



National Science Board

# SCIENCE AND ENGINEERING INDICATORS 2008

Volume 2  
Appendix Tables



NATIONAL SCIENCE FOUNDATION

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# Science and Engineering Indicators 2008

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Appendix Tables



National Science Board

## Cover Image

The cover for *Science and Engineering Indicators 2008* celebrates the 2007–09 International Polar Year with a montage of photographic images from the Arctic and Antarctic regions. At the center is an ice cave at Loudwater Cove, on Anvers Island. Arcing above it are smaller images showing (right to left) the Beacon Valley field camp in the Dry Valleys of southern Victoria Land, a deepwater cnidarian, a female polar bear and her cub on sea ice, a skua chick, an aurora borealis, a sunset at Cape Hallett, and an LC-130 Hercules cargo aircraft. (Credit, ice cave: Zenobia Evans, National Science Foundation (NSF). Credits, images right to left: Josh Landis, NSF; Katrin Iken and Bodil Bluhm, University of Alaska, Fairbanks; *The Hidden Ocean, Arctic 2005 Exploration*; Ariana Owens, NSF; Patrick Smith; Ken Ryan, NSF; Jerry Marty, NSF).

## Recommended Citation

National Science Board. 2008. *Science and Engineering Indicators 2008*. Two volumes. Arlington, VA: National Science Foundation (volume 1, NSB 08-01; volume 2, NSB 08-01A).

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Appendix table 1-1

**Proficiency in specific mathematics knowledge and skill areas of students in grades 3 and 5, by student and family characteristics: 2002 and 2004**

(Percent)

Student/family characteristic	Multiplication and division (level 5)		Place value (level 6)		Rate and measurement (level 7)		Fractions (level 8)		Area and volume (level 9)	
	Grade 3	Grade 5	Grade 3	Grade 5	Grade 3	Grade 5	Grade 3	Grade 5	Grade 3	Grade 5
All students.....	76	92	41	74	13	43	1	13	NA	2
Sex										
Male.....	78	93	45	77	16	47	1	16	NA	2
Female.....	74	91	37	70	10	39	—	10	NA	1
Race/ethnicity										
White, non-Hispanic.....	84	95	52	82	17	53	1	18	NA	2
Black, non-Hispanic.....	60	85	21	54	4	20	—	3	NA	0
Hispanic.....	69	91	30	68	7	34	—	7	NA	1
Asian.....	77	94	48	81	18	56	1	22	NA	3
Other <sup>a</sup> .....	68	87	33	65	10	36	—	13	NA	1
Mother's education										
<High school.....	52	80	16	47	3	18	—	3	NA	0
High school diploma.....	71	90	33	67	8	34	—	7	NA	1
Some college <sup>b</sup> .....	78	94	42	76	11	43	1	11	NA	1
Bachelor's or higher degree.....	90	98	63	90	25	66	2	28	NA	4
Poverty status <sup>c</sup>										
Below poverty threshold.....	58	84	20	53	4	22	—	4	NA	0
Above poverty threshold.....	82	95	48	80	16	50	1	16	NA	2

— = <0.5%; NA = not available

<sup>a</sup>Includes non-Hispanic Native Hawaiians, Pacific Islanders, American Indians, Alaska Natives, and children of more than one race.

<sup>b</sup>Includes vocational and technical education.

<sup>c</sup>Federal poverty thresholds define households below poverty level based on household income and number of household members.

NOTES: In 2004 followup for Early Childhood Longitudinal Study (ECLS) kindergarten class of fall 1998, 86% of cohort was in grade 5, 14% was in a lower grade, and <1% was in a higher grade. For simplicity, students in ECLS followups referred to by modal and expected grade, i.e., third graders in spring 2002 assessment and fifth graders in spring 2004 assessment.

SOURCES: National Center for Education Statistics, ECLS, 2002 and 2004; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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Appendix table 1-2

**Average mathematics scores of students in kindergarten and grades 1, 3, and 5, by student and family characteristics: 1998, 2000, 2002, and 2004**

Student/family characteristic	Fall 1998 kindergarten	Spring 2000 grade 1	Spring 2002 grade 3	Spring 2004 grade 5	Gain from kindergarten to grade 5
All students.....	22	39	91	112	89
Sex					
Male.....	22	39	93	114	92
Female.....	22	39	89	110	87
Race/ethnicity					
White, non-Hispanic.....	25	43	97	118	93
Black, non-Hispanic.....	19	33	79	99	80
Hispanic.....	19	36	85	108	89
Asian.....	25	39	94	118	93
Other <sup>a</sup> .....	20	38	86	107	86
Mother's education					
<High school.....	17	29	75	95	79
High school diploma.....	21	37	86	107	86
Some college <sup>b</sup> .....	22	39	92	113	90
Bachelor's or higher degree.....	28	47	103	125	97
Poverty status <sup>c</sup>					
Below poverty threshold.....	18	31	78	99	81
Above poverty threshold.....	24	42	95	116	92

<sup>a</sup>Includes non-Hispanic Native Hawaiians, Pacific Islanders, American Indians, Alaska Natives, and children of more than one race.

<sup>b</sup>Includes vocational and technical education.

<sup>c</sup>Federal poverty thresholds define households below poverty level based on household income and number of household members.

NOTES: Early Childhood Longitudinal Study (ECLS) mathematics scale ranged from 0 to 153. In 2004 followup for ECLS kindergarten class of fall 1998, 86% of cohort was in grade 5, 14% was in a lower grade, and <1% was in a higher grade. For simplicity, students in ECLS followups referred to by modal and expected grade, i.e., first graders in spring 2000 assessment, third graders in spring 2002 assessment, and fifth graders in spring 2004 assessment.

SOURCES: National Center for Education Statistics, ECLS, fall 1998 and spring 2000, 2002, and 2004; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-3

**Average science scores of students in grades 3 and 5, by student and family characteristics: 2002 and 2004**

Student/family characteristic	Spring 2002 grade 3	Spring 2004 grade 5	Gain from spring 2002 to spring 2004
All students.....	44	57	13
Sex			
Male.....	46	59	13
Female.....	42	55	13
Race/ethnicity			
White, non-Hispanic.....	49	62	13
Black, non-Hispanic.....	35	46	11
Hispanic.....	38	52	14
Asian.....	44	57	13
Other <sup>a</sup> .....	41	54	12
Mother's education			
<High school.....	32	45	12
High school diploma.....	41	54	12
Some college <sup>b</sup> .....	44	57	13
Bachelor's or higher degree.....	52	65	13
Poverty status <sup>c</sup>			
Below poverty threshold.....	34	46	12
Above poverty threshold.....	47	60	13

<sup>a</sup>Includes non-Hispanic Native Hawaiians, Pacific Islanders, American Indians, Alaska Natives, and children of more than one race.

<sup>b</sup>Includes vocational and technical education.

<sup>c</sup>Federal poverty thresholds define households below poverty level based on household income and number of household members.

NOTES: Early Childhood Longitudinal Study (ECLS) science scale ranged from 0 to 92. In 2004 followup for ECLS kindergarten class of fall 1998, 86% of cohort was in grade 5, 14% was in a lower grade, and <1% was in a higher grade. For simplicity, students in ECLS followups referred to by modal and expected grade, i.e., third graders in spring 2002 assessment and fifth graders in spring 2004 assessment.

SOURCES: National Center for Education Statistics, ECLS, spring 2002 and 2004; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-4

**Proficiency in specific mathematics knowledge and skill areas of students in grades 10 and 12, by student and family characteristics: 2002 and 2004**

(Percent)

Student/family characteristic	Simple operations: whole numbers (level 1)		Simple operations: decimals, fractions, roots, and powers (level 2)		Simple problem solving (level 3)		Understanding intermediate-level concepts, multistep problem solving (level 4)		Complex problem solving, advanced knowledge (level 5)		Mean score	
	Grade 10	Grade 12	Grade 10	Grade 12	Grade 10	Grade 12	Grade 10	Grade 12	Grade 10	Grade 12	Grade 10	Grade 12
	All students.....	92	96	68	79	47	63	21	35	1	4	38
Sex												
Male.....	92	96	70	80	49	65	23	38	1	5	38	50
Female.....	92	96	67	78	45	61	19	33	1	3	37	48
Race/ethnicity												
White, non-Hispanic.....	96	98	79	86	59	73	27	44	1	5	41	52
Black, non-Hispanic.....	85	93	44	59	20	36	5	12	0	0	30	39
Hispanic.....	86	93	49	65	26	44	9	19	0	1	32	42
Asian/Pacific Islander.....	96	98	79	87	60	74	31	50	4	11	42	55
Mother's education												
<High school.....	84	92	46	60	23	38	7	15	0	1	31	40
High school diploma.....	92	96	63	75	39	56	15	27	0	2	35	46
Some college <sup>a</sup> .....	93	97	70	81	48	64	20	35	1	3	38	49
Bachelor's or higher degree.....	96	98	83	89	67	79	36	54	2	8	43	56
Socioeconomic status <sup>b</sup>												
Lowest quartile.....	86	93	48	62	25	40	8	16	0	1	31	41
Middle two quartiles.....	93	96	69	79	46	62	18	32	0	2	37	48
Highest quartile.....	98	99	87	93	72	83	39	58	3	9	44	57

<sup>a</sup>Includes vocational and technical education.

<sup>b</sup>Socioeconomic status based on five equally weighted components: father's education, mother's education, family income, father's occupational prestige score, and mother's occupational prestige score.

SOURCES: National Center for Education Statistics, Education Longitudinal Study, spring 2002 and 2004; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-5

**Average mathematics score of students in grades 4, 8, and 12, by student characteristics: Selected years, 1990–2005**

Grade/student characteristic	1990	1992	1996	2000	2003	2005
All grade 4 students.....	213	220	224	226	235	238
Sex						
Male.....	214	221	224	227	236	239
Female.....	213	219	223	224	233	237
Race/ethnicity						
White, non-Hispanic.....	220	227	232	234	243	246
Black, non-Hispanic.....	188	193	198	203	216	220
Hispanic.....	200	202	207	208	222	226
Asian/Pacific Islander <sup>a</sup> .....	NA	231	229	NA	246	251
American Indian/Alaska Native <sup>b</sup> .....	NA	NA	NA	NA	223	226
Free/reduced-price lunch <sup>c</sup>						
Eligible.....	NA	NA	207	208	222	225
Not eligible.....	NA	NA	232	235	244	248
Percentile score						
10th.....	171	177	182	184	197	200
25th.....	193	199	203	205	216	220
50th.....	214	221	225	227	236	239
75th.....	235	242	245	248	255	258
90th.....	253	259	262	265	270	273
All grade 8 students.....	263	268	270	273	278	279
Sex						
Male.....	263	268	271	274	278	280
Female.....	262	269	269	272	277	278
Race/ethnicity						
White, non-Hispanic.....	270	277	281	284	288	289
Black, non-Hispanic.....	237	237	240	244	252	255
Hispanic.....	246	249	251	253	259	262
Asian/Pacific Islander <sup>a</sup> .....	NA	290	NA	288	291	295
American Indian/Alaska Native <sup>b</sup> .....	NA	NA	NA	NA	263	264
Free/reduced-price lunch <sup>c</sup>						
Eligible.....	NA	NA	250	253	259	262
Not eligible.....	NA	NA	277	283	287	288
Percentile score						
10th.....	215	221	221	223	230	231
25th.....	239	243	245	249	254	255
50th.....	264	269	273	275	279	280
75th.....	288	294	297	300	303	304
90th.....	307	315	316	320	323	324

Appendix table 1-5

(Page 2 of 2)

**Average mathematics score of students in grades 4, 8, and 12, by student characteristics: Selected years, 1990–2005**

Grade/student characteristic	1990	1992	1996	2000	2003	2005
All grade 12 students <sup>d</sup> .....	NA	NA	NA	NA	NA	150
Sex						
Male.....	NA	NA	NA	NA	NA	151
Female.....	NA	NA	NA	NA	NA	149
Race/ethnicity						
White, non-Hispanic.....	NA	NA	NA	NA	NA	157
Black, non-Hispanic.....	NA	NA	NA	NA	NA	127
Hispanic.....	NA	NA	NA	NA	NA	133
Asian/Pacific Islander.....	NA	NA	NA	NA	NA	163
American Indian/Alaska Native.....	NA	NA	NA	NA	NA	134
Percentile score						
10th.....	NA	NA	NA	NA	NA	105
25th.....	NA	NA	NA	NA	NA	127
50th.....	NA	NA	NA	NA	NA	151
75th.....	NA	NA	NA	NA	NA	174
90th.....	NA	NA	NA	NA	NA	194

NA = not available

<sup>a</sup>Insufficient sample size in 1990 for Asian/Pacific Islanders precluded calculation of reliable estimates. Special analyses raised concerns about accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996 and grade 4 Asian/Pacific Islander results in 2000; therefore omitted from National Center for Education Statistics (NCES) reports and this report.

<sup>b</sup>Insufficient sample sizes in 1990, 1992, 1996, and 2000 for grade 4 and 8 American Indians/Alaska Natives precluded calculation of reliable estimates.

<sup>c</sup>Information on student's eligibility for free/reduced-price lunch first gathered in 1996 for grades 4 and 8 and not available for grade 12.

<sup>d</sup>2005 grade 12 mathematics assessment not comparable with previous assessments; therefore mathematics trend information for grade 12 not available. For results from previous grade 12 mathematics assessments see NCES, *The Nation's Report Card: Mathematics 2000*, NCES 2001-517 (2001).

NOTES: For grades 4 and 8, scores on 0–500 scale across two grades. For grade 12, scores on 0–300 scale. National Assessment of Educational Progress (NAEP) recently changed way it includes students with disabilities and limited English proficiency in assessments. Before 1996, these students not allowed to use testing accommodations (e.g., extended time, one-on-one testing, bilingual dictionary). In 1996 and 2000, assessment administered to split samples: accommodations not permitted and accommodations permitted. Results in this table for 1996 and 2000 for sample allowed to use accommodations. In 2003, NAEP mathematics assessment completed transition to an accommodations-permitted test.

SOURCES: NCES, *The Nation's Report Card: Mathematics 2005*, NCES 2006-453 (2006); NCES, *The Nation's Report Card: 12th-Grade Reading and Mathematics 2005*, NCES 2007-468 (2007b); NAEP, 1990, 1996, 2003, and 2005 mathematics assessments; and National Science Foundation, Division of Science Resources Statistics, special tabulations.



Appendix table 1-6

**Students in grades 4, 8, and 12 scoring at or above proficient level in mathematics for their grade, by student characteristics: Selected years, 1990–2005**

(Percent)

Grade/student characteristic	1990	1992	1996	2000	2003	2005
All grade 4 students.....	13	18	21	24	32	36
Sex						
Male.....	13	19	22	26	35	38
Female.....	12	16	20	22	30	34
Race/ethnicity						
White, non-Hispanic.....	16	22	27	31	43	47
Black, non-Hispanic.....	1	2	3	5	10	13
Hispanic.....	5	6	7	7	16	19
Asian/Pacific Islander <sup>a</sup> .....	NA	28	27	NA	48	55
American Indian/Alaska Native <sup>b</sup> .....	NA	NA	NA	NA	17	21
Free/reduced-price lunch <sup>c</sup>						
Eligible.....	NA	NA	8	8	15	19
Not eligible.....	NA	NA	27	32	45	49
All grade 8 students.....	15	21	23	26	29	30
Sex						
Male.....	17	21	25	27	30	31
Female.....	14	21	22	24	27	28
Race/ethnicity						
White, non-Hispanic.....	18	26	30	34	37	39
Black, non-Hispanic.....	5	2	4	5	7	9
Hispanic.....	7	7	8	8	12	13
Asian/Pacific Islander <sup>a</sup> .....	NA	43	NA	41	43	47
American Indian/Alaska Native <sup>b</sup> .....	NA	NA	NA	NA	15	14
Free/reduced-price lunch <sup>c</sup>						
Eligible.....	NA	NA	8	9	12	19
Not eligible.....	NA	NA	28	34	37	39
All grade 12 students <sup>d</sup> .....	NA	NA	NA	NA	NA	23
Sex						
Male.....	NA	NA	NA	NA	NA	25
Female.....	NA	NA	NA	NA	NA	21
Race/ethnicity						
White, non-Hispanic.....	NA	NA	NA	NA	NA	29
Black, non-Hispanic.....	NA	NA	NA	NA	NA	6
Hispanic.....	NA	NA	NA	NA	NA	8
Asian/Pacific Islander.....	NA	NA	NA	NA	NA	36
American Indian/Alaska Native.....	NA	NA	NA	NA	NA	6

NA = not available

<sup>a</sup>Insufficient sample size in 1990 for Asian/Pacific Islanders precluded calculation of reliable estimates. Special analyses raised concerns about accuracy and precision of grade 8 Asian/Pacific Islander results in 1996 and grade 4 Asian/Pacific Islander results in 2000; therefore omitted from National Center for Education Statistics (NCES) reports and this report.

<sup>b</sup>Insufficient sample sizes in 1990, 1992, 1996, and 2000 for grade 4 and 8 American Indians/Alaska Natives precluded calculation of reliable estimates.

<sup>c</sup>Information on student's eligibility for free/reduced-price lunch first gathered in 1996 for grades 4 and 8 and not available for grade 12.

<sup>d</sup>The 2005 grade 12 mathematics assessment not comparable to previous assessments; therefore mathematics trend information for grade 12 not available. For results from previous grade 12 mathematics assessments see NCES, *The Nation's Report Card: Mathematics 2000*, NCES 2001-517 (2001).

NOTES: For grades 4 and 8, scores on 0–500 scale across two grades. For grade 12, scores on 0–300 scale. National Assessment of Educational Progress (NAEP) recently changed way it includes students with disabilities and limited English proficiency in assessments. Before 1996, these students not allowed to use testing accommodations (e.g., extended time, one-on-one testing, bilingual dictionary). In 1996 and 2000, assessment administered to split samples: accommodations not permitted and accommodations permitted. Results in this table for 1996 and 2000 for sample allowed to use accommodations. In 2003, NAEP mathematics assessment completed transition to an accommodations-permitted test.

SOURCES: NCES, *The Nation's Report Card: Mathematics 2005*, NCES 2006-453 (2006); NCES, *The Nation's Report Card: 12th-Grade Reading and Mathematics 2005*, NCES 2007-468 (2007b); NAEP, 1990, 1996, 2003, and 2005 mathematics assessments; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-7

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**Average science score of students in grades 4, 8, and 12, by student characteristics: 1996, 2000, and 2005**

Grade/student characteristic	1996	2000	2005
All grade 4 students.....	147	147	151
Sex			
Male.....	148	149	153
Female.....	146	145	149
Race/ethnicity			
White, non-Hispanic.....	158	159	162
Black, non-Hispanic.....	120	122	129
Hispanic.....	124	122	133
Asian/Pacific Islander <sup>a</sup> .....	144	NA	158
American Indian/Alaska Native.....	129	135	138
Free/reduced-price lunch			
Eligible.....	129	127	135
Not eligible.....	159	158	162
Percentile score			
10th.....	99	99	109
25th.....	125	125	130
50th.....	150	150	153
75th.....	172	172	173
90th.....	190	190	189
All grade 8 students.....	149	149	149
Sex			
Male.....	150	153	150
Female.....	148	146	147
Race/ethnicity			
White, non-Hispanic.....	159	161	160
Black, non-Hispanic.....	121	121	124
Hispanic.....	128	127	129
Asian/Pacific Islander.....	151	153	156
American Indian/Alaska Native.....	148	147	128
Free/reduced-price lunch			
Eligible.....	129	127	130
Not eligible.....	156	159	159
Percentile score			
10th.....	103	101	101
25th.....	127	126	126
50th.....	152	152	151
75th.....	174	175	174
90th.....	192	194	192
All grade 12 students.....	150	146	147
Sex			
Male.....	154	148	149
Female.....	147	145	145
Race/ethnicity			
White, non-Hispanic.....	159	153	156
Black, non-Hispanic.....	123	122	120
Hispanic.....	131	128	128
Asian/Pacific Islander.....	147	149	153
American Indian/Alaska Native.....	144	151	139

Appendix table 1-7

**Average science score of students in grades 4, 8, and 12, by student characteristics: 1996, 2000, and 2005**

Grade/student characteristic	1996	2000	2005
Percentile score			
10th .....	105	101	101
25th .....	128	124	125
50th .....	152	148	149
75th .....	174	170	171
90th .....	192	189	189

NA = not available

\*Special analyses raised concerns about accuracy and precision of national grade 4 Asian/Pacific Islander results in 2000; therefore omitted from National Center for Education Statistics (NCES) reports and this report.

NOTES: Scores on 0–300 scale for each grade. National Assessment of Educational Progress (NAEP) recently changed way it includes students with disabilities and limited English proficiency in assessments. Before 1996, these students not allowed to use testing accommodations (e.g., extended time, one-on-one testing, bilingual dictionary). In 1996 and 2000, assessment administered to split samples: accommodations not permitted and accommodations permitted. Results in this table for 1996 and 2000 for sample allowed to use accommodations. In 2005, NAEP science assessment completed transition to an accommodations-permitted test.

SOURCES: NCES, The Nation’s Report Card: Science 2005, NCES 2006-466 (2006); NAEP, 1996, 2000, and 2005 science assessments; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

## Appendix table 1-8

**Students in grades 4, 8, and 12 scoring at or above proficient level in science for their grade, by student characteristics: 1996, 2000, and 2005**

(Percent)

Grade/student characteristic	1996	2000	2005
All grade 4 students.....	28	27	29
Sex			
Male.....	29	30	31
Female.....	26	25	26
Race/ethnicity			
White, non-Hispanic.....	36	37	40
Black, non-Hispanic.....	5	6	8
Hispanic.....	9	8	11
Asian/Pacific Islander <sup>a</sup> .....	24	NA	36
American Indian/Alaska Native.....	18	18	14
Free/reduced-price lunch			
Eligible.....	12	10	12
Not eligible.....	37	37	40
All grade 8 students.....	29	30	29
Sex			
Male.....	31	34	32
Female.....	27	27	26
Race/ethnicity			
White, non-Hispanic.....	37	40	39
Black, non-Hispanic.....	5	7	7
Hispanic.....	10	10	10
Asian/Pacific Islander.....	33	35	36
American Indian/Alaska Native.....	25	27	12
Free/reduced-price lunch			
Eligible.....	12	11	12
Not eligible.....	34	38	38
All grade 12 students.....	21	18	18
Sex			
Male.....	26	20	21
Female.....	17	16	16
Race/ethnicity			
White, non-Hispanic.....	27	22	24
Black, non-Hispanic.....	3	3	2
Hispanic.....	6	6	5
Asian/Pacific Islander.....	21	24	23
American Indian/Alaska Native.....	11	20	13

NA = not available

<sup>a</sup>Special analyses raised concerns about accuracy and precision of national grade 4 Asian/Pacific Islander results in 2000; therefore omitted from National Center for Education Statistics (NCES) reports and this report.

NOTES: National Assessment of Educational Progress (NAEP) recently changed way it includes students with disabilities and limited English proficiency in assessments. Before 1996, these students not allowed to use testing accommodations (e.g., extended time, one-on-one testing, bilingual dictionary). In 1996 and 2000, assessment administered to split samples: accommodations not permitted and accommodations permitted. Results in this table for 1996 and 2000 for sample allowed to use accommodations. In 2005, NAEP science assessment completed transition to an accommodations-permitted test.

SOURCES: NCES, The Nation's Report Card: Science 2005, NCES 2006-466 (2006); NAEP, 1996, 2000, and 2005 science assessments; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-9

**High school graduates completing advanced mathematics courses, by student and school characteristics and subject: Selected years, 1990–2005**

(Percent)

Student characteristic	Trigonometry or algebra III	Precalculus or analysis	Statistics or probability	Calculus	
				Any	AP/IB
1990 graduates .....	20.2	13.5	1.0	7.1	4.4
1994 graduates .....	23.6	17.3	2.0	10.2	7.6
2000 graduates .....	19.3	26.5	5.7	12.5	8.4
2005 graduates .....	19.2	29.2	7.7	14.3	9.7
Sex					
Male .....	17.9	27.6	7.7	14.6	10.2
Female .....	20.4	30.6	7.8	14.0	9.3
Race/ethnicity					
White .....	21.0	31.7	8.5	16.0	10.7
Black .....	17.9	17.8	5.7	5.9	3.2
Hispanic .....	9.3	20.1	3.4	7.2	5.6
Asian/Pacific Islander .....	18.9	48.1	12.9	31.1	25.3
Other .....	22.8	22.4	7.0	13.3	8.0
School sector					
Public .....	18.1	27.5	7.6	13.2	9.2
Private .....	28.8	44.6	8.3	24.6	14.9
Community type					
Urban .....	18.9	30.6	7.1	15.1	12.4
Suburban .....	18.4	32.1	9.1	15.1	10.0
Rural .....	20.7	22.7	6.0	12.1	6.7
Size (enrollment)					
Small (1–599) .....	17.4	23.8	3.6	12.0	5.9
Medium (600–1,799) .....	22.5	31.1	7.5	14.9	10.0
Large (≥1,800) .....	15.4	30.3	11.1	14.0	11.4
Poverty rate <sup>a</sup>					
Very low .....	26.2	45.8	12.0	22.7	13.8
Low .....	17.1	31.2	9.9	15.4	11.4
Medium .....	19.0	23.2	6.6	11.4	7.7
High .....	16.8	18.6	3.1	6.8	5.0

AP = Advanced Placement

IB = International Baccalaureate

<sup>a</sup>Students eligible for national free/reduced-priced lunch program: very low = ≤5%, low = 6–25%, medium = 26–50%, and high = 51–100%.NOTES: AP/IB calculus courses appear in two columns: alone in their specific column and along with other calculus courses in “any” column. Slight differences in pre-2005 data from earlier editions of *Science and Engineering Indicators* result from minor refinements in defining graduates and some course categories. For information on courses and coding, see <http://nces.ed.gov/surveys/hst/courses.asp>, accessed 12 March 2007.

SOURCES: National Center for Education Statistics, National Assessment of Educational Progress, 1990, 1994, 2000, and 2005 High School Transcript Studies; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-10

**High school graduates completing advanced S&E courses, by student and school characteristics and subject: Selected years, 1990–2005**

(Percent)

Student characteristic	Advanced biology		Chemistry		Physics		Environmental science		Engineering or science technologies	
	Any	AP/IB	Any	AP/IB	Any	AP/IB	Any	AP/IB	Engineering	technologies
1990 graduates .....	25.9	5.0	43.4	NA	23.3	NA	3.9	NA	0.1	1.5
1994 graduates .....	33.6	4.8	49.0	NA	27.4	NA	4.7	NA	0.5	2.5
2000 graduates .....	38.8	6.5	55.2	3.1	34.1	2.4	8.6	0.7	1.3	6.3
2005 graduates .....	39.2	6.9	54.3	3.6	34.8	3.2	9.9	1.4	1.4	6.7
<b>Sex</b>										
Male .....	33.3	5.6	50.6	3.9	36.8	4.1	10.4	1.3	2.3	11.1
Female .....	44.7	8.0	57.8	3.4	32.8	2.4	9.5	1.6	0.6	2.6
<b>Race/ethnicity</b>										
White .....	42.0	7.2	54.9	3.7	37.0	3.3	10.1	1.6	1.4	7.3
Black .....	34.7	4.1	53.7	1.2	26.8	1.0	13.7	0.9	0.9	5.9
Hispanic .....	25.8	4.9	47.0	2.5	24.3	2.1	6.6	1.1	1.3	5.1
Asian/Pacific Islander .....	42.0	15.0	65.6	12.5	51.5	10.4	5.4	2.0	2.9	6.2
Other .....	43.6	3.9	53.1	4.8	30.8	2.1	6.3	1.0	1.5	2.1
<b>School sector</b>										
Public .....	38.4	6.5	52.5	3.3	32.6	2.9	9.9	1.3	1.6	7.3
Private .....	45.9	9.9	71.2	6.5	54.8	5.5	9.8	2.4	0.0	1.2
<b>Community type</b>										
Urban .....	36.3	7.3	59.5	5.1	35.2	3.6	7.1	1.6	2.0	5.4
Suburban .....	39.5	7.4	54.6	3.7	37.3	4.0	10.1	1.7	1.4	7.3
Rural .....	41.4	5.5	48.5	2.0	29.8	1.3	12.3	0.8	0.7	7.1
<b>Size (enrollment)</b>										
Small (1–599) .....	40.2	5.6	51.2	1.9	29.8	1.3	12.8	0.8	0.2	4.4
Medium (600–1,799) .....	42.0	7.5	54.0	3.9	35.4	3.3	9.9	1.5	1.5	6.8
Large (≥1,800) .....	35.8	7.1	56.9	4.2	35.7	4.1	8.9	1.8	2.4	7.8
<b>Poverty rate<sup>a</sup></b>										
Very low .....	50.3	10.7	67.0	4.9	49.8	7.9	9.6	2.9	1.7	9.7
Low .....	38.3	7.3	53.9	3.4	35.6	3.1	9.4	1.3	2.4	6.9
Medium .....	39.2	4.7	48.5	3.2	28.1	1.9	8.9	1.1	1.0	6.8
High .....	32.7	5.7	49.6	2.1	22.2	1.9	13.2	1.0	1.2	6.3

NA = not available

AP = Advanced Placement

IB = International Baccalaureate

<sup>a</sup>Students eligible for national free/reduced-priced lunch program: very low = ≤5%, low = 6–25%, medium = 26–50%, and high = 51–100%.

NOTES: AP/IB courses appear in two columns: alone in their specific column and along with other courses in "any" column. For some subjects, AP and IB courses not coded separately in 1994 or 1990. Slight differences in pre-2005 data from earlier editions of *Science and Engineering Indicators* result from minor refinements in defining graduates and some course categories. For information on courses and coding, see <http://nces.ed.gov/surveys/hst/courses.asp>, accessed 12 March 2007.

SOURCES: National Center for Education Statistics, National Assessment of Educational Progress, 1990, 1994, 2000, and 2005 High School Transcript Studies; and National Science Foundation, Division of Science Resources Statistics, special tabulations.



Appendix table 1-11

**Public school teachers with master's degree or higher, by minority enrollment and school poverty level: Academic year 2003–04**

(Percent)

School characteristic	Middle school teachers			High school teachers		
	Mathematics	Science	Other	Mathematics	Science	Other
All schools .....	45.8	44.1	49.0	49.5	57.6	49.4
Minority enrollment (%)						
0–5 .....	46.0	50.2	55.3	49.4	62.7	48.9
>5–45 .....	49.2	47.3	51.1	51.6	59.5	52.5
>45 .....	42.0	38.0	43.8	47.2	53.2	46.1
School poverty level <sup>a</sup> (%)						
0–10 .....	50.8	61.5	58.1	61.3	68.4	59.1
>10–50 .....	50.6	44.0	49.5	46.4	56.2	48.4
>50 .....	36.0	38.9	44.9	45.0	47.9	43.8

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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Appendix table 1-12

**Public school teachers with regular or advanced certification, by minority enrollment and school poverty level: Academic year 2003–04**

(Percent)

School characteristic	Middle school teachers			High school teachers		
	Mathematics	Science	Other	Mathematics	Science	Other
All schools .....	85.6	83.0	87.1	84.9	82.7	86.3
Minority enrollment (%)						
0–5 .....	85.6	89.1	89.5	88.1	83.3	87.4
>5–45 .....	90.5	84.9	89.4	86.9	85.9	87.6
>45 .....	80.2	78.5	83.3	81.4	78.5	84.3
School poverty level <sup>a</sup> (%)						
0–10 .....	90.1	93.9	88.5	83.5	84.0	87.8
>10–50 .....	89.1	82.4	88.8	86.0	83.2	87.2
>50 .....	78.3	80.4	83.4	83.9	79.3	82.9

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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Appendix table 1-13

**Length of practice teaching of public middle and high school teachers with less than 5 years of teaching experience, by minority enrollment and school poverty level: Academic year 2003–04**

(Percent)

Field/school characteristic	Participated in practice teaching	Practice teaching (weeks)			
		≤4	5–7	8–11	≥12
Mathematics .....	78.6	3.2	4.6	13.5	57.4
Minority enrollment (%)					
0–5 .....	92.7	0.2	0.2	16.7	75.5
>5–45 .....	82.7	1.4	4.5	11.7	65.1
>45 .....	71.3	5.4	5.7	14.2	46.0
School poverty level <sup>a</sup> (%)					
0–10 .....	85.8	0.3	6.8	17.6	61.1
>10–50 .....	82.0	2.4	3.3	12.9	63.5
>50 .....	69.3	6.3	5.6	12.0	45.5
Science .....	75.0	2.4	3.9	13.6	55.1
Minority enrollment (%)					
0–5 .....	91.1	1.2	3.1	16.9	69.9
>5–45 .....	76.2	1.5	3.7	17.3	53.6
>45 .....	68.2	3.8	4.4	8.5	51.5
School poverty level <sup>a</sup> (%)					
0–10 .....	85.2	1.1	5.2	23.3	55.5
>10–50 .....	75.6	1.8	3.2	14.5	56.1
>50 .....	65.9	4.6	5.0	6.7	49.6
Other .....	81.2	3.5	3.8	13.8	60.1
Minority enrollment (%)					
0–5 .....	89.6	0.9	1.1	16.3	71.3
>5–45 .....	83.2	2.3	2.7	14.3	63.8
>45 .....	76.8	5.4	5.6	12.6	53.2
School poverty level <sup>a</sup> (%)					
0–10 .....	88.8	1.7	1.6	15.7	69.7
>10–50 .....	82.8	3.2	3.5	14.5	61.6
>50 .....	75.7	4.9	5.7	11.8	53.4

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-14

**Preparedness for first-year teaching of public middle and high school teachers with less than 5 years of teaching experience, by minority enrollment and school poverty level: Academic year 2003–04**

(Percent)

Field/school characteristic	Teach subject matter	Assess students	Use variety of instructional methods	Select/adapt curriculum and instructional materials	Use computers in classroom instruction	Handle classroom management or discipline
Mathematics .....	90.8	73.0	63.5	61.3	57.1	51.3
Minority enrollment (%)						
0–5 .....	94.4	83.6	86.8	67.0	63.9	58.2
>5–45 .....	93.7	78.8	68.9	67.4	61.4	54.9
>45 .....	87.6	65.2	52.5	54.6	51.7	46.3
School poverty level <sup>a</sup> (%)						
0–10 .....	95.6	82.6	80.5	68.8	67.1	53.9
>10–50 .....	91.0	73.2	67.1	63.4	56.4	51.7
>50 .....	87.5	66.5	48.1	52.2	51.5	48.7
Science .....	79.0	59.3	58.0	56.5	62.4	43.7
Minority enrollment (%)						
0–5 .....	91.7	66.5	71.2	58.0	71.4	53.1
>5–45 .....	76.5	56.6	59.7	56.6	62.3	45.1
>45 .....	77.3	59.8	51.8	55.9	59.4	39.0
School poverty level <sup>a</sup> (%)						
0–10 .....	88.0	64.5	64.6	54.1	72.0	55.1
>10–50 .....	78.3	57.6	60.3	57.2	59.8	43.3
>50 .....	73.6	58.8	46.6	54.1	60.0	35.4
Other .....	81.1	67.3	66.3	63.5	59.0	53.4
Minority enrollment (%)						
0–5 .....	84.2	73.2	75.5	68.4	63.4	61.6
>5–45 .....	82.1	70.8	70.5	68.4	62.7	56.2
>45 .....	79.3	62.2	59.6	57.5	54.3	48.3
School poverty level <sup>a</sup> (%)						
0–10 .....	84.2	74.0	73.2	72.9	59.9	62.2
>10–50 .....	82.4	69.2	69.3	65.0	60.7	54.6
>50 .....	76.7	59.9	56.9	55.7	54.9	45.9

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

NOTES: Teachers with &lt;5 years of teaching experience asked about how well they were prepared to perform various tasks during first year of teaching. Response categories included "very well prepared," "well prepared," "somewhat prepared," and "not at all prepared." Percentages based on teachers responding "very well prepared" or "well prepared."

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-15

**Qualifications of public middle and high school mathematics, biology/life science, and physical science teachers in main assignment field, by minority enrollment and school poverty level: Academic year 2003–04**

(Percent distribution)

Field/school characteristic	Middle school teachers				High school teachers			
	In-field	Related field	General preparation	Out-of-field	In-field	Related field	General preparation	Out-of-field
Mathematics .....	53.5	3.9	37.5	5.1	87.4	2.0	3.1	7.5
Minority enrollment (%)								
0–5 .....	72.9	0.2	25.2	1.7	91.3	0.7	4.9	3.2
>5–45 .....	49.6	0.8	44.2	5.5	90.2	0.9	2.5	6.4
>45 .....	51.5	8.6	34.2	5.7	82.8	3.8	3.0	10.4
School poverty level <sup>a</sup> (%)								
0–10 .....	58.2	0.4	38.4	3.0	92.2	0.4	3.0	4.4
>10–50 .....	56.4	1.3	38.4	3.8	87.5	2.6	3.1	6.8
>50 .....	47.4	9.3	35.5	7.8	82.9	1.8	3.3	12.0
Biology/life science .....	54.8	16.2	19.4	9.5	91.9	3.6	1.3	3.2
Minority enrollment (%)								
0–5 .....	—	—	—	—	95.6	2.9	0.9	0.6
>5–45 .....	47.5	24.0	14.2	14.4	92.3	3.7	1.2	2.8
>45 .....	66.0	8.9	17.8	7.2	89.9	3.9	1.5	4.8
School poverty level <sup>a</sup> (%)								
0–10 .....	—	—	—	—	94.8	3.9	0.8	0.4
>10–50 .....	46.1	13.9	25.8	14.2	92.4	3.0	1.4	3.2
>50 .....	72.0	8.0	13.3	6.7	87.8	5.4	1.6	5.3
Physical science .....	32.7	38.2	26.0	3.1	78.1	19.6	0.9	1.5
Minority enrollment (%)								
0–5 .....	—	—	—	—	76.3	22.1	0.0	1.5
>5–45 .....	36.3	28.6	30.0	5.1	79.4	17.9	1.3	1.4
>45 .....	27.3	49.6	20.8	2.3	77.0	20.7	0.8	1.5
School poverty level <sup>a</sup> (%)								
0–10 .....	—	—	—	—	85.9	11.7	1.1	1.3
>10–50 .....	42.2	29.8	22.6	5.3	75.3	22.3	1.0	1.4
>50 .....	13.8	58.0	28.3	0.0	76.7	22.1	0.6	0.7

— = too few cases for reliable estimate

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

NOTE: Percents may not add to 100 due to rounding.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-16

**Public school teachers with 3 or less years of teaching experience, by minority enrollment and school poverty level: Academic year 2003–04**  
(Percent)

School characteristic	Middle school teachers			High school teachers		
	Mathematics	Science	Other	Mathematics	Science	Other
All schools .....	21.8	15.3	15.4	16.9	18.6	15.4
Minority enrollment (%)						
0–5 .....	15.2	13.6	9.7	13.6	17.2	13.7
>5–45 .....	15.9	17.8	13.2	16.2	16.7	14.6
>45 .....	28.1	13.1	20.4	19.1	21.5	17.0
School poverty level <sup>a</sup> (%)						
0–10 .....	17.8	11.0	10.1	17.5	16.9	13.5
>10–50 .....	15.9	15.5	14.6	16.9	18.8	14.9
>50 .....	32.8	16.0	18.9	15.8	19.2	17.5

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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Appendix table 1-17

**Participation in induction and mentoring activities during first year of teaching among public middle and high school teachers with less than 5 years of teaching experience, by minority enrollment and school poverty level: Academic year 2003–04**  
(Percent)

Field/school characteristic	Participated in formal induction program	Worked closely with mentor teacher	Worked with mentor teacher in same subject area
Mathematics .....	71.3	68.5	51.6
Minority enrollment (%)			
0–5 .....	87.8	80.9	57.3
>5–45 .....	76.1	74.8	60.1
>45 .....	62.6	59.7	43.0
School poverty level <sup>a</sup> (%)			
0–10 .....	75.6	69.4	64.8
>10–50 .....	77.0	73.0	55.2
>50 .....	58.7	60.0	38.0
Science .....	67.7	71.6	50.2
Minority enrollment (%)			
0–5 .....	73.5	81.8	50.8
>5–45 .....	70.2	76.6	59.3
>45 .....	63.2	63.0	40.4
School poverty level <sup>a</sup> (%)			
0–10 .....	77.4	77.9	59.4
>10–50 .....	69.4	74.4	54.8
>50 .....	57.3	62.6	34.1
Other .....	69.0	67.9	47.5
Minority enrollment (%)			
0–5 .....	66.9	70.0	45.5
>5–45 .....	74.9	73.9	54.3
>45 .....	64.2	61.7	41.8
School poverty level <sup>a</sup> (%)			
0–10 .....	80.2	71.8	57.2
>10–50 .....	69.2	69.8	49.6
>50 .....	63.4	61.1	38.9

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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Appendix table 1-18

**Participation of public middle and high school teachers in professional development activities during the past 12 months on various topics, by minority enrollment and school poverty level: Academic year 2003–04**

(Percent)

Field/school characteristic	Content of subject(s) taught	Use of computers for instruction	Student discipline and classroom management
Mathematics .....	76.4	64.3	37.7
Minority enrollment (%)			
0–5 .....	69.0	65.0	29.2
>5–45 .....	75.3	64.3	35.3
>45 .....	80.4	64.1	43.6
School poverty level <sup>a</sup> (%)			
0–10 .....	75.5	67.5	34.8
>10–50 .....	73.9	62.6	34.4
>50 .....	82.9	66.1	48.0
Science .....	73.4	66.6	36.1
Minority enrollment (%)			
0–5 .....	67.8	67.8	36.0
>5–45 .....	72.5	64.2	31.6
>45 .....	76.7	69.0	41.5
School poverty level <sup>a</sup> (%)			
0–10 .....	71.8	69.6	28.5
>10–50 .....	71.6	63.5	37.5
>50 .....	78.3	71.4	39.3
Other .....	77.7	66.1	44.7
Minority enrollment (%)			
0–5 .....	74.4	68.2	40.1
>5–45 .....	78.3	66.5	43.3
>45 .....	78.6	64.6	48.3
School poverty level <sup>a</sup> (%)			
0–10 .....	76.6	66.9	37.6
>10–50 .....	77.7	65.5	43.3
>50 .....	78.8	66.5	53.0

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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Appendix table 1-19

**Professional development topics reported to be useful or very useful by public middle and high school teachers, by time spent:  
Academic year 2003–04**

(Percent)

Field/time spent	Content of subject(s) taught	Use of computers for instruction	Student discipline and classroom management
Mathematics .....	64.2	62.0	53.5
Time spent (hours)			
1–8 .....	46.9	48.3	46.1
9–32 .....	62.3	73.3	67.8
>32 .....	80.3	89.7	69.1
Science .....	67.1	65.0	55.2
Time spent (hours)			
1–8 .....	52.1	50.7	47.4
9–32 .....	65.0	76.6	76.3
>32 .....	85.9	90.6	90.5
Other .....	68.6	64.8	59.0
Time spent (hours)			
1–8 .....	49.5	53.2	51.8
9–32 .....	69.3	75.9	72.7
>32 .....	85.0	90.0	88.5

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-20

**Topics rated as top priority for additional professional development by public middle and high school teachers, by minority enrollment and school poverty level: Academic year 2003–04**

(Percent)

Field/school characteristic	Content of main subject field	Use of technology in instruction	Student discipline and classroom management	Content standards in main subject field	Teaching students with special needs or LEP students	Methods of teaching	Student assessment
Mathematics .....	22.3	20.9	19.3	11.4	10.2	11.1	2.7
Minority enrollment (%)							
0–5 .....	20.9	22.9	17.1	13.3	7.2	10.8	4.2
>5–45 .....	25.7	19.9	14.0	12.0	9.8	13.8	2.9
>45 .....	19.1	21.3	25.9	10.1	11.8	8.2	2.0
School poverty level <sup>a</sup> (%)							
0–10 .....	22.9	22.5	13.3	14.6	9.3	13.0	1.8
>10–50 .....	24.1	20.2	18.0	10.0	10.6	12.3	2.9
>50 .....	17.5	21.2	27.5	12.7	10.1	7.2	2.4
Science .....	24.7	20.6	17.5	10.8	11.3	10.9	3.2
Minority enrollment (%)							
0–5 .....	29.8	24.9	11.5	12.1	5.3	11.3	2.8
>5–45 .....	29.4	20.5	14.3	11.4	10.8	9.7	3.3
>45 .....	17.1	19.0	23.8	9.7	14.4	12.2	3.3
School poverty level <sup>a</sup> (%)							
0–10 .....	34.6	23.4	10.1	9.1	7.6	10.1	2.9
>10–50 .....	25.2	20.7	17.7	12.3	10.0	10.2	3.1
>50 .....	17.2	18.1	22.8	9.2	16.8	12.0	3.9
Other .....	24.4	16.3	19.4	8.5	18.4	8.1	3.5
Minority enrollment (%)							
0–5 .....	25.9	18.6	14.3	10.5	17.3	8.5	3.9
>5–45 .....	26.8	16.1	17.3	8.2	18.2	8.4	3.5
>45 .....	20.7	15.5	24.3	7.8	19.0	7.6	3.3
School poverty level <sup>a</sup> (%)							
0–10 .....	29.8	18.2	10.9	8.6	17.3	10.1	3.7
>10–50 .....	24.8	16.3	19.1	8.8	18.4	8.0	3.4
>50 .....	19.7	14.6	26.4	7.6	19.1	7.2	3.5

LEP = limited English proficiency

<sup>a</sup>School poverty level is percentage of students in school qualifying for free/reduced-price lunch.

NOTES: Teachers asked to select three top priorities for additional professional development from list of topics shown. Response categories included "first priority," "second priority," and "third priority." Percentages based on teachers' responses of their first priority.

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.



Appendix table 1-21

**Professional commitment of public middle and high school teachers, by teachers' perceptions of working conditions:  
Academic year 2003–04**

(Percent)

Teacher perception of working conditions	I plan to remain in teaching as long as I am able			If I could start over, I would certainly become a teacher again		
	Mathematics	Science	Other	Mathematics	Science	Other
<i>Principal lets staff know expectations</i>						
Yes .....	47.9	46.3	46.6	46.4	37.3	44.0
No .....	28.6	31.0	36.4	24.2	42.3	37.2
<i>Administration is supportive and encouraging</i>						
Yes .....	48.2	45.2	47.9	48.8	40.1	45.2
No .....	21.8	26.8	32.0	20.2	22.2	30.6
<i>I am satisfied with my teaching salary</i>						
Yes .....	50.2	43.8	52.5	59.8	51.3	58.9
No .....	30.7	35.1	33.5	28.3	22.9	27.4
<i>I received a great deal of support from parents</i>						
Yes .....	57.5	51.2	53.8	58.3	44.3	53.4
No .....	31.1	37.9	36.7	27.4	26.2	34.6
<i>Necessary instructional materials are available</i>						
Yes .....	45.7	40.4	45.1	47.5	36.6	45.0
No .....	41.3	42.4	41.8	36.4	28.7	33.0
<i>Principal enforces school rules</i>						
Yes .....	48.3	47.6	48.6	49.8	37.9	45.1
No .....	24.3	37.0	38.8	20.9	21.9	32.5
<i>There is a great deal of cooperative effort among staff</i>						
Yes .....	48.1	45.2	49.2	46.0	40.3	45.1
No .....	18.5	29.7	33.0	20.2	20.0	32.6
<i>Staff are recognized for job well done</i>						
Yes .....	52.2	46.3	51.9	52.0	42.3	48.8
No .....	22.1	35.8	31.5	20.9	19.0	31.4
<i>I am satisfied with being a teacher at this school</i>						
Yes .....	51.5	52.0	51.3	54.5	45.8	50.8
No .....	26.8	28.9	26.5	24.1	16.8	30.9
<i>Student tardiness is a serious problem</i>						
Yes .....	38.2	43.0	38.4	37.4	30.0	37.6
No .....	48.8	42.2	46.0	53.4	47.0	44.0
<i>Student absenteeism is a serious problem</i>						
Yes .....	39.2	41.0	38.4	38.4	27.9	37.6
No .....	51.2	52.2	47.6	56.2	49.4	43.6
<i>Student class cutting is a serious problem</i>						
Yes .....	35.7	39.6	40.2	35.7	25.0	37.7
No .....	43.5	40.1	44.8	44.5	35.8	44.5
<i>Students dropping out is a serious problem</i>						
Yes .....	41.0	37.3	41.0	41.8	22.5	36.7
No .....	44.2	39.6	43.1	44.0	35.2	42.0
<i>Student apathy is a serious problem</i>						
Yes .....	36.1	37.9	35.6	33.4	29.7	31.6
No .....	55.6	50.8	50.9	59.5	50.7	47.4
<i>Students coming to school unprepared to learn is a serious problem</i>						
Yes .....	42.0	38.2	37.6	37.5	25.6	33.4
No .....	61.3	52.7	54.0	54.4	59.0	49.1

NOTES: Teachers asked about how long they planned to remain in teaching. Response categories included "as long as I am able," "until I am eligible for retirement," "will probably continue unless something better comes along," "definitely plan to leave teaching as soon as I can," and "undecided at this time." In addition, teachers asked whether they would become a teacher again if they could go back to college days and start over again. Response categories included "certainly," "probably," "chance about even for and against," "probably not," and "certainly not."

SOURCES: National Center for Education Statistics, Schools and Staffing Survey, 2003–04; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 1-22

**High school graduates enrolled in college in October after completing high school, by family income, race/ethnicity, and parents' education: Selected years, 1975–2005**

(Percent)

Year	Total	Family income			Race/ethnicity			Parents' education			
		Low	Middle	High	White	Black	Hispanic	<High school	High school diploma or equivalent	Some college	≥Bachelor's degree
1975.....	50.7	31.2	46.2	64.5	51.1	41.7	58.0	NA	NA	NA	NA
1980.....	49.3	32.5	42.5	65.2	49.8	42.7	52.3	NA	NA	NA	NA
1985.....	57.7	40.2	50.6	74.6	60.1	42.2	51.0	NA	NA	NA	NA
1990.....	60.1	46.7	54.4	76.6	63.0	46.8	42.7	NA	NA	NA	NA
1995.....	61.9	34.2	56.1	83.5	64.3	51.2	53.7	27.3	47.0	70.2	87.7
2000.....	63.3	49.7	59.5	76.9	65.7	54.9	52.9	44.4	51.8	63.8	81.2
2001.....	61.7	43.8	56.3	79.9	64.2	54.6	51.7	39.0	51.9	62.0	81.3
2002.....	65.2	56.4	60.7	78.2	68.9	59.4	53.3	43.3	51.9	65.9	82.6
2003.....	63.9	52.8	57.6	80.1	66.2	57.5	58.6	43.3	53.9	62.9	82.1
2004.....	66.7	49.6	63.5	79.3	68.8	62.5	61.8	39.6	54.7	66.5	85.8
2005.....	68.6	53.5	65.1	81.2	73.2	55.7	54.0	43.0	62.1	65.6	88.8

NA = not available

NOTES: Includes students ages 16–24 years completing high school in survey year. Family income categorized as: low income includes families in lowest 20% of income distribution, middle income includes families in middle 60%, and high income includes families in highest 20%. Parents' education is highest level of education attained by either parent of student. Some data before 2000 omitted because of space limitations but can be obtained from The Condition of Education 2007 (see source below).

SOURCE: National Center for Education Statistics, The Condition of Education 2007, NCES 2007-064 (2007).

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Appendix table 2-1

**S&E degrees awarded, by degree level, Carnegie institution type, and field: 2005**

Degree/institution type	S&E field										
	All fields	S&E	Agricultural sciences	Biological sciences	Computer science	Mathematics	Earth, atmospheric, and ocean sciences	Physical sciences	Psychology	Social sciences	Engineering
Bachelor's .....	1,437,200	466,003	17,111	67,982	50,564	14,840	3,959	15,030	85,936	144,448	66,133
Doctorate-granting universities—very high research activity .....	360,445	170,069	7,965	25,501	9,731	5,029	1,426	4,897	23,491	57,800	34,229
Doctorate-granting universities—high research activity .....	230,149	74,359	3,111	10,090	6,902	1,827	689	2,101	13,123	20,637	15,879
Doctoral/research universities .....	91,964	23,851	428	2,969	4,451	728	190	723	5,083	7,273	2,006
Master's colleges and universities .....	521,962	131,499	3,848	18,029	20,617	4,678	1,105	4,398	31,647	38,006	9,171
Baccalaureate colleges .....	193,963	61,393	1,718	10,681	6,670	2,557	544	2,869	12,273	20,536	3,545
Associate's colleges .....	1,316	272	23	3	139	0	0	0	87	20	0
Medical schools and medical centers .....	5,572	16	0	16	0	0	0	0	0	0	0
Schools of engineering .....	1,547	1,396	0	9	80	17	5	35	0	1	1,249
Other specialized institutions .....	30,122	3,103	7	684	1,968	4	0	7	232	147	54
Tribal colleges .....	160	45	11	0	6	0	0	0	0	28	0
Master's .....	567,875	120,025	4,171	8,099	17,820	4,598	1,685	4,116	16,076	29,361	34,099
Doctorate-granting universities—very high research activity .....	153,544	50,382	2,223	3,866	5,931	2,506	800	2,389	1,495	12,822	18,350
Doctorate-granting universities—high research activity .....	93,605	26,482	921	1,557	4,140	1,073	608	916	2,020	5,862	9,385
Doctoral/research universities .....	66,480	9,918	240	472	2,018	244	48	239	2,517	2,506	1,634
Master's colleges and universities .....	219,907	29,045	721	1,478	5,227	766	203	529	8,074	7,740	4,307
Baccalaureate colleges .....	11,229	1,073	56	59	118	3	9	31	499	184	114
Medical schools and medical centers .....	6,448	771	10	593	2	0	1	9	49	14	93
Schools of engineering .....	417	230	0	0	6	0	16	0	0	0	208
Other specialized institutions .....	16,236	2,121	0	74	378	6	0	3	1,422	230	8
Tribal colleges .....	9	3	0	0	0	0	0	0	0	3	0
Doctoral .....	52,588	28,251	1,004	5,934	1,120	1,180	572	3,620	4,348	3,922	6,551
Doctorate-granting universities—very high research activity .....	31,127	19,608	791	4,286	793	971	457	2,866	1,238	3,011	5,195
Doctorate-granting universities—high research activity .....	9,679	5,031	175	754	210	183	104	634	1,082	684	1,205
Doctoral/research universities .....	4,970	1,460	25	85	85	21	3	66	925	164	86
Master's colleges and universities .....	2,122	356	9	32	28	0	3	16	203	25	40
Baccalaureate colleges .....	176	30	0	4	0	5	0	3	16	1	1
Medical schools and medical centers .....	1,964	933	4	770	3	0	0	30	93	13	20
Schools of engineering .....	9	9	0	0	0	0	5	0	0	0	4
Other specialized institutions .....	2,541	824	0	3	1	0	0	5	791	24	0

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 2-2

**Higher education instructional faculty, by teaching field, highest degree, and employment status: Fall 1992 and fall 2003**

(Percent)

Teaching field	All faculty (number)			Doctoral/first professional faculty (number)				Other faculty (number)	
		Full time	Part time	Full time	Part time	Full time	Part time		
<b>1992</b>									
All faculty .....	904,900	58.4	41.6	440,500	77.7	22.3	453,100	40.4	59.6
S&E .....	425,500	64.2	35.8	248,800	79.4	20.6	174,200	43.0	57.0
Agriculture/biological/health sciences .....	180,000	67.9	32.2	112,600	76.7	23.3	66,700	53.2	46.8
Physical/mathematical/computer science/engineering .....	152,800	60.3	39.7	75,500	84.9	15.1	76,000	36.6	63.4
Social/behavioral sciences .....	92,700	63.6	36.4	60,800	77.5	22.5	31,400	37.0	63.0
Non-S&E .....	465,500	52.9	47.1	186,100	75.4	24.6	271,500	38.2	61.8
<b>2003</b>									
All faculty .....	1,093,100	56.7	43.3	540,700	77.8	22.2	552,400	36.0	64.0
S&E .....	507,500	63.7	36.3	305,000	80.7	19.3	202,500	38.2	61.8
Agriculture/biological/health sciences .....	207,200	67.9	32.1	131,100	81.2	18.8	76,100	44.9	55.1
Physical/mathematical/computer science/engineering .....	198,100	60.4	39.6	103,900	82.3	17.7	94,200	36.2	63.8
Social/behavioral sciences .....	102,200	61.8	38.2	70,000	77.3	22.7	32,200	28.2	71.8
Non-S&E .....	585,600	50.6	49.4	235,600	74.2	25.8	349,900	34.7	65.3

NOTES: For 1992, total includes missing field and missing highest degree not shown separately. Physical sciences include earth, atmospheric, and ocean sciences.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

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Appendix table 2-3

**Full-time higher education instructional faculty, by teaching field, highest degree, and institution type: Fall 1992 and fall 2003**

(Percent)

Teaching field	All institutions (number)	Research	Other institutions
<b>1992</b>			
All faculty .....	528,300	29.3	70.7
S&E .....	273,200	35.7	64.3
Agriculture/biological/health sciences .....	122,100	40.9	59.1
Physical/mathematical/computer science/engineering .....	92,100	32.2	67.8
Social/behavioral sciences .....	59,000	30.4	69.6
Non-S&E .....	246,100	21.7	78.3
Doctorate/first professional.....	342,100	39.5	60.5
S&E .....	197,500	46.1	54.0
Agriculture/biological/health sciences .....	86,400	52.7	47.3
Physical/mathematical/computer science/engineering .....	64,100	44.5	55.5
Social/behavioral sciences .....	47,100	35.8	64.2
Non-S&E .....	140,300	29.7	70.3
Other .....	183,000	10.2	89.8
S&E .....	74,900	8.4	91.7
Agriculture/biological/health sciences .....	35,500	12.1	87.9
Physical/mathematical/computer science/engineering .....	27,800	3.8	96.2
Social/behavioral sciences .....	11,600	7.8	92.2
Non-S&E .....	103,600	11.1	89.0
<b>2003</b>			
All faculty .....	619,800	31.1	68.9
S&E .....	323,500	38.1	61.9
Agriculture/biological/health sciences .....	140,700	44.2	55.8
Physical/mathematical/computer science/engineering .....	119,600	33.6	66.4
Social/behavioral sciences .....	63,200	33.0	67.0
Non-S&E .....	296,400	23.4	76.6
Doctorate/first professional.....	420,900	40.0	60.0
S&E .....	246,100	46.7	53.3
Agriculture/biological/health sciences .....	106,500	54.4	45.6
Physical/mathematical/computer science/engineering .....	85,500	43.3	56.7
Social/behavioral sciences .....	54,100	37.0	63.0
Non-S&E .....	174,800	30.5	69.5
Other .....	199,000	12.3	87.8
S&E .....	77,400	10.6	89.4
Agriculture/biological/health sciences .....	34,200	12.3	87.7
Physical/mathematical/computer science/engineering .....	34,100	9.3	90.7
Social/behavioral sciences .....	9,100	9.4	90.7
Non-S&E .....	121,600	13.3	86.7

NOTES: For 1992, total includes missing field and missing highest degree not shown separately. Physical sciences include earth, atmospheric, and ocean sciences. Institution type based on 1994 Carnegie classification. See National Science Board, *Science and Engineering Indicators 2006* (NSB 06-01A) for characteristics of these institution types.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 2-4

**Full-time instructional faculty, by teaching field, highest degree, and level of student: Fall 1992 and fall 2003**

(Percent)

Teaching field	All levels (number)	Only undergraduate	Undergraduate and graduate	Only graduate/first professional
<b>1992</b>				
All faculty .....	476,100	70.1	13.7	16.2
S&E.....	239,200	66.7	13.5	19.8
Agriculture/biological/health sciences.....	96,600	56.5	9.7	33.8
Physical/mathematical/computer science/engineering .....	87,300	75.1	14.7	10.2
Social/behavioral sciences .....	55,200	71.3	18.2	10.5
Non-S&E .....	233,600	73.4	14.0	12.7
Doctorate/first professional.....	303,500	57.5	18.6	23.9
S&E.....	168,200	55.4	17.6	26.9
Agriculture/biological/health sciences.....	63,800	38.6	13.0	48.4
Physical/mathematical/computer science/engineering .....	60,200	65.6	20.1	14.4
Social/behavioral sciences .....	44,200	65.9	21.1	13.0
Non-S&E .....	134,100	60.1	19.8	20.1
Other .....	169,900	92.5	5.0	2.5
S&E.....	70,500	93.7	3.6	2.7
Agriculture/biological/health sciences.....	32,600	91.7	3.3	5.0
Physical/mathematical/computer science/engineering .....	27,000	96.5	2.8	0.8
Social/behavioral sciences .....	11,000	93.0	6.4	0.6
Non-S&E .....	97,400	91.5	6.0	2.5
<b>2003</b>				
All faculty .....	554,200	66.4	14.4	19.3
S&E.....	281,100	61.8	13.4	24.8
Agriculture/biological/health sciences.....	112,200	47.1	10.7	42.2
Physical/mathematical/computer science/engineering .....	111,300	73.6	13.9	12.6
Social/behavioral sciences .....	57,600	67.6	17.9	14.5
Non-S&E .....	273,100	71.1	15.3	13.6
Doctorate/first professional.....	372,800	54.7	18.9	26.4
S&E.....	208,800	51.4	16.9	31.8
Agriculture/biological/health sciences.....	81,000	32.3	12.8	54.9
Physical/mathematical/computer science/engineering .....	78,400	63.8	18.9	17.3
Social/behavioral sciences .....	49,500	62.9	20.3	16.8
Non-S&E .....	164,000	58.9	21.5	19.6
Other .....	181,400	90.4	5.1	4.6
S&E.....	72,300	91.8	3.5	4.8
Agriculture/biological/health sciences.....	31,200	85.5	5.3	9.2
Physical/mathematical/computer science/engineering .....	33,000	96.7	1.9	1.4
Social/behavioral sciences .....	8,100	96.0	3.1	0.9
Non-S&E .....	109,200	89.4	6.1	4.4

NOTES: For 1992, total includes missing field and missing highest degree not shown separately. Physical sciences include earth, atmospheric, and ocean sciences.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 2-5

**Full-time undergraduate instructional faculty, by teaching field and presence of teaching assistant: Fall 1992 and fall 2003**

(Percent)

Teaching field	All undergraduates	Yes	No
<b>1992</b>			
All faculty .....	399,000	20.2	79.8
S&E .....	191,800	26.4	73.6
Agriculture/biological/health sciences.....	64,000	24.4	75.6
Physical/mathematical/computer science/engineering .....	78,400	30.2	69.8
Social/behavioral sciences .....	49,400	23.0	77.0
Non-S&E .....	204,100	14.3	85.7
Doctoral faculty .....	231,100	26.2	73.8
S&E .....	122,900	26.2	73.8
Agriculture/biological/health sciences.....	32,900	32.7	67.3
Physical/mathematical/computer science/engineering .....	51,500	40.3	59.7
Social/behavioral sciences .....	38,400	27.8	72.2
Non-S&E .....	107,100	16.8	83.2
Other faculty .....	167,900	11.9	88.1
S&E .....	68,900	12.3	87.7
Agriculture/biological/health sciences.....	31,000	15.7	84.3
Physical/mathematical/computer science/engineering .....	26,900	11.0	89.0
Social/behavioral sciences .....	11,000	6.0	94.0
Non-S&E .....	97,000	11.6	88.5
<b>2003</b>			
All faculty .....	447,500	25.5	74.5
S&E .....	211,400	34.2	65.8
Agriculture/biological/health sciences.....	64,800	28.7	71.3
Physical/mathematical/computer science/engineering .....	97,300	43.4	56.6
Social/behavioral sciences .....	49,200	31.8	68.2
Non-S&E .....	236,100	17.7	82.3
Doctoral faculty .....	274,300	32.4	67.6
S&E .....	142,500	43.1	56.9
Agriculture/biological/health sciences.....	36,500	35.4	64.6
Physical/mathematical/computer science/engineering .....	64,900	53.7	46.3
Social/behavioral sciences .....	41,200	33.2	66.8
Non-S&E .....	131,800	20.8	79.2
Other faculty .....	173,200	14.6	85.4
S&E .....	68,800	15.9	84.1
Agriculture/biological/health sciences.....	28,300	14.5	85.5
Physical/mathematical/computer science/engineering .....	32,500	18.5	81.5
Social/behavioral sciences .....	8,000	10.2	89.8
Non-S&E .....	104,300	13.8	86.2

NOTES: For 1992, total includes missing field and missing highest degree not shown separately. Physical sciences include earth, atmospheric, and ocean sciences.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 2-6

**Undergraduate faculty, by teaching field and primary instruction methods: Fall 1992 and fall 2003**

(Percent)

Teaching field	All fields	Agriculture/ biological/health sciences	Physical/ mathematical/ computer science/ engineering	Social/behavioral sciences	Non-S&E
<b>1992</b>					
All faculty (number) .....	370,900	57,100	73,900	46,800	190,200
Multiple-choice midterm/final exam .....	55.7	79.2	40.9	63.9	52.3
Essay midterm/final exam .....	61.2	46.9	40.4	77.2	69.7
Short-answer midterm/final exam .....	56.3	52.8	59.5	52.7	57.2
Term/research paper .....	57.8	53.5	34.4	77.2	63.4
Multiple drafts of written work.....	34.2	26.1	17.8	38.8	41.8
Student presentations .....	64.5	63.3	41.7	63.1	74.1
Student evaluations of each others' work .....	34.7	26.8	17.5	25.4	45.8
<b>2003</b>					
All faculty (number) .....	446,400	64,500	97,200	49,200	235,600
Multiple-choice midterm/final exam .....	54.8	76.0	47.9	65.1	49.7
Essay midterm/final exam .....	55.1	44.2	37.5	67.2	62.9
Short-answer midterm/final exam .....	59.9	59.2	68.2	57.8	57.1
Term/research paper .....	76.2	75.6	57.3	84.8	82.3
Multiple drafts of written work.....	42.1	30.3	25.5	46.6	51.3
Oral presentations .....	62.7	62.0	44.1	58.2	71.5
Student evaluations of each others' work .....	38.4	31.9	23.2	28.2	48.5
Group projects.....	56.8	57.0	53.0	48.0	60.1
Laboratory/shop/studio assignments .....	47.5	68.0	61.9	23.9	41.0
Service/co-op interactions with business.....	28.5	37.0	14.9	24.3	32.7

NOTES: Percentage is those reporting use in "some" or "all" courses. Because respondents could select more than one, percentages will not add to 100. For 1992, total includes missing field not shown separately. Physical sciences include earth, atmospheric, and ocean sciences.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).



## Full-time S&amp;E graduate students, by source and mechanism of primary support: 1985–2005

Source	All mechanisms		Research assistantship		Fellowship		Traineeship		Teaching assistantship		Other		Self-support <sup>a</sup>	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>All sources</b>														
1985	257,287	100.0	60,995	23.7	22,540	8.8	13,665	5.3	61,822	24.0	20,635	8.0	77,630	30.2
1986	266,168	100.0	66,010	24.8	22,954	8.6	13,526	5.1	62,552	23.5	22,246	8.4	78,880	29.6
1987	271,056	100.0	70,214	25.9	21,953	8.1	14,096	5.2	62,847	23.2	22,166	8.2	79,780	29.4
1988	275,127	100.0	74,588	27.1	22,353	8.1	14,397	5.2	63,053	22.9	21,576	7.8	79,160	28.8
1989	282,648	100.0	79,045	28.0	23,450	8.3	14,524	5.1	64,296	22.7	21,082	7.5	80,251	28.4
1990	292,782	100.0	80,746	27.6	25,254	8.6	15,198	5.2	64,950	22.2	22,250	7.6	84,384	28.8
1991	307,010	100.0	85,175	27.7	26,695	8.7	15,403	5.0	65,214	21.2	22,940	7.5	91,583	29.8
1992	322,555	100.0	88,030	27.3	28,627	8.9	15,361	4.8	65,702	20.4	23,536	7.3	101,299	31.4
1993	329,644	100.0	90,154	27.3	29,132	8.8	15,445	4.7	67,290	20.4	21,347	6.5	106,276	32.2
1994	332,088	100.0	92,008	27.7	28,892	8.7	15,681	4.7	66,844	20.1	21,628	6.5	107,035	32.2
1995	329,283	100.0	89,946	27.3	28,887	8.8	15,943	4.8	65,976	20.0	21,844	6.6	106,687	32.4
1996	328,536	100.0	87,694	26.7	28,862	8.8	15,481	4.7	65,756	20.0	21,268	6.5	109,475	33.3
1997	327,289	100.0	88,001	26.9	28,956	8.8	14,488	4.4	65,425	20.0	21,678	6.6	108,741	33.2
1998	327,389	100.0	88,097	26.9	29,106	8.9	14,946	4.6	65,173	19.9	21,843	6.7	108,224	33.1
1999	334,423	100.0	91,279	27.3	30,112	9.0	14,707	4.4	66,294	19.8	22,615	6.8	109,416	32.7
2000	341,283	100.0	94,323	27.6	31,330	9.2	14,171	4.2	66,423	19.5	22,604	6.6	112,432	32.9
2001	354,522	100.0	99,923	28.2	32,270	9.1	14,086	4.0	68,267	19.3	23,340	6.6	116,636	32.9
2002	378,991	100.0	108,183	28.5	34,851	9.2	14,925	3.9	70,732	18.7	23,646	6.2	126,654	33.4
2003	397,420	100.0	114,256	28.7	34,460	8.7	15,097	3.8	73,105	18.4	25,772	6.5	134,730	33.9
2004	402,630	100.0	114,741	28.5	35,089	8.7	14,815	3.7	73,034	18.1	27,872	6.9	137,079	34.1
2005	406,653	100.0	114,251	28.1	36,487	9.0	14,522	3.6	74,276	18.3	27,697	6.8	139,420	34.3
<b>Federal</b>														
1985	49,051	100.0	30,433	62.0	4,416	9.0	8,954	18.3	549	1.1	4,699	9.6	NA	NA
1986	51,361	100.0	32,739	63.7	4,596	8.9	8,688	16.9	495	1.0	4,843	9.4	NA	NA
1987	53,538	100.0	34,996	65.4	4,445	8.3	8,922	16.7	444	0.8	4,731	8.8	NA	NA
1988	55,489	100.0	36,752	66.2	4,566	8.2	8,664	15.6	504	0.9	5,003	9.0	NA	NA
1989	57,433	100.0	38,555	67.1	5,166	9.0	8,682	15.1	490	0.9	4,540	7.9	NA	NA
1990	59,258	100.0	38,504	65.0	6,314	10.7	9,228	15.6	609	1.0	4,603	7.8	NA	NA
1991	63,000	100.0	40,790	64.7	7,445	11.8	9,616	15.3	476	0.8	4,673	7.4	NA	NA
1992	65,607	100.0	42,586	64.9	7,757	11.8	10,040	15.3	643	1.0	4,581	7.0	NA	NA
1993	67,673	100.0	44,502	65.8	7,510	11.1	10,174	15.0	846	1.3	4,641	6.9	NA	NA
1994	68,550	100.0	45,621	66.6	6,939	10.1	10,407	15.2	780	1.1	4,803	7.0	NA	NA
1995	67,294	100.0	44,597	66.3	6,914	10.3	10,234	15.2	739	1.1	4,810	7.1	NA	NA
1996	65,240	100.0	43,370	66.5	7,044	10.8	9,869	15.1	843	1.3	4,114	6.3	NA	NA
1997	64,522	100.0	43,328	67.2	7,074	11.0	9,291	14.4	908	1.4	3,921	6.1	NA	NA
1998	63,759	100.0	41,826	65.6	7,033	11.0	9,658	15.1	1,120	1.8	4,122	6.5	NA	NA
1999	65,796	100.0	43,061	65.4	7,345	11.2	9,725	14.8	997	1.5	4,668	7.1	NA	NA
2000	67,588	100.0	44,620	66.0	7,475	11.1	9,544	14.1	1,371	2.0	4,578	6.8	NA	NA
2001	68,873	100.0	46,205	67.1	7,406	10.8	9,497	13.8	1,077	1.6	4,688	6.8	NA	NA
2002	75,565	100.0	51,621	68.3	7,899	10.5	9,996	13.2	1,227	1.6	4,822	6.4	NA	NA
2003	81,776	100.0	57,255	70.0	7,608	9.3	10,090	12.3	1,531	1.9	5,292	6.5	NA	NA
2004	83,812	100.0	58,547	69.9	7,999	9.5	9,876	11.8	1,533	1.8	5,857	7.0	NA	NA
2005	83,832	100.0	58,199	69.4	8,347	10.0	9,725	11.6	1,619	1.9	5,942	7.1	NA	NA

## Full-time S&amp;E graduate students, by source and mechanism of primary support: 1985–2005

Source	All mechanisms		Research assistantship		Fellowship		Traineeship		Teaching assistantship		Other		Self-support <sup>a</sup>	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Nonfederal														
1985 .....	130,606	100.0	30,562	23.4	18,124	13.9	4,711	3.6	61,273	46.9	15,936	12.2	NA	NA
1986 .....	135,927	100.0	33,271	24.5	18,358	13.5	4,838	3.6	62,057	45.7	17,403	12.8	NA	NA
1987 .....	137,738	100.0	35,218	25.6	17,508	12.7	5,174	3.8	62,403	45.3	17,435	12.7	NA	NA
1988 .....	140,478	100.0	37,836	26.9	17,787	12.7	5,733	4.1	62,549	44.5	16,573	11.8	NA	NA
1989 .....	144,964	100.0	40,490	27.9	18,284	12.6	5,842	4.0	63,806	44.0	16,542	11.4	NA	NA
1990 .....	149,140	100.0	42,242	28.3	18,940	12.7	5,970	4.0	64,341	43.1	17,647	11.8	NA	NA
1991 .....	152,427	100.0	44,385	29.1	19,250	12.6	5,787	3.8	64,738	42.5	18,267	12.0	NA	NA
1992 .....	155,649	100.0	45,444	29.2	20,870	13.4	5,321	3.4	65,059	41.8	18,955	12.2	NA	NA
1993 .....	155,695	100.0	45,652	29.3	21,622	13.9	5,271	3.4	66,444	42.7	16,706	10.7	NA	NA
1994 .....	156,503	100.0	46,387	29.6	21,953	14.0	5,274	3.4	66,064	42.2	16,825	10.8	NA	NA
1995 .....	155,302	100.0	45,349	29.2	21,973	14.1	5,709	3.7	65,237	42.0	17,034	11.0	NA	NA
1996 .....	153,821	100.0	44,324	28.8	21,818	14.2	5,612	3.6	64,913	42.2	17,154	11.2	NA	NA
1997 .....	154,026	100.0	44,673	29.0	21,882	14.2	5,197	3.4	64,517	41.9	17,757	11.5	NA	NA
1998 .....	155,406	100.0	46,271	29.8	22,073	14.2	5,288	3.4	64,053	41.2	17,721	11.4	NA	NA
1999 .....	159,211	100.0	48,218	30.3	22,767	14.3	4,982	3.1	65,297	41.0	17,947	11.3	NA	NA
2000 .....	161,263	100.0	49,703	30.8	23,855	14.8	4,627	2.9	65,052	40.3	18,026	11.2	NA	NA
2001 .....	169,013	100.0	53,718	31.8	24,864	14.7	4,589	2.7	67,190	39.8	18,652	11.0	NA	NA
2002 .....	176,772	100.0	56,562	32.0	26,952	15.2	4,929	2.8	69,505	39.3	18,824	10.6	NA	NA
2003 .....	180,914	100.0	57,001	31.5	26,852	14.8	5,007	2.8	71,574	39.6	20,480	11.3	NA	NA
2004 .....	181,739	100.0	56,194	30.9	27,090	14.9	4,939	2.7	71,501	39.3	22,015	12.1	NA	NA
2005 .....	183,401	100.0	56,052	30.6	28,140	15.3	4,797	2.6	72,657	39.6	21,755	11.9	NA	NA

NA = not available

<sup>a</sup>Includes any loans (including federal) and support from personal or family financial contributions.

NOTES: S&amp;E includes health fields (i.e., medical sciences and other life sciences). These fields reported separately in National Science Foundation, Division of Science Resources Statistics (NSF/SRS), Graduate Students and Postdoctorates in Science and Engineering (annual series).

SOURCE: NSF/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Science and Engineering Indicators 2008

Appendix table 2-8

**Full-time S&E graduate students, by field and mechanism of primary support: 2005**

Field	All mechanisms		Research assistantship		Fellowship		Traineeship		Teaching assistantship		Other		Self-support <sup>a</sup>	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
S&E .....	406,653	100.0	114,251	28.1	36,487	9.0	14,522	3.6	74,276	18.3	27,697	6.8	139,420	34.3
Engineering .....	84,375	100.0	34,725	41.2	7,274	8.6	1,030	1.2	11,927	14.1	5,794	6.9	23,625	28.0
Aerospace .....	3,241	100.0	1,369	42.2	260	8.0	35	1.1	460	14.2	345	10.6	772	23.8
Chemical .....	6,139	100.0	3,593	58.5	658	10.7	123	2.0	757	12.3	229	3.7	779	12.7
Civil .....	13,118	100.0	4,450	33.9	1,103	8.4	160	1.2	1,993	15.2	786	6.0	4,626	35.3
Electrical .....	25,843	100.0	10,196	39.5	1,571	6.1	147	0.6	3,869	15.0	1,645	6.4	8,415	32.6
Industrial .....	6,113	100.0	1,490	24.4	434	7.1	51	0.8	924	15.1	772	12.6	2,442	39.9
Materials .....	4,507	100.0	2,767	61.4	652	14.5	23	0.5	413	9.2	119	2.6	533	11.8
Mechanical .....	12,178	100.0	5,329	43.8	927	7.6	109	0.9	2,202	18.1	617	5.1	2,994	24.6
Other .....	13,236	100.0	5,531	41.8	1,669	12.6	382	2.9	1,309	9.9	1281	9.7	3,064	23.1
Science .....	322,278	100.0	79,526	24.7	29,213	9.1	13,492	4.2	62,349	19.3	21,903	6.8	115,795	35.9
Natural sciences .....	219,570	100.0	65,494	29.8	17,780	8.1	11,164	5.1	42,526	19.4	14,610	6.7	67,996	31.0
Agricultural sciences .....	9,710	100.0	5,534	57.0	656	6.8	20	0.2	1,187	12.2	393	4.1	1,920	19.8
Biological sciences .....	57,651	100.0	24,582	42.6	7,230	12.5	5,604	9.7	9,126	15.8	2,920	5.1	8,189	14.2
Earth, atmospheric, and ocean sciences .....	11,370	100.0	4,740	41.7	1,356	11.9	111	1.0	2,664	23.4	419	3.7	2,080	18.3
Atmospheric sciences .....	1,002	100.0	666	66.5	50	5.0	14	1.4	138	13.8	18	1.8	116	11.6
Earth sciences .....	5,537	100.0	2,038	36.8	702	12.7	21	0.4	1,856	33.5	125	2.3	795	14.4
Oceanography .....	2,198	100.0	1,238	56.3	264	12.0	21	1.0	289	13.1	61	2.8	325	14.8
Other geosciences .....	2,633	100.0	798	30.3	340	12.9	55	2.1	381	14.5	215	8.2	844	32.1
Mathematics/computer sciences .....	43,578	100.0	9,078	20.8	2,893	6.6	326	0.7	12,962	29.7	3,158	7.2	15,161	34.8
Computer sciences .....	28,317	100.0	7,186	25.4	1,465	5.2	231	0.8	4,742	16.7	2,451	8.7	12,242	43.2
Mathematics/statistics .....	15,261	100.0	1,892	12.4	1,428	9.4	95	0.6	8,220	53.9	707	4.6	2,919	19.1
Medical/other life sciences .....	64,875	100.0	7,547	11.6	2,855	4.4	4,681	7.2	4,003	6.2	6,986	10.8	38,803	59.8
Medical sciences .....	22,529	100.0	4,844	21.5	1,557	6.9	1,793	8.0	1,713	7.6	2,094	9.3	10,528	46.7
Other life sciences .....	42,346	100.0	2,703	6.4	1,298	3.1	2,888	6.8	2,290	5.4	4,892	11.6	28,275	66.8
Physical sciences .....	32,386	100.0	14,013	43.3	2,790	8.6	422	1.3	12,584	38.9	734	2.3	1,843	5.7
Astronomy .....	1,129	100.0	613	54.3	222	19.7	7	0.6	226	20.0	31	2.7	30	2.7
Chemistry .....	18,760	100.0	7,829	41.7	1,510	8.1	321	1.7	7,829	41.7	362	1.9	909	4.8
Physics .....	12,210	100.0	5,533	45.3	1,028	8.4	92	0.8	4,507	36.9	323	2.6	727	6.0
Other physical sciences .....	287	100.0	38	13.2	30	10.5	2	0.7	22	7.7	18	6.3	177	61.7
Social/behavioral sciences .....	102,708	100.0	14,032	13.7	11,433	11.1	2,328	2.3	19,823	19.3	7,293	7.1	47,799	46.5
Psychology .....	38,957	100.0	5,837	15.0	2,512	6.4	1,081	2.8	6,240	16.0	3,295	8.5	19,992	51.3
Social sciences .....	63,751	100.0	8,195	12.9	8,921	14.0	1,247	2.0	13,583	21.3	3,998	6.3	27,807	43.6
Anthropology .....	5,833	100.0	567	9.7	1,402	24.0	59	1.0	1,653	28.3	318	5.5	1,834	31.4
Economics .....	11,537	100.0	2,134	18.5	1,596	13.8	148	1.3	3,418	29.6	646	5.6	3,595	31.2
History of science .....	582	100.0	41	7.0	172	29.6	0	0.0	165	28.4	27	4.6	177	30.4
Linguistics .....	2,519	100.0	207	8.2	421	16.7	9	0.4	779	30.9	289	11.5	814	32.3
Political science/public administration .....	22,243	100.0	1,917	8.6	3,222	14.5	703	3.2	2,970	13.4	1,306	5.9	12,125	54.5
Sociology .....	7,234	100.0	1,078	14.9	989	13.7	213	2.9	2,513	34.7	430	5.9	2,011	27.8
Other social sciences .....	13,803	100.0	2,251	16.3	1,119	8.1	115	0.8	2,085	15.1	982	7.1	7,251	52.5

<sup>a</sup>Includes any loans (including federal) and support from personal or family financial contributions.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 2-9

**Full-time S&E graduate students primarily supported by federal government, by field and mechanism of primary support: 2005**

(Percent)

Field	All mechanisms	Research assistantship	Fellowship	Traineeship	Teaching assistantship	Other
S&E .....	20.6	50.9	22.9	67.0	2.2	3.6
Engineering .....	25.2	49.4	24.4	52.4	2.0	5.3
Aerospace .....	37.5	63.8	33.8	17.1	1.3	21.7
Chemical .....	34.2	49.4	30.9	72.4	2.5	1.2
Civil .....	15.2	37.8	18.8	12.5	1.5	1.1
Electrical .....	23.4	52.4	21.7	32.0	1.8	2.3
Industrial .....	15.5	36.9	26.5	66.7	1.5	7.4
Materials .....	35.2	50.6	22.5	30.4	3.6	2.9
Mechanical .....	25.6	50.3	29.8	43.1	2.5	1.6
Other .....	32.1	51.2	23.8	75.9	2.3	16.1
Science .....	19.4	51.6	22.5	68.1	2.2	3.2
Natural sciences .....	25.2	57.1	28.2	75.7	2.4	4.2
Agricultural sciences .....	24.1	37.3	23.3	60.0	3.8	3.0
Biological sciences .....	38.4	59.4	28.9	75.0	4.1	7.9
Earth, atmospheric, and ocean sciences .....	29.1	56.9	29.6	45.9	3.3	2.9
Atmospheric sciences .....	52.8	71.5	32.0	57.1	18.8	2.2
Earth sciences .....	27.0	59.8	28.5	9.5	3.1	2.2
Oceanography .....	35.6	53.2	36.7	47.6	0.7	3.6
Other geosciences .....	19.0	42.9	26.2	56.4	1.1	3.3
Mathematics/computer sciences .....	16.3	57.5	28.2	34.7	1.4	4.3
Computer sciences .....	19.0	58.0	29.4	29.9	1.3	4.3
Mathematics/statistics .....	11.5	55.7	27.0	46.3	1.5	4.2
Medical/other life sciences .....	14.2	41.4	25.0	80.7	3.1	3.2
Medical sciences .....	21.7	48.8	27.4	79.4	3.6	4.8
Other life sciences .....	10.3	28.2	22.0	81.5	2.8	2.6
Physical sciences .....	34.6	69.2	30.0	70.1	1.7	6.6
Astronomy .....	45.1	67.7	31.1	100.0	2.2	21.3
Chemistry .....	32.1	66.3	28.3	75.7	1.7	2.9
Physics .....	38.2	73.8	32.3	47.8	1.8	11.4
Other physical sciences .....	7.0	21.1	30.0	100.0	4.5	0.0
Social/behavioral sciences .....	7.0	26.0	13.6	31.4	1.7	1.6
Psychology .....	9.5	33.1	26.6	47.1	2.1	2.0
Social sciences .....	5.5	21.0	10.0	17.9	1.6	1.4
Anthropology .....	6.4	14.8	13.5	28.8	2.1	2.2
Economics .....	6.9	27.4	6.9	21.6	0.7	1.1
History of science .....	3.8	2.4	10.5	0.0	0.6	1.0
Linguistics .....	5.6	33.3	8.8	33.3	0.5	2.5
Political science/public administration .....	3.5	11.2	7.3	10.7	3.3	1.1
Sociology .....	6.3	21.2	11.2	31.0	1.0	1.1
Other social sciences .....	6.8	23.9	17.1	26.1	1.3	1.8

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 2-10

**Full-time S&E graduate students primarily supported by federal government, by agency: 1985–2005**

Year	All federal		National Institutes of Health		Other Department of Health and Human Services		National Science Foundation		Department of Defense		Department of Agriculture		National Aeronautics and Space Administration		Department of Energy		Other agencies	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1985.....	49,051	100	11,112	22.7	4,740	9.7	10,180	20.8	7,326	14.9	2,171	4.4	NA	NA	NA	NA	13,522	27.6
1986.....	51,361	100	11,877	23.1	4,500	8.8	10,826	21.1	7,940	15.5	2,328	4.5	NA	NA	NA	NA	13,890	27.0
1987.....	53,538	100	12,944	24.2	4,247	7.9	11,247	21.0	8,795	16.4	2,684	5.0	NA	NA	NA	NA	13,621	25.4
1988.....	55,489	100	13,715	24.7	4,186	7.5	11,634	21.0	9,546	17.2	2,591	4.7	NA	NA	NA	NA	13,817	24.9
1989.....	57,433	100	14,357	25.0	4,335	7.5	11,900	20.7	9,140	15.9	2,728	4.7	NA	NA	NA	NA	14,973	26.1
1990.....	59,258	100	14,996	25.3	4,512	7.6	12,025	20.3	8,868	15.0	2,722	4.6	NA	NA	NA	NA	16,135	27.2
1991.....	63,000	100	16,018	25.4	4,461	7.1	12,666	20.1	9,128	14.5	3,075	4.9	NA	NA	NA	NA	17,652	28.0
1992.....	65,607	100	17,091	26.1	4,321	6.6	13,366	20.4	9,247	14.1	3,216	4.9	NA	NA	NA	NA	18,366	28.0
1993.....	67,673	100	18,135	26.8	3,888	5.7	13,530	20.0	9,750	14.4	3,324	4.9	NA	NA	NA	NA	19,046	28.1
1994.....	68,550	100	18,292	26.7	4,374	6.4	13,990	20.4	9,449	13.8	3,422	5.0	NA	NA	NA	NA	19,023	27.8
1995.....	67,294	100	18,109	26.9	4,666	6.9	13,661	20.3	9,339	13.9	3,254	4.8	NA	NA	NA	NA	18,265	27.1
1996.....	65,240	100	17,929	27.5	4,432	6.8	13,412	20.6	8,802	13.5	3,004	4.6	2,309	3.5	NA	NA	15,352	23.5
1997.....	64,522	100	18,087	28.0	4,443	6.9	13,362	20.7	9,021	14.0	2,646	4.1	2,586	4.0	NA	NA	14,377	22.3
1998.....	63,759	100	18,215	28.6	4,489	7.0	13,459	21.1	8,259	13.0	2,485	3.9	2,646	4.2	NA	NA	14,206	22.3
1999.....	65,796	100	19,019	28.9	4,423	6.7	13,835	21.0	8,026	12.2	2,634	4.0	2,579	3.9	2,749	4.2	12,531	19.1
2000.....	67,588	100	19,472	28.8	4,018	5.9	14,599	21.6	8,141	12.1	2,630	3.9	2,780	4.1	2,995	4.4	12,953	19.2
2001.....	68,873	100	19,904	28.9	4,433	6.4	15,429	22.4	7,960	11.6	2,735	4.0	2,819	4.1	3,116	4.5	12,477	18.1
2002.....	75,565	100	22,129	29.3	4,830	6.4	17,135	22.7	7,977	10.6	3,100	4.1	3,082	4.1	3,548	4.7	13,764	18.2
2003.....	81,776	100	24,309	29.7	4,922	6.0	19,308	23.6	9,204	11.3	3,468	4.2	3,230	3.9	4,024	4.9	13,311	16.3
2004.....	83,812	100	26,683	31.8	4,211	5.0	19,969	23.8	9,007	10.7	3,562	4.2	2,916	3.5	4,135	4.9	13,329	15.9
2005.....	83,832	100	26,810	32.0	3,942	4.7	20,423	24.4	8,976	10.7	3,370	4.0	2,691	3.2	4,392	5.2	13,228	15.8

NA = not available

NOTES: Detail may not add to total because of rounding. Data not reported until first year given.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

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Appendix table 2-11

## Primary support mechanisms for S&amp;E doctorate recipients, by citizenship, sex, and race/ethnicity: 2005

Support mechanism	All doctorate recipients	Non-U.S. citizen	Temporary resident	Permanent resident	U.S. citizen <sup>c</sup>							
					Total	Male	Female	White	Asian	Underrepresented minority	Other/unknown race/ethnicity	Unknown citizenship
<b>All mechanisms</b>												
Number .....	29,751	11,981	10,792	1,189	16,118	8,624	7,492	12,777	1,198	1,887	256	1,652
Percent.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Research assistantships</b>												
Number .....	9,079	5,700	5,294	406	3,340	2,134	1,205	2,779	295	226	40	39
Percent.....	30.5	47.6	49.1	34.1	20.7	24.7	16.1	21.8	24.6	12.0	15.6	2.4
<b>Fellowships</b>												
Number .....	5,084	1,602	1,408	194	3,463	1,824	1,639	2,526	263	637	37	19
Percent.....	17.1	13.4	13.1	16.3	21.5	21.2	21.9	19.8	22.0	33.8	14.5	1.2
<b>Traineeships</b>												
Number .....	276	31	23	8	241	102	139	188	30	20	3	4
Percent.....	0.9	0.3	0.2	0.7	1.5	1.2	1.9	1.5	2.5	1.1	1.2	0.2
<b>Teaching assistantships</b>												
Number .....	4,221	2,100	1,899	201	2,108	1,161	947	1,760	115	193	40	13
Percent.....	14.2	17.5	17.6	16.9	13.1	13.5	12.6	13.8	9.6	10.2	15.6	0.8
<b>Other assistantships</b>												
Number .....	166	54	43	11	107	44	63	84	4	17	2	5
Percent.....	0.6	0.5	0.4	0.9	0.7	0.5	0.8	0.7	0.3	0.9	0.8	0.3
<b>Grant/stipend</b>												
Number .....	3,117	716	605	111	2,389	1,251	1,137	1,854	272	238	25	12
Percent.....	10.5	6.0	5.6	9.3	14.8	14.5	15.2	14.5	22.7	12.6	9.8	0.7
<b>Personal<sup>a</sup></b>												
Number .....	3,545	470	336	134	3,060	1,310	1,750	2,515	134	376	35	15
Percent.....	11.9	3.9	3.1	11.3	19.0	15.2	23.4	19.7	11.2	19.9	13.7	0.9
<b>Other<sup>b</sup></b>												
Number .....	1,223	577	531	46	644	399	245	538	38	57	11	2
Percent.....	4.1	4.8	4.9	3.9	4.0	4.6	3.3	4.2	3.2	3.0	4.3	0.1
<b>Unknown</b>												
Number .....	3,040	731	653	78	766	399	367	533	47	123	63	1,543
Percent.....	10.2	6.1	6.1	6.6	4.8	4.6	4.9	4.2	3.9	6.5	24.6	93.4

<sup>a</sup>Personal savings, other personal earnings in graduate school, other family earnings or savings, and loans.

<sup>b</sup>Employer reimbursement or assistance, foreign support, and other sources.

<sup>c</sup>Includes naturalized citizens.

NOTES: S&E includes health fields (i.e., medical and other life sciences). U.S. citizen total includes unknown sex. Underrepresented minority includes blacks, Hispanics, American Indians/Alaska Natives, Native Hawaiians/other Pacific Islanders, and multiple races/ethnicities. Traineeships include internship and residency.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, special tabulations (2007).

Appendix table 2-12

**Amount of undergraduate and graduate debt of S&E doctorate recipients, by field: 2005**

(Percent)

Field	Doctorates (n)	Debt						
		None	≤\$10,000	\$10,001–\$20,000	\$20,001–\$30,000	\$30,001–\$40,000	\$40,001–50,000	≥\$50,001
<b>Cumulative debt</b>								
All fields .....	38,739	51.4	11.4	9.1	6.9	4.9	4.1	12.2
S&E .....	26,805	54.0	11.4	9.3	6.5	4.5	3.7	10.6
Engineering .....	5,744	66.4	10.9	6.7	4.6	2.7	2.3	6.4
Sciences .....	21,061	50.7	11.5	10.0	7.0	5.0	4.1	11.8
Agricultural sciences .....	911	52.9	14.7	8.7	7.4	4.0	3.8	8.6
Biological sciences .....	5,845	50.7	12.2	12.6	7.8	5.3	3.4	7.9
Computer sciences .....	1,010	73.3	9.0	5.7	3.2	2.0	1.4	5.4
Earth, atmospheric, and ocean sciences .....	641	50.1	16.4	10.5	8.1	5.3	3.3	6.4
Mathematics .....	1,093	68.7	11.7	7.4	3.6	2.1	2.1	4.4
Medical/other health sciences .....	1,577	51.8	9.1	7.4	7.0	6.3	5.0	13.3
Physical sciences .....	3,340	59.0	12.1	9.8	6.3	3.9	2.8	6.0
Psychology .....	2,872	30.5	8.3	9.5	8.8	6.8	6.7	29.4
Social sciences .....	3,772	46.3	12.0	9.5	6.9	5.6	5.2	14.4
Non-S&E .....	11,934	45.6	11.6	8.9	7.6	5.6	5.0	15.7
<b>Undergraduate debt</b>								
All fields .....	38,742	72.6	9.1	8.1	5.0	2.7	1.5	1.0
S&E .....	26,808	72.1	9.2	8.5	5.3	2.7	1.4	0.9
Engineering .....	5,745	80.5	7.2	5.3	3.6	1.7	0.8	0.9
Sciences .....	21,063	69.7	9.7	9.4	5.7	2.9	1.6	1.0
Agricultural sciences .....	911	73.3	9.8	7.9	5.2	2.1	1.1	0.7
Biological sciences .....	5,845	64.4	10.3	12.5	6.8	3.4	1.7	0.9
Computer sciences .....	1,010	85.2	6.3	4.4	2.0	1.1	0.3	0.7
Earth, atmospheric, and ocean sciences .....	641	66.0	13.4	9.5	5.3	3.3	2.0	0.5
Mathematics .....	1,093	81.0	8.1	6.0	2.8	1.1	0.4	0.6
Medical/other health sciences .....	1,577	74.5	8.0	6.3	4.4	3.7	2.0	1.1
Physical sciences .....	3,340	69.6	9.7	9.8	5.8	2.8	1.3	1.0
Psychology .....	2,873	64.1	10.6	10.4	7.4	3.9	2.2	1.4
Social sciences .....	3,773	72.8	9.5	7.5	5.1	2.6	1.6	1.0
Non-S&E .....	11,934	73.8	9.1	7.0	4.6	2.8	1.7	1.1
<b>Graduate debt</b>								
All fields .....	38,739	67.1	7.6	5.0	4.3	3.3	2.8	10.0
S&E .....	26,805	70.4	7.4	4.6	3.7	3.0	2.4	8.4
Engineering .....	5,744	78.0	7.5	3.5	2.8	2.0	1.5	4.8
Sciences .....	21,061	68.4	7.3	4.9	4.0	3.3	2.7	9.4
Agricultural sciences .....	911	67.8	10.3	5.8	3.7	2.7	2.6	6.9
Biological sciences .....	5,845	74.3	7.4	4.7	3.9	2.7	1.8	5.3
Computer sciences .....	1,010	82.5	5.8	2.7	1.6	1.9	0.9	4.7
Earth, atmospheric, and ocean sciences .....	641	72.2	9.8	4.1	4.8	2.5	1.9	4.7
Mathematics .....	1,093	80.8	7.1	3.2	2.7	1.3	1.4	3.6
Medical/other health sciences .....	1,577	65.6	5.8	5.2	5.3	4.7	2.7	10.7
Physical sciences .....	3,340	78.5	7.1	4.2	3.1	2.1	1.2	3.8
Psychology .....	2,872	46.6	5.6	5.7	5.3	5.4	5.0	26.4
Social sciences .....	3,772	60.3	8.6	6.4	4.4	4.1	4.5	11.8
Non-S&E .....	11,934	59.5	8.0	5.7	5.6	4.1	3.6	13.5

NOTE: 4,612 doctorate recipients did not report undergraduate debt; 4,615 did not report graduate debt.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, special tabulations (2007).

Appendix table 2-13

**Enrollment in higher education, by Carnegie institution type: 1986–2004**

Year	All institutions	Doctorate-granting universities—very high research activity	Doctorate-granting universities—high research activity	Doctoral/ research universities	Master's colleges/ universities	Baccalaureate colleges	Associate's colleges	Medical schools/ medical centers	Schools of engineering	Other special focus institutions	Tribal colleges	Not classified
1986.....	12,670,121	2,028,365	1,408,854	538,407	2,742,615	988,017	4,210,265	66,255	8,954	207,414	6,050	464,925
1987.....	12,925,116	2,081,103	1,429,880	552,972	2,791,503	1,000,337	4,391,135	65,828	8,988	207,051	6,992	389,327
1988.....	13,201,196	2,101,752	1,463,739	559,423	2,870,397	1,043,039	4,501,474	67,516	10,350	215,406	7,205	360,895
1989.....	13,621,203	2,119,271	1,508,679	571,276	2,980,237	1,067,801	4,714,824	67,131	10,667	217,126	7,350	356,841
1990.....	13,983,255	2,154,796	1,529,924	584,693	3,091,747	1,089,745	4,899,502	68,407	12,047	226,756	7,193	318,445
1991.....	14,527,724	2,166,048	1,546,223	593,116	3,142,636	1,111,202	5,302,915	70,689	12,764	234,271	8,046	339,814
1992.....	14,657,118	2,158,689	1,533,625	603,048	3,172,014	1,129,156	5,379,531	75,777	13,275	241,506	9,715	340,782
1993.....	14,477,792	2,146,394	1,512,688	606,412	3,164,308	1,131,893	5,263,181	76,839	14,075	247,173	10,251	304,578
1994.....	14,449,476	2,143,968	1,505,465	608,538	3,167,715	1,130,525	5,224,917	77,693	12,733	256,391	9,619	311,912
1995.....	14,445,438	2,147,614	1,505,914	610,804	3,174,249	1,144,858	5,209,476	78,889	13,314	265,221	9,798	285,301
1996.....	14,481,915	2,146,987	1,493,408	616,414	3,188,063	1,151,943	5,254,403	80,084	13,055	272,802	9,680	255,076
1997.....	14,521,994	2,152,915	1,506,792	616,402	3,222,192	1,160,817	5,299,102	80,539	11,859	275,127	9,979	186,270
1998.....	14,835,140	2,177,443	1,517,419	628,402	3,270,069	1,178,466	5,214,709	80,018	12,624	287,643	10,424	457,923
2000.....	15,592,671	2,212,283	1,552,492	654,576	3,388,151	1,220,648	6,013,139	79,588	12,757	294,959	9,689	154,389
2001.....	15,749,338	2,261,898	1,599,014	692,004	3,505,595	1,235,676	5,958,162	80,442	14,158	316,338	10,061	75,990
2002.....	16,440,463	2,326,033	1,653,569	735,301	3,662,414	1,296,988	6,260,838	82,178	14,106	333,118	10,744	65,174
2003.....	16,622,932	2,354,908	1,675,963	776,609	3,755,773	1,323,723	6,258,095	83,513	14,278	343,727	12,227	24,116
2004.....	16,901,039	2,362,063	1,693,731	832,888	3,854,479	1,335,972	6,343,388	87,549	13,740	354,940	12,553	9,736

NOTE: Data not available for 1999.

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Fall Enrollment Survey (various years); and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

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Appendix table 2-14

**Estimates and projections of U.S. population ages 20–24 years, by sex and race/ethnicity: 2000–2050**

Sex	All races		White, non-Hispanic		Asian		Black		Hispanic		Other race/ethnicity	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Both sexes</b>												
2000	19,116,000	100.0	11,780,000	61.6	850,000	4.4	2,757,000	14.4	3,427,000	17.9	568,000	3.0
2005	20,823,000	100.0	12,836,000	61.6	898,000	4.3	3,078,000	14.8	3,604,000	17.3	695,000	3.3
2010	21,676,000	100.0	12,992,000	59.9	943,000	4.4	3,357,000	15.5	3,927,000	18.1	785,000	3.6
2015	21,810,000	100.0	12,380,000	56.8	1,020,000	4.7	3,451,000	15.8	4,472,000	20.5	866,000	4.0
2020	20,751,000	100.0	11,380,000	54.8	1,076,000	5.2	3,109,000	15.0	4,656,000	22.4	936,000	4.5
2025	22,052,000	100.0	11,606,000	52.6	1,234,000	5.6	3,315,000	15.0	5,285,000	24.0	1,088,000	4.9
2030	23,136,000	100.0	11,759,000	50.8	1,380,000	6.0	3,568,000	15.4	5,733,000	24.8	1,226,000	5.3
2035	24,227,000	100.0	12,030,000	49.7	1,507,000	6.2	3,768,000	15.6	6,142,000	25.4	1,367,000	5.6
2040	24,897,000	100.0	12,074,000	48.5	1,622,000	6.5	3,834,000	15.4	6,525,000	26.2	1,488,000	6.0
2045	25,534,000	100.0	11,976,000	46.9	1,758,000	6.9	3,929,000	15.4	6,970,000	27.3	1,618,000	6.3
2050	26,297,000	100.0	11,838,000	45.0	1,922,000	7.3	4,089,000	15.6	7,478,000	28.4	1,771,000	6.7
<b>Male</b>												
2000	9,763,000	100.0	5,961,000	61.1	425,000	4.4	1,345,000	13.8	1,884,000	19.3	286,000	2.9
2005	10,657,000	100.0	6,549,000	61.5	448,000	4.2	1,545,000	14.5	1,911,000	17.9	351,000	3.3
2010	11,075,000	100.0	6,648,000	60.0	475,000	4.3	1,687,000	15.2	2,034,000	18.4	398,000	3.6
2015	11,137,000	100.0	6,330,000	56.8	514,000	4.6	1,735,000	15.6	2,312,000	20.8	438,000	3.9
2020	10,584,000	100.0	5,811,000	54.9	539,000	5.1	1,562,000	14.8	2,404,000	22.7	475,000	4.5
2025	11,235,000	100.0	5,917,000	52.7	618,000	5.5	1,664,000	14.8	2,722,000	24.2	556,000	4.9
2030	11,787,000	100.0	5,997,000	50.9	691,000	5.9	1,792,000	15.2	2,951,000	25.0	627,000	5.3
2035	12,344,000	100.0	6,136,000	49.7	755,000	6.1	1,893,000	15.3	3,160,000	25.6	699,000	5.7
2040	12,688,000	100.0	6,160,000	48.6	813,000	6.4	1,927,000	15.2	3,356,000	26.5	761,000	6.0
2045	13,014,000	100.0	6,112,000	47.0	881,000	6.8	1,976,000	15.2	3,584,000	27.5	827,000	6.4
2050	13,404,000	100.0	6,042,000	45.1	964,000	7.2	2,057,000	15.3	3,844,000	28.7	906,000	6.8
<b>Female</b>												
2000	9,353,000	100.0	5,819,000	62.2	426,000	4.6	1,412,000	15.1	1,544,000	16.5	282,000	3.0
2005	10,166,000	100.0	6,287,000	61.8	450,000	4.4	1,532,000	15.1	1,693,000	16.7	344,000	3.4
2010	10,602,000	100.0	6,344,000	59.8	469,000	4.4	1,670,000	15.7	1,893,000	17.9	388,000	3.7
2015	10,673,000	100.0	6,050,000	56.7	506,000	4.7	1,716,000	16.1	2,160,000	20.2	428,000	4.0
2020	10,166,000	100.0	5,568,000	54.8	537,000	5.3	1,547,000	15.2	2,252,000	22.2	461,000	4.5
2025	10,817,000	100.0	5,689,000	52.6	615,000	5.7	1,650,000	15.3	2,563,000	23.7	532,000	4.9
2030	11,349,000	100.0	5,763,000	50.8	689,000	6.1	1,776,000	15.6	2,782,000	24.5	599,000	5.3
2035	11,883,000	100.0	5,894,000	49.6	752,000	6.3	1,875,000	15.8	2,982,000	25.1	668,000	5.6
2040	12,209,000	100.0	5,914,000	48.4	809,000	6.6	1,907,000	15.6	3,169,000	26.0	727,000	6.0
2045	12,520,000	100.0	5,865,000	46.8	876,000	7.0	1,954,000	15.6	3,386,000	27.0	790,000	6.3
2050	12,893,000	100.0	5,795,000	44.9	958,000	7.4	2,032,000	15.8	3,634,000	28.2	865,000	6.7

NOTES: Numbers rounded to nearest 1,000. Detail will not add to total because of rounding. Asian, black, and other race/ethnicity include Hispanics; Hispanics may be of any race.

SOURCES: Census Bureau, Population Projections Program, U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin, <http://www.census.gov/ipc/www/usinterimproj>.

**Freshmen intending S&E major, by sex, race/ethnicity, and field: Selected years, 1985–2006**

(Percent)

Sex, race/ethnicity, and field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006
All intending S&E major .....	32.6	28.9	30.6	32.2	33.3	32.4	34.2	33.7	33.1	33.5	33.5	32.6	33.1	30.9	32.0
Physical sciences .....	2.2	1.8	2.0	2.1	2.5	2.3	2.1	1.9	1.8	1.9	2.0	2.0	2.3	2.8	2.3
Biological/agricultural sciences.....	5.6	5.1	5.3	6.6	8.2	9.4	9.1	8.2	7.5	7.5	7.8	7.7	8.3	8.1	8.8
Mathematics/statistics.....	1.1	0.9	0.8	0.8	0.8	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Computer sciences.....	4.1	2.3	2.3	2.4	2.1	3.0	4.1	5.1	5.2	4.7	3.1	2.4	2.0	1.2	1.6
Social/behavioral sciences.....	8.6	9.4	10.3	9.5	9.7	8.9	8.5	8.9	9.2	9.6	10.4	10.5	10.2	9.6	10.5
Engineering .....	11.0	9.4	9.9	10.8	10.0	8.1	9.7	9.0	8.7	9.1	9.5	9.3	9.6	8.4	8.0
Male .....	41.9	36.5	38.2	40.1	41.1	39.2	42.4	42.4	41.4	42.2	41.2	39.6	40.8	37.0	37.9
Physical sciences .....	3.1	2.7	2.8	2.9	3.2	2.8	2.7	2.4	2.3	2.4	2.4	2.5	2.9	2.7	2.8
Biological/agricultural sciences .....	6.1	5.6	6.0	7.0	8.8	9.2	8.4	7.3	6.5	6.5	6.6	6.7	7.4	7.2	8.1
Mathematics/statistics .....	1.1	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.8	0.7	0.8	0.9	1.0	0.9	0.9
Computer sciences.....	5.5	3.5	3.4	3.4	3.5	5.1	7.1	9.1	9.3	8.8	6.0	4.7	4.1	3.1	3.0
Social/behavioral sciences .....	7.2	7.0	7.7	7.0	7.5	6.7	6.3	6.4	6.6	7.1	7.5	7.7	7.5	7.5	8.6
Engineering .....	18.9	16.8	17.4	18.9	17.3	14.6	17.2	16.5	15.9	16.7	17.9	17.1	17.9	15.6	14.5
Female .....	24.6	22.3	24.5	25.3	26.8	27.1	27.7	26.8	26.2	26.7	26.7	26.2	26.3	27.0	27.2
Physical sciences .....	1.4	1.1	1.3	1.5	1.9	1.8	1.6	1.5	1.5	1.5	1.6	1.7	1.9	1.9	2.0
Biological/agricultural sciences .....	5.3	4.8	4.9	6.2	7.7	9.6	9.7	9.0	7.9	8.3	8.5	8.5	9.0	8.7	9.6
Mathematics/statistics .....	1.1	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.6
Computer sciences.....	2.8	1.4	1.4	1.5	1.1	1.3	1.7	1.8	1.9	1.6	0.9	0.5	0.4	0.8	0.4
Social/behavioral sciences .....	10.2	11.3	12.8	11.6	11.5	11.0	10.5	11.0	11.3	11.7	12.0	12.0	11.5	12.3	12.1
Engineering .....	3.8	2.9	3.3	3.7	3.9	2.7	3.5	2.9	3.0	3.0	3.0	2.9	2.9	2.6	2.5
White.....	31.7	27.8	29.6	30.5	31.7	30.9	32.8	31.7	30.6	31.9	31.3	30.1	30.1	29.0	29.5
Physical sciences .....	2.3	1.9	2.0	2.3	2.6	2.5	2.4	2.0	2.0	2.1	2.1	2.1	2.3	2.4	2.5
Biological/agricultural sciences .....	5.3	4.7	5.1	6.0	7.6	9.0	8.6	7.9	6.6	7.0	7.0	6.4	7.0	7.0	7.5
Mathematics/statistics .....	1.1	0.9	0.9	0.8	0.9	0.7	0.7	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8
Computer sciences.....	3.4	2.1	1.9	1.8	1.8	2.5	3.5	4.1	4.3	4.0	2.8	2.3	1.9	1.5	1.5
Social/behavioral sciences .....	8.9	9.3	10.1	9.3	9.4	8.7	8.6	8.6	8.7	9.1	9.4	9.6	9.1	9.3	9.6
Engineering .....	10.7	8.9	9.6	10.3	9.4	7.5	9.0	8.5	8.3	9.0	9.2	8.9	9.0	8.0	7.6
Male .....	41.0	35.6	37.4	38.8	39.8	37.5	40.6	40.0	39.6	41.0	39.6	38.3	38.7	36.1	36.4
Physical sciences.....	3.2	2.8	3.0	3.1	3.3	2.9	3.0	2.4	2.5	2.6	2.8	2.8	3.0	3.1	3.0
Biological/agricultural sciences .....	5.8	5.3	5.5	6.5	8.1	8.6	7.8	7.1	6.0	6.1	6.2	5.8	6.4	6.5	7.0
Mathematics/statistics .....	1.2	1.0	1.0	0.9	0.9	0.8	0.7	0.7	0.9	0.7	0.9	0.9	1.0	1.0	0.9
Computer sciences.....	5.1	3.3	3.1	3.0	3.2	4.6	6.4	7.7	8.2	7.7	5.5	4.7	3.9	3.0	3.0
Social/behavioral sciences .....	7.2	7.0	7.8	7.1	7.6	6.9	6.3	6.3	6.7	7.0	7.2	7.7	7.4	7.6	8.3
Engineering.....	18.5	16.2	17.0	18.2	16.7	13.7	16.4	15.8	15.3	16.9	17.0	16.4	17.0	14.9	14.2
Female .....	22.9	20.9	22.7	23.1	25.2	25.3	25.8	24.9	23.8	24.2	23.9	23.9	23.9	23.2	24.2
Physical sciences.....	1.3	1.2	1.3	1.4	2.0	1.9	1.8	1.6	1.5	1.5	1.5	1.7	1.9	1.8	1.9
Biological/agricultural sciences .....	4.9	4.3	4.5	5.7	7.3	9.1	9.3	8.8	7.5	7.6	7.6	7.4	7.7	7.3	8.1
Mathematics/statistics .....	1.1	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Computer sciences.....	1.9	0.9	0.8	0.8	0.6	0.7	1.0	1.1	1.1	0.8	0.5	0.4	0.3	0.3	0.3
Social/behavioral sciences .....	10.5	11.2	12.5	11.4	11.2	10.5	10.1	10.4	10.6	11.1	11.1	11.2	10.6	11.0	11.0
Engineering.....	3.2	2.4	2.8	3.0	3.4	2.4	3.0	2.4	2.5	2.5	2.5	2.5	2.7	2.1	2.2

## Freshmen intending S&amp;E major, by sex, race/ethnicity, and field: Selected years, 1985–2006

(Percent)

Sex, race/ethnicity, and field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006
Asian American.....	51.3	47.5	44.0	44.6	42.8	41.5	45.9	47.5	44.5	42.5	43.2	44.2	45.5	42.0	44.7
Physical sciences.....	4.2	2.9	2.3	2.5	2.5	2.1	2.0	1.6	1.5	1.7	1.9	2.1	2.4	2.4	2.8
Biological/agricultural sciences.....	11.6	12.1	9.8	12.2	13.4	13.2	11.8	11.2	10.2	10.1	11.9	14.6	16.1	15.1	17.3
Mathematics/statistics.....	1.1	0.9	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.9	0.9	0.9	1.1
Computer sciences.....	3.0	3.7	2.4	3.5	2.7	5.2	7.9	12.6	11.0	9.3	4.6	3.2	2.2	1.7	1.5
Social/behavioral sciences.....	7.5	8.2	9.4	8.4	8.8	7.1	6.8	6.7	7.4	7.3	8.1	8.6	8.8	8.5	10.3
Engineering.....	23.9	19.7	19.3	17.2	14.7	13.3	16.8	14.8	13.8	13.4	15.9	14.8	15.1	13.4	11.7
Male.....	61.0	56.0	52.7	55.3	51.1	50.3	57.5	60.0	56.3	54.3	55.0	53.4	54.3	49.3	50.7
Physical sciences.....	5.5	3.2	3.0	3.2	2.8	2.8	2.2	2.0	1.7	1.8	2.2	2.7	2.6	2.6	3.3
Biological/agricultural sciences.....	10.2	11.1	10.0	12.2	13.4	12.2	9.9	8.9	8.5	8.4	10.2	13.0	14.1	13.4	15.3
Mathematics/statistics.....	1.2	0.7	0.6	0.8	0.6	0.6	0.6	0.6	0.7	0.7	0.9	1.1	1.0	1.0	1.3
Computer sciences.....	3.1	4.6	3.3	5.4	4.2	8.0	12.5	19.4	17.8	15.5	8.1	5.4	4.1	3.1	2.8
Social/behavioral sciences.....	6.4	5.4	5.7	5.8	6.5	4.7	4.9	4.8	5.5	5.6	6.1	6.3	6.7	6.3	8.3
Engineering.....	34.6	31.0	30.1	27.9	23.6	22.0	27.4	24.3	22.1	22.3	27.5	24.9	25.8	22.9	19.7
Female.....	40.9	38.1	34.7	34.0	34.5	32.9	34.3	35.9	34.5	32.8	33.5	35.9	37.6	35.1	39.4
Physical sciences.....	2.9	2.4	1.9	1.8	2.2	1.6	1.5	1.4	1.3	1.5	1.6	1.8	2.0	2.2	2.5
Biological/agricultural sciences.....	13.1	13.0	9.4	12.3	13.5	14.0	13.4	13.3	11.7	12.0	13.5	16.1	18.0	16.4	18.7
Mathematics/statistics.....	1.2	1.2	1.0	0.8	0.8	0.6	0.6	0.6	0.7	0.7	0.8	0.7	0.8	0.7	0.9
Computer sciences.....	2.8	2.6	1.5	1.6	1.4	2.5	3.4	6.2	5.2	4.0	1.6	1.0	0.6	0.4	0.5
Social/behavioral sciences.....	8.7	11.3	13.4	10.9	10.7	9.3	8.8	8.5	8.9	8.9	9.9	10.6	10.6	10.4	12.2
Engineering.....	12.2	7.6	7.5	6.6	5.9	4.9	6.6	5.9	6.7	5.7	6.1	5.7	5.6	5.0	4.6
Black.....	33.3	31.0	32.0	35.5	37.9	35.8	38.0	37.2	36.8	35.2	35.4	33.6	34.3	32.0	34.0
Physical sciences.....	1.6	1.0	1.2	1.2	1.6	1.6	1.2	1.2	1.2	1.0	1.2	1.4	1.8	1.7	1.6
Biological/agricultural sciences.....	4.2	4.1	4.6	5.3	7.4	8.7	8.8	7.9	7.5	7.8	8.4	8.6	9.5	8.5	9.4
Mathematics/statistics.....	0.7	0.6	0.4	0.6	0.6	0.7	0.6	0.6	0.5	0.4	0.5	0.4	0.5	0.5	0.5
Computer sciences.....	10.4	5.2	5.9	5.6	5.4	6.3	7.1	8.4	8.1	7.4	4.7	3.3	3.3	2.5	2.2
Social/behavioral sciences.....	6.8	9.6	10.6	10.4	10.0	9.9	10.3	11.4	11.1	12.5	12.0	12.2	11.5	12.0	13.1
Engineering.....	9.6	10.5	9.3	12.4	12.9	8.6	10.0	7.7	8.4	6.1	8.6	7.7	7.7	6.8	7.2
Male.....	39.1	36.8	36.3	41.3	44.6	40.5	43.6	41.7	41.7	37.7	40.2	36.7	38.2	33.9	36.3
Physical sciences.....	1.9	1.3	1.1	1.1	2.0	1.7	1.6	1.4	1.4	1.0	1.3	1.4	1.7	1.7	1.8
Biological/agricultural sciences.....	3.9	4.1	4.2	4.9	6.8	7.6	7.4	5.8	5.8	5.6	5.8	5.7	7.5	6.3	6.8
Mathematics/statistics.....	0.8	0.7	0.4	0.6	0.6	0.8	0.5	0.6	0.4	0.4	0.4	0.7	0.6	0.5	0.8
Computer sciences.....	11.2	6.3	6.9	6.0	6.6	8.5	9.8	13.2	12.4	12.2	8.2	6.1	6.2	4.8	3.8
Social/behavioral sciences.....	5.4	6.9	7.7	7.4	7.4	6.4	6.6	7.4	6.5	7.4	8.0	8.1	7.1	7.4	8.7
Engineering.....	15.9	17.5	16.0	21.3	21.2	15.5	17.7	13.3	15.2	11.1	16.5	14.7	15.1	13.2	14.4
Female.....	28.9	26.8	29.1	31.7	34.0	32.8	34.7	34.0	34.3	33.1	32.5	31.5	31.9	30.6	32.1
Physical sciences.....	1.3	0.9	1.1	1.2	1.7	1.5	1.1	1.0	1.2	1.0	1.3	1.4	1.9	1.6	1.6
Biological/agricultural sciences.....	4.5	3.9	4.7	5.7	7.8	9.4	9.7	9.2	8.6	9.0	10.0	10.2	10.9	9.9	11.0
Mathematics/statistics.....	0.6	0.6	0.5	0.6	0.6	0.7	0.8	0.6	0.5	0.4	0.5	0.3	0.4	0.5	0.4
Computer sciences.....	9.9	4.4	5.2	5.3	4.6	4.8	5.2	5.3	5.5	4.3	2.5	1.7	1.5	1.1	1.1
Social/behavioral sciences.....	7.7	11.2	12.4	12.3	11.7	12.0	12.8	13.8	14.1	15.3	14.5	14.7	14.3	14.7	15.7
Engineering.....	4.9	5.8	5.2	6.6	7.6	4.4	5.1	4.1	4.4	3.1	3.7	3.2	2.9	2.8	2.3

**Freshmen intending S&E major, by sex, race/ethnicity, and field: Selected years, 1985–2006**

(Percent)

Sex, race/ethnicity, and field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006
Mexican American/Chicano and Puerto Rican American .....	38.9	35.1	33.5	30.6	33.2	36.0	36.9	36.2	33.3	33.6	34.7	34.7	37.2	34.8	35.9
Physical sciences .....	1.9	1.5	1.7	1.4	1.6	1.3	1.4	1.0	1.4	1.2	1.6	1.7	1.6	1.7	2.1
Biological/agricultural sciences .....	7.1	6.7	5.6	6.2	6.9	7.9	9.3	8.6	7.1	7.4	8.2	8.1	9.3	7.6	9.8
Mathematics/statistics .....	0.7	0.5	0.6	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.7	0.8	0.9
Computer sciences .....	4.7	2.6	2.2	2.8	2.1	2.9	3.4	3.8	3.8	3.8	2.4	2.1	2.2	1.1	1.2
Social/behavioral sciences .....	11.9	12.4	12.9	9.9	12.5	12.2	11.4	10.9	12.3	11.6	13.2	13.1	12.6	14.0	15.5
Engineering .....	12.6	11.4	10.5	10.0	9.7	11.2	10.8	11.3	8.1	8.9	8.6	8.9	10.8	9.6	6.4
Male .....	47.5	41.9	40.2	35.6	38.8	42.0	43.0	45.0	40.6	40.4	40.8	40.8	45.0	40.6	40.8
Physical sciences .....	2.8	1.9	2.2	1.7	2.2	1.7	1.8	1.1	1.7	1.3	1.8	2.2	2.1	1.9	2.6
Biological/agricultural sciences .....	7.4	6.8	5.9	5.5	7.4	6.8	7.7	7.3	7.1	5.9	6.8	6.3	7.9	6.3	9.2
Mathematics/statistics .....	0.8	0.8	0.8	0.5	0.5	0.3	0.6	0.8	0.6	0.9	1.0	1.0	0.8	1.0	1.1
Computer sciences .....	6.5	3.2	3.1	3.9	3.1	4.7	5.7	6.8	7.3	7.1	5.2	4.6	4.5	2.7	3.1
Social/behavioral sciences .....	9.3	9.7	10.0	7.3	9.8	7.8	8.0	6.9	7.7	7.6	7.9	8.2	8.7	9.0	11.3
Engineering .....	20.7	19.5	18.2	16.7	15.8	20.7	19.2	22.1	16.2	17.6	18.1	18.5	21.0	19.7	13.5
Female .....	31.7	29.4	28.3	26.3	28.2	31.0	31.5	28.7	27.6	28.4	30.7	30.5	31.7	30.7	32.5
Physical sciences .....	1.1	1.0	1.3	1.3	1.1	1.2	1.2	0.8	1.2	1.3	1.5	1.2	1.3	1.5	1.6
Biological/agricultural sciences .....	7.0	6.6	5.6	6.7	6.5	8.7	10.3	9.4	6.9	8.2	9.2	9.2	10.4	8.4	10.1
Mathematics/statistics .....	0.5	0.3	0.4	0.2	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.7	0.7	0.8	0.7
Computer sciences .....	3.1	2.2	1.6	1.9	1.1	1.5	1.5	1.4	1.5	1.4	0.6	0.4	0.6	0.2	0.1
Social/behavioral sciences .....	14.0	14.9	15.2	12.5	14.7	15.8	14.2	13.8	15.3	14.3	16.7	16.4	15.6	17.3	17.9
Engineering .....	6.0	4.4	4.2	3.7	4.4	3.3	3.9	2.9	2.2	2.7	2.2	2.6	3.1	2.5	2.1
Other Latino .....	NA	NA	NA	NA	38.0	39.5	38.2	37.2	35.2	36.6	35.4	37.6	38.3	34.3	36.7
Physical sciences .....	NA	NA	NA	NA	2.0	1.4	1.8	1.3	1.3	1.4	1.6	1.7	1.9	1.4	1.8
Biological/agricultural sciences .....	NA	NA	NA	NA	9.5	10.9	9.4	7.6	7.6	7.9	7.8	8.4	9.1	8.7	10.0
Mathematics/statistics .....	NA	NA	NA	NA	0.2	0.5	0.4	0.4	0.3	0.4	0.7	0.6	0.9	0.6	0.6
Computer sciences .....	NA	NA	NA	NA	2.2	3.5	4.4	5.0	5.7	4.4	2.5	2.4	1.8	1.3	1.3
Social/behavioral sciences .....	NA	NA	NA	NA	13.1	12.7	11.9	13.1	12.7	13.4	13.9	14.6	14.4	13.9	15.4
Engineering .....	NA	NA	NA	NA	11.0	10.5	10.3	9.8	7.6	9.1	8.9	9.9	10.2	8.4	7.6
Male .....	NA	NA	NA	NA	40.4	44.5	43.9	45.4	43.9	45.5	42.2	43.8	45.1	39.8	40.1
Physical sciences .....	NA	NA	NA	NA	1.8	2.0	2.2	1.9	1.8	2.1	2.0	2.1	2.7	1.5	1.9
Biological/agricultural sciences .....	NA	NA	NA	NA	8.7	8.3	7.9	5.3	6.8	7.1	6.9	6.4	7.4	7.4	8.9
Mathematics/statistics .....	NA	NA	NA	NA	0.3	0.6	0.6	0.4	0.3	0.5	0.9	0.8	1.1	0.8	0.9
Computer sciences .....	NA	NA	NA	NA	2.9	5.8	7.2	9.4	11.2	8.7	4.8	4.7	3.4	3.3	2.8
Social/behavioral sciences .....	NA	NA	NA	NA	9.0	9.0	7.6	9.7	8.5	9.0	10.0	10.6	10.5	9.4	11.0
Engineering .....	NA	NA	NA	NA	17.7	18.8	18.4	18.7	15.3	18.1	17.6	19.2	20.0	17.4	14.6
Female .....	NA	NA	NA	NA	35.4	35.8	33.3	31.3	29.9	30.3	31.1	33.1	33.8	30.8	34.2
Physical sciences .....	NA	NA	NA	NA	2.0	1.2	1.3	1.1	0.9	0.9	1.5	1.4	1.6	1.3	1.5
Biological/agricultural sciences .....	NA	NA	NA	NA	9.9	13.2	10.6	9.4	8.5	8.3	8.3	9.7	10.4	9.5	10.6
Mathematics/statistics .....	NA	NA	NA	NA	0.2	0.5	0.3	0.3	0.3	0.3	0.6	0.5	0.7	0.5	0.6
Computer sciences .....	NA	NA	NA	NA	1.5	1.5	2.1	1.7	2.1	1.6	0.9	0.8	0.7	0.2	0.3
Social/behavioral sciences .....	NA	NA	NA	NA	17.0	16.1	15.1	15.5	15.3	16.4	16.6	17.5	17.0	16.8	18.4
Engineering .....	NA	NA	NA	NA	4.8	3.3	3.9	3.3	2.8	2.8	3.2	3.2	3.4	2.5	2.8

Appendix table 2-15

**Freshmen intending S&E major, by sex, race/ethnicity, and field: Selected years, 1985–2006**

(Percent)

Sex, race/ethnicity, and field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006
American Indian .....	29.2	31.5	33.9	31.2	31.9	30.6	34.9	35.4	33.8	35.3	32.0	34.2	33.8	32.9	34.4
Physical sciences .....	1.6	2.2	2.0	2.0	1.5	2.0	2.5	2.7	2.6	1.8	1.7	1.7	2.5	2.3	2.7
Biological/agricultural sciences .....	5.5	6.3	4.8	6.5	8.0	9.3	8.8	9.3	6.9	8.4	7.9	9.7	8.6	8.7	10.0
Mathematics/statistics .....	0.5	1.0	0.6	0.3	0.7	0.4	0.5	0.7	0.4	0.6	0.6	0.8	0.6	0.7	0.4
Computer sciences.....	5.1	2.7	2.2	3.0	2.3	3.0	5.0	4.4	4.0	4.4	2.8	2.3	2.2	1.7	1.6
Social/behavioral sciences .....	9.9	9.3	13.5	9.7	11.0	9.5	10.7	10.4	11.9	12.7	11.5	13.4	12.1	12.3	12.2
Engineering.....	6.6	10.0	10.8	9.7	8.4	6.4	7.4	7.9	8.0	7.4	7.5	6.3	7.8	7.2	7.5
Male.....	33.0	39.7	38.8	37.0	35.9	36.5	37.0	39.0	36.6	41.0	36.8	40.9	40.7	37.4	39.5
Physical sciences.....	2.6	3.6	2.5	2.4	2.0	2.4	3.2	2.9	3.6	2.3	2.2	2.1	3.2	2.6	3.2
Biological/agricultural sciences .....	7.7	7.2	5.9	6.1	9.5	9.6	6.8	7.9	4.9	6.9	5.3	8.8	8.2	8.1	7.7
Mathematics/statistics .....	1.0	0.8	0.4	0.3	0.8	0.2	0.8	0.7	0.4	0.6	0.8	0.6	0.7	0.5	0.7
Computer sciences.....	3.8	2.6	1.5	3.0	1.9	4.1	5.8	5.4	5.1	7.2	4.0	5.3	4.7	3.5	3.3
Social/behavioral sciences .....	6.4	7.2	11.2	6.7	8.2	7.5	6.9	7.0	8.2	8.3	8.6	10.0	8.7	8.8	10.4
Engineering.....	11.5	18.3	17.3	18.5	13.5	12.7	13.5	15.1	14.4	15.7	15.9	14.1	15.2	13.9	14.2
Female.....	20.8	23.4	28.3	25.3	26.5	25.1	30.7	30.0	28.4	30.6	27.2	30.7	29.4	30.1	30.8
Physical sciences.....	0.7	0.9	1.3	1.7	1.0	1.9	1.9	2.4	1.8	1.6	1.4	1.7	2.1	2.1	2.4
Biological/agricultural sciences .....	3.1	5.6	4.0	6.7	6.7	9.1	10.2	10.4	7.9	9.0	8.8	10.2	9.0	9.0	11.9
Mathematics/statistics .....	0.2	1.2	0.6	0.3	0.6	0.5	0.3	0.5	0.3	0.7	0.4	0.9	0.5	0.8	0.2
Computer sciences.....	1.9	0.7	1.0	1.5	1.6	0.7	2.3	1.3	0.9	1.1	0.5	0.4	0.5	0.6	0.4
Social/behavioral sciences .....	12.4	11.3	15.5	12.0	12.4	11.2	12.9	12.7	14.4	15.2	13.3	15.7	14.4	14.9	13.5
Engineering.....	2.5	3.7	5.9	3.1	4.2	1.7	3.1	2.7	3.1	3.0	2.8	1.8	2.9	2.7	2.4

NA = not available

NOTE: Physical sciences include physics; chemistry; astronomy; and earth, atmospheric, and ocean sciences.

SOURCE: Higher Education Research Institute, University of California at Los Angeles, Survey of the American Freshman: National Norms, special tabulations (2007).

**Freshmen intending to major in selected S&E fields, by sex and race/ethnicity: Selected years, 1985–2006**

(Percent)

Sex, race/ethnicity, and field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006
Male .....	61.4	59.2	57.3	57.9	56.1	54.5	55.6	56.2	55.9	55.8	55.5	54.8	55.0	53.5	53.2
Female .....	38.6	40.8	42.7	42.1	43.9	45.5	44.4	43.8	44.1	44.2	44.4	45.2	45.0	46.5	46.8
White.....	83.7	83.1	81.8	76.9	79.1	76.2	76.3	74.4	72.4	71.2	72.1	71.6	72.1	70.6	72.0
Physical sciences .....	86.3	88.3	87.6	85.0	85.7	84.7	84.6	84.9	82.5	80.8	80.6	78.6	79.7	78.8	79.0
Biological/agricultural sciences.....	84.2	82.9	81.9	77.5	79.4	76.6	77.0	75.3	71.5	68.9	68.3	65.1	65.1	64.5	65.8
Mathematics/statistics.....	89.7	89.1	89.8	84.7	86.9	83.5	82.9	82.7	82.8	81.4	80.0	78.6	80.8	79.2	78.5
Computer sciences.....	71.2	73.4	68.5	61.3	66.3	65.2	68.0	63.7	64.0	62.6	68.8	71.7	71.6	69.9	74.7
Social/behavioral sciences.....	88.2	85.6	83.5	79.0	81.3	78.6	78.5	76.9	74.3	71.9	73.0	73.2	74.1	72.3	72.3
Engineering .....	83.3	81.5	81.1	76.1	77.2	74.3	75.2	74.5	73.3	74.1	72.6	72.8	73.6	71.3	74.8
Asian American.....	4.2	4.7	4.7	5.9	5.7	7.2	8.1	9.4	9.7	9.6	10.2	11.6	11.9	11.8	12.0
Physical sciences .....	5.4	4.5	4.0	5.2	4.6	5.5	5.4	6.2	6.5	6.9	7.3	9.5	9.2	9.4	10.5
Biological/agricultural sciences.....	5.6	6.9	6.2	8.2	7.4	8.5	8.3	9.4	10.8	10.9	12.7	16.4	16.8	16.7	17.0
Mathematics/statistics.....	2.8	3.1	3.3	4.3	4.2	4.5	5.1	6.3	6.9	8.0	8.3	10.3	9.0	9.5	11.4
Computer sciences.....	1.9	4.5	3.4	6.2	5.5	9.3	11.4	16.1	14.8	14.4	11.8	10.6	9.2	9.1	8.6
Social/behavioral sciences.....	2.4	2.5	3.0	3.8	4.0	4.3	4.8	5.0	5.6	5.8	6.4	7.2	7.8	7.4	8.5
Engineering .....	5.7	6.0	6.4	6.7	6.3	8.9	10.3	10.8	11.1	10.9	12.8	13.3	13.4	13.8	12.6
Black.....	10.0	9.6	10.5	13.1	11.4	11.6	11.4	10.4	11.5	11.0	10.7	9.8	10.1	11.6	11.0
Physical sciences .....	6.9	5.3	6.1	7.0	7.2	7.2	6.5	6.3	7.4	6.6	6.5	7.0	7.8	8.6	7.6
Biological/agricultural sciences.....	7.8	7.3	9.0	10.0	9.3	10.6	10.5	9.6	11.3	11.4	11.3	10.9	11.3	12.2	11.2
Mathematics/statistics.....	6.2	6.6	5.3	8.7	7.3	10.0	10.0	8.5	6.6	5.5	6.7	5.6	5.3	6.5	6.8
Computer sciences.....	24.9	19.3	25.1	27.5	24.1	20.8	17.0	15.3	15.6	15.7	14.4	12.7	15.1	17.4	14.0
Social/behavioral sciences.....	7.7	9.2	10.3	13.0	10.3	11.4	12.2	11.9	12.1	13.3	12.1	11.3	11.4	13.3	12.7
Engineering .....	8.5	9.8	9.4	13.4	12.7	10.9	10.3	7.9	9.7	6.9	8.7	7.5	7.6	9.0	9.3
Hispanic .....	1.5	1.9	2.1	2.6	3.9	5.1	5.0	6.4	7.1	7.6	6.9	7.4	8.1	8.8	9.1
Physical sciences .....	1.1	1.3	1.7	1.8	2.6	2.8	3.6	3.8	5.3	5.1	5.3	5.3	5.5	5.4	6.5
Biological/agricultural sciences.....	1.7	2.1	2.1	2.6	3.6	4.6	5.0	6.1	7.4	7.6	7.0	7.3	8.1	8.0	9.2
Mathematics/statistics.....	0.7	1.0	1.5	1.1	1.9	2.6	3.3	5.2	4.7	6.4	6.1	6.7	6.9	7.3	7.8
Computer sciences.....	1.4	1.8	1.9	3.3	3.6	4.5	4.1	4.9	5.9	6.1	5.2	6.0	7.0	6.2	6.5
Social/behavioral sciences.....	1.7	2.1	2.4	2.8	5.0	5.9	6.1	7.5	9.1	9.2	8.7	9.0	9.5	10.8	11.6
Engineering .....	1.5	1.9	2.2	2.5	3.7	5.9	4.9	7.0	6.1	7.1	5.8	6.7	7.6	8.4	7.0
American Indian.....	0.9	1.0	1.0	1.6	1.7	2.1	3.1	2.3	1.9	1.3	1.2	1.3	2.0	1.8	2.4
Physical sciences .....	0.8	1.1	0.9	1.6	1.1	2.1	3.5	3.3	2.5	1.2	1.1	1.1	2.0	1.8	2.6
Biological/agricultural sciences.....	1.1	1.1	0.8	1.7	1.8	2.2	3.1	2.5	1.8	1.4	1.3	1.5	2.0	1.8	2.5
Mathematics/statistics.....	0.5	1.1	0.6	0.6	1.6	1.1	2.1	2.4	0.9	1.1	1.0	1.2	1.4	1.5	1.1
Computer sciences.....	1.3	1.1	0.9	2.1	1.9	2.2	3.7	1.9	1.4	1.1	1.1	1.1	2.2	1.8	2.4
Social/behavioral sciences.....	1.2	0.9	1.2	1.7	2.1	2.4	3.7	2.6	2.4	1.6	1.5	1.7	2.4	2.1	2.6
Engineering .....	0.6	1.0	1.0	1.5	1.5	1.8	2.3	2.0	1.7	1.0	1.0	0.9	1.6	1.4	2.1

Appendix table 2-16

**Freshmen intending to major in selected S&E fields, by sex and race/ethnicity: Selected years, 1985–2006**

(Percent)

Sex, race/ethnicity, and field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006
Unknown .....	1.6	1.9	1.9	2.6	1.9	2.5	3.3	3.9	3.8	3.3	3.2	3.3	3.4	3.1	4.0
Physical sciences .....	1.4	1.8	1.8	2.1	1.7	2.5	3.4	4.0	3.2	3.2	2.9	3.1	3.3	2.8	3.8
Biological/agricultural sciences.....	1.7	2.1	1.9	2.9	2.0	2.9	3.7	3.8	3.7	3.8	3.7	4.2	4.0	3.8	4.6
Mathematics/statistics.....	0.8	1.3	1.3	2.2	2.1	1.3	2.5	3.6	3.5	1.7	2.5	2.5	2.3	2.2	2.3
Computer sciences.....	1.0	2.2	1.6	2.3	1.6	2.2	2.9	4.0	4.1	3.4	2.8	2.0	2.4	2.5	2.9
Social/behavioral sciences.....	1.5	2.0	1.9	3.1	2.1	2.5	3.2	4.0	4.2	3.5	3.6	3.6	3.7	3.5	4.5
Engineering .....	1.9	1.8	2.0	2.3	1.6	2.5	3.2	3.6	3.3	2.9	2.6	2.6	2.8	2.4	3.1

NOTES: Physical sciences include physics; chemistry; astronomy; and earth, atmospheric, and ocean sciences. Hispanic includes three group designations from freshman norms survey: Mexican American/Chicano, Puerto Rican American, and other Latino. Detail may not add to total because students may check more than one race/ethnicity, e.g., white and Hispanic.

SOURCE: Higher Education Research Institute, University of California at Los Angeles, Survey of the American Freshman: National Norms, special tabulations (2007).

Science and Engineering Indicators 2008

Appendix table 2-17

## Foreign undergraduate student enrollment in U.S. universities, by field and selected places of origin: April 2006 and 2007

Place of origin	All fields	S&E	Agricultural sciences	Biological sciences	Computer sciences	Engineering	Mathematics	Physical sciences	Psychology	Social sciences	Non-S&E
<b>April 2006</b>											
All locations.....	245,050	70,310	400	9,800	15,660	20,110	2,150	3,010	5,420	13,760	174,740
South Korea.....	27,810	6,380	20	1,340	1,100	1,340	270	330	380	1,600	21,430
Japan.....	27,420	5,870	90	820	790	530	170	350	1,110	2,010	21,550
India.....	10,000	4,720	10	460	890	2,540	80	130	110	510	5,280
Canada.....	12,290	2,410	30	640	150	460	50	130	340	620	9,880
Nepal.....	5,240	2,160	30	460	710	480	70	130	40	250	3,090
China.....	7,880	2,150	40	270	390	580	200	80	100	480	5,730
Hong Kong.....	6,460	2,110	10	230	300	610	120	110	280	450	4,360
Taiwan.....	8,690	2,110	0	330	540	590	80	110	180	290	6,580
Saudi Arabia.....	3,750	2,100	0	60	850	1,050	10	70	10	60	1,640
Nigeria.....	4,110	2,000	0	420	350	790	30	110	50	260	2,120
Malaysia.....	3,720	1,940	10	170	230	1,140	70	60	140	130	1,780
Indonesia.....	5,770	1,780	20	140	500	780	50	70	70	160	3,990
Kenya.....	5,400	1,600	10	350	520	300	50	100	80	190	3,810
Mexico.....	5,890	1,450	10	110	250	660	30	40	150	200	4,450
Pakistan.....	2,830	1,240	0	70	450	450	30	10	30	200	1,600
Turkey.....	3,580	1,220	0	50	340	340	30	20	60	390	2,350
Vietnam.....	3,720	1,120	0	170	370	290	50	110	10	120	2,610
Jamaica.....	3,780	1,110	0	220	320	210	30	60	110	150	2,670
Trinidad and Tobago.....	2,760	1,080	10	220	210	260	40	60	140	130	1,680
Singapore.....	1,950	820	0	90	70	330	20	40	70	210	1,120
Other locations.....	92,000	24,970	110	3,190	6,340	6,370	680	900	1,990	5,380	67,040
<b>April 2007</b>											
All locations.....	253,303	70,680	474	10,272	13,895	20,924	2,195	3,299	5,280	14,341	182,623
South Korea.....	31,527	7,044	21	1,465	1,012	1,567	301	420	438	1,820	24,483
Japan.....	24,547	5,106	95	740	605	487	146	329	867	1,837	19,441
India.....	10,603	4,974	5	516	944	2,594	79	138	116	582	5,629
Saudi Arabia.....	5,358	2,976	0	97	1,050	1,642	13	95	12	67	2,382
China.....	10,924	2,938	77	390	480	757	280	145	140	669	7,986
Nepal.....	6,582	2,611	47	581	751	639	75	198	48	272	3,971
Canada.....	12,441	2,458	28	647	142	479	45	123	345	649	9,983
Hong Kong.....	6,519	1,925	6	204	203	530	110	118	277	477	4,594
Nigeria.....	4,000	1,922	3	423	275	787	27	107	44	256	2,078
Taiwan.....	8,217	1,902	2	319	388	555	64	101	158	315	6,315
Malaysia.....	3,484	1,732	12	182	155	968	92	63	146	114	1,752
Indonesia.....	5,364	1,517	22	123	353	724	39	61	53	142	3,847
Mexico.....	6,059	1,500	6	115	217	710	32	48	139	233	4,559
Kenya.....	5,213	1,422	8	317	420	298	43	90	71	175	3,791
Turkey.....	3,677	1,340	2	52	354	355	39	13	66	459	2,337
Vietnam.....	5,196	1,333	4	192	448	341	50	135	22	141	3,863
Jamaica.....	3,775	1,050	1	230	288	205	38	55	112	121	2,725
Pakistan.....	2,553	1,028	0	69	272	418	20	17	25	207	1,525
Trinidad and Tobago.....	2,620	974	16	218	148	257	39	58	126	112	1,646
Singapore.....	1,948	770	4	85	54	306	23	33	71	194	1,178
Other locations.....	92,696	24,158	115	3,307	5,336	6,305	640	952	2,004	5,499	68,538

NOTE: Numbers rounded to nearest 10.

SOURCE: Bureau of Citizenship and Immigration Services, Student and Exchange Visitor Information System database, special tabulations (2007).



Appendix table 2-18

**Undergraduate enrollment in engineering and engineering technology programs: Selected years, 1985–2005**

Enrollment level	1985	1987	1989	1991	1993	1995	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Engineering</b>															
Students.....	420,864	392,198	378,277	379,977	375,944	363,315	365,358	366,991	361,395	390,803	409,557	421,178	421,791	419,387	409,326
Full time.....	384,191	356,998	338,529	339,397	337,817	325,489	326,458	329,657	323,713	353,118	367,954	383,109	384,612	384,792	375,112
Freshman.....	103,225	95,453	95,420	93,002	88,875	86,299	90,882	94,909	93,951	101,773	106,825	107,086	103,834	103,361	100,411
Sophomore.....	79,627	73,317	71,267	71,257	69,974	67,981	67,879	69,608	69,941	76,706	78,348	81,854	82,542	82,002	79,664
Junior.....	84,875	77,085	70,483	73,516	73,449	68,894	68,812	67,638	66,975	74,055	76,938	79,806	80,703	81,621	78,891
Senior or fifth year.....	116,464	111,143	101,359	101,622	105,519	102,315	98,885	97,502	92,846	100,584	105,843	114,363	117,533	117,808	116,146
Part time.....	36,673	35,200	39,748	40,580	38,127	37,826	38,900	37,334	37,682	37,685	41,603	38,069	37,179	34,595	34,214
<b>Engineering technologies</b>															
Students.....	123,571	128,501	127,687	127,135	106,976	105,809	108,459	108,993	108,754	107,165	108,886	112,654	110,250	107,931	97,371
Full time.....	83,038	80,600	76,179	75,340	65,581	63,929	67,864	68,545	69,173	66,771	71,147	72,704	72,040	69,584	62,560
First year.....	34,389	32,685	32,225	31,302	24,824	25,665	30,227	28,367	29,490	29,531	31,588	30,252	28,033	27,938	25,388
Second year.....	23,293	22,906	21,627	20,815	19,962	18,863	19,106	18,426	17,326	18,318	19,171	20,360	21,009	19,364	17,465
Other years associated.....	466	1,404	1,810	2,221	2,564	2,007	3,442	6,080	5,289	2,474	2,207	2,786	3,720	2,827	1,822
Bachelor's of engineering technologies third and later years.....	24,890	23,605	20,517	21,002	18,231	17,394	15,089	15,672	17,068	16,448	18,181	19,306	19,278	19,455	17,885
Part time.....	40,533	47,901	51,508	51,795	41,395	41,880	40,595	40,448	39,581	40,394	37,739	39,950	38,210	38,347	34,811

SOURCE: Engineering Workforce Commission, Engineering & Technology Enrollments, Fall 2005, American Association of Engineering Societies (2006).

Science and Engineering Indicators 2008

Appendix table 2-19  
**Engineering enrollment, by enrollment level and attendance: 1985–2005**

Year	Undergraduate						Graduate					
	All enrolled		Full time		Part time		All enrolled		Full time		Part time	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1985.....	420,864	100.0	384,191	91.3	36,673	8.7	95,505	100.0	60,641	63.5	34,864	36.5
1986.....	407,657	100.0	369,520	90.6	38,137	9.4	107,196	100.0	67,333	62.8	39,863	37.2
1987.....	392,198	100.0	356,998	91.0	35,200	9.0	110,778	100.0	69,343	62.6	41,435	37.4
1988.....	385,412	100.0	346,169	89.8	39,243	10.2	112,007	100.0	69,226	61.8	42,781	38.2
1989.....	378,277	100.0	338,529	89.5	39,748	10.5	114,048	100.0	68,967	60.5	45,081	39.5
1990.....	380,287	100.0	338,842	89.1	41,445	10.9	117,834	100.0	72,456	61.5	45,378	38.5
1991.....	379,977	100.0	339,397	89.3	40,580	10.7	123,497	100.0	74,568	60.4	48,929	39.6
1992.....	382,525	100.0	344,126	90.0	38,399	10.0	128,854	100.0	78,651	61.0	50,203	39.0
1993.....	375,944	100.0	337,817	89.9	38,127	10.1	128,081	100.0	78,885	61.6	49,196	38.4
1994.....	367,298	100.0	328,463	89.4	38,835	10.6	122,242	100.0	74,596	61.0	47,646	39.0
1995.....	363,315	100.0	325,489	89.6	37,826	10.4	118,506	100.0	72,215	60.9	46,291	39.1
1996.....	356,177	100.0	317,772	89.2	38,405	10.8	113,063	100.0	70,129	62.0	42,934	38.0
1997.....	365,358	100.0	326,458	89.4	38,900	10.6	112,257	100.0	70,447	62.8	41,810	37.2
1998.....	366,991	100.0	329,657	89.8	37,334	10.2	110,355	100.0	69,519	63.0	40,836	37.0
1999.....	361,395	100.0	323,713	89.6	37,682	10.4	105,006	100.0	67,634	64.4	37,372	35.6
2000.....	390,803	100.0	353,118	90.4	37,685	9.6	118,257	100.0	81,821	69.2	36,436	30.8
2001.....	409,557	100.0	367,954	89.8	41,603	10.2	128,764	100.0	87,187	67.7	41,577	32.3
2002.....	421,178	100.0	383,109	91.0	38,069	9.0	140,240	100.0	97,752	69.7	42,488	30.3
2003.....	421,791	100.0	384,612	91.2	37,179	8.8	147,940	100.0	103,223	69.8	44,717	30.2
2004.....	419,387	100.0	384,792	91.8	34,595	8.2	145,278	100.0	100,756	69.4	44,522	30.6
2005.....	409,326	100.0	375,112	91.6	34,214	8.4	139,755	100.0	97,676	69.9	42,079	30.1

SOURCE: Engineering Workforce Commission, Engineering & Technology Enrollments, Fall 2005, American Association of Engineering Societies (2006).

**S&E graduate enrollment, by field and sex: Selected years, 1985–2005**

Field/sex	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>Both sexes</b>														
S&E.....	404,021	421,497	434,478	471,212	504,304	499,640	487,208	493,256	493,311	509,620	540,417	567,170	574,937	583,226
Engineering.....	96,018	103,983	104,065	113,535	116,872	107,201	101,148	101,691	104,112	109,493	119,668	127,377	123,566	120,473
Aerospace.....	2,538	3,015	3,524	4,120	3,940	3,343	3,083	3,349	3,407	3,451	3,685	4,048	4,089	4,170
Chemical.....	7,177	7,141	6,482	7,157	7,554	7,452	7,288	6,883	7,056	6,913	7,414	7,516	7,452	7,173
Civil.....	14,902	14,682	14,909	17,398	19,583	19,218	17,193	16,226	16,451	16,665	17,713	18,890	18,561	18,050
Electrical.....	28,203	31,399	33,257	35,111	35,290	30,861	30,787	31,822	33,611	36,100	39,948	41,763	38,995	37,444
Industrial.....	10,525	12,353	11,333	12,996	13,905	13,475	11,957	11,803	12,119	12,940	14,033	14,313	13,852	13,614
Materials.....	3,959	4,397	4,635	5,203	5,410	4,956	4,688	4,481	4,377	4,721	4,992	5,131	5,059	5,160
Mechanical.....	14,157	16,366	16,265	17,730	18,477	16,363	15,045	14,956	15,235	15,852	17,139	18,393	17,852	17,387
Other.....	14,557	14,630	13,660	13,820	12,713	11,533	11,107	12,171	11,856	12,851	14,744	17,323	17,706	17,475
Science.....	308,003	317,514	330,413	357,677	387,432	392,439	386,060	391,565	389,199	400,127	420,749	439,793	451,371	462,753
Natural sciences.....	197,318	203,637	210,734	225,574	244,098	249,363	246,849	254,854	255,406	263,978	279,369	292,453	299,574	305,495
Agricultural sciences.....	11,846	11,405	11,461	11,766	12,305	12,768	12,803	12,312	12,023	12,235	12,698	13,197	13,445	13,123
Biological sciences.....	45,709	46,317	48,449	51,365	55,950	58,344	56,705	56,959	56,282	57,639	61,088	64,701	66,548	68,449
Earth, atmospheric, and ocean sciences.....	15,414	14,357	13,630	14,466	15,721	15,716	14,548	14,083	13,941	13,841	14,240	14,620	15,131	14,827
Atmospheric sciences.....	964	952	912	968	1,112	1,072	1,092	913	963	924	1,036	1,150	1,086	1,146
Earth sciences.....	10,288	8,976	8,032	7,544	7,759	7,582	6,959	6,637	6,596	6,544	6,712	6,889	7,358	7,212
Oceanography.....	2,081	2,135	2,214	2,395	2,627	2,723	2,479	2,624	2,668	2,585	2,618	2,695	2,801	2,760
Other geosciences.....	2,081	2,294	2,472	3,559	4,223	4,339	4,018	3,909	3,714	3,788	3,874	3,886	3,886	3,709
Mathematics/computer sciences.....	47,332	50,559	51,729	54,633	56,213	51,962	52,710	58,735	63,000	68,847	73,432	73,161	69,947	68,256
Computer sciences.....	29,769	32,051	32,482	34,681	36,213	33,458	35,991	42,478	47,350	52,196	55,269	53,696	50,016	48,046
Mathematics/statistics.....	17,563	18,508	19,247	19,952	20,000	18,504	16,719	16,257	15,650	16,651	18,163	19,465	19,931	20,210
Medical/other life sciences.....	46,030	48,258	51,836	58,620	68,581	77,174	79,578	82,074	79,775	80,378	85,570	92,476	98,742	104,444
Medical sciences.....	13,276	14,256	14,914	16,702	19,224	20,659	20,895	23,479	22,815	24,012	26,841	29,440	29,807	31,410
Other life sciences.....	32,754	34,002	36,922	41,918	49,357	56,515	58,683	58,595	56,960	56,366	58,729	63,036	68,935	73,034
Physical sciences.....	30,987	32,741	33,629	34,724	35,328	33,399	31,105	30,691	30,385	31,038	32,341	34,298	35,761	36,396
Astronomy.....	671	719	789	829	880	912	778	832	888	916	990	1,080	1,119	1,191
Chemistry.....	18,305	18,827	18,828	19,407	20,131	19,570	18,774	18,416	18,105	18,366	19,045	20,049	20,776	21,122
Physics.....	11,672	12,807	13,657	14,081	13,841	12,425	11,147	10,869	10,841	11,248	11,701	12,555	13,298	13,472
Other physical sciences.....	339	388	355	407	476	492	406	574	551	508	605	614	568	611
Social/behavioral sciences.....	110,685	113,877	119,679	132,103	143,334	143,076	139,211	136,711	133,793	136,149	141,380	147,340	151,797	157,258
Psychology.....	40,721	42,612	45,528	51,343	54,557	53,641	53,126	51,727	50,466	50,467	51,165	52,211	54,218	57,412
Social sciences.....	69,964	71,265	74,151	80,760	88,777	89,435	86,085	84,984	83,327	85,682	90,215	95,129	97,579	99,846
Anthropology.....	5,631	5,835	6,128	6,731	7,361	7,693	7,560	7,633	7,626	7,491	7,481	7,789	7,826	7,706
Economics.....	14,698	14,201	14,415	15,071	15,629	15,011	13,140	12,576	12,827	13,569	14,196	14,634	14,513	13,923
History of science.....	272	294	304	337	369	401	443	557	532	571	663	737	994	965
Linguistics.....	3,055	3,282	3,286	3,425	3,321	3,194	3,068	2,799	2,674	2,744	2,875	3,028	2,941	3,187
Political science/public administration.....	26,621	27,429	29,194	31,707	35,076	34,298	32,083	31,372	31,131	31,805	34,934	36,880	39,270	41,106
Sociology.....	7,620	7,968	8,393	9,292	10,360	10,505	10,361	9,707	9,397	9,620	9,665	9,900	9,713	9,885
Other social sciences.....	12,067	12,256	12,431	14,197	16,661	18,333	19,430	20,340	19,140	19,882	20,401	22,161	22,322	23,074

**S&E graduate enrollment, by field and sex: Selected years, 1985–2005**

Field/sex	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>Male</b>														
S&E.....	258,216	267,941	268,725	284,897	294,476	279,305	264,497	262,675	262,109	271,157	287,061	298,694	296,847	295,547
Engineering.....	84,935	91,012	90,457	97,837	99,184	89,188	82,428	81,804	83,366	87,236	94,701	99,790	96,294	93,595
Aerospace.....	2,375	2,791	3,281	3,793	3,583	2,992	2,712	2,926	2,938	2,966	3,169	3,445	3,489	3,563
Chemical.....	6,170	5,979	5,445	5,897	6,050	5,885	5,568	5,150	5,181	5,084	5,419	5,416	5,346	5,094
Civil.....	12,755	12,579	12,474	14,296	15,725	14,986	13,029	12,069	12,174	12,162	12,808	13,492	13,120	12,655
Electrical.....	25,768	28,301	29,742	31,260	30,977	26,707	26,237	26,689	28,075	29,888	32,678	33,969	31,794	30,656
Industrial.....	8,743	10,085	9,180	10,594	11,260	10,652	9,301	9,144	9,406	10,132	10,957	11,047	10,622	10,327
Materials.....	3,352	3,659	3,820	4,208	4,373	3,882	3,571	3,397	3,336	3,548	3,741	3,800	3,738	3,812
Mechanical.....	13,146	15,070	14,867	16,219	16,703	14,686	13,266	13,168	13,403	13,908	15,056	16,039	15,396	14,977
Other.....	12,626	12,548	11,648	11,570	10,513	9,398	8,744	9,261	8,853	9,548	10,873	12,582	12,789	12,511
Science.....	173,281	176,929	178,268	187,060	195,292	190,117	182,069	180,871	178,743	183,921	192,360	198,904	200,553	201,952
Natural sciences.....	115,931	119,402	119,883	124,821	130,391	127,014	122,954	124,771	125,060	129,753	136,353	141,081	141,024	141,662
Agricultural sciences.....	8,769	8,367	8,224	8,098	8,058	8,169	7,497	7,263	6,935	6,892	7,045	7,171	7,187	6,921
Biological sciences.....	25,932	26,013	26,348	27,372	29,081	29,629	28,229	27,338	26,475	26,590	27,677	28,818	29,270	29,946
Earth, atmospheric, and ocean sciences.....	11,489	10,581	9,776	10,015	10,695	10,282	9,132	8,358	8,188	7,949	7,993	8,082	8,199	7,939
Atmospheric sciences.....	807	784	734	778	887	835	829	671	695	626	703	776	723	758
Earth sciences.....	7,806	6,819	6,078	5,546	5,665	5,299	4,663	4,237	4,141	4,061	4,099	4,125	4,299	4,169
Oceanography.....	1,471	1,497	1,484	1,543	1,611	1,616	1,424	1,402	1,401	1,330	1,309	1,303	1,292	1,279
Other geosciences.....	1,405	1,481	1,480	2,148	2,532	2,532	2,216	2,048	1,951	1,932	1,882	1,878	1,885	1,733
Mathematics/computer sciences.....	34,417	36,948	37,756	40,045	41,144	37,571	36,961	40,147	43,140	47,275	50,521	51,056	49,173	48,758
Computer sciences.....	22,208	24,036	24,494	26,391	27,782	25,325	26,110	29,933	33,270	36,894	39,244	38,880	36,739	35,985
Mathematics/statistics.....	12,209	12,912	13,262	13,654	13,362	12,246	10,851	10,214	9,870	10,381	11,277	12,176	12,434	12,773
Medical/other life sciences.....	10,846	11,869	11,955	13,135	15,291	17,049	18,878	19,889	19,052	19,345	20,842	22,434	22,734	23,428
Medical sciences.....	6,634	7,388	7,172	8,044	8,967	9,355	9,626	10,303	9,748	10,136	11,045	11,917	11,533	11,714
Other life sciences.....	4,212	4,481	4,783	5,091	6,324	7,694	9,252	9,586	9,304	9,209	9,797	10,517	11,201	11,714
Physical sciences.....	24,478	25,624	25,824	26,156	26,122	24,314	22,257	21,776	21,270	21,702	22,275	23,520	24,461	24,670
Astronomy.....	563	601	649	657	682	689	570	607	621	651	688	735	764	797
Chemistry.....	13,516	13,649	13,158	13,145	13,279	12,742	12,052	11,799	11,349	11,511	11,720	12,210	12,544	12,699
Physics.....	10,175	11,134	11,789	12,101	11,865	10,590	9,403	8,993	8,931	9,206	9,500	10,189	10,797	10,803
Other physical sciences.....	224	240	228	253	296	293	232	377	369	334	367	386	356	371
Social/behavioral sciences.....	57,350	57,527	58,385	62,239	64,901	63,103	59,115	56,100	53,683	54,168	56,007	57,823	59,529	60,290
Psychology.....	15,597	15,683	15,673	16,556	16,567	15,877	15,507	14,456	13,594	13,149	13,437	13,395	13,992	13,993
Social sciences.....	41,753	41,844	42,712	45,683	48,334	47,226	43,608	41,644	40,089	41,019	42,570	44,428	45,537	46,297
Anthropology.....	2,510	2,482	2,548	2,778	2,969	3,140	3,059	2,989	2,941	2,929	2,864	2,919	2,853	2,782
Economics.....	11,134	10,683	10,591	10,876	11,023	10,352	8,940	8,362	8,273	8,739	9,084	9,226	9,174	8,796
History of science.....	180	198	192	205	227	262	281	345	313	327	362	425	580	525
Linguistics.....	1,198	1,305	1,334	1,512	1,301	1,194	1,051	966	930	951	984	1,023	1,014	1,132
Political science/public administration.....	16,276	16,563	17,024	17,971	19,320	18,348	16,679	15,799	15,204	15,304	16,315	17,038	18,292	19,020
Sociology.....	3,583	3,616	3,828	4,191	4,280	4,168	3,968	3,498	3,354	3,388	3,444	3,493	3,372	3,540
Other social sciences.....	6,872	6,997	7,195	8,150	9,214	9,762	9,630	9,685	9,074	9,381	9,517	10,304	10,252	10,502

**S&E graduate enrollment, by field and sex: Selected years, 1985–2005**

Field/sex	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>Female</b>														
S&E.....	145,805	153,556	165,753	186,315	209,828	220,335	222,711	230,581	231,202	238,463	253,356	268,476	278,090	287,679
Engineering.....	11,083	12,971	13,608	15,698	17,688	18,013	18,720	19,887	20,746	22,257	24,967	27,587	27,272	26,878
Aerospace.....	163	224	243	327	357	351	371	423	469	485	516	603	600	607
Chemical.....	1,007	1,162	1,037	1,260	1,504	1,567	1,720	1,733	1,875	1,829	1,995	2,100	2,106	2,079
Civil.....	2,147	2,103	2,435	3,102	3,858	4,232	4,164	4,157	4,277	4,503	4,905	5,398	5,441	5,395
Electrical.....	2,435	3,098	3,515	3,851	4,313	4,154	4,550	5,133	5,536	6,212	7,270	7,794	7,201	6,788
Industrial.....	1,782	2,268	2,153	2,402	2,645	2,823	2,656	2,659	2,713	2,808	3,076	3,266	3,230	3,287
Materials.....	607	738	815	995	1,037	1,074	1,117	1,084	1,041	1,173	1,251	1,331	1,321	1,348
Mechanical.....	1,011	1,296	1,398	1,511	1,774	1,677	1,779	1,788	1,832	1,944	2,083	2,354	2,456	2,410
Other.....	1,931	2,082	2,012	2,250	2,200	2,135	2,363	2,910	3,003	3,303	3,871	4,741	4,917	4,964
Science.....	134,722	140,585	152,145	170,617	192,140	202,322	203,991	210,694	210,456	216,206	228,389	240,889	250,818	260,801
Natural sciences.....	81,387	84,235	90,851	100,753	113,707	122,349	123,895	130,083	130,346	134,225	143,016	151,372	158,550	163,833
Agricultural sciences.....	3,077	3,038	3,237	3,668	4,247	4,599	4,706	5,049	5,088	5,343	5,653	6,026	6,258	6,202
Biological sciences.....	19,777	20,304	22,101	23,993	26,869	28,715	28,476	29,621	29,807	31,049	33,411	35,883	37,278	38,503
Earth, atmospheric, and ocean sciences.....	3,925	3,776	3,854	4,451	5,026	5,434	5,416	5,725	5,753	5,892	6,247	6,538	6,932	6,888
Atmospheric sciences.....	157	168	178	190	225	237	263	242	268	298	333	374	363	388
Earth sciences.....	2,482	2,157	1,954	1,998	2,094	2,283	2,296	2,400	2,455	2,483	2,613	2,764	3,059	3,043
Oceanography.....	610	638	730	852	1,016	1,107	1,055	1,222	1,267	1,255	1,309	1,392	1,509	1,481
Other geosciences.....	676	813	992	1,411	1,691	1,807	1,802	1,861	1,763	1,856	1,992	2,008	2,001	1,976
Mathematics/computer sciences.....	12,915	13,611	13,973	14,588	15,069	14,391	15,749	18,588	19,860	21,572	22,911	22,105	20,774	19,498
Computer sciences.....	7,561	8,015	7,988	8,290	8,431	8,133	9,881	12,545	14,080	15,302	16,025	14,816	13,277	12,061
Mathematics/statistics.....	5,354	5,596	5,985	6,298	6,638	6,258	5,868	6,043	5,780	6,270	6,886	7,289	7,497	7,437
Medical/other life sciences.....	35,184	36,389	39,881	45,485	53,290	60,125	60,700	62,185	60,723	61,033	64,728	70,042	76,008	81,016
Medical sciences.....	6,642	6,868	7,742	8,658	10,257	11,304	11,269	13,176	13,067	13,876	15,796	17,523	18,274	19,696
Other life sciences.....	28,542	29,521	32,139	36,827	43,033	48,821	49,431	49,009	47,656	47,157	48,932	52,519	57,734	61,320
Physical sciences.....	6,509	7,117	7,805	8,568	9,206	9,085	8,848	8,915	9,115	9,336	10,066	10,778	11,300	11,726
Astronomy.....	108	118	140	172	198	223	208	225	267	265	302	345	355	394
Chemistry.....	4,789	5,178	5,670	6,262	6,852	6,828	6,722	6,617	6,756	6,855	7,325	7,839	8,232	8,423
Physics.....	1,497	1,673	1,868	1,980	1,976	1,835	1,744	1,876	1,910	2,042	2,201	2,366	2,501	2,669
Other physical sciences.....	115	148	127	154	180	199	174	197	182	174	238	228	212	240
Social/behavioral sciences.....	53,335	56,350	61,294	69,864	78,433	79,973	80,096	80,611	80,110	81,981	85,373	89,517	92,268	96,968
Psychology.....	25,124	26,929	29,855	34,787	37,990	37,764	37,619	37,271	36,872	37,318	37,728	38,816	40,226	43,419
Social sciences.....	28,211	29,421	31,439	35,077	40,443	42,209	42,477	43,340	43,238	44,663	47,645	50,701	52,042	53,549
Anthropology.....	3,121	3,353	3,580	3,953	4,392	4,553	4,501	4,644	4,685	4,562	4,617	4,870	4,973	4,924
Economics.....	3,564	3,518	3,824	4,195	4,606	4,659	4,200	4,214	4,554	4,830	5,112	5,408	5,339	5,127
History of science.....	92	96	112	132	142	139	162	212	219	244	301	312	414	440
Linguistics.....	1,857	1,977	1,952	1,913	2,020	2,000	2,017	1,833	1,744	1,793	1,891	2,005	1,927	2,055
Political science/public administration.....	10,345	10,866	12,170	13,736	15,756	15,950	15,404	15,573	15,927	16,501	18,619	19,842	20,978	22,086
Sociology.....	4,037	4,352	4,565	5,101	6,080	6,337	6,393	6,209	6,043	6,232	6,221	6,407	6,341	6,345
Other social sciences.....	5,195	5,259	5,236	6,047	7,447	8,571	9,800	10,655	10,066	10,501	10,884	11,857	12,070	12,572

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 2-21

## First-time full-time S&amp;E graduate students, by field: Selected years, 1985–2005

Field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
S&E .....	80,678	80,843	84,532	93,147	92,748	89,482	89,177	92,214	94,340	98,112	104,184	107,715	106,580	110,401
Engineering .....	18,277	19,440	19,831	22,542	20,349	18,076	18,848	20,513	22,191	23,306	24,607	24,429	22,025	22,373
Aerospace .....	722	920	982	1,125	963	650	735	727	775	767	712	845	834	804
Chemical .....	1,546	1,372	1,343	1,527	1,532	1,421	1,467	1,491	1,595	1,541	1,616	1,600	1,392	1,293
Civil .....	3,536	3,221	3,404	4,210	4,019	3,825	3,792	3,726	3,840	3,820	4,107	4,363	4,175	4,057
Electrical .....	4,892	5,462	5,768	6,231	5,484	5,002	5,548	6,369	7,195	7,882	8,221	7,834	6,633	6,987
Industrial .....	1,195	1,506	1,754	2,056	1,663	1,541	1,549	1,851	2,005	2,216	2,238	2,029	1,724	1,674
Materials .....	806	881	920	1,012	892	822	870	892	1,005	975	1,044	958	926	992
Mechanical .....	3,030	3,270	3,306	3,771	3,514	2,832	2,829	3,119	3,269	3,583	3,709	3,476	3,129	3,225
Other .....	2,550	2,808	2,354	2,610	2,282	1,983	2,058	2,338	2,507	2,522	2,960	3,324	3,212	3,341
Science .....	62,401	61,403	64,701	70,605	72,399	71,406	70,329	71,701	72,149	74,806	79,577	83,286	84,555	88,028
Natural sciences .....	40,397	39,954	41,671	44,725	45,309	46,055	45,825	48,677	49,626	51,215	54,124	55,791	56,676	58,262
Agricultural sciences .....	2,525	2,281	2,420	2,495	2,363	2,290	2,157	2,253	2,335	2,338	2,320	2,424	2,316	2,260
Biological sciences .....	9,713	9,621	9,882	10,570	11,017	11,356	11,053	10,959	10,955	11,608	12,127	12,719	12,796	12,896
Earth, atmospheric, and ocean sciences .....	3,218	2,566	2,636	2,908	2,985	2,801	2,681	2,746	2,649	2,794	3,085	3,104	2,926	2,777
Atmospheric sciences .....	286	256	211	224	214	198	224	203	222	205	213	268	228	228
Earth sciences .....	2,133	1,554	1,451	1,503	1,505	1,423	1,339	1,296	1,230	1,383	1,437	1,412	1,336	1,327
Oceanography .....	392	367	440	474	488	420	410	474	479	511	533	567	534	463
Other geosciences .....	407	389	534	707	778	760	708	773	718	695	902	857	828	759
Mathematics/computer sciences .....	8,678	9,006	9,716	9,920	8,786	8,361	8,320	9,948	11,850	12,763	12,955	12,319	12,035	12,454
Computer sciences .....	4,703	5,092	5,487	5,570	4,742	4,783	5,018	6,677	8,431	9,077	9,037	8,134	7,783	8,258
Mathematics/statistics .....	3,975	3,914	4,229	4,350	4,044	3,578	3,302	3,271	3,419	3,686	3,918	4,185	4,252	4,196
Medical/other life sciences .....	9,616	9,702	10,164	11,724	13,468	15,118	15,577	16,767	16,008	15,701	17,357	18,384	20,000	21,218
Medical sciences .....	3,435	3,635	3,838	4,024	4,419	4,743	4,531	5,037	5,127	5,361	5,780	6,034	6,546	6,704
Other life sciences .....	6,181	6,067	6,326	7,700	9,049	10,375	11,046	11,730	10,881	10,340	11,577	12,350	13,454	14,514
Physical sciences .....	6,647	6,778	6,853	7,108	6,690	6,129	6,037	6,004	5,829	6,011	6,280	6,841	6,603	6,657
Astronomy .....	155	171	160	153	153	147	125	171	183	193	194	225	210	190
Chemistry .....	3,882	3,764	3,861	4,088	3,842	3,708	3,758	3,672	3,482	3,651	3,746	3,983	3,862	3,904
Physics .....	2,550	2,772	2,784	2,820	2,642	2,188	2,074	2,074	2,101	2,102	2,231	2,543	2,442	2,458
Other physical sciences .....	60	71	48	47	53	86	80	87	63	65	109	90	89	105
Social/behavioral sciences .....	22,004	21,449	23,030	25,880	27,090	25,351	24,504	23,024	22,523	23,591	25,453	27,495	27,879	29,766
Psychology .....	7,597	7,859	8,516	9,457	9,686	9,241	8,800	8,305	7,545	7,691	8,420	8,858	9,478	10,377
Social sciences .....	14,407	13,590	14,514	16,423	17,404	16,110	15,704	14,719	14,978	15,900	17,033	18,637	18,401	19,389
Anthropology .....	986	988	1,055	1,271	1,309	1,247	1,196	1,193	1,157	1,119	1,177	1,279	1,187	1,257
Economics .....	3,337	2,988	3,128	3,516	3,407	3,097	2,835	2,837	2,963	3,058	3,418	3,457	3,209	3,233
History of science .....	53	65	67	69	69	70	79	91	78	72	97	107	107	138
Linguistics .....	685	648	655	675	611	594	579	422	454	495	466	588	570	633
Political science/public administration .....	5,130	4,639	5,213	6,121	6,567	5,916	5,264	4,837	5,142	5,562	6,241	6,950	7,348	7,810
Sociology .....	1,380	1,554	1,665	1,710	1,932	1,650	1,696	1,451	1,464	1,591	1,690	1,722	1,537	1,677
Other social sciences .....	2,836	2,708	2,731	3,061	3,509	3,536	4,055	3,888	3,720	4,003	3,944	4,534	4,443	4,641

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
S&E .....	404,021	421,497	434,478	471,212	504,304	499,640	487,208	493,256	493,311	509,620	540,417	567,170	574,937	583,226
Engineering .....	96,018	103,983	104,065	113,535	116,872	107,201	101,148	101,691	104,112	109,493	119,668	127,377	123,566	120,473
Aerospace .....	2,538	3,015	3,524	4,120	3,940	3,343	3,083	3,349	3,407	3,451	3,685	4,048	4,089	4,170
Chemical .....	7,177	7,141	6,482	7,157	7,554	7,452	7,288	6,883	7,056	6,913	7,414	7,516	7,452	7,173
Civil .....	14,902	14,682	14,909	17,398	19,583	19,218	17,193	16,226	16,451	16,665	17,713	18,890	18,561	18,050
Electrical .....	28,203	31,399	33,257	35,111	35,290	30,861	30,787	31,822	33,611	36,100	39,948	41,763	38,995	37,444
Industrial .....	10,525	12,353	11,333	12,996	13,905	13,475	11,957	11,803	12,119	12,940	14,033	14,313	13,852	13,614
Materials .....	3,959	4,397	4,635	5,203	5,410	4,956	4,688	4,481	4,377	4,721	4,992	5,131	5,059	5,160
Mechanical .....	14,157	16,366	16,265	17,730	18,477	16,363	15,045	14,956	15,235	15,852	17,139	18,393	17,852	17,387
Other .....	14,557	14,630	13,660	13,820	12,713	11,533	11,107	12,171	11,856	12,851	14,744	17,323	17,706	17,475
Science .....	308,003	317,514	330,413	357,677	387,432	392,439	386,060	391,565	389,199	400,127	420,749	439,793	451,371	462,753
Natural sciences .....	197,318	203,637	210,734	225,574	244,098	249,363	246,849	254,854	255,406	263,978	279,369	292,453	299,574	305,495
Agricultural sciences .....	11,846	11,405	11,461	11,766	12,305	12,768	12,203	12,312	12,023	12,235	12,698	13,197	13,445	13,123
Biological sciences .....	45,709	46,317	48,449	51,365	55,950	58,344	56,705	56,959	56,282	57,639	61,088	64,701	66,548	68,449
Earth, atmospheric, and ocean sciences .....	15,414	14,357	13,630	14,466	15,721	15,716	14,548	14,083	13,941	13,841	14,240	14,620	15,131	14,827
Atmospheric sciences .....	964	952	912	968	1,112	1,072	1,092	913	963	924	1,036	1,150	1,086	1,146
Earth sciences .....	10,288	8,976	8,032	7,544	7,759	7,582	6,959	6,637	6,596	6,544	6,712	6,889	7,358	7,212
Oceanography .....	2,081	2,135	2,214	2,395	2,627	2,723	2,479	2,624	2,668	2,585	2,618	2,695	2,801	2,760
Other geosciences .....	2,081	2,294	2,472	3,559	4,223	4,339	4,018	3,909	3,714	3,788	3,874	3,886	3,886	3,709
Mathematics/computer sciences .....	47,332	50,559	51,729	54,633	56,213	51,962	52,710	58,735	63,000	68,847	73,432	73,161	69,947	68,256
Computer sciences .....	29,769	32,051	32,482	34,681	36,213	33,458	35,991	42,478	47,350	52,196	55,269	53,696	50,016	48,046
Mathematics/statistics .....	17,563	18,508	19,247	19,952	20,000	18,504	16,719	16,257	15,650	16,651	18,163	19,465	19,931	20,210
Medical/other life sciences .....	46,030	48,258	51,836	58,620	68,581	77,174	79,578	82,074	79,775	80,378	85,570	92,476	98,742	104,444
Medical sciences .....	13,276	14,256	14,914	16,702	19,224	20,659	20,895	23,479	22,815	24,012	26,841	29,440	29,807	31,410
Other life sciences .....	32,754	34,002	36,922	41,918	49,357	56,515	58,683	58,595	56,960	56,366	58,729	63,036	68,935	73,034
Physical sciences .....	30,987	32,741	33,629	34,724	35,328	33,399	31,105	30,691	30,385	31,038	32,341	34,298	35,761	36,396
Astronomy .....	671	719	789	829	880	912	778	832	888	916	990	1,080	1,119	1,191
Chemistry .....	18,305	18,827	18,828	19,407	20,131	19,570	18,774	18,416	18,105	18,366	19,045	20,049	20,776	21,122
Physics .....	11,672	12,807	13,657	14,081	13,841	12,425	11,147	10,869	10,841	11,248	11,701	12,555	13,298	13,472
Other physical sciences .....	339	388	355	407	476	492	406	574	551	508	605	614	568	611
Social/behavioral sciences .....	110,685	113,877	119,679	132,103	143,334	143,076	139,211	136,711	133,793	136,149	141,380	147,340	151,797	157,258
Psychology .....	40,721	42,612	45,528	51,343	54,557	53,641	53,126	51,727	50,466	50,467	51,165	52,211	54,218	57,412
Social sciences .....	69,964	71,265	74,151	80,760	88,777	89,435	86,085	84,984	83,327	85,682	90,215	95,129	97,579	99,846
Anthropology .....	5,631	5,835	6,128	6,731	7,361	7,693	7,560	7,633	7,626	7,491	7,481	7,789	7,826	7,706
Economics .....	14,698	14,201	14,415	15,071	15,629	15,011	13,140	12,576	12,827	13,569	14,196	14,634	14,513	13,923
History of science .....	272	294	304	337	369	401	443	557	532	571	663	737	994	965
Linguistics .....	3,055	3,282	3,286	3,425	3,321	3,194	3,068	2,799	2,674	2,744	2,875	3,028	2,941	3,187
Political science/public administration .....	26,621	27,429	29,194	31,707	35,076	34,298	32,083	31,372	31,131	31,805	34,934	36,880	39,270	41,106
Sociology .....	7,620	7,968	8,393	9,292	10,360	10,505	10,361	9,707	9,397	9,620	9,665	9,900	9,713	9,885
Other social sciences .....	12,067	12,256	12,431	14,197	16,661	18,333	19,430	20,340	19,140	19,882	20,401	22,161	22,322	23,074



**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
U.S. citizen/permanent resident														
S&E.....	324,081	329,350	332,503	358,025	393,985	396,755	383,327	377,802	364,954	368,840	387,532	412,282	424,147	436,530
Engineering.....	67,187	70,594	67,365	72,181	77,577	71,717	64,642	60,188	56,711	56,971	61,362	67,393	66,456	66,638
Aerospace.....	1,729	2,144	2,431	2,892	2,739	2,157	1,765	1,817	1,894	1,805	1,999	2,361	2,401	2,528
Chemical.....	4,747	4,643	3,681	3,956	4,369	4,483	4,424	3,869	3,726	3,418	3,701	3,753	3,768	3,690
Civil.....	9,515	9,095	9,074	10,854	13,299	13,559	12,090	10,801	10,306	10,072	10,553	11,458	11,436	11,417
Electrical.....	19,760	21,282	22,109	22,297	22,839	19,585	18,032	16,517	15,315	15,534	16,579	18,118	16,878	16,706
Industrial.....	8,578	9,734	8,392	9,190	10,428	10,123	8,616	8,073	7,574	7,607	8,318	8,845	8,783	9,065
Materials.....	2,590	2,704	2,687	3,027	3,237	3,029	2,721	2,438	2,265	2,385	2,482	2,546	2,501	2,518
Mechanical.....	9,370	10,855	10,450	11,056	12,199	10,905	9,351	8,760	8,097	8,183	8,604	9,643	9,766	9,744
Other.....	10,898	10,137	8,541	8,909	8,467	7,876	7,643	7,913	7,534	7,967	9,126	10,669	10,923	10,970
Science.....	256,894	258,756	265,138	285,844	316,408	325,038	318,685	317,614	308,243	311,869	326,170	344,889	357,691	369,892
Natural sciences.....	161,021	160,976	162,407	171,451	190,145	198,753	196,206	198,867	193,036	195,259	205,709	218,925	227,424	233,716
Agricultural sciences.....	9,096	8,401	8,422	8,466	9,083	9,567	9,414	9,774	9,612	9,722	10,085	10,601	10,750	10,474
Biological sciences.....	38,961	37,768	37,795	39,001	43,175	46,276	45,641	45,770	44,521	45,205	47,262	49,865	50,755	52,047
Earth, atmospheric, and ocean sciences.....	13,549	12,167	11,055	11,569	12,713	12,769	12,033	11,563	11,249	11,059	11,472	11,845	12,344	12,066
Atmospheric sciences.....	755	713	663	658	815	806	801	639	659	639	730	869	819	863
Earth sciences.....	9,263	7,763	6,628	6,010	6,088	6,039	5,666	5,413	5,294	5,189	5,333	5,456	5,906	5,785
Oceanography.....	1,736	1,731	1,651	1,785	2,037	2,102	1,972	2,108	2,142	2,071	2,152	2,206	2,304	2,270
Other geosciences.....	1,795	1,960	2,113	3,116	3,773	3,822	3,594	3,403	3,154	3,160	3,257	3,314	3,315	3,148
Mathematics/computer sciences.....	34,490	35,653	35,352	36,375	38,170	35,358	34,249	35,653	34,681	36,309	39,342	41,477	40,846	40,369
Computer sciences.....	22,272	23,274	22,788	23,057	24,304	22,663	23,074	25,323	25,088	26,142	28,203	29,420	28,286	27,555
Mathematics/statistics.....	12,218	12,379	12,564	13,318	13,866	12,695	11,175	10,330	9,593	10,167	11,139	12,057	12,560	12,814
Medical/other life sciences.....	42,880	44,874	47,927	54,041	63,928	72,793	74,659	76,548	74,243	74,129	78,297	84,924	91,523	96,980
Medical sciences.....	11,002	11,769	12,051	13,305	15,827	17,522	17,440	19,646	19,090	19,784	21,773	24,212	24,982	26,553
Other life sciences.....	31,878	33,105	35,876	40,736	48,101	55,271	57,219	56,902	55,153	54,345	56,524	60,712	66,541	70,427
Physical sciences.....	22,045	22,113	21,856	21,999	23,076	21,990	20,210	19,559	18,730	18,835	19,251	20,213	21,206	21,780
Astronomy.....	517	537	625	612	663	680	593	593	617	633	687	747	749	828
Chemistry.....	13,934	13,528	12,721	12,509	13,456	13,156	12,662	12,331	11,883	11,797	11,792	12,210	12,685	12,905
Physics.....	7,278	7,692	8,188	8,511	8,557	7,745	6,608	6,140	5,757	5,991	6,259	6,744	7,280	7,506
Other physical sciences.....	316	356	322	367	400	409	347	495	473	414	513	512	492	541
Social/behavioral sciences.....	95,873	97,780	102,731	114,393	126,263	126,285	122,479	118,747	115,207	116,610	120,461	125,964	130,267	136,176
Psychology.....	39,229	41,073	43,897	49,355	52,676	51,554	51,118	49,488	48,203	47,946	48,308	49,099	51,045	54,384
Social sciences.....	56,644	56,707	58,834	65,038	73,587	74,731	71,361	69,259	67,004	68,664	72,153	76,865	79,222	81,792
Anthropology.....	5,090	5,173	5,365	5,907	6,561	6,999	6,858	6,810	6,797	6,722	6,634	6,967	6,966	6,861
Economics.....	9,234	8,493	8,182	8,589	9,204	8,624	6,837	6,118	6,006	6,233	6,530	6,920	6,938	6,590
History of science.....	217	251	264	286	314	355	376	498	463	501	595	668	925	886
Linguistics.....	1,983	2,179	2,109	2,166	2,260	2,197	2,086	1,837	1,714	1,782	1,893	2,065	1,936	2,257
Political science/public administration.....	23,446	23,712	25,648	28,099	31,545	30,920	28,657	27,453	26,972	27,582	30,280	32,003	34,318	36,234
Sociology.....	6,044	6,267	6,589	7,570	8,809	9,209	9,107	8,449	8,065	8,228	8,275	8,485	8,356	8,494
Other social sciences.....	10,630	10,632	10,677	12,421	14,894	16,427	17,440	18,094	16,987	17,616	17,946	19,757	19,783	20,470



**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>White</b>														
S&E.....	259,332	266,111	269,670	288,765	309,131	304,438	286,607	275,325	261,112	260,380	270,034	283,276	288,866	292,510
Engineering.....	50,159	53,818	51,503	54,738	57,415	51,931	46,093	42,063	39,083	38,459	40,559	43,469	43,235	42,836
Aerospace.....	1,342	1,631	2,015	2,196	2,071	1,774	1,440	1,437	1,451	1,434	1,512	1,747	1,791	1,844
Chemical.....	3,883	3,844	3,107	3,157	3,407	3,429	3,365	2,805	2,627	2,417	2,565	2,554	2,666	2,561
Civil.....	7,327	7,066	7,337	8,684	10,415	10,434	9,208	8,088	7,759	7,492	7,707	8,333	8,270	8,139
Electrical.....	13,461	14,922	15,818	15,508	15,606	12,630	11,092	9,897	8,982	8,876	9,121	9,709	9,444	9,144
Industrial.....	7,055	8,021	6,731	7,275	7,681	7,262	6,391	5,761	5,329	5,255	5,668	5,680	5,484	5,632
Materials.....	2,108	2,276	2,226	2,533	2,575	2,402	2,019	1,935	1,751	1,839	1,882	1,909	1,815	1,859
Mechanical.....	7,159	7,984	7,633	8,416	9,029	8,059	6,979	6,491	6,005	5,932	6,254	6,883	6,998	6,898
Other.....	7,824	8,074	6,636	6,969	6,631	5,941	5,599	5,649	5,179	5,214	5,850	6,654	6,767	6,759
Science.....	209,173	212,293	218,167	234,027	251,716	252,507	240,514	233,262	222,029	221,921	229,475	239,807	245,631	249,674
Natural sciences.....	133,142	133,184	134,647	141,586	152,198	156,251	149,950	148,357	142,528	141,957	148,248	155,919	160,700	163,627
Agricultural sciences.....	8,062	7,627	7,460	7,628	7,977	8,233	7,990	8,383	8,152	8,147	8,486	8,799	8,936	8,662
Biological sciences.....	33,741	32,370	32,107	32,823	34,819	36,279	34,778	34,319	33,255	33,193	34,568	35,809	36,057	36,635
Earth, atmospheric, and ocean sciences.....	11,756	10,912	10,126	10,519	11,076	11,245	10,402	10,007	9,812	9,573	9,799	9,963	10,342	10,120
Atmospheric sciences.....	708	657	594	589	714	691	657	552	557	547	623	713	663	697
Earth sciences.....	7,912	7,081	6,109	5,492	5,365	5,388	4,989	4,796	4,720	4,603	4,639	4,691	5,111	5,010
Oceanography.....	1,507	1,431	1,473	1,556	1,711	1,825	1,699	1,815	1,872	1,769	1,845	1,871	1,933	1,896
Other geosciences.....	1,629	1,743	1,950	2,882	3,286	3,341	3,057	2,844	2,663	2,654	2,692	2,688	2,635	2,517
Mathematics/computer sciences.....	25,511	26,806	26,560	26,984	27,376	24,427	22,413	22,036	21,423	22,443	23,885	25,674	25,813	25,510
Computer sciences.....	15,724	17,156	16,496	16,527	16,804	14,773	14,062	14,377	14,468	15,057	15,962	17,260	16,954	16,595
Mathematics/statistics.....	9,787	9,650	10,064	10,457	10,572	9,654	8,351	7,659	6,955	7,386	7,923	8,414	8,859	8,915
Medical/other life sciences.....	35,744	37,370	40,065	45,218	52,359	58,581	58,600	58,575	55,543	54,353	56,890	60,567	63,827	66,373
Medical sciences.....	8,769	9,154	9,195	10,077	11,546	12,372	11,915	12,763	12,017	12,492	14,307	15,425	15,602	15,658
Other life sciences.....	26,975	28,216	30,870	35,141	40,813	46,209	46,685	45,812	43,526	41,861	42,583	45,142	48,225	50,715
Physical sciences.....	18,328	18,099	18,329	18,414	18,591	17,486	15,767	15,037	14,343	14,248	14,620	15,107	15,725	16,327
Astronomy.....	472	486	553	544	580	577	514	511	523	527	570	610	631	677
Chemistry.....	11,378	10,763	10,498	10,414	10,687	10,297	9,712	9,394	9,028	8,977	8,926	8,955	9,170	9,463
Physics.....	6,227	6,561	7,003	7,164	7,005	6,250	5,268	4,840	4,514	4,485	4,789	5,209	5,600	5,765
Other physical sciences.....	251	289	275	292	319	362	273	292	278	259	335	333	324	422
Social/behavioral sciences.....	76,031	79,109	83,520	92,441	99,518	96,256	90,564	84,905	79,501	79,964	81,227	83,888	84,931	86,047
Psychology.....	32,757	34,785	37,227	40,990	42,662	40,146	38,724	36,267	33,801	33,578	33,473	33,587	33,655	34,479
Social sciences.....	43,274	44,324	46,293	51,451	56,856	56,110	51,840	48,638	45,700	46,386	47,754	50,301	51,276	51,568
Anthropology.....	4,553	4,448	4,631	5,116	5,581	5,815	5,641	5,440	5,311	5,190	5,153	5,316	5,258	5,077
Economics.....	7,166	6,674	6,527	6,832	7,173	6,691	5,107	4,476	4,314	4,392	4,481	4,778	4,819	4,625
History of science.....	210	223	227	269	294	317	303	424	386	414	426	514	700	679
Linguistics.....	1,672	1,720	1,670	1,697	1,770	1,688	1,518	1,375	1,237	1,293	1,335	1,418	1,349	1,540
Political science/public administration.....	16,772	18,132	19,529	21,657	24,044	22,413	19,984	18,317	17,401	17,635	18,785	19,525	20,566	21,115
Sociology.....	4,796	4,833	5,233	5,944	6,552	6,673	6,446	5,796	5,445	5,590	5,549	5,602	5,535	5,560
Other social sciences.....	8,105	8,294	8,476	9,936	11,442	12,513	12,841	12,810	11,606	11,872	12,025	13,148	13,049	12,972

**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>Asian/Pacific Islander</b>														
S&E.....	12,954	15,669	17,109	20,060	26,853	29,361	30,371	32,717	30,250	32,035	35,021	38,290	38,080	38,737
Engineering.....	4,805	5,850	6,020	7,111	8,996	9,018	8,133	8,161	7,274	8,007	9,384	10,770	9,784	9,667
Aerospace.....	84	109	143	196	224	177	153	153	206	138	186	207	212	251
Chemical.....	277	349	244	399	461	458	512	486	501	494	566	557	468	508
Civil.....	436	582	597	837	1,167	1,322	1,050	931	744	771	855	1,024	997	1,006
Electrical.....	1,966	2,453	2,703	3,021	3,746	3,712	3,489	3,491	3,119	3,454	4,079	4,606	3,823	3,788
Industrial.....	326	442	455	596	883	855	739	784	628	686	878	1,023	949	1,046
Materials.....	219	241	276	260	336	311	295	240	246	244	298	316	346	315
Mechanical.....	794	883	824	985	1,307	1,225	947	1,008	804	945	912	1,035	1,015	987
Other.....	703	791	778	817	872	958	948	1,068	1,026	1,275	1,610	2,002	1,974	1,766
Science.....	8,149	9,819	11,089	12,949	17,857	20,343	22,238	24,556	22,976	24,028	25,637	27,520	28,296	29,070
Natural sciences.....	6,159	7,383	8,442	9,920	13,532	15,402	16,879	19,161	17,843	18,634	19,726	20,956	21,452	21,857
Agricultural sciences.....	139	172	228	227	282	282	309	310	250	262	286	316	329	300
Biological sciences.....	1,440	1,642	1,972	2,333	3,433	4,298	4,479	4,476	4,246	4,710	4,835	5,158	5,300	5,461
Earth, atmospheric, and ocean sciences.....	194	179	207	267	462	419	417	400	351	341	355	363	436	415
Atmospheric sciences.....	25	37	45	28	55	69	56	41	41	26	31	54	59	58
Earth sciences.....	110	68	95	136	217	151	166	144	132	139	149	126	149	136
Oceanography.....	27	44	31	37	66	83	60	67	64	51	64	48	69	65
Other geosciences.....	32	30	36	66	124	116	135	148	114	125	111	135	159	156
Mathematics/computer sciences.....	2,491	3,235	3,430	3,729	4,577	5,164	5,677	7,146	6,280	6,412	7,137	7,131	6,453	6,090
Computer sciences.....	1,868	2,466	2,727	2,863	3,557	4,043	4,626	6,144	5,332	5,427	5,953	5,767	5,118	4,671
Mathematics/statistics.....	623	769	703	866	1,020	1,121	1,051	1,002	948	985	1,184	1,364	1,335	1,419
Medical/other life sciences.....	958	1,108	1,430	1,935	2,805	3,459	4,359	5,147	5,192	5,451	5,689	6,369	7,199	7,885
Medical sciences.....	451	555	655	965	1,458	1,729	2,074	2,490	2,437	2,495	2,506	2,881	3,210	3,532
Other life sciences.....	507	553	775	970	1,347	1,730	2,285	2,657	2,755	2,956	3,183	3,488	3,989	4,353
Physical sciences.....	937	1,047	1,175	1,429	1,973	1,780	1,638	1,682	1,524	1,458	1,424	1,619	1,735	1,706
Astronomy.....	6	14	36	30	24	30	39	31	33	36	44	53	38	46
Chemistry.....	660	715	680	820	1,186	1,122	1,106	1,133	1,079	983	950	1,103	1,170	1,135
Physics.....	265	304	452	557	732	611	467	490	393	422	405	431	502	503
Other physical sciences.....	6	14	7	22	31	17	26	28	19	17	25	32	25	22
Social/behavioral sciences.....	1,990	2,436	2,647	3,029	4,325	4,941	5,359	5,395	5,133	5,394	5,911	6,564	6,844	7,213
Psychology.....	559	727	817	1,040	1,470	1,598	1,909	2,038	2,063	2,176	2,186	2,376	2,447	2,569
Social sciences.....	1,431	1,709	1,830	1,989	2,855	3,343	3,450	3,357	3,070	3,218	3,725	4,188	4,397	4,644
Anthropology.....	53	98	109	117	172	208	236	256	260	253	252	283	294	305
Economics.....	314	414	427	424	639	646	601	650	506	524	623	694	663	636
History of science.....	3	10	15	7	12	14	21	20	20	21	28	29	48	36
Linguistics.....	45	109	83	91	139	179	212	148	106	154	183	215	176	247
Political science/public administration.....	676	651	710	810	1,025	1,227	1,264	1,163	1,206	1,225	1,489	1,622	1,803	1,975
Sociology.....	155	191	212	220	343	434	420	406	367	374	387	456	402	410
Other social sciences.....	185	236	274	320	525	635	696	714	605	667	763	889	1,011	1,035

**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>Black</b>														
S&E.....	12,405	12,409	14,034	16,406	20,433	22,148	23,560	25,200	25,928	27,075	28,719	31,242	32,619	33,708
Engineering.....	1,387	1,416	1,616	2,025	2,561	2,857	2,879	2,965	2,977	2,915	3,074	3,212	3,399	3,470
Aerospace.....	24	25	27	44	56	51	35	52	57	45	51	59	68	73
Chemical.....	71	87	79	119	160	175	172	147	168	167	160	173	169	146
Civil.....	182	160	244	279	393	471	443	450	448	431	453	428	453	456
Electrical.....	455	422	564	669	864	821	874	886	830	812	846	812	850	843
Industrial.....	234	276	264	394	451	541	489	541	557	591	616	685	714	764
Materials.....	33	24	37	57	75	88	112	92	94	107	112	110	105	102
Mechanical.....	161	187	200	246	336	403	428	375	396	354	358	382	369	411
Other.....	227	235	201	217	226	307	326	422	427	408	478	563	671	675
Science.....	11,018	10,993	12,418	14,381	17,872	19,291	20,681	22,235	22,951	24,160	25,645	28,030	29,220	30,238
Natural sciences.....	4,966	5,009	5,663	6,633	8,233	8,998	9,724	10,650	10,849	11,695	12,584	14,100	14,976	15,511
Agricultural sciences.....	138	133	160	157	268	308	288	310	292	327	375	460	394	417
Biological sciences.....	1,181	1,053	1,203	1,296	1,701	1,871	2,105	2,218	2,241	2,351	2,479	2,757	2,893	2,980
Earth, atmospheric, and ocean sciences.....	127	93	95	140	223	215	203	213	220	227	266	270	261	262
Atmospheric sciences.....	7	2	7	6	13	18	12	7	18	19	25	32	36	30
Earth sciences.....	70	49	43	54	65	67	56	62	56	57	64	75	84	82
Oceanography.....	18	14	21	24	30	34	26	28	28	31	36	35	30	37
Other geosciences.....	32	28	24	56	115	96	109	116	118	120	141	128	111	113
Mathematics/computer sciences.....	1,031	1,210	1,311	1,617	1,877	1,844	1,957	2,079	2,084	2,299	2,524	2,606	2,498	2,482
Computer sciences.....	622	769	848	1,093	1,167	1,155	1,300	1,485	1,512	1,709	1,898	1,951	1,802	1,761
Mathematics/statistics.....	409	441	463	524	710	689	657	594	572	590	626	655	696	721
Medical/other life sciences.....	1,954	1,984	2,261	2,723	3,320	3,863	4,219	4,927	5,094	5,616	6,047	7,068	7,935	8,362
Medical sciences.....	509	558	568	818	1,034	1,179	1,239	1,728	1,780	1,829	1,955	2,402	2,444	2,652
Other life sciences.....	1,445	1,426	1,693	1,905	2,286	2,684	2,980	3,199	3,314	3,787	4,092	4,666	5,491	5,710
Physical sciences.....	535	536	633	700	844	897	952	903	918	875	893	939	995	1,008
Astronomy.....	6	6	6	11	12	11	11	9	9	12	10	9	10	10
Chemistry.....	381	374	440	477	594	624	667	633	650	631	636	663	713	694
Physics.....	121	136	173	189	211	248	245	234	235	211	220	236	248	272
Other physical sciences.....	27	20	14	23	27	14	29	27	24	21	27	31	24	32
Social/behavioral sciences.....	6,052	5,984	6,755	7,748	9,639	10,293	10,957	11,585	12,102	12,465	13,061	13,930	14,244	14,727
Psychology.....	1,790	1,794	2,061	2,455	3,284	3,359	3,644	3,749	4,214	4,347	4,491	4,692	5,001	5,251
Social sciences.....	4,262	4,190	4,694	5,293	6,355	6,934	7,313	7,836	7,888	8,118	8,570	9,238	9,243	9,476
Anthropology.....	95	101	116	132	176	215	254	291	270	274	248	276	272	277
Economics.....	392	379	359	365	482	468	389	375	397	390	405	441	434	384
History of science.....	2	5	3	5	4	8	8	14	14	16	24	25	30	42
Linguistics.....	119	142	151	145	63	51	45	49	44	47	44	49	47	64
Political science/public administration.....	2,143	2,133	2,500	2,831	3,258	3,552	3,699	4,097	4,073	4,264	4,632	4,849	4,968	5,000
Sociology.....	580	557	598	752	985	1,096	1,161	1,159	1,098	1,132	1,132	1,201	1,164	1,194
Other social sciences.....	931	873	967	1,063	1,387	1,544	1,757	1,851	1,992	1,995	2,085	2,397	2,328	2,515

**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Hispanic														
S&E.....	10,138	10,533	11,205	13,053	16,050	17,237	18,154	20,322	21,327	22,329	24,282	26,687	28,126	29,457
Engineering.....	1,481	1,730	1,707	2,124	2,696	2,808	2,812	2,924	3,018	3,183	3,461	3,979	4,164	4,090
Aerospace.....	33	37	49	54	70	65	71	80	80	71	92	119	118	116
Chemical.....	107	117	111	159	181	202	142	182	182	180	206	249	249	240
Civil.....	251	263	275	383	550	593	694	701	776	747	778	846	898	896
Electrical.....	443	521	558	661	842	785	810	769	717	825	941	1,094	1,097	1,090
Industrial.....	254	286	242	257	337	386	396	426	439	469	477	562	629	579
Materials.....	37	49	53	56	76	102	86	75	84	80	79	98	99	106
Mechanical.....	181	282	214	338	382	422	360	388	366	407	450	537	566	575
Other.....	175	175	205	216	258	253	253	303	374	404	438	474	508	488
Science.....	8,657	8,803	9,498	10,929	13,354	14,429	15,342	17,398	18,309	19,146	20,821	22,708	23,962	25,367
Natural sciences.....	4,367	4,598	5,003	5,540	6,853	7,399	7,899	9,016	9,269	9,787	10,579	12,046	12,908	13,210
Agricultural sciences.....	322	222	299	279	309	292	411	422	440	425	406	490	524	506
Biological sciences.....	933	1,030	1,196	1,369	1,647	1,822	1,987	2,185	2,183	2,338	2,585	2,830	2,998	3,146
Earth, atmospheric, and ocean sciences.....	238	227	208	250	370	365	399	400	355	397	413	484	537	507
Atmospheric sciences.....	11	10	8	24	15	10	12	7	12	15	16	21	27	36
Earth sciences.....	105	99	109	116	160	152	161	154	136	155	163	187	217	206
Oceanography.....	98	90	68	59	102	99	116	132	113	137	131	158	161	150
Other geosciences.....	24	28	23	51	93	104	110	107	94	90	103	118	132	115
Mathematics/computer sciences.....	750	817	847	980	1,110	1,064	1,150	1,312	1,323	1,376	1,546	1,705	1,768	1,835
Computer sciences.....	488	551	542	631	695	664	723	865	863	894	1,004	1,101	1,143	1,202
Mathematics/statistics.....	262	266	305	349	415	400	427	447	460	482	542	604	625	633
Medical/other life sciences.....	1,525	1,711	1,772	2,013	2,670	3,125	3,170	3,802	4,124	4,355	4,648	5,443	5,849	5,976
Medical sciences.....	450	539	617	769	1,051	1,125	1,055	1,493	1,533	1,734	1,669	1,874	2,009	1,964
Other life sciences.....	1,075	1,172	1,155	1,244	1,619	2,000	2,115	2,309	2,591	2,621	2,979	3,569	3,840	4,012
Physical sciences.....	599	591	681	649	747	731	782	895	844	896	981	1,094	1,232	1,240
Astronomy.....	7	8	13	11	13	16	11	13	17	17	17	25	23	27
Chemistry.....	438	419	464	398	472	485	523	618	602	629	668	750	837	821
Physics.....	151	159	195	233	252	219	237	229	202	239	274	297	343	358
Other physical sciences.....	3	5	9	7	10	11	11	35	23	11	22	22	29	34
Social/behavioral sciences.....	4,290	4,205	4,495	5,389	6,501	7,030	7,443	8,382	9,040	9,359	10,242	10,662	11,054	12,157
Psychology.....	1,611	1,665	1,751	2,365	2,562	2,799	3,075	3,567	4,145	4,309	4,655	4,680	4,800	5,119
Social sciences.....	2,679	2,540	2,744	3,024	3,939	4,231	4,368	4,815	4,895	5,050	5,587	5,982	6,254	7,038
Anthropology.....	151	152	162	207	248	345	338	327	368	383	409	436	453	470
Economics.....	315	292	305	336	391	419	330	283	277	346	362	411	409	390
History of science.....	2	3	3	4	3	4	10	22	17	18	55	38	56	60
Linguistics.....	68	93	128	132	165	138	157	135	142	126	140	136	148	163
Political science/public administration.....	1,445	1,254	1,390	1,453	1,902	1,927	1,926	2,166	2,303	2,223	2,587	2,749	3,012	3,370
Sociology.....	231	249	276	353	485	531	625	674	634	636	686	709	693	718
Other social sciences.....	467	497	480	539	745	867	982	1,208	1,154	1,318	1,348	1,503	1,483	1,867

**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>American Indian/Alaska Native</b>														
S&E.....	871	943	1,068	1,365	1,605	1,856	1,969	1,994	2,021	2,136	2,239	2,399	2,368	2,651
Engineering.....	122	123	122	184	209	230	239	242	208	227	244	304	278	429
Aerospace.....	2	5	5	5	8	8	3	8	8	8	11	15	16	13
Chemical.....	8	26	10	22	14	21	18	16	20	13	21	19	27	24
Civil.....	16	9	22	34	43	42	58	56	39	43	58	65	51	52
Electrical.....	30	18	37	38	43	51	46	47	37	45	39	63	54	54
Industrial.....	11	24	15	39	36	24	23	39	41	43	34	52	48	51
Materials.....	6	2	5	3	4	8	11	10	5	8	11	8	6	5
Mechanical.....	25	23	13	21	30	44	35	33	27	32	32	42	24	28
Other.....	24	16	15	22	31	32	45	33	31	35	38	40	52	202
Science.....	749	820	946	1,181	1,396	1,626	1,730	1,752	1,813	1,909	1,995	2,095	2,090	2,222
Natural sciences.....	381	420	462	559	716	859	884	932	905	992	1,062	1,104	1,112	1,162
Agricultural sciences.....	22	29	26	31	37	62	62	69	56	58	76	77	82	76
Biological sciences.....	88	90	84	129	155	203	197	186	189	205	210	236	249	278
Earth, atmospheric, and ocean sciences.....	23	18	26	29	45	52	82	63	61	70	81	63	67	61
Atmospheric sciences.....	0	0	0	0	2	4	2	2	3	4	4	5	4	3
Earth sciences.....	17	16	19	20	27	27	38	26	27	32	36	26	33	29
Oceanography.....	2	1	0	3	3	8	17	12	10	12	11	8	11	11
Other geosciences.....	4	1	7	6	13	13	25	23	21	22	30	24	19	18
Mathematics/computer sciences.....	79	76	74	63	102	126	103	104	105	125	107	129	131	138
Computer sciences.....	57	28	40	43	70	56	60	74	80	87	83	104	92	100
Mathematics/statistics.....	22	48	34	20	32	70	43	30	25	38	24	25	39	38
Medical/other life sciences.....	134	161	208	245	296	340	370	441	419	453	505	520	505	527
Medical sciences.....	39	37	61	65	65	82	98	125	113	124	138	167	134	135
Other life sciences.....	95	124	147	180	231	258	272	316	306	329	367	353	371	392
Physical sciences.....	35	46	44	62	81	76	70	69	75	81	83	79	78	82
Astronomy.....	1	1	0	2	3	3	1	2	1	0	2	3	3	5
Chemistry.....	25	29	25	43	54	43	50	53	61	62	58	51	54	53
Physics.....	9	16	19	15	22	30	18	13	12	19	22	24	18	20
Other physical sciences.....	0	0	0	2	2	0	1	1	1	0	1	1	3	4
Social/behavioral sciences.....	368	400	484	622	680	767	846	820	908	917	933	991	978	1,060
Psychology.....	135	152	180	252	289	330	341	300	360	334	320	324	324	334
Social sciences.....	233	248	304	370	391	437	505	520	548	583	613	667	654	726
Anthropology.....	21	36	53	68	79	103	103	105	109	102	89	99	106	123
Economics.....	17	19	70	57	23	26	19	20	24	25	32	38	56	42
History of science.....	0	0	0	0	0	1	1	2	2	2	2	5	7	5
Linguistics.....	8	13	10	7	3	9	7	15	13	13	12	16	17	17
Political science/public administration.....	108	98	91	114	139	140	155	177	175	192	217	241	219	251
Sociology.....	34	38	37	55	62	58	86	75	75	82	82	83	71	68
Other social sciences.....	45	44	43	69	85	100	134	126	150	167	179	185	178	220

**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Other/unknown race/ethnicity														
S&E.....	28,381	23,685	19,417	18,376	19,913	21,715	22,666	22,244	24,316	24,885	27,237	30,388	34,088	39,467
Engineering.....	9,233	7,657	6,397	5,999	5,700	4,873	4,486	3,833	4,151	4,180	4,640	5,659	5,596	6,146
Aerospace.....	244	337	192	397	310	82	63	87	92	109	147	214	196	231
Chemical.....	401	220	130	100	146	198	215	233	228	147	183	201	189	211
Civil.....	1,303	1,015	599	637	731	697	637	575	540	588	702	762	767	868
Electrical.....	3,405	2,946	2,429	2,400	1,738	1,586	1,721	1,427	1,630	1,522	1,553	1,834	1,610	1,787
Industrial.....	698	685	685	629	1,040	1,055	578	522	580	563	645	843	959	993
Materials.....	187	112	90	118	171	118	198	86	85	107	100	105	130	131
Mechanical.....	1,050	1,496	1,566	1,050	1,115	752	602	465	499	513	598	764	794	845
Other.....	1,945	846	706	668	449	385	472	438	497	631	712	936	951	1,080
Science.....	19,148	16,028	13,020	12,377	14,213	16,842	18,180	18,411	20,165	20,705	22,597	24,729	28,492	33,321
Natural sciences.....	12,006	10,382	8,190	7,213	8,613	9,844	10,870	10,751	11,642	12,194	13,510	14,800	16,276	18,349
Agricultural sciences.....	413	218	249	144	210	390	354	280	422	503	456	459	485	513
Biological sciences.....	1,578	1,583	1,233	1,051	1,420	1,803	2,095	2,386	2,407	2,408	2,585	3,075	3,258	3,547
Earth, atmospheric, and ocean sciences.....	1,211	738	393	364	537	473	530	480	450	451	558	702	701	701
Atmospheric sciences.....	4	7	9	11	16	14	62	30	28	28	31	44	30	39
Earth sciences.....	1,049	450	253	192	254	254	256	231	223	203	282	351	312	322
Oceanography.....	84	151	58	106	125	53	54	54	55	71	65	86	100	111
Other geosciences.....	74	130	73	55	142	152	158	165	144	149	180	221	259	229
Mathematics/computer sciences.....	4,628	3,509	3,130	3,002	3,128	2,733	2,949	2,976	3,466	3,654	4,143	4,232	4,183	4,314
Computer sciences.....	3,513	2,304	2,135	1,900	2,011	1,972	2,303	2,378	2,833	2,968	3,303	3,237	3,177	3,226
Mathematics/statistics.....	1,115	1,205	995	1,102	1,117	761	646	598	633	686	840	995	1,006	1,088
Medical/other life sciences.....	2,565	2,540	2,191	1,907	2,478	3,425	3,941	3,656	3,871	3,901	4,518	4,957	6,208	7,857
Medical sciences.....	784	926	955	611	673	1,035	1,059	1,047	1,210	1,110	1,198	1,463	1,583	2,612
Other life sciences.....	1,781	1,614	1,236	1,296	1,805	2,390	2,882	2,609	2,661	2,791	3,320	3,494	4,625	5,245
Physical sciences.....	1,611	1,794	994	745	840	1,020	1,001	973	1,026	1,277	1,250	1,375	1,441	1,417
Astronomy.....	25	22	17	14	31	43	17	27	34	41	44	47	44	63
Chemistry.....	1,052	1,228	614	357	463	585	604	500	463	515	554	688	741	739
Physics.....	505	516	346	353	335	387	373	334	401	615	549	547	569	588
Other physical sciences.....	29	28	17	21	11	5	7	112	128	106	103	93	87	27
Social/behavioral sciences.....	7,142	5,646	4,830	5,164	5,600	6,998	7,310	7,660	8,523	8,511	9,087	9,929	12,216	14,972
Psychology.....	2,377	1,950	1,861	2,253	2,409	3,322	3,425	3,567	3,620	3,202	3,183	3,440	4,818	6,632
Social sciences.....	4,765	3,696	2,969	2,911	3,191	3,676	3,885	4,093	4,903	5,309	5,904	6,489	7,398	8,340
Anthropology.....	217	338	294	267	305	313	286	391	479	520	483	557	583	609
Economics.....	1,030	715	494	575	496	374	391	314	488	556	627	558	557	513
History of science.....	0	10	16	1	1	11	33	16	24	30	60	57	84	64
Linguistics.....	71	102	67	94	120	132	147	115	172	149	179	231	199	226
Political science/public administration.....	2,302	1,444	1,428	1,234	1,177	1,661	1,629	1,533	1,814	2,043	2,570	3,017	3,750	4,523
Sociology.....	248	399	233	246	382	417	369	339	446	414	439	434	491	544
Other social sciences.....	897	688	437	494	710	768	1,030	1,385	1,480	1,597	1,546	1,635	1,734	1,861

Appendix table 2-22

**S&E graduate enrollment, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, citizenship, and race/ethnicity	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>Temporary resident</b>														
S&E.....	79,940	92,147	101,975	113,187	110,319	102,885	103,881	115,454	128,357	140,780	152,885	154,888	150,790	146,696
Engineering.....	28,831	33,389	36,700	41,354	39,295	35,484	36,506	41,503	47,401	52,522	58,306	59,984	57,110	53,835
Aerospace.....	809	871	1,093	1,228	1,201	1,186	1,318	1,532	1,513	1,646	1,686	1,687	1,688	1,642
Chemical.....	2,430	2,498	2,801	3,201	3,185	2,969	2,864	3,014	3,330	3,495	3,713	3,763	3,684	3,483
Civil.....	5,387	5,587	5,835	6,544	6,284	5,659	5,103	5,425	6,145	6,593	7,160	7,432	7,125	6,633
Electrical.....	8,443	10,117	11,148	12,814	12,451	11,276	12,755	15,305	18,296	20,566	23,369	23,645	22,117	20,738
Industrial.....	1,947	2,619	2,941	3,806	3,477	3,352	3,341	3,730	4,545	5,333	5,715	5,468	5,069	4,549
Materials.....	1,369	1,693	1,948	2,176	2,173	1,927	1,967	2,043	2,112	2,336	2,510	2,585	2,558	2,642
Mechanical.....	4,787	5,511	5,815	6,674	6,278	5,458	5,694	6,196	7,138	7,669	8,535	8,750	8,086	7,643
Other.....	3,659	4,493	5,119	4,911	4,246	3,657	3,464	4,258	4,322	4,884	5,618	6,654	6,783	6,505
Science.....	51,109	58,758	65,275	71,833	71,024	67,401	67,375	73,951	80,956	88,258	94,579	94,904	93,680	92,861
Natural sciences.....	36,297	42,661	48,327	54,123	53,953	50,610	50,643	55,987	62,370	68,719	73,660	73,528	72,150	71,779
Agricultural sciences.....	2,750	3,004	3,039	3,300	3,222	3,201	2,789	2,538	2,411	2,513	2,613	2,596	2,695	2,649
Biological sciences.....	6,748	8,549	10,654	12,364	12,775	12,068	11,064	11,189	11,761	12,434	13,826	14,836	15,793	16,402
Earth, atmospheric, and ocean sciences.....	1,865	2,190	2,575	2,897	3,008	2,947	2,515	2,520	2,692	2,782	2,768	2,775	2,787	2,761
Atmospheric sciences.....	209	239	249	310	297	266	291	274	304	285	306	281	267	283
Earth sciences.....	1,025	1,213	1,404	1,534	1,671	1,543	1,293	1,224	1,302	1,355	1,379	1,433	1,452	1,427
Oceanography.....	345	404	563	610	590	621	507	516	526	514	466	489	497	490
Other geosciences.....	286	334	359	443	450	517	424	506	560	628	617	572	571	561
Mathematics/computer sciences.....	12,842	14,906	16,377	18,258	18,043	16,604	18,461	23,082	28,319	32,538	34,090	31,684	29,101	27,887
Computer sciences.....	7,497	8,777	9,694	11,624	11,909	10,795	12,917	17,155	22,262	26,054	27,066	24,276	21,730	20,491
Mathematics/statistics.....	5,345	6,129	6,683	6,634	6,134	5,809	5,544	5,927	6,057	6,484	7,024	7,408	7,371	7,396
Medical/other life sciences.....	3,150	3,384	3,909	4,579	4,653	4,381	4,919	5,526	5,532	6,249	7,273	7,552	7,219	7,464
Medical sciences.....	2,274	2,487	2,863	3,397	3,397	3,137	3,455	3,833	3,725	4,228	5,068	5,228	4,825	4,857
Other life sciences.....	876	897	1,046	1,182	1,256	1,244	1,464	1,693	1,807	2,021	2,205	2,324	2,394	2,607
Physical sciences.....	8,942	10,628	11,773	12,725	12,252	11,409	10,895	11,132	11,655	12,203	13,090	14,085	14,555	14,616
Astronomy.....	154	182	164	217	217	232	185	239	271	283	303	333	370	363
Chemistry.....	4,371	5,299	6,107	6,898	6,675	6,414	6,112	6,085	6,222	6,569	7,253	7,839	8,091	8,217
Physics.....	4,394	5,115	5,469	5,570	5,284	4,680	4,539	4,729	5,084	5,257	5,442	5,811	6,018	5,966
Other physical sciences.....	23	32	33	40	76	83	59	79	78	94	92	102	76	70
Social/behavioral sciences.....	14,812	16,097	16,948	17,710	17,071	16,791	16,732	17,964	18,586	19,539	20,919	21,376	21,530	21,082
Psychology.....	1,492	1,539	1,631	1,988	1,881	2,087	2,008	2,239	2,263	2,521	2,857	3,112	3,173	3,028
Social sciences.....	13,320	14,558	15,317	15,722	15,190	14,704	14,724	15,725	16,323	17,018	18,062	18,264	18,357	18,054
Anthropology.....	541	662	763	824	800	694	702	823	829	769	847	822	860	845
Economics.....	5,464	5,708	6,233	6,482	6,425	6,387	6,303	6,458	6,821	7,336	7,666	7,714	7,575	7,333
History of science.....	55	43	40	51	55	46	67	59	69	70	68	69	69	79
Linguistics.....	1,072	1,103	1,177	1,259	1,061	997	982	962	960	962	982	963	1,005	930
Political science/public administration.....	3,175	3,717	3,546	3,608	3,531	3,378	3,426	3,919	4,159	4,223	4,654	4,877	4,952	4,872
Sociology.....	1,576	1,701	1,804	1,722	1,551	1,296	1,254	1,258	1,332	1,392	1,390	1,415	1,357	1,391
Other social sciences.....	1,437	1,624	1,754	1,776	1,767	1,906	1,990	2,246	2,153	2,266	2,455	2,404	2,539	2,604

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.



Appendix table 2-23

**First-time full-time S&E graduate students, by field and citizenship: 2000–2005**

Field/citizenship	2000	2001	2002	2003	2004	2005
All S&E fields .....	94,340	98,112	104,184	107,715	106,580	110,401
Engineering .....	22,191	23,306	24,607	24,429	22,025	22,373
Science .....	72,149	74,806	79,577	83,286	84,555	88,028
Agricultural sciences .....	2,335	2,338	2,320	2,424	2,316	2,260
Biological sciences .....	10,955	11,608	12,127	12,719	12,796	12,896
Computer sciences .....	8,431	9,077	9,037	8,134	7,783	8,258
Earth, atmospheric, and ocean sciences .....	2,649	2,794	3,085	3,104	2,926	2,777
Mathematics/statistics .....	3,419	3,686	3,918	4,185	4,252	4,196
Medical/other life sciences .....	16,008	15,701	17,357	18,384	20,000	21,218
Physical sciences .....	5,829	6,011	6,280	6,841	6,603	6,657
Psychology .....	7,545	7,691	8,420	8,858	9,478	10,377
Social sciences .....	14,978	15,900	17,033	18,637	18,401	19,389
U.S. citizen/permanent resident						
All S&E fields .....	61,036	62,421	70,374	76,498	77,442	80,054
Engineering .....	8,618	8,689	10,773	12,279	11,198	10,922
Science .....	52,418	53,732	59,601	64,219	66,244	69,132
Agricultural sciences .....	1,916	1,845	1,856	1,971	1,870	1,828
Biological sciences .....	8,355	8,772	9,263	9,763	9,828	9,932
Computer sciences .....	2,414	2,621	3,534	3,891	3,651	3,664
Earth, atmospheric, and ocean sciences .....	2,082	2,210	2,550	2,573	2,469	2,288
Mathematics/statistics .....	1,849	2,030	2,311	2,527	2,637	2,571
Medical/other life sciences .....	14,720	14,189	15,721	16,829	18,476	19,585
Physical sciences .....	3,323	3,325	3,775	4,095	4,039	4,154
Psychology .....	7,060	7,167	7,902	8,285	8,960	9,838
Social sciences .....	10,699	11,573	12,689	14,285	14,314	15,272
Temporary resident						
All S&E fields .....	33,304	35,691	33,810	31,217	29,138	30,347
Engineering .....	13,573	14,617	13,834	12,150	10,827	11,451
Science .....	19,731	21,074	19,976	19,067	18,311	18,896
Agricultural sciences .....	419	493	464	453	446	432
Biological sciences .....	2,600	2,836	2,864	2,956	2,968	2,964
Computer sciences .....	6,017	6,456	5,503	4,243	4,132	4,594
Earth, atmospheric, and ocean sciences .....	567	584	535	531	457	489
Mathematics/statistics .....	1,570	1,656	1,607	1,658	1,615	1,625
Medical/other life sciences .....	1,288	1,512	1,636	1,555	1,524	1,633
Physical sciences .....	2,506	2,686	2,505	2,746	2,564	2,503
Psychology .....	485	524	518	573	518	539
Social sciences .....	4,279	4,327	4,344	4,352	4,087	4,117

NOTE: Data on first-time full-time enrollment by race/ethnicity and citizenship not collected before 1999.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.



Appendix table 2-24

## Foreign graduate student enrollment in U.S. universities, by field and selected place of origin: April 2006 and 2007

Place of origin	All fields	S&E	Agricultural sciences	Biological sciences	Computer sciences	Engineering	Mathematics	Physical sciences	Psychology	Social sciences	Non-S&E
<b>April 2006</b>											
All locations.....	246,004	131,455	1,397	12,430	21,971	50,113	7,376	16,862	3,194	18,112	114,549
India.....	55,099	38,862	224	2,779	10,841	20,160	758	2,540	245	1,315	16,237
China.....	44,999	30,862	272	4,063	3,733	10,727	2,959	6,100	221	2,787	14,137
South Korea.....	24,771	10,120	97	780	1,026	4,179	672	1,062	247	2,057	14,651
Taiwan.....	17,791	5,869	50	688	1,035	2,298	288	464	200	846	11,922
Turkey.....	5,919	3,407	12	208	332	1,210	178	404	83	980	2,512
Japan.....	7,316	2,674	64	212	168	335	93	247	302	1,253	4,642
Canada.....	8,452	2,105	57	318	87	340	84	284	404	531	6,347
Thailand.....	5,094	1,572	32	54	414	571	41	95	26	339	3,522
Germany.....	2,952	1,310	18	132	112	228	94	224	104	398	1,642
Iran.....	1,656	1,275	4	47	104	864	52	114	17	73	381
Russia.....	2,047	1,207	8	103	123	164	124	393	37	255	840
Colombia.....	2,304	1,195	47	191	58	416	76	168	26	213	1,109
Mexico.....	3,026	1,190	28	86	99	382	85	176	42	292	1,836
Romania.....	1,929	1,164	6	114	172	159	171	287	31	224	765
Nepal.....	2,008	1,119	52	64	232	356	48	211	9	147	889
France.....	2,335	1,021	9	86	61	421	60	131	19	234	1,314
Pakistan.....	1,729	1,015	3	21	274	429	35	107	4	142	714
Bangladesh.....	1,210	848	12	39	151	378	32	107	2	127	362
United Kingdom.....	2,108	825	12	92	49	111	63	165	71	262	1,283
Italy.....	1,472	782	7	54	54	209	52	133	23	250	690
Other locations.....	51,787	23,033	383	2,299	2,846	6,176	1,411	3,450	1,081	5,387	28,754
<b>April 2007</b>											
All locations.....	265,835	141,767	1,454	13,187	25,123	54,935	7,813	17,203	3,353	18,699	124,068
India.....	66,534	46,743	241	3,202	13,880	24,148	824	2,774	284	1,390	19,791
China.....	48,253	32,167	289	4,131	3,783	11,141	3,240	6,209	252	3,122	16,086
South Korea.....	25,725	10,068	88	796	1,011	4,083	638	1,063	263	2,126	15,657
Taiwan.....	19,013	6,084	49	754	949	2,412	334	501	220	865	12,929
Turkey.....	5,955	3,420	11	220	324	1,209	179	404	97	976	2,535
Japan.....	6,807	2,508	64	214	138	331	100	241	283	1,137	4,299
Canada.....	8,611	2,094	60	295	75	326	90	268	416	564	6,517
Iran.....	1,950	1,496	4	49	126	1,033	55	123	20	86	454
Thailand.....	5,014	1,438	30	60	378	503	44	97	23	303	3,576
Nepal.....	2,627	1,416	59	91	320	445	60	261	12	168	1,211
Germany.....	2,962	1,348	17	145	113	224	107	238	87	417	1,614
Mexico.....	3,148	1,325	32	99	102	419	97	193	46	337	1,823
Colombia.....	2,450	1,276	49	213	65	437	74	187	32	219	1,174
Russia.....	2,001	1,124	11	104	106	156	116	347	31	253	877
Romania.....	1,794	1,049	6	103	176	144	141	240	34	205	745
France.....	2,361	1,035	9	95	51	440	80	132	13	215	1,326
Pakistan.....	1,735	1,021	6	25	290	426	31	97	4	142	714
Bangladesh.....	1,189	838	10	40	145	396	29	95	5	118	351
Sri Lanka.....	1,074	830	17	91	74	147	73	366	14	48	244
United Kingdom.....	2,188	830	13	86	45	106	68	159	78	275	1,358
Other locations.....	54,444	23,657	389	2,374	2,972	6,409	1,433	3,208	1,139	5,733	30,787

NOTE: Physical sciences include earth, atmospheric, and ocean sciences.

SOURCE: Bureau of Citizenship and Immigration Services, Student and Exchange Visitor Information System database, special tabulations (2007).

## Earned associate's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Both sexes</b>													
All fields .....	459,087	440,816	440,375	486,297	519,098	544,094	546,031	543,876	552,046	553,735	595,223	605,403	640,910
S&E.....	26,486	23,130	19,733	19,352	23,420	24,228	25,771	33,651	38,063	42,200	51,782	49,420	45,686
Engineering.....	3,923	4,589	2,735	2,513	2,526	2,285	1,888	1,730	1,791	1,647	1,816	2,140	2,072
Aerospace.....	18	20	6	14	8	2	1	1	0	0	0	0	0
Chemical.....	21	37	34	24	43	16	7	13	18	28	7	305	2
Civil.....	114	84	99	102	102	80	110	58	53	45	62	48	41
Electrical.....	1,077	1,770	527	377	400	257	179	239	224	70	226	236	244
Industrial.....	50	53	43	30	94	103	81	67	132	80	71	30	79
Materials.....	11	32	27	28	19	8	5	11	14	10	12	12	13
Mechanical.....	80	100	128	142	96	104	58	77	67	65	69	70	64
Other.....	2,552	2,493	1,871	1,796	1,764	1,715	1,447	1,264	1,283	1,349	1,369	1,439	1,629
Science.....	22,563	18,541	16,998	16,839	20,894	21,943	23,883	31,921	36,272	40,553	49,966	47,280	43,614
Natural sciences.....	18,001	13,647	12,558	12,752	15,062	15,866	17,202	24,454	28,717	32,443	41,569	38,248	34,040
Agricultural sciences.....	2,023	1,569	1,656	1,724	1,896	1,910	1,865	1,943	2,083	1,983	1,993	1,941	1,875
Biological sciences.....	1,233	995	999	1,142	1,499	1,901	2,181	1,468	1,519	1,519	1,783	1,749	1,985
Earth, atmospheric, and ocean sciences.....	63	40	28	28	168	186	191	174	181	58	186	40	182
Atmospheric sciences.....	1	0	0	0	89	107	95	92	103	0	135	2	139
Earth sciences.....	60	40	27	28	22	28	51	28	35	28	33	24	23
Oceanography.....	2	0	1	0	57	51	45	54	43	30	18	14	20
Mathematics/computer sciences.....	13,680	9,953	8,846	8,640	10,275	10,410	11,425	19,598	23,798	27,599	36,522	32,973	28,442
Computer sciences.....	12,890	9,286	8,192	7,970	9,532	9,627	10,632	18,928	23,106	26,916	35,789	32,176	27,641
Mathematics/statistics.....	790	667	654	670	743	783	793	670	692	683	733	797	801
Physical sciences.....	1,002	1,090	1,029	1,218	1,224	1,459	1,540	1,271	1,136	1,284	1,085	1,545	1,556
Astronomy.....	1	0	0	0	0	0	1	1	1	2	2	1	3
Chemistry.....	153	111	108	108	244	293	314	301	183	201	249	279	301
Physics.....	68	69	64	69	85	98	92	106	118	125	144	166	162
Other physical sciences.....	780	910	857	1,041	895	1,068	1,133	863	834	956	690	1,099	1,090
Social/behavioral sciences.....	4,562	4,894	4,440	4,087	5,832	6,077	6,681	7,467	7,555	8,110	8,397	9,032	9,574
Psychology.....	983	1,016	1,113	997	1,235	1,600	1,606	1,445	1,538	1,691	1,766	1,869	1,927
Social sciences.....	3,579	3,878	3,327	3,090	4,597	4,477	5,075	6,022	6,017	6,419	6,631	7,163	7,647
Anthropology.....	36	41	37	29	53	66	77	51	77	82	75	94	118
Area/ethnic studies.....	32	14	15	19	33	63	87	244	297	305	103	90	100
Economics.....	85	137	170	149	192	142	188	210	209	220	220	262	292
Linguistics.....	3	2	0	0	0	0	0	0	0	0	0	0	6
Political science/public administration.....	1,229	1,530	804	844	1,232	1,132	1,344	1,023	911	923	1,232	1,385	1,510
Sociology.....	356	226	257	238	276	364	504	365	370	415	452	551	497
Other social sciences.....	1,838	1,928	2,044	1,811	2,811	2,710	2,875	4,129	4,153	4,474	4,549	4,781	5,124
Non-S&E.....	432,601	417,686	420,642	466,945	495,678	519,866	520,260	510,225	513,983	511,535	543,441	555,983	595,224
Engineering technologies.....	53,667	49,815	48,342	45,106	40,946	39,190	35,221	35,544	35,413	31,557	34,007	29,681	28,769

## Earned associate's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Male</b>													
All fields .....	204,325	192,227	187,125	200,043	213,263	219,704	212,698	216,156	220,011	215,129	236,083	230,029	245,677
S&E.....	14,695	13,152	10,607	10,360	12,103	12,461	12,636	17,186	20,115	23,419	30,229	29,066	27,343
Engineering.....	3,501	4,092	2,408	2,233	2,196	1,978	1,617	1,492	1,494	1,376	1,527	1,665	1,784
Aerospace.....	14	18	6	14	8	2	1	1	0	0	0	0	0
Chemical .....	16	17	20	15	18	13	4	10	16	26	6	117	1
Civil .....	88	71	85	85	83	57	82	38	34	28	48	32	30
Electrical.....	1,011	1,613	468	351	368	238	160	215	200	58	189	211	229
Industrial.....	43	49	40	26	81	87	75	52	115	74	61	24	74
Materials .....	11	27	26	25	17	6	4	10	11	9	8	10	11
Mechanical .....	75	91	119	130	87	98	54	69	60	56	62	66	62
Other .....	2,243	2,206	1,644	1,587	1,534	1,477	1,237	1,097	1,058	1,125	1,153	1,205	1,377
Science.....	11,194	9,060	8,199	8,127	9,907	10,483	11,019	15,694	18,621	22,043	28,702	27,401	25,559
Natural sciences.....	9,588	7,410	6,528	6,716	7,809	8,412	9,008	13,503	16,496	19,765	26,197	24,895	22,837
Agricultural sciences.....	1,201	1,002	965	1,119	1,280	1,300	1,196	1,159	1,302	1,225	1,228	1,236	1,234
Biological sciences .....	554	422	423	457	613	757	789	494	497	484	579	607	674
Earth, atmospheric, and ocean sciences .....	47	26	20	23	130	148	126	116	123	37	123	21	117
Atmospheric sciences.....	1	0	0	0	77	91	74	71	77	0	93	1	93
Earth sciences.....	44	26	19	23	17	21	30	12	25	17	15	12	11
Oceanography.....	2	0	1	0	36	36	22	33	21	20	15	8	13
Mathematics/computer sciences .....	7,128	5,297	4,563	4,438	5,123	5,434	6,164	11,134	13,990	17,345	23,691	22,155	19,880
Computer sciences.....	6,639	4,878	4,148	4,032	4,695	4,996	5,720	10,727	13,541	16,902	23,226	21,654	19,354
Mathematics/statistics.....	489	419	415	406	428	438	444	407	449	443	465	501	526
Physical sciences .....	658	663	557	679	663	773	733	600	584	674	576	876	932
Astronomy.....	1	0	0	0	0	0	1	1	1	1	1	1	3
Chemistry.....	93	64	65	77	130	139	155	126	99	108	121	125	154
Physics.....	64	62	53	55	63	87	74	76	93	89	114	124	120
Other physical sciences.....	500	537	439	547	470	547	503	397	391	476	340	626	655
Social/behavioral sciences.....	1,606	1,650	1,671	1,411	2,098	2,071	2,011	2,191	2,125	2,278	2,505	2,506	2,722
Psychology .....	312	294	283	257	282	446	376	326	355	367	437	429	443
Social sciences.....	1,294	1,356	1,388	1,154	1,816	1,625	1,635	1,865	1,770	1,911	2,068	2,077	2,279
Anthropology .....	9	12	8	9	17	28	26	21	30	28	35	26	39
Area/ethnic studies.....	8	6	8	6	10	17	31	53	43	61	29	39	39
Economics.....	69	79	99	85	120	83	104	116	114	90	112	139	154
Linguistics.....	2	1	0	0	0	0	0	0	0	0	0	0	3
Political science/public administration .....	330	396	312	290	516	365	335	250	204	225	321	282	357
Sociology.....	129	69	82	76	78	100	151	89	104	111	125	130	121
Other social sciences.....	747	793	879	688	1,075	1,032	988	1,336	1,275	1,396	1,446	1,461	1,566
Non-S&E.....	189,630	179,075	176,518	189,683	201,160	207,243	200,062	198,970	199,896	191,710	205,854	200,963	218,334
Engineering technologies .....	47,946	44,158	42,766	39,777	36,129	34,196	29,990	30,079	29,747	26,537	28,331	25,141	24,265

## Earned associate's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Female</b>													
All fields .....	254,762	248,589	253,250	286,254	305,835	324,390	333,333	327,720	332,035	338,606	359,140	375,374	395,233
S&E.....	11,791	9,978	9,126	8,992	11,317	11,767	13,135	16,465	17,948	18,781	21,553	20,354	18,343
Engineering.....	422	497	327	280	330	307	271	238	297	271	289	475	288
Aerospace.....	4	2	0	0	0	0	0	0	0	0	0	0	0
Chemical .....	5	20	14	9	25	3	3	3	2	2	1	188	1
Civil .....	26	13	14	17	19	23	28	20	19	17	14	16	11
Electrical.....	66	157	59	26	32	19	19	24	24	12	37	25	15
Industrial.....	7	4	3	4	13	16	6	15	17	6	10	6	5
Materials .....	0	5	1	3	2	2	1	1	3	1	4	2	2
Mechanical .....	5	9	9	12	9	6	4	8	7	9	7	4	2
Other .....	309	287	227	209	230	238	210	167	225	224	216	234	252
Science.....	11,369	9,481	8,799	8,712	10,987	11,460	12,864	16,227	17,651	18,510	21,264	19,879	18,055
Natural sciences.....	8,413	6,237	6,030	6,036	7,253	7,454	8,194	10,951	12,221	12,678	15,372	13,353	11,203
Agricultural sciences.....	822	567	691	605	616	610	669	784	781	758	765	705	641
Biological sciences .....	679	573	576	685	886	1,144	1,392	974	1,022	1,035	1,204	1,142	1,311
Earth, atmospheric, and ocean sciences .....	16	14	8	5	38	38	65	58	58	21	63	19	65
Atmospheric sciences.....	0	0	0	0	12	16	21	21	26	0	42	1	46
Earth sciences.....	16	14	8	5	5	7	21	16	10	11	18	12	12
Oceanography .....	0	0	0	0	21	15	23	21	22	10	3	6	7
Mathematics/computer sciences .....	6,552	4,656	4,283	4,202	5,152	4,976	5,261	8,464	9,808	10,254	12,831	10,818	8,562
Computer sciences.....	6,251	4,408	4,044	3,938	4,837	4,631	4,912	8,201	9,565	10,014	12,563	10,522	8,287
Mathematics/statistics.....	301	248	239	264	315	345	349	263	243	240	268	296	275
Physical sciences .....	344	427	472	539	561	686	807	671	552	610	509	669	624
Astronomy.....	0	0	0	0	0	0	0	0	0	1	1	0	0
Chemistry.....	60	47	43	31	114	154	159	175	84	93	128	154	147
Physics.....	4	7	11	14	22	11	18	30	25	36	30	42	42
Other physical sciences.....	280	373	418	494	425	521	630	466	443	480	350	473	435
Social/behavioral sciences.....	2,956	3,244	2,769	2,676	3,734	4,006	4,670	5,276	5,430	5,832	5,892	6,526	6,852
Psychology .....	671	722	830	740	953	1,154	1,230	1,119	1,183	1,324	1,329	1,440	1,484
Social sciences.....	2,285	2,522	1,939	1,936	2,781	2,852	3,440	4,157	4,247	4,508	4,563	5,086	5,368
Anthropology .....	27	29	29	20	36	38	51	30	47	54	40	68	79
Area/ethnic studies.....	24	8	7	13	23	46	56	191	254	244	74	51	61
Economics.....	16	58	71	64	72	59	84	94	95	130	108	123	138
Linguistics.....	1	1	0	0	0	0	0	0	0	0	0	0	3
Political science/public administration .....	899	1,134	492	554	716	767	1,009	773	707	698	911	1,103	1,153
Sociology.....	227	157	175	162	198	264	353	276	266	304	327	421	376
Other social sciences.....	1,091	1,135	1,165	1,123	1,736	1,678	1,887	2,793	2,878	3,078	3,103	3,320	3,558
Non-S&E.....	242,971	238,611	244,124	277,262	294,518	312,623	320,198	311,255	314,087	319,825	337,587	355,020	376,890
Engineering technologies .....	5,721	5,657	5,576	5,329	4,817	4,994	5,231	5,465	5,666	5,020	5,676	4,540	4,504

NOTE: Engineering technologies focused more on applied skills than on fundamental science and mathematics.

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

## Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
All races/ethnicities and citizenships													
All fields .....	459,087	440,816	440,375	486,297	519,098	544,094	546,031	543,876	552,046	553,735	595,223	605,403	640,910
S&E.....	25,957	22,167	19,479	19,154	23,118	24,228	25,771	33,651	38,063	42,200	51,782	49,420	45,686
Engineering.....	3,923	4,588	2,732	2,510	2,525	2,285	1,888	1,730	1,791	1,647	1,816	2,140	2,072
Aerospace.....	NA	NA	NA	NA	NA	2	1	1	0	0	0	0	0
Chemical.....	NA	NA	NA	NA	NA	16	7	13	18	28	7	305	2
Civil.....	NA	NA	NA	NA	NA	80	110	58	53	45	62	48	41
Electrical.....	NA	NA	NA	NA	NA	257	179	239	224	70	226	236	244
Industrial.....	NA	NA	NA	NA	NA	103	81	67	132	80	71	30	79
Materials.....	NA	NA	NA	NA	NA	8	5	11	14	10	12	12	13
Mechanical.....	NA	NA	NA	NA	NA	104	58	77	67	65	69	70	64
Other.....	3,923	4,588	2,732	2,510	2,525	1,715	1,447	1,264	1,283	1,349	1,369	1,439	1,629
Science.....	22,034	17,579	16,747	16,644	20,593	21,943	23,883	31,921	36,272	40,553	49,966	47,280	43,614
Natural sciences.....	18,370	13,903	12,798	13,070	15,345	15,866	17,202	24,454	28,717	32,443	41,569	38,248	34,040
Agricultural sciences.....	2,393	1,824	1,893	2,039	2,227	1,910	1,865	1,943	2,083	1,983	1,993	1,941	1,875
Biological sciences.....	1,233	995	999	1,142	1,471	1,901	2,181	1,468	1,519	1,519	1,783	1,749	1,985
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	186	191	174	181	58	186	40	182
Atmospheric sciences.....	NA	NA	NA	NA	NA	107	95	92	103	0	135	2	139
Earth sciences.....	NA	NA	NA	NA	NA	28	51	28	35	28	33	24	23
Oceanography.....	NA	NA	NA	NA	NA	51	45	54	43	30	18	14	20
Mathematics/computer sciences.....	13,679	9,953	8,846	8,640	10,255	10,410	11,425	19,598	23,798	27,599	36,522	32,973	28,442
Computer sciences.....	12,890	9,286	8,192	7,970	9,512	9,627	10,632	18,928	23,106	26,916	35,789	32,176	27,641
Mathematics.....	789	667	654	670	743	783	793	670	692	683	733	797	801
Physical sciences.....	1,065	1,131	1,060	1,249	1,392	1,459	1,540	1,271	1,136	1,284	1,085	1,545	1,556
Astronomy.....	NA	NA	NA	NA	NA	0	1	1	1	2	2	1	3
Chemistry.....	NA	NA	NA	NA	NA	293	314	301	183	201	249	279	301
Physics.....	NA	NA	NA	NA	NA	98	92	106	118	125	144	166	162
Other physical sciences.....	1,065	1,131	1,060	1,249	1,392	1,068	1,133	863	834	956	690	1,099	1,090
Social/behavioral sciences.....	3,664	3,676	3,949	3,574	5,248	6,077	6,681	7,467	7,555	8,110	8,397	9,032	9,574
Psychology.....	983	1,016	1,113	997	1,237	1,600	1,606	1,445	1,538	1,691	1,766	1,869	1,927
Social sciences.....	2,681	2,660	2,836	2,577	4,011	4,477	5,075	6,022	6,017	6,419	6,631	7,163	7,647
Anthropology.....	NA	NA	NA	NA	NA	66	77	51	77	82	75	94	118
Area/ethnic studies.....	32	14	15	19	33	63	87	244	297	305	103	90	100
Economics.....	NA	NA	NA	NA	NA	142	188	210	209	220	220	262	292
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	6
Political science/public administration.....	NA	NA	NA	NA	NA	1,132	1,344	1,023	911	923	1,232	1,385	1,510
Sociology.....	NA	NA	NA	NA	NA	364	504	365	370	415	452	551	497
Other social sciences.....	2,649	2,646	2,821	2,558	3,978	2,710	2,875	4,129	4,153	4,474	4,549	4,781	5,124
Non-S&E.....	433,130	418,649	420,896	467,143	495,980	519,866	520,260	510,225	513,983	511,535	543,441	555,983	595,224
Engineering technologies.....	51,579	47,434	46,180	42,595	38,473	39,190	35,221	35,544	35,413	31,557	34,007	29,681	28,769
U.S. citizen/permanent resident													
All fields.....	452,661	436,331	434,406	479,320	510,074	534,183	535,432	533,982	540,911	541,689	582,148	591,222	627,194

## Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
S&E.....	25,341	21,759	19,018	18,786	22,481	23,524	25,012	32,827	36,980	40,825	50,243	47,859	44,368
Engineering.....	3,767	4,468	2,649	2,442	2,447	2,208	1,821	1,662	1,695	1,590	1,736	2,032	1,952
Aerospace.....	NA	NA	NA	NA	NA	2	1	1	0	0	0	0	0
Chemical.....	NA	NA	NA	NA	NA	16	7	11	17	26	7	302	2
Civil.....	NA	NA	NA	NA	NA	78	105	54	53	43	56	47	41
Electrical.....	NA	NA	NA	NA	NA	251	173	236	187	69	223	232	236
Industrial.....	NA	NA	NA	NA	NA	103	80	66	130	78	70	30	77
Materials.....	NA	NA	NA	NA	NA	8	5	11	14	10	12	12	13
Mechanical.....	NA	NA	NA	NA	NA	102	57	76	67	64	68	69	62
Other.....	3,767	4,468	2,649	2,442	2,447	1,648	1,393	1,207	1,227	1,300	1,300	1,340	1,521
Science.....	21,574	17,291	16,369	16,344	20,034	21,316	23,191	31,165	35,285	39,235	48,507	45,827	42,416
Natural sciences.....	17,983	13,645	12,496	12,826	14,923	15,393	16,705	23,849	27,911	31,296	40,305	37,022	33,053
Agricultural sciences.....	2,359	1,812	1,870	2,018	2,194	1,892	1,846	1,920	2,037	1,931	1,982	1,898	1,861
Biological sciences.....	1,213	960	964	1,120	1,433	1,824	2,103	1,441	1,484	1,489	1,734	1,692	1,927
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	184	189	173	177	57	186	38	182
Atmospheric sciences.....	NA	NA	NA	NA	NA	105	95	92	103	0	135	2	139
Earth sciences.....	NA	NA	NA	NA	NA	28	49	27	31	27	33	22	23
Oceanography.....	NA	NA	NA	NA	NA	51	45	54	43	30	18	14	20
Mathematics/computer sciences.....	13,366	9,776	8,641	8,469	9,971	10,111	11,119	19,099	23,110	26,579	35,376	31,934	27,643
Computer sciences.....	12,616	9,121	8,005	7,815	9,275	9,367	10,370	18,462	22,460	25,932	34,689	31,184	26,902
Mathematics.....	750	655	636	654	696	744	749	637	650	647	687	750	741
Physical sciences.....	1,045	1,097	1,021	1,219	1,325	1,382	1,448	1,216	1,103	1,240	1,027	1,460	1,440
Astronomy.....	NA	NA	NA	NA	NA	0	1	1	1	2	2	1	3
Chemistry.....	NA	NA	NA	NA	NA	247	253	269	174	196	236	266	282
Physics.....	NA	NA	NA	NA	NA	89	82	98	115	120	128	157	151
Other physical sciences.....	1,045	1,097	1,021	1,219	1,325	1,046	1,112	848	813	922	661	1,036	1,004
Social/behavioral sciences.....	3,591	3,646	3,873	3,518	5,111	5,923	6,486	7,316	7,374	7,939	8,202	8,805	9,363
Psychology.....	969	1,008	1,086	989	1,220	1,581	1,567	1,423	1,513	1,655	1,723	1,826	1,889
Social sciences.....	2,622	2,638	2,787	2,529	3,891	4,342	4,919	5,893	5,861	6,284	6,479	6,979	7,474
Anthropology.....	NA	NA	NA	NA	NA	58	66	48	75	81	75	92	117
Area/ethnic studies.....	32	14	15	19	31	49	82	228	276	290	97	87	98
Economics.....	NA	NA	NA	NA	NA	120	150	192	182	200	189	225	260
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	2
Political science/public administration.....	NA	NA	NA	NA	NA	1,115	1,317	1,011	897	912	1,222	1,362	1,497
Sociology.....	NA	NA	NA	NA	NA	353	494	361	360	409	446	530	478
Other social sciences.....	2,590	2,624	2,772	2,510	3,860	2,647	2,810	4,053	4,071	4,392	4,450	4,683	5,022
Non-S&E.....	427,320	414,572	415,388	460,534	487,593	510,659	510,420	501,155	503,931	500,864	531,905	543,363	582,826
Engineering technologies.....	50,899	46,859	45,647	42,069	38,093	38,764	34,761	35,215	34,742	31,136	33,572	29,202	28,422
White													
All fields.....	355,422	345,546	330,557	376,869	392,637	408,126	400,307	380,777	378,041	372,372	393,947	393,977	417,202
S&E.....	18,133	16,169	13,898	13,842	15,631	16,392	16,835	20,982	23,970	26,204	31,433	29,640	27,588
Engineering.....	2,260	3,235	1,986	1,867	1,886	1,658	1,363	1,126	1,202	1,171	1,250	1,370	1,342

## Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Aerospace .....	NA	NA	NA	NA	NA	0	1	1	0	0	0	0	0
Chemical .....	NA	NA	NA	NA	NA	14	5	11	17	22	6	175	2
Civil .....	NA	NA	NA	NA	NA	53	77	31	40	24	43	27	26
Electrical.....	NA	NA	NA	NA	NA	186	143	122	100	49	164	164	167
Industrial.....	NA	NA	NA	NA	NA	85	67	58	92	59	57	25	72
Materials .....	NA	NA	NA	NA	NA	8	5	8	12	8	11	12	13
Mechanical.....	NA	NA	NA	NA	NA	55	44	52	46	40	48	50	43
Other .....	2,260	3,235	1,986	1,867	1,886	1,257	1,021	843	895	969	921	917	1,019
Science.....	15,873	12,934	11,912	11,975	13,745	14,734	15,472	19,856	22,768	25,033	30,183	28,270	26,246
Natural sciences.....	13,803	10,438	9,275	9,628	10,504	10,960	11,693	15,797	18,508	20,495	25,674	23,483	21,186
Agricultural sciences.....	2,138	1,571	1,705	1,847	2,017	1,633	1,680	1,718	1,824	1,715	1,788	1,681	1,703
Biological sciences.....	676	590	685	759	977	1,197	1,310	930	979	1,013	1,132	1,083	1,222
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	156	160	150	156	54	146	34	143
Atmospheric sciences.....	NA	NA	NA	NA	NA	82	83	74	85	0	99	2	106
Earth sciences.....	NA	NA	NA	NA	NA	23	40	24	29	25	30	20	18
Oceanography.....	NA	NA	NA	NA	NA	51	37	52	42	29	17	12	19
Mathematics/computer sciences.....	10,255	7,360	6,044	6,054	6,515	6,950	7,544	12,200	14,796	16,827	21,922	19,765	17,182
Computer sciences.....	9,730	6,879	5,583	5,577	6,006	6,471	7,052	11,821	14,438	16,446	21,550	19,329	16,774
Mathematics.....	525	481	461	477	509	479	492	379	358	381	372	436	408
Physical sciences.....	734	917	841	968	995	1,024	999	799	753	886	686	920	936
Astronomy.....	NA	NA	NA	NA	NA	0	0	0	1	2	0	0	2
Chemistry.....	NA	NA	NA	NA	NA	153	153	144	98	133	128	153	155
Physics.....	NA	NA	NA	NA	NA	62	45	65	72	77	80	89	92
Other physical sciences.....	734	917	841	968	995	809	801	590	582	674	478	678	687
Social/behavioral sciences.....	2,070	2,496	2,637	2,347	3,241	3,774	3,779	4,059	4,260	4,538	4,509	4,787	5,060
Psychology.....	680	781	845	738	894	1,146	1,087	952	1,005	1,111	1,111	1,141	1,124
Social sciences.....	1,390	1,715	1,792	1,609	2,347	2,628	2,692	3,107	3,255	3,427	3,398	3,646	3,936
Anthropology.....	NA	NA	NA	NA	NA	45	44	31	51	62	43	61	74
Area/ethnic studies.....	3	3	3	7	5	14	10	59	208	211	15	15	17
Economics.....	NA	NA	NA	NA	NA	78	67	81	92	87	84	100	115
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	1
Political science/public administration.....	NA	NA	NA	NA	NA	544	593	367	352	337	541	643	722
Sociology.....	NA	NA	NA	NA	NA	223	287	202	187	209	219	234	198
Other social sciences.....	1,387	1,712	1,789	1,602	2,342	1,724	1,691	2,367	2,365	2,521	2,496	2,593	2,809
Non-S&E.....	337,289	329,377	316,659	363,027	377,006	391,734	383,472	359,795	354,071	346,168	362,514	364,337	389,614
Engineering technologies.....	40,934	37,383	33,584	33,792	28,442	29,646	26,522	25,643	24,999	21,971	23,383	20,541	20,787
Asian/Pacific Islander													
All fields.....	10,165	11,329	11,761	15,069	16,280	20,976	23,882	25,654	25,780	28,032	28,929	28,855	29,782
S&E.....	828	1,051	834	842	1,108	1,392	1,700	2,384	2,502	2,877	3,438	3,158	2,749
Engineering.....	184	369	194	146	136	152	148	160	130	97	112	135	136
Aerospace.....	NA	NA	NA	NA	NA	1	0	0	0	0	0	0	0
Chemical.....	NA	NA	NA	NA	NA	2	1	0	0	2	1	8	0

**Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Civil.....	NA	NA	NA	NA	NA	3	4	3	4	5	6	2	1
Electrical.....	NA	NA	NA	NA	NA	6	8	38	17	2	7	7	3
Industrial.....	NA	NA	NA	NA	NA	2	1	2	0	0	2	0	1
Materials.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Mechanical.....	NA	NA	NA	NA	NA	0	4	0	2	0	0	0	2
Other.....	184	369	194	146	136	138	130	117	107	88	96	118	129
Science.....	644	682	640	696	972	1,240	1,552	2,224	2,372	2,780	3,326	3,023	2,613
Natural sciences.....	597	576	521	608	756	935	1,196	1,745	1,941	2,303	2,828	2,460	1,996
Agricultural sciences.....	4	10	6	8	6	10	4	19	9	9	9	18	11
Biological sciences.....	31	59	52	126	146	190	264	109	94	91	142	148	204
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	5	4	1	0	0	5	0	2
Atmospheric sciences.....	NA	NA	NA	NA	NA	4	3	0	0	0	4	0	2
Earth sciences.....	NA	NA	NA	NA	NA	1	0	1	0	0	1	0	0
Oceanography.....	NA	NA	NA	NA	NA	0	1	0	0	0	0	0	0
Mathematics/computer sciences.....	511	464	401	388	528	606	748	1,471	1,757	2,117	2,567	2,104	1,604
Computer sciences.....	448	395	336	323	459	513	661	1,381	1,651	2,026	2,465	2,004	1,509
Mathematics.....	63	69	65	65	69	93	87	90	106	91	102	100	95
Physical sciences.....	51	43	62	86	76	124	176	145	81	86	105	190	175
Astronomy.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	1	0
Chemistry.....	NA	NA	NA	NA	NA	38	51	51	29	15	35	43	45
Physics.....	NA	NA	NA	NA	NA	15	16	15	9	18	17	26	21
Other physical sciences.....	51	43	62	86	76	71	109	79	43	53	53	120	109
Social/behavioral sciences.....	47	106	119	88	216	305	356	479	431	477	498	563	617
Psychology.....	8	19	14	24	33	57	63	51	53	50	74	75	72
Social sciences.....	39	87	105	64	183	248	293	428	378	427	424	488	545
Anthropology.....	NA	NA	NA	NA	NA	3	1	1	4	0	4	2	9
Area/ethnic studies.....	0	0	1	1	7	2	0	3	6	2	3	1	11
Economics.....	NA	NA	NA	NA	NA	13	35	41	32	36	28	24	46
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	1
Political science/public administration.....	NA	NA	NA	NA	NA	64	65	89	71	68	51	97	93
Sociology.....	NA	NA	NA	NA	NA	11	28	24	12	12	17	26	31
Other social sciences.....	39	87	104	63	176	155	164	270	253	309	321	338	354
Non-S&E.....	9,337	10,278	10,927	14,227	15,172	19,584	22,182	23,270	23,278	25,155	25,491	25,697	27,033
Engineering technologies.....	1,570	1,989	1,663	1,496	1,358	1,458	1,586	1,752	1,725	1,711	1,905	1,314	1,083
Black													
All fields.....	35,861	33,858	32,185	37,854	41,260	45,923	51,588	55,154	57,851	58,454	66,047	66,741	72,566
S&E.....	1,653	1,766	1,460	1,631	1,963	2,307	2,577	3,856	4,351	4,859	6,457	5,856	5,379
Engineering.....	148	249	120	126	201	148	131	123	104	118	117	150	162
Aerospace.....	NA	NA	NA	NA	NA	1	0	0	0	0	0	0	0
Chemical.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	14	0
Civil.....	NA	NA	NA	NA	NA	5	12	5	3	3	2	6	7
Electrical.....	NA	NA	NA	NA	NA	38	19	21	17	17	21	24	27



**Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Industrial .....	NA	NA	NA	NA	NA	7	5	1	3	3	3	2	2
Materials .....	NA	NA	NA	NA	NA	0	0	0	0	1	1	0	0
Mechanical .....	NA	NA	NA	NA	NA	0	0	0	0	1	0	0	0
Other .....	148	249	120	126	201	97	95	96	81	93	90	104	126
Science.....	1,505	1,517	1,340	1,505	1,762	2,159	2,446	3,733	4,247	4,741	6,340	5,706	5,217
Natural sciences.....	1,098	1,159	953	1,070	1,182	1,364	1,475	2,734	3,304	3,746	5,229	4,543	4,003
Agricultural sciences .....	19	27	17	14	15	23	11	18	3	14	13	18	8
Biological sciences .....	93	100	63	57	93	147	140	137	127	121	145	135	147
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	10	9	13	9	1	17	0	17
Atmospheric sciences.....	NA	NA	NA	NA	NA	10	9	13	9	0	16	0	16
Earth sciences.....	NA	NA	NA	NA	NA	0	0	0	0	0	1	0	1
Oceanography.....	NA	NA	NA	NA	NA	0	0	0	0	1	0	0	0
Mathematics/computer sciences .....	938	961	828	921	1,004	1,091	1,219	2,481	3,085	3,533	4,991	4,317	3,753
Computer sciences.....	914	923	803	894	978	1,046	1,182	2,445	3,035	3,506	4,950	4,281	3,718
Mathematics .....	24	38	25	27	26	45	37	36	50	27	41	36	35
Physical sciences .....	48	71	45	78	70	93	96	85	80	77	63	73	78
Astronomy.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Chemistry.....	NA	NA	NA	NA	NA	22	17	17	12	9	15	15	22
Physics.....	NA	NA	NA	NA	NA	5	7	2	1	1	6	5	3
Other physical sciences.....	48	71	45	78	70	66	72	66	67	67	42	53	53
Social/behavioral sciences.....	407	358	387	435	580	795	971	999	943	995	1,111	1,163	1,214
Psychology .....	65	73	83	103	109	126	125	135	142	140	144	158	172
Social sciences.....	342	285	304	332	471	669	846	864	801	855	967	1,005	1,042
Anthropology.....	NA	NA	NA	NA	NA	3	4	3	1	1	1	0	6
Area/ethnic studies.....	1	3	5	6	10	9	19	16	7	13	24	17	23
Economics.....	NA	NA	NA	NA	NA	5	11	7	5	9	9	19	14
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Political science/public administration .....	NA	NA	NA	NA	NA	264	347	275	254	248	325	311	347
Sociology .....	NA	NA	NA	NA	NA	50	63	55	66	73	76	100	76
Other social sciences.....	341	282	299	326	461	338	402	508	468	511	532	558	576
Non-S&E.....	34,208	32,092	30,725	36,223	39,297	43,616	49,011	51,298	53,500	53,595	59,590	60,885	67,187
Engineering technologies .....	3,395	3,100	2,829	3,030	2,698	3,015	2,982	3,321	3,372	2,795	3,280	2,536	2,602
Hispanic													
All fields.....	22,783	22,804	23,475	29,019	33,015	38,499	42,784	50,488	54,333	55,900	59,942	63,669	68,205
S&E.....	1,380	1,635	1,453	1,463	2,152	2,498	2,773	3,868	4,131	4,531	5,539	5,374	5,205
Engineering.....	126	369	176	153	153	161	112	178	186	129	151	268	201
Aerospace .....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Chemical .....	NA	NA	NA	NA	NA	0	0	0	0	2	0	89	0
Civil .....	NA	NA	NA	NA	NA	7	6	5	2	6	2	5	2
Electrical.....	NA	NA	NA	NA	NA	8	2	48	48	0	9	30	27
Industrial .....	NA	NA	NA	NA	NA	6	1	7	33	11	7	3	0
Materials .....	NA	NA	NA	NA	NA	0	0	0	0	1	0	0	0

## Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Mechanical.....	NA	NA	NA	NA	NA	44	12	21	19	23	18	17	14
Other.....	126	369	176	153	153	96	91	97	84	86	115	124	158
Science.....	1,254	1,266	1,277	1,310	1,999	2,337	2,661	3,690	3,945	4,402	5,388	5,106	5,004
Natural sciences.....	924	901	845	909	1,386	1,558	1,636	2,497	2,696	3,045	3,895	3,534	3,274
Agricultural sciences.....	53	91	114	57	88	136	75	77	109	86	68	54	43
Biological sciences.....	135	153	88	130	160	208	276	183	220	188	216	207	227
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	10	8	1	1	1	1	2	5
Atmospheric sciences.....	NA	NA	NA	NA	NA	9	0	0	0	0	0	0	0
Earth sciences.....	NA	NA	NA	NA	NA	1	7	1	1	1	1	1	4
Oceanography.....	NA	NA	NA	NA	NA	0	1	0	0	0	0	1	1
Mathematics/computer sciences.....	676	620	609	677	1,086	1,134	1,175	2,130	2,253	2,672	3,515	3,138	2,862
Computer sciences.....	638	581	562	622	1,019	1,035	1,065	2,033	2,154	2,567	3,391	3,007	2,708
Mathematics.....	38	39	47	55	67	99	110	97	99	105	124	131	154
Physical sciences.....	60	37	34	45	52	70	102	106	113	98	95	133	137
Astronomy.....	NA	NA	NA	NA	NA	0	1	1	0	0	2	0	0
Chemistry.....	NA	NA	NA	NA	NA	20	23	42	27	24	40	37	48
Physics.....	NA	NA	NA	NA	NA	5	11	11	22	16	13	24	28
Other physical sciences.....	60	37	34	45	52	45	67	52	64	58	40	72	61
Social/behavioral sciences.....	330	365	432	401	613	779	1,025	1,193	1,249	1,357	1,493	1,572	1,730
Psychology.....	43	64	123	88	141	193	209	192	218	259	293	333	379
Social sciences.....	287	301	309	313	472	586	816	1,001	1,031	1,098	1,200	1,239	1,351
Anthropology.....	NA	NA	NA	NA	NA	4	12	8	10	13	16	17	13
Area/ethnic studies.....	1	2	0	0	2	8	23	17	7	15	24	12	20
Economics.....	NA	NA	NA	NA	NA	20	26	50	43	55	50	58	63
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Political science/public administration.....	NA	NA	NA	NA	NA	214	277	249	195	219	244	220	234
Sociology.....	NA	NA	NA	NA	NA	54	90	63	78	92	108	124	123
Other social sciences.....	286	299	309	313	470	286	388	614	698	704	758	808	898
Non-S&E.....	21,403	21,169	22,022	27,556	30,863	36,001	40,011	46,620	50,202	51,369	54,403	58,295	63,000
Engineering technologies.....	2,084	2,359	2,232	2,411	2,398	2,777	2,728	3,283	3,369	3,069	2,829	2,863	2,405
American Indian/Alaska Native													
All fields.....	2,953	3,049	3,102	3,772	4,213	5,352	5,520	5,697	5,758	5,965	6,515	6,886	7,059
S&E.....	163	195	182	257	315	419	455	525	501	577	679	709	686
Engineering.....	11	27	12	21	8	22	25	17	16	15	19	34	28
Aerospace.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Chemical.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	9	0
Civil.....	NA	NA	NA	NA	NA	1	3	2	1	1	1	4	2
Electrical.....	NA	NA	NA	NA	NA	1	1	0	0	0	0	0	5
Industrial.....	NA	NA	NA	NA	NA	1	1	0	0	0	2	0	1
Materials.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Mechanical.....	NA	NA	NA	NA	NA	0	0	0	1	0	0	0	0
Other.....	11	27	12	21	8	19	20	15	14	14	16	21	20

**Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Science.....	152	168	170	236	307	397	430	508	485	562	660	675	658
Natural sciences.....	101	98	111	157	189	241	243	312	317	331	437	426	373
Agricultural sciences.....	29	28	23	37	41	54	54	67	48	49	53	58	55
Biological sciences.....	8	17	19	22	25	40	46	37	32	41	27	45	44
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	1	1	0	0	0	2	0	0
Atmospheric sciences.....	NA	NA	NA	NA	NA	0	0	0	0	0	1	0	0
Earth sciences.....	NA	NA	NA	NA	NA	1	1	0	0	0	0	0	0
Oceanography.....	NA	NA	NA	NA	NA	0	0	0	0	0	1	0	0
Mathematics/computer sciences.....	56	49	67	91	116	124	122	195	220	224	339	299	250
Computer sciences.....	52	45	58	78	101	111	120	188	208	217	326	289	237
Mathematics.....	4	4	9	13	15	13	2	7	12	7	13	10	13
Physical sciences.....	8	4	2	7	7	22	20	13	17	17	16	24	24
Astronomy.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	1
Chemistry.....	NA	NA	NA	NA	NA	4	1	1	4	4	2	2	3
Physics.....	NA	NA	NA	NA	NA	0	1	0	2	0	3	0	2
Other physical sciences.....	8	4	2	7	7	18	18	12	11	13	11	22	18
Social/behavioral sciences.....	51	70	59	79	118	156	187	196	168	231	223	249	285
Psychology.....	11	16	13	16	18	35	38	38	34	32	31	36	56
Social sciences.....	40	54	46	63	100	121	149	158	134	199	192	213	229
Anthropology.....	NA	NA	NA	NA	NA	2	1	1	2	0	1	0	2
Area/ethnic studies.....	5	6	6	4	7	16	29	26	22	21	31	34	24
Economics.....	NA	NA	NA	NA	NA	1	1	2	1	3	2	1	1
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Political science/public administration.....	NA	NA	NA	NA	NA	13	17	16	4	8	21	32	29
Sociology.....	NA	NA	NA	NA	NA	7	9	1	4	4	6	5	17
Other social sciences.....	35	48	40	59	93	82	92	112	101	163	131	141	156
Non-S&E.....	2,790	2,854	2,920	3,515	3,898	4,933	5,065	5,172	5,257	5,388	5,836	6,177	6,373
Engineering technologies.....	267	219	257	232	210	286	236	273	253	239	314	341	278
Other/unknown race/ethnicity													
All fields.....	25,477	19,745	33,326	16,737	22,669	15,307	11,351	16,212	19,148	20,966	26,768	31,094	32,380
S&E.....	3,184	943	1,191	751	1,312	516	672	1,212	1,525	1,777	2,697	3,122	2,761
Engineering.....	1,038	219	161	129	63	67	42	58	57	60	87	75	83
Aerospace.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Chemical.....	NA	NA	NA	NA	NA	0	1	0	0	0	0	7	0
Civil.....	NA	NA	NA	NA	NA	9	3	8	3	4	2	3	3
Electrical.....	NA	NA	NA	NA	NA	12	0	7	5	1	22	7	7
Industrial.....	NA	NA	NA	NA	NA	4	2	0	0	5	1	0	0
Materials.....	NA	NA	NA	NA	NA	0	0	3	2	0	0	0	0
Mechanical.....	NA	NA	NA	NA	NA	1	0	1	1	0	0	2	4
Other.....	1,038	219	161	129	63	41	36	39	46	50	62	56	69
Science.....	2,146	724	1,030	622	1,249	449	630	1,154	1,468	1,717	2,610	3,047	2,678
Natural sciences.....	1,460	473	791	454	906	335	462	764	1,145	1,376	2,242	2,576	2,221

**Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Agricultural sciences .....	116	85	5	55	27	36	22	21	44	58	51	69	41
Biological sciences .....	270	41	57	26	32	42	67	45	32	35	72	74	83
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	2	7	8	11	1	15	2	15
Atmospheric sciences.....	NA	NA	NA	NA	NA	0	0	5	9	0	15	0	15
Earth sciences.....	NA	NA	NA	NA	NA	2	1	1	1	1	0	1	0
Oceanography.....	NA	NA	NA	NA	NA	0	6	2	1	0	0	1	0
Mathematics/computer sciences .....	930	322	692	338	722	206	311	622	999	1,206	2,042	2,311	1,992
Computer sciences.....	834	298	663	321	712	191	290	594	974	1,170	2,007	2,274	1,956
Mathematics .....	96	24	29	17	10	15	21	28	25	36	35	37	36
Physical sciences .....	144	25	37	35	125	49	55	68	59	76	62	120	90
Astronomy.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Chemistry.....	NA	NA	NA	NA	NA	10	8	14	4	11	16	16	9
Physics.....	NA	NA	NA	NA	NA	2	2	5	9	8	9	13	5
Other physical sciences.....	144	25	37	35	125	37	45	49	46	57	37	91	76
Social/behavioral sciences.....	686	251	239	168	343	114	168	390	323	341	368	471	457
Psychology .....	162	55	8	20	25	24	45	55	61	63	70	83	86
Social sciences.....	524	196	231	148	318	90	123	335	262	278	298	388	371
Anthropology.....	NA	NA	NA	NA	NA	1	4	4	7	5	10	12	13
Area/ethnic studies.....	22	0	0	1	0	0	1	107	26	28	0	8	3
Economics.....	NA	NA	NA	NA	NA	3	10	11	9	10	16	23	21
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Political science/public administration .....	NA	NA	NA	NA	NA	16	18	15	21	32	40	59	72
Sociology .....	NA	NA	NA	NA	NA	8	17	16	13	19	20	41	33
Other social sciences.....	502	196	231	147	318	62	73	182	186	184	212	245	229
Non-S&E.....	22,293	18,802	32,135	15,986	21,357	14,791	10,679	15,000	17,623	19,189	24,071	27,972	29,619
Engineering technologies .....	2,649	1,809	5,082	1,108	2,987	1,582	707	943	1,024	1,351	1,861	1,607	1,267
Temporary resident													
All fields.....	6,426	4,485	5,969	6,977	9,024	9,911	10,599	9,894	11,135	12,046	13,075	14,181	13,716
S&E.....	616	408	461	368	637	704	759	824	1,083	1,375	1,539	1,561	1,318
Engineering.....	156	120	83	68	78	77	67	68	96	57	80	108	120
Aerospace.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Chemical .....	NA	NA	NA	NA	NA	0	0	2	1	2	0	3	0
Civil .....	NA	NA	NA	NA	NA	2	5	4	0	2	6	1	0
Electrical.....	NA	NA	NA	NA	NA	6	6	3	37	1	3	4	8
Industrial.....	NA	NA	NA	NA	NA	0	1	1	2	2	1	0	2
Materials .....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Mechanical .....	NA	NA	NA	NA	NA	2	1	1	0	1	1	1	2
Other .....	156	120	83	68	78	67	54	57	56	49	69	99	108
Science.....	460	288	378	300	559	627	692	756	987	1,318	1,459	1,453	1,198
Natural sciences .....	387	258	302	244	422	473	497	605	806	1,147	1,264	1,226	987
Agricultural sciences.....	34	12	23	21	33	18	19	23	46	52	11	43	14
Biological sciences .....	20	35	35	22	38	77	78	27	35	30	49	57	58

**Earned associate's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	2	2	1	4	1	0	2	0
Atmospheric sciences.....	NA	NA	NA	NA	NA	2	0	0	0	0	0	0	0
Earth sciences.....	NA	NA	NA	NA	NA	0	2	1	4	1	0	2	0
Oceanography.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Mathematics/computer sciences .....	313	177	205	171	284	299	306	499	688	1,020	1,146	1,039	799
Computer sciences.....	274	165	187	155	237	260	262	466	646	984	1,100	992	739
Mathematics.....	39	12	18	16	47	39	44	33	42	36	46	47	60
Physical sciences .....	20	34	39	30	67	77	92	55	33	44	58	85	116
Astronomy.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Chemistry.....	NA	NA	NA	NA	NA	46	61	32	9	5	13	13	19
Physics.....	NA	NA	NA	NA	NA	9	10	8	3	5	16	9	11
Other physical sciences.....	20	34	39	30	67	22	21	15	21	34	29	63	86
Social/behavioral sciences.....	73	30	76	56	137	154	195	151	181	171	195	227	211
Psychology.....	14	8	27	8	17	19	39	22	25	36	43	43	38
Social sciences.....	59	22	49	48	120	135	156	129	156	135	152	184	173
Anthropology.....	NA	NA	NA	NA	NA	8	11	3	2	1	0	2	1
Area/ethnic studies.....	0	0	0	0	2	14	5	16	21	15	6	3	2
Economics.....	NA	NA	NA	NA	NA	22	38	18	27	20	31	37	32
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	4
Political science/public administration.....	NA	NA	NA	NA	NA	17	27	12	14	11	10	23	13
Sociology.....	NA	NA	NA	NA	NA	11	10	4	10	6	6	21	19
Other social sciences.....	59	22	49	48	118	63	65	76	82	82	99	98	102
Non-S&E.....	5,810	4,077	5,508	6,609	8,387	9,207	9,840	9,070	10,052	10,671	11,536	12,620	12,398
Engineering technologies.....	680	575	533	526	380	426	460	329	671	421	435	479	347

NA = not available

NOTES: Race/ethnicity data collected on broad fields of study only until 1994. Field taxonomies for data through 1994 do not exactly match field taxonomies used in tables by sex or race/ethnicity data after 1994. Primary difference between taxonomies: history included in social sciences before 1995 but in non-S&E from 1995 on. Racial/ethnic breakouts for U.S. citizens and permanent residents only; temporary resident includes all races/ethnicities. Engineering technologies focused more on applied skills than on fundamental science and mathematics.

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Science and Engineering Indicators 2008

## Earned bachelor's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Both sexes</b>													
All fields .....	990,877	1,003,532	1,030,171	1,107,997	1,179,278	1,174,436	1,186,589	1,253,121	1,257,648	1,305,730	1,359,843	1,407,009	1,437,200
S&E.....	332,273	331,526	322,821	337,675	366,035	378,148	388,482	398,622	400,206	415,611	441,087	455,848	466,003
Engineering.....	77,572	74,425	66,947	62,187	62,705	63,371	62,352	59,536	59,258	60,639	63,773	64,675	66,133
Aerospace.....	2,854	2,989	2,944	2,869	2,735	1,771	1,290	1,267	1,498	1,747	2,017	2,318	2,384
Chemical.....	8,941	6,114	4,187	3,728	4,899	6,391	6,977	6,219	6,088	5,946	5,545	5,185	4,889
Civil.....	9,730	8,746	8,015	8,083	9,788	11,329	12,010	9,596	8,949	8,891	9,367	9,399	9,797
Electrical.....	23,668	26,791	24,318	21,520	19,598	17,579	16,434	17,672	18,371	18,977	20,729	21,342	21,412
Industrial.....	4,009	4,313	4,121	3,820	3,584	3,519	3,997	3,937	3,818	3,976	3,939	3,807	3,938
Materials.....	1,276	1,152	1,114	1,166	1,216	1,046	1,063	972	930	933	950	865	906
Mechanical.....	17,200	15,723	15,217	14,263	14,708	15,141	13,806	13,109	13,160	13,377	14,044	14,368	14,908
Other.....	9,894	8,597	7,031	6,738	6,177	6,595	6,775	6,764	6,444	6,792	7,182	7,391	7,899
Science.....	254,701	257,101	255,874	275,488	303,330	314,777	326,130	339,086	340,948	354,972	377,314	391,173	399,870
Natural sciences.....	129,668	125,166	109,137	105,383	116,745	129,465	140,346	150,898	152,326	158,536	168,557	171,106	169,486
Agricultural sciences.....	11,907	9,524	8,582	8,432	11,632	14,580	17,361	18,244	17,467	17,360	17,693	17,041	17,111
Biological sciences.....	39,405	39,047	36,949	40,351	47,989	56,890	65,139	64,904	62,089	61,768	63,582	64,762	67,982
Earth, atmospheric, and ocean sciences.....	7,576	4,689	3,181	2,728	3,503	4,478	4,466	4,047	3,968	3,984	3,949	3,903	3,959
Atmospheric sciences.....	414	345	330	360	369	444	431	490	456	525	562	572	677
Earth sciences.....	7,001	4,189	2,707	2,214	2,901	3,820	3,830	3,359	3,334	3,234	3,252	3,170	3,146
Oceanography.....	161	155	144	154	233	214	205	198	178	225	135	161	136
Mathematics/computer sciences.....	54,510	56,442	46,277	40,194	39,433	38,620	38,116	49,123	54,639	61,408	69,211	71,160	65,404
Computer sciences.....	39,121	39,927	30,963	25,410	24,580	24,769	25,393	37,388	43,184	49,135	56,329	57,405	50,564
Mathematics/statistics.....	15,389	16,515	15,314	14,784	14,853	13,851	12,723	11,735	11,455	12,273	12,882	13,755	14,840
Physical sciences.....	16,270	15,464	14,148	13,678	14,188	14,897	15,264	14,580	14,163	14,016	14,122	14,240	15,030
Astronomy.....	119	130	164	151	167	169	140	160	240	276	271	292	331
Chemistry.....	10,701	9,830	8,822	8,461	9,109	10,016	10,926	10,390	9,822	9,448	9,332	9,305	9,937
Physics.....	4,111	4,324	4,347	4,245	4,080	3,836	3,393	3,362	3,457	3,651	3,922	4,156	4,210
Other physical sciences.....	1,339	1,180	815	821	832	876	805	668	644	641	597	487	552
Social/behavioral sciences.....	125,033	131,935	146,737	170,105	186,585	185,312	185,784	188,188	188,622	196,436	208,757	220,067	230,384
Psychology.....	40,237	43,195	48,954	58,893	67,251	72,601	74,734	74,654	74,168	77,323	79,115	82,510	85,936
Social sciences.....	84,796	88,740	97,783	111,212	119,334	112,711	111,050	113,534	114,454	119,113	129,642	137,557	144,448
Anthropology.....	2,684	2,802	3,135	4,212	5,203	5,806	6,759	7,057	6,898	7,198	7,542	7,629	7,739
Area/ethnic studies.....	2,872	3,313	3,950	4,625	5,073	5,176	5,257	5,617	5,561	5,844	5,745	6,242	6,611
Economics.....	23,073	24,402	25,301	25,302	22,973	19,083	17,701	19,400	20,377	21,827	23,871	24,933	25,164
History of science.....	0	0	0	0	9	29	31	92	101	103	103	140	117
Linguistics.....	490	477	447	572	553	564	577	727	757	861	920	1,047	1,053
Political science/public administration.....	32,378	33,876	38,246	44,257	47,936	41,978	37,807	36,439	36,651	38,573	43,735	47,353	51,417
Sociology.....	12,165	12,359	14,393	17,632	21,007	22,974	24,750	25,685	25,363	25,318	26,191	27,030	28,576
Other social sciences.....	11,134	11,511	12,311	14,612	16,580	17,101	18,168	18,517	18,746	19,389	21,535	23,183	23,771
Non-S&E.....	658,604	672,006	707,350	770,322	813,243	796,288	798,107	854,499	857,442	890,119	918,756	951,161	971,197
Engineering technologies.....	20,476	20,577	20,098	18,294	17,022	16,607	14,631	15,238	15,127	15,406	15,336	15,119	15,247

## Earned bachelor's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Male</b>													
All fields .....	486,660	485,003	487,566	508,952	537,536	531,146	525,282	536,158	536,023	553,957	575,977	596,192	608,262
S&E.....	203,402	199,981	189,338	189,328	200,315	202,217	201,471	197,669	197,623	204,408	218,698	225,909	230,806
Engineering.....	66,326	63,021	56,759	52,522	52,724	52,421	50,882	47,320	47,344	47,952	50,803	51,418	52,936
Aerospace.....	2,613	2,741	2,643	2,545	2,419	1,541	1,088	1,029	1,194	1,435	1,633	1,905	1,980
Chemical.....	6,848	4,574	3,017	2,564	3,335	4,367	4,701	4,016	4,033	3,823	3,532	3,352	3,113
Civil.....	8,388	7,550	6,841	6,803	8,009	9,031	9,441	7,263	6,908	6,667	7,118	7,120	7,448
Electrical.....	20,936	23,227	21,130	18,757	17,339	15,409	14,416	15,322	15,829	16,257	17,820	18,310	18,579
Industrial.....	2,842	2,929	2,860	2,723	2,547	2,493	2,918	2,630	2,594	2,635	2,627	2,542	2,669
Materials.....	990	854	853	912	956	799	804	704	667	648	674	595	624
Mechanical.....	15,399	13,996	13,537	12,673	13,076	13,441	12,171	11,325	11,421	11,594	12,183	12,416	12,955
Other.....	8,310	7,150	5,878	5,545	5,043	5,340	5,343	5,031	4,698	4,893	5,216	5,178	5,568
Science.....	137,076	136,960	132,579	136,806	147,591	149,796	150,589	150,349	150,279	156,456	167,895	174,491	177,870
Natural sciences.....	78,306	75,460	65,691	61,906	67,799	73,540	77,597	80,791	81,821	85,257	91,461	93,579	92,532
Agricultural sciences.....	7,737	6,129	5,557	5,292	7,294	8,943	10,094	9,780	8,976	8,726	8,734	8,327	8,380
Biological sciences.....	20,435	20,039	18,295	19,715	23,145	26,972	29,873	26,946	25,005	24,073	24,049	24,322	25,699
Earth, atmospheric, and ocean sciences.....	5,715	3,629	2,380	1,946	2,453	2,954	2,924	2,430	2,346	2,282	2,298	2,256	2,299
Atmospheric sciences.....	346	284	278	303	305	362	348	376	324	374	386	369	436
Earth sciences.....	5,244	3,218	1,995	1,530	1,978	2,456	2,445	1,950	1,934	1,788	1,846	1,812	1,795
Oceanography.....	125	127	107	113	170	136	131	104	88	120	66	75	68
Mathematics/computer sciences.....	32,985	34,871	29,682	25,700	25,483	25,066	25,324	33,045	37,242	42,142	48,142	50,436	47,544
Computer sciences.....	24,690	26,038	21,418	17,896	17,629	17,706	18,490	26,914	31,284	35,631	41,139	42,999	39,329
Mathematics/statistics.....	8,295	8,833	8,264	7,804	7,854	7,360	6,834	6,131	5,958	6,511	7,003	7,437	8,215
Physical sciences.....	11,434	10,792	9,777	9,253	9,424	9,605	9,382	8,590	8,252	8,034	8,238	8,238	8,610
Astronomy.....	89	107	127	112	120	117	94	106	145	160	161	169	188
Chemistry.....	6,807	6,156	5,391	5,046	5,365	5,783	6,043	5,483	5,047	4,719	4,650	4,550	4,791
Physics.....	3,550	3,629	3,705	3,575	3,403	3,161	2,741	2,638	2,701	2,825	3,082	3,248	3,307
Other physical sciences.....	988	900	554	520	536	544	504	363	359	330	345	271	324
Social/behavioral sciences.....	58,770	61,500	66,888	74,900	79,792	76,256	72,992	69,558	68,458	71,199	76,434	80,912	85,338
Psychology.....	12,815	13,399	14,291	16,155	18,029	19,638	19,491	17,540	16,701	17,397	17,616	18,302	19,103
Social sciences.....	45,955	48,101	52,597	58,745	61,763	56,618	53,501	52,018	51,757	53,802	58,818	62,610	66,235
Anthropology.....	1,021	1,003	1,155	1,486	1,863	2,117	2,446	2,315	2,192	2,272	2,313	2,349	2,360
Area/ethnic studies.....	1,101	1,251	1,613	1,858	1,967	2,082	2,001	2,045	1,904	2,036	2,055	2,162	2,345
Economics.....	15,400	16,335	17,224	17,725	16,161	13,235	12,253	13,016	13,453	14,438	15,775	16,652	17,023
History of science.....	0	0	0	0	4	14	14	40	45	40	49	67	53
Linguistics.....	140	140	134	179	159	153	184	229	245	249	294	330	324
Political science/public administration.....	18,799	19,365	21,622	24,648	26,701	23,010	19,953	18,092	18,014	18,830	21,269	23,065	25,092
Sociology.....	3,767	3,897	4,488	5,427	6,638	7,435	7,846	7,657	7,440	7,307	7,553	7,720	8,438
Other social sciences.....	5,727	6,110	6,361	7,422	8,270	8,572	8,804	8,624	8,464	8,630	9,510	10,265	10,600
Non-S&E.....	283,258	285,022	298,228	319,624	337,221	328,929	323,811	338,489	338,400	349,549	357,279	370,283	377,456
Engineering technologies.....	18,224	18,429	17,999	16,329	15,114	14,704	12,925	13,291	13,072	13,267	13,050	13,003	13,096

## Earned bachelor's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Female													
All fields .....	504,217	518,529	542,605	599,045	641,742	643,290	661,307	716,963	721,625	751,773	783,866	810,817	828,938
S&E.....	128,871	131,545	133,483	148,347	165,720	175,931	187,011	200,953	202,583	211,203	222,389	229,939	235,197
Engineering.....	11,246	11,404	10,188	9,665	9,981	10,950	11,470	12,216	11,914	12,687	12,970	13,257	13,197
Aerospace.....	241	248	301	324	316	230	202	238	304	312	384	413	404
Chemical .....	2,093	1,540	1,170	1,164	1,564	2,024	2,276	2,203	2,055	2,123	2,013	1,833	1,776
Civil .....	1,342	1,196	1,174	1,280	1,779	2,298	2,569	2,333	2,041	2,224	2,249	2,279	2,349
Electrical.....	2,732	3,564	3,188	2,763	2,259	2,170	2,018	2,350	2,542	2,720	2,909	3,032	2,833
Industrial.....	1,167	1,384	1,261	1,097	1,037	1,026	1,079	1,307	1,224	1,341	1,312	1,265	1,269
Materials .....	286	298	261	254	260	247	259	268	263	285	276	270	282
Mechanical .....	1,801	1,727	1,680	1,590	1,632	1,700	1,635	1,784	1,739	1,783	1,861	1,952	1,953
Other .....	1,584	1,447	1,153	1,193	1,134	1,255	1,432	1,733	1,746	1,899	1,966	2,213	2,331
Science.....	117,625	120,141	123,295	138,682	155,739	164,981	175,541	188,737	190,669	198,516	209,419	216,682	222,000
Natural sciences.....	51,362	49,706	43,446	43,477	48,946	55,925	62,749	70,107	70,505	73,279	77,096	77,527	76,954
Agricultural sciences.....	4,170	3,395	3,025	3,140	4,338	5,637	7,267	8,464	8,491	8,634	8,959	8,714	8,731
Biological sciences .....	18,970	19,008	18,654	20,636	24,844	29,918	35,266	37,958	37,084	37,695	39,533	40,440	42,283
Earth, atmospheric, and ocean sciences .....	1,861	1,060	801	782	1,050	1,524	1,542	1,617	1,622	1,702	1,651	1,647	1,660
Atmospheric sciences.....	68	61	52	57	64	82	83	114	132	151	176	203	241
Earth sciences.....	1,757	971	712	684	923	1,364	1,385	1,409	1,400	1,446	1,406	1,358	1,351
Oceanography .....	36	28	37	41	63	78	74	94	90	105	69	86	68
Mathematics/computer sciences .....	21,525	21,571	16,595	14,494	13,950	13,554	12,792	16,078	17,397	19,266	21,069	20,724	17,860
Computer sciences.....	14,431	13,889	9,545	7,514	6,951	7,063	6,903	10,474	11,900	13,504	15,190	14,406	11,235
Mathematics/statistics.....	7,094	7,682	7,050	6,980	6,999	6,491	5,889	5,604	5,497	5,762	5,879	6,318	6,625
Physical sciences .....	4,836	4,672	4,371	4,425	4,764	5,292	5,882	5,990	5,911	5,982	5,884	6,002	6,420
Astronomy.....	30	23	37	39	47	52	46	54	95	116	110	123	143
Chemistry.....	3,894	3,674	3,431	3,415	3,744	4,233	4,883	4,907	4,775	4,729	4,682	4,755	5,146
Physics.....	561	695	642	670	677	675	652	724	756	826	840	908	903
Other physical sciences.....	351	280	261	301	296	332	301	305	285	311	252	216	228
Social/behavioral sciences.....	66,263	70,435	79,849	95,205	106,793	109,056	112,792	118,630	120,164	125,237	132,323	139,155	145,046
Psychology .....	27,422	29,796	34,663	42,738	49,222	52,963	55,243	57,114	57,467	59,926	61,499	64,208	66,833
Social sciences.....	38,841	40,639	45,186	52,467	57,571	56,093	57,549	61,516	62,697	65,311	70,824	74,947	78,213
Anthropology .....	1,663	1,799	1,980	2,726	3,340	3,689	4,313	4,742	4,706	4,926	5,229	5,280	5,379
Area/ethnic studies.....	1,771	2,062	2,337	2,767	3,106	3,094	3,256	3,572	3,657	3,808	3,690	4,080	4,266
Economics.....	7,673	8,067	8,077	7,577	6,812	5,848	5,448	6,384	6,924	7,389	8,096	8,281	8,141
History of science.....	0	0	0	0	5	15	17	52	56	63	54	73	64
Linguistics.....	350	337	313	393	394	411	393	498	512	612	626	717	729
Political science/public administration .....	13,579	14,511	16,624	19,609	21,235	18,968	17,854	18,347	18,637	19,743	22,466	24,288	26,325
Sociology.....	8,398	8,462	9,905	12,205	14,369	15,539	16,904	18,028	17,923	18,011	18,638	19,310	20,138
Other social sciences.....	5,407	5,401	5,950	7,190	8,310	8,529	9,364	9,893	10,282	10,759	12,025	12,918	13,171
Non-S&E.....	375,346	386,984	409,122	450,698	476,022	467,359	474,296	516,010	519,042	540,570	561,477	580,878	593,741
Engineering technologies .....	2,252	2,148	2,099	1,965	1,908	1,903	1,706	1,947	2,055	2,139	2,286	2,116	2,151

NOTE: Engineering technologies focused more on applied skills than on fundamental science and mathematics.

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.



**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>All races/ethnicities and citizenships</b>													
All fields .....	990,877	1,003,532	1,030,171	1,107,997	1,179,278	1,174,436	1,186,589	1,253,121	1,257,648	1,305,730	1,359,843	1,407,009	1,437,200
S&E.....	342,970	343,070	337,431	356,785	388,435	378,148	388,482	398,622	400,206	415,611	441,087	455,848	466,003
Engineering.....	77,571	74,423	66,947	62,186	62,670	63,371	62,352	59,536	59,258	60,639	63,773	64,675	66,133
Aerospace.....	NA	NA	NA	NA	NA	1,771	1,290	1,267	1,498	1,747	2,017	2,318	2,384
Chemical.....	NA	NA	NA	NA	NA	6,391	6,977	6,219	6,088	5,946	5,545	5,185	4,889
Civil.....	NA	NA	NA	NA	NA	11,329	12,010	9,596	8,949	8,891	9,367	9,399	9,797
Electrical.....	NA	NA	NA	NA	NA	17,579	16,434	17,672	18,371	18,977	20,729	21,342	21,412
Industrial.....	NA	NA	NA	NA	NA	3,519	3,997	3,937	3,818	3,976	3,939	3,807	3,938
Materials.....	NA	NA	NA	NA	NA	1,046	1,063	972	930	933	950	865	906
Mechanical.....	NA	NA	NA	NA	NA	15,141	13,806	13,109	13,160	13,377	14,044	14,368	14,908
Other.....	77,571	74,423	66,947	62,186	62,670	6,595	6,775	6,764	6,444	6,792	7,182	7,391	7,899
Science.....	265,399	268,647	270,484	294,599	325,765	314,777	326,130	339,086	340,948	354,972	377,314	391,173	399,870
Natural sciences.....	130,058	125,371	109,350	105,595	116,742	129,465	140,346	150,898	152,326	158,536	168,557	171,106	169,486
Agricultural sciences.....	12,418	9,727	8,795	8,643	11,827	14,580	17,361	18,244	17,467	17,360	17,693	17,041	17,111
Biological sciences.....	39,405	39,047	36,949	40,351	47,877	56,890	65,139	64,904	62,089	61,768	63,582	64,762	67,982
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	4,478	4,466	4,047	3,968	3,984	3,949	3,903	3,959
Atmospheric sciences.....	NA	NA	NA	NA	NA	444	431	490	456	525	562	572	677
Earth sciences.....	NA	NA	NA	NA	NA	3,820	3,830	3,359	3,334	3,234	3,252	3,170	3,146
Oceanography.....	NA	NA	NA	NA	NA	214	205	198	178	225	135	161	136
Mathematics/computer sciences.....	54,388	56,442	46,277	40,194	39,347	38,620	38,116	49,123	54,639	61,408	69,211	71,160	65,404
Computer sciences.....	39,121	39,927	30,963	25,410	24,477	24,769	25,393	37,388	43,184	49,135	56,329	57,405	50,564
Mathematics.....	15,267	16,515	15,314	14,784	14,870	13,851	12,723	11,735	11,455	12,273	12,882	13,755	14,840
Physical sciences.....	23,847	20,155	17,329	16,407	17,691	14,897	15,264	14,580	14,163	14,016	14,122	14,240	15,030
Astronomy.....	NA	NA	NA	NA	NA	169	140	160	240	276	271	292	331
Chemistry.....	NA	NA	NA	NA	NA	10,016	10,926	10,390	9,822	9,448	9,332	9,305	9,937
Physics.....	NA	NA	NA	NA	NA	3,836	3,393	3,362	3,457	3,651	3,922	4,156	4,210
Other physical sciences.....	23,847	20,155	17,329	16,407	17,691	876	805	668	644	641	597	487	552
Social/behavioral sciences.....	135,341	143,276	161,134	189,004	209,023	185,312	185,784	188,188	188,622	196,436	208,757	220,067	230,384
Psychology.....	40,237	43,195	48,954	58,893	67,251	72,601	74,734	74,654	74,168	77,323	79,115	82,510	85,936
Social sciences.....	95,104	100,081	112,180	130,111	141,772	112,711	111,050	113,534	114,454	119,113	129,642	137,557	144,448
Anthropology.....	NA	NA	NA	NA	NA	5,806	6,759	7,057	6,898	7,198	7,542	7,629	7,739
Area/ethnic studies.....	2,872	3,313	3,950	4,625	5,484	5,176	5,257	5,617	5,561	5,844	5,745	6,242	6,611
Economics.....	NA	NA	NA	NA	NA	19,083	17,701	19,400	20,377	21,827	23,871	24,933	25,164
History of science.....	NA	NA	NA	NA	NA	29	31	92	101	103	103	140	117
Linguistics.....	NA	NA	NA	NA	NA	564	577	727	757	861	920	1,047	1,053
Political science/public administration.....	NA	NA	NA	NA	NA	41,978	37,807	36,439	36,651	38,573	43,735	47,353	51,417
Sociology.....	NA	NA	NA	NA	NA	22,974	24,750	25,685	25,363	25,318	26,191	27,030	28,576
Other social sciences.....	92,232	96,768	108,230	125,486	136,288	17,101	18,168	18,517	18,746	19,389	21,535	23,183	23,771
Non-S&E.....	647,907	660,462	692,740	751,212	790,843	796,288	798,107	854,499	857,442	890,119	918,756	951,161	971,197
Engineering technologies.....	20,533	20,577	20,098	18,294	16,987	16,607	14,631	15,238	15,127	15,406	15,336	15,119	15,247
<b>U.S. citizen/permanent resident</b>													
All fields.....	961,619	974,940	1,003,714	1,078,340	1,146,907	1,137,424	1,147,815	1,214,326	1,218,169	1,264,606	1,317,020	1,362,834	1,392,752

**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
S&E.....	328,899	329,393	325,108	344,061	374,633	363,463	373,745	383,438	384,492	399,288	423,358	437,228	447,559
Engineering.....	71,381	68,534	61,875	57,604	58,165	58,561	57,555	55,003	54,839	56,372	59,498	60,128	61,396
Aerospace.....	NA	NA	NA	NA	NA	1,655	1,161	1,146	1,350	1,625	1,857	2,144	2,213
Chemical.....	NA	NA	NA	NA	NA	5,867	6,406	5,774	5,664	5,499	5,186	4,817	4,478
Civil.....	NA	NA	NA	NA	NA	10,892	11,536	9,137	8,537	8,520	9,018	9,084	9,471
Electrical.....	NA	NA	NA	NA	NA	15,462	14,564	15,836	16,529	17,108	18,677	19,069	19,093
Industrial.....	NA	NA	NA	NA	NA	3,095	3,517	3,456	3,343	3,534	3,537	3,426	3,543
Materials.....	NA	NA	NA	NA	NA	1,016	1,035	935	888	904	919	836	866
Mechanical.....	NA	NA	NA	NA	NA	14,360	12,898	12,320	12,416	12,694	13,448	13,754	14,261
Other.....	71,381	68,534	61,875	57,604	58,165	6,214	6,438	6,399	6,112	6,488	6,856	6,998	7,471
Science.....	257,518	260,859	263,233	286,457	316,468	304,902	316,190	328,435	329,653	342,916	363,860	377,100	386,163
Natural sciences.....	125,047	120,352	104,928	101,039	111,656	124,311	135,412	145,321	146,216	151,871	160,862	163,020	161,859
Agricultural sciences.....	11,981	9,438	8,529	8,373	11,478	14,322	17,108	17,986	17,219	17,098	17,423	16,792	16,837
Biological sciences.....	38,490	38,185	36,076	39,288	46,660	55,607	63,677	63,528	60,652	60,311	62,045	63,109	66,016
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	4,405	4,388	4,001	3,919	3,925	3,892	3,853	3,879
Atmospheric sciences.....	NA	NA	NA	NA	NA	440	420	482	454	519	554	569	667
Earth sciences.....	NA	NA	NA	NA	NA	3,761	3,770	3,326	3,288	3,185	3,204	3,125	3,081
Oceanography.....	NA	NA	NA	NA	NA	204	198	193	177	221	134	159	131
Mathematics/computer sciences.....	51,509	53,209	43,599	37,579	36,591	35,730	35,568	45,758	50,821	57,066	63,903	65,617	60,767
Computer sciences.....	37,005	37,349	28,828	23,373	22,273	22,472	23,378	34,502	39,792	45,247	51,643	52,544	46,688
Mathematics.....	14,504	15,860	14,771	14,206	14,318	13,258	12,190	11,256	11,029	11,819	12,260	13,073	14,079
Physical sciences.....	23,067	19,520	16,724	15,799	16,927	14,247	14,671	14,048	13,605	13,471	13,599	13,649	14,360
Astronomy.....	NA	NA	NA	NA	NA	159	132	156	227	260	256	282	311
Chemistry.....	NA	NA	NA	NA	NA	9,620	10,530	10,046	9,487	9,105	9,006	8,955	9,539
Physics.....	NA	NA	NA	NA	NA	3,613	3,217	3,202	3,275	3,484	3,754	3,967	4,009
Other physical sciences.....	23,067	19,520	16,724	15,799	16,927	855	792	644	616	622	583	445	501
Social/behavioral sciences.....	132,471	140,507	158,305	185,418	204,812	180,591	180,778	183,114	183,437	191,045	202,998	214,080	224,304
Psychology.....	39,694	42,701	48,443	58,202	66,421	71,659	73,685	73,390	72,885	75,956	77,721	81,039	84,432
Social sciences.....	92,777	97,806	109,862	127,216	138,391	108,932	107,093	109,724	110,552	115,089	125,277	133,041	139,872
Anthropology.....	NA	NA	NA	NA	NA	5,691	6,586	6,941	6,778	7,084	7,448	7,523	7,624
Area/ethnic studies.....	2,800	3,246	3,824	4,491	5,348	4,951	5,059	5,439	5,394	5,684	5,585	6,078	6,448
Economics.....	NA	NA	NA	NA	NA	17,393	15,877	17,709	18,553	19,923	21,823	22,763	22,964
History of science.....	NA	NA	NA	NA	NA	28	31	91	98	101	100	140	116
Linguistics.....	NA	NA	NA	NA	NA	484	491	644	680	780	840	973	976
Political science/public administration.....	NA	NA	NA	NA	NA	40,890	36,755	35,285	35,504	37,411	42,451	46,046	50,151
Sociology.....	NA	NA	NA	NA	NA	22,642	24,451	25,386	25,105	25,023	25,842	26,704	28,247
Other social sciences.....	89,977	94,560	106,038	122,725	133,043	16,853	17,843	18,229	18,440	19,083	21,188	22,814	23,346
Non-S&E.....	632,720	645,547	678,606	734,279	772,274	773,961	774,070	830,888	833,677	865,318	893,662	925,606	945,193
Engineering technologies.....	19,256	19,591	19,439	17,582	16,546	16,057	14,074	14,797	14,609	14,947	14,883	14,613	14,764
White													
All fields.....	826,356	819,477	840,326	892,363	931,603	892,785	877,759	895,129	888,412	912,956	940,495	962,887	977,279
S&E.....	281,394	272,090	266,862	278,190	297,171	275,819	274,800	270,416	267,848	276,379	290,306	296,576	301,172
Engineering.....	60,992	56,491	50,081	45,162	44,853	43,766	41,666	39,067	38,767	39,723	41,825	41,857	42,208

## Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Aerospace .....	NA	NA	NA	NA	NA	1,301	869	899	1,058	1,279	1,447	1,629	1,723
Chemical .....	NA	NA	NA	NA	NA	4,417	4,631	4,062	4,061	3,976	3,746	3,483	3,203
Civil .....	NA	NA	NA	NA	NA	8,646	8,940	7,003	6,615	6,624	7,032	7,011	7,194
Electrical.....	NA	NA	NA	NA	NA	10,079	9,293	9,715	9,891	9,975	10,957	10,934	10,856
Industrial.....	NA	NA	NA	NA	NA	2,220	2,271	2,385	2,330	2,428	2,392	2,352	2,356
Materials .....	NA	NA	NA	NA	NA	851	813	741	708	712	701	614	633
Mechanical.....	NA	NA	NA	NA	NA	11,332	9,919	9,467	9,541	9,876	10,516	10,756	10,961
Other .....	60,992	56,491	50,081	45,162	44,853	4,920	4,930	4,795	4,563	4,853	5,034	5,078	5,282
Science.....	220,402	215,599	216,781	233,028	252,318	232,053	233,134	231,349	229,081	236,656	248,481	254,719	258,964
Natural sciences.....	107,076	98,344	84,578	80,111	87,401	94,609	100,831	103,333	102,187	105,430	109,684	109,980	109,569
Agricultural sciences.....	11,233	8,696	7,938	7,704	10,556	12,873	15,246	15,655	14,950	14,729	14,925	14,353	14,347
Biological sciences.....	31,818	30,549	28,404	30,264	35,080	40,697	45,387	43,907	41,325	41,288	41,949	42,460	43,774
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	4,012	3,986	3,561	3,436	3,450	3,442	3,338	3,366
Atmospheric sciences.....	NA	NA	NA	NA	NA	401	390	437	395	467	493	508	597
Earth sciences.....	NA	NA	NA	NA	NA	3,430	3,429	2,959	2,888	2,806	2,837	2,691	2,663
Oceanography.....	NA	NA	NA	NA	NA	181	167	165	153	177	112	139	106
Mathematics/computer sciences.....	43,484	42,446	33,998	28,998	27,824	26,087	25,278	30,114	32,664	36,262	39,434	39,996	37,786
Computer sciences.....	31,321	29,181	21,711	17,349	16,155	15,601	15,846	21,719	24,491	27,506	30,458	30,357	27,615
Mathematics.....	12,163	13,265	12,287	11,649	11,669	10,486	9,432	8,395	8,173	8,756	8,976	9,639	10,171
Physical sciences.....	20,541	16,653	14,238	13,145	13,941	10,940	10,934	10,096	9,812	9,701	9,934	9,833	10,296
Astronomy.....	NA	NA	NA	NA	NA	132	112	131	185	204	212	220	234
Chemistry.....	NA	NA	NA	NA	NA	7,112	7,537	6,900	6,505	6,268	6,281	6,153	6,595
Physics.....	NA	NA	NA	NA	NA	3,004	2,623	2,543	2,625	2,742	2,970	3,128	3,101
Other physical sciences.....	20,541	16,653	14,238	13,145	13,941	692	662	522	497	487	471	332	366
Social/behavioral sciences.....	113,326	117,255	132,203	152,917	164,917	137,444	132,303	128,016	126,894	131,226	138,797	144,739	149,395
Psychology.....	33,959	35,761	40,506	48,134	53,763	55,914	55,346	52,397	51,562	53,324	54,676	56,515	58,043
Social sciences.....	79,367	81,494	91,697	104,783	111,154	81,530	76,957	75,619	75,332	77,902	84,121	88,224	91,352
Anthropology.....	NA	NA	NA	NA	NA	4,696	5,225	5,378	5,222	5,380	5,592	5,496	5,583
Area/ethnic studies.....	2,242	2,554	2,998	3,414	3,759	3,156	3,026	2,943	2,938	3,076	2,948	3,178	3,239
Economics.....	NA	NA	NA	NA	NA	12,869	11,437	12,102	12,419	13,374	14,302	14,662	14,723
History of science.....	NA	NA	NA	NA	NA	26	24	58	57	60	68	100	86
Linguistics.....	NA	NA	NA	NA	NA	339	359	450	499	585	603	652	637
Political science/public administration.....	NA	NA	NA	NA	NA	30,907	26,770	24,976	24,963	26,162	29,547	31,681	33,838
Sociology.....	NA	NA	NA	NA	NA	16,170	16,661	16,561	16,105	15,838	16,275	16,681	17,247
Other social sciences.....	77,125	78,940	88,699	101,369	107,395	13,367	13,455	13,151	13,129	13,427	14,786	15,774	15,999
Non-S&E.....	544,962	547,387	573,464	614,173	634,432	616,966	602,959	624,713	620,564	636,577	650,189	666,311	676,107
Engineering technologies.....	16,673	16,541	16,156	14,279	13,245	12,675	10,988	10,871	10,698	10,885	10,672	10,405	10,525
Asian/Pacific Islander													
All fields.....	25,562	31,921	37,573	41,725	50,587	59,295	67,358	75,265	75,496	79,149	83,049	86,030	90,562
S&E.....	13,323	16,934	19,138	20,552	24,504	28,604	32,568	35,553	36,398	37,452	39,738	41,178	43,030
Engineering.....	4,482	5,590	6,075	6,220	6,407	6,785	7,085	6,854	7,025	7,121	7,412	7,625	8,208
Aerospace.....	NA	NA	NA	NA	NA	159	118	98	103	128	145	186	184
Chemical.....	NA	NA	NA	NA	NA	652	874	788	702	636	563	527	486

**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Civil .....	NA	NA	NA	NA	NA	942	1,017	646	521	482	500	493	585
Electrical.....	NA	NA	NA	NA	NA	2,769	2,663	3,143	3,522	3,774	3,966	4,083	4,290
Industrial .....	NA	NA	NA	NA	NA	1,249	1,135	1,002	998	892	939	928	1,082
Materials .....	NA	NA	NA	NA	NA	93	84	91	88	85	91	95	101
Mechanical.....	NA	NA	NA	NA	NA	287	437	332	319	356	386	376	352
Other .....	4,482	5,590	6,075	6,220	6,407	634	757	754	772	768	822	937	1,128
Science.....	8,841	11,344	13,063	14,332	18,097	21,819	25,483	28,699	29,373	30,331	32,326	33,553	34,822
Natural sciences.....	5,809	7,130	7,260	7,595	9,524	12,009	14,212	16,331	16,564	17,129	18,300	18,221	18,175
Agricultural sciences .....	165	182	144	128	163	282	396	454	399	411	459	415	446
Biological sciences.....	1,952	2,565	2,907	3,559	5,103	7,045	8,541	8,025	7,493	7,209	7,399	7,786	8,832
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	102	95	98	86	85	73	85	86
Atmospheric sciences.....	NA	NA	NA	NA	NA	12	7	14	14	8	9	11	15
Earth sciences.....	NA	NA	NA	NA	NA	77	77	77	64	65	58	65	69
Oceanography.....	NA	NA	NA	NA	NA	13	11	7	8	12	6	9	2
Mathematics/computer sciences.....	2,929	3,489	3,287	2,925	3,160	3,335	3,655	6,292	7,242	8,207	9,226	8,706	7,495
Computer sciences.....	2,044	2,455	2,268	2,010	2,245	2,371	2,803	5,401	6,326	7,207	8,073	7,462	6,075
Mathematics .....	885	1,034	1,019	915	915	964	852	891	916	1,000	1,153	1,244	1,420
Physical sciences .....	763	894	922	983	1,098	1,245	1,525	1,462	1,344	1,217	1,143	1,229	1,316
Astronomy.....	NA	NA	NA	NA	NA	13	7	9	12	24	16	18	21
Chemistry.....	NA	NA	NA	NA	NA	986	1,280	1,208	1,126	978	893	960	1,024
Physics.....	NA	NA	NA	NA	NA	214	204	218	184	184	204	223	236
Other physical sciences.....	763	894	922	983	1,098	32	34	27	22	31	30	28	35
Social/behavioral sciences.....	3,032	4,214	5,803	6,737	8,573	9,810	11,271	12,368	12,809	13,202	14,026	15,332	16,647
Psychology .....	845	1,154	1,575	1,885	2,538	3,331	4,067	4,188	4,150	4,241	4,060	4,345	4,799
Social sciences.....	2,187	3,060	4,228	4,852	6,035	6,479	7,204	8,180	8,659	8,961	9,966	10,987	11,848
Anthropology .....	NA	NA	NA	NA	NA	259	363	340	332	377	396	398	424
Area/ethnic studies.....	137	207	327	345	450	510	574	737	714	686	671	758	875
Economics.....	NA	NA	NA	NA	NA	1,995	2,154	2,774	3,082	3,235	3,708	4,007	4,003
History of science.....	NA	NA	NA	NA	NA	2	4	12	15	20	16	14	11
Linguistics.....	NA	NA	NA	NA	NA	51	62	72	69	73	84	105	112
Political science/public administration .....	NA	NA	NA	NA	NA	2,088	2,100	2,077	2,228	2,325	2,645	2,900	3,266
Sociology .....	NA	NA	NA	NA	NA	989	1,228	1,324	1,300	1,325	1,372	1,596	1,853
Other social sciences.....	2,050	2,853	3,901	4,507	5,585	585	719	844	919	920	1,074	1,209	1,304
Non-S&E.....	12,239	14,987	18,435	21,173	26,083	30,691	34,790	39,712	39,098	41,697	43,311	44,852	47,532
Engineering technologies.....	542	807	839	768	768	730	474	738	672	710	657	631	721
Black													
All fields.....	57,563	55,103	56,837	65,009	76,667	85,287	92,067	104,212	106,648	111,032	117,257	122,618	125,678
S&E.....	17,040	17,230	17,385	19,987	24,421	26,911	29,825	32,924	33,290	34,796	36,711	38,369	39,283
Engineering.....	2,039	2,315	2,067	2,229	2,577	2,845	3,077	3,063	2,884	2,982	3,074	3,212	3,185
Aerospace .....	NA	NA	NA	NA	NA	64	50	40	39	43	65	70	71
Chemical .....	NA	NA	NA	NA	NA	305	373	383	373	346	317	303	273
Civil .....	NA	NA	NA	NA	NA	326	403	403	329	317	292	320	342
Electrical.....	NA	NA	NA	NA	NA	1,048	1,067	1,049	1,082	1,103	1,284	1,393	1,311

**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Industrial .....	NA	NA	NA	NA	NA	236	245	256	237	256	274	251	296
Materials .....	NA	NA	NA	NA	NA	22	20	24	27	32	22	22	19
Mechanical .....	NA	NA	NA	NA	NA	604	642	594	515	561	471	504	537
Other .....	2,039	2,315	2,067	2,229	2,577	240	277	314	282	324	349	349	336
Science.....	15,001	14,915	15,318	17,758	21,844	24,066	26,748	29,861	30,406	31,814	33,637	35,157	36,098
Natural sciences.....	6,009	6,524	6,005	5,834	6,972	7,994	9,049	10,732	11,272	11,965	12,975	13,229	12,687
Agricultural sciences.....	219	157	143	162	219	253	367	450	428	454	452	450	444
Biological sciences.....	2,047	1,890	1,916	2,111	2,739	3,232	4,124	4,739	4,693	4,634	4,878	5,038	5,051
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	64	57	51	56	62	60	65	68
Atmospheric sciences.....	NA	NA	NA	NA	NA	11	8	10	2	10	12	20	8
Earth sciences.....	NA	NA	NA	NA	NA	49	41	40	52	42	43	43	54
Oceanography.....	NA	NA	NA	NA	NA	4	8	1	2	10	5	2	6
Mathematics/computer sciences.....	2,913	3,654	3,249	2,808	3,178	3,475	3,448	4,402	5,099	5,797	6,657	6,718	6,158
Computer sciences.....	2,143	2,820	2,457	1,997	2,213	2,517	2,432	3,497	4,291	4,954	5,867	5,934	5,303
Mathematics.....	770	834	792	811	965	958	1,016	905	808	843	790	784	855
Physical sciences.....	830	823	697	753	836	970	1,053	1,090	996	1,018	928	958	966
Astronomy.....	NA	NA	NA	NA	NA	3	0	1	2	3	1	3	4
Chemistry.....	NA	NA	NA	NA	NA	738	861	888	827	796	744	756	761
Physics.....	NA	NA	NA	NA	NA	172	148	152	133	182	147	166	166
Other physical sciences.....	830	823	697	753	836	57	44	49	34	37	36	33	35
Social/behavioral sciences.....	8,992	8,391	9,313	11,924	14,872	16,072	17,699	19,129	19,134	19,849	20,662	21,928	23,411
Psychology.....	2,667	2,451	2,743	3,688	4,618	5,741	6,647	7,572	7,562	7,747	8,011	8,479	9,130
Social sciences.....	6,325	5,940	6,570	8,236	10,254	10,331	11,052	11,557	11,572	12,102	12,651	13,449	14,281
Anthropology.....	NA	NA	NA	NA	NA	145	220	268	242	253	258	338	320
Area/ethnic studies.....	219	194	233	354	516	607	653	738	691	784	749	805	905
Economics.....	NA	NA	NA	NA	NA	1,156	925	1,044	1,089	1,221	1,326	1,409	1,377
History of science.....	NA	NA	NA	NA	NA	0	2	6	6	4	6	8	5
Linguistics.....	NA	NA	NA	NA	NA	17	8	14	24	25	17	32	33
Political science/public administration.....	NA	NA	NA	NA	NA	3,859	3,761	3,602	3,554	3,737	4,048	4,423	4,844
Sociology.....	NA	NA	NA	NA	NA	3,208	3,851	4,097	4,200	4,168	4,214	4,227	4,542
Other social sciences.....	6,106	5,746	6,337	7,882	9,738	1,339	1,632	1,788	1,766	1,910	2,033	2,207	2,255
Non-S&E.....	40,523	37,873	39,452	45,022	52,246	58,376	62,242	71,288	73,358	76,236	80,546	84,249	86,395
Engineering technologies.....	1,277	1,269	1,208	1,227	1,132	1,321	1,424	1,431	1,389	1,430	1,482	1,539	1,533
Hispanic													
All fields.....	36,391	38,196	41,361	49,027	57,845	66,691	74,938	88,324	89,972	95,104	100,352	105,165	109,643
S&E.....	12,031	12,419	13,327	15,351	18,442	21,359	24,445	27,984	28,321	29,871	32,331	33,437	35,202
Engineering.....	2,187	2,554	2,561	2,566	2,961	3,651	4,125	4,075	4,016	4,136	4,357	4,470	4,614
Aerospace.....	NA	NA	NA	NA	NA	93	93	67	92	97	110	121	139
Chemical.....	NA	NA	NA	NA	NA	345	379	380	341	353	320	313	333
Civil.....	NA	NA	NA	NA	NA	693	874	762	742	761	798	836	888
Electrical.....	NA	NA	NA	NA	NA	1,101	1,123	1,283	1,302	1,411	1,428	1,551	1,521
Industrial.....	NA	NA	NA	NA	NA	302	451	391	356	372	364	332	364
Materials.....	NA	NA	NA	NA	NA	26	89	38	34	33	50	52	59

**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Mechanical.....	NA	NA	NA	NA	NA	827	832	846	880	819	950	935	962
Other.....	2,187	2,554	2,561	2,566	2,961	264	284	308	269	290	337	330	348
Science.....	9,844	9,865	10,766	12,785	15,481	17,708	20,320	23,909	24,305	25,735	27,974	28,967	30,588
Natural sciences.....	4,359	4,660	4,417	4,705	5,034	6,120	7,094	8,844	9,160	9,415	10,620	10,501	10,607
Agricultural sciences.....	250	233	196	213	217	383	559	634	607	662	686	673	710
Biological sciences.....	2,069	2,146	2,090	2,264	2,652	3,101	3,795	4,446	4,547	4,367	4,840	4,601	4,814
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	84	113	127	157	136	119	131	151
Atmospheric sciences.....	NA	NA	NA	NA	NA	5	8	9	15	10	10	13	20
Earth sciences.....	NA	NA	NA	NA	NA	74	100	105	130	109	103	112	121
Oceanography.....	NA	NA	NA	NA	NA	5	5	13	12	17	6	6	10
Mathematics/computer sciences.....	1,380	1,696	1,568	1,695	1,566	1,836	1,887	2,754	2,979	3,386	4,114	4,211	3,994
Computer sciences.....	1,045	1,375	1,195	1,215	1,096	1,314	1,327	2,155	2,354	2,714	3,445	3,535	3,179
Mathematics.....	335	321	373	480	470	522	560	599	625	672	669	676	815
Physical sciences.....	660	585	563	533	599	716	740	883	870	864	861	885	938
Astronomy.....	NA	NA	NA	NA	NA	6	4	7	16	10	12	23	17
Chemistry.....	NA	NA	NA	NA	NA	553	593	719	669	666	669	651	704
Physics.....	NA	NA	NA	NA	NA	105	119	125	151	157	164	187	183
Other physical sciences.....	660	585	563	533	599	52	24	32	34	31	16	24	34
Social/behavioral sciences.....	5,485	5,205	6,349	8,080	10,447	11,588	13,226	15,065	15,145	16,320	17,354	18,466	19,981
Psychology.....	1,734	1,702	2,152	2,746	3,587	4,543	5,282	6,127	6,178	6,692	6,807	7,252	7,654
Social sciences.....	3,751	3,503	4,197	5,334	6,860	7,045	7,944	8,938	8,967	9,628	10,547	11,214	12,327
Anthropology.....	NA	NA	NA	NA	NA	308	445	462	465	494	533	568	578
Area/ethnic studies.....	168	144	169	259	428	476	570	659	648	688	717	756	827
Economics.....	NA	NA	NA	NA	NA	844	829	976	1,030	1,068	1,188	1,289	1,352
History of science.....	NA	NA	NA	NA	NA	0	1	3	5	7	4	7	6
Linguistics.....	NA	NA	NA	NA	NA	40	24	42	45	39	48	71	68
Political science/public administration.....	NA	NA	NA	NA	NA	2,866	2,912	2,975	2,925	3,135	3,568	3,857	4,562
Sociology.....	NA	NA	NA	NA	NA	1,567	1,908	2,317	2,291	2,440	2,555	2,665	2,874
Other social sciences.....	3,583	3,359	4,028	5,075	6,432	944	1,255	1,504	1,558	1,757	1,934	2,001	2,060
Non-S&E.....	24,360	25,777	28,034	33,676	39,403	45,332	50,493	60,340	61,651	65,233	68,021	71,728	74,441
Engineering technologies.....	525	664	634	731	853	884	723	1,068	1,108	1,112	1,244	1,170	1,144
American Indian/Alaska Native													
All fields.....	4,246	3,866	3,967	4,486	5,574	6,454	7,238	8,431	8,664	8,668	9,242	9,914	9,556
S&E.....	1,384	1,290	1,238	1,344	1,819	1,995	2,298	2,611	2,796	2,642	2,892	3,231	3,167
Engineering.....	209	210	177	158	176	221	263	328	256	308	320	333	349
Aerospace.....	NA	NA	NA	NA	NA	3	3	7	8	17	10	23	16
Chemical.....	NA	NA	NA	NA	NA	31	29	42	31	33	34	29	30
Civil.....	NA	NA	NA	NA	NA	58	71	84	65	67	67	64	73
Electrical.....	NA	NA	NA	NA	NA	43	50	81	56	70	99	88	84
Industrial.....	NA	NA	NA	NA	NA	4	19	23	17	21	12	15	27
Materials.....	NA	NA	NA	NA	NA	2	6	5	4	6	3	6	5
Mechanical.....	NA	NA	NA	NA	NA	55	45	53	51	61	58	73	72
Other.....	209	210	177	158	176	25	40	33	24	33	37	35	42

**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Science.....	1,175	1,080	1,061	1,186	1,643	1,774	2,035	2,283	2,540	2,334	2,572	2,898	2,818
Natural sciences.....	511	423	408	421	504	675	743	918	1,076	963	989	1,186	1,109
Agricultural sciences.....	54	43	58	53	64	124	146	190	215	158	163	187	160
Biological sciences.....	161	144	145	176	211	285	341	379	431	410	380	417	496
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	26	31	43	35	26	24	31	25
Atmospheric sciences.....	NA	NA	NA	NA	NA	0	1	4	5	1	4	1	1
Earth sciences.....	NA	NA	NA	NA	NA	25	26	35	29	23	18	30	23
Oceanography.....	NA	NA	NA	NA	NA	1	4	4	1	2	2	0	1
Mathematics/computer sciences.....	198	164	143	123	136	168	156	241	322	286	328	475	325
Computer sciences.....	139	112	90	80	81	110	99	172	271	229	263	416	249
Mathematics.....	59	52	53	43	55	58	57	69	51	57	65	59	76
Physical sciences.....	98	72	62	69	93	72	69	65	73	83	94	76	103
Astronomy.....	NA	NA	NA	NA	NA	0	0	2	2	2	4	1	3
Chemistry.....	NA	NA	NA	NA	NA	57	54	49	47	57	71	50	65
Physics.....	NA	NA	NA	NA	NA	13	11	12	19	21	17	20	33
Other physical sciences.....	98	72	62	69	93	2	4	2	5	3	2	5	2
Social/behavioral sciences.....	664	657	653	765	1,139	1,099	1,292	1,365	1,464	1,371	1,583	1,712	1,709
Psychology.....	201	180	208	235	335	407	496	518	561	542	544	596	552
Social sciences.....	463	477	445	530	804	692	796	847	903	829	1,039	1,116	1,157
Anthropology.....	NA	NA	NA	NA	NA	69	86	89	93	85	111	103	98
Area/ethnic studies.....	16	28	25	24	50	40	62	80	106	121	128	145	134
Economics.....	NA	NA	NA	NA	NA	73	68	71	68	65	95	108	95
History of science.....	NA	NA	NA	NA	NA	0	0	1	0	0	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	6	5	10	2	2	9	4	12
Political science/public administration.....	NA	NA	NA	NA	NA	218	253	231	234	241	286	352	342
Sociology.....	NA	NA	NA	NA	NA	176	192	220	225	184	244	228	259
Other social sciences.....	447	449	420	506	754	110	130	145	175	131	166	176	217
Non-S&E.....	2,862	2,576	2,729	3,142	3,755	4,459	4,940	5,820	5,868	6,026	6,350	6,683	6,389
Engineering technologies.....	103	78	105	75	111	115	101	109	128	101	124	193	96
Other/unknown race/ethnicity													
All fields.....	11,501	26,377	23,650	25,730	24,631	26,912	28,455	42,965	48,977	57,697	66,625	76,220	80,034
S&E.....	3,727	9,430	7,158	8,637	8,276	8,775	9,809	13,950	15,839	18,148	21,380	24,437	25,705
Engineering.....	1,472	1,374	914	1,269	1,191	1,293	1,339	1,616	1,891	2,102	2,510	2,631	2,832
Aerospace.....	NA	NA	NA	NA	NA	35	28	35	50	61	80	115	80
Chemical.....	NA	NA	NA	NA	NA	117	120	119	156	155	206	162	153
Civil.....	NA	NA	NA	NA	NA	227	231	239	265	269	329	360	389
Electrical.....	NA	NA	NA	NA	NA	422	368	565	676	775	943	1,020	1,031
Industrial.....	NA	NA	NA	NA	NA	46	94	69	84	101	109	100	148
Materials.....	NA	NA	NA	NA	NA	22	23	36	27	36	52	47	49
Mechanical.....	NA	NA	NA	NA	NA	293	325	358	431	485	514	558	647
Other.....	1,472	1,374	914	1,269	1,191	131	150	195	202	220	277	269	335
Science.....	2,255	8,056	6,244	7,368	7,085	7,482	8,470	12,334	13,948	16,046	18,870	21,806	22,873
Natural sciences.....	1,283	3,271	2,260	2,373	2,221	2,904	3,483	5,163	5,957	6,969	8,294	9,903	9,712



**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Agricultural sciences .....	60	127	50	113	259	407	394	603	620	684	738	714	730
Biological sciences .....	443	891	614	914	875	1,247	1,489	2,032	2,163	2,403	2,599	2,807	3,049
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	117	106	121	149	166	174	203	183
Atmospheric sciences.....	NA	NA	NA	NA	NA	11	6	8	23	23	26	16	26
Earth sciences.....	NA	NA	NA	NA	NA	106	97	110	125	140	145	184	151
Oceanography.....	NA	NA	NA	NA	NA	0	3	3	1	3	3	3	6
Mathematics/computer sciences .....	605	1,760	1,354	1,030	727	829	1,144	1,955	2,515	3,128	4,144	5,511	5,009
Computer sciences.....	313	1,406	1,107	722	483	559	871	1,558	2,059	2,637	3,537	4,840	4,267
Mathematics .....	292	354	247	308	244	270	273	397	456	491	607	671	742
Physical sciences .....	175	493	242	316	360	304	350	452	510	588	639	668	741
Astronomy.....	NA	NA	NA	NA	NA	5	9	6	10	17	11	17	32
Chemistry.....	NA	NA	NA	NA	NA	174	205	282	313	340	348	385	390
Physics.....	NA	NA	NA	NA	NA	105	112	152	163	198	252	243	290
Other physical sciences.....	175	493	242	316	360	20	24	12	24	33	28	23	29
Social/behavioral sciences.....	972	4,785	3,984	4,995	4,864	4,578	4,987	7,171	7,991	9,077	10,576	11,903	13,161
Psychology .....	288	1,453	1,259	1,514	1,580	1,723	1,847	2,588	2,872	3,410	3,623	3,852	4,254
Social sciences.....	684	3,332	2,725	3,481	3,284	2,855	3,140	4,583	5,119	5,667	6,953	8,051	8,907
Anthropology .....	NA	NA	NA	NA	NA	214	247	404	424	495	558	620	621
Area/ethnic studies.....	18	119	72	95	145	162	174	282	297	329	372	436	468
Economics.....	NA	NA	NA	NA	NA	456	464	742	865	960	1,204	1,288	1,414
History of science.....	NA	NA	NA	NA	NA	0	0	11	15	10	6	11	8
Linguistics.....	NA	NA	NA	NA	NA	31	33	56	41	56	79	109	114
Political science/public administration .....	NA	NA	NA	NA	NA	952	959	1,424	1,600	1,811	2,357	2,833	3,299
Sociology .....	NA	NA	NA	NA	NA	532	611	867	984	1,068	1,182	1,307	1,472
Other social sciences.....	666	3,213	2,653	3,386	3,139	508	652	797	893	938	1,195	1,447	1,511
Non-S&E.....	7,774	16,947	16,492	17,093	16,355	18,137	18,646	29,015	33,138	39,549	45,245	51,783	54,329
Engineering technologies .....	136	232	497	502	437	332	364	580	614	709	704	675	745
Temporary resident													
All fields .....	29,258	28,592	26,457	29,657	32,371	37,012	38,774	38,795	39,479	41,124	42,823	44,175	44,448
S&E.....	14,071	13,677	12,323	12,724	13,802	14,685	14,737	15,184	15,714	16,323	17,729	18,620	18,444
Engineering.....	6,190	5,889	5,072	4,582	4,505	4,810	4,797	4,533	4,419	4,267	4,275	4,547	4,737
Aerospace.....	NA	NA	NA	NA	NA	116	129	121	148	122	160	174	171
Chemical .....	NA	NA	NA	NA	NA	524	571	445	424	447	359	368	411
Civil .....	NA	NA	NA	NA	NA	437	474	459	412	371	349	315	326
Electrical.....	NA	NA	NA	NA	NA	2,117	1,870	1,836	1,842	1,869	2,052	2,273	2,319
Industrial.....	NA	NA	NA	NA	NA	424	480	481	475	442	402	381	395
Materials .....	NA	NA	NA	NA	NA	30	28	37	42	29	31	29	40
Mechanical .....	NA	NA	NA	NA	NA	781	908	789	744	683	596	614	647
Other .....	6,190	5,889	5,072	4,582	4,505	381	337	365	332	304	326	393	428
Science.....	7,881	7,788	7,251	8,142	9,297	9,875	9,940	10,651	11,295	12,056	13,454	14,073	13,707
Natural sciences.....	5,011	5,019	4,422	4,556	5,086	5,154	4,934	5,577	6,110	6,665	7,695	8,086	7,627
Agricultural sciences.....	437	289	266	270	349	258	253	258	248	262	270	249	274
Biological sciences .....	915	862	873	1,063	1,217	1,283	1,462	1,376	1,437	1,457	1,537	1,653	1,966



**Earned bachelor's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	73	78	46	49	59	57	50	80
Atmospheric sciences.....	NA	NA	NA	NA	NA	4	11	8	2	6	8	3	10
Earth sciences.....	NA	NA	NA	NA	NA	59	60	33	46	49	48	45	65
Oceanography .....	NA	NA	NA	NA	NA	10	7	5	1	4	1	2	5
Mathematics/computer sciences .....	2,879	3,233	2,678	2,615	2,756	2,890	2,548	3,365	3,818	4,342	5,308	5,543	4,637
Computer sciences.....	2,116	2,578	2,135	2,037	2,204	2,297	2,015	2,886	3,392	3,888	4,686	4,861	3,876
Mathematics .....	763	655	543	578	552	593	533	479	426	454	622	682	761
Physical sciences .....	780	635	605	608	764	650	593	532	558	545	523	591	670
Astronomy.....	NA	NA	NA	NA	NA	10	8	4	13	16	15	10	20
Chemistry.....	NA	NA	NA	NA	NA	396	396	344	335	343	326	350	398
Physics.....	NA	NA	NA	NA	NA	223	176	160	182	167	168	189	201
Other physical sciences.....	780	635	605	608	764	21	13	24	28	19	14	42	51
Social/behavioral sciences.....	2,870	2,769	2,829	3,586	4,211	4,721	5,006	5,074	5,185	5,391	5,759	5,987	6,080
Psychology.....	543	494	511	691	830	942	1,049	1,264	1,283	1,367	1,394	1,471	1,504
Social sciences.....	2,327	2,275	2,318	2,895	3,381	3,779	3,957	3,810	3,902	4,024	4,365	4,516	4,576
Anthropology .....	NA	NA	NA	NA	NA	115	173	116	120	114	94	106	115
Area/ethnic studies.....	72	67	126	134	136	225	198	178	167	160	160	164	163
Economics.....	NA	NA	NA	NA	NA	1,690	1,824	1,691	1,824	1,904	2,048	2,170	2,200
History of science.....	NA	NA	NA	NA	NA	1	0	1	3	2	3	0	1
Linguistics.....	NA	NA	NA	NA	NA	80	86	83	77	81	80	74	77
Political science/public administration .....	NA	NA	NA	NA	NA	1,088	1,052	1,154	1,147	1,162	1,284	1,307	1,266
Sociology.....	NA	NA	NA	NA	NA	332	299	299	258	295	349	326	329
Other social sciences.....	2,255	2,208	2,192	2,761	3,245	248	325	288	306	306	347	369	425
Non-S&E.....	15,187	14,915	14,134	16,933	18,569	22,327	24,037	23,611	23,765	24,801	25,094	25,555	26,004
Engineering technologies .....	1,277	986	659	712	441	550	557	441	518	459	453	506	483

NA = not available

NOTES: Race/ethnicity data collected on broad fields of study only until 1994. Field taxonomies for data through 1994 do not exactly match field taxonomies used in tables by sex or race/ethnicity data after 1994. Primary difference between taxonomies: history included in social sciences before 1995 but in non-S&E from 1995 on. Racial/ethnic breakouts for U.S. citizens and permanent residents only; temporary resident includes all racial/ethnic groups. Engineering technologies focused more on applied skills than on fundamental science and mathematics.

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Science and Engineering Indicators 2008

## Earned master's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Both sexes</b>													
All fields .....	287,213	290,532	311,050	338,498	370,973	399,428	420,954	456,260	466,645	481,132	511,603	555,537	567,875
S&E.....	70,578	72,603	76,425	78,368	86,425	94,309	93,485	95,683	98,986	99,173	107,910	118,470	120,025
Engineering.....	20,972	22,070	23,743	24,013	27,664	28,630	25,874	25,736	26,523	26,266	29,704	33,872	34,099
Aerospace.....	605	737	855	941	1,047	821	625	560	611	682	735	870	946
Chemical.....	1,814	1,386	1,321	1,025	1,220	1,369	1,345	1,352	1,368	1,267	1,365	1,506	1,506
Civil.....	3,542	3,267	3,296	3,404	4,438	5,168	4,880	4,140	4,013	3,947	4,190	4,445	4,631
Electrical.....	5,649	6,895	7,849	7,942	8,828	8,743	7,341	8,339	8,630	8,279	10,075	12,173	11,637
Industrial.....	1,463	1,728	1,823	2,039	2,745	2,873	2,935	3,048	3,401	3,388	3,849	4,244	3,937
Materials.....	713	765	815	787	849	852	724	759	709	630	720	800	790
Mechanical.....	3,272	3,380	3,703	3,680	4,169	4,368	3,756	3,378	3,472	3,519	3,839	4,555	4,761
Other.....	3,914	3,912	4,081	4,195	4,368	4,436	4,268	4,160	4,319	4,554	4,931	5,279	5,891
Science.....	49,606	50,533	52,682	54,355	58,761	65,679	67,611	69,947	72,463	72,907	78,206	84,598	85,926
Natural sciences.....	23,977	25,208	26,047	25,638	27,574	29,288	30,185	32,864	34,960	35,373	38,979	41,618	40,489
Agricultural sciences.....	3,113	2,776	2,570	2,600	3,272	3,574	3,927	3,858	3,752	4,019	3,955	4,221	4,171
Biological sciences.....	5,095	4,999	4,953	4,806	4,840	5,495	6,594	6,325	6,487	6,334	6,877	7,647	8,099
Earth, atmospheric, and ocean sciences.....	2,160	2,051	1,819	1,499	1,397	1,483	1,435	1,345	1,363	1,406	1,491	1,570	1,685
Atmospheric sciences.....	236	216	206	172	202	203	177	156	140	141	167	179	255
Earth sciences.....	1,806	1,729	1,511	1,195	1,052	1,142	1,145	1,104	1,121	1,151	1,203	1,248	1,314
Oceanography.....	118	106	102	132	143	138	113	85	102	114	121	143	116
Mathematics/computer sciences.....	10,004	11,808	12,829	12,956	14,100	14,495	14,088	17,824	19,621	19,990	22,954	24,150	22,418
Computer sciences.....	7,101	8,481	9,399	9,324	10,349	10,563	10,489	14,529	16,341	16,582	19,248	19,853	17,820
Mathematics/statistics.....	2,903	3,327	3,430	3,632	3,751	3,932	3,599	3,295	3,280	3,408	3,706	4,297	4,598
Physical sciences.....	3,605	3,574	3,876	3,777	3,965	4,241	4,141	3,512	3,737	3,624	3,702	4,030	4,116
Astronomy.....	91	71	100	98	135	119	93	102	93	112	123	150	159
Chemistry.....	1,734	1,750	1,800	1,676	1,853	2,105	2,268	1,908	2,009	1,866	1,830	2,056	1,912
Physics.....	1,523	1,543	1,739	1,725	1,781	1,826	1,497	1,244	1,376	1,353	1,453	1,637	1,846
Other physical sciences.....	257	210	237	278	196	191	283	258	259	293	296	187	199
Social/behavioral sciences.....	25,629	25,325	26,635	28,717	31,187	36,391	37,426	37,083	37,503	37,534	39,227	42,980	45,437
Psychology.....	8,481	8,165	8,652	9,802	10,412	13,132	13,633	13,708	14,335	14,041	14,469	15,298	16,076
Social sciences.....	17,148	17,160	17,983	18,915	20,775	23,259	23,793	23,375	23,168	23,493	24,758	27,682	29,361
Anthropology.....	771	746	725	851	927	1,053	1,111	950	1,092	1,017	1,043	1,098	1,107
Area/ethnic studies.....	884	876	990	1,262	1,501	1,584	1,587	1,529	1,515	1,497	1,514	1,617	1,681
Economics.....	2,532	2,321	2,333	2,411	2,725	2,838	2,804	2,515	2,492	2,651	2,951	3,201	3,504
History of science.....	0	0	0	0	9	13	18	24	26	35	25	25	29
Linguistics.....	633	542	579	606	610	603	642	553	552	520	525	574	611
Political science/public administration.....	9,481	9,933	10,314	10,392	11,310	12,802	13,368	13,035	12,929	13,183	14,115	15,766	17,354
Sociology.....	1,045	970	1,169	1,293	1,564	1,790	1,752	2,036	1,901	1,957	1,929	2,031	1,518
Other social sciences.....	1,802	1,772	1,873	2,100	2,129	2,576	2,511	2,733	2,661	2,633	2,656	3,370	3,557
Non-S&E.....	216,635	217,929	234,625	260,130	284,548	305,119	327,469	360,577	367,659	381,959	403,693	437,067	447,850

## Earned master's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Male</b>													
All fields .....	143,716	141,655	149,399	156,895	169,753	179,198	181,457	191,234	193,006	198,097	210,758	227,335	230,057
S&E.....	48,247	48,759	50,845	50,441	55,454	58,518	55,223	54,213	55,593	55,701	61,199	66,798	66,974
Engineering.....	18,728	19,300	20,661	20,656	23,570	23,998	21,179	20,396	20,895	20,692	23,520	26,737	26,492
Aerospace.....	574	682	791	855	941	722	550	484	521	557	628	721	782
Chemical .....	1,529	1,143	1,092	852	996	1,063	1,013	1,008	1,016	932	1,022	1,089	1,081
Civil .....	3,128	2,792	2,851	2,864	3,607	4,123	3,781	3,065	2,952	2,884	3,042	3,234	3,309
Electrical.....	5,154	6,178	6,933	7,008	7,777	7,539	6,197	6,781	6,957	6,718	8,173	9,788	9,167
Industrial.....	1,236	1,409	1,465	1,603	2,190	2,361	2,331	2,400	2,612	2,593	3,005	3,338	3,018
Materials .....	600	600	634	607	682	668	550	558	536	459	537	601	586
Mechanical .....	3,044	3,133	3,377	3,320	3,769	3,918	3,337	2,923	3,024	3,051	3,380	3,992	4,163
Other .....	3,463	3,363	3,518	3,547	3,608	3,604	3,420	3,177	3,277	3,498	3,733	3,974	4,386
Science.....	29,519	29,459	30,184	29,785	31,884	34,520	34,044	33,817	34,698	35,009	37,679	40,061	40,482
Natural sciences.....	16,246	16,663	17,216	16,503	17,954	18,860	18,684	19,441	20,606	20,839	23,198	24,516	24,069
Agricultural sciences.....	2,215	1,882	1,719	1,660	2,007	2,103	2,232	2,039	1,915	2,022	1,896	1,965	1,951
Biological sciences .....	2,666	2,555	2,491	2,315	2,374	2,637	3,076	2,815	2,732	2,665	2,859	3,160	3,229
Earth, atmospheric, and ocean sciences .....	1,639	1,531	1,337	1,116	1,006	1,032	948	832	799	834	879	869	973
Atmospheric sciences.....	196	187	174	138	161	152	135	119	100	95	112	112	185
Earth sciences .....	1,361	1,272	1,099	887	756	789	752	670	649	678	702	682	737
Oceanography .....	82	72	64	91	89	91	61	43	50	61	65	75	51
Mathematics/computer sciences.....	6,951	8,011	8,833	8,709	9,773	10,130	9,620	11,458	12,724	13,020	15,186	16,005	15,329
Computer sciences.....	5,064	5,985	6,773	6,563	7,554	7,777	7,510	9,661	10,833	11,083	13,157	13,658	12,742
Mathematics/statistics.....	1,887	2,026	2,060	2,146	2,219	2,353	2,110	1,797	1,891	1,937	2,029	2,347	2,587
Physical sciences.....	2,775	2,684	2,836	2,703	2,794	2,958	2,808	2,297	2,436	2,298	2,378	2,517	2,587
Astronomy .....	76	55	85	79	106	88	61	77	57	85	81	97	97
Chemistry.....	1,166	1,181	1,131	993	1,110	1,220	1,341	1,085	1,184	1,014	1,001	1,106	973
Physics.....	1,333	1,300	1,448	1,441	1,463	1,535	1,242	1,000	1,090	1,067	1,140	1,224	1,419
Other physical sciences.....	200	148	172	190	115	115	164	135	105	132	156	90	98
Social/behavioral sciences .....	13,273	12,796	12,968	13,282	13,930	15,660	15,360	14,376	14,092	14,170	14,481	15,545	16,413
Psychology .....	3,064	2,838	2,814	2,994	2,928	3,735	3,715	3,415	3,477	3,369	3,369	3,348	3,444
Social sciences.....	10,209	9,958	10,154	10,288	11,002	11,925	11,645	10,961	10,615	10,801	11,112	12,197	12,969
Anthropology .....	325	305	290	350	393	385	399	363	403	375	388	377	370
Area/ethnic studies.....	467	467	503	639	740	766	742	650	619	618	626	656	693
Economics.....	1,920	1,739	1,699	1,711	1,909	1,944	1,851	1,563	1,519	1,601	1,790	1,949	2,113
History of science.....	0	0	0	0	5	9	11	18	16	18	15	11	17
Linguistics.....	224	196	211	218	218	187	224	146	172	160	145	164	178
Political science/public administration .....	5,785	5,830	5,917	5,752	6,069	6,678	6,677	6,315	6,088	6,205	6,392	6,938	7,598
Sociology.....	470	425	507	514	604	678	610	649	643	642	633	673	485
Other social sciences.....	1,018	996	1,027	1,104	1,064	1,278	1,131	1,257	1,155	1,182	1,123	1,429	1,515
Non-S&E.....	95,469	92,896	98,554	106,454	114,299	120,680	126,234	137,021	137,413	142,396	149,559	160,537	163,083

## Earned master's degrees, by sex and field: Selected years, 1985–2005

Sex/field	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>Female</b>													
All fields .....	143,497	148,877	161,651	181,603	201,220	220,230	239,497	265,026	273,639	283,035	300,845	328,202	337,818
S&E.....	22,331	23,844	25,580	27,927	30,971	35,791	38,262	41,470	43,393	43,472	46,711	51,672	53,051
Engineering.....	2,244	2,770	3,082	3,357	4,094	4,632	4,695	5,340	5,628	5,574	6,184	7,135	7,607
Aerospace.....	31	55	64	86	106	99	75	76	90	125	107	149	164
Chemical .....	285	243	229	173	224	306	332	344	352	335	343	417	425
Civil .....	414	475	445	540	831	1,045	1,099	1,075	1,061	1,063	1,148	1,211	1,322
Electrical.....	495	717	916	934	1,051	1,204	1,144	1,558	1,673	1,561	1,902	2,385	2,470
Industrial.....	227	319	358	436	555	512	604	648	789	795	844	906	919
Materials .....	113	165	181	180	167	184	174	201	173	171	183	199	204
Mechanical .....	228	247	326	360	400	450	419	455	448	468	459	563	598
Other .....	451	549	563	648	760	832	848	983	1,042	1,056	1,198	1,305	1,505
Science.....	20,087	21,074	22,498	24,570	26,877	31,159	33,567	36,130	37,765	37,898	40,527	44,537	45,444
Natural sciences.....	7,731	8,545	8,831	9,135	9,620	10,428	11,501	13,423	14,354	14,534	15,781	17,102	16,420
Agricultural sciences.....	898	894	851	940	1,265	1,471	1,695	1,819	1,837	1,997	2,059	2,256	2,220
Biological sciences .....	2,429	2,444	2,462	2,491	2,466	2,858	3,518	3,510	3,755	3,669	4,018	4,487	4,870
Earth, atmospheric, and ocean sciences .....	521	520	482	383	391	451	487	513	564	572	612	701	712
Atmospheric sciences.....	40	29	32	34	41	51	42	37	40	46	55	67	70
Earth sciences.....	445	457	412	308	296	353	393	434	472	473	501	566	577
Oceanography .....	36	34	38	41	54	47	52	42	52	53	56	68	65
Mathematics/computer sciences .....	3,053	3,797	3,996	4,247	4,327	4,365	4,468	6,366	6,897	6,970	7,768	8,145	7,089
Computer sciences.....	2,037	2,496	2,626	2,761	2,795	2,786	2,979	4,868	5,508	5,499	6,091	6,195	5,078
Mathematics/statistics.....	1,016	1,301	1,370	1,486	1,532	1,579	1,489	1,498	1,389	1,471	1,677	1,950	2,011
Physical sciences.....	830	890	1,040	1,074	1,171	1,283	1,333	1,215	1,301	1,326	1,324	1,513	1,529
Astronomy .....	15	16	15	19	29	31	32	25	36	27	42	53	62
Chemistry.....	568	569	669	683	743	885	927	823	825	852	829	950	939
Physics.....	190	243	291	284	318	291	255	244	286	286	313	413	427
Other physical sciences.....	57	62	65	88	81	76	119	123	154	161	140	97	101
Social/behavioral sciences .....	12,356	12,529	13,667	15,435	17,257	20,731	22,066	22,707	23,411	23,364	24,746	27,435	29,024
Psychology .....	5,417	5,327	5,838	6,808	7,484	9,397	9,918	10,293	10,858	10,672	11,100	11,950	12,632
Social sciences.....	6,939	7,202	7,829	8,627	9,773	11,334	12,148	12,414	12,553	12,692	13,646	15,485	16,392
Anthropology .....	446	441	435	501	534	668	712	587	689	642	655	721	737
Area/ethnic studies.....	417	409	487	623	761	818	845	879	896	879	888	961	988
Economics.....	612	582	634	700	816	894	953	952	973	1,050	1,161	1,252	1,391
History of science.....	0	0	0	0	4	4	7	6	10	17	10	14	12
Linguistics.....	409	346	368	388	392	416	418	407	380	360	380	410	433
Political science/public administration .....	3,696	4,103	4,397	4,640	5,241	6,124	6,691	6,720	6,841	6,978	7,723	8,828	9,756
Sociology.....	575	545	662	779	960	1,112	1,142	1,387	1,258	1,315	1,296	1,358	1,033
Other social sciences.....	784	776	846	996	1,065	1,298	1,380	1,476	1,506	1,451	1,533	1,941	2,042
<b>Non-S&amp;E .....</b>	<b>121,166</b>	<b>125,033</b>	<b>136,071</b>	<b>153,676</b>	<b>170,249</b>	<b>184,439</b>	<b>201,235</b>	<b>223,556</b>	<b>230,246</b>	<b>239,563</b>	<b>254,134</b>	<b>276,530</b>	<b>284,767</b>

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

**Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
<b>All races/ethnicities and citizenships</b>													
All fields .....	287,213	290,532	311,050	338,498	370,973	399,428	420,954	456,260	466,645	481,132	511,603	555,537	567,875
S&E.....	64,726	66,774	70,333	72,828	81,415	94,309	93,485	95,683	98,986	99,173	107,910	118,470	120,025
Engineering.....	20,935	22,057	23,735	24,007	27,658	28,630	25,874	25,736	26,523	26,266	29,704	33,872	34,099
Aerospace.....	NA	NA	NA	NA	NA	821	625	560	611	682	735	870	946
Chemical.....	NA	NA	NA	NA	NA	1,369	1,345	1,352	1,368	1,267	1,365	1,506	1,506
Civil.....	NA	NA	NA	NA	NA	5,168	4,880	4,140	4,013	3,947	4,190	4,445	4,631
Electrical.....	NA	NA	NA	NA	NA	8,743	7,341	8,339	8,630	8,279	10,075	12,173	11,637
Industrial.....	NA	NA	NA	NA	NA	2,873	2,935	3,048	3,401	3,388	3,849	4,244	3,937
Materials.....	NA	NA	NA	NA	NA	852	724	759	709	630	720	800	790
Mechanical.....	NA	NA	NA	NA	NA	4,368	3,756	3,378	3,472	3,519	3,839	4,555	4,761
Other.....	20,935	22,057	23,735	24,007	27,658	4,436	4,268	4,160	4,319	4,554	4,931	5,279	5,891
Science.....	43,791	44,717	46,598	48,821	53,757	65,679	67,611	69,947	72,463	72,907	78,206	84,598	85,926
Natural sciences.....	24,034	25,269	26,089	25,669	27,713	29,288	30,185	32,864	34,960	35,373	38,979	41,618	40,489
Agricultural sciences.....	3,152	2,824	2,604	2,625	3,299	3,574	3,927	3,858	3,752	4,019	3,955	4,221	4,171
Biological sciences.....	5,091	4,999	4,953	4,806	4,798	5,495	6,594	6,325	6,487	6,334	6,877	7,647	8,099
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	1,483	1,435	1,345	1,363	1,406	1,491	1,570	1,685
Atmospheric sciences.....	NA	NA	NA	NA	NA	203	177	156	140	141	167	179	255
Earth sciences.....	NA	NA	NA	NA	NA	1,142	1,145	1,104	1,121	1,151	1,203	1,248	1,314
Oceanography.....	NA	NA	NA	NA	NA	138	113	85	102	114	121	143	116
Mathematics/computer sciences.....	9,989	11,808	12,829	12,956	14,251	14,495	14,088	17,824	19,621	19,990	22,954	24,150	22,418
Computer sciences.....	7,101	8,481	9,399	9,324	10,167	10,563	10,489	14,529	16,341	16,582	19,248	19,853	17,820
Mathematics/statistics.....	2,888	3,327	3,430	3,632	4,084	3,932	3,599	3,295	3,280	3,408	3,706	4,297	4,598
Physical sciences.....	5,802	5,638	5,703	5,282	5,365	4,241	4,141	3,512	3,737	3,624	3,702	4,030	4,116
Astronomy.....	NA	NA	NA	NA	NA	119	93	102	93	112	123	150	159
Chemistry.....	NA	NA	NA	NA	NA	2,105	2,268	1,908	2,009	1,866	1,830	2,056	1,912
Physics.....	NA	NA	NA	NA	NA	1,826	1,497	1,244	1,376	1,353	1,453	1,637	1,846
Other physical sciences.....	5,802	5,638	5,703	5,282	5,365	191	283	258	259	293	296	187	199
Social/behavioral sciences.....	19,757	19,448	20,509	23,152	26,044	36,391	37,426	37,083	37,503	37,534	39,227	42,980	45,437
Psychology.....	8,481	8,165	8,652	9,802	11,020	13,132	13,633	13,708	14,335	14,041	14,469	15,298	16,076
Social sciences.....	11,276	11,283	11,857	13,350	15,024	23,259	23,793	23,375	23,168	23,493	24,758	27,682	29,361
Anthropology.....	NA	NA	NA	NA	NA	1,053	1,111	950	1,092	1,017	1,043	1,098	1,107
Area/ethnic studies.....	884	876	990	1,262	1,534	1,584	1,587	1,529	1,515	1,497	1,514	1,617	1,681
Economics.....	NA	NA	NA	NA	NA	2,838	2,804	2,515	2,492	2,651	2,951	3,201	3,504
History of science.....	NA	NA	NA	NA	NA	13	18	24	26	35	25	25	29
Linguistics.....	NA	NA	NA	NA	NA	603	642	553	552	520	525	574	611
Political science/public administration.....	NA	NA	NA	NA	NA	12,802	13,368	13,035	12,929	13,183	14,115	15,766	17,354
Sociology.....	NA	NA	NA	NA	NA	1,790	1,752	2,036	1,901	1,957	1,929	2,031	1,518
Other social sciences.....	10,392	10,407	10,867	12,088	13,490	2,576	2,511	2,733	2,661	2,633	2,656	3,370	3,557
Non-S&E.....	222,487	223,758	240,717	265,670	289,558	305,119	327,469	360,577	367,659	381,959	403,693	437,067	447,850
<b>U.S. citizen/permanent resident</b>													
All fields.....	260,261	262,268	278,927	300,887	326,864	350,672	371,477	400,689	405,455	417,821	440,227	481,135	495,470
S&E.....	52,220	53,729	55,190	55,779	61,265	72,092	72,220	70,933	71,564	71,623	75,542	83,120	86,563

**Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Engineering.....	15,241	16,276	16,988	16,487	18,539	18,931	17,238	15,913	15,522	15,463	16,330	18,252	19,219
Aerospace.....	NA	NA	NA	NA	NA	615	441	339	360	395	447	579	656
Chemical.....	NA	NA	NA	NA	NA	685	748	721	726	662	657	704	739
Civil.....	NA	NA	NA	NA	NA	3,712	3,664	3,048	2,780	2,593	2,686	2,782	3,080
Electrical.....	NA	NA	NA	NA	NA	5,375	4,265	4,231	3,959	4,036	4,403	5,276	5,229
Industrial.....	NA	NA	NA	NA	NA	1,874	1,872	1,872	1,992	1,958	2,084	2,268	2,178
Materials.....	NA	NA	NA	NA	NA	535	472	483	409	386	381	417	451
Mechanical.....	NA	NA	NA	NA	NA	2,939	2,602	2,212	2,222	2,214	2,239	2,630	2,847
Other.....	15,241	16,276	16,988	16,487	18,539	3,196	3,174	3,007	3,074	3,219	3,433	3,596	4,039
Science.....	36,979	37,453	38,202	39,292	42,726	53,161	54,982	55,020	56,042	56,160	59,212	64,868	67,344
Natural sciences.....	19,462	20,234	20,167	18,935	19,651	20,986	21,994	22,589	23,230	23,721	25,466	27,626	27,788
Agricultural sciences.....	2,546	2,257	1,974	2,022	2,605	2,921	3,269	3,342	3,281	3,540	3,440	3,575	3,575
Biological sciences.....	4,617	4,490	4,317	4,057	3,949	4,610	5,671	5,575	5,614	5,529	5,876	6,532	6,886
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	1,198	1,198	1,150	1,191	1,207	1,285	1,312	1,431
Atmospheric sciences.....	NA	NA	NA	NA	NA	151	143	118	116	113	128	135	206
Earth sciences.....	NA	NA	NA	NA	NA	938	959	962	987	1,001	1,046	1,058	1,132
Oceanography.....	NA	NA	NA	NA	NA	109	96	70	88	93	111	119	93
Mathematics/computer sciences.....	7,595	8,905	9,411	9,078	9,334	9,483	9,122	10,150	10,646	11,009	12,352	13,545	13,161
Computer sciences.....	5,392	6,414	6,957	6,505	6,388	6,667	6,516	7,966	8,596	8,895	10,159	11,033	10,340
Mathematics/statistics.....	2,203	2,491	2,454	2,573	2,946	2,816	2,606	2,184	2,050	2,114	2,193	2,512	2,821
Physical sciences.....	4,704	4,582	4,465	3,778	3,763	2,774	2,734	2,372	2,498	2,436	2,513	2,662	2,735
Astronomy.....	NA	NA	NA	NA	NA	94	74	80	65	77	94	102	122
Chemistry.....	NA	NA	NA	NA	NA	1,366	1,501	1,309	1,388	1,260	1,297	1,384	1,289
Physics.....	NA	NA	NA	NA	NA	1,144	938	761	808	829	851	1,010	1,148
Other physical sciences.....	4,704	4,582	4,465	3,778	3,763	170	221	222	237	270	271	166	176
Social/behavioral sciences.....	17,517	17,219	18,035	20,357	23,075	32,175	32,988	32,431	32,812	32,439	33,746	37,242	39,556
Psychology.....	8,185	7,945	8,393	9,485	10,688	12,659	13,231	13,241	13,871	13,562	13,804	14,695	15,446
Social sciences.....	9,332	9,274	9,642	10,872	12,387	19,516	19,757	19,190	18,941	18,877	19,942	22,547	24,110
Anthropology.....	NA	NA	NA	NA	NA	958	1,020	864	1,004	918	960	993	1,034
Area/ethnic studies.....	765	764	836	1,074	1,355	1,401	1,397	1,300	1,287	1,269	1,266	1,364	1,445
Economics.....	NA	NA	NA	NA	NA	1,561	1,456	1,209	1,172	1,191	1,337	1,493	1,774
History of science.....	NA	NA	NA	NA	NA	13	16	22	21	33	18	22	23
Linguistics.....	NA	NA	NA	NA	NA	412	473	380	394	351	353	398	422
Political science/public administration.....	NA	NA	NA	NA	NA	11,217	11,517	11,111	10,946	11,037	11,893	13,401	14,860
Sociology.....	NA	NA	NA	NA	NA	1,614	1,580	1,845	1,744	1,766	1,744	1,832	1,349
Other social sciences.....	8,567	8,510	8,806	9,798	11,032	2,340	2,298	2,459	2,373	2,312	2,371	3,044	3,203
Non-S&E.....	208,041	208,539	223,737	245,108	265,599	278,580	299,257	329,756	333,891	346,198	364,685	398,015	408,907
White													
All fields.....	223,649	216,807	230,322	247,524	265,668	277,437	288,353	297,226	293,390	296,978	306,552	326,932	336,718
S&E.....	43,982	43,360	43,945	44,513	47,975	54,610	53,769	49,850	48,792	48,410	49,936	54,339	56,082
Engineering.....	12,186	12,837	12,832	12,635	13,920	13,831	12,492	11,020	10,466	10,404	10,726	11,757	12,267
Aerospace.....	NA	NA	NA	NA	NA	451	345	284	277	310	347	444	500
Chemical.....	NA	NA	NA	NA	NA	494	541	501	487	435	431	455	452

**Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Civil .....	NA	NA	NA	NA	NA	2,913	2,842	2,337	2,130	1,931	1,995	2,089	2,245
Electrical.....	NA	NA	NA	NA	NA	3,473	2,737	2,474	2,244	2,308	2,433	2,812	2,806
Industrial .....	NA	NA	NA	NA	NA	1,342	1,360	1,238	1,290	1,261	1,302	1,361	1,226
Materials .....	NA	NA	NA	NA	NA	447	350	373	295	287	282	304	314
Mechanical.....	NA	NA	NA	NA	NA	2,237	1,967	1,630	1,558	1,584	1,618	1,840	2,045
Other .....	12,186	12,837	12,832	12,635	13,920	2,474	2,350	2,183	2,185	2,288	2,318	2,452	2,679
Science.....	31,796	30,523	31,113	31,878	34,055	40,779	41,277	38,830	38,326	38,006	39,210	42,582	43,815
Natural sciences.....	16,735	16,352	16,080	15,005	15,322	15,836	16,486	15,943	15,879	16,176	16,909	18,219	18,577
Agricultural sciences .....	2,345	2,044	1,817	1,818	2,282	2,447	2,809	2,864	2,782	2,951	2,898	2,953	2,930
Biological sciences.....	4,081	3,745	3,679	3,353	3,144	3,642	4,395	4,179	4,124	4,085	4,290	4,618	4,862
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	1,019	1,084	1,036	1,043	1,065	1,125	1,144	1,234
Atmospheric sciences.....	NA	NA	NA	NA	NA	133	128	111	99	98	117	120	185
Earth sciences.....	NA	NA	NA	NA	NA	819	873	861	876	890	914	921	963
Oceanography.....	NA	NA	NA	NA	NA	67	83	64	68	77	94	103	86
Mathematics/computer sciences.....	6,176	6,729	6,818	6,705	6,818	6,576	6,110	6,090	6,056	6,293	6,748	7,481	7,538
Computer sciences.....	4,303	4,717	4,786	4,637	4,464	4,354	4,105	4,435	4,541	4,738	5,125	5,686	5,556
Mathematics/statistics .....	1,873	2,012	2,032	2,068	2,354	2,222	2,005	1,655	1,515	1,555	1,623	1,795	1,982
Physical sciences .....	4,133	3,834	3,766	3,129	3,078	2,152	2,088	1,774	1,874	1,782	1,848	2,023	2,013
Astronomy.....	NA	NA	NA	NA	NA	77	67	65	47	59	67	76	98
Chemistry.....	NA	NA	NA	NA	NA	1,007	1,068	929	992	876	905	1,012	886
Physics.....	NA	NA	NA	NA	NA	924	755	585	627	613	642	790	873
Other physical sciences.....	4,133	3,834	3,766	3,129	3,078	144	198	195	208	234	234	145	156
Social/behavioral sciences.....	15,061	14,171	15,033	16,873	18,733	24,943	24,791	22,887	22,447	21,830	22,301	24,363	25,238
Psychology .....	7,220	6,698	7,075	7,973	8,810	10,367	10,444	9,646	9,798	9,315	9,356	9,901	10,141
Social sciences.....	7,841	7,473	7,958	8,900	9,923	14,576	14,347	13,241	12,649	12,515	12,945	14,462	15,097
Anthropology.....	NA	NA	NA	NA	NA	774	862	686	800	705	743	770	779
Area/ethnic studies.....	508	494	601	782	896	947	992	898	794	769	720	838	809
Economics.....	NA	NA	NA	NA	NA	1,161	1,047	839	840	827	828	927	1,097
History of science.....	NA	NA	NA	NA	NA	11	12	20	18	23	13	17	20
Linguistics.....	NA	NA	NA	NA	NA	317	364	295	284	270	258	290	300
Political science/public administration .....	NA	NA	NA	NA	NA	8,320	8,185	7,427	7,005	7,051	7,503	8,353	9,077
Sociology .....	NA	NA	NA	NA	NA	1,165	1,130	1,254	1,178	1,183	1,177	1,202	858
Other social sciences.....	7,333	6,979	7,357	8,118	9,027	1,881	1,755	1,822	1,730	1,687	1,703	2,065	2,157
Non-S&E.....	179,667	173,447	186,377	203,011	217,693	222,827	234,584	247,376	244,598	248,568	256,616	272,593	280,636
Asian/Pacific Islander													
All fields.....	7,805	8,129	10,174	11,070	13,169	15,906	17,912	21,412	21,946	22,610	24,184	26,990	28,659
S&E.....	3,285	3,455	4,100	4,310	4,846	5,989	6,180	6,990	7,045	6,814	7,589	8,567	8,823
Engineering.....	1,551	1,650	1,992	2,008	2,260	2,572	2,319	2,379	2,414	2,201	2,444	3,002	3,094
Aerospace .....	NA	NA	NA	NA	NA	44	42	26	37	29	42	51	55
Chemical .....	NA	NA	NA	NA	NA	100	87	114	120	96	96	135	106
Civil .....	NA	NA	NA	NA	NA	369	386	283	220	204	241	254	298
Electrical.....	NA	NA	NA	NA	NA	1,117	911	1,061	1,026	919	1,049	1,421	1,379
Industrial .....	NA	NA	NA	NA	NA	344	293	265	358	315	262	347	326

## Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Materials .....	NA	NA	NA	NA	NA	42	62	54	55	43	53	53	64
Mechanical .....	NA	NA	NA	NA	NA	221	153	192	212	190	275	284	332
Other .....	1,551	1,650	1,992	2,008	2,260	335	385	384	386	405	426	457	534
Science.....	1,734	1,805	2,108	2,302	2,586	3,417	3,861	4,611	4,631	4,613	5,145	5,565	5,729
Natural sciences .....	1,229	1,426	1,617	1,735	1,918	2,305	2,546	3,159	3,143	3,131	3,509	3,714	3,696
Agricultural sciences .....	58	47	44	50	61	97	103	94	97	126	99	111	111
Biological sciences .....	179	190	223	231	305	426	575	595	540	537	646	763	793
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	50	30	22	28	37	28	39	31
Atmospheric sciences.....	NA	NA	NA	NA	NA	6	4	4	5	7	4	5	4
Earth sciences.....	NA	NA	NA	NA	NA	37	19	17	17	25	18	28	26
Oceanography .....	NA	NA	NA	NA	NA	7	7	1	6	5	6	6	1
Mathematics/computer sciences .....	779	962	1,072	1,203	1,303	1,494	1,560	2,208	2,258	2,218	2,505	2,605	2,517
Computer sciences.....	615	779	894	1,014	1,106	1,266	1,322	2,028	2,053	2,004	2,284	2,330	2,193
Mathematics/statistics .....	164	183	178	189	197	228	238	180	205	214	221	275	324
Physical sciences .....	213	227	278	251	249	238	278	240	220	213	231	196	244
Astronomy.....	NA	NA	NA	NA	NA	8	2	5	5	4	7	6	7
Chemistry.....	NA	NA	NA	NA	NA	136	197	172	153	125	157	128	154
Physics.....	NA	NA	NA	NA	NA	91	73	53	56	66	57	60	75
Other physical sciences.....	213	227	278	251	249	3	6	10	6	18	10	2	8
Social/behavioral sciences.....	505	379	491	567	668	1,112	1,315	1,452	1,488	1,482	1,636	1,851	2,033
Psychology .....	129	113	131	170	191	289	364	472	498	526	525	580	582
Social sciences.....	376	266	360	397	477	823	951	980	990	956	1,111	1,271	1,451
Anthropology .....	NA	NA	NA	NA	NA	25	25	39	39	34	42	43	44
Area/ethnic studies.....	48	32	44	56	75	75	91	78	101	92	101	93	111
Economics.....	NA	NA	NA	NA	NA	138	155	132	113	119	156	157	185
History of science.....	NA	NA	NA	NA	NA	0	0	0	0	2	2	3	1
Linguistics.....	NA	NA	NA	NA	NA	47	37	42	43	26	32	37	41
Political science/public administration .....	NA	NA	NA	NA	NA	405	478	516	534	512	600	715	854
Sociology .....	NA	NA	NA	NA	NA	74	69	66	70	86	95	106	78
Other social sciences.....	328	234	316	341	402	59	96	107	90	85	83	117	137
Non-S&E.....	4,520	4,674	6,074	6,760	8,323	9,917	11,732	14,422	14,901	15,796	16,595	18,423	19,836
Black													
All fields .....	13,960	13,173	13,455	15,857	18,897	22,954	26,948	33,305	35,059	36,524	39,582	44,375	46,901
S&E.....	1,742	1,784	1,652	2,090	2,554	4,210	4,870	5,492	6,117	6,133	6,800	7,459	7,607
Engineering.....	330	403	355	398	564	665	674	658	700	738	827	853	874
Aerospace .....	NA	NA	NA	NA	NA	13	9	7	10	14	8	11	19
Chemical .....	NA	NA	NA	NA	NA	28	35	34	34	31	43	31	56
Civil .....	NA	NA	NA	NA	NA	105	109	93	102	101	96	76	100
Electrical.....	NA	NA	NA	NA	NA	228	168	183	188	189	226	238	229
Industrial .....	NA	NA	NA	NA	NA	80	89	90	119	142	158	170	152
Materials .....	NA	NA	NA	NA	NA	12	18	15	9	19	14	21	19
Mechanical.....	NA	NA	NA	NA	NA	91	110	91	89	71	79	85	82
Other .....	330	403	355	398	564	108	136	145	149	171	203	221	217



**Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Science.....	1,412	1,381	1,297	1,692	1,990	3,545	4,196	4,834	5,417	5,395	5,973	6,606	6,733
Natural sciences.....	523	581	495	644	716	897	1,041	1,109	1,327	1,287	1,511	1,646	1,455
Agricultural sciences.....	50	55	36	51	70	74	96	84	96	88	103	102	85
Biological sciences.....	151	167	124	137	135	163	236	223	313	288	298	385	375
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	15	12	7	21	18	18	22	19
Atmospheric sciences.....	NA	NA	NA	NA	NA	2	2	0	4	2	2	3	5
Earth sciences.....	NA	NA	NA	NA	NA	13	10	6	15	15	13	16	13
Oceanography.....	NA	NA	NA	NA	NA	0	0	1	2	1	3	3	1
Mathematics/computer sciences.....	233	280	257	383	406	513	565	678	767	772	979	1,017	875
Computer sciences.....	180	207	198	283	308	373	411	580	654	659	881	902	740
Mathematics/statistics.....	53	73	59	100	98	140	154	98	113	113	98	115	135
Physical sciences.....	89	79	78	73	105	132	132	117	130	121	113	120	101
Astronomy.....	NA	NA	NA	NA	NA	4	2	0	0	2	1	1	2
Chemistry.....	NA	NA	NA	NA	NA	77	84	65	82	74	76	87	55
Physics.....	NA	NA	NA	NA	NA	41	39	44	41	37	32	27	39
Other physical sciences.....	89	79	78	73	105	10	7	8	7	8	4	5	5
Social/behavioral sciences.....	889	800	802	1,048	1,274	2,648	3,155	3,725	4,090	4,108	4,462	4,960	5,278
Psychology.....	426	376	395	454	544	802	1,059	1,346	1,598	1,631	1,801	1,923	2,135
Social sciences.....	463	424	407	594	730	1,846	2,096	2,379	2,492	2,477	2,661	3,037	3,143
Anthropology.....	NA	NA	NA	NA	NA	38	29	33	37	32	33	31	30
Area/ethnic studies.....	41	34	27	52	116	101	109	91	86	108	122	127	135
Economics.....	NA	NA	NA	NA	NA	95	96	71	66	76	67	70	96
History of science.....	NA	NA	NA	NA	NA	1	1	0	1	2	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	12	12	4	14	5	7	3	9
Political science/public administration.....	NA	NA	NA	NA	NA	1,176	1,386	1,585	1,754	1,717	1,861	2,057	2,235
Sociology.....	NA	NA	NA	NA	NA	229	247	344	294	285	274	301	205
Other social sciences.....	422	390	380	542	614	194	216	251	240	252	297	448	433
Non-S&E.....	12,218	11,389	11,803	13,767	16,343	18,744	22,078	27,813	28,942	30,391	32,782	36,916	39,294
Hispanic													
All fields.....	7,730	7,781	8,133	9,684	11,371	13,905	16,360	20,803	22,163	23,165	25,257	29,498	31,815
S&E.....	1,514	1,584	1,585	1,736	2,092	2,945	3,220	3,746	4,077	4,089	4,381	5,078	5,365
Engineering.....	346	512	468	468	581	711	765	852	838	855	876	1,130	1,152
Aerospace.....	NA	NA	NA	NA	NA	22	20	13	11	19	14	21	39
Chemical.....	NA	NA	NA	NA	NA	30	51	39	40	45	39	40	41
Civil.....	NA	NA	NA	NA	NA	151	159	180	168	187	152	163	208
Electrical.....	NA	NA	NA	NA	NA	197	187	211	172	180	242	340	276
Industrial.....	NA	NA	NA	NA	NA	95	108	172	192	204	163	229	239
Materials.....	NA	NA	NA	NA	NA	11	22	15	22	16	6	16	26
Mechanical.....	NA	NA	NA	NA	NA	100	113	99	93	87	117	157	153
Other.....	346	512	468	468	581	105	105	123	140	117	143	164	170
Science.....	1,168	1,072	1,117	1,268	1,511	2,234	2,455	2,894	3,239	3,234	3,505	3,948	4,213
Natural sciences.....	481	493	444	494	574	674	732	915	1,092	1,028	1,234	1,379	1,327
Agricultural sciences.....	66	62	48	49	69	96	105	133	123	175	132	171	185

**Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Biological sciences .....	139	126	126	136	151	167	214	268	310	267	267	330	359
Earth, atmospheric, and ocean sciences .....	NA	NA	NA	NA	NA	34	23	30	28	35	28	36	47
Atmospheric sciences.....	NA	NA	NA	NA	NA	6	3	2	0	1	2	2	3
Earth sciences.....	NA	NA	NA	NA	NA	28	18	26	25	31	24	32	43
Oceanography .....	NA	NA	NA	NA	NA	0	2	2	3	3	2	2	1
Mathematics/computer sciences .....	149	183	178	213	240	282	274	388	512	415	663	715	592
Computer sciences.....	94	123	144	128	162	210	211	288	440	333	555	602	462
Mathematics/statistics .....	55	60	34	85	78	72	63	100	72	82	108	113	130
Physical sciences .....	127	122	92	96	114	95	116	96	119	136	144	127	144
Astronomy.....	NA	NA	NA	NA	NA	2	2	2	1	2	2	3	2
Chemistry.....	NA	NA	NA	NA	NA	51	72	56	74	72	90	70	84
Physics.....	NA	NA	NA	NA	NA	37	36	34	37	56	41	44	53
Other physical sciences.....	127	122	92	96	114	5	6	4	7	6	11	10	5
Social/behavioral sciences.....	687	579	673	774	937	1,560	1,723	1,979	2,147	2,206	2,271	2,569	2,886
Psychology .....	344	271	360	391	463	622	718	837	937	953	957	1,085	1,219
Social sciences.....	343	308	313	383	474	938	1,005	1,142	1,210	1,253	1,314	1,484	1,667
Anthropology .....	NA	NA	NA	NA	NA	45	37	37	45	59	48	58	62
Area/ethnic studies.....	59	66	64	79	78	88	91	107	113	121	139	117	151
Economics.....	NA	NA	NA	NA	NA	53	71	67	53	57	79	80	111
History of science.....	NA	NA	NA	NA	NA	0	1	0	1	0	1	0	0
Linguistics.....	NA	NA	NA	NA	NA	17	24	18	27	19	23	26	26
Political science/public administration .....	NA	NA	NA	NA	NA	573	634	701	736	743	800	905	1,023
Sociology .....	NA	NA	NA	NA	NA	85	69	110	116	140	117	139	111
Other social sciences.....	284	242	249	304	396	77	78	102	119	114	107	159	183
Non-S&E.....	6,216	6,197	6,548	7,948	9,279	10,960	13,140	17,057	18,086	19,076	20,876	24,420	26,450
American Indian/Alaska Native													
All fields .....	1,257	1,049	1,082	1,125	1,344	1,542	1,844	2,099	2,274	2,382	2,546	2,826	2,892
S&E.....	228	147	209	200	253	307	370	383	472	420	452	535	486
Engineering.....	47	38	33	40	50	43	53	64	60	57	70	85	82
Aerospace .....	NA	NA	NA	NA	NA	2	2	0	2	4	2	6	2
Chemical .....	NA	NA	NA	NA	NA	3	5	3	4	2	2	0	4
Civil .....	NA	NA	NA	NA	NA	10	10	14	10	11	13	16	13
Electrical.....	NA	NA	NA	NA	NA	10	8	14	10	13	18	10	20
Industrial .....	NA	NA	NA	NA	NA	5	6	8	15	8	8	19	18
Materials .....	NA	NA	NA	NA	NA	1	0	4	1	2	1	1	1
Mechanical.....	NA	NA	NA	NA	NA	7	10	7	7	6	9	21	6
Other .....	47	38	33	40	50	5	12	14	11	11	17	12	18
Science.....	181	109	176	160	203	264	317	319	412	363	382	450	404
Natural sciences.....	93	48	86	57	68	79	98	108	144	118	126	135	122
Agricultural sciences .....	6	3	6	8	8	13	18	23	18	25	24	23	27
Biological sciences.....	18	11	17	13	26	20	25	26	29	34	31	33	29
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	4	5	9	11	4	9	7	11
Atmospheric sciences.....	NA	NA	NA	NA	NA	0	0	0	0	0	0	0	1

**Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Earth sciences.....	NA	NA	NA	NA	NA	4	5	9	8	4	9	7	10
Oceanography.....	NA	NA	NA	NA	NA	0	0	0	3	0	0	0	0
Mathematics/computer sciences.....	48	25	45	23	22	27	39	41	77	40	50	64	44
Computer sciences.....	41	22	39	14	14	16	25	32	68	32	42	57	35
Mathematics/statistics.....	7	3	6	9	8	11	14	9	9	8	8	7	9
Physical sciences.....	21	9	18	13	12	15	11	9	9	15	12	8	11
Astronomy.....	NA	NA	NA	NA	NA	0	0	0	0	0	1	0	1
Chemistry.....	NA	NA	NA	NA	NA	11	8	5	7	11	5	3	6
Physics.....	NA	NA	NA	NA	NA	4	2	3	2	4	5	5	3
Other physical sciences.....	21	9	18	13	12	0	1	1	0	0	1	0	1
Social/behavioral sciences.....	88	61	90	103	135	185	219	211	268	245	256	315	282
Psychology.....	37	35	33	49	57	81	97	69	106	96	104	108	115
Social sciences.....	51	26	57	54	78	104	122	142	162	149	152	207	167
Anthropology.....	NA	NA	NA	NA	NA	16	10	14	17	12	11	19	14
Area/ethnic studies.....	8	4	6	11	9	10	21	16	20	20	33	27	27
Economics.....	NA	NA	NA	NA	NA	5	8	3	7	10	6	6	10
History of science.....	NA	NA	NA	NA	NA	0	0	0	1	1	0	0	0
Linguistics.....	NA	NA	NA	NA	NA	0	2	1	1	4	1	2	6
Political science/public administration.....	NA	NA	NA	NA	NA	46	55	62	70	74	77	118	90
Sociology.....	NA	NA	NA	NA	NA	14	16	30	28	17	17	17	7
Other social sciences.....	43	22	51	43	69	13	10	16	18	11	7	18	13
Non-S&E.....	1,029	902	873	925	1,091	1,235	1,474	1,716	1,802	1,962	2,094	2,291	2,406
Other/unknown race/ethnicity													
All fields.....	5,860	15,329	15,761	15,627	16,415	18,928	20,060	25,844	30,623	36,162	42,106	50,514	48,485
S&E.....	1,469	3,399	3,699	2,930	3,545	4,031	3,811	4,472	5,061	5,757	6,384	7,142	8,200
Engineering.....	781	836	1,308	938	1,164	1,109	935	940	1,044	1,208	1,387	1,425	1,750
Aerospace.....	NA	NA	NA	NA	NA	83	23	9	23	19	34	46	41
Chemical.....	NA	NA	NA	NA	NA	30	29	30	41	53	46	43	80
Civil.....	NA	NA	NA	NA	NA	164	158	141	150	159	189	184	216
Electrical.....	NA	NA	NA	NA	NA	350	254	288	319	427	435	455	519
Industrial.....	NA	NA	NA	NA	NA	131	156	172	164	153	178	205	211
Materials.....	NA	NA	NA	NA	NA	22	20	22	27	19	25	22	27
Mechanical.....	NA	NA	NA	NA	NA	160	109	120	117	151	154	180	235
Other.....	781	836	1,308	938	1,164	169	186	158	203	227	326	290	421
Science.....	688	2,563	2,391	1,992	2,381	2,922	2,876	3,532	4,017	4,549	4,997	5,717	6,450
Natural sciences.....	401	1,334	1,445	1,000	1,053	1,195	1,091	1,355	1,645	1,981	2,177	2,533	2,611
Agricultural sciences.....	21	46	23	46	115	194	138	144	165	175	184	215	237
Biological sciences.....	49	251	148	187	188	192	226	284	298	318	344	403	468
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	76	44	46	60	48	77	64	89
Atmospheric sciences.....	NA	NA	NA	NA	NA	4	6	1	8	5	3	5	8
Earth sciences.....	NA	NA	NA	NA	NA	37	34	43	46	36	68	54	77
Oceanography.....	NA	NA	NA	NA	NA	35	4	2	6	7	6	5	4
Mathematics/computer sciences.....	210	726	1,041	551	545	591	574	745	976	1,271	1,407	1,663	1,595

## Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Computer sciences.....	159	566	896	429	334	448	442	603	840	1,129	1,272	1,456	1,354
Mathematics/statistics.....	51	160	145	122	211	143	132	142	136	142	135	207	241
Physical sciences.....	121	311	233	216	205	142	109	136	146	169	165	188	222
Astronomy.....	NA	NA	NA	NA	NA	3	1	8	12	10	16	16	12
Chemistry.....	NA	NA	NA	NA	NA	84	72	82	80	102	64	84	104
Physics.....	NA	NA	NA	NA	NA	47	33	42	45	53	74	84	105
Other physical sciences.....	121	311	233	216	205	8	3	4	9	4	11	4	1
Social/behavioral sciences.....	287	1,229	946	992	1,328	1,727	1,785	2,177	2,372	2,568	2,820	3,184	3,839
Psychology.....	29	452	399	448	623	498	549	871	934	1,041	1,061	1,098	1,254
Social sciences.....	258	777	547	544	705	1,229	1,236	1,306	1,438	1,527	1,759	2,086	2,585
Anthropology.....	NA	NA	NA	NA	NA	60	57	55	66	76	83	72	105
Area/ethnic studies.....	101	134	94	94	181	180	93	110	173	159	151	162	212
Economics.....	NA	NA	NA	NA	NA	109	79	97	93	102	201	253	275
History of science.....	NA	NA	NA	NA	NA	1	2	2	0	5	2	2	2
Linguistics.....	NA	NA	NA	NA	NA	19	34	20	25	27	32	40	40
Political science/public administration.....	NA	NA	NA	NA	NA	697	779	820	847	940	1,052	1,253	1,581
Sociology.....	NA	NA	NA	NA	NA	47	49	41	58	55	64	67	90
Other social sciences.....	157	643	453	450	524	116	143	161	176	163	174	237	280
Non-S&E.....	4,391	11,930	12,062	12,697	12,870	14,897	16,249	21,372	25,562	30,405	35,722	43,372	40,285
Temporary resident													
All fields.....	26,952	28,264	32,123	37,611	44,109	48,756	49,477	55,571	61,190	63,311	71,376	74,402	72,405
S&E.....	12,506	13,045	15,143	17,049	20,150	22,217	21,265	24,750	27,422	27,550	32,368	35,350	33,462
Engineering.....	5,694	5,781	6,747	7,520	9,119	9,699	8,636	9,823	11,001	10,803	13,374	15,620	14,880
Aerospace.....	NA	NA	NA	NA	NA	206	184	221	251	287	288	291	290
Chemical.....	NA	NA	NA	NA	NA	684	597	631	642	605	708	802	767
Civil.....	NA	NA	NA	NA	NA	1,456	1,216	1,092	1,233	1,354	1,504	1,663	1,551
Electrical.....	NA	NA	NA	NA	NA	3,368	3,076	4,108	4,671	4,243	5,672	6,897	6,408
Industrial.....	NA	NA	NA	NA	NA	999	1,063	1,176	1,409	1,430	1,765	1,976	1,759
Materials.....	NA	NA	NA	NA	NA	317	252	276	300	244	339	383	339
Mechanical.....	NA	NA	NA	NA	NA	1,429	1,154	1,166	1,250	1,305	1,600	1,925	1,914
Other.....	5,694	5,781	6,747	7,520	9,119	1,240	1,094	1,153	1,245	1,335	1,498	1,683	1,852
Science.....	6,812	7,264	8,396	9,529	11,031	12,518	12,629	14,927	16,421	16,747	18,994	19,730	18,582
Natural sciences.....	4,572	5,035	5,922	6,734	8,062	8,302	8,191	10,275	11,730	11,652	13,513	13,992	12,701
Agricultural sciences.....	606	567	630	603	694	653	658	516	471	479	515	646	596
Biological sciences.....	474	509	636	749	849	885	923	750	873	805	1,001	1,115	1,213
Earth, atmospheric, and ocean sciences.....	NA	NA	NA	NA	NA	285	237	195	172	199	206	258	254
Atmospheric sciences.....	NA	NA	NA	NA	NA	52	34	38	24	28	39	44	49
Earth sciences.....	NA	NA	NA	NA	NA	204	186	142	134	150	157	190	182
Oceanography.....	NA	NA	NA	NA	NA	29	17	15	14	21	10	24	23
Mathematics/computer sciences.....	2,394	2,903	3,418	3,878	4,917	5,012	4,966	7,674	8,975	8,981	10,602	10,605	9,257
Computer sciences.....	1,709	2,067	2,442	2,819	3,779	3,896	3,973	6,563	7,745	7,687	9,089	8,820	7,480
Mathematics/statistics.....	685	836	976	1,059	1,138	1,116	993	1,111	1,230	1,294	1,513	1,785	1,777
Physical sciences.....	1,098	1,056	1,238	1,504	1,602	1,467	1,407	1,140	1,239	1,188	1,189	1,368	1,381

**Earned master's degrees, by field, race/ethnicity, and citizenship: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	2000	2001	2002	2003	2004	2005
Astronomy .....	NA	NA	NA	NA	NA	25	19	22	28	35	29	48	37
Chemistry .....	NA	NA	NA	NA	NA	739	767	599	621	606	533	672	623
Physics .....	NA	NA	NA	NA	NA	682	559	483	568	524	602	627	698
Other physical sciences .....	1,098	1,056	1,238	1,504	1,602	21	62	36	22	23	25	21	23
Social/behavioral sciences .....	2,240	2,229	2,474	2,795	2,969	4,216	4,438	4,652	4,691	5,095	5,481	5,738	5,881
Psychology .....	296	220	259	317	332	473	402	467	464	479	665	603	630
Social sciences .....	1,944	2,009	2,215	2,478	2,637	3,743	4,036	4,185	4,227	4,616	4,816	5,135	5,251
Anthropology .....	NA	NA	NA	NA	NA	95	91	86	88	99	83	105	73
Area/ethnic studies .....	119	112	154	188	179	183	190	229	228	228	248	253	236
Economics .....	NA	NA	NA	NA	NA	1,277	1,348	1,306	1,320	1,460	1,614	1,708	1,730
History of science .....	NA	NA	NA	NA	NA	0	2	2	5	2	7	3	6
Linguistics .....	NA	NA	NA	NA	NA	191	169	173	158	169	172	176	189
Political science/public administration .....	NA	NA	NA	NA	NA	1,585	1,851	1,924	1,983	2,146	2,222	2,365	2,494
Sociology .....	NA	NA	NA	NA	NA	176	172	191	157	191	185	199	169
Other social sciences .....	1,825	1,897	2,061	2,290	2,458	236	213	274	288	321	285	326	354
Non-S&E .....	14,446	15,219	16,980	20,562	23,959	26,539	28,212	30,821	33,768	35,761	39,008	39,052	38,943

NA = not available

NOTES: Race/ethnicity data collected on broad fields of study only until 1994. Field taxonomies for data through 1994 do not exactly match field taxonomies used in tables by sex or race/ethnicity data after 1994. Primary difference between taxonomies: history included in social sciences before 1995 but in non-S&E from 1995 on. Racial/ethnic breakouts for U.S. citizens and permanent residents only; temporary resident includes all racial/ethnic groups.

SOURCES: National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

*Science and Engineering Indicators 2008*

**Earned doctoral degrees, by field, sex, and citizenship: Selected years, 1985–2005**

Field/sex/citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>Both sexes</b>														
All fields .....	31,295	32,365	34,325	37,530	39,800	41,747	42,535	41,092	41,361	40,651	39,953	40,740	42,117	43,354
S&E .....	19,663	20,692	22,706	25,060	26,640	27,864	28,650	27,338	27,557	27,037	26,235	26,907	27,991	29,751
Engineering.....	3,166	3,712	4,543	5,213	5,698	6,008	6,114	5,330	5,323	5,508	5,077	5,279	5,775	6,404
Aerospace.....	124	142	178	206	228	252	273	206	214	203	209	200	201	219
Chemical.....	504	584	712	691	737	708	767	674	726	730	705	648	725	875
Civil .....	391	477	538	575	624	656	655	584	556	595	627	673	673	757
Electrical.....	716	779	1,137	1,405	1,543	1,731	1,720	1,478	1,543	1,577	1,393	1,465	1,650	1,852
Industrial.....	92	120	162	165	236	284	246	211	176	206	230	214	217	222
Materials.....	303	392	380	489	535	588	582	469	451	497	396	474	511	540
Mechanical .....	513	657	760	875	1,030	1,025	1,022	855	864	953	827	814	852	978
Other .....	523	561	676	807	765	764	849	853	793	747	690	791	946	961
Science.....	16,497	16,980	18,163	19,847	20,942	21,856	22,536	22,008	22,234	21,529	21,158	21,628	22,216	23,347
Natural sciences .....	10,163	10,644	11,631	13,042	13,753	14,549	14,869	14,277	14,463	14,065	13,952	14,217	14,751	15,882
Agricultural sciences.....	1,152	1,005	1,154	1,108	1,036	1,117	1,078	1,065	1,037	975	1,009	1,060	1,045	1,038
Biological sciences .....	3,793	3,839	4,116	4,649	5,092	5,376	5,788	5,581	5,853	5,693	5,690	5,693	5,939	6,368
Earth, atmospheric, and ocean sciences.....	575	599	672	801	721	726	804	723	694	660	689	683	686	713
Atmospheric sciences.....	80	87	87	108	99	130	149	124	143	116	117	139	126	144
Earth sciences .....	385	375	455	560	479	454	489	452	387	393	426	374	420	420
Oceanography .....	110	137	130	133	143	142	166	147	164	151	146	170	140	149
Mathematics/computer sciences.....	998	1,189	1,471	1,838	2,026	2,187	2,032	1,939	1,910	1,832	1,726	1,859	2,024	2,339
Computer sciences.....	310	450	612	800	880	997	909	856	860	825	807	866	948	1,136
Mathematics/statistics.....	688	739	859	1,038	1,146	1,190	1,123	1,083	1,050	1,007	919	993	1,076	1,203
Medical/other life sciences.....	729	800	974	1,041	1,197	1,329	1,421	1,407	1,591	1,541	1,653	1,633	1,719	1,777
Medical sciences .....	367	375	430	456	518	555	545	607	664	648	682	655	776	807
Other life sciences .....	362	425	544	585	679	774	876	800	927	893	971	978	943	970
Physical sciences.....	2,916	3,212	3,244	3,605	3,681	3,814	3,746	3,562	3,378	3,364	3,185	3,289	3,338	3,647
Astronomy .....	100	100	113	125	145	173	198	159	185	186	141	167	165	186
Chemistry .....	1,836	1,975	1,970	2,194	2,137	2,162	2,147	2,132	1,989	1,981	1,921	2,041	1,987	2,127
Physics .....	980	1,137	1,161	1,286	1,399	1,479	1,401	1,271	1,204	1,197	1,123	1,081	1,186	1,334
Social/behavioral sciences .....	6,334	6,336	6,532	6,805	7,189	7,307	7,667	7,731	7,771	7,464	7,206	7,411	7,465	7,465
Psychology .....	3,117	3,172	3,208	3,250	3,420	3,429	3,557	3,668	3,616	3,385	3,197	3,273	3,327	3,327
Social sciences .....	3,217	3,164	3,324	3,555	3,769	3,878	4,110	4,063	4,155	4,079	4,009	4,138	4,138	4,138
Anthropology .....	377	383	351	374	380	410	469	488	482	450	521	505	565	499
Area/ethnic studies.....	106	92	93	116	137	121	94	109	127	146	122	106	133	110
Economics.....	959	960	1,062	1,053	1,067	1,152	1,163	1,075	1,086	1,081	1,026	1,050	1,069	1,184
History of science .....	23	25	20	27	37	41	35	50	42	40	47	46	48	43
Linguistics .....	176	199	188	227	214	201	244	251	230	230	193	224	254	211
Political science/public administration ...	666	647	700	740	824	894	975	1,016	986	984	938	1,024	946	990
Sociology.....	486	449	458	493	535	555	601	572	637	577	566	612	599	555
Other social sciences.....	424	409	452	525	575	504	529	502	565	571	596	571	524	546
Non-S&E .....	11,632	11,673	11,619	12,470	13,160	13,883	13,885	13,754	13,804	13,614	13,718	13,833	14,126	13,603
<b>Male</b>														
All fields .....	20,552	20,934	21,812	23,521	24,384	25,160	24,937	23,434	23,161	22,719	21,750	22,244	22,959	23,731

## Earned doctoral degrees, by field, sex, and citizenship: Selected years, 1985–2005

Field/sex/citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
S&E.....	14,332	14,905	15,968	17,351	17,976	18,594	18,549	17,233	17,041	16,708	15,895	16,301	16,955	17,970
Engineering.....	2,968	3,470	4,168	4,702	5,097	5,270	5,315	4,504	4,459	4,568	4,172	4,368	4,754	5,215
Aerospace.....	119	132	170	197	218	237	254	188	191	174	185	173	177	190
Chemical.....	463	524	632	605	638	597	641	550	571	547	527	494	552	662
Civil.....	371	459	484	529	558	575	571	495	466	483	505	547	539	580
Electrical.....	681	747	1,070	1,312	1,403	1,545	1,560	1,310	1,338	1,372	1,223	1,284	1,423	1,598
Industrial.....	86	107	144	146	207	231	205	169	140	160	162	159	174	178
Materials.....	271	347	335	412	449	489	470	376	367	392	315	373	420	419
Mechanical.....	487	640	731	810	955	954	928	751	767	860	729	726	757	858
Other.....	490	514	602	691	669	642	686	665	619	580	526	612	712	730
Science.....	11,364	11,435	11,800	12,649	12,879	13,324	13,234	12,729	12,582	12,140	11,723	11,933	12,201	12,755
Natural sciences.....	7,600	7,808	8,203	9,171	9,242	9,692	9,594	9,170	9,013	8,696	8,452	8,606	8,809	9,407
Agricultural sciences.....	975	828	907	880	786	857	783	749	718	629	683	686	646	659
Biological sciences.....	2,555	2,479	2,574	2,863	3,014	3,132	3,261	3,170	3,225	3,134	3,143	3,089	3,183	3,257
Earth, atmospheric, and ocean sciences...	470	491	542	626	566	577	608	535	495	461	478	470	448	470
Atmospheric sciences.....	76	73	77	89	79	106	124	101	108	87	86	100	80	93
Earth sciences.....	310	299	363	436	384	362	366	338	278	278	305	270	288	293
Oceanography.....	84	119	102	101	103	109	118	96	109	96	87	100	80	84
Mathematics/computer sciences.....	859	999	1,208	1,514	1,602	1,727	1,594	1,495	1,507	1,399	1,288	1,419	1,520	1,784
Computer sciences.....	277	385	504	679	737	808	743	692	717	668	638	690	749	909
Mathematics/statistics.....	582	614	704	835	865	919	851	803	790	731	650	729	771	875
Medical/other life sciences.....	289	325	345	369	408	477	469	499	522	542	526	544	540	565
Medical sciences.....	204	233	224	245	268	264	257	273	278	275	284	257	294	299
Other life sciences.....	85	92	121	124	140	213	212	226	244	267	242	287	246	266
Physical sciences.....	2,452	2,686	2,627	2,919	2,866	2,922	2,879	2,722	2,546	2,531	2,334	2,398	2,472	2,672
Astronomy.....	89	87	96	110	120	143	161	126	145	145	114	127	119	137
Chemistry.....	1,474	1,569	1,471	1,672	1,530	1,488	1,522	1,493	1,361	1,350	1,276	1,386	1,350	1,403
Physics.....	889	1,030	1,060	1,137	1,216	1,291	1,196	1,103	1,040	1,036	944	885	1,003	1,132
Social/behavioral sciences.....	3,764	3,627	3,597	3,478	3,637	3,632	3,640	3,559	3,569	3,444	3,271	3,327	3,392	3,348
Psychology.....	1,576	1,474	1,408	1,249	1,322	1,245	1,162	1,209	1,203	1,121	1,060	1,042	1,081	1,062
Social sciences.....	2,188	2,153	2,189	2,229	2,315	2,387	2,478	2,350	2,366	2,323	2,211	2,285	2,311	2,286
Anthropology.....	187	185	189	143	149	172	203	214	206	187	216	197	254	213
Area/ethnic studies.....	59	48	40	55	68	55	42	48	60	49	52	33	55	51
Economics.....	814	797	864	833	808	864	876	781	790	773	738	747	754	827
History of science.....	21	15	11	15	21	24	21	32	25	32	35	23	36	27
Linguistics.....	85	93	82	112	89	98	107	99	95	94	78	91	104	73
Political science/public administration....	491	472	499	527	569	620	674	655	620	650	540	626	600	581
Sociology.....	243	274	226	247	279	258	265	228	260	240	221	251	246	211
Other social sciences.....	288	269	278	297	332	296	290	293	310	298	331	317	262	303
Non-S&E.....	6,220	6,029	5,844	6,170	6,408	6,566	6,388	6,201	6,120	6,011	5,855	5,943	6,004	5,761
Female														
All fields.....	10,743	11,431	12,513	13,873	15,121	16,416	17,241	17,481	18,126	17,855	18,117	18,496	19,157	19,564
S&E.....	5,331	5,787	6,738	7,600	8,429	9,129	9,870	9,980	10,459	10,275	10,288	10,606	11,035	11,742
Engineering.....	198	242	375	467	522	696	750	788	838	930	891	911	1,021	1,174

## Earned doctoral degrees, by field, sex, and citizenship: Selected years, 1985–2005

Field/sex/citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Aerospace.....	5	10	8	7	8	14	16	17	21	28	24	27	24	29
Chemical.....	41	60	80	83	94	109	122	123	152	180	176	154	173	210
Civil.....	20	18	54	41	54	76	80	89	88	111	121	126	134	176
Electrical.....	35	32	67	79	125	173	150	155	195	204	163	181	227	249
Industrial.....	6	13	18	17	27	50	40	42	35	45	67	55	43	41
Materials.....	32	45	45	77	78	95	106	88	83	105	80	101	91	120
Mechanical.....	26	17	29	57	57	64	88	96	96	91	96	88	95	120
Other.....	33	47	74	106	79	115	148	178	168	166	164	179	234	229
Science.....	5,133	5,545	6,363	7,133	7,907	8,433	9,120	9,192	9,621	9,345	9,397	9,695	10,014	10,568
Natural sciences.....	2,563	2,836	3,428	3,824	4,397	4,787	5,165	5,048	5,428	5,335	5,479	5,611	5,941	6,456
Agricultural sciences.....	177	177	247	222	246	256	287	311	317	339	319	374	399	376
Biological sciences.....	1,238	1,360	1,542	1,773	2,050	2,217	2,495	2,394	2,622	2,550	2,545	2,604	2,756	3,105
Earth, atmospheric, and ocean sciences.....	105	108	130	172	146	147	191	185	196	198	211	213	238	243
Atmospheric sciences.....	4	14	10	16	18	23	25	22	33	28	31	39	46	51
Earth sciences.....	75	76	92	124	89	91	119	112	108	115	121	104	132	127
Oceanography.....	26	18	28	32	39	33	47	51	55	55	59	70	60	65
Mathematics/computer sciences.....	139	190	263	316	402	451	413	434	400	431	432	440	504	551
Computer sciences.....	33	65	108	117	138	186	150	157	141	155	166	176	199	225
Mathematics/statistics.....	106	125	155	199	264	265	263	277	259	276	266	264	305	326
Medical/other life sciences.....	440	475	629	668	777	843	936	899	1,066	989	1,125	1,089	1,179	1,209
Medical sciences.....	163	142	206	208	241	285	280	329	386	367	397	398	482	506
Other life sciences.....	277	333	423	460	536	558	656	570	680	622	728	691	697	703
Physical sciences.....	464	526	617	673	776	873	843	825	827	828	847	891	865	972
Astronomy.....	11	13	17	14	25	30	37	33	40	41	27	40	46	49
Chemistry.....	362	406	499	517	582	661	613	632	624	627	644	655	636	723
Physics.....	91	107	101	142	169	182	193	160	163	160	176	196	183	200
Social/behavioral sciences.....	2,570	2,709	2,935	3,309	3,510	3,646	3,955	4,144	4,193	4,010	3,918	4,084	4,073	4,112
Psychology.....	1,541	1,698	1,800	1,996	2,088	2,181	2,363	2,449	2,410	2,260	2,132	2,231	2,246	2,264
Social sciences.....	1,029	1,011	1,135	1,313	1,422	1,465	1,592	1,695	1,783	1,750	1,786	1,853	1,827	1,848
Anthropology.....	190	198	162	230	231	237	261	274	276	263	305	308	311	285
Area/ethnic studies.....	47	44	53	61	68	65	52	59	67	97	70	73	78	59
Economics.....	145	163	198	217	246	279	266	291	293	306	281	303	315	355
History of science.....	2	10	9	11	16	17	13	18	17	8	12	23	12	16
Linguistics.....	91	106	106	112	118	102	135	148	135	136	115	133	150	137
Political science/public administration.....	175	175	201	211	246	265	298	356	364	330	395	398	346	409
Sociology.....	243	175	232	246	255	294	334	342	376	337	345	361	353	344
Other social sciences.....	136	140	174	225	242	206	233	207	255	273	263	254	262	243
Non-S&E.....	5,412	5,644	5,775	6,273	6,692	7,287	7,371	7,501	7,667	7,580	7,829	7,890	8,122	7,822
U.S. Citizens														
All fields.....	23,388	22,997	23,413	25,583	26,462	27,740	28,151	27,992	27,986	26,975	25,998	26,499	26,466	26,312
S&E.....	13,691	13,580	14,207	15,412	15,820	16,425	17,071	16,887	16,826	16,112	15,466	15,799	15,933	16,118
Engineering.....	1,279	1,559	1,866	2,087	2,229	2,386	2,739	2,487	2,223	2,153	1,893	1,912	1,945	1,999
Aerospace.....	53	64	75	103	114	140	155	103	117	94	82	70	71	93
Chemical.....	240	294	383	348	324	291	321	333	340	333	301	272	292	294



## Earned doctoral degrees, by field, sex, and citizenship: Selected years, 1985–2005

Field/sex/citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Civil .....	130	162	188	173	169	206	249	261	221	223	211	239	190	211
Electrical.....	270	321	440	555	630	683	753	639	533	469	422	410	421	466
Industrial.....	29	44	51	50	89	108	102	86	67	74	71	55	63	59
Materials .....	144	176	173	211	228	238	271	225	221	202	164	176	192	177
Mechanical .....	193	241	259	297	347	383	456	399	341	386	286	288	270	292
Other .....	220	257	297	350	328	337	432	441	383	372	356	402	446	407
Science.....	12,412	12,021	12,341	13,325	13,591	14,039	14,332	14,400	14,603	13,959	13,573	13,887	13,988	14,119
Natural sciences .....	7,436	7,266	7,691	8,220	8,266	8,577	8,724	8,544	8,743	8,517	8,310	8,560	8,694	8,948
Agricultural sciences.....	715	606	660	591	506	554	532	506	498	469	460	521	531	527
Biological sciences .....	3,150	2,982	3,119	3,313	3,449	3,494	3,670	3,659	3,904	3,909	3,798	3,796	3,963	4,141
Earth, atmospheric, and ocean sciences...	411	403	477	580	426	431	488	423	444	382	397	419	415	421
Atmospheric sciences.....	54	51	55	56	42	64	83	61	76	55	61	66	67	82
Earth sciences .....	278	261	335	431	303	284	310	273	256	245	246	244	255	242
Oceanography .....	79	91	87	93	81	83	95	89	112	82	90	109	93	97
Mathematics/computer sciences .....	566	589	732	850	923	1,038	960	960	907	840	768	860	853	885
Computer sciences.....	189	244	339	388	427	484	430	421	389	369	356	389	397	405
Mathematics/statistics.....	377	345	393	462	496	554	530	539	518	471	412	471	456	480
Medical/other life sciences .....	550	606	730	779	879	938	959	972	1,119	1,063	1,125	1,164	1,192	1,206
Medical sciences.....	236	249	279	286	310	324	308	374	411	389	384	428	468	484
Other life sciences.....	314	357	451	493	569	614	651	598	708	674	741	736	724	722
Physical sciences .....	2,044	2,080	1,973	2,107	2,083	2,122	2,115	2,024	1,871	1,854	1,762	1,800	1,740	1,768
Astronomy.....	82	72	78	84	106	120	151	111	127	120	101	125	113	120
Chemistry.....	1,345	1,381	1,298	1,351	1,273	1,238	1,233	1,256	1,119	1,131	1,135	1,172	1,112	1,131
Physics.....	617	627	597	672	704	764	731	657	625	603	526	503	515	517
Social/behavioral sciences.....	4,976	4,755	4,650	5,105	5,325	5,462	5,608	5,856	5,860	5,442	5,263	5,327	5,294	5,171
Psychology .....	2,804	2,749	2,685	2,954	3,071	3,083	3,036	3,223	3,155	2,902	2,722	2,786	2,723	2,811
Social sciences.....	2,172	2,006	1,965	2,151	2,254	2,379	2,572	2,633	2,705	2,540	2,541	2,541	2,571	2,360
Anthropology .....	322	312	279	315	312	330	356	374	387	348	405	407	449	375
Area/ethnic studies.....	90	81	77	92	105	96	86	91	116	129	97	89	116	96
Economics.....	523	488	509	452	437	492	487	463	443	403	371	349	357	331
History of science .....	17	24	16	18	28	31	32	40	32	36	40	35	39	32
Linguistics .....	107	107	88	117	91	98	126	136	105	108	90	95	111	98
Political science/public administration ...	473	422	439	502	563	636	730	756	763	711	704	736	691	681
Sociology.....	375	318	300	324	359	378	415	429	478	448	455	466	452	398
Other social sciences.....	265	254	257	331	359	318	340	344	381	357	379	364	356	349
Non-S&E.....	9,697	9,417	9,206	10,171	10,642	11,315	11,080	11,105	11,160	10,863	10,532	10,700	10,533	10,194
Male														
All fields.....	14,236	13,581	13,402	14,391	14,518	14,964	15,044	14,518	14,157	13,630	12,845	13,085	12,993	12,791
S&E.....	9,312	9,012	9,034	9,612	9,656	9,859	10,137	9,729	9,389	9,006	8,456	8,639	8,660	8,624
Engineering.....	1,160	1,410	1,617	1,808	1,933	2,012	2,324	2,060	1,802	1,741	1,526	1,538	1,532	1,602
Aerospace .....	50	58	71	98	108	128	143	93	103	77	72	61	61	82
Chemical .....	211	250	323	297	265	221	260	268	248	251	228	204	221	227
Civil .....	121	153	151	152	139	170	204	207	179	164	162	176	134	147
Electrical.....	250	307	411	511	573	604	679	577	464	425	377	364	368	410

## Earned doctoral degrees, by field, sex, and citizenship: Selected years, 1985–2005

Field/sex/citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Industrial .....	25	36	41	39	69	82	77	58	50	51	43	38	45	45
Materials .....	125	144	138	164	186	185	213	176	174	155	122	141	160	133
Mechanical .....	178	231	240	263	314	355	409	347	294	352	252	257	228	256
Other .....	200	231	242	284	279	267	339	334	290	266	270	297	315	302
Science.....	8,152	7,602	7,417	7,804	7,723	7,847	7,813	7,669	7,587	7,265	6,930	7,101	7,128	7,022
Natural sciences.....	5,400	5,114	5,140	5,506	5,274	5,422	5,398	5,199	5,121	4,974	4,762	4,933	4,906	4,968
Agricultural sciences .....	590	485	488	453	368	419	377	338	324	292	291	346	325	319
Biological sciences .....	2,118	1,905	1,928	2,023	2,000	2,006	2,031	2,010	2,096	2,120	2,064	2,029	2,086	2,116
Earth, atmospheric, and ocean sciences.....	328	325	378	438	324	340	356	303	309	254	246	276	252	267
Atmospheric sciences.....	51	43	52	50	32	56	72	52	61	42	44	50	46	59
Earth sciences.....	216	202	260	319	238	219	221	195	182	161	153	169	158	155
Oceanography.....	61	80	66	69	54	65	63	56	66	51	49	57	48	53
Mathematics/computer sciences .....	472	473	566	674	716	790	734	704	689	617	567	650	633	676
Computer sciences.....	165	193	266	305	345	368	347	330	316	284	278	310	309	316
Mathematics/statistics .....	307	280	300	369	371	422	387	374	373	333	289	340	324	360
Medical/other life sciences .....	171	207	208	221	226	263	254	285	308	302	312	326	323	338
Medical sciences.....	106	143	121	135	128	120	120	142	143	126	135	143	142	158
Other life sciences.....	65	64	87	86	98	143	134	143	165	176	177	183	181	180
Physical sciences .....	1,721	1,719	1,572	1,697	1,640	1,604	1,646	1,559	1,395	1,389	1,282	1,306	1,287	1,252
Astronomy.....	73	63	67	77	86	99	126	87	95	93	80	97	81	86
Chemistry.....	1,084	1,085	956	1,014	921	829	881	894	744	766	753	805	766	719
Physics.....	564	571	549	606	633	676	639	578	556	530	449	404	440	447
Social/behavioral sciences.....	2,752	2,488	2,277	2,298	2,449	2,425	2,415	2,470	2,466	2,291	2,168	2,168	2,222	2,054
Psychology .....	1,395	1,260	1,147	1,106	1,200	1,092	987	1,043	1,021	949	888	869	878	883
Social sciences.....	1,357	1,228	1,130	1,192	1,249	1,333	1,428	1,427	1,445	1,342	1,280	1,299	1,344	1,171
Anthropology.....	156	141	148	119	119	134	146	164	153	142	163	155	210	147
Area/ethnic studies.....	49	42	30	39	47	42	37	41	53	45	40	25	47	44
Economics.....	428	382	375	335	312	344	363	329	318	277	264	252	245	221
History of science.....	16	14	8	12	15	15	20	25	19	29	29	17	29	21
Linguistics.....	46	44	32	49	36	45	46	52	43	44	31	41	44	32
Political science/public administration .....	333	283	274	327	368	427	488	472	475	454	389	438	433	381
Sociology .....	166	171	124	147	171	156	163	154	187	173	175	181	170	144
Other social sciences.....	163	151	139	164	181	170	165	190	197	178	189	190	166	181
Non-S&E.....	4,924	4,569	4,368	4,779	4,862	5,105	4,907	4,789	4,768	4,624	4,389	4,446	4,333	4,167
Female														
All fields.....	9,152	9,416	10,011	11,189	11,939	12,774	13,075	13,474	13,826	13,345	13,152	13,414	13,473	13,519
S&E.....	4,379	4,568	5,173	5,798	6,160	6,564	6,920	7,158	7,436	7,106	7,009	7,160	7,273	7,492
Engineering.....	119	149	249	279	296	374	414	427	421	412	367	374	413	396
Aerospace .....	3	6	4	5	6	12	12	10	14	17	10	9	10	11
Chemical .....	29	44	60	51	59	70	61	65	92	82	73	68	71	67
Civil .....	9	9	37	21	30	36	45	54	42	59	49	63	56	64
Electrical.....	20	14	29	44	57	79	74	62	69	44	45	46	53	55

Appendix table 2-31

**Earned doctoral degrees, by field, sex, and citizenship: Selected years, 1985–2005**

Field/sex/citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Industrial .....	4	8	10	11	20	26	25	28	17	23	28	17	18	14
Materials .....	19	32	35	47	42	53	58	49	47	47	42	35	32	44
Mechanical .....	15	10	19	34	33	28	46	52	47	34	34	31	42	36
Other .....	20	26	55	66	49	70	93	107	93	106	86	105	131	105
Science.....	4,260	4,419	4,924	5,519	5,864	6,190	6,506	6,731	7,015	6,694	6,642	6,786	6,860	7,096
Natural sciences.....	2,036	2,152	2,551	2,713	2,991	3,153	3,319	3,345	3,622	3,543	3,547	3,627	3,788	3,979
Agricultural sciences .....	125	121	172	138	138	135	154	168	174	177	168	175	206	208
Biological sciences .....	1,032	1,077	1,191	1,290	1,449	1,487	1,637	1,649	1,808	1,789	1,734	1,767	1,877	2,024
Earth, atmospheric, and ocean sciences.....	83	78	99	142	102	91	131	120	135	128	151	143	163	154
Atmospheric sciences.....	3	8	3	6	10	8	11	9	15	13	17	16	21	23
Earth sciences.....	62	59	75	112	65	65	88	78	74	84	93	75	97	87
Oceanography.....	18	11	21	24	27	18	32	33	46	31	41	52	45	44
Mathematics/computer sciences.....	94	116	166	176	206	248	225	256	218	223	201	210	220	209
Computer sciences.....	24	51	73	83	82	116	82	91	73	85	78	79	88	89
Mathematics/statistics .....	70	65	93	93	124	132	143	165	145	138	123	131	132	120
Medical/other life sciences .....	379	399	522	558	653	675	704	687	811	761	813	838	869	868
Medical sciences.....	130	106	158	151	182	204	187	232	268	263	249	285	326	326
Other life sciences.....	249	293	364	407	471	471	517	455	543	498	564	553	543	542
Physical sciences .....	323	361	401	409	443	517	468	465	476	465	480	494	453	516
Astronomy.....	9	9	11	7	20	21	25	24	32	27	21	28	32	34
Chemistry.....	261	296	342	336	352	409	351	362	375	365	382	367	346	412
Physics.....	53	56	48	66	71	87	92	79	69	73	77	99	75	70
Social/behavioral sciences.....	2,224	2,267	2,373	2,806	2,873	3,037	3,187	3,386	3,393	3,151	3,095	3,159	3,072	3,117
Psychology .....	1,409	1,489	1,538	1,847	1,869	1,991	2,044	2,180	2,133	1,953	1,834	1,917	1,845	1,928
Social sciences.....	815	778	835	959	1,004	1,046	1,143	1,206	1,260	1,198	1,261	1,242	1,227	1,189
Anthropology.....	166	171	131	196	193	196	210	210	234	206	242	252	239	228
Area/ethnic studies.....	41	39	47	53	58	54	49	50	63	84	57	64	69	52
Economics.....	95	106	134	117	125	148	124	134	125	126	107	97	112	110
History of science.....	1	10	8	6	13	16	12	15	13	7	11	18	10	11
Linguistics.....	61	63	56	68	55	53	80	84	62	64	59	54	67	66
Political science/public administration .....	140	139	165	175	195	209	241	284	288	257	315	298	258	300
Sociology .....	209	147	176	177	188	222	252	275	291	275	280	285	282	254
Other social sciences.....	102	103	118	167	177	148	175	154	184	179	190	174	190	168
Non-S&E.....	4,773	4,848	4,838	5,391	5,779	6,210	6,155	6,316	6,390	6,239	6,143	6,254	6,200	6,027

NOTES: Total includes unknown sex not shown separately. Medical/other life sciences reported separately from S&E fields in National Science Foundation, Division of Science Resources Statistics (NSF/SRS) higher education publications. For detailed fields, see NSF/SRS, Science and Engineering Doctorate Awards annual series, <http://www.nsf.gov/statistics/doctorates/>.

SOURCE: NSF/SRS, Survey of Earned Doctorates, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>All races/ethnicities and citizenships</b>														
All fields .....	31,295	32,365	34,325	37,530	39,800	41,747	42,535	41,092	41,361	40,651	39,953	40,740	42,117	43,354
S&E.....	19,663	20,692	22,706	25,060	26,640	27,864	28,650	27,338	27,557	27,037	26,235	26,907	27,991	29,751
Engineering.....	3,166	3,712	4,543	5,213	5,698	6,008	6,114	5,330	5,323	5,508	5,077	5,279	5,775	6,404
Aerospace.....	124	142	178	206	228	252	273	206	214	203	209	200	201	219
Chemical.....	504	584	712	691	737	708	767	674	726	730	705	648	725	875
Civil.....	391	477	538	575	624	656	655	584	556	595	627	673	673	757
Electrical.....	716	779	1,137	1,405	1,543	1,731	1,720	1,478	1,543	1,577	1,393	1,465	1,650	1,852
Industrial.....	92	120	162	165	236	284	246	211	176	206	230	214	217	222
Materials.....	303	392	380	489	535	588	582	469	451	497	396	474	511	540
Mechanical.....	513	657	760	875	1,030	1,025	1,022	855	864	953	827	814	852	978
Other.....	523	561	676	807	765	764	849	853	793	747	690	791	946	961
Science.....	16,497	16,980	18,163	19,847	20,942	21,856	22,536	22,008	22,234	21,529	21,158	21,628	22,216	23,347
Natural sciences.....	10,163	10,644	11,631	13,042	13,753	14,549	14,869	14,277	14,463	14,065	13,952	14,217	14,751	15,882
Agricultural sciences.....	1,152	1,005	1,154	1,108	1,036	1,117	1,078	1,065	1,037	975	1,009	1,060	1,045	1,038
Biological sciences.....	3,793	3,839	4,116	4,649	5,092	5,376	5,788	5,581	5,853	5,693	5,690	5,693	5,939	6,368
Earth, atmospheric, and ocean sciences.....	575	599	672	801	721	726	804	723	694	660	689	683	686	713
Atmospheric sciences.....	80	87	87	108	99	130	149	124	143	116	117	139	126	144
Earth sciences.....	385	375	455	560	479	454	489	452	387	393	426	374	420	420
Oceanography.....	110	137	130	133	143	142	166	147	164	151	146	170	140	149
Mathematics/computer sciences.....	998	1,189	1,471	1,838	2,026	2,187	2,032	1,939	1,910	1,832	1,726	1,859	2,024	2,339
Computer sciences.....	310	450	612	800	880	997	909	856	860	825	807	866	948	1,136
Mathematics/statistics.....	688	739	859	1,038	1,146	1,190	1,123	1,083	1,050	1,007	919	993	1,076	1,203
Medical/other life sciences.....	729	800	974	1,041	1,197	1,329	1,421	1,407	1,591	1,541	1,653	1,633	1,719	1,777
Medical sciences.....	367	375	430	456	518	555	545	607	664	648	682	655	776	807
Other life sciences.....	362	425	544	585	679	774	876	800	927	893	971	978	943	970
Physical sciences.....	2,916	3,212	3,244	3,605	3,681	3,814	3,746	3,562	3,378	3,364	3,185	3,289	3,338	3,647
Astronomy.....	100	100	113	125	145	173	198	159	185	186	141	167	165	186
Chemistry.....	1,836	1,975	1,970	2,194	2,137	2,162	2,147	2,132	1,989	1,981	1,921	2,041	1,987	2,127
Physics.....	980	1,137	1,161	1,286	1,399	1,479	1,401	1,271	1,204	1,197	1,123	1,081	1,186	1,334
Social/behavioral sciences.....	6,334	6,336	6,532	6,805	7,189	7,307	7,667	7,731	7,771	7,464	7,206	7,411	7,465	7,465
Psychology.....	3,117	3,172	3,208	3,250	3,420	3,429	3,557	3,668	3,616	3,385	3,197	3,273	3,327	3,327
Social sciences.....	3,217	3,164	3,324	3,555	3,769	3,878	4,110	4,063	4,155	4,079	4,009	4,138	4,138	4,138
Anthropology.....	377	383	351	374	380	410	469	488	482	450	521	505	565	499
Area/ethnic studies.....	106	92	93	116	137	121	94	109	127	146	122	106	133	110
Economics.....	959	960	1,062	1,053	1,067	1,152	1,163	1,075	1,086	1,081	1,026	1,050	1,069	1,184
History of science.....	23	25	20	27	37	41	35	50	42	40	47	46	48	43
Linguistics.....	176	199	188	227	214	201	244	251	230	230	193	224	254	211
Political science/public administration.....	666	647	700	740	824	894	975	1,016	986	984	938	1,024	946	990
Sociology.....	486	449	458	493	535	555	601	572	637	577	566	612	599	555
Other social sciences.....	424	409	452	525	575	504	529	502	565	571	596	571	524	546
Non-S&E.....	11,632	11,673	11,619	12,470	13,160	13,883	13,885	13,754	13,804	13,614	13,718	13,833	14,126	13,603

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>U.S. citizen</b>														
All fields .....	23,388	22,997	23,413	25,583	26,462	27,740	28,151	27,992	27,986	26,975	25,998	26,499	26,466	26,312
S&E.....	13,691	13,580	14,207	15,412	15,820	16,425	17,071	16,887	16,826	16,112	15,466	15,799	15,933	16,118
Engineering.....	1,279	1,559	1,866	2,087	2,229	2,386	2,739	2,487	2,223	2,153	1,893	1,912	1,945	1,999
Aerospace.....	53	64	75	103	114	140	155	103	117	94	82	70	71	93
Chemical .....	240	294	383	348	324	291	321	333	340	333	301	272	292	294
Civil .....	130	162	188	173	169	206	249	261	221	223	211	239	190	211
Electrical.....	270	321	440	555	630	683	753	639	533	469	422	410	421	466
Industrial.....	29	44	51	50	89	108	102	86	67	74	71	55	63	59
Materials .....	144	176	173	211	228	238	271	225	221	202	164	176	192	177
Mechanical.....	193	241	259	297	347	383	456	399	341	386	286	288	270	292
Other .....	220	257	297	350	328	337	432	441	383	372	356	402	446	407
Science.....	12,412	12,021	12,341	13,325	13,591	14,039	14,332	14,400	14,603	13,959	13,573	13,887	13,988	14,119
Natural sciences.....	7,436	7,266	7,691	8,220	8,266	8,577	8,724	8,544	8,743	8,517	8,310	8,560	8,694	8,948
Agricultural sciences.....	715	606	660	591	506	554	532	506	498	469	460	521	531	527
Biological sciences.....	3,150	2,982	3,119	3,313	3,449	3,494	3,670	3,659	3,904	3,909	3,798	3,796	3,963	4,141
Earth, atmospheric, and ocean sciences .....	411	403	477	580	426	431	488	423	444	382	397	419	415	421
Atmospheric sciences.....	54	51	55	56	42	64	83	61	76	55	61	66	67	82
Earth sciences.....	278	261	335	431	303	284	310	273	256	245	246	244	255	242
Oceanography .....	79	91	87	93	81	83	95	89	112	82	90	109	93	97
Mathematics/computer sciences .....	566	589	732	850	923	1,038	960	960	907	840	768	860	853	885
Computer sciences.....	189	244	339	388	427	484	430	421	389	369	356	389	397	405
Mathematics/statistics.....	377	345	393	462	496	554	530	539	518	471	412	471	456	480
Medical/other life sciences .....	550	606	730	779	879	938	959	972	1,119	1,063	1,125	1,164	1,192	1,206
Medical sciences.....	236	249	279	286	310	324	308	374	411	389	384	428	468	484
Other life sciences.....	314	357	451	493	569	614	651	598	708	674	741	736	724	722
Physical sciences .....	2,044	2,080	1,973	2,107	2,083	2,122	2,115	2,024	1,871	1,854	1,762	1,800	1,740	1,768
Astronomy.....	82	72	78	84	106	120	151	111	127	120	101	125	113	120
Chemistry.....	1,345	1,381	1,298	1,351	1,273	1,238	1,233	1,256	1,119	1,131	1,135	1,172	1,112	1,131
Physics.....	617	627	597	672	704	764	731	657	625	603	526	503	515	517
Social/behavioral sciences.....	4,976	4,755	4,650	5,105	5,325	5,462	5,608	5,856	5,860	5,442	5,263	5,327	5,294	5,171
Psychology .....	2,804	2,749	2,685	2,954	3,071	3,083	3,036	3,223	3,155	2,902	2,722	2,786	2,723	2,811
Social sciences.....	2,172	2,006	1,965	2,151	2,254	2,379	2,572	2,633	2,705	2,540	2,541	2,541	2,571	2,360
Anthropology .....	322	312	279	315	312	330	356	374	387	348	405	407	449	375
Area/ethnic studies.....	90	81	77	92	105	96	86	91	116	129	97	89	116	96
Economics.....	523	488	509	452	437	492	487	463	443	403	371	349	357	331
History of science.....	17	24	16	18	28	31	32	40	32	36	40	35	39	32
Linguistics.....	107	107	88	117	91	98	126	136	105	108	90	95	111	98
Political science/public administration .....	473	422	439	502	563	636	730	756	763	711	704	736	691	681
Sociology.....	375	318	300	324	359	378	415	429	478	448	455	466	452	398
Other social sciences.....	265	254	257	331	359	318	340	344	381	357	379	364	356	349
Non-S&E.....	9,697	9,417	9,206	10,171	10,642	11,315	11,080	11,105	11,160	10,863	10,532	10,700	10,533	10,194
<b>White</b>														
All fields.....	20,778	20,469	20,900	22,428	23,251	23,888	23,181	23,098	22,970	21,869	20,757	20,872	20,762	20,845

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
S&E.....	12,324	12,150	12,731	13,530	13,988	14,165	14,106	14,012	13,861	13,110	12,430	12,546	12,568	12,777
Engineering.....	1,098	1,331	1,585	1,708	1,891	1,958	2,151	1,991	1,765	1,650	1,395	1,457	1,462	1,521
Aerospace .....	48	55	67	89	99	116	133	92	103	75	70	56	56	71
Chemical .....	199	252	329	300	282	242	269	279	268	263	214	203	212	223
Civil .....	115	140	163	143	147	175	206	219	181	176	170	203	150	174
Electrical.....	232	256	360	431	507	540	529	472	398	337	278	264	290	332
Industrial.....	28	39	41	42	67	85	78	74	56	49	53	43	51	46
Materials .....	127	151	147	179	198	189	226	177	180	158	121	143	150	145
Mechanical.....	160	203	218	244	303	320	361	323	262	292	213	228	196	228
Other .....	189	235	260	280	288	291	349	355	317	300	276	317	357	302
Science.....	11,226	10,819	11,146	11,822	12,097	12,207	11,955	12,021	12,096	11,460	11,035	11,089	11,106	11,256
Natural sciences.....	6,786	6,565	6,978	7,358	7,374	7,504	7,339	7,190	7,308	7,033	6,824	6,887	6,957	7,158
Agricultural sciences .....	675	563	612	551	473	511	452	442	433	417	407	452	457	473
Biological sciences.....	2,872	2,696	2,833	2,964	3,054	3,020	3,068	3,017	3,195	3,143	3,028	2,978	3,104	3,248
Earth, atmospheric, and ocean sciences .....	387	373	444	536	403	410	436	365	398	345	361	369	364	374
Atmospheric sciences.....	50	42	52	53	40	62	76	56	70	49	57	62	59	73
Earth sciences.....	262	247	313	398	286	270	279	233	228	219	225	217	216	215
Oceanography.....	75	84	79	85	77	78	81	76	100	77	79	90	89	86
Mathematics/computer sciences .....	507	509	647	732	823	923	790	810	748	696	620	673	684	692
Computer sciences.....	170	215	296	330	378	416	341	336	311	300	267	294	308	305
Mathematics/statistics .....	337	294	351	402	445	507	449	474	437	396	353	379	376	387
Medical/other life sciences.....	494	536	676	691	782	806	813	816	940	885	944	934	938	929
Medical sciences.....	207	216	251	247	275	266	244	300	325	294	292	320	350	343
Other life sciences.....	287	320	425	444	507	540	569	516	615	591	652	614	588	586
Physical sciences .....	1,851	1,888	1,766	1,884	1,839	1,834	1,780	1,740	1,594	1,547	1,464	1,481	1,410	1,442
Astronomy.....	76	68	73	81	97	109	129	104	111	100	85	99	92	100
Chemistry.....	1,219	1,243	1,167	1,201	1,119	1,065	1,040	1,054	952	937	951	974	894	925
Physics.....	556	577	526	602	623	660	611	582	531	510	428	408	424	417
Social/behavioral sciences.....	4,440	4,254	4,168	4,464	4,723	4,703	4,616	4,831	4,788	4,427	4,211	4,202	4,149	4,098
Psychology .....	2,552	2,478	2,424	2,616	2,747	2,674	2,481	2,667	2,569	2,372	2,188	2,222	2,105	2,243
Social sciences.....	1,888	1,776	1,744	1,848	1,976	2,029	2,135	2,164	2,219	2,055	2,023	1,980	2,044	1,855
Anthropology.....	273	269	250	289	286	284	290	319	328	283	321	304	358	300
Area/ethnic studies.....	82	74	64	75	90	77	69	68	91	97	71	60	75	63
Economics.....	469	439	461	394	391	426	402	393	374	338	305	290	288	267
History of science.....	16	22	15	16	23	30	25	35	30	30	38	31	32	25
Linguistics.....	90	94	82	102	76	87	107	114	93	89	77	79	96	85
Political science/public administration .....	397	369	394	427	492	546	630	625	620	569	561	582	554	550
Sociology .....	326	282	245	268	303	318	332	334	368	343	343	338	354	293
Other social sciences.....	235	227	233	277	315	261	280	276	315	306	307	296	287	272
Non-S&E.....	8,454	8,319	8,169	8,898	9,263	9,723	9,075	9,086	9,109	8,759	8,327	8,326	8,194	8,068
Asian/Pacific Islander														
All fields.....	516	545	627	787	881	1,129	1,295	1,305	1,365	1,456	1,439	1,438	1,511	1,560
S&E.....	388	468	501	620	722	906	1,041	1,032	1,047	1,152	1,136	1,123	1,176	1,244

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Engineering.....	90	136	173	187	217	254	290	263	241	268	250	213	229	246
Aerospace .....	3	6	5	9	9	14	8	9	5	10	6	7	7	7
Chemical .....	22	24	40	27	26	27	17	32	44	37	49	37	47	33
Civil .....	5	14	14	11	11	15	13	20	18	16	14	10	12	13
Electrical.....	15	42	48	67	85	92	128	92	79	83	81	80	63	80
Industrial .....	0	2	8	3	10	10	11	2	5	13	4	4	4	3
Materials .....	11	15	18	21	18	33	25	27	23	24	24	15	23	16
Mechanical.....	21	25	25	26	34	37	50	42	39	49	32	27	37	32
Other .....	13	8	15	23	24	26	38	39	28	36	40	33	36	62
Science.....	298	332	328	433	505	652	751	769	806	884	886	910	947	998
Natural sciences.....	228	248	256	338	392	477	554	564	582	660	665	685	690	776
Agricultural sciences .....	9	17	8	11	9	11	22	22	15	11	14	10	14	13
Biological sciences .....	106	107	120	159	186	225	255	288	318	373	392	395	400	423
Earth, atmospheric, and ocean sciences .....	7	9	11	5	6	7	10	14	8	13	6	9	7	12
Atmospheric sciences.....	2	4	0	0	0	1	3	1	0	2	1	0	4	2
Earth sciences.....	4	5	9	4	4	4	5	10	5	11	4	6	3	6
Oceanography .....	1	0	2	1	2	2	2	3	3	0	1	3	0	4
Mathematics/computer sciences .....	16	29	31	55	57	66	75	72	85	68	70	84	72	93
Computer sciences.....	2	11	18	32	29	42	42	43	41	36	50	46	43	53
Mathematics/statistics .....	14	18	13	23	28	24	33	29	44	32	20	38	29	40
Medical/other life sciences .....	14	19	11	23	17	22	42	45	55	67	59	73	68	92
Medical sciences.....	9	13	7	9	11	14	23	27	33	47	41	45	46	61
Other life sciences.....	5	6	4	14	6	8	19	18	22	20	18	28	22	31
Physical sciences .....	76	67	75	85	117	146	150	123	101	128	124	114	129	143
Astronomy.....	1	1	0	0	2	4	6	2	8	6	8	8	7	7
Chemistry.....	57	49	42	62	75	90	81	88	49	76	78	66	88	88
Physics.....	18	17	33	23	40	52	63	33	44	46	38	40	34	48
Social/behavioral sciences.....	70	84	72	95	113	175	197	205	224	224	221	225	257	222
Psychology .....	34	38	38	46	52	83	101	110	121	105	114	111	143	117
Social sciences.....	36	46	34	49	61	92	96	95	103	119	107	114	114	105
Anthropology .....	7	8	3	2	3	9	8	8	9	14	10	16	19	17
Area/ethnic studies.....	1	1	1	3	4	2	2	3	5	4	2	5	7	4
Economics.....	8	18	15	21	18	32	34	20	27	32	28	28	27	27
History of science.....	0	0	0	0	1	0	1	2	0	1	0	0	1	2
Linguistics.....	7	3	0	2	5	4	8	5	3	5	5	4	3	2
Political science/public administration .....	7	4	6	11	12	22	23	24	24	24	28	23	28	25
Sociology .....	2	8	7	6	10	15	8	19	19	24	21	16	21	16
Other social sciences.....	4	4	2	4	8	8	12	14	16	15	13	22	8	12
Non-S&E.....	128	77	126	167	159	223	254	273	318	304	303	315	335	316
Black														
All fields.....	911	769	822	1,011	1,109	1,293	1,336	1,630	1,631	1,611	1,665	1,708	1,881	1,688
S&E.....	310	271	322	403	427	516	581	689	713	690	704	689	790	754
Engineering.....	19	12	24	43	41	53	83	85	74	82	76	71	84	85

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Aerospace .....	1	1	1	1	3	1	3	1	4	0	2	1	1	2
Chemical .....	4	4	2	4	4	2	12	9	8	16	10	8	9	11
Civil .....	2	1	2	8	3	7	9	5	5	7	10	6	5	7
Electrical.....	6	0	8	16	13	20	27	26	19	20	15	21	31	28
Industrial .....	1	0	2	1	9	7	7	7	4	6	4	2	3	7
Materials .....	1	2	0	1	3	5	3	5	4	5	5	3	5	4
Mechanical.....	1	2	5	3	2	7	10	10	17	17	16	9	14	8
Other .....	3	2	4	9	4	4	12	22	13	11	14	21	16	18
Science.....	291	259	298	360	386	463	498	604	639	608	628	618	706	669
Natural sciences .....	96	106	111	134	162	205	225	268	271	275	287	282	333	353
Agricultural sciences .....	6	7	7	6	5	11	15	19	12	9	9	18	18	13
Biological sciences .....	44	45	46	51	64	90	101	109	110	125	114	100	136	142
Earth, atmospheric, and ocean sciences .....	1	1	2	2	3	0	3	8	3	5	4	11	6	6
Atmospheric sciences.....	1	1	0	0	0	0	0	1	1	0	1	1	1	3
Earth sciences.....	0	0	1	1	2	0	2	4	1	2	2	4	4	2
Oceanography .....	0	0	1	1	1	0	1	3	1	3	1	6	1	1
Mathematics/computer sciences .....	5	12	7	14	10	13	10	27	27	30	30	31	23	31
Computer sciences.....	2	2	1	5	5	9	4	17	13	13	17	17	15	15
Mathematics/statistics .....	3	10	6	9	5	4	6	10	14	17	13	14	8	16
Medical/other life sciences .....	17	25	24	35	52	55	51	51	67	60	68	74	101	114
Medical sciences.....	7	9	9	16	18	23	16	17	29	27	26	26	44	49
Other life sciences.....	10	16	15	19	34	32	35	34	38	33	42	48	57	65
Physical sciences .....	23	16	25	26	28	36	45	54	52	46	62	48	49	47
Astronomy.....	0	2	0	0	2	1	2	2	1	1	1	1	0	2
Chemistry.....	19	11	20	19	19	27	31	46	36	36	41	35	40	35
Physics.....	4	3	5	7	7	8	12	6	15	9	20	12	9	10
Social/behavioral sciences.....	195	153	187	226	224	258	273	336	368	333	341	336	373	316
Psychology .....	100	88	96	125	116	143	142	168	184	167	162	163	204	159
Social sciences.....	95	65	91	101	108	115	131	168	184	166	179	173	169	157
Anthropology .....	9	8	7	6	8	5	11	12	19	10	21	21	15	22
Area/ethnic studies.....	2	5	6	8	7	9	9	12	11	17	11	10	10	11
Economics.....	9	8	8	11	15	14	14	22	14	8	13	9	21	7
History of science.....	0	2	0	0	1	0	3	1	1	1	0	0	1	1
Linguistics.....	2	2	3	3	5	1	2	3	1	4	1	0	3	1
Political science/public administration .....	34	21	26	29	32	39	31	52	58	65	62	67	57	51
Sociology .....	24	10	26	20	23	25	37	40	52	40	45	46	36	38
Other social sciences.....	15	9	15	24	17	22	24	26	28	21	26	20	26	26
Non-S&E.....	601	498	500	608	682	777	755	941	918	921	961	1,019	1,091	934
Hispanic														
All fields.....	563	619	583	733	835	922	1,064	1,184	1,182	1,122	1,237	1,280	1,178	1,294
S&E.....	263	320	323	424	465	517	604	685	684	603	682	697	688	763
Engineering.....	16	24	33	49	56	61	82	71	69	74	88	91	73	73
Aerospace .....	0	1	1	0	3	7	4	0	3	5	2	4	3	6



**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Chemical .....	2	7	5	10	10	12	6	5	13	5	16	14	9	15
Civil .....	6	1	4	5	7	7	10	11	8	8	8	11	16	10
Electrical.....	1	4	10	12	16	14	23	28	19	15	28	21	12	11
Industrial .....	0	1	0	3	3	4	4	2	0	3	5	3	1	1
Materials .....	0	2	1	5	6	5	10	7	7	8	7	9	7	10
Mechanical.....	3	4	3	8	3	5	13	8	10	17	10	12	9	12
Other .....	4	4	9	6	8	7	12	10	9	13	12	17	16	8
Science.....	247	296	290	375	409	456	522	614	615	529	594	606	615	690
Natural sciences.....	114	140	150	181	213	229	281	302	319	278	301	310	332	378
Agricultural sciences .....	11	12	12	8	15	12	15	11	20	21	20	19	15	14
Biological sciences .....	49	52	58	79	93	104	132	154	155	149	161	158	175	207
Earth, atmospheric, and ocean sciences .....	3	3	6	11	7	5	15	18	16	5	11	10	10	15
Atmospheric sciences.....	0	1	1	0	2	0	1	3	2	0	1	0	0	3
Earth sciences.....	3	1	4	10	5	4	10	8	5	4	3	9	7	7
Oceanography .....	0	1	1	1	0	1	4	5	6	0	6	7	1	5
Mathematics/computer sciences .....	12	14	12	17	14	18	32	24	24	20	24	24	33	32
Computer sciences.....	5	4	4	11	5	6	15	12	11	6	13	9	12	9
Mathematics/statistics .....	7	10	8	6	9	12	17	12	13	14	11	15	21	23
Medical/other life sciences .....	13	11	10	12	19	29	29	39	33	22	30	38	43	41
Medical sciences.....	5	5	6	3	3	12	14	22	18	12	14	18	16	17
Other life sciences.....	8	6	4	9	16	17	15	17	15	10	16	20	27	24
Physical sciences .....	26	48	52	54	65	61	58	56	71	61	55	61	56	69
Astronomy.....	0	0	1	1	1	3	3	1	1	7	3	3	6	3
Chemistry.....	14	40	40	39	43	38	36	41	49	39	35	38	38	52
Physics.....	12	8	11	14	21	20	19	14	21	15	17	20	12	14
Social/behavioral sciences.....	133	156	140	194	196	227	241	312	296	251	293	296	283	312
Psychology .....	64	92	87	113	120	138	161	206	203	155	179	162	164	178
Social sciences.....	69	64	53	81	76	89	80	106	93	96	114	134	119	134
Anthropology.....	14	14	8	10	12	19	16	10	10	17	22	32	31	17
Area/ethnic studies.....	2	0	3	4	2	2	1	3	5	4	5	7	12	11
Economics.....	14	11	12	10	11	12	18	18	16	11	13	12	8	19
History of science.....	0	0	1	0	3	1	0	0	1	2	1	1	2	2
Linguistics.....	3	5	2	7	2	5	5	11	5	3	4	5	5	4
Political science/public administration .....	13	16	7	18	19	21	14	27	25	19	33	29	29	32
Sociology .....	16	9	17	21	16	13	17	24	24	33	21	39	25	33
Other social sciences.....	7	9	3	11	11	16	9	13	7	7	15	9	7	16
Non-S&E.....	300	299	260	309	370	405	460	499	498	519	555	583	490	531
American Indian/Alaska Native														
All fields.....	96	115	94	130	120	148	167	214	169	148	146	134	129	139
S&E.....	43	56	56	61	49	77	85	120	92	77	69	74	62	70
Engineering.....	1	7	7	6	2	9	17	12	8	6	6	11	5	8
Aerospace .....	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Chemical .....	0	1	1	1	1	2	4	2	1	1	1	1	2	0

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Civil .....	0	1	1	1	0	0	2	2	1	0	0	1	3	0
Electrical.....	1	3	0	2	0	1	5	1	0	1	0	5	0	2
Industrial .....	0	0	0	0	0	1	0	0	0	0	1	0	0	0
Materials .....	0	0	4	1	0	0	0	2	0	1	1	0	0	0
Mechanical.....	0	1	0	1	0	2	6	2	3	1	1	0	0	4
Other .....	0	1	1	0	1	3	0	3	3	2	2	4	0	1
Science.....	42	49	49	55	47	68	68	108	84	71	63	63	57	62
Natural sciences.....	23	26	30	33	25	36	32	44	42	34	28	25	32	28
Agricultural sciences .....	4	2	2	4	2	2	5	1	5	0	2	4	4	3
Biological sciences .....	13	11	7	10	7	15	7	20	17	15	12	11	14	12
Earth, atmospheric, and ocean sciences .....	1	0	6	3	3	0	3	6	4	0	0	2	4	4
Atmospheric sciences.....	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Earth sciences.....	1	0	3	2	3	0	0	6	4	0	0	1	3	3
Oceanography .....	0	0	2	1	0	0	3	0	0	0	0	1	0	0
Mathematics/computer sciences .....	0	3	2	1	2	2	2	2	3	1	4	4	2	1
Computer sciences.....	0	3	2	1	1	0	1	1	1	0	1	2	2	1
Mathematics/statistics .....	0	0	0	0	1	2	1	1	2	1	3	2	0	0
Medical/other life sciences .....	2	3	3	5	6	9	6	6	4	6	3	2	3	4
Medical sciences.....	2	1	2	3	1	1	2	0	2	2	1	1	0	1
Other life sciences.....	0	2	1	2	5	8	4	6	2	4	2	1	3	3
Physical sciences .....	3	7	10	10	5	8	9	9	9	12	7	2	5	4
Astronomy.....	0	0	2	0	1	0	1	1	1	1	0	0	0	0
Chemistry.....	2	6	5	9	2	6	6	5	7	11	5	2	4	2
Physics.....	1	1	3	1	2	2	2	3	1	0	2	0	1	2
Social/behavioral sciences.....	19	23	19	22	22	32	36	64	42	37	35	38	25	34
Psychology .....	10	16	11	13	15	14	18	35	22	17	15	22	12	15
Social sciences.....	9	7	8	9	7	18	18	29	20	20	20	16	13	19
Anthropology .....	3	1	1	1	3	5	3	8	5	8	6	2	2	3
Area/ethnic studies.....	0	1	1	0	1	1	4	3	1	2	2	2	3	2
Economics.....	2	0	1	1	0	2	1	1	1	2	0	1	0	1
History of science.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Linguistics.....	1	0	0	0	1	0	1	1	0	0	0	1	0	0
Political science/public administration .....	1	2	2	3	0	2	4	7	4	5	3	7	2	4
Sociology .....	1	2	1	2	0	1	4	4	6	2	7	0	2	4
Other social sciences.....	1	1	2	2	2	7	1	5	3	1	2	3	4	5
Non-S&E.....	53	59	38	69	71	71	82	94	77	71	77	60	67	69
Other/unknown race/ethnicity														
All fields.....	524	480	387	494	266	360	1,108	561	669	769	754	1,067	1,005	786
S&E.....	363	315	274	374	169	244	654	349	429	480	445	670	649	510
Engineering.....	55	49	44	94	22	51	116	65	66	73	78	69	92	66
Aerospace .....	1	1	1	4	0	2	7	1	2	4	2	2	4	6
Chemical .....	13	6	6	6	1	6	13	6	6	11	11	9	13	12
Civil .....	2	5	4	5	1	2	9	4	8	16	9	8	4	7

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Electrical.....	15	16	14	27	9	16	41	20	18	13	20	19	25	13
Industrial .....	0	2	0	1	0	1	2	1	2	3	4	3	4	2
Materials .....	5	6	3	4	3	6	7	7	7	6	6	6	7	2
Mechanical .....	8	6	8	15	5	12	16	14	10	10	14	12	14	8
Other .....	11	7	8	32	3	6	21	12	13	10	12	10	21	16
Science.....	308	266	230	280	147	193	538	284	363	407	367	601	557	444
Natural sciences.....	189	181	166	176	100	126	293	176	221	237	205	371	350	255
Agricultural sciences .....	10	5	19	11	2	7	23	11	13	11	8	18	23	11
Biological sciences .....	66	71	55	50	45	40	107	71	109	104	91	154	134	109
Earth, atmospheric, and ocean sciences .....	12	17	8	23	4	9	21	12	15	14	15	18	24	10
Atmospheric sciences.....	1	3	1	3	0	1	3	0	3	4	1	3	2	0
Earth sciences.....	8	8	5	16	3	6	14	10	10	8	11	13	20	9
Oceanography .....	3	6	2	4	1	2	4	2	2	2	3	2	2	1
Mathematics/computer sciences .....	26	22	33	31	17	16	51	25	20	25	20	44	39	36
Computer sciences.....	10	9	18	9	9	11	27	12	12	14	8	21	17	22
Mathematics/statistics .....	16	13	15	22	8	5	24	13	8	11	12	23	22	14
Medical/other life sciences .....	10	12	6	13	3	17	18	15	20	23	21	43	39	26
Medical sciences.....	6	5	4	8	2	8	9	8	4	7	10	18	12	13
Other life sciences.....	4	7	2	5	1	9	9	7	16	16	11	25	27	13
Physical sciences .....	65	54	45	48	29	37	73	42	44	60	50	94	91	63
Astronomy.....	5	1	2	2	3	3	10	1	5	5	4	14	8	8
Chemistry.....	34	32	24	21	15	12	39	22	26	32	25	57	48	29
Physics.....	26	21	19	25	11	22	24	19	13	23	21	23	35	26
Social/behavioral sciences.....	119	85	64	104	47	67	245	108	142	170	162	230	207	189
Psychology .....	44	37	29	41	21	31	133	37	56	86	64	106	95	99
Social sciences.....	75	48	35	63	26	36	112	71	86	84	98	124	112	90
Anthropology .....	16	12	10	7	0	8	28	17	16	16	25	32	24	16
Area/ethnic studies.....	3	0	2	2	1	5	1	2	3	5	6	5	9	5
Economics.....	21	12	12	15	2	6	18	9	11	12	12	9	13	10
History of science.....	1	0	0	2	0	0	3	2	0	2	1	3	3	2
Linguistics.....	4	3	1	3	2	1	3	2	3	7	3	6	4	6
Political science/public administration .....	21	10	4	14	8	6	28	21	32	29	17	28	21	19
Sociology .....	6	7	4	7	7	6	17	8	9	6	18	27	14	14
Other social sciences.....	3	4	2	13	6	4	14	10	12	7	16	14	24	18
Non-S&E.....	161	165	113	120	97	116	454	212	240	289	309	397	356	276
U.S. permanent resident														
All fields .....	1,319	1,571	1,625	1,851	2,255	4,317	2,932	2,310	1,950	1,825	1,652	1,630	1,538	1,600
S&E.....	964	1,126	1,150	1,343	1,699	3,614	2,350	1,731	1,484	1,338	1,238	1,157	1,076	1,189
Engineering.....	315	355	365	388	469	956	593	404	350	299	272	266	242	285
Aerospace.....	17	8	8	11	6	13	13	9	10	8	10	10	6	5
Chemical .....	52	56	62	51	53	90	88	38	43	29	34	20	22	37
Civil .....	40	41	59	40	59	103	78	51	40	47	37	30	34	41
Electrical.....	83	73	99	132	165	288	187	127	116	95	84	92	79	100

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Industrial.....	9	13	8	18	16	41	17	13	10	15	10	16	14	17
Materials .....	21	38	21	29	39	114	44	36	23	23	11	24	19	17
Mechanical .....	58	67	66	62	87	180	82	65	55	42	57	45	28	31
Other .....	35	59	42	45	44	127	84	65	53	40	29	29	40	37
Science.....	649	771	785	955	1,230	2,658	1,757	1,327	1,134	1,039	966	891	834	904
Natural sciences.....	418	503	522	649	866	2,215	1,363	1,023	856	764	707	649	587	644
Agricultural sciences.....	46	50	49	57	55	112	88	55	61	37	32	41	35	30
Biological sciences.....	108	160	181	211	303	835	586	464	364	339	315	263	233	255
Earth, atmospheric, and ocean sciences.....	29	23	26	24	37	112	67	48	30	29	36	32	23	21
Atmospheric sciences.....	5	2	5	4	8	29	19	16	10	6	7	12	4	4
Earth sciences.....	21	17	11	17	19	64	39	22	15	15	17	12	16	14
Oceanography.....	3	4	10	3	10	19	9	10	5	8	12	8	3	3
Mathematics/computer sciences.....	66	83	93	118	177	349	189	138	125	110	95	103	105	129
Computer sciences.....	24	32	58	63	83	132	90	72	69	55	64	57	50	68
Mathematics/statistics.....	42	51	35	55	94	217	99	66	56	55	31	46	55	61
Medical/other life sciences.....	35	40	27	60	60	105	69	77	75	68	68	59	73	77
Medical sciences.....	28	25	20	45	34	59	35	38	40	43	39	26	41	41
Other life sciences.....	7	15	7	15	26	46	34	39	35	25	29	33	32	36
Physical sciences.....	134	147	146	179	234	702	364	241	201	181	161	151	118	132
Astronomy.....	2	1	4	2	5	21	7	6	12	4	5	5	2	0
Chemistry.....	87	91	85	110	127	386	205	150	122	102	93	94	72	82
Physics.....	45	55	57	67	102	295	152	85	67	75	63	52	44	50
Social/behavioral sciences.....	231	268	263	306	364	443	394	304	278	275	259	242	247	260
Psychology.....	59	58	54	65	90	101	89	70	75	75	71	69	65	80
Social sciences.....	172	210	209	241	274	342	305	234	203	200	188	173	182	180
Anthropology.....	15	18	14	16	23	28	20	26	24	21	25	15	22	17
Area/ethnic studies.....	4	2	2	4	4	10	2	3	2	3	6	4	3	2
Economics.....	64	85	66	77	77	134	103	80	58	61	55	59	44	54
History of science.....	1	0	0	1	0	2	1	2	3	3	0	1	3	1
Linguistics.....	15	10	23	19	26	20	33	20	14	16	18	19	25	17
Political science/public administration.....	28	39	49	50	55	53	59	50	39	40	28	30	41	42
Sociology.....	17	28	26	41	36	51	46	30	37	23	23	21	15	27
Other social sciences.....	28	28	29	33	53	44	41	23	26	33	33	24	29	20
Non-S&E.....	355	445	475	508	556	703	582	579	466	487	414	473	462	411
Temporary resident														
All fields.....	5,247	5,659	6,678	9,374	9,964	8,831	9,191	9,057	9,660	9,800	9,731	10,589	11,617	12,824
S&E.....	4,159	4,595	5,546	7,853	8,347	7,253	7,780	7,524	7,964	8,260	8,015	8,711	9,516	10,792
Engineering.....	1,423	1,539	1,946	2,644	2,791	2,527	2,555	2,191	2,451	2,787	2,649	2,910	3,308	3,754
Aerospace.....	51	59	83	90	99	94	97	82	74	87	106	111	116	115
Chemical.....	201	217	237	283	338	318	343	282	307	335	327	341	367	474
Civil.....	207	237	263	355	379	337	310	253	280	300	349	388	422	475
Electrical.....	312	311	499	693	705	712	712	637	784	930	824	915	1,057	1,189
Industrial.....	48	57	91	94	125	131	118	108	94	110	134	137	134	128

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Materials .....	127	159	155	241	251	224	244	193	181	250	196	260	280	317
Mechanical .....	239	303	359	496	554	439	449	354	433	494	446	446	525	606
Other .....	238	196	259	392	340	272	282	282	298	281	267	312	407	450
Science.....	2,736	3,056	3,600	5,209	5,556	4,726	5,225	5,333	5,513	5,473	5,366	5,801	6,208	7,038
Natural sciences.....	1,948	2,266	2,641	3,979	4,279	3,499	4,071	4,176	4,270	4,175	4,166	4,389	4,810	5,464
Agricultural sciences.....	361	298	369	448	460	442	411	486	443	400	433	427	418	415
Biological sciences.....	425	497	609	1,065	1,249	971	1,321	1,287	1,385	1,242	1,292	1,398	1,470	1,677
Earth, atmospheric, and ocean sciences.....	112	124	115	187	228	170	213	220	182	219	223	201	224	233
Atmospheric sciences.....	20	26	23	41	44	35	42	42	47	49	45	57	51	52
Earth sciences.....	72	75	72	110	141	97	122	142	99	125	145	107	131	137
Oceanography.....	20	23	20	36	43	38	49	36	36	45	33	37	42	44
Mathematics/computer sciences.....	329	444	524	849	866	749	771	775	806	792	788	818	987	1,201
Computer sciences.....	89	143	178	340	348	365	330	330	363	358	348	378	459	599
Mathematics/statistics.....	240	301	346	509	518	384	441	445	443	434	440	440	528	602
Medical/other life sciences.....	99	98	133	172	215	246	273	286	306	317	324	329	365	388
Medical sciences.....	75	71	95	115	153	153	158	160	164	172	199	170	217	227
Other life sciences.....	24	27	38	57	62	93	115	126	142	145	125	159	148	161
Physical sciences.....	622	805	891	1,258	1,261	921	1,082	1,122	1,148	1,205	1,106	1,216	1,346	1,550
Astronomy.....	14	24	26	37	34	28	37	37	42	52	31	34	47	63
Chemistry.....	331	401	462	694	676	493	599	622	648	672	596	689	722	797
Physics.....	277	380	403	527	551	400	446	463	458	481	479	493	577	690
Social/behavioral sciences.....	788	790	959	1,230	1,277	1,227	1,154	1,157	1,243	1,298	1,200	1,412	1,398	1,574
Psychology.....	81	85	106	133	150	165	137	153	164	152	156	195	188	210
Social sciences.....	707	705	853	1,097	1,127	1,062	1,017	1,004	1,079	1,146	1,044	1,217	1,210	1,364
Anthropology.....	26	26	32	38	40	41	67	62	62	68	71	61	69	74
Area/ethnic studies.....	9	4	4	18	22	11	3	8	6	11	10	10	12	8
Economics.....	328	312	388	511	519	500	494	492	537	575	531	597	613	738
History of science.....	4	1	3	7	8	7	1	4	4	1	5	9	5	8
Linguistics.....	47	67	57	85	86	78	79	86	101	101	73	101	110	82
Political science/public administration.....	114	127	144	177	166	172	134	157	138	172	145	203	173	222
Sociology.....	73	69	105	119	133	116	114	77	95	80	68	88	110	95
Other social sciences.....	106	99	120	142	153	137	125	118	136	138	141	148	118	137
Non-S&E.....	1,088	1,064	1,132	1,521	1,617	1,578	1,411	1,533	1,696	1,540	1,716	1,878	2,101	2,032
Unknown citizenship														
All fields.....	1,341	2,138	2,609	722	1,119	859	2,261	1,733	1,765	2,051	2,572	2,022	2,496	2,618
S&E.....	849	1,391	1,803	452	774	572	1,449	1,196	1,283	1,327	1,516	1,240	1,466	1,652
Engineering.....	149	259	366	94	209	139	227	248	299	269	263	191	280	366
Aerospace.....	3	11	12	2	9	5	8	12	13	14	11	9	8	6
Chemical.....	11	17	30	9	22	9	15	21	36	33	43	15	44	70
Civil.....	14	37	28	7	17	10	18	19	15	25	30	16	27	30
Electrical.....	51	74	99	25	43	48	68	75	110	83	63	48	93	97
Industrial.....	6	6	12	3	6	4	9	4	5	7	15	6	6	18
Materials.....	11	19	31	8	17	12	23	15	26	22	25	14	20	29

**Earned doctoral degrees, by field, citizenship, and race/ethnicity: Selected years, 1985–2005**

Field, race/ethnicity, and citizenship	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Mechanical .....	23	46	76	20	42	23	35	37	35	31	38	35	29	49
Other .....	30	49	78	20	53	28	51	65	59	54	38	48	53	67
Science.....	700	1,132	1,437	358	565	433	1,222	948	984	1,058	1,253	1,049	1,186	1,286
Natural sciences.....	361	609	777	194	342	258	711	534	594	609	769	619	660	826
Agricultural sciences.....	30	51	76	12	15	9	47	18	35	69	84	71	61	66
Biological sciences.....	110	200	207	60	91	76	211	171	200	203	285	236	273	295
Earth, atmospheric, and ocean sciences.....	23	49	54	10	30	13	36	32	38	30	33	31	24	38
Atmospheric sciences.....	1	8	4	7	5	2	5	5	10	6	4	4	4	6
Earth sciences.....	14	22	37	2	16	9	18	15	17	8	18	11	18	27
Oceanography.....	8	19	13	1	9	2	13	12	11	16	11	16	2	5
Mathematics/computer sciences.....	37	73	122	21	60	51	112	66	72	90	75	78	79	124
Computer sciences.....	8	31	37	9	22	16	59	33	39	43	39	42	42	64
Mathematics/statistics.....	29	42	85	12	38	35	53	33	33	47	36	36	37	60
Medical/other life sciences.....	45	56	84	30	43	40	120	72	91	93	136	81	89	106
Medical sciences.....	28	30	36	10	21	19	44	35	49	44	60	31	50	55
Other life sciences.....	17	26	48	20	22	21	76	37	42	49	76	50	39	51
Physical sciences.....	116	180	234	61	103	69	185	175	158	124	156	122	134	197
Astronomy.....	2	3	5	2	0	4	3	5	4	10	4	3	3	3
Chemistry.....	73	102	125	39	61	45	110	104	100	76	97	86	81	117
Physics.....	41	75	104	20	42	20	72	66	54	38	55	33	50	77
Social/behavioral sciences.....	339	523	660	164	223	175	511	414	390	449	484	430	526	460
Psychology.....	173	280	363	98	109	80	295	222	222	256	248	223	351	226
Social sciences.....	166	243	297	66	114	95	216	192	168	193	236	207	175	234
Anthropology.....	14	27	26	5	5	11	26	26	9	13	20	22	25	33
Area/ethnic studies.....	3	5	10	2	6	4	3	7	3	3	9	3	2	4
Economics.....	44	75	99	13	34	26	79	40	48	42	69	45	55	61
History of science.....	1	0	1	1	1	1	1	4	3	0	2	1	1	2
Linguistics.....	7	15	20	6	11	5	6	9	10	5	12	9	8	14
Political science/public administration.....	51	59	68	11	40	33	52	53	46	61	61	55	41	45
Sociology.....	21	34	27	9	7	10	26	36	27	26	20	37	22	35
Other social sciences.....	25	28	46	19	10	5	23	17	22	43	43	35	21	40
Non-S&E.....	492	747	806	270	345	287	812	537	482	724	1,056	782	1,030	966

NOTES: Medical/other life sciences reported separately from S&E fields in National Science Foundation, Division of Science Resources Statistics (NSF/SRS), higher education publications. For detailed fields, see NSF/SRS, Science and Engineering Doctorate Awards annual series, <http://www.nsf.gov/statistics/doctorates/>.

SOURCE: NSF/SRS, Survey of Earned Doctorates, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

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**Plans of foreign recipients of U.S. S&E doctorates to stay in United States, by field and place of origin: 1994–2005**

Field/place of origin	Foreign S&E doctorate recipients			Plans to stay (%)			Definite plans to stay (%)		
	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05
<b>All S&amp;E fields</b>									
All non-U.S. citizens.....	42,490	37,825	41,071	70.9	72.0	73.8	39.1	49.7	49.3
East/South Asia .....	26,827	21,765	23,564	76.7	78.5	79.8	42.0	53.8	52.3
China <sup>a</sup> .....	11,297	9,947	11,594	95.9	90.9	91.6	51.5	62.1	60.2
Taiwan .....	4,977	3,043	1,889	56.0	63.7	65.3	26.7	38.3	38.6
Japan.....	614	596	713	43.8	54.9	58.8	27.7	35.9	40.8
South Korea .....	4,017	3,218	4,062	45.4	62.5	69.8	23.9	41.9	43.0
India.....	5,014	3,855	3,587	90.5	88.2	88.2	56.3	66.5	62.7
Other.....	908	1,106	1,719	35.5	33.1	31.1	17.3	21.1	19.2
West Asia .....	3,718	3,113	3,706	62.1	61.2	61.2	29.2	40.6	40.6
Iran .....	620	371	327	84.2	85.2	88.7	34.5	53.1	57.2
Israel.....	323	164	227	62.2	56.1	72.7	41.5	36.6	52.4
Turkey.....	635	950	1,411	58.4	58.4	60.2	30.1	40.6	42.0
Other.....	2,140	1,628	1,741	56.8	57.9	55.3	25.5	38.1	34.9
Pacific/Australasia .....	945	736	660	51.9	56.4	64.2	27.6	39.7	42.7
Australia.....	227	197	164	55.1	64.5	67.7	38.8	46.7	51.2
Indonesia .....	310	223	237	29.0	41.7	55.3	10.6	28.3	31.6
New Zealand .....	96	94	90	64.6	60.6	61.1	46.9	47.9	46.7
Other.....	312	222	169	68.3	62.2	75.1	30.4	41.4	47.9
Africa .....	1,894	1,480	1,487	59.5	63.6	65.9	22.2	34.9	39.6
Egypt.....	365	327	487	54.0	55.7	62.2	22.5	36.7	40.7
Nigeria .....	194	115	77	90.2	86.1	88.3	26.3	37.4	42.9
South Africa .....	144	161	126	51.4	63.4	46.8	34.7	39.1	35.7
Other.....	1,191	877	797	57.2	63.6	69.0	19.9	33.2	39.3
Europe .....	5,004	6,171	6,571	67.9	72.5	74.6	44.7	53.7	54.0
Greece .....	586	399	348	61.3	68.7	67.2	37.9	51.9	46.6
United Kingdom.....	485	516	480	77.7	77.3	78.8	53.6	58.5	57.9
Germany .....	757	838	750	65.3	63.0	67.3	43.9	48.7	51.3
Italy.....	328	366	494	51.2	58.2	66.0	29.0	45.6	49.0
France.....	320	327	389	55.3	68.2	67.4	31.6	45.3	46.0
Spain.....	224	240	258	58.0	54.6	59.7	39.7	38.3	42.6
Other.....	2,304	3,485	3,852	73.6	77.7	79.0	49.4	57.1	56.9
North/South America .....	3,875	4,232	4,664	53.0	53.4	58.3	33.0	38.9	41.5
Canada .....	1,180	1,259	1,458	65.0	68.7	66.9	45.8	52.7	51.1
Mexico .....	599	781	789	40.2	36.7	46.6	21.5	26.4	31.3
Argentina .....	244	273	321	65.2	61.2	70.7	43.4	47.6	54.2
Brazil .....	681	612	567	32.2	34.3	42.9	18.5	23.7	31.0
Chile .....	147	126	200	38.8	53.2	37.5	23.1	42.1	28.0
Colombia.....	178	206	322	54.5	56.8	57.5	29.2	40.8	35.4
Peru .....	128	111	140	71.9	62.2	71.4	42.2	38.7	45.0
Other.....	718	864	867	58.9	55.6	63.2	32.7	37.3	41.8
Country unknown .....	227	328	419	81.9	46.6	49.2	37.4	23.2	15.3
<b>Physical/earth, atmospheric, and ocean sciences</b>									
All non-U.S. citizens.....	7,522	6,585	6,773	79.0	78.2	80.3	44.7	56.5	56.9
East/South Asia .....	4,937	3,718	3,661	85.1	84.0	86.8	46.8	59.0	61.3
China <sup>a</sup> .....	2,911	2,212	2,237	96.2	90.9	92.4	51.1	62.8	63.7
Taiwan .....	599	352	194	65.8	70.7	75.8	34.2	46.9	52.1
Japan.....	89	84	102	55.1	63.1	66.7	37.1	39.3	46.1
South Korea .....	647	450	512	58.7	71.3	83.2	35.7	54.4	62.3
India .....	620	502	459	88.7	86.5	86.1	55.3	64.1	66.4
Other .....	71	118	157	40.8	48.3	47.8	15.5	31.4	31.2
West Asia .....	453	368	465	69.1	67.1	68.0	33.1	48.4	47.3
Iran .....	81	57	42	90.1	78.9	83.3	30.9	57.9	64.3
Israel.....	41	16	26	65.9	62.5	73.1	48.8	43.8	50.0
Turkey.....	75	92	151	57.3	57.6	68.2	32.0	41.3	50.3
Other .....	256	203	246	66.4	68.5	64.6	31.6	49.3	42.3
Pacific/Australasia .....	147	113	100	66.7	62.8	76.0	33.3	43.4	52.0
Australia .....	27	18	27	63.0	66.7	63.0	37.0	55.6	51.9
Indonesia .....	26	29	17	46.2	55.2	64.7	23.1	37.9	52.9

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**Plans of foreign recipients of U.S. S&E doctorates to stay in United States, by field and place of origin: 1994–2005**

Field/place of origin	Foreign S&E doctorate recipients			Plans to stay (%)			Definite plans to stay (%)		
	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05
New Zealand.....	14	14	13	71.4	57.1	76.9	57.1	35.7	69.2
Other .....	80	52	43	73.8	67.3	88.4	31.3	44.2	46.5
Africa .....	195	168	177	71.8	75.6	80.8	26.2	45.8	50.3
Egypt.....	18	25	43	61.1	64.0	67.4	16.7	52.0	44.2
Nigeria.....	25	14	9	100.0	78.6	88.9	32.0	35.7	33.3
South Africa.....	17	21	12	58.8	57.1	58.3	41.2	42.9	50.0
Other .....	135	108	113	69.6	81.5	87.6	24.4	46.3	54.0
Europe .....	1,202	1,629	1,705	67.1	73.5	76.7	45.9	56.7	55.1
Greece.....	112	66	57	52.7	62.1	61.4	29.5	50.0	42.1
United Kingdom.....	104	134	98	72.1	71.6	80.6	49.0	58.2	63.3
Germany.....	208	225	181	58.2	58.7	67.4	39.9	45.8	51.9
Italy.....	64	77	126	53.1	50.6	61.1	32.8	40.3	42.1
France.....	91	74	106	47.3	62.2	67.9	31.9	44.6	46.2
Spain.....	35	26	48	48.6	61.5	54.2	37.1	42.3	35.4
Other .....	588	1027	1,089	77.7	80.5	82.4	54.8	61.7	58.8
North/South America.....	545	522	599	64.4	67.4	65.8	43.1	54.0	50.1
Canada.....	181	193	230	74.6	80.3	67.8	56.9	66.8	57.0
Mexico.....	73	79	92	52.1	41.8	58.7	28.8	34.2	41.3
Argentina.....	61	39	40	72.1	74.4	82.5	50.8	56.4	57.5
Brazil.....	83	54	41	49.4	44.4	39.0	36.1	29.6	29.3
Chile.....	22	12	16	45.5	66.7	62.5	18.2	58.3	43.8
Colombia.....	12	34	49	25.0	79.4	59.2	8.3	70.6	40.8
Peru.....	17	14	17	76.5	64.3	76.5	47.1	35.7	47.1
Other .....	96	97	114	69.8	69.1	72.8	38.5	53.6	53.5
Country unknown.....	43	67	66	76.7	50.7	40.9	39.5	28.4	16.7
Biological/agricultural sciences									
All non-U.S. citizens.....	11,460	10,859	10,710	72.8	72.4	75.0	43.9	49.2	50.8
East/South Asia.....	7,041	6,435	6,125	82.9	81.4	83.5	51.2	55.5	56.0
China <sup>a</sup> .....	3,647	3,391	3,085	96.7	92.0	93.6	59.7	62.2	62.8
Taiwan.....	1,180	856	578	61.1	64.5	68.3	35.3	41.5	44.1
Japan.....	122	136	178	59.8	66.9	66.9	41.8	47.8	44.9
South Korea.....	805	714	798	59.8	74.4	86.6	41.2	55.3	59.1
India.....	988	941	979	93.3	89.1	91.9	56.9	61.4	62.8
Other .....	299	397	507	37.5	26.4	24.1	22.7	17.6	14.4
West Asia.....	842	720	802	56.9	56.8	54.4	28.5	36.9	35.0
Iran.....	132	74	40	81.1	85.1	92.5	37.1	47.3	50.0
Israel.....	59	42	33	71.2	61.9	78.8	52.5	33.3	48.5
Turkey.....	82	178	262	48.8	44.9	51.5	23.2	31.5	35.1
Other .....	569	426	467	51.0	56.3	51.0	24.8	37.8	32.8
Pacific/Australasia.....	300	228	194	48.7	52.6	60.8	28.0	34.6	41.8
Australia.....	82	63	40	51.2	68.3	80.0	37.8	49.2	55.0
Indonesia.....	94	50	51	22.3	32.0	43.1	12.8	22.0	27.5
New Zealand.....	27	32	34	59.3	46.9	50.0	40.7	37.5	38.2
Other .....	97	83	69	69.1	55.4	68.1	30.9	30.1	46.4
Africa.....	681	511	515	52.7	56.0	61.6	17.8	28.8	35.7
Egypt.....	62	44	118	45.2	59.1	59.3	14.5	38.6	40.7
Nigeria.....	59	39	34	91.5	94.9	94.1	28.8	41.0	47.1
South Africa.....	41	57	39	53.7	59.6	33.3	34.1	36.8	20.5
Other .....	519	371	324	49.1	50.9	62.3	15.6	25.1	34.6
Europe.....	1106	1,337	1,368	69.1	74.9	77.6	45.7	53.7	56.2
Greece.....	84	77	72	54.8	67.5	65.3	36.9	55.8	48.6
United Kingdom.....	137	154	146	82.5	82.5	82.9	60.6	61.7	56.2
Germany.....	193	203	164	69.9	69.0	73.2	46.6	54.7	53.7
Italy.....	55	47	81	61.8	57.4	70.4	30.9	42.6	44.4
France.....	73	68	79	63.0	67.6	77.2	37.0	32.4	53.2
Spain.....	92	72	53	62.0	56.9	77.4	39.1	36.1	49.1
Other .....	472	716	773	70.6	79.3	79.4	46.8	56.0	59.5
North/South America.....	1,436	1,545	1,609	50.2	49.4	58.2	31.2	35.0	42.4
Canada.....	425	435	485	62.6	68.5	72.2	44.5	52.2	57.5



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**Plans of foreign recipients of U.S. S&E doctorates to stay in United States, by field and place of origin: 1994–2005**

Field/place of origin	Foreign S&E doctorate recipients			Plans to stay (%)			Definite plans to stay (%)		
	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05
Mexico.....	250	315	255	38.8	30.2	44.3	20.8	20.0	30.2
Argentina.....	76	96	100	55.3	60.4	65.0	40.8	44.8	49.0
Brazil.....	251	217	217	25.9	27.2	38.7	13.1	19.8	29.0
Chile.....	57	46	71	47.4	65.2	43.7	33.3	50.0	35.2
Colombia.....	69	78	102	69.6	53.8	54.9	39.1	35.9	33.3
Peru.....	35	36	52	60.0	66.7	73.1	40.0	41.7	40.4
Other.....	273	322	327	56.8	49.1	61.2	30.4	30.7	41.0
Country unknown.....	54	83	97	79.6	55.4	52.6	51.9	24.1	16.5
<b>Mathematics/computer sciences</b>									
All non-U.S. citizens.....	4,200	3,692	4,226	72.3	74.4	75.6	41.1	53.4	55.1
East/South Asia.....	2,545	1,909	2,210	77.1	80.7	81.9	41.6	56.9	58.2
China <sup>a</sup> .....	1,020	805	1,157	96.0	89.8	90.1	47.0	64.5	65.5
Taiwan.....	429	282	161	53.8	66.0	62.7	23.8	36.9	35.4
Japan.....	32	47	46	43.8	78.7	71.7	18.8	57.4	52.2
South Korea.....	358	306	360	41.1	66.7	77.2	18.7	39.9	50.0
India.....	636	398	363	89.0	90.2	86.5	61.3	74.1	64.7
Other.....	70	71	123	34.3	43.7	33.3	21.4	28.2	26.8
West Asia.....	324	296	379	63.0	57.1	63.6	35.8	40.2	48.0
Iran.....	49	30	43	79.6	83.3	81.4	44.9	56.7	60.5
Israel.....	63	21	32	77.8	66.7	59.4	60.3	52.4	46.9
Turkey.....	68	88	131	58.8	65.9	71.0	32.4	47.7	57.3
Other.....	144	157	173	52.8	45.9	54.3	23.6	31.2	38.2
Pacific/Australasia.....	89	71	57	68.5	74.6	71.9	40.4	54.9	57.9
Australia.....	30	28	26	70.0	71.4	57.7	50.0	53.6	53.8
Indonesia.....	20	11	9	45.0	45.5	88.9	0.0	18.2	55.6
New Zealand.....	17	17	14	76.5	82.4	71.4	64.7	64.7	57.1
Other.....	22	15	8	81.8	93.3	100.0	45.5	73.3	75.0
Africa.....	110	95	126	66.4	76.8	72.2	28.2	46.3	51.6
Egypt.....	35	17	51	68.6	64.7	66.7	28.6	52.9	39.2
Nigeria.....	5	S	S	100.0	S	S	40.0	S	S
South Africa.....	9	15	8	66.7	86.7	62.5	44.4	53.3	62.5
Other.....	61	59	65	62.3	76.3	76.9	24.6	44.1	60.0
Europe.....	810	955	1,018	69.8	75.3	74.7	47.0	57.1	57.1
Greece.....	114	49	64	63.2	69.4	65.6	41.2	49.0	51.6
United Kingdom.....	37	53	49	75.7	77.4	69.4	48.6	66.0	57.1
Germany.....	104	107	110	64.4	62.6	64.5	43.3	48.6	50.9
Italy.....	67	51	54	40.3	64.7	64.8	25.4	54.9	53.7
France.....	23	24	35	65.2	75.0	71.4	39.1	37.5	57.1
Spain.....	20	28	19	55.0	46.4	52.6	45.0	39.3	42.1
Other.....	445	643	687	77.5	79.8	79.0	53.0	60.0	59.2
North/South America.....	294	334	394	51.0	54.2	58.1	31.0	39.5	43.7
Canada.....	82	99	127	68.3	65.7	63.8	47.6	49.5	51.2
Mexico.....	52	61	61	36.5	39.3	45.9	17.3	29.5	29.5
Argentina.....	18	20	30	61.1	75.0	83.3	27.8	60.0	73.3
Brazil.....	61	59	73	34.4	44.1	49.3	19.7	28.8	38.4
Chile.....	11	10	12	36.4	40.0	58.3	9.1	30.0	33.3
Colombia.....	24	20	24	50.0	50.0	50.0	33.3	40.0	25.0
Peru.....	6	S	9	66.7	S	66.7	33.3	S	55.6
Other.....	40	63	58	57.5	55.6	58.6	37.5	38.1	41.4
Country unknown.....	28	32	42	78.6	40.6	54.8	42.9	21.9	16.7
<b>Social/behavioral sciences</b>									
All non-U.S. citizens.....	5,632	5,150	5,676	53.0	55.0	57.6	27.8	37.4	40.5
East/South Asia.....	2,772	2,219	2,230	52.1	54.3	57.8	25.6	35.9	38.9
China <sup>a</sup> .....	701	577	584	86.2	79.5	78.8	42.4	56.7	56.8
Taiwan.....	430	328	238	30.9	34.5	42.9	8.6	17.7	24.8
Japan.....	226	231	257	41.6	46.8	47.9	26.5	27.3	35.0
South Korea.....	788	559	612	26.3	34.9	44.3	10.4	20.2	27.5
India.....	458	377	330	77.7	78.2	80.3	46.7	57.0	53.9
Other.....	169	147	209	29.6	24.5	32.5	11.8	14.3	19.6

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**Plans of foreign recipients of U.S. S&E doctorates to stay in United States, by field and place of origin: 1994–2005**

Field/place of origin	Foreign S&E doctorate recipients			Plans to stay (%)			Definite plans to stay (%)		
	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05
West Asia .....	554	435	587	47.1	50.6	53.2	22.6	35.2	35.3
Iran .....	50	24	16	84.0	70.8	87.5	32.0	29.2	50.0
Israel.....	100	60	106	56.0	46.7	69.8	30.0	38.3	51.9
Turkey.....	99	131	254	38.4	50.4	44.9	24.2	39.7	30.3
Other .....	305	220	211	41.0	49.5	52.1	18.0	32.3	31.8
Pacific/Australasia.....	229	165	135	40.2	43.6	51.1	19.7	31.5	34.8
Australia .....	56	61	51	46.4	54.1	62.7	35.7	37.7	45.1
Indonesia.....	75	41	45	16.0	14.6	31.1	2.7	4.9	15.6
New Zealand.....	26	21	12	57.7	52.4	58.3	42.3	47.6	33.3
Other .....	72	42	27	54.2	52.4	59.3	16.7	40.5	48.1
Africa .....	363	278	243	56.2	63.3	56.8	17.1	28.4	32.9
Egypt .....	30	19	37	46.7	31.6	35.1	20.0	21.1	29.7
Nigeria.....	66	35	12	81.8	74.3	66.7	10.6	37.1	41.7
South Africa .....	39	36	36	41.0	58.3	38.9	25.6	27.8	27.8
Other .....	228	188	158	52.6	65.4	65.2	17.1	27.7	34.2
Europe .....	841	1037	1,245	62.9	63.9	67.5	41.0	48.7	53.0
Greece.....	76	59	37	61.8	64.4	67.6	36.8	44.1	45.9
United Kingdom.....	150	127	133	74.0	74.8	77.4	50.7	52.8	60.2
Germany.....	142	142	162	67.6	69.7	67.3	49.3	52.1	55.6
Italy.....	103	117	133	51.5	59.0	62.4	32.0	50.4	54.9
France .....	39	68	63	51.3	70.6	61.9	20.5	51.5	46.0
Spain .....	44	70	82	54.5	45.7	53.7	45.5	34.3	45.1
Other .....	287	454	635	62.0	62.1	68.8	38.3	48.5	52.6
North/South America .....	830	978	1,162	51.2	48.9	50.9	32.3	34.3	36.7
Canada .....	326	349	437	58.9	59.3	58.8	39.3	43.6	43.2
Mexico.....	106	145	160	33.0	36.6	33.1	17.9	23.4	24.4
Argentina.....	51	70	107	54.9	45.7	64.5	31.4	34.3	53.3
Brazil .....	80	114	114	36.3	37.7	37.7	26.3	27.2	29.8
Chile .....	32	34	64	31.3	41.2	26.6	18.8	29.4	18.8
Colombia.....	40	27	58	37.5	37.0	41.4	17.5	25.9	25.9
Peru.....	41	36	33	63.4	50.0	63.6	41.5	38.9	36.4
Other .....	154	203	189	58.4	49.8	57.1	35.1	31.0	36.0
Country unknown.....	43	38	74	74.4	47.4	39.2	20.9	18.4	16.2
Engineering									
All non-U.S. citizens.....	13,676	11,539	13,686	71.9	74.9	75.7	36.1	50.7	46.2
East/South Asia .....	9,532	7,484	9,338	74.8	79.9	79.4	37.5	54.2	48.1
China <sup>a</sup> .....	3,018	2,962	4,531	97.0	92.2	91.7	45.6	61.8	55.8
Taiwan.....	2,339	1,225	718	55.8	68.3	68.1	24.3	39.5	35.9
Japan.....	145	98	130	26.9	38.8	58.5	13.8	26.5	38.5
South Korea .....	1,419	1,189	1,780	42.8	63.9	65.7	17.6	39.9	34.2
India .....	2,312	1,637	1,456	92.8	90.0	88.5	56.8	70.4	62.8
Other .....	299	373	723	35.8	36.7	31.7	14.4	22.8	18.5
West Asia .....	1,545	1,294	1,473	68.2	66.5	65.3	29.3	42.3	41.8
Iran .....	308	186	186	84.7	89.2	90.9	33.1	56.5	57.0
Israel.....	60	25	30	45.0	56.0	90.0	25.0	20.0	66.7
Turkey.....	311	461	613	67.5	64.6	65.9	32.8	43.0	44.4
Other .....	866	622	644	64.1	61.6	56.2	27.0	38.6	33.7
Pacific/Australasia.....	180	159	174	51.7	62.3	69.0	26.1	45.9	39.7
Australia .....	32	27	20	59.4	70.4	75.0	37.5	48.1	55.0
Indonesia.....	95	92	115	37.9	54.3	66.1	13.7	40.2	34.8
New Zealand.....	12	10	17	66.7	90.0	64.7	33.3	70.0	47.1
Other .....	41	30	22	73.2	70.0	81.8	43.9	53.3	45.5
Africa .....	545	428	426	64.4	65.2	68.3	28.4	39.7	40.1
Egypt .....	220	222	238	54.5	55.4	66.0	24.5	34.7	42.0
Nigeria.....	39	23	20	94.9	91.3	90.0	43.6	34.8	40.0
South Africa .....	38	32	31	52.6	68.8	64.5	39.5	46.9	51.6
Other .....	248	151	137	70.2	74.8	70.1	27.8	46.4	34.3
Europe .....	1,045	1,213	1,235	70.4	73.8	75.5	43.4	51.4	48.5
Greece.....	200	148	118	67.5	73.6	72.0	41.5	54.7	44.9

Appendix table 2-33

(Page 5 of 5)

**Plans of foreign recipients of U.S. S&E doctorates to stay in United States, by field and place of origin: 1994–2005**

Field/place of origin	Foreign S&E doctorate recipients			Plans to stay (%)			Definite plans to stay (%)		
	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05	1994–97	1998–2001	2002–05
United Kingdom.....	57	48	54	87.7	83.3	75.9	56.1	56.3	48.1
Germany.....	110	161	133	68.2	55.9	62.4	40.0	42.2	42.9
Italy.....	39	74	100	51.3	60.8	74.0	17.9	39.2	51.0
France.....	94	93	106	56.4	69.9	61.3	29.8	52.7	36.8
Spain.....	33	44	56	63.6	65.9	58.9	33.3	45.5	39.3
Other.....	512	645	668	74.6	80.2	82.5	48.6	54.1	52.5
North/South America.....	770	853	900	53.0	57.1	63.2	30.5	41.9	39.7
Canada.....	166	183	179	71.1	76.5	73.2	49.4	58.5	45.3
Mexico.....	118	181	221	44.1	45.3	54.3	23.7	35.4	33.9
Argentina.....	38	48	44	89.5	68.8	79.5	60.5	60.4	52.3
Brazil.....	206	168	122	30.6	34.5	52.5	14.6	22.6	32.0
Chile.....	25	24	37	24.0	45.8	27.0	16.0	41.7	21.6
Colombia.....	33	47	89	57.6	59.6	71.9	27.3	36.2	43.8
Peru.....	29	23	29	96.6	69.6	75.9	44.8	34.8	58.6
Other.....	155	179	179	56.8	66.5	68.7	29.7	46.9	41.9
Country unknown.....	59	108	140	94.9	38.9	54.3	32.2	21.3	12.9

S = suppressed for reasons of confidentiality

\*Includes Hong Kong.

NOTES: Data include permanent and temporary residents. Recipients who plan to stay report plan to locate in United States; those with definite plans report postdoctoral research appointment or definite employment plans in United States.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, special tabulations (2006).

## Postdocs at U.S. universities, by field and citizenship status: 1985–2005

Citizenship	All S&E fields	Agricultural sciences	Biological sciences	Computer sciences	Earth, atmospheric, and ocean sciences	Engineering	Mathematics	Medical/ other life sciences	Physical sciences	Psychology	Social sciences
All postdocs											
1985 .....	22,387	374	9,128	70	379	1,356	226	5,455	4,539	510	350
1986 .....	23,721	421	9,692	75	420	1,405	201	5,804	4,860	521	322
1987 .....	24,881	453	10,353	103	424	1,446	229	6,066	4,968	460	379
1988 .....	26,123	476	10,653	96	496	1,690	284	6,409	5,201	498	320
1989 .....	27,932	522	11,425	84	453	1,928	225	7,026	5,366	536	367
1990 .....	29,565	536	11,909	71	594	1,950	249	7,762	5,592	464	438
1991 .....	30,865	580	12,455	120	625	2,262	206	8,008	5,722	508	379
1992 .....	32,747	640	13,158	145	692	2,369	201	8,864	5,792	525	361
1993 .....	34,322	720	13,778	164	765	2,446	224	9,657	5,669	521	378
1994 .....	36,377	729	14,379	185	824	2,606	239	10,590	5,884	551	390
1995 .....	35,926	724	14,659	213	845	2,648	262	9,766	5,851	582	376
1996 .....	37,107	699	14,890	250	861	2,677	326	10,538	5,828	594	444
1997 .....	38,481	724	15,082	322	942	2,971	308	11,217	5,968	586	361
1998 .....	40,086	695	15,761	374	902	2,853	279	12,210	6,004	617	391
1999 .....	40,800	750	16,097	334	925	3,196	351	11,820	6,157	716	454
2000 .....	43,115	822	16,734	344	1,155	3,313	385	12,891	6,270	730	471
2001 .....	43,315	835	17,029	338	1,036	3,166	353	13,121	6,218	809	410
2002 .....	45,007	945	17,648	361	1,114	3,568	393	13,099	6,610	815	454
2003 .....	46,613	1,052	18,615	360	1,166	3,820	447	13,067	6,724	960	402
2004 .....	47,087	942	18,696	384	1,253	3,965	466	13,150	6,956	910	365
2005 .....	48,653	989	19,003	406	1,364	4,163	500	14,069	6,896	892	371
U.S. citizen/permanent resident											
1985 .....	13,528	227	5,952	45	253	443	112	3,785	2,026	456	229
1986 .....	14,041	250	6,095	48	278	460	100	3,921	2,213	471	205
1987 .....	14,133	281	6,248	69	261	497	119	3,801	2,178	387	292
1988 .....	14,420	321	6,093	57	307	588	151	3,976	2,260	425	242
1989 .....	14,863	316	6,344	47	271	657	95	4,178	2,267	434	254
1990 .....	15,115	328	6,371	40	377	613	99	4,446	2,213	381	247
1991 .....	15,135	330	6,400	84	389	655	92	4,328	2,202	407	248
1992 .....	15,800	360	6,577	98	415	767	92	4,616	2,248	401	226
1993 .....	16,727	378	6,924	89	460	843	107	5,092	2,213	386	235
1994 .....	17,986	363	7,251	96	514	1,018	131	5,517	2,421	426	249
1995 .....	18,142	392	7,396	113	502	999	117	5,319	2,578	465	261
1996 .....	18,412	355	7,483	121	504	1,050	137	5,482	2,489	483	308
1997 .....	18,916	370	7,300	146	573	1,089	138	6,081	2,512	453	254
1998 .....	19,710	364	7,684	188	530	950	127	6,744	2,371	487	265
1999 .....	18,884	376	7,360	144	535	1,018	152	6,159	2,259	535	346
2000 .....	19,452	331	7,078	129	705	1,069	149	6,825	2,271	561	334
2001 .....	18,397	328	7,009	113	599	976	154	6,309	2,032	594	283

**Postdocs at U.S. universities, by field and citizenship status: 1985–2005**

Citizenship	All S&E fields	Agricultural sciences	Biological sciences	Computer sciences	Earth, atmospheric, and ocean sciences	Engineering	Mathematics	Medical/other life sciences	Physical sciences	Psychology	Social sciences
2002 .....	19,663	395	7,804	175	651	1,125	189	6,139	2,227	612	346
2003 .....	19,645	462	7,762	159	610	1,145	215	6,121	2,266	632	273
2004 .....	20,118	419	7,803	162	689	1,308	212	6,173	2,471	634	247
2005 .....	21,678	423	7,851	164	746	1,419	263	7,503	2,458	593	258
<b>Foreign citizen</b>											
1985 .....	8,859	147	3,176	25	126	913	114	1,670	2,513	54	121
1986 .....	9,680	171	3,597	27	142	945	101	1,883	2,647	50	117
1987 .....	10,748	172	4,105	34	163	949	110	2,265	2,790	73	87
1988 .....	11,703	155	4,560	39	189	1,102	133	2,433	2,941	73	78
1989 .....	13,069	206	5,081	37	182	1,271	130	2,848	3,099	102	113
1990 .....	14,450	208	5,538	31	217	1,337	150	3,316	3,379	83	191
1991 .....	15,730	250	6,055	36	236	1,607	114	3,680	3,520	101	131
1992 .....	16,947	280	6,581	47	277	1,602	109	4,248	3,544	124	135
1993 .....	17,595	342	6,854	75	305	1,603	117	4,565	3,456	135	143
1994 .....	18,391	366	7,128	89	310	1,588	108	5,073	3,463	125	141
1995 .....	17,784	332	7,263	100	343	1,649	145	4,447	3,273	117	115
1996 .....	18,695	344	7,407	129	357	1,627	189	5,056	3,339	111	136
1997 .....	19,565	354	7,782	176	369	1,882	170	5,136	3,456	133	107
1998 .....	20,376	331	8,077	186	372	1,903	152	5,466	3,633	130	126
1999 .....	21,916	374	8,737	190	390	2,178	199	5,661	3,898	181	108
2000 .....	23,663	491	9,656	215	450	2,244	236	6,066	3,999	169	137
2001 .....	24,918	507	10,020	225	437	2,190	199	6,812	4,186	215	127
2002 .....	25,344	550	9,844	186	463	2,443	204	6,960	4,383	203	108
2003 .....	26,968	590	10,853	201	556	2,675	232	6,946	4,458	328	129
2004 .....	26,969	523	10,893	222	564	2,657	254	6,977	4,485	276	118
2005 .....	26,975	566	11,152	242	618	2,744	237	6,566	4,438	299	113

NOTES: Medical/other life sciences reported separately from S&E fields in National Science Foundation, Division of Science Resources Statistics (NSF/SRS), Graduate Students and Postdoctorates in Science and Engineering. Foreign citizen includes temporary residents only.

SOURCE: NSF/SRS, Survey of Graduate Students and Postdoctorates in Science and Engineering, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Science and Engineering Indicators 2008

Appendix table 2-35

**Tertiary-type A, advanced research programs, and tertiary education, by age group and region/country: 2004**

(Percent)

Region/country	Tertiary-type A and advanced research programs		All tertiary	
	25–64 years	25–34 years	25–64 years	25–34 years
OECD average .....	19.0	23.7	25.2	31.0
United States .....	29.7	30.2	39.1	39.0
Norway .....	29.4	37.0	31.8	39.2
Israel .....	29.4	34.2	45.4	49.3
Netherlands .....	26.9	31.8	29.3	34.2
Denmark .....	25.2	27.2	32.4	34.9
Iceland.....	23.5	28.2	27.8	31.3
Canada .....	22.2	27.5	44.6	53.3
Korea.....	22.0	30.8	30.5	49.1
Australia .....	21.9	27.0	30.8	36.2
Japan (2003).....	20.9	26.4	37.4	51.6
Russian Federation (2003).....	20.8	21.5	54.6	56.1
United Kingdom .....	20.2	25.9	29.0	34.6
Sweden .....	19.3	25.9	34.5	42.3
Spain.....	18.9	26.6	26.4	38.1
Switzerland.....	18.1	20.2	28.2	30.4
Ireland.....	17.8	25.8	28.3	40.4
New Zealand .....	17.6	22.8	25.3	28.0
Finland .....	17.1	23.8	34.0	38.0
Germany.....	14.7	14.8	24.9	22.9
Greece.....	14.6	17.2	20.6	24.6
Mexico.....	14.4	16.3	16.4	19.3
France .....	14.3	22.0	23.9	38.1
Belgium.....	13.6	19.1	29.8	40.7
Luxembourg .....	13.5	17.5	22.9	30.9
Slovak Republic.....	11.8	13.6	12.4	14.3
Chile.....	10.3	14.2	13.2	18.3
Austria.....	9.2	11.1	18.3	20.3
Poland .....	NA	NA	15.7	23.2
Hungary .....	NA	NA	16.7	18.9
Portugal .....	NA	NA	12.5	18.6
Italy .....	NA	NA	11.4	14.6
Czech Republic .....	NA	NA	12.3	13.0
Turkey .....	NA	NA	9.1	10.8
Brazil.....	NA	NA	7.8	7.9

NA = not available

OECD = Organisation for Economic Co-operation and Development

NOTES: Tertiary education includes International Standard Classification of Education (ISCED) levels 5A, 5B, and 6 programs. ISCED 5A programs largely theory-based and designed to provide sufficient qualifications for entry into advanced research programs and professions with high skill requirements. ISCED 5B programs focus on practical, technical, or occupational skills for direct entry into labor market. ISCED 6 programs devoted to advanced studies and original research leading to award of an advanced research qualification. In United States, ISCED 5B corresponds to associate's, ISCED 5A corresponds to bachelor's and master's, and ISCED 6 corresponds to doctoral degrees.

SOURCE: OECD, Education at a Glance: OECD Indicators 2006 (2006).

Appendix table 2-36

**Tertiary education of population ages 25–34, by country: 1991–2004**

(Percent)

Country	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
OECD average .....	20.5	21.9	NA	22.2	22.4	23.8	24.9	24.8	25.3	26.4	27.3	28.4	29.5	31.0
Australia .....	22.8	NA	22.8	23.6	24.7	25.3	25.7	28.1	29.0	31.4	33.5	35.8	36.3	36.2
Austria .....	7.9	7.9	NA	8.8	8.7	9.2	12.4	12.5	12.7	15.0	14.3	14.8	15.4	20.3
Belgium .....	26.8	27.2	NA	30.0	32.9	32.2	33.1	33.8	34.4	36.0	37.5	37.6	38.9	40.7
Canada .....	32.9	34.2	NA	37.8	39.3	40.6	44.1	45.5	46.8	48.3	50.5	51.2	52.8	53.3
Czech Republic .....	NA	NA	NA	12.5	11.8	11.2	10.9	10.5	10.9	11.2	11.3	12.3	12.1	13.0
Denmark .....	18.7	19.5	NA	19.7	20.3	20.7	NA	26.8	28.6	29.3	29.1	30.6	35.1	34.9
Finland .....	33.3	33.5	NA	34.1	35.0	35.2	36.4	36.0	37.4	37.6	38.2	39.2	39.8	38.0
France .....	20.1	21.6	23.1	24.3	25.4	26.0	27.8	29.6	30.9	32.4	34.2	36.1	37.4	38.1
Germany .....	19.6	18.8	NA	18.7	20.8	20.3	21.0	21.5	21.5	22.3	21.8	21.7	21.8	22.9
Greece .....	NA	NA	NA	25.0	26.0	28.2	22.3	24.3	24.6	24.3	24.0	24.1	23.7	24.6
Hungary .....	NA	NA	NA	NA	NA	14.3	12.4	13.9	13.7	14.7	14.8	15.0	16.8	18.9
Iceland .....	NA	NA	NA	NA	NA	23.7	23.0	24.2	27.6	27.8	26.5	29.1	29.1	31.3
Ireland .....	19.7	21.2	NA	24.4	27.2	31.3	32.5	29.5	28.1	30.3	33.4	36.3	37.1	40.4
Italy .....	6.6	6.8	NA	7.9	8.2	8.3	NA	9.0	10.0	10.4	11.8	12.5	12.5	14.6
Japan .....	NA	NA	NA	NA	NA	NA	45.2	45.4	45.1	47.2	47.7	50.3	51.6	51.6
Korea .....	21.0	23.9	26.8	27.7	29.2	30.6	30.9	33.8	34.8	36.9	39.2	41.2	46.6	49.1
Luxembourg .....	NA	NA	NA	NA	NA	NA	NA	NA	21.2	22.9	23.4	22.6	18.7	30.9
Mexico .....	NA	NA	NA	NA	16.3	17.1	17.3	16.7	16.6	17.4	18.0	18.4	18.7	19.3
Netherlands .....	22.2	23.6	NA	23.9	24.5	25.1	NA	27.5	25.1	26.6	26.5	27.7	27.7	34.2
New Zealand .....	23.2	23.2	NA	21.1	24.2	NA	25.4	26.4	26.0	27.2	28.5	29.3	32.4	28.0
Norway .....	27.1	28.2	NA	30.7	32.1	30.0	29.9	32.8	34.7	34.9	37.9	39.7	39.8	39.2
Poland .....	NA	NA	NA	NA	9.9	NA	10.3	11.8	12.3	14.2	15.2	16.8	20.4	23.2
Portugal .....	8.5	NA	NA	13.2	13.5	14.4	NA	11.5	12.2	13.0	14.0	15.0	16.3	18.6
Slovak Republic .....	NA	NA	NA	12.5	11.6	12.4	10.4	11.3	11.1	11.2	11.9	11.9	13.2	14.3
Spain .....	16.3	22.5	NA	25.2	26.6	28.6	30.3	32.0	33.5	34.1	35.5	36.7	37.5	38.1
Sweden .....	27.0	26.5	NA	27.3	28.6	28.4	29.3	30.7	31.7	33.6	36.9	39.2	40.4	42.3
Switzerland .....	21.3	21.3	NA	22.0	21.5	22.5	24.7	25.0	25.9	25.6	25.6	26.5	29.4	30.4
Turkey .....	6.1	5.6	NA	6.6	7.5	NA	7.3	7.8	8.7	8.9	9.1	10.5	11.4	10.8
United Kingdom .....	18.5	20.6	NA	23.1	23.3	24.3	24.7	25.9	27.3	28.6	29.5	31.2	33.1	34.6
United States .....	30.2	30.2	NA	32.0	33.6	35.2	35.7	36.2	37.4	38.1	39.1	39.3	38.7	39.0

NA = not available

OECD = Organisation for Economic Co-operation and Development

NOTES: Tertiary education includes International Standard Classification of Education (ISCED) levels 5A, 5B, and 6 programs. ISCED 5A programs largely theory-based and designed to provide sufficient qualifications for entry into advanced research programs and professions with high skill requirements. ISCED 5B programs focus on practical, technical, or occupational skills for direct entry into labor market. ISCED 6 programs devoted to advanced studies and original research leading to award of an advanced research qualification. In United States, ISCED 5B corresponds to associate's, ISCED 5A corresponds to bachelor's and master's, and ISCED 6 corresponds to doctoral degrees.

SOURCE: OECD, *OECD Factbook 2006: Economic, Environmental and Social Statistics*; and Education at a Glance: OECD Indicators 2006 (2006).

## First university degrees, by selected region and country/economy: 2004 or most recent year

Region/location	Field of first university degree								Degrees in (%)		
	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E	S&E	Natural sciences	Engineering
All regions <sup>a</sup> .....	10,926,433	3,888,857	685,973	422,284	204,982	1,117,061	1,458,547	7,068,388	35.6	12.0	13.3
Asia <sup>a</sup> .....	3,698,652	1,662,138	357,788	73,956	77,736	411,116	741,542	2,067,665	44.9	13.8	20.1
Bangladesh (2003) .....	180,258	74,844	18,905	5,598	1,469	48,002	870	105,414	41.5	14.4	0.5
Brunei .....	724	47	18	13	0	16	0	677	6.5	4.3	0.0
Cambodia .....	8,544	1,751	129	1,070	165	209	178	6,793	20.5	16.0	2.1
China .....	1,196,290	672,463	134,164	NA	34,078	61,758	442,463	523,827	56.2	14.1	37.0
Hong Kong .....	27,329	10,313	1,550	2,438	0	2,382	3,943	17,016	37.7	14.6	14.4
India (1990) .....	750,000	176,036	147,036	NA	NA	NA	29,000	573,964	23.5	19.6	3.9
Japan <sup>b</sup> (2005) .....	551,016	349,015	19,260	NA	16,015	215,809	97,931	202,001	63.3	6.4	17.8
Kyrgyzstan .....	31,115	6,790	678	1,233	402	2,487	1,990	24,325	21.8	7.4	6.4
Laos .....	1,833	1,044	41	41	120	630	212	789	57.0	11.0	11.6
Mongolia .....	19,264	4,812	429	510	476	1,264	2,133	14,452	25.0	7.3	11.1
Philippines <sup>c</sup> .....	350,529	89,241	4,860	26,321	11,764	15,145	31,151	292,439	25.5	12.3	8.9
Singapore <sup>d</sup> .....	10,165	5,947	1,277	1,161	NA	NA	3,509	4,218	58.5	24.0	34.5
South Korea (short) .....	261,754	119,338	15,811	14,287	3,228	15,638	70,374	142,416	45.6	12.7	26.9
South Korea (long) .....	5,304	0	0	0	0	0	0	5,304	0.0	0.0	0.0
Taiwan (2005) .....	210,763	85,891	4,953	21,284	5,024	7,760	46,870	124,872	40.8	14.8	22.2
Thailand (2001) .....	93,764	64,606	8,677	NA	4,995	40,016	10,918	29,158	68.9	14.6	11.6
Middle East <sup>a</sup> .....	623,780	212,555	36,407	32,404	16,805	56,628	70,311	411,225	34.1	13.7	11.3
Bahrain (2003) .....	1,434	419	54	159	0	96	110	1,015	29.2	14.9	7.7
Iran .....	183,770	90,055	15,397	12,330	10,076	18,566	33,686	93,715	49.0	20.6	18.3
Iraq .....	54,396	11,629	1,606	1,289	1,185	570	6,979	42,767	21.4	7.5	12.8
Israel .....	46,307	20,143	2,391	3,371	276	9,111	4,994	26,164	43.5	13.0	10.8
Jordan .....	28,195	10,746	1,621	4,214	635	1,486	2,790	17,449	38.1	22.9	9.9
Lebanon .....	19,590	6,572	1,089	882	108	2,273	2,220	13,018	33.5	10.6	11.3
Morocco .....	23,653	7,263	2,455	882	0	3,413	513	16,390	30.7	14.1	2.2
Oman .....	5,028	662	79	252	11	35	285	4,366	13.2	6.8	5.7
Palestine .....	10,226	2,425	385	589	59	555	837	7,801	23.7	10.1	8.2
Qatar .....	668	156	41	57	3	30	25	512	23.4	15.1	3.7
Saudi Arabia .....	62,379	8,692	2,065	2,724	154	2,878	871	53,687	13.9	7.9	1.4
Turkey (short) .....	188,134	53,793	9,224	5,655	4,298	17,615	17,001	134,341	28.6	10.2	9.0
Africa <sup>a</sup> .....	174,915	51,231	8,262	8,744	5,857	15,618	12,750	123,684	29.3	13.1	7.3
Burundi .....	680	207	0	74	51	70	12	473	30.4	18.4	1.8
Eritrea .....	1,254	501	71	85	104	159	82	753	40.0	20.7	6.5
Ethiopia <sup>a</sup> .....	41,363	7,812	782	2,088	1,697	734	2,511	33,551	18.9	11.0	6.1
Gambia .....	470	94	94	0	0	0	0	376	20.0	20.0	0.0
Ghana (2001) .....	7,122	2,951	916	0	362	1,177	496	4,171	41.4	17.9	7.0
Kenya <sup>a</sup> (2000) .....	10,587	3,812	1,068	63	1,440	433	808	6,775	36.0	24.3	7.6
Lesotho (2003) .....	475	190	40	0	30	120	0	285	40.0	14.7	0.0
Madagascar <sup>a</sup> .....	5,947	2,079	771	190	53	836	229	3,868	35.0	17.1	3.9



## First university degrees, by selected region and country/economy: 2004 or most recent year

Region/location	Field of first university degree								Degrees in (%)		
	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E	S&E	Natural sciences	Engineering
Mauritius.....	1,681	1,054	219	92	10	224	509	627	62.7	19.1	30.3
Mozambique.....	2,878	1,298	245	91	133	724	105	1,580	45.1	16.3	3.6
Namibia (2003).....	1541	186	76	0	87	23	0	1355	12.1	10.6	0.0
South Africa (2003).....	90,270	27,747	3,621	5,911	1,554	9,421	7,240	62,523	30.7	12.3	8.0
Swaziland.....	1,026	147	55	0	30	57	5	879	14.3	8.3	0.5
Uganda.....	9,621	3,153	304	150	306	1,640	753	6,468	32.8	7.9	7.8
Europe <sup>a</sup> .....	3,624,246	1,137,210	151,886	157,269	68,249	320,944	438,852	2,486,697	31.4	10.4	12.1
European Union.....	1,636,402	617,469	107,739	89,963	21,493	185,997	212,267	1,018,594	37.7	13.4	13.0
Austria (short).....	4,450	2,040	114	595	1	34	1,296	2,410	45.8	16.0	29.1
Austria (long).....	15,838	5,502	866	532	207	2,021	1,876	10,336	34.7	10.1	11.8
Belgium (short).....	14,882	5,657	1,479	661	164	1,313	2,040	9,225	38.0	15.5	13.7
Belgium (long).....	9,992	3,608	234	105	298	1,724	1,247	6,045	39.5	6.4	12.5
Denmark (short).....	26,476	5,462	746	973	143	1,758	1,842	21,014	20.6	7.0	7.0
Denmark (long).....	3,042	1,307	63	37	1	22	1,184	1,735	43.0	3.3	38.9
Finland (short).....	23,896	7,823	302	1,290	673	213	5,345	16,073	32.7	9.5	22.4
Finland (long).....	12,412	5,462	885	676	133	1,384	2,384	6,950	44.0	13.6	19.2
France (short).....	268,716	90,399	29,472	15,406	171	29,635	15,715	178,317	33.6	16.8	5.8
France (long).....	52,722	28,555	0	207	156	0	28,192	24,167	54.2	0.7	53.5
Germany (short).....	82,149	51,003	1,024	6,713	3,138	22,158	17,970	31,146	62.1	13.2	21.9
Germany (long).....	125,653	57,730	10,453	7,472	2,450	27,663	9,692	67,923	45.9	16.2	7.7
Greece (short).....	22,700	7,997	1,952	1,631	16	4,303	95	14,703	35.2	15.9	0.4
Greece (long).....	6,774	3,655	1,342	784	243	332	954	3,119	54.0	35.0	14.1
Iceland (short).....	2,189	589	89	155	20	191	134	1,600	26.9	12.1	6.1
Iceland (long).....	106	20	15	0	0	5	0	86	18.9	14.2	0.0
Ireland (short).....	25,193	8,012	1,955	2,218	208	1,123	2,508	17,181	31.8	17.4	10.0
Ireland (long).....	672	36	0	0	0	0	36	636	5.4	0.0	5.4
Italy (short).....	96,260	38,390	4,929	3,535	1,525	9,761	18,640	57,870	39.9	10.4	19.4
Italy (long).....	168,314	60,377	8,540	2,957	1,815	19,806	27,259	107,937	35.9	7.9	16.2
Netherlands (short).....	84,194	21,553	2,104	3,783	1,644	7,159	6,863	62,641	25.6	8.9	8.2
Portugal.....	52,550	17,759	3,020	2,900	769	4,555	6,515	34,791	33.8	12.7	12.4
Spain (short).....	88,504	24,475	0	5,539	2,564	0	16,372	64,029	27.7	9.2	18.5
Spain (long).....	113,931	42,841	8,872	4,390	1,837	13,326	14,416	71,090	37.6	13.3	12.7
Sweden (short).....	41,133	16,847	1,743	1,804	201	3,228	9,871	24,286	41.0	9.1	24.0
Sweden (long).....	1,564	430	0	0	46	343	41	1,134	27.5	2.9	2.6
United Kingdom <sup>f</sup> .....	292,090	109,940	27,540	25,600	3,070	33,940	19,780	182,150	37.6	19.2	6.8
European Free Trade Association.....	42,798	12,710	1,535	2,561	331	3,448	4,835	30,088	29.7	10.3	11.3
Norway (short).....	20,277	4,717	151	1,309	110	1,860	1,287	15,560	23.3	7.7	6.3
Norway (long).....	3,416	1,374	51	245	30	59	989	2,042	40.2	9.5	29.0
Switzerland (short).....	10,172	2,801	242	638	129	135	1,657	7,371	27.5	9.9	16.3

## First university degrees, by selected region and country/economy: 2004 or most recent year

Region/location	Field of first university degree								Degrees in (%)		
	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E	S&E	Natural sciences	Engineering
Switzerland (long).....	8,933	3,818	1,091	369	62	1,394	902	5,115	42.7	17.0	10.1
Central/Eastern Europe.....	1,945,046	507,031	42,612	64,745	46,425	131,499	221,750	1,438,015	26.1	7.9	11.4
Albania (2003).....	4,916	790	38	63	339	132	218	4,126	16.1	9.0	4.4
Armenia .....	11,698	941	0	0	198	0	743	10,757	8.0	1.7	6.4
Bulgaria .....	41,721	15,616	1,007	1,151	556	6,461	6,441	26,105	37.4	6.5	15.4
Croatia (2003) .....	10,192	3,136	538	414	277	452	1,455	7,056	30.8	12.1	14.3
Czech Republic (short).....	12,539	3,740	625	560	353	845	1,357	8,799	29.8	12.3	10.8
Czech Republic (long).....	20,587	8,566	951	765	929	412	5,509	12,021	41.6	12.8	26.8
Estonia.....	5,544	1,660	305	287	126	399	543	3,884	29.9	13.0	9.8
Georgia .....	23,545	6,428	1,013	309	578	289	4,239	17,117	27.3	8.1	18.0
Hungary (short) .....	53,514	11,640	742	1,306	1,740	3,518	4,334	41,874	21.8	7.1	8.1
Latvia.....	20,273	5,872	352	797	164	2,997	1,562	14,401	29.0	6.5	7.7
Lithuania.....	23,707	7,170	571	948	370	1,185	4,096	16,537	30.2	8.0	17.3
Macedonia <sup>a</sup> .....	4,835	1,308	204	162	129	128	685	3,527	27.1	10.2	14.2
Poland (short).....	172,537	49,871	2,857	8,677	2,575	23,820	11,942	122,666	28.9	8.2	6.9
Poland (long) .....	105,972	40,716	3,522	4,108	2,184	13,569	17,333	65,256	38.4	9.3	16.4
Romania .....	131,828	40,328	5,070	2,089	2,708	8,492	21,969	91,500	30.6	7.5	16.7
Russia (2006).....	1,254,987	293,729	22,883	41,308	31,641	66,209	131,688	961,258	23.4	7.6	10.5
Serbia-Montenegro <sup>a</sup> (2001) .....	13,925	5,043	773	396	642	342	2,890	8,882	36.2	13.0	20.8
Slovak Republic (short).....	10,119	3,414	576	568	127	341	1,802	6,705	33.7	12.6	17.8
Slovak Republic (long).....	15,762	4,739	359	690	684	830	2,176	11,023	30.1	11.0	13.8
Slovenia .....	6,845	2,324	226	147	105	1,078	768	4,521	34.0	7.0	11.2
America <sup>a</sup> .....	2,646,268	774,817	120,408	135,114	34,855	300,899	183,541	1,871,451	29.3	11.0	6.9
North/Central America .....	1,897,772	616,999	100,212	105,113	23,920	262,898	124,856	1,280,773	32.5	12.1	6.6
Canada .....	137,296	53,201	9,894	7,267	1,537	23,845	10,658	84,095	38.7	13.6	7.8
Belize.....	150	9	4	5	0	0	0	141	6.0	6.0	0.0
Costa Rica .....	26,315	5,585	332	1,065	208	1,857	2,123	20,730	21.2	6.1	8.1
Cuba (2001).....	16,769	2,760	395	219	384	408	1,354	14,009	16.5	6.0	8.1
El Salvador (2003).....	8,651	1,365	178	202	173	27	785	7,286	15.8	6.4	9.1
Guatemala (2002) .....	3,865	882	82	0	134	254	412	2,983	22.8	5.6	10.7
Honduras (2003) .....	4,386	1,391	25	103	414	57	792	2,995	31.7	12.4	18.1
Mexico.....	276,690	93,858	7,093	24,584	3,912	15,423	42,846	182,832	33.9	12.9	15.5
Panama.....	16,641	2,970	174	508	117	960	1,211	13,671	17.8	4.8	7.3
United States.....	1,407,009	455,848	82,905	71,160	17,041	220,067	64,675	951,161	32.4	12.2	4.6
South America .....	748,496	157,818	20,196	30,001	10,935	38,001	58,685	590,678	21.1	8.2	7.8
Argentina (2003) .....	79,227	22,318	2,474	3,867	1,950	6,644	7,383	56,909	28.2	10.5	9.3
Bolivia (2000).....	15,341	5,115	563	392	1,006	997	2,157	10,226	33.3	12.8	14.1
Brazil (2002).....	466,260	92,040	14,539	21,131	4,912	23,434	28,024	374,220	19.7	8.7	6.0
Chile.....	71,502	22,770	2,095	2,948	2,094	4,906	10,727	48,732	31.8	10.0	15.0
Colombia.....	60,574	1,919	0	1,123	796	0	0	58,655	3.2	3.2	0.0

Appendix table 2-37

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## First university degrees, by selected region and country/economy: 2004 or most recent year

Region/location	Field of first university degree								Degrees in (%)		
	All fields	All S&E fields	Physical/biological sciences	Mathematics/computer sciences	Agricultural sciences	Social/behavioral sciences	Engineering	Non-S&E	S&E	Natural sciences	Engineering
Guyana.....	942	332	33	104	22	72	101	610	35.2	16.9	10.7
Venezuela (2002).....	54,650	13,324	492	436	155	1,948	10,293	41,326	24.4	2.0	18.8
Oceania <sup>a</sup> .....	158,572	50,906	11,222	14,797	1,480	11,856	11,551	107,666	32.1	17.3	7.3
Australia (short).....	125,038	41,071	8,858	12,317	1,244	9,223	9,429	83,967	32.8	17.9	7.5
Australia (long).....	5,171	1,907	525	257	2	509	614	3,264	36.9	15.2	11.9
New Zealand (short).....	27,782	7,834	1,839	2,223	232	2,124	1,416	19,948	28.2	15.5	5.1
New Zealand (long).....	581	94	0	0	2	0	92	487	16.2	0.3	15.8

NA = not available

<sup>a</sup>Includes only locations for which relatively recent data available.<sup>b</sup>Japanese social science data also include business administration.<sup>c</sup>Engineering data for 2003.<sup>d</sup>Singapore data include social sciences in humanities (non-S&E).<sup>e</sup>Engineering degrees are long.<sup>f</sup>Includes former colleges and polytechnical institutions. Data for United Kingdom rounded to nearest 10. Detail may not add to total because of rounding. Ratios based on unrounded data.

NOTES: Physical/biological sciences include physical, biological, earth, atmospheric, and ocean sciences. Natural sciences include physical, biological, agricultural, and computer sciences and mathematics. Data for first university degrees use International Standard Classification of Education (ISCED 97), level 5A. First university degree programs in most countries <5 years; however, in some countries, especially European, some level 5A degree programs >5 years and noted as long. When country has first university degrees <5 years and some >5 years, such as Germany, duration noted as short or long. Unspecified duration means <5 years. Data for some countries not in Organisation for Economic Co-operation and Development include degrees comparable with U.S. master's or first professional degrees.

SOURCES: Organisation for Economic Co-operation and Development, Education Online Database, <http://www.oecd.org/education/database/>; United Nations Educational, Scientific, and Cultural Organization (UNESCO), Institute for Statistics, special tabulations (2006); Canada—Statistics Canada, special tabulations (2007); China—National Bureau of Statistics of China, *China Statistical Yearbook, 2005* (Beijing); Germany—Federal Statistical Office, Prüfungen an Hochschulen 2004 (2005); Japan—Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, Monbusho Survey of Education, special tabulations (2007); Russia—State University Higher School of Economics, special tabulations (2007); Singapore—Ministry of Education, Education Statistics Digest: 2004; Taiwan—Ministry of Education, Educational Statistics of the Republic of China: 2006 (2006); Thailand—National Statistical Office, Ministry of Information and Communication Technology, *Statistical Yearbook: 2004*; United Kingdom—Higher Education Statistics Agency, special tabulations (2007); and United States—National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Science and Engineering Indicators 2008

**S&E first university degrees, by selected Western or Asian country and field: Selected years, 1985–2005**

Country/field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
<b>China</b>														
All fields .....	183,241	225,312	275,056	262,088	347,068	325,484	381,647	440,935	495,624	567,839	655,763	929,598	1,196,290	NA
S&E fields.....	115,287	138,724	175,584	181,770	193,088	235,313	281,245	322,769	359,478	337,352	384,529	533,582	672,463	NA
Physical/biological sciences .....	8,686	9,115	8,153	6,598	11,087	25,509	39,113	42,351	49,214	63,517	72,526	103,409	134,164	NA
Mathematics/computer sciences.....	7,764	8,974	13,079	13,847	12,520	12,520	NA	NA	NA	NA	NA	NA	NA	NA
Agricultural sciences.....	11,907	13,850	14,531	14,542	16,994	16,365	16,559	17,453	19,154	19,005	22,462	29,758	34,078	NA
Social/behavioral sciences .....	13,855	19,619	27,713	32,163	31,656	32,075	50,134	67,611	78,205	35,267	37,517	48,878	61,758	NA
Engineering.....	73,075	87,166	112,108	114,620	120,831	148,844	175,439	195,354	212,905	219,563	252,024	351,537	442,463	NA
<b>Japan</b>														
All fields .....	373,302	382,655	376,688	428,079	445,774	493,277	524,512	532,436	538,683	545,512	547,711	544,894	548,897	551,016
S&E fields.....	247,258	252,688	247,643	284,617	295,743	330,210	348,897	350,535	353,465	359,019	357,282	352,088	351,299	349,015
Physical/biological sciences .....	9,166	9,817	9,900	10,452	10,757	12,089	13,386	13,662	13,300	14,192	19,369	19,549	19,727	19,260
Mathematics/computer sciences.....	3,532	3,572	3,395	3,765	4,221	4,884	5,103	4,906	4,941	4,965	NA	NA	NA	NA
Agricultural sciences.....	10,928	11,266	10,252	12,282	13,021	14,970	13,838	14,150	15,562	14,084	16,393	15,933	15,865	16,015
Social/behavioral sciences .....	151,072	150,956	147,087	170,721	179,338	200,875	213,619	214,377	216,506	221,300	217,838	215,205	217,276	215,809
Engineering.....	72,560	77,077	77,009	87,397	88,406	97,392	102,951	103,440	103,156	104,478	103,682	101,401	98,431	97,931
<b>South Korea</b>														
All fields .....	118,584	149,582	166,845	175,586	208,834	184,214	196,566	209,444	214,498	234,540	239,793	252,777	261,754	NA
S&E fields.....	45,079	53,093	58,789	73,011	78,830	84,350	91,278	94,078	96,859	111,060	113,097	115,770	119,338	NA
Physical/biological sciences .....	8,112	7,082	8,249	9,703	11,634	11,828	12,532	13,865	13,427	13,915	12,864	17,035	15,811	NA
Mathematics/computer sciences.....	2,888	3,149	6,274	7,547	8,502	12,351	14,151	9,847	9,299	14,510	13,591	10,131	14,287	NA
Agricultural sciences.....	4,068	6,395	8,027	6,586	7,843	7,767	6,662	5,345	5,859	5,555	5,910	2,387	3,228	NA
Social/behavioral sciences .....	6,472	8,867	8,098	18,483	17,808	16,955	16,624	14,195	11,766	14,764	15,790	15,717	15,638	NA
Engineering.....	23,539	27,600	28,141	30,692	33,043	35,449	41,309	50,827	56,508	62,316	64,942	70,500	70,374	NA
<b>United States</b>														
All fields .....	990,877	1,003,532	1,030,171	1,107,997	1,179,278	1,174,436	1,186,589	NA	1,253,121	1,257,648	1,305,730	1,359,843	1,407,009	1,437,200
S&E fields.....	332,273	331,526	322,821	337,675	366,035	378,148	388,482	NA	398,622	400,206	415,611	441,087	455,848	466,003
Physical/biological sciences .....	63,251	59,200	54,278	56,757	65,680	76,265	84,869	NA	83,531	80,220	79,768	81,653	82,905	86,971
Mathematics/computer sciences.....	54,510	56,442	46,277	40,194	39,433	38,620	38,116	NA	49,123	54,639	61,408	69,211	71,160	65,404
Agricultural sciences.....	11,907	9,524	8,582	8,432	11,632	14,580	17,361	NA	18,244	17,467	17,360	17,693	17,041	17,111
Social/behavioral sciences .....	125,033	131,935	146,737	170,105	186,585	185,312	185,784	NA	188,188	188,622	196,436	208,757	220,067	230,384
Engineering.....	77,572	74,425	66,947	62,187	62,705	63,371	62,352	NA	59,536	59,258	60,639	63,773	64,675	66,133
<b>United Kingdom<sup>a</sup></b>														
All fields .....	72,000	70,870	73,660	79,640	196,820	237,800	258,750	263,670	265,270	274,440	272,660	282,380	292,090	306,360
S&E fields.....	40,550	39,870	41,250	40,730	75,290	83,840	90,820	92,380	92,530	95,310	95,180	104,120	109,940	112,500
Physical/biological sciences .....	12,500	12,210	11,510	12,430	21,070	27,610	31,220	32,230	31,630	33,630	32,570	27,300	27,540	28,290
Mathematics/computer sciences.....	4,540	4,540	4,530	5,220	10,580	12,340	13,000	14,630	15,300	17,120	18,420	23,340	25,600	25,370
Agricultural sciences.....	1,450	1,370	1,340	1,210	1,650	2,300	2,800	2,860	2,340	2,910	2,970	2,710	3,070	2,920
Social/behavioral sciences .....	12,430	12,480	14,060	12,120	22,150	19,510	20,780	20,650	22,710	21,170	20,930	31,310	33,940	36,350
Engineering.....	9,630	9,270	9,820	9,740	19,840	22,080	23,020	22,010	20,550	20,490	20,280	19,460	19,780	19,580

Appendix table 2-38

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**S&E first university degrees, by selected Western or Asian country and field: Selected years, 1985–2005**

Country/field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Germany														
All first university degrees														
All fields .....	131,969	138,955	145,087	152,919	180,973	201,667	212,970	197,151	190,076	182,427	184,768	195,103	207,802	226,530
S&E fields .....	71,542	78,233	85,961	92,324	98,304	104,789	111,923	99,079	94,535	89,990	92,829	98,860	108,733	121,356
Physical/biological sciences .....	10,312	10,611	12,473	13,803	14,116	14,507	14,909	12,390	11,467	10,543	10,977	10,938	11,477	12,728
Mathematics/computer sciences.....	4,272	4,729	5,306	6,828	7,718	9,463	11,603	10,541	9,864	9,187	9,570	11,036	14,185	17,698
Agricultural sciences.....	4,390	4,644	4,894	4,953	4,823	4,839	4,855	4,992	4,935	4,878	4,698	5,214	5,588	5,864
Social/behavioral sciences .....	29,236	34,006	37,038	37,552	44,223	48,563	52,855	46,013	43,318	40,622	41,356	44,818	49,821	55,014
Engineering.....	23,332	24,243	26,250	29,188	27,424	27,416	27,701	25,143	24,952	24,760	26,228	26,854	27,662	30,052
Short degree (3–5 yr)														
All fields .....	48,003	52,753	54,631	58,855	63,337	69,216	75,641	70,126	68,139	66,151	66,914	74,722	82,149	91,331
S&E fields .....	34,074	39,080	40,880	40,922	43,618	43,565	43,807	41,092	40,351	39,609	40,977	44,779	51,003	56,739
Physical/biological sciences .....	549	599	689	678	777	710	649	615	539	463	499	681	1,024	1,515
Mathematics/computer sciences.....	1,009	1,336	1,603	2,186	2,488	2,812	3,177	2,881	2,960	3,038	3,537	4,730	6,713	8,504
Agricultural sciences.....	1,474	1,565	2,081	2,230	2,242	2,342	2,447	2,472	2,526	2,580	2,481	2,709	3,138	3,284
Social/behavioral sciences .....	15,061	19,031	20,095	19,034	22,254	23,500	24,815	21,322	19,654	17,985	17,044	19,171	22,158	24,056
Engineering.....	15,981	16,549	16,412	16,794	15,856	14,201	12,719	13,802	14,673	15,543	17,416	17,488	17,970	19,380
Long degree (6–7 yr)														
All fields .....	83,966	86,202	90,456	94,064	117,636	132,451	137,329	127,025	121,937	116,276	117,854	120,381	125,653	135,199
S&E fields .....	37,468	39,153	45,081	51,402	54,686	61,223	68,116	57,987	54,184	50,381	51,852	54,081	57,730	64,617
Physical/biological sciences .....	9,763	10,012	11,784	13,125	13,339	13,797	14,260	11,775	10,928	10,080	10,478	10,257	10,453	11,213
Mathematics/computer sciences.....	3,263	3,393	3,703	4,642	5,229	6,651	8,426	7,660	6,905	6,149	6,033	6,306	7,472	9,194
Agricultural sciences.....	2,916	3,079	2,813	2,723	2,581	2,496	2,408	2,520	2,409	2,298	2,217	2,505	2,450	2,580
Social/behavioral sciences .....	14,175	14,975	16,943	18,518	21,969	25,064	28,040	24,691	23,664	22,637	24,312	25,647	27,663	30,958
Engineering.....	7,351	7,694	9,838	12,394	11,567	13,215	14,982	11,341	10,279	9,217	8,812	9,366	9,692	10,672

NA = not available

\*Beginning in 1992, data include degrees from colleges and polytechnics.

NOTES: Physical/biological sciences include physical, biological, earth, atmospheric, and ocean sciences. Data for first university degrees use International Standard Classification of Education (ISCED 97), level 5A.

SOURCES: China—National Bureau of Statistics of China, *China Statistical Yearbook*, annual series (Beijing) (various years); Japan—Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, Monbusho Survey of Education (annual series; various years); South Korea—Organisation for Economic Co-operation and Development, Education Online Database, <http://www.oecd.org/education/database/>; Taiwan—Ministry of Education, Educational Statistics of the Republic of China (annual series; various years); Germany—Federal Statistical Office, Prüfungen an Hochschulen (annual series; various years); United Kingdom—Higher Education Statistics Agency, special tabulations (various years); and United States—National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

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**First university degrees, by field, sex, country/economy, and region: 2004 or most recent year**

Sex/location	All fields	All S&E fields	Physical/ biological/ sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
Male .....	3,582,415	1,625,546	178,451	244,449	78,484	499,556	624,616	1,956,869
Asia .....	1,086,137	580,850	47,602	41,341	27,601	265,861	198,445	505,287
Bangladesh (2003) .....	119,532	51,103	13,861	4,709	1,223	30,532	778	68,429
Brunei .....	249	21	11	4	0	6	0	228
Cambodia.....	6,103	1,503	86	950	142	150	175	4,600
Hong Kong.....	12,849	6,454	825	1,762	0	854	3,013	6,395
Japan <sup>a</sup> .....	548,897	351,299	19,727	NA	15,865	217,276	98,431	197,598
Kyrgyzstan .....	14,014	3,460	131	596	365	957	1,411	10,554
Laos.....	1,096	658	27	18	90	340	183	438
Mongolia.....	6,623	2,079	169	245	173	435	1,057	4,544
Philippines.....	142,102	23,054	1,525	11,254	5,547	4,728	0	119,048
South Korea.....	135,067	78,732	7,911	8,198	1,930	7,962	52,731	56,335
Taiwan (2005) .....	99,605	62,487	3,329	13,605	2,266	2,621	40,666	37,118
Middle East .....	319,339	126,983	15,357	17,841	10,456	25,391	57,938	192,356
Bahrain (2003) .....	384	137	10	42	NA	15	70	247
Iran .....	94,933	54,583	5,474	6,046	6,067	7,460	29,536	40,350
Iraq .....	33,021	8,203	725	680	799	339	5,660	24,818
Israel.....	18,547	10,318	1,031	2,280	127	3,070	3,810	8,229
Jordan.....	14,773	6,016	519	2,627	266	586	2,018	8,757
Lebanon.....	8,922	3,315	405	566	56	579	1,709	5,607
Morocco.....	13,322	4,863	1,509	693	0	2,248	413	8,459
Oman.....	1,903	419	34	101	5	35	244	1,484
Palestine.....	4,792	1,289	129	280	46	292	542	3,503
Qatar.....	157	45	2	13	0	5	25	112
Saudi Arabia.....	24,069	4,327	896	1,140	154	1,343	794	19,742
Turkey.....	104,516	33,468	4,623	3,373	2,936	9,419	13,117	71,048
Africa.....	48,276	14,560	2,590	2,005	2,291	3,642	4,032	33,716
Burundi.....	504	163	0	62	40	49	12	341
Eritrea.....	1,074	450	67	72	94	137	80	624
Ethiopia.....	29,270	6,639	738	1,488	1,456	608	2,349	22,631
Gambia.....	402	86	86	0	0	0	0	316
Ghana (2001).....	5,232	2,227	694	0	294	801	438	3,005
Madagascar (2002).....	3,095	1,343	476	151	25	513	178	1,752
Mauritius.....	838	568	99	52	5	69	343	270
Mozambique.....	1,859	891	175	74	95	456	91	968
Swaziland.....	470	94	31	0	20	40	3	376
Uganda.....	5,532	2,099	224	106	262	969	538	3,433
Europe.....	741,110	373,963	51,216	66,069	11,852	76,282	168,554	367,147
Austria.....	9,965	4,762	442	907	103	743	2,567	5,203
Belgium.....	11,910	5,504	860	630	261	817	2,936	6,406
Denmark.....	10,647	4,340	386	811	66	787	2,290	6,307
Finland.....	13,385	8,569	463	1,140	440	478	6,048	4,816
France.....	138,765	67,336	14,058	10,372	156	9,651	33,099	71,429
Germany.....	104,279	68,091	5,412	10,278	2,434	26,519	23,448	36,188
Greece.....	10,738	5,690	1,790	1,443	121	1,762	574	5,048
Hungary.....	19,564	6,801	377	921	904	1,325	3,274	12,763
Iceland.....	725	327	36	113	10	73	95	398
Ireland.....	10,672	4,796	830	1,571	127	303	1,965	5,876
Italy.....	111,217	54,798	5,429	3,731	2,068	10,507	33,063	56,419
Netherlands.....	36,724	14,384	1,229	3,376	928	2,872	5,979	22,340
Norway.....	9,480	4,158	103	1,260	71	889	1,835	5,322
Portugal.....	16,637	8,447	946	1,712	285	1,336	4,168	8,190
Spain.....	80,980	38,805	3,426	7,095	2,549	4,453	21,282	42,175
Sweden.....	16,177	10,004	648	1,063	119	1,162	7,012	6,173
Switzerland.....	10,675	4,591	831	886	150	505	2,219	6,084
United Kingdom <sup>b</sup> .....	128,570	62,560	13,950	18,760	1,060	12,100	16,700	66,010
Central/Eastern Europe.....	247,006	104,391	6,376	14,997	6,271	19,062	57,685	142,615
Albania (2003).....	1,387	363	7	18	164	21	153	1,024

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**First university degrees, by field, sex, country/economy, and region: 2004 or most recent year**

Sex/location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
Armenia .....	5,180	576	0	0	107	0	469	4,604
Bulgaria.....	17,529	7,779	411	529	323	2,518	3,998	9,750
Croatia (2003) .....	4,125	1,765	164	276	141	164	1,020	2,360
Czech Republic.....	15,226	7,891	687	1,011	590	404	5,199	7,335
Estonia .....	1,688	782	95	175	51	104	357	906
Georgia .....	10,972	3,960	241	147	422	78	3,072	7,012
Latvia .....	6,068	2,567	124	563	99	702	1,079	3,501
Lithuania .....	8,623	3,980	238	582	170	312	2,678	4,643
Macedonia .....	1,731	669	59	59	71	38	442	1,062
Poland .....	103,723	46,355	2,018	9,604	1,999	11,501	21,233	57,368
Romania.....	56,775	21,525	1,870	928	1,595	2,447	14,685	35,250
Slovak Republic.....	11,415	5,008	372	990	485	422	2,739	6,407
Slovenia .....	2,564	1,171	90	115	54	351	561	1,393
North/Central America .....	809,121	318,714	42,331	71,989	12,818	94,893	96,683	490,407
Belize.....	53	7	3	4	0	0	0	46
Canada.....	54,122	26,270	4,051	5,119	768	8,126	8,206	27,852
Costa Rica.....	9,986	2,997	150	739	137	406	1,565	6,989
Cuba (2001) .....	5,702	1,802	208	155	267	136	1,036	3,900
El Salvador (2003) .....	3,738	916	73	118	148	15	562	2,822
Guatemala (2002).....	2,105	511	24	0	122	40	325	1,594
Mexico .....	132,341	59,255	3,294	15,160	2,986	4,966	32,849	73,086
Panama.....	4,882	1,390	55	258	63	292	722	3,492
United States.....	596,192	225,909	34,816	50,436	8,327	80,912	51,418	370,283
South America .....	267,307	77,082	8,021	19,492	6,370	10,548	32,651	190,225
Argentina (2003) .....	33,346	11,311	876	2,269	1,097	2,040	5,029	22,035
Brazil (2002).....	172,951	50,025	6,048	14,436	3,344	6,804	19,393	122,926
Chile.....	33,815	14,573	1,082	2,241	1,422	1,687	8,141	19,242
Colombia.....	26,800	972	0	483	489	0	0	25,828
Guyana.....	395	201	15	63	18	17	88	194
Oceania.....	64,119	29,003	4,958	10,715	825	3,877	8,628	35,116
Australia.....	53,426	24,733	4,174	9,148	667	3,138	7,606	28,693
New Zealand .....	10,693	4,270	784	1,567	158	739	1,022	6,423
Female .....	4,081,684	1,058,156	192,677	128,065	57,087	507,175	173,162	3,023,528
Asia.....	786,049	226,337	24,857	31,454	17,683	114,732	37,611	559,712
Bangladesh (2003) .....	60,726	23,741	5,044	889	246	17,470	92	36,985
Brunei .....	475	26	7	9	0	10	0	449
Cambodia.....	2,441	248	43	120	23	59	3	2,193
Hong Kong.....	14,480	3,859	725	676	0	1,528	930	10,621
Japan <sup>a</sup> .....	225,872	92,968	5,358	NA	6,771	69,784	11,055	132,904
Kyrgyzstan .....	17,101	3,330	547	637	37	1,530	579	13,771
Laos.....	737	386	14	23	30	290	29	351
Mongolia .....	12,641	2,733	260	265	303	829	1,076	9,908
Philippines.....	208,427	35,036	3,335	15,067	6,217	10,417		173,391
South Korea.....	131,991	40,606	7,900	6,089	1,298	7,676	17,643	91,385
Taiwan (2005) .....	111,158	23,404	1,624	7,679	2,758	5,139	6,204	87,754
Middle East .....	304,441	85,572	21,050	14,563	6,349	31,237	12,373	218,869
Bahrain (2003) .....	1,050	282	44	117	NA	81	40	768
Iran .....	88,837	35,472	9,923	6,284	4,009	11,106	4,150	53,365
Iraq .....	21,375	3,426	881	609	386	231	1,319	17,949
Israel.....	27,760	9,825	1,360	1,091	149	6,041	1,184	17,935
Jordan.....	13,422	4,730	1,102	1,587	369	900	772	8,692
Lebanon.....	10,668	3,257	684	316	52	1,694	511	7,411
Morocco.....	10,331	2,400	946	189	0	1,165	100	7,931
Oman .....	3,125	243	45	151	6	0	41	2,882
Palestine .....	5,434	1,136	256	309	13	263	295	4,298
Qatar.....	511	111	39	44	3	25	0	400
Saudi Arabia.....	38,310	4,365	1,169	1,584	0	1,535	77	33,945
Turkey.....	83,618	20,325	4,601	2,282	1,362	8,196	3,884	63,293



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**First university degrees, by field, sex, country/economy, and region: 2004 or most recent year**

Sex/location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
Africa.....	23,766	4,736	867	765	455	1,979	670	19,030
Burundi.....	176	44	0	12	11	21	0	132
Eritrea.....	180	51	4	13	10	22	2	129
Ethiopia.....	12,093	1,173	44	600	241	126	162	10,920
Gambia.....	68	8	8	0	0	0	0	60
Ghana (2001).....	1,890	724	222	0	68	376	58	1,166
Madagascar (2002).....	2,852	736	295	39	28	323	51	2,116
Mauritius.....	843	486	120	40	5	155	166	357
Mozambique.....	1,019	407	70	17	38	268	14	612
Swaziland.....	556	53	24	0	10	17	2	503
Uganda.....	4,089	1,054	80	44	44	671	215	3,035
Europe.....	1,001,721	268,182	58,819	27,761	11,722	116,423	53,467	733,539
Austria.....	10,323	2,780	538	220	105	1,312	605	7,543
Belgium.....	12,964	3,761	853	136	201	1,743	828	9,203
Denmark.....	18,871	2,429	423	199	78	993	736	16,442
Finland.....	22,923	4,716	724	826	366	1,119	1,681	18,207
France.....	190,019	51,618	15,414	5,241	171	19,984	10,808	138,401
Germany.....	103,523	40,642	6,065	3,907	3,154	23,302	4,214	62,881
Greece.....	18,736	5,962	1,504	972	138	2,873	475	12,774
Hungary.....	33,950	4,839	365	385	836	2,193	1,060	29,111
Iceland.....	1,570	282	68	42	10	123	39	1,288
Ireland.....	15,193	3,252	1,125	647	81	820	579	11,941
Italy.....	153,357	43,969	8,040	2,761	1,272	19,060	12,836	109,388
Netherlands.....	47,470	7,169	875	407	716	4,287	884	40,301
Norway.....	16,104	2,259	108	294	69	1,249	539	13,845
Portugal.....	35,913	9,312	2,074	1,188	484	3,219	2,347	26,601
Spain.....	121,455	28,511	5,446	2,834	1,852	8,873	9,506	92,944
Sweden.....	26,520	7,273	1,095	741	128	2,409	2,900	19,247
Switzerland.....	9,310	2,028	502	121	41	1,024	340	7,282
United Kingdom <sup>b</sup> .....	163,520	47,380	13,600	6,840	2,020	21,840	3,090	116,140
Central/Eastern Europe.....	375,614	92,228	11,838	6,738	6,131	42,368	25,153	283,386
Albania (2003).....	3,529	427	31	45	175	111	65	3,102
Armenia.....	6,518	365	0	0	91	0	274	6,153
Bulgaria.....	24,192	7,837	596	622	233	3,943	2,443	16,355
Croatia (2003).....	6,067	1,371	374	138	136	288	435	4,696
Czech Republic.....	17,900	4,415	889	314	692	853	1,667	13,485
Estonia.....	3,856	878	210	112	75	295	186	2,978
Georgia.....	12,573	2,468	772	162	156	211	1,167	10,105
Latvia.....	14,205	3,305	228	234	65	2,295	483	10,900
Lithuania.....	15,084	3,190	333	366	200	873	1,418	11,894
Macedonia.....	3,104	639	145	103	58	90	243	2,465
Poland.....	174,786	44,232	4,361	3,181	2,760	25,888	8,042	130,554
Romania.....	75,053	18,803	3,200	1,161	1,113	6,045	7,284	56,250
Slovak Republic.....	14,466	3,145	563	268	326	749	1,239	11,321
Slovenia.....	4,281	1,153	136	32	51	727	207	3,128
North/Central America.....	1,084,265	296,894	57,856	33,021	10,688	167,948	27,381	787,371
Belize.....	97	2	1	1	0	0	0	95
Canada.....	83,174	26,931	5,843	2,148	769	15,719	2,452	56,243
Costa Rica.....	16,329	2,588	182	326	71	1,451	558	13,741
Cuba (2001).....	11,067	958	187	64	117	272	318	10,109
El Salvador (2003).....	4,913	449	105	84	25	12	223	4,464
Guatemala (2002).....	1,760	371	58	0	12	214	87	1,389
Mexico.....	144,349	34,603	3,799	9,424	926	10,457	9,997	109,746
Panama.....	11,759	1,580	119	250	54	668	489	10,179
United States.....	810,817	229,939	48,089	20,724	8,714	139,155	13,257	580,878
South America.....	411,198	62,298	11,120	9,681	3,404	24,509	13,584	348,900
Argentina (2003).....	45,881	11,007	1,598	1,598	853	4,604	2,354	34,874
Brazil (2002).....	293,309	42,016	8,491	6,695	1,568	16,631	8,631	251,293



Appendix table 2-39

(Page 4 of 4)

**First university degrees, by field, sex, country/economy, and region: 2004 or most recent year**

Sex/location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
Chile.....	37,687	8,197	1,013	707	672	3,219	2,586	29,490
Colombia.....	33,774	947	0	640	307	0	NA	32,827
Guyana.....	547	131	18	41	4	55	13	416
Oceania.....	94,630	21,909	6,270	4,082	655	7,979	2,923	72,721
Australia.....	76,872	18,251	5,215	3,426	579	6,594	2,437	58,621
New Zealand.....	17,758	3,658	1,055	656	76	1,385	486	14,100

NA = not available

<sup>a</sup>Japanese social science data include business administration.<sup>b</sup>Includes former colleges and polytechnical institutions. Data for United Kingdom rounded to nearest 10. Detail may not add to total because of rounding. Ratios based on unrounded data.

NOTES: Physical/biological sciences include physical, biological, earth, atmospheric, and ocean sciences. Data for first university degrees use International Standard Classification of Education (ISCED 97), level 5A. Long (>5 years) and short (<5 years) first university degrees combined. Sum of male plus female greater than total in appendix table 2-37 in a few countries because this table includes some degrees (mostly non-S&E) >6 years in duration.

SOURCES: Organisation for Economic Co-operation and Development, Education Online Database, <http://www.oecd.org/education/database/>; United Nations Educational, Scientific, and Cultural Organization (UNESCO), Institute for Statistics, special tabulations (2006); Japan—Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, Monbusho Survey of Education, special tabulations (2007); Taiwan—Ministry of Education, Educational Statistics of the Republic of China: 2006 (2006); Germany—Federal Statistical Office, Prüfungen an Hochschulen 2004 (2005); United Kingdom—Higher Education Statistics Agency, special tabulations (2007); and United States—National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 2-40

(Page 1 of 2)

**Earned S&E doctoral degree, by selected region, country/economy, and field: 2004 or most recent year**

Location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
All regions .....	285,447	149,601	55,947	8,565	10,288	29,692	45,109	135,846
Asia <sup>a</sup> .....	66,750	34,322	11,744	427	3,644	2,823	15,684	32,428
Armenia .....	331	216	56	0	9	67	84	115
China .....	23,446	14,858	4,518	NA	977	1,309	8,054	8,588
India (2003) .....	13,733	6,318	4,497	NA	1,042	NA	779	7,415
Japan <sup>b</sup> (2005) .....	16,851	7,658	1,543	NA	1,257	943	3,915	9,193
Kyrgyzstan .....	431	206	52	13	4	89	48	225
Mongolia .....	99	30	8	3	10	3	6	69
Philippines .....	1,748	120	12	13	59	36	0	1,628
South Korea .....	7,946	3,531	788	232	203	268	2,040	4,415
Taiwan (2005) .....	2,165	1,385	270	166	83	108	758	780
Middle East <sup>a</sup> .....	16,076	4,918	1,748	367	485	774	1,544	11,158
Iran .....	2,304	478	117	34	75	94	158	1,826
Iraq .....	5,056	1,335	285	86	132	38	794	3,721
Israel .....	1,135	714	426	57	30	114	87	421
Jordan .....	202	35	7	2	21	5	0	167
Lebanon .....	728	26	4	0	0	22	0	702
Morocco .....	2,155	829	542	70	0	183	34	1,326
Oman .....	31	3	2	0	1	0	0	28
Saudi Arabia .....	1,785	221	88	27	5	48	53	1,564
Turkey .....	2,680	1,277	277	91	221	270	418	1,403
Sub-Saharan Africa <sup>a</sup> .....	3,078	1,050	275	121	199	296	159	2,028
Ghana (2000) .....	733	211	71	NA	29	29	82	522
Kenya (2000) .....	1,331	468	182	NA	113	114	59	863
Uganda .....	1,014	371	22	121	57	153	18	643
Europe <sup>a</sup> .....	137,072	71,273	27,452	5,101	3,348	15,876	19,496	65,799
European Union .....	83,188	45,398	20,433	4,514	1,864	8,166	10,421	37,790
Austria .....	2,443	1,107	326	118	42	224	397	1,336
Belgium .....	1,479	906	546	112	47	112	89	573
Denmark .....	788	531	0	100	0	55	376	257
Finland .....	1,863	956	304	75	36	177	364	907
France .....	8,420	5,585	3,366	676	18	746	779	2,835
Germany (2005) .....	25,952	12,194	5,825	1,023	575	2,560	2,211	13,758
Greece .....	1,295	905	573	138	36	39	119	390
Iceland .....	10	5	4	0	0	1	0	5
Ireland .....	683	411	234	31	14	24	108	272
Italy .....	6,351	3,834	1,650	281	276	450	1,177	2,517
Netherlands .....	2,679	1,498	499	0	205	311	483	1,181
Portugal .....	3,963	2,259	601	432	60	587	579	1,704
Spain .....	8,168	3,672	1,856	393	186	634	603	4,496
Sweden .....	3,834	2,385	689	255	49	296	1,096	1,449
United Kingdom <sup>c</sup> .....	15,260	9,150	3,960	880	320	1,950	2,040	6,110
European Free Trade Association .....	3,708	1,406	697	94	73	217	325	2,302
Norway .....	756	124	0	0	41	77	6	632
Switzerland .....	2,952	1,282	697	94	32	140	319	1,670
Central/Eastern Europe .....	50,176	24,469	6,322	493	1,411	7,493	8,750	25,707
Bulgaria .....	392	172	64	13	9	12	74	220
Croatia (2003) .....	314	177	65	10	10	36	56	137
Czech Republic .....	1,732	1,059	307	103	86	95	468	673
Estonia .....	209	71	42	8	1	4	16	138
Georgia .....	481	246	72	0	20	86	68	235
Hungary .....	893	323	152	19	40	76	36	570
Latvia .....	84	47	9	6	5	14	13	37
Lithuania .....	301	173	60	10	7	34	62	128
Macedonia .....	67	30	8	1	0	4	17	37
Poland .....	5,460	908	0	0	0	0	908	4,552
Romania .....	2,680	1,221	151	0	1	379	690	1,459
Russia .....	29,850	16,003	4,442	NA	893	5,910	4,758	13,847

Appendix table 2-40

(Page 2 of 2)

**Earned S&E doctoral degree, by selected region, country/economy, and field: 2004 or most recent year**

Location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
Serbia and Montenegro (2001) .....	419	180	35	9	33	6	97	239
Slovak Republic.....	854	430	156	21	36	62	155	424
Slovenia .....	355	230	75	18	6	45	86	125
Ukraine .....	6,085	3,199	684	275	264	730	1,246	2,886
America <sup>a</sup> .....	57,085	35,131	13,499	2,326	2,421	9,288	7,597	21,954
North/Central America .....	48,381	29,950	11,211	2,288	1,387	8,512	6,552	18,431
Canada .....	3,709	2,175	755	149	127	657	487	1,534
Costa Rica.....	30	7	0	0	5	2	0	23
Cuba.....	162	100	58	0	10	4	28	62
Mexico .....	2,325	1,393	436	115	199	382	261	932
United States .....	42,155	26,275	9,962	2,024	1,046	7,467	5,776	15,880
South America.....	8,704	5,181	2,288	38	1,034	776	1,045	3,523
Argentina (2003) .....	422	297	212	24	5	37	19	125
Brazil (2003) .....	8,094	4,726	1,941	NA	1,026	736	1,023	3,368
Chile .....	188	158	135	14	3	3	3	30
Oceania.....	5,386	2,907	1,229	223	191	635	629	2,479
Australia.....	4,763	2,570	1,046	179	190	569	586	2,193
New Zealand.....	623	337	183	44	1	66	43	286

NA = not available

<sup>a</sup>Includes only locations for which relatively recent data available.<sup>b</sup>Includes thesis doctorates, called ronbun hakase, earned by employees in industry.<sup>c</sup>Data rounded to nearest 10. Detail may not add to total because of rounding.

NOTES: Physical/biological sciences include physical, biological, earth, atmospheric, and ocean sciences. Data for doctoral degrees use International Standard Classification of Education (ISCED 97), level 6. S&amp;E data do not include health fields.

SOURCES: Organisation for Economic Co-operation and Development, Education Online Database, <http://www.oecd.org/education/database/>; United Nations Educational, Scientific, and Cultural Organization (UNESCO), Institute for Statistics, special tabulations (2006); China—*China Statistical Yearbook 2005*; India—Department of Science and Technology; Japan—Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, Monbusho Survey of Education, special tabulations (2007), and Division of Higher Education, special tabulations (2007); Taiwan—Ministry of Education, Educational Statistics of the Republic of China: 2006 (2006); Germany—Federal Statistical Office, Prüfungen an Hochschulen 2004 (2005); United Kingdom—Higher Education Statistics Agency, special tabulations (2007); Russia—State University Higher School of Economics, special tabulations (2007); Brazil—Ministry of Science and Technology, Indicadores Nacionais de Ciência e Tecnologia, <http://www.mct.gov.br/index.php/content/view/7787.html>, accessed 3 April 2007; Canada—Statistics Canada, special tabulations (2007); and United States—National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 2-41

(Page 1 of 3)

**Earned S&E doctoral degrees, by selected region, country/economy, sex, and field: 2004 or most recent year**

Sex/location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
Male .....	130,221	74,972	26,106	6,210	4,314	12,179	26,163	55,249
Asia .....	19,927	10,352	2,156	315	1,113	1,193	5,575	9,575
Japan <sup>a</sup> .....	11,384	6,051	1,311	NA	845	878	3,017	5,333
Kyrgyzstan .....	194	94	24	6	2	40	22	100
Philippines .....	677	57	3	11	31	12	0	620
South Korea .....	6,019	2,962	611	158	178	189	1,826	3,057
Taiwan (2005) .....	1,653	1,188	207	140	57	74	710	465
Middle East .....	10,108	3,344	1,059	257	325	496	1,207	6,764
Iran .....	1,744	428	97	26	72	83	150	1,316
Iraq .....	3,434	984	153	50	104	27	650	2,450
Israel .....	566	398	238	41	13	46	60	168
Morocco .....	1,440	553	338	54	0	132	29	887
Saudi Arabia .....	1,263	171	69	21	5	30	46	1,092
Turkey .....	1,661	810	164	65	131	178	272	851
Sub-Saharan Africa .....	2,160	792	214	99	154	183	142	1,368
Ghana (2001) .....	740	194	68	0	28	24	74	546
Kenya (2000) .....	747	341	127	3	88	71	52	406
Uganda .....	673	257	19	96	38	88	16	416
Europe .....	68,383	39,882	15,027	3,628	1,714	6,146	13,367	28,501
European Union .....	47,354	28,547	11,732	3,410	1,073	4,278	8,054	18,807
Austria .....	1,454	737	180	108	24	102	323	717
Belgium .....	978	629	376	92	31	59	71	349
Denmark .....	505	379	0	74	0	34	271	126
Finland .....	947	570	148	58	25	68	271	377
France .....	4,906	3,492	1,957	534	8	416	577	1,414
Germany .....	15,680	8,491	3,736	833	350	1,632	1,940	7,189
Greece .....	801	615	365	116	20	20	94	186
Ireland .....	371	240	120	25	7	11	77	131
Italy .....	3,120	2,038	715	173	132	208	810	1,082
Netherlands .....	1,623	997	311	0	135	181	370	626
Portugal .....	1,797	1,111	236	261	25	216	373	686
Spain .....	4,290	1,997	873	276	115	298	435	2,293
Sweden .....	2,202	1,591	395	180	31	173	812	611
United Kingdom <sup>b</sup> .....	8,680	5,660	2,320	680	170	860	1,630	3,020
European Free Trade Association .....	2,319	939	454	78	42	108	257	1,380
Norway .....	455	64	0	0	23	38	3	391
Switzerland .....	1,864	875	454	78	19	70	254	989
Central/Eastern Europe .....	18,710	10,396	2,841	140	599	1,760	5,056	8,314
Armenia .....	226	157	30	0	3	47	77	69
Bulgaria .....	193	89	28	6	4	6	45	104
Croatia (2003) .....	163	95	26	3	5	17	44	68
Czech Republic .....	1,116	740	181	86	60	44	369	376
Estonia .....	79	39	25	3	1	0	10	40
Georgia .....	225	138	26	0	12	43	57	87
Hungary .....	510	198	101	14	27	32	24	312
Latvia .....	35	21	2	5	0	6	8	14
Lithuania .....	128	81	21	6	3	10	41	47
Poland .....	2,897	689	0	0	0	0	689	2,208
Romania .....	1,359	733	82	0	1	158	492	626
Russia (1998) .....	11,309	7,156	2,241	NA	460	1,364	3,091	4,153
Slovak Republic .....	470	260	78	17	23	33	109	210
America .....	26,764	18,891	6,985	1,746	887	3,884	5,389	7,873
Canada .....	2,124	1,395	503	122	85	273	412	729
Chile .....	125	107	89	13	1	2	2	18
Cuba .....	97	60	35	0	6	2	17	37
Mexico .....	1,442	924	257	92	151	216	208	518
United States .....	22,976	16,405	6,101	1,519	644	3,391	4,750	6,571
Oceania .....	2,879	1,711	665	165	121	277	483	1,168

Appendix table 2-41

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**Earned S&E doctoral degrees, by selected region, country/economy, sex, and field: 2004 or most recent year**

Sex/location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
Australia.....	2,561	1,530	570	137	121	256	446	1,031
New Zealand.....	318	181	95	28	0	21	37	137
Female.....	88,661	38,936	16,960	2,117	2,271	11,531	6,057	49,725
Asia.....	7,523	2,186	524	109	365	562	626	5,337
Japan <sup>a</sup> .....	3,776	1,245	247	NA	284	376	338	2,531
Kyrgyzstan.....	237	112	28	7	2	49	26	125
Philippines.....	1,071	63	9	2	28	24	0	1,008
South Korea.....	1,927	569	177	74	25	79	214	1,358
Taiwan (2005).....	512	197	63	26	26	34	48	315
Middle East.....	5,007	1,510	676	108	138	251	337	3,497
Iran.....	560	50	20	8	3	11	8	510
Iraq.....	1,622	351	132	36	28	11	144	1,271
Israel.....	569	316	188	16	17	68	27	253
Morocco.....	715	276	204	16	0	51	5	439
Saudi Arabia.....	522	50	19	6	0	18	7	472
Turkey.....	1,019	467	113	26	90	92	146	552
Sub-Saharan Africa.....	1,432	516	51	121	81	229	34	916
Ghana (2001).....	64	17	3	0	1	5	8	47
Kenya (2000).....	354	128	26	0	23	71	8	226
Uganda.....	1,014	371	22	121	57	153	18	643
Europe.....	50,498	22,369	10,800	1,170	1,123	5,516	3,760	28,129
European Union.....	35,814	16,846	8,697	1,104	791	3,887	2,367	18,968
Austria.....	989	370	146	10	18	122	74	619
Belgium.....	501	277	170	20	16	53	18	224
Denmark.....	283	152	0	26	0	21	105	131
Finland.....	916	386	156	17	11	109	93	530
France.....	3,514	2,093	1,409	142	10	330	202	1,421
Germany.....	10,272	3,703	2,089	190	225	928	271	6,569
Greece.....	494	290	208	22	16	19	25	204
Ireland.....	312	171	114	6	7	13	31	141
Italy.....	3,231	1,796	935	108	144	242	367	1,435
Netherlands.....	1,056	501	188	0	70	130	113	555
Portugal.....	2,166	1,148	365	171	35	371	206	1,018
Spain.....	3,878	1,675	983	117	71	336	168	2,203
Sweden.....	1,632	794	294	75	18	123	284	838
United Kingdom <sup>b</sup> .....	6,570	3,490	1,640	200	150	1,090	410	3,080
European Free Trade Association.....	1,389	467	243	16	31	109	68	922
Norway.....	301	60	0	0	18	39	3	241
Switzerland.....	1,088	407	243	16	13	70	65	681
Central/Eastern Europe.....	13,295	5,056	1,860	50	301	1,520	1,325	8,239
Armenia.....	105	59	26	0	6	20	7	46
Bulgaria.....	199	83	36	7	5	6	29	116
Croatia (2003).....	151	82	39	7	5	19	12	69
Czech Republic.....	616	319	126	17	26	51	99	297
Estonia.....	130	32	17	5	0	4	6	98
Georgia.....	256	108	46	0	8	43	11	148
Hungary.....	383	125	51	5	13	44	12	258
Latvia.....	49	26	7	1	5	8	5	23
Lithuania.....	173	92	39	4	4	24	21	81
Poland.....	2,563	219	0	0	0	0	219	2,344
Romania.....	1,321	488	69	0	0	221	198	833
Russia (1998).....	6,965	3,253	1,326	NA	216	1,051	660	3,712
Slovak Republic.....	384	170	78	4	13	29	46	214
America.....	21,694	11,159	4,345	551	494	4,615	1,154	10,535
Canada.....	1,585	780	252	27	42	384	75	805
Chile.....	63	51	46	1	2	1	1	12
Cuba.....	65	40	23	0	4	2	11	25
Mexico.....	883	469	179	23	48	166	53	414

Appendix table 2-41

(Page 3 of 3)

**Earned S&E doctoral degrees, by selected region, country/economy, sex, and field: 2004 or most recent year**

Sex/location	All fields	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
United States.....	19,098	9,819	3,845	500	398	4,062	1,014	9,279
Oceania.....	2,507	1,196	564	58	70	358	146	1,311
Australia.....	2,202	1,040	476	42	69	313	140	1,162
New Zealand.....	305	156	88	16	1	45	6	149

NA = not available

<sup>a</sup>Male/female breakouts for number completing doctoral degree coursework in S&E field; number very close to conferred degrees.<sup>b</sup>Data rounded to nearest 10.

NOTES: Physical/biological sciences include physical; biological; and earth, atmospheric, and ocean sciences. Data for doctoral degrees use International Standard Classification of Education (ISCED 97), level 6. S&amp;E data do not include health fields.

SOURCES: Organisation for Economic Co-operation and Development, Education Online Database, <http://www.oecd.org/education/database/>; United Nations Educational, Scientific, and Cultural Organization (UNESCO), Institute for Statistics, special tabulations (2006); Japan—Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, Monbusho Survey of Education (2006); Taiwan—Ministry of Education, Educational Statistics of the Republic of China: 2005 (2005); Germany—Federal Statistical Office, Prüfungen an Hochschulen 2004 (2005); United Kingdom—Higher Education Statistics Agency, special tabulations (2007); Canada—Statistics Canada, special tabulations (2007); and United States—National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.*Science and Engineering Indicators 2008*

Appendix table 2-42

**S&E doctoral degrees, by selected Western industrialized country and field: Selected years, 1985–2005**

Country/field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
Germany.....	14,951	16,064	17,901	22,462	22,000	22,387	24,174	24,545	24,671	24,796	23,838	23,043	23,138	25,952
All S&E.....	5,738	6,576	7,568	10,465	10,200	10,889	11,728	11,984	11,895	11,803	11,017	10,796	10,661	12,194
Physical/biological sciences.....	2,986	3,440	4,095	5,326	5,700	5,868	6,418	6,271	6,123	5,974	5,521	5,251	5,249	5,825
Mathematics/computer sciences.....	274	294	383	418	500	663	785	980	968	956	898	998	936	1,023
Agricultural sciences.....	414	468	518	709	500	507	521	522	497	472	448	501	538	575
Social/behavioral sciences.....	968	1,068	1,200	1,483	1,400	1,741	1,775	1,982	2,082	2,181	1,915	2,013	1,937	2,560
Engineering.....	1,096	1,306	1,372	2,529	2,100	2,110	2,229	2,229	2,225	2,220	2,235	2,033	2,001	2,211
United Kingdom.....	6,210	6,840	7,850	8,390	8,720	7,560	10,210	11,340	11,550	14,120	14,210	14,870	15,260	15,780
All S&E.....	4,610	5,020	5,820	6,300	6,100	5,130	6,770	7,390	7,180	8,520	8,520	8,810	9,150	9,390
Physical/biological sciences.....	2,410	2,580	2,940	3,150	3,030	2,580	3,420	3,670	3,570	4,310	4,380	3,780	3,960	4,040
Mathematics/computer sciences.....	280	320	420	540	530	450	590	680	660	770	760	750	880	960
Agricultural sciences.....	160	190	240	250	280	270	320	330	270	270	340	300	320	310
Social/behavioral sciences.....	690	730	880	910	740	500	680	910	970	1,170	1,180	1,970	1,950	2,070
Engineering.....	1,070	1,190	1,350	1,450	1,520	1,330	1,760	1,810	1,710	2,010	1,860	2,020	2,040	2,020
United States.....	31,295	32,365	34,325	37,530	39,800	41,747	42,535	41,092	41,361	40,651	39,953	40,740	42,117	43,354
All S&E.....	18,934	19,892	21,732	24,019	25,443	26,535	27,229	25,931	25,966	25,496	24,582	25,274	26,272	27,974
Physical/biological sciences.....	7,284	7,650	8,032	9,055	9,494	9,916	10,338	9,866	9,925	9,717	9,564	9,665	9,963	10,728
Mathematics/computer sciences.....	998	1,189	1,471	1,838	2,026	2,187	2,032	1,939	1,910	1,832	1,726	1,859	2,024	2,339
Agricultural sciences.....	1,152	1,005	1,154	1,108	1,036	1,117	1,078	1,065	1,037	975	1,009	1,060	1,045	1,038
Social/behavioral sciences.....	6,334	6,336	6,532	6,805	7,189	7,307	7,667	7,731	7,771	7,464	7,206	7,411	7,465	7,465
Engineering.....	3,166	3,712	4,543	5,213	5,698	6,008	6,114	5,330	5,323	5,508	5,077	5,279	5,775	6,404

NOTES: Physical/biological sciences include physical; biological; and earth, atmospheric, and ocean sciences. Data for doctoral degrees use International Standard Classification of Education (ISCED 97), level 6. S&E data do not include health fields. German doctoral degrees include former East Germany from 1990 and thereafter. Data for United Kingdom rounded to nearest 10.

SOURCES: Germany—Federal Statistical Office, Prüfungen an Hochschulen (annual series); United Kingdom—Higher Education Statistics Agency, special tabulations (2007); United States—National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

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Appendix table 2-43

## S&amp;E doctoral degrees, by selected Asian country/economy and field: Selected years, 1985–2005

Country/economy and field	1985	1987	1989	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005
China.....	234	622	1,904	2,556	2,114	4,364	6,793	10,160	11,383	12,465	14,638	18,806	23,446	NA
All S&E .....	125	218	1,024	1,198	1,894	3,417	5,308	6,778	7,766	8,153	9,523	12,238	14,858	NA
Physical/biological sciences .....	33	52	141	252	528	1,191	1,678	2,135	2,306	2,655	2,808	3,705	4,518	NA
Mathematics/computer sciences.....	23	31	78	95	103	187	334	417	NA	NA	NA	NA	NA	NA
Agricultural sciences .....	1	8	56	37	92	182	328	444	462	536	626	756	977	NA
Social/behavioral sciences .....	0	0	23	47	102	198	325	513	514	621	837	1,204	1,309	NA
Engineering .....	68	127	726	767	1,069	1,659	2,643	3,269	4,484	4,341	5,252	6,573	8,054	NA
India .....	7,438	7,603	8,284	8,383	9,070	9,070	10,408	10,951	11,296	11,544	11,974	13,733	NA	NA
All S&E .....	4,007	4,123	4,209	4,294	4,320	4,000	4,764	5,317	5,395	5,394	5,527	6,318	NA	NA
Physical/biological sciences .....	2,922	2,937	3,044	2,950	3,386	2,950	3,498	3,836	3,885	3,727	3,955	4,497	NA	NA
Mathematics/computer sciences.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Agricultural sciences .....	576	583	579	715	611	715	968	785	787	889	838	1,042	NA	NA
Social/behavioral sciences .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Engineering .....	509	603	586	629	323	335	298	696	723	778	734	779	NA	NA
Japan .....	7,978	9,157	10,036	10,758	11,576	12,645	13,921	15,470	15,357	16,078	16,183	16,314	16,909	16,851
All S&E .....	3,088	3,248	3,561	3,874	4,438	5,205	6,157	7,082	7,089	7,401	7,461	7,581	7,912	7,658
Physical/biological sciences .....	860	837	876	863	1,009	1,182	1,315	1,542	1,579	1,586	1,602	1,651	1,679	1,543
Mathematics/computer sciences.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Agricultural sciences .....	697	715	734	791	824	956	1,043	1,100	1,147	1,241	1,248	1,258	1,348	1,257
Social/behavioral sciences .....	127	149	177	191	243	276	388	506	563	610	656	751	808	943
Engineering .....	1,404	1,547	1,774	2,029	2,362	2,791	3,411	3,934	3,800	3,964	3,955	3,921	4,077	3,915
South Korea.....	1,400	1,906	2,458	2,984	3,583	4,462	4,999	5,586	6,143	6,208	6,690	7,172	7,946	NA
All S&E .....	548	759	984	1,135	1,421	1,920	2,189	2,607	2,865	2,956	3,225	3,192	3,531	NA
Physical/biological sciences .....	212	277	192	225	244	358	427	438	614	581	590	711	788	NA
Mathematics/computer sciences.....	0	0	105	99	124	169	187	188	247	282	258	222	232	NA
Agricultural sciences .....	89	110	175	156	172	223	178	230	242	260	288	169	203	NA
Social/behavioral sciences .....	50	102	97	189	222	232	240	168	108	195	190	222	268	NA
Engineering .....	197	270	415	466	659	938	1,157	1,583	1,654	1,638	1,899	1,868	2,040	NA
Taiwan.....	115	225	314	410	701	848	1,187	1,337	1,400	1,463	1,501	1,759	1,964	2,165
All S&E .....	109	197	257	370	513	650	839	892	932	970	966	1,167	1,291	1,385
Physical/biological sciences .....	20	35	42	62	97	115	163	150	147	144	166	202	206	270
Mathematics/computer sciences.....	4	14	18	32	45	55	88	119	113	107	107	127	136	166
Agricultural sciences .....	10	28	36	36	48	63	79	76	83	90	93	93	116	83
Social/behavioral sciences .....	16	22	41	31	36	44	76	65	87	108	72	89	111	108
Engineering .....	59	98	120	209	287	373	433	482	502	521	528	656	722	758

NA = not available

NOTES: Physical/biological sciences include physical; biological; and earth, atmospheric, and ocean sciences. Data for doctoral degrees use International Standard Classification of Education (ISCED 97), level 6. S&E data do not include health fields. Japanese data include thesis doctorates, called *ronbun hakase*, earned by employees in industry. In Japanese higher education data, mathematics included in natural sciences; computer sciences included in engineering.

SOURCES: China—National Research Center for Science and Technology for Development and *Education Statistics Yearbook of China* (various years); India—Department of Science and Technology; Japan—Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, Higher Education Bureau, Monbusho Survey of Education (annual series), special tabulations (2007); South Korea—Organisation for Economic Co-operation and Development, Education Online Database, <http://www.oecd.org/education/database/>; and Taiwan—Ministry of Education, Educational Statistics of the Republic of China (annual series).



Appendix table 2-44

**Trends in population ages 20–24 years, by selected country and region: 1980–2050**

(Thousands)

Year	Western Europe	Eastern Europe	Africa	South America	United States	China	India	Japan
1980.....	13,293	25,952	41,724	22,796	21,836	86,837	62,367	7,907
1985.....	14,302	23,191	48,273	26,217	21,711	107,746	70,281	8,190
1990.....	13,897	20,617	55,585	27,593	19,420	128,517	78,331	8,800
1995.....	11,858	22,236	64,834	29,169	18,633	121,960	85,654	9,898
2000.....	10,767	23,572	75,505	32,381	19,119	98,187	89,020	8,597
2005.....	11,308	24,444	87,835	34,659	20,901	100,115	101,182	7,542
2010.....	11,540	23,554	98,302	35,012	22,417	116,599	109,275	6,611
2015.....	10,928	17,321	106,960	35,028	23,151	101,426	114,682	6,072
2020.....	10,650	13,840	115,612	35,745	22,469	94,026	115,922	6,133
2025.....	10,275	13,948	127,375	36,290	23,023	83,266	115,887	5,952
2030.....	9,881	14,470	139,738	36,487	23,732	83,815	116,204	5,809
2035.....	9,849	14,011	150,859	36,008	24,016	88,688	115,797	5,525
2040.....	9,996	12,973	158,960	35,344	24,019	87,163	113,229	5,223
2045.....	10,070	11,735	165,509	34,624	23,890	80,309	108,452	5,067
2050.....	10,041	11,025	171,544	33,772	24,130	74,541	102,484	5,075

SOURCES: United Nations Secretariat, World Population Prospects: The 2004 Revision; Department of Economic and Social Affairs, Population Division; and World Urbanization Prospects: The 2003 Revision, <http://esa.un.org/unpp>, accessed 19 October 2006.

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Appendix table 2-45

**Foreign S&E student enrollment in UK universities, by enrollment level, place of origin, and field: Academic years 1995 and 2006**

Enrollment level/place of origin	All S&E fields	Physical/ biological/ agricultural sciences	Mathematics/ computer sciences	Social/ behavioral sciences	Engineering
<b>1995</b>					
All undergraduates .....	393,040	131,370	69,730	79,260	112,690
All foreign.....	34,530	7,770	4,270	6,550	15,940
Greece.....	3,830	720	610	570	1,920
Malaysia.....	3,760	170	490	400	2,700
Irish Republic.....	3,110	1,300	340	220	1,260
Germany.....	2,660	1,010	210	640	800
France.....	2,640	880	270	470	1,010
Hong Kong.....	2,200	220	410	470	1,110
Singapore.....	1,990	140	200	260	1,390
United States.....	1,220	520	50	560	90
Canada.....	160	90	20	40	20
China.....	150	10	20	10	110
Other.....	12,820	2,730	1,660	2,910	5,530
Foreign (%).....	8.8	5.9	6.1	8.3	14.1
All graduates.....	99,980	35,270	15,170	22,890	26,650
All foreign.....	28,850	8,100	3,490	8,010	9,260
Greece.....	2,410	580	460	500	870
Malaysia.....	1,570	320	200	220	820
Irish Republic.....	1,040	490	110	170	280
Germany.....	1,290	390	200	340	360
France.....	950	290	80	190	400
Hong Kong.....	1,030	90	190	400	360
Singapore.....	570	80	150	90	250
United States.....	1,090	240	70	670	110
Canada.....	600	140	40	320	110
China.....	1,330	410	140	120	660
Other.....	16,970	5,070	1,870	4,990	5,040
Foreign (%).....	28.9	23.0	23.0	35.0	34.7
<b>2006</b>					
All undergraduates .....	536,310	149,140	123,410	166,040	97,720
All foreign.....	55,950	8,990	12,560	15,210	19,200
China.....	8,590	890	2,850	2,450	2,400
Malaysia.....	3,380	270	500	320	2,280
France.....	3,080	530	480	620	1,450
Greece.....	2,890	300	650	600	1,330
Irish Republic.....	2,890	930	240	630	1,090
Hong Kong.....	2,680	540	580	770	790
Germany.....	2,160	500	290	950	410
Cyprus.....	1,840	360	590	420	470
Nigeria.....	1,800	170	460	370	800
India.....	1,690	190	360	240	900
Other.....	24,950	4,310	5,560	7,840	7,280
Foreign (%).....	10.4	6.0	10.2	9.2	19.6
All graduates.....	156,020	39,370	29,170	48,500	38,980
All foreign.....	67,630	13,250	14,530	18,460	21,400
China.....	10,090	1,120	2,850	2,010	4,120
India.....	6,410	1,210	2,150	530	2,520
Greece.....	5,260	880	1,090	1,290	2,000
United States.....	3,100	600	240	2,000	270
Pakistan.....	2,670	200	1,060	240	1,170
Nigeria.....	2,530	470	700	440	930
Germany.....	2,370	580	400	860	530
France.....	2,240	660	350	390	840
Irish Republic.....	1,800	540	190	600	470
Malaysia.....	1,740	270	310	170	990
Other.....	29,420	6,720	5,190	9,930	7,560
Foreign (%).....	43.3	33.6	49.8	38.1	54.9

UK = United Kingdom

NOTES: Academic year 1995 is enrollment between 1 August 1994 and 31 July 1995. Academic year 2006 is enrollment between 1 August 2005 and 31 July 2006. Data rounded to nearest 10. Detail may not add to total because of rounding. Percentages based on unrounded data. Physical sciences include earth, atmospheric, and ocean sciences.

SOURCE: Higher Education Statistics Agency, special tabulations (2007).

Appendix table 2-46

**Foreign S&E student enrollment in Japanese universities, by enrollment level, place of origin, and field: 2005**

Enrollment level/place of origin	All fields	All S&E fields	Physical/ biological sciences	Agricultural sciences	Social/ behavioral sciences	Engineering	Non-S&E
All undergraduates.....	2,504,885	1,508,689	85,502	71,664	925,988	425,535	996,196
Foreign .....	68,889	41,171	668	591	33,400	6,512	27,718
China .....	46,196	30,007	396	364	25,676	3,571	16,189
Korea .....	13,081	6,875	208	100	5,313	1,254	6,206
Malaysia.....	1,335	1,190	14	18	156	1,002	145
Vietnam.....	777	540	13	10	321	196	237
Thailand.....	639	380	4	28	267	81	259
Mongolia.....	468	315	0	11	272	32	153
Indonesia.....	462	257	1	11	172	73	205
Sri Lanka.....	229	143	0	1	107	35	86
Nepal.....	198	135	3	4	104	24	63
United States.....	1,555	133	6	0	125	2	1,422
Other.....	3,949	1,196	23	44	887	242	2,753
Foreign (%).....	2.8	2.7	0.8	0.8	3.6	1.5	2.8
All graduates .....	240,890	140,071	20,285	13,021	27,566	79,199	100,819
Master's .....	165,525	107,918	14,007	8,636	20,047	65,228	57,607
Doctoral.....	75,365	32,153	6,278	4,385	7,519	13,971	43,212
Foreign.....	31,915	18,141	917	2,051	8,292	6,881	13,774
China .....	17,566	9,898	325	754	5,702	3,117	7,668
Korea .....	4,322	2,121	101	192	855	973	2,201
Indonesia.....	908	660	70	130	109	351	248
Vietnam.....	778	585	25	92	188	280	193
Bangladesh.....	811	541	67	152	78	244	270
Thailand.....	866	537	22	139	123	253	329
Malaysia.....	433	332	10	26	71	225	101
Philippines.....	393	279	34	60	84	101	114
Myanmar.....	295	185	14	43	74	54	110
India.....	268	179	28	39	35	77	89
Other.....	5,275	2,824	221	424	973	1,206	2,451
Foreign (%).....	13.2	13.0	4.5	15.8	30.1	8.7	13.7

NOTES: Data for students of non-Japanese citizenship, including permanent residents. Undergraduates include 4-year colleges and universities. Engineering includes computer sciences. Physical sciences includes earth, atmospheric, and ocean sciences and mathematics. Business and law included with social and behavioral sciences.

SOURCE: Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, special tabulations.

Appendix table 2-47

**S&E student enrollment in Canadian universities, by enrollment level, top place of origin, and field: 1994 and 2004**

Enrollment level/place of origin	All S&E fields	Physical/ biological sciences	Mathematics/ computer sciences	Agricultural sciences	Social/ behavioral sciences	Engineering
<b>1994</b>						
Undergraduate.....	282,180	63,470	27,120	10,730	130,380	50,490
Foreign.....	13,670	2,530	2,780	340	4,330	3,690
Hong Kong.....	2,270	240	750	40	800	440
United States.....	920	290	50	20	440	120
Malaysia.....	720	90	180	10	140	290
France.....	510	80	50	20	210	160
Lebanon.....	380	50	90	0	70	170
Morocco.....	290	30	60	10	50	140
Singapore.....	260	30	60	0	130	40
Haiti.....	210	20	40	10	80	60
China.....	190	40	90	0	30	20
Tunisia.....	180	20	40	10	50	70
Other.....	7,750	1,640	1,370	230	2,320	2,190
Foreign (%).....	4.8	4.0	10.2	3.2	3.3	7.3
Graduate.....	48,170	12,290	4,800	2,940	15,590	12,550
Foreign.....	10,600	2,790	1,310	760	2,330	3,410
China.....	1,550	530	260	70	170	530
Iran.....	650	120	40	40	40	410
United States.....	520	160	40	20	230	70
France.....	510	140	40	40	180	120
India.....	510	90	90	30	50	260
Morocco.....	330	120	70	10	40	90
Algeria.....	220	60	40	10	30	90
Tunisia.....	190	30	40	0	40	80
Brazil.....	150	40	10	20	30	50
Hong Kong.....	140	20	40	0	40	40
Other.....	5,810	1,490	650	520	1,500	1,670
Foreign (%).....	22.0	22.7	27.3	25.8	14.9	27.1
<b>2004</b>						
Undergraduate.....	344,340	79,560	32,550	10,340	155,120	66,770
Foreign.....	24,290	3,980	4,610	510	8,440	6,750
China.....	3,700	500	1,060	70	1,320	750
United States.....	2,480	600	160	120	1,320	280
France.....	1,130	140	110	30	590	260
Morocco.....	1,070	80	200	10	150	630
India.....	620	90	130	10	110	290
Hong Kong.....	560	90	130	10	230	110
South Korea.....	550	170	80	10	200	90
Lebanon.....	480	70	100	0	80	230
Pakistan.....	470	50	140	0	120	160
Bangladesh.....	380	40	140	10	60	130
Other.....	12,850	2,150	2,360	240	4,260	3,820
Foreign (%).....	7.1	5.0	14.2	4.9	5.4	10.1
Graduate.....	66,880	15,890	7,960	4,080	20,090	18,860
Foreign.....	15,650	3,050	2,330	860	3,340	6,070
China.....	3,010	520	670	70	430	1,310
France.....	1,340	440	100	110	390	300
United States.....	780	230	110	40	280	120
India.....	710	80	110	40	60	420
Iran.....	710	90	80	20	40	490
Morocco.....	550	80	120	20	90	250
Algeria.....	400	50	110	20	30	200
Romania.....	390	100	60	10	80	140
Tunisia.....	340	30	80	10	80	140
Bangladesh.....	330	20	50	0	30	220
Other.....	7,090	1,420	840	520	1,820	2,490
Foreign (%).....	23.4	19.2	29.3	21.2	16.6	32.2

NOTES: Data rounded to nearest 10. Detail may not add to total because of rounding. Physical sciences include earth, atmospheric, and ocean sciences. Engineering includes architecture; social/behavioral sciences include law.

SOURCE: Statistics Canada, Center for Education Statistics, special tabulations (2007).

Appendix table 2-48

**S&E student enrollment in Australian universities, by enrollment level and field: 2005**

Enrollment level/place of origin	All S&E fields	Natural/ physical sciences	Mathematics/ computer sciences	Agricultural sciences	Society/ culture	Engineering
Undergraduate.....	329,643	62,681	44,022	12,319	160,257	50,364
Foreign .....	47,887	7,773	17,488	416	10,217	11,993
Foreign (%).....	14.5	12.4	39.7	3.4	6.4	23.8
Graduate.....	101,644	13,320	20,377	4,929	48,018	15,000
Foreign .....	32,474	3,123	13,513	992	8,042	6,804
Foreign (%).....	31.9	23.4	66.3	20.1	16.7	45.4

NOTES: Natural/physical sciences include mathematics; biological sciences; physical sciences; and earth, atmospheric, and ocean sciences. Society/culture includes social sciences, psychology, social work, law, library science, humanities, and sport and recreation.

SOURCE: Department of Education, Science and Training, Australia, [http://www.dest.gov.au/sectors/higher\\_education/publications\\_resources/statistics/publications\\_higher\\_education\\_statistics\\_collections.htm#studpubs](http://www.dest.gov.au/sectors/higher_education/publications_resources/statistics/publications_higher_education_statistics_collections.htm#studpubs), accessed 6 April 2007.

Appendix table 2-49

**Doctoral degrees earned by foreign students, by selected industrialized country and field:  
2005 or most recent year**

Country and field	All	Foreign	
		Number	Percent
Germany.....	22,402	3,556	15.9
S&E.....	9,778	2,417	24.7
Physical/biological sciences .....	4,481	1,345	30.0
Mathematics/computer sciences.....	836	187	22.4
Agricultural sciences .....	376	199	52.9
Social/behavioral sciences .....	2,290	270	11.8
Engineering.....	1,795	416	23.2
Non-S&E .....	12,624	1,139	9.0
Japan <sup>a</sup> .....	16,851	1,478	8.8
S&E.....	7,658	792	10.3
Physical/biological sciences .....	1,543	87	5.6
Mathematics/computer sciences.....	NA	NA	NA
Agricultural sciences .....	1,257	228	18.1
Social/behavioral sciences .....	943	133	14.1
Engineering.....	3,915	344	8.8
Non-S&E .....	9,193	686	7.5
United Kingdom <sup>b</sup> .....	16,520	6,650	40.2
S&E.....	9,760	4,100	42.0
Physical/biological sciences .....	3,980	1,190	30.0
Mathematics/computer sciences.....	1,160	570	49.4
Agricultural sciences .....	320	150	46.9
Social/behavioral sciences .....	2,100	840	39.9
Engineering.....	2,200	1,340	61.0
Non-S&E .....	6,750	2,550	37.7
United States.....	43,354	14,424	33.3
S&E.....	27,974	11,516	41.2
Physical/biological sciences .....	10,728	3,868	36.1
Mathematics/computer sciences.....	2,339	1,330	56.9
Agricultural sciences .....	1,038	445	42.9
Social/behavioral sciences .....	7,465	1,834	24.6
Engineering.....	6,404	4,039	63.1
Non-S&E .....	15,380	2,908	18.9

NA = not available

<sup>a</sup>University-based doctorates only, excluding *ronbun hakase* doctorates awarded for research within industry. Natural sciences include mathematics; engineering includes computer sciences.<sup>b</sup>Data rounded to nearest 10. Detail may not add to total because of rounding. Percentages based on unrounded data.

NOTES: Physical/biological sciences include physical, biological, earth, atmospheric, and ocean sciences. Data for doctoral degrees use International Standard Classification of Education (ISCED 97), level 6. S&amp;E data do not include health fields. For each country, data for doctoral degree recipients with foreign citizenship, including permanent and temporary residents.

SOURCES: Germany—Federal Statistical Office, *Prüfungen an Hochschulen 2005* (2006); Japan—Government of Japan, Ministry of Education, Culture, Sports, Science and Technology, special tabulations (2007); United Kingdom—Higher Education Statistics Agency, special tabulations (2007); and United States—National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 3-1

(Page 1 of 4)

**Employment and earnings in S&E and related occupations, by occupation: May 2006**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
All occupations .....	132,604,980	39,190	15,500	20,270	30,400	47,820	72,960
Scientists, engineers, technicians, and technical managers .....	7,441,780	68,940	33,570	45,940	64,160	87,170	112,300
Technical managers .....	473,820	108,390	63,360	81,070	103,020	129,770	D
Computer and information systems managers.....	251,210	107,250	60,800	79,240	101,580	129,250	D
Engineering managers .....	183,960	110,030	67,470	84,090	105,430	130,170	D
Natural sciences managers .....	38,660	107,970	60,300	77,320	100,080	130,900	D
Scientists/engineers .....	5,407,710	71,150	37,070	49,840	67,780	89,160	112,140
Engineers.....	1,543,900	77,910	46,980	58,650	74,800	93,950	116,070
Aerospace engineers.....	86,720	89,260	59,610	71,360	87,610	106,450	124,550
Agricultural engineers .....	3,050	67,810	42,390	53,040	66,030	80,370	96,270
Biomedical engineers.....	14,030	78,030	44,930	56,420	73,930	93,420	116,330
Chemical engineers .....	29,060	81,600	50,060	62,410	78,860	98,100	118,670
Civil engineers .....	236,690	72,120	44,810	54,520	68,600	86,260	104,420
Computer hardware engineers .....	74,480	91,280	53,910	69,500	88,470	111,030	135,260
Electrical engineers.....	147,670	78,900	49,120	60,640	75,930	94,050	115,240
Electronics engineers, except computer .....	131,880	82,820	52,050	64,440	81,050	99,630	119,900
Environmental engineers.....	51,370	72,590	43,180	54,150	69,940	88,480	106,230
Health and safety engineers, except mining safety engineers and inspectors .....	24,620	68,400	41,050	51,630	66,290	83,240	100,160
Industrial engineers.....	198,340	70,630	44,790	55,060	68,620	84,850	100,980
Marine engineers and naval architects .....	7,810	75,400	45,200	56,280	72,990	90,790	113,320
Materials engineers.....	21,230	75,960	46,120	57,850	73,990	92,210	112,140
Mechanical engineers .....	217,500	72,580	45,170	55,420	69,850	87,550	104,900
Mining and geological engineers, including mining safety engineers .....	6,810	77,620	42,040	54,390	72,160	94,110	128,410
Nuclear engineers.....	14,870	92,040	65,220	77,920	90,220	105,710	124,510
Petroleum engineers .....	15,060	101,620	57,960	75,880	98,380	123,130	D
Engineers, all other .....	155,620	81,750	46,080	62,710	81,660	100,320	120,610
Engineering teachers, postsecondary .....	31,950	82,080	41,880	57,350	76,670	101,510	129,610
Sales engineers .....	75,150	83,080	47,010	59,490	77,720	100,280	127,680
Mathematical and computer scientists .....	2,743,560	68,910	34,910	47,580	65,900	87,320	109,200
Computer and information scientists, research.....	27,650	96,440	53,590	71,930	93,950	118,100	144,880
Computer software engineers, applications .....	472,520	82,000	49,350	62,830	79,780	98,470	119,770
Computer software engineers, systems software .....	329,060	87,250	53,580	67,620	85,370	105,330	125,750
Computer support specialists .....	514,460	44,350	25,290	32,110	41,470	53,640	68,540
Computer systems analysts .....	446,460	72,230	42,780	54,320	69,760	87,600	106,820
Database administrators .....	109,840	67,460	37,350	48,560	64,670	84,830	103,010
Network and computer systems administrators.....	289,520	65,260	38,610	48,520	62,130	79,160	97,080
Network systems and data communications analysts....	203,710	67,460	38,410	49,510	64,600	82,630	101,740
Computer specialists, all other .....	180,270	69,370	35,500	50,950	68,570	87,120	103,270
Mathematicians .....	2,840	86,780	43,500	62,970	86,930	106,250	132,190
Operations research analysts .....	56,170	69,100	38,760	48,820	64,650	85,760	108,290
Statisticians .....	19,660	69,080	37,010	48,480	65,720	87,850	108,630
Mathematical science occupations, all other .....	10,190	64,920	35,480	48,420	63,570	77,540	93,210
Computer science teachers, postsecondary.....	36,630	65,000	32,130	42,710	57,620	81,900	108,780
Mathematical science teachers, postsecondary.....	44,570	62,790	31,580	41,830	56,420	76,450	103,330
Life scientists.....	291,980	68,760	34,770	44,970	60,750	83,310	114,680
Animal scientists.....	3,930	53,230	31,540	37,930	47,800	62,950	81,430
Food scientists and technologists.....	8,770	59,260	29,620	37,740	53,810	76,960	97,350
Soil and plant scientists .....	10,720	59,330	33,650	42,410	56,080	72,020	93,460
Biochemists and biophysicists.....	18,680	80,900	40,820	53,390	76,320	100,060	129,510
Microbiologists.....	15,730	65,200	35,460	43,850	57,980	80,550	108,270
Zoologists and wildlife biologists.....	18,000	56,120	32,800	41,400	53,300	67,200	84,580
Biological scientists, all other .....	25,220	63,560	34,300	46,920	60,940	75,810	95,130
Conservation scientists .....	16,000	55,410	29,860	40,950	54,970	68,460	80,260
Foresters.....	10,760	52,450	33,490	40,870	51,190	62,290	74,570
Epidemiologists.....	4,120	60,290	36,920	45,220	56,670	71,080	87,300

Appendix table 3-1

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**Employment and earnings in S&E and related occupations, by occupation: May 2006**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Medical scientists, except epidemiologists .....	78,210	70,350	35,490	44,830	61,680	88,130	117,520
Life scientists, all other .....	12,830	64,480	32,950	41,820	56,970	79,160	104,780
Agricultural sciences teachers, postsecondary .....	10,120	77,190	41,440	55,630	75,140	94,150	118,180
Biological science teachers, postsecondary .....	51,950	82,110	37,620	49,420	69,210	101,780	D
Forestry and conservation science teachers, postsecondary .....	2,630	66,970	36,290	46,900	64,430	84,140	102,630
Environmental science teachers, postsecondary .....	4,310	71,980	32,890	46,500	64,780	89,680	119,260
Physical scientists .....	291,380	70,870	36,830	47,170	64,520	89,040	116,860
Astronomers .....	1,430	95,000	44,590	62,050	95,740	125,420	D
Physicists .....	15,420	95,580	52,070	72,910	94,240	117,080	143,570
Atmospheric and space scientists .....	8,250	77,810	39,090	55,530	77,150	96,490	119,700
Chemists .....	80,500	66,040	35,480	44,780	59,870	82,610	106,310
Materials scientists .....	9,390	77,010	41,810	55,170	74,610	96,800	118,670
Environmental scientists and specialists, including health .....	77,720	61,120	34,590	42,840	56,100	74,480	94,670
Geoscientists, except hydrologists and geographers .....	28,980	79,890	39,740	51,860	72,660	100,650	135,950
Hydrologists .....	7,740	68,230	42,080	51,370	66,260	82,140	98,320
Physical scientists, all other .....	21,380	85,310	41,440	59,210	83,450	109,430	136,130
Atmospheric, earth, marine, and space sciences teachers, postsecondary .....	8,670	74,880	37,330	50,390	69,300	94,470	121,500
Chemistry teachers, postsecondary .....	19,560	70,100	36,160	46,920	61,220	85,550	116,910
Physics teachers, postsecondary .....	12,340	74,650	39,580	50,870	68,170	91,420	120,210
Social scientists .....	536,880	64,570	31,220	42,180	58,310	80,340	107,690
Economists .....	12,970	83,500	42,280	55,740	77,010	103,500	136,550
Market research analysts .....	213,590	65,930	32,250	42,190	58,820	84,070	112,510
Survey researchers .....	24,140	39,680	16,720	22,150	33,360	50,960	73,630
Clinical, counseling, and school psychologists .....	97,330	66,110	35,280	45,300	59,440	77,750	102,730
Industrial-organizational psychologists .....	1,140	89,920	48,380	66,310	86,420	115,000	139,620
Psychologists, all other .....	7,960	80,360	33,220	53,820	76,310	95,820	123,840
Sociologists .....	3,440	68,300	36,790	44,610	60,290	88,240	115,770
Urban and regional planners .....	32,640	58,940	35,610	44,480	56,630	71,390	86,880
Anthropologists and archeologists .....	4,960	52,900	28,940	36,150	49,930	66,610	81,490
Geographers .....	960	63,720	37,530	50,120	62,990	77,770	93,930
Political scientists .....	3,970	86,370	36,730	56,100	90,140	115,750	133,120
Social scientists and related workers, all other .....	31,110	67,720	38,230	49,860	64,920	81,610	103,390
Social science research assistants .....	15,840	35,840	20,500	26,270	33,860	43,310	54,930
Anthropology and archeology teachers, postsecondary ...	5,040	68,240	37,590	49,160	62,820	83,760	109,330
Economics teachers, postsecondary .....	12,330	79,370	38,630	52,140	71,850	96,230	130,990
Geography teachers, postsecondary .....	4,070	62,850	34,300	47,300	59,000	76,630	98,200
Political science teachers, postsecondary .....	13,850	69,040	35,730	47,340	61,820	82,960	113,480
Psychology teachers, postsecondary .....	29,690	64,580	32,800	44,150	58,670	79,230	104,390
Sociology teachers, postsecondary .....	16,110	63,160	30,880	42,280	56,620	76,310	104,820
Social sciences teachers, postsecondary, all other .....	5,750	69,640	29,750	45,270	61,210	89,730	123,180
Technicians .....	1,560,250	51,440	26,940	35,080	47,350	62,930	81,690
Computer programmers .....	396,020	69,500	38,460	49,580	65,510	85,080	106,610
Mathematical technicians .....	1,210	46,010	25,860	29,990	37,880	51,890	72,040
Surveyors .....	56,820	51,390	26,690	35,720	48,290	63,990	79,910
Architectural and civil drafters .....	107,110	43,900	27,010	33,550	41,960	52,220	63,310
Electrical and electronics drafters .....	32,440	49,610	29,290	36,660	46,830	60,160	74,490
Mechanical drafters .....	72,950	45,960	28,230	34,680	43,700	55,130	67,860
Drafters, all other .....	22,800	45,480	26,340	33,340	43,060	55,920	69,810
Aerospace engineering and operations technicians .....	8,280	54,480	34,570	43,440	53,300	63,900	74,860
Civil engineering technicians .....	86,730	42,380	25,250	31,310	40,560	51,230	62,920
Electrical and electronic engineering technicians .....	166,340	50,840	30,120	39,270	50,660	60,470	73,200
Electro-mechanical technicians .....	15,310	46,540	29,830	35,730	44,720	56,360	68,700
Environmental engineering technicians .....	20,600	43,100	25,110	30,920	40,560	53,250	66,120
Industrial engineering technicians .....	73,640	50,920	30,190	37,040	46,810	60,860	79,180



Appendix table 3-1

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**Employment and earnings in S&E and related occupations, by occupation: May 2006**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Mechanical engineering technicians.....	46,660	47,710	29,770	36,770	45,850	57,310	70,090
Engineering technicians, except drafters, all other.....	78,260	53,850	30,530	41,900	54,250	66,070	77,080
Surveying and mapping technicians.....	70,940	34,590	20,020	25,070	32,340	42,230	53,310
Agricultural and food science technicians.....	19,220	33,700	20,850	25,640	31,730	39,870	49,270
Biological technicians.....	71,590	38,240	23,670	28,580	35,710	45,770	57,890
Chemical technicians.....	59,900	40,970	24,560	30,640	39,240	49,870	60,120
Geological and petroleum technicians.....	11,280	51,490	22,020	31,560	46,160	63,740	88,150
Nuclear technicians.....	6,400	64,760	42,550	54,240	65,500	76,570	89,240
Environmental science and protection technicians, including health.....	34,790	40,260	23,600	29,450	38,090	49,340	60,700
Forensic science technicians.....	12,310	48,130	27,530	34,640	45,330	58,380	73,100
Forest and conservation technicians.....	30,580	33,780	22,450	26,270	30,880	40,030	49,380
Life, physical, and social science technicians, all other....	58,080	40,870	21,890	28,740	37,920	50,790	64,060
Other S&E-related.....	7,317,320	63,130	27,290	38,150	53,050	73,100	109,050
Actuaries.....	16,620	91,810	46,470	58,710	82,800	114,570	D
Architects, except landscape and naval.....	101,010	69,760	39,420	49,780	64,150	83,450	104,970
Landscape architects.....	22,130	60,480	34,230	42,720	55,140	73,240	95,420
Cartographers and photogrammetrists.....	11,430	52,600	30,910	37,480	48,240	65,240	80,520
Architecture teachers, postsecondary.....	5,820	67,390	37,670	50,250	64,620	82,050	101,700
Healthcare practitioner and technical workers.....	7,160,310	62,990	27,140	37,950	52,830	72,840	109,060
Medical and health services managers.....	232,920	81,160	45,050	57,240	73,340	94,780	127,830
Health educators.....	57,900	45,370	24,750	31,300	41,330	56,580	72,500
Health specialties teachers, postsecondary.....	116,370	91,260	36,990	52,500	77,190	118,020	D
Nursing instructors and teachers, postsecondary.....	39,350	58,690	34,140	43,750	55,280	70,170	88,640
Chiropractors.....	25,470	81,070	32,670	45,710	65,220	96,500	D
Dentists, general.....	86,110	140,950	68,990	95,780	132,140	D	D
Oral and maxillofacial surgeons.....	5,320	164,760	60,550	104,650	D	D	D
Orthodontists.....	5,200	176,900	81,720	D	D	D	D
Prosthodontists.....	480	158,940	55,650	103,500	D	D	D
Dentists, all other specialists.....	4,560	108,340	40,830	52,160	91,200	D	D
Dietitians and nutritionists.....	51,230	47,890	29,860	38,430	46,980	57,090	68,330
Optometrists.....	24,220	98,550	45,030	66,530	91,040	118,490	D
Pharmacists.....	239,920	93,500	67,860	83,180	94,520	108,140	119,480
Anesthesiologists.....	29,890	184,340	114,200	D	D	D	D
Family and general practitioners.....	109,400	149,850	69,990	112,600	D	D	D
Internists, general.....	48,700	160,860	87,070	128,250	D	D	D
Obstetricians and gynecologists.....	22,520	178,040	103,070	D	D	D	D
Pediatricians, general.....	28,930	141,440	66,480	103,230	138,130	D	D
Psychiatrists.....	24,730	149,990	60,900	118,450	D	D	D
Surgeons.....	51,900	184,150	116,850	D	D	D	D
Physicians and surgeons, all other.....	208,960	142,220	45,160	84,630	D	D	D
Physician assistants.....	62,960	74,270	43,100	62,430	74,980	89,220	102,230
Podiatrists.....	9,020	118,500	44,500	68,890	108,220	D	NA
Registered nurses.....	2,417,150	59,730	40,250	47,710	57,280	69,850	83,440
Audiologists.....	10,910	61,110	38,370	47,220	57,120	70,940	89,160
Occupational therapists.....	88,570	62,510	40,840	50,450	60,470	73,710	89,450
Physical therapists.....	156,100	68,050	46,510	55,030	66,200	78,080	94,810
Radiation therapists.....	14,290	67,580	44,840	54,170	66,170	78,550	92,110
Recreational therapists.....	24,130	36,510	20,880	26,780	34,990	44,850	55,530
Respiratory therapists.....	99,330	48,610	35,200	40,840	47,420	56,160	64,190
Speech-language pathologists.....	98,690	60,840	37,970	46,360	57,710	72,410	90,400
Therapists, all other.....	11,660	45,070	20,880	25,800	42,250	56,940	72,640
Veterinarians.....	49,750	81,490	43,530	56,450	71,990	94,880	133,150
Health diagnosing and treating practitioners, all other.....	53,270	83,110	33,500	43,520	61,570	106,920	D
Medical and clinical laboratory technologists.....	160,760	50,550	34,660	41,680	49,700	58,560	69,260
Medical and clinical laboratory technicians.....	144,710	34,620	21,830	26,430	32,840	41,020	50,250
Dental hygienists.....	166,380	62,430	40,450	51,240	62,800	74,190	86,530

Appendix table 3-1

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**Employment and earnings in S&E and related occupations, by occupation: May 2006**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Cardiovascular technologists and technicians.....	43,870	43,990	23,670	29,900	42,300	55,670	67,410
Diagnostic medical sonographers.....	44,340	58,110	40,960	48,890	57,160	67,670	77,520
Nuclear medicine technologists.....	19,270	63,000	46,490	53,530	62,300	72,410	82,310
Radiologic technologists and technicians .....	190,180	49,320	32,750	39,840	48,170	57,940	68,920
Emergency medical technicians and paramedics .....	196,190	29,390	17,300	21,290	27,070	35,210	45,280
Dietetic technicians.....	24,450	26,090	15,720	18,750	24,040	31,530	38,520
Pharmacy technicians .....	282,450	26,510	17,800	21,010	25,630	31,030	36,720
Psychiatric technicians.....	58,940	30,450	18,720	21,960	27,780	36,770	47,210
Respiratory therapy technicians .....	18,710	39,860	25,940	32,050	39,120	46,930	56,220
Surgical technologists.....	84,330	37,370	25,490	30,300	36,080	43,560	51,140
Veterinary technologists and technicians.....	69,700	27,750	18,280	21,720	26,780	32,800	38,850
Licensed practical and licensed vocational nurses.....	720,380	37,530	26,380	31,080	36,550	43,640	50,480
Medical records and health information technicians .....	164,700	30,140	19,060	22,420	28,030	35,990	45,260
Opticians, dispensing .....	65,190	32,220	19,290	23,560	30,300	38,950	47,630
Orthotists and prosthetists .....	5,290	62,110	31,060	42,050	58,980	75,730	94,240
Health technologists and technicians, all other .....	72,180	38,260	22,440	27,620	35,140	45,890	59,020
Occupational health and safety specialists .....	42,220	59,270	35,250	45,050	58,030	72,660	86,590
Occupational health and safety technicians.....	10,020	44,340	25,240	32,550	42,160	53,840	68,640
Athletic trainers.....	15,440	38,860	21,940	28,920	36,560	45,690	57,580
Healthcare practitioners and technical workers, all other .....	50,690	45,090	21,720	27,040	37,200	56,890	81,910

D = suppressed to avoid disclosure of confidential information

SOURCE: Bureau of Labor Statistics, Occupational Employment Statistics Survey, May 2006.

Appendix table 3-2

(Page 1 of 4)

**Employment and earnings in S&E and related occupations, by occupation: May 2005**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
All occupations .....	130,307,840	37,870	15,110	19,680	29,430	46,180	70,180
Scientists, engineers, technicians, and technical managers .....	7,256,190	67,150	32,850	44,970	62,500	84,910	109,190
Technical managers .....	487,140	103,290	59,670	76,950	98,060	123,750	D
Computer and information systems managers.....	259,330	102,360	57,300	75,240	96,520	123,140	D
Engineering managers .....	187,410	105,470	65,150	80,710	100,760	124,750	D
Natural sciences managers .....	40,400	99,140	50,260	67,700	93,090	122,170	D
Scientists/engineers .....	5,233,520	68,800	36,100	48,380	65,490	86,030	108,230
Engineers.....	1,514,180	75,010	45,790	56,740	72,020	90,170	111,190
Aerospace engineers.....	81,100	85,450	57,250	68,700	84,090	101,970	117,680
Agricultural engineers .....	3,170	66,370	41,160	50,940	64,890	81,600	92,750
Biomedical engineers.....	11,660	75,380	44,060	55,050	71,840	90,820	113,590
Chemical engineers .....	27,550	79,230	49,350	60,990	77,140	94,810	113,950
Civil engineers .....	229,700	69,480	44,410	53,080	66,190	82,850	100,040
Computer hardware engineers .....	78,580	87,170	52,470	66,630	84,420	105,960	128,300
Electrical engineers.....	144,920	76,060	47,750	58,860	73,510	90,320	110,570
Electronics engineers, except computer .....	130,050	79,990	50,090	61,950	78,030	96,580	114,630
Environmental engineers.....	50,140	70,720	42,570	52,710	68,090	85,940	104,610
Health and safety engineers, except mining safety engineers and inspectors.....	25,330	67,240	40,230	50,850	65,210	81,560	96,130
Industrial engineers.....	191,640	68,500	43,620	53,470	66,670	82,490	97,080
Marine engineers and naval architects .....	6,550	74,320	41,730	55,360	72,920	90,080	111,660
Materials engineers.....	20,950	71,390	44,090	54,790	69,660	86,870	105,330
Mechanical engineers .....	220,750	70,000	44,550	53,920	67,590	84,490	101,660
Mining and geological engineers, including mining safety engineers ...	5,680	75,070	43,290	53,780	70,070	90,090	119,130
Nuclear engineers .....	14,290	90,690	63,760	77,010	88,290	104,880	120,540
Petroleum engineers .....	14,860	97,350	51,410	68,850	93,000	119,990	D
Engineers, all other .....	152,940	77,570	43,140	58,760	77,150	94,860	114,260
Engineering teachers, postsecondary .....	34,500	78,780	39,690	54,430	74,540	96,790	124,600
Sales engineers .....	69,790	79,370	43,730	56,370	74,200	95,420	121,660
Mathematical and computer scientists .....	2,629,640	66,690	33,810	46,180	63,640	84,440	105,890
Computer and information scientists, research.....	25,890	94,030	52,680	70,090	91,230	113,830	139,760
Computer software engineers, applications .....	455,980	79,540	47,370	60,420	77,090	94,970	116,150
Computer software engineers, systems software .....	320,720	84,310	51,890	65,070	82,120	101,780	120,410
Computer support specialists .....	499,860	43,380	24,230	31,070	40,610	52,840	67,640
Computer systems analysts .....	492,120	70,430	43,080	54,070	68,300	85,210	102,750
Database administrators .....	99,380	65,590	35,400	46,920	63,250	83,040	100,930
Network and computer systems administrators.....	270,330	63,210	37,790	47,390	59,930	76,190	93,270
Network systems and data communications analysts.....	185,190	64,970	36,900	47,190	61,750	80,410	98,640
Computer specialists, all other .....	116,760	63,190	29,760	41,590	59,420	80,540	103,190
Mathematicians .....	2,930	81,150	41,750	57,530	80,920	102,200	121,770
Operations research analysts .....	52,530	65,940	37,310	47,400	62,180	81,350	101,570
Statisticians .....	17,480	66,130	35,110	45,260	62,450	83,830	104,580
Mathematical science occupations, all other .....	7,320	61,560	34,840	48,360	61,860	73,860	88,280
Computer science teachers, postsecondary.....	38,520	60,330	30,120	40,160	54,270	75,490	97,860
Mathematical science teachers, postsecondary.....	44,660	58,850	30,220	40,060	53,820	72,230	94,370
Life scientists.....	290,950	67,070	33,710	43,660	59,140	82,050	111,350
Animal scientists.....	3,000	47,600	29,840	34,930	43,170	55,400	71,500
Food scientists and technologists.....	7,570	56,840	28,910	36,460	51,440	73,070	92,660
Soil and plant scientists .....	10,100	58,040	32,360	40,590	54,530	70,830	91,520
Biochemists and biophysicists.....	17,690	75,320	39,950	51,850	71,000	90,400	115,980
Microbiologists.....	15,250	63,360	34,460	42,920	56,870	78,270	104,490
Zoologists and wildlife biologists.....	16,440	55,280	32,250	40,570	52,050	67,150	85,350
Biological scientists, all other .....	26,200	63,670	33,430	45,210	60,190	78,460	99,020
Conservation scientists .....	15,540	54,640	30,730	39,970	53,350	66,960	81,910
Foresters.....	10,750	51,030	31,110	38,120	48,670	61,660	74,550
Epidemiologists.....	3,630	56,340	33,620	41,130	52,170	66,300	83,670
Medical scientists, except epidemiologists.....	73,670	69,140	35,410	44,900	61,730	86,300	113,830

Appendix table 3-2

(Page 2 of 4)

**Employment and earnings in S&E and related occupations, by occupation: May 2005**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Life scientists, all other .....	12,790	64,570	32,850	41,990	56,370	77,000	105,900
Agricultural sciences teachers, postsecondary .....	11,460	73,680	39,100	52,140	71,330	90,230	113,750
Biological science teachers, postsecondary .....	59,540	77,690	33,900	45,090	63,570	96,090	D
Forestry and conservation science teachers, postsecondary .....	2,990	67,550	38,900	47,830	64,870	83,510	105,210
Environmental science teachers, postsecondary .....	4,340	66,020	31,410	43,570	60,880	82,540	110,360
Physical scientists .....	280,810	68,340	35,740	45,480	62,140	85,860	112,060
Astronomers .....	970	101,360	49,920	73,180	104,670	127,710	142,220
Physicists .....	15,160	91,480	49,070	66,670	89,810	112,550	136,870
Atmospheric and space scientists .....	7,050	73,020	37,250	52,410	73,940	89,500	109,630
Chemists .....	76,540	63,470	34,640	43,500	57,890	79,190	101,890
Materials scientists .....	7,880	74,350	41,450	53,490	71,450	92,400	114,720
Environmental scientists and specialists, including health .....	72,000	57,470	32,910	40,540	52,630	69,770	89,040
Geoscientists, except hydrologists and geographers .....	27,430	79,990	39,420	52,070	71,640	101,890	135,290
Hydrologists .....	8,360	67,260	40,190	49,180	63,820	82,000	102,150
Physical scientists, all other .....	23,800	84,380	41,260	59,440	83,300	108,460	125,910
Atmospheric, earth, marine, and space sciences teachers, postsecondary .....	8,810	70,960	35,240	48,450	65,720	90,010	115,270
Chemistry teachers, postsecondary .....	19,520	65,400	34,170	45,190	58,060	79,280	106,730
Physics teachers, postsecondary .....	13,310	71,020	37,560	49,470	65,880	87,360	113,370
Social scientists .....	517,950	62,560	30,550	41,130	56,500	77,690	103,810
Economists .....	12,470	80,900	40,810	53,100	73,690	99,920	132,420
Market research analysts .....	195,710	64,370	31,530	41,370	57,300	81,970	108,990
Survey researchers .....	21,650	37,710	16,080	21,200	31,140	48,320	70,450
Clinical, counseling, and school psychologists .....	98,820	63,960	34,040	43,700	57,170	74,490	99,270
Industrial-organizational psychologists .....	1,070	89,980	48,950	65,240	84,690	110,660	139,980
Psychologists, all other .....	6,750	74,250	33,150	51,520	74,260	93,870	111,620
Sociologists .....	3,500	61,700	33,000	40,630	52,760	76,600	109,350
Urban and regional planners .....	31,650	57,620	34,920	43,360	55,170	69,490	85,940
Anthropologists and archeologists .....	4,790	50,060	27,530	34,200	45,910	62,810	80,040
Geographers .....	810	64,620	39,040	50,340	63,550	78,250	92,290
Political scientists .....	5,010	84,820	39,890	56,160	84,100	108,930	132,600
Social scientists and related workers, all other .....	31,900	65,040	36,590	47,750	62,650	80,060	99,500
Social science research assistants .....	16,320	35,960	20,470	26,580	33,950	43,330	54,910
Anthropology and archeology teachers, postsecondary .....	5,320	66,700	37,750	48,340	60,710	81,260	105,630
Economics teachers, postsecondary .....	12,670	74,600	36,850	50,590	68,910	90,770	119,480
Geography teachers, postsecondary .....	4,250	61,790	34,950	45,890	57,870	75,490	94,800
Political science teachers, postsecondary .....	13,710	65,760	35,260	45,750	59,850	79,500	106,000
Psychology teachers, postsecondary .....	30,240	61,980	31,710	42,860	56,370	75,550	98,340
Sociology teachers, postsecondary .....	14,980	59,030	30,260	40,880	54,320	72,320	93,310
Social sciences teachers, postsecondary, all other .....	6,330	66,060	29,370	43,260	60,040	84,600	115,330
Technicians .....	1,535,530	50,050	26,210	34,250	45,930	60,830	80,190
Computer programmers .....	389,090	67,400	37,380	48,040	63,420	82,600	103,850
Mathematical technicians .....	1,430	46,230	25,500	29,990	36,470	55,670	71,380
Surveyors .....	54,220	48,950	25,530	33,960	45,860	60,730	75,870
Architectural and civil drafters .....	101,040	42,110	26,140	32,370	40,390	50,070	59,590
Electrical and electronics drafters .....	30,270	48,410	29,040	36,160	45,550	58,380	72,490
Mechanical drafters .....	74,650	45,490	28,140	34,540	43,350	54,370	67,410
Drafters, all other .....	20,870	45,420	25,230	32,510	42,310	55,340	74,120
Aerospace engineering and operations technicians .....	9,950	54,720	35,100	43,610	52,450	62,750	76,620
Civil engineering technicians .....	90,390	40,780	24,500	30,440	39,210	49,850	59,360
Electrical and electronic engineering technicians .....	165,850	48,710	29,700	37,900	48,040	57,090	69,970
Electro-mechanical technicians .....	15,130	45,670	29,100	34,880	43,880	55,230	67,410
Environmental engineering technicians .....	19,900	41,940	24,540	30,710	39,810	51,500	63,570
Industrial engineering technicians .....	73,310	49,220	29,480	36,150	45,280	58,360	75,640
Mechanical engineering technicians .....	46,580	46,520	28,760	36,050	44,830	55,700	68,060
Engineering technicians, except drafters, all other .....	78,300	52,400	30,830	41,080	52,530	63,860	73,560
Surveying and mapping technicians .....	63,910	33,390	19,300	24,080	31,290	40,750	52,000

Appendix table 3-2

**Employment and earnings in S&E and related occupations, by occupation: May 2005**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Agricultural and food science technicians.....	19,340	33,260	20,350	25,140	31,360	39,460	49,200
Biological technicians.....	67,080	36,480	22,480	27,330	34,270	43,550	54,510
Chemical technicians.....	59,790	40,120	23,650	29,970	38,500	48,760	58,600
Geological and petroleum technicians.....	11,130	49,550	21,630	30,760	43,750	61,070	84,650
Nuclear technicians.....	6,050	59,840	29,260	48,170	61,120	72,700	86,950
Environmental science and protection technicians, including health ..	32,460	38,520	22,950	28,550	36,260	46,780	57,510
Forensic science technicians.....	11,030	47,390	27,350	34,200	44,590	57,130	71,100
Forest and conservation technicians.....	29,940	31,480	20,450	23,970	28,540	37,300	45,700
Life, physical, and social science technicians, all other.....	63,810	45,180	23,220	29,790	40,030	54,990	73,230
Other S&E-related.....	7,125,240	60,120	26,120	36,660	50,540	69,470	103,710
Actuaries.....	15,770	90,760	45,660	57,740	81,640	112,360	D
Architects, except landscape and naval.....	96,740	68,560	39,130	48,670	62,850	81,680	105,500
Landscape architects.....	20,220	59,540	33,570	42,150	54,220	71,220	92,310
Cartographers and photogrammetrists.....	11,260	51,340	29,620	36,640	48,250	63,850	79,930
Architecture teachers, postsecondary.....	6,110	65,740	35,620	48,400	62,270	80,200	97,120
Healthcare practitioner and technical workers.....	6,975,150	60,000	26,000	36,500	50,360	69,250	103,610
Medical and health services managers.....	230,130	77,140	43,640	54,620	69,700	90,050	121,190
Health educators.....	51,970	43,440	23,850	30,220	39,730	53,930	69,670
Health specialties teachers, postsecondary.....	108,680	82,450	34,470	48,960	70,890	104,410	D
Nursing instructors and teachers, postsecondary.....	37,020	56,840	32,850	41,920	53,160	67,900	86,570
Chiropractors.....	24,290	82,060	32,900	46,170	67,200	102,920	D
Dentists, general.....	86,270	133,680	64,770	90,920	125,300	D	D
Oral and maxillofacial surgeons.....	5,120	160,660	64,930	103,470	D	D	D
Orthodontists.....	4,820	163,410	73,300	117,500	D	D	D
Prosthodontists.....	560	146,080	63,310	81,790	D	D	D
Dentists, all other specialists.....	3,480	115,640	39,910	52,960	94,600	D	D
Dietitians and nutritionists.....	48,850	45,950	29,050	36,960	44,940	54,730	65,780
Optometrists.....	23,720	95,500	42,860	64,400	88,040	114,600	D
Pharmacists.....	229,740	88,650	64,350	78,620	89,820	103,300	113,310
Anesthesiologists.....	27,970	174,240	108,040	D	D	D	D
Family and general practitioners.....	112,150	140,370	56,680	101,420	140,400	D	D
Internists, general.....	48,210	156,550	88,790	124,750	D	D	D
Obstetricians and gynecologists.....	21,910	171,810	95,960	D	D	D	D
Pediatricians, general.....	26,400	139,230	66,520	101,150	136,600	D	D
Psychiatrists.....	23,450	146,150	63,820	113,880	D	D	D
Surgeons.....	52,930	177,690	116,560	D	D	D	D
Physicians and surgeons, all other.....	180,210	138,910	44,850	94,030	143,480	D	D
Physician assistants.....	63,350	71,070	38,370	59,260	72,030	86,530	100,490
Podiatrists.....	8,290	111,250	43,990	67,010	100,550	D	D
Registered nurses.....	2,368,070	56,880	38,660	45,710	54,670	66,650	79,460
Audiologists.....	10,330	57,660	35,920	44,400	53,490	65,710	82,580
Occupational therapists.....	87,430	59,100	38,840	47,590	56,860	69,740	85,450
Physical therapists.....	151,280	65,350	44,750	52,270	63,080	74,530	90,810
Radiation therapists.....	14,120	63,620	42,380	51,270	62,340	73,600	87,060
Recreational therapists.....	23,260	35,150	20,140	25,970	33,480	43,240	53,520
Respiratory therapists.....	95,320	46,270	33,680	39,050	45,140	53,410	60,280
Speech-language pathologists.....	94,660	58,000	36,380	44,080	54,880	69,060	86,380
Therapists, all other.....	9,730	45,680	20,930	29,990	42,070	55,020	72,440
Veterinarians.....	47,870	77,710	40,960	53,550	68,910	90,760	127,050
Health diagnosing and treating practitioners, all other.....	57,880	87,630	29,100	40,340	57,480	137,470	D
Medical and clinical laboratory technologists.....	155,250	48,600	33,480	40,000	47,710	56,030	66,510
Medical and clinical laboratory technicians.....	142,330	33,170	20,700	25,330	31,700	39,500	47,840
Dental hygienists.....	161,140	60,620	38,470	49,120	60,890	71,480	85,660
Cardiovascular technologists and technicians.....	43,560	41,580	22,810	28,930	40,420	52,480	63,010
Diagnostic medical sonographers.....	43,590	55,430	38,970	46,710	54,370	64,330	73,130
Nuclear medicine technologists.....	18,280	60,530	44,650	50,980	59,670	69,760	80,730
Radiologic technologists and technicians.....	184,580	47,010	31,290	38,250	45,950	55,100	65,220
Emergency medical technicians and paramedics.....	196,880	28,440	16,620	20,470	26,080	34,310	44,050

Appendix table 3-2

(Page 4 of 4)

**Employment and earnings in S&E and related occupations, by occupation: May 2005**

(Dollars)

Occupation	All employed ( <i>n</i> )	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Dietetic technicians.....	23,780	25,380	14,890	17,860	23,470	30,740	37,400
Pharmacy technicians.....	266,790	25,350	17,100	20,080	24,390	29,650	35,150
Psychiatric technicians.....	62,040	29,210	18,580	21,360	26,770	35,230	44,780
Respiratory therapy technicians.....	22,060	38,620	25,680	31,420	38,200	45,030	53,720
Surgical technologists.....	83,680	35,920	24,530	29,330	34,830	42,010	48,710
Veterinary technologists and technicians.....	63,860	26,710	17,700	20,870	25,670	31,560	37,360
Licensed practical and licensed vocational nurses.....	710,020	36,210	25,340	29,970	35,230	42,180	48,510
Medical records and health information technicians.....	160,450	28,720	18,410	21,480	26,690	34,210	42,960
Opticians, dispensing.....	70,090	30,770	18,490	22,470	29,000	36,920	45,720
Orthotists and prosthetists.....	5,190	60,050	29,110	39,310	53,760	71,270	93,310
Health technologists and technicians, all other.....	71,140	37,520	21,360	26,540	34,300	44,770	57,610
Occupational health and safety specialists.....	35,460	55,800	32,500	41,510	53,710	68,400	83,810
Occupational health and safety technicians.....	9,510	46,120	24,020	31,690	43,150	58,830	73,310
Athletic trainers.....	15,110	36,520	20,240	26,930	34,260	43,080	54,640
Healthcare practitioners and technical workers, all other.....	50,880	39,590	19,540	24,800	33,520	47,860	68,160

D = suppressed to avoid disclosure of confidential information

SOURCE: Bureau of Labor Statistics, Occupational Employment Statistics Survey, May 2005.

Science and Engineering Indicators 2008



Appendix table 3-3

(Page 1 of 4)

**Employment and earnings in S&E and related occupations, by occupation: May 2004**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
All occupations .....	128,127,360	37,020	14,880	19,300	28,770	45,060	68,510
Scientists, engineers, technicians, and technical managers .....	7,160,770	65,170	31,940	43,710	60,730	82,460	105,840
Technical managers .....	494,010	99,700	56,770	74,070	94,400	119,460	D
Computer and information systems managers.....	267,390	98,260	53,350	71,650	92,570	118,330	D
Engineering managers .....	186,380	102,600	63,750	78,820	97,630	121,090	D
Natural sciences managers.....	40,240	95,800	47,910	64,550	88,660	118,210	D
Scientists/engineers .....	5,085,740	66,940	35,270	47,350	63,870	83,740	105,030
Engineers.....	1,487,810	72,770	44,740	55,130	70,030	87,670	108,050
Aerospace engineers.....	73,650	80,460	52,820	64,380	79,100	94,900	113,520
Agricultural engineers .....	3,220	60,400	37,680	43,270	56,520	77,740	90,410
Biomedical engineers.....	8,650	70,800	41,260	51,620	67,690	86,400	107,530
Chemical engineers .....	30,320	80,050	49,030	60,920	76,770	94,740	115,180
Civil engineers .....	218,220	66,930	42,610	51,430	64,230	79,920	94,660
Computer hardware engineers .....	74,760	84,010	50,490	63,730	81,150	102,100	123,560
Electrical engineers.....	148,310	74,220	47,310	57,540	71,610	88,400	108,070
Electronics engineers, except computer .....	135,560	77,450	49,120	60,280	75,770	92,870	112,200
Environmental engineers.....	47,690	68,350	40,620	50,740	66,480	83,690	100,050
Health and safety engineers, except mining safety engineers and inspectors .....	25,860	66,110	39,930	49,900	63,730	79,500	92,870
Industrial engineers.....	174,960	66,660	42,450	52,210	65,020	79,830	93,950
Marine engineers and naval architects .....	6,620	73,720	43,790	54,530	72,040	89,900	109,190
Materials engineers.....	21,130	69,390	44,130	53,510	67,110	83,830	101,120
Mechanical engineers .....	217,010	68,460	43,900	53,070	66,320	82,380	97,850
Mining and geological engineers, including mining safety engineers .....	5,050	68,160	39,700	50,500	64,690	83,050	103,790
Nuclear engineers .....	17,180	88,760	61,790	73,340	84,880	100,220	118,870
Petroleum engineers .....	14,690	91,820	48,260	65,350	88,500	113,180	140,800
Engineers, all other .....	159,720	75,540	44,630	57,880	74,430	91,280	111,580
Engineering teachers, postsecondary .....	33,520	77,070	38,700	53,430	72,140	93,420	122,290
Sales engineers .....	71,690	75,740	41,430	53,270	70,620	91,500	117,260
Mathematical and computer scientists .....	2,566,170	65,070	33,170	45,190	62,170	82,360	102,860
Computer and information scientists, research.....	24,720	88,020	48,930	64,860	85,190	108,440	132,700
Computer software engineers, applications.....	425,890	77,330	46,520	59,130	74,980	92,130	113,830
Computer software engineers, systems software .....	318,020	82,160	50,420	63,150	79,740	98,220	118,350
Computer support specialists .....	488,540	43,620	24,190	30,980	40,430	53,010	69,110
Computer systems analysts .....	489,130	68,370	41,730	52,400	66,460	82,980	99,180
Database administrators .....	96,960	63,460	33,380	44,490	60,650	81,140	97,450
Network and computer systems administrators.....	259,320	61,470	37,100	46,260	58,190	73,620	91,300
Network systems and data communications analysts....	169,200	63,410	36,260	46,480	60,600	78,060	95,040
Computer specialists, all other .....	130,420	63,030	28,640	41,160	59,480	81,530	103,620
Mathematicians .....	2,410	81,500	43,160	60,050	81,240	101,360	120,900
Operations research analysts .....	55,030	63,420	36,180	45,640	60,190	78,420	95,990
Statisticians .....	17,030	63,260	32,870	42,770	58,620	80,690	100,500
Mathematical science occupations, all other .....	8,500	61,710	37,380	50,690	62,360	72,990	86,070
Computer science teachers, postsecondary.....	37,260	58,140	28,670	38,710	52,630	72,210	94,980
Mathematical science teachers, postsecondary.....	43,760	57,240	29,560	39,390	52,450	70,170	91,240
Life scientists.....	275,500	64,960	32,330	42,280	57,680	79,610	108,290
Animal scientists.....	1,540	53,800	31,670	39,220	49,920	63,920	82,600
Food scientists and technologists.....	7,210	56,110	28,410	36,450	50,840	72,510	91,300
Soil and plant scientists .....	9,690	55,470	30,660	37,890	51,200	69,120	88,840
Biochemists and biophysicists.....	15,200	71,730	38,710	49,430	68,950	88,540	110,660
Microbiologists.....	13,880	61,250	32,630	41,000	54,840	74,260	101,720
Zoologists and wildlife biologists .....	15,050	53,120	31,450	39,150	50,330	63,800	81,200
Biological scientists, all other .....	26,180	60,370	30,580	40,940	56,270	74,500	94,070
Conservation scientists .....	14,290	53,500	30,740	39,660	52,480	65,550	78,470
Foresters.....	10,250	49,730	29,770	37,260	48,230	60,500	72,050
Epidemiologists.....	4,560	58,060	36,130	45,320	54,800	67,160	82,310

Appendix table 3-3

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**Employment and earnings in S&E and related occupations, by occupation: May 2004**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Medical scientists, except epidemiologists .....	66,450	68,730	33,030	44,120	61,320	86,830	114,360
Life scientists, all other .....	13,870	63,710	30,870	39,740	55,430	77,070	106,340
Agricultural sciences teachers, postsecondary .....	10,230	67,520	35,920	47,380	65,190	84,160	105,750
Biological science teachers, postsecondary .....	60,260	73,220	33,200	43,890	61,940	90,410	131,390
Forestry and conservation science teachers, postsecondary .....	2,970	67,660	39,320	48,840	65,530	83,690	104,260
Environmental science teachers, postsecondary .....	3,860	66,790	32,170	44,390	62,330	85,030	109,760
Physical scientists .....	273,360	66,050	34,060	43,890	59,960	83,200	108,880
Astronomers .....	680	93,580	43,410	66,190	97,320	120,350	137,860
Physicists .....	14,150	89,090	49,450	66,590	87,450	109,420	132,780
Atmospheric and space scientists .....	7,070	69,590	34,590	48,880	70,100	86,610	106,020
Chemists .....	79,650	61,220	33,170	41,900	56,060	76,080	98,010
Materials scientists .....	7,330	74,390	40,030	53,350	72,390	92,340	113,460
Environmental scientists and specialists, including health .....	66,850	55,190	31,610	39,100	51,080	67,360	85,940
Geoscientists, except hydrologists and geographers .....	25,100	76,870	37,700	49,260	68,730	98,380	130,750
Hydrologists .....	7,290	64,100	38,580	47,080	61,510	77,910	94,460
Physical scientists, all other .....	25,260	81,560	38,080	56,340	80,150	105,910	123,890
Atmospheric, earth, marine, and space sciences teachers, postsecondary .....	8,660	70,300	36,540	48,550	65,350	88,740	113,380
Chemistry teachers, postsecondary .....	18,720	63,520	33,200	43,480	56,660	76,200	102,230
Physics teachers, postsecondary .....	12,590	69,210	36,810	48,450	64,510	84,790	110,400
Social scientists .....	482,900	60,570	29,430	39,910	54,940	74,890	98,770
Economists .....	12,030	79,770	41,040	53,650	72,780	96,240	129,170
Market research analysts .....	170,200	62,990	30,890	40,510	56,140	79,990	105,870
Survey researchers .....	19,480	32,010	15,330	17,920	26,490	41,390	56,740
Clinical, counseling, and school psychologists .....	96,540	60,810	32,280	41,850	54,950	71,880	92,250
Industrial-organizational psychologists .....	1,500	78,800	45,620	56,880	71,400	93,210	125,560
Psychologists, all other .....	6,480	69,740	28,840	48,280	71,910	87,380	107,380
Sociologists .....	3,640	63,350	32,720	42,990	57,870	80,650	104,450
Urban and regional planners .....	31,140	55,640	33,840	41,950	53,450	67,530	82,610
Anthropologists and archeologists .....	4,510	47,550	25,630	31,960	43,890	59,760	74,640
Geographers .....	750	59,600	35,410	46,190	58,970	71,600	86,270
Political scientists .....	4,370	85,770	41,270	59,780	86,750	109,600	131,400
Social scientists and related workers, all other .....	31,990	60,500	30,400	43,110	58,490	74,240	91,820
Social science research assistants .....	15,710	35,900	20,290	26,380	34,360	43,190	53,960
Anthropology and archeology teachers, postsecondary .....	4,990	66,060	37,320	47,800	60,860	80,900	105,070
Economics teachers, postsecondary .....	12,230	73,280	35,180	49,360	67,520	89,030	118,220
Geography teachers, postsecondary .....	4,180	61,020	33,590	44,340	57,510	75,880	93,520
Political science teachers, postsecondary .....	13,230	64,950	34,380	44,050	58,980	78,870	105,830
Psychology teachers, postsecondary .....	29,400	60,800	31,290	42,270	55,600	73,420	96,210
Sociology teachers, postsecondary .....	14,220	59,830	30,480	41,140	54,860	72,650	93,740
Social sciences teachers, postsecondary, all other .....	6,310	68,460	35,140	45,240	61,230	85,570	116,980
Technicians .....	1,581,010	48,890	25,520	33,350	44,850	59,530	78,840
Computer programmers .....	412,090	65,910	36,470	47,580	62,890	81,280	99,610
Mathematical technicians .....	1,720	43,650	25,050	29,630	38,460	52,680	68,820
Surveyors .....	52,680	46,080	24,640	31,940	42,980	57,190	71,640
Architectural and civil drafters .....	101,060	40,750	25,670	31,460	39,190	47,800	57,670
Electrical and electronics drafters .....	34,850	46,760	27,600	33,920	43,180	56,110	72,050
Mechanical drafters .....	76,610	45,140	27,490	34,090	43,000	54,240	67,650
Drafters, all other .....	22,620	45,560	23,860	31,630	41,860	55,880	79,660
Aerospace engineering and operations technicians .....	9,260	54,040	33,780	42,390	52,500	63,760	75,370
Civil engineering technicians .....	90,000	39,900	24,180	29,880	38,480	48,590	57,550
Electrical and electronic engineering technicians .....	178,560	47,130	29,000	36,290	46,310	55,750	67,900
Electro-mechanical technicians .....	18,770	43,130	27,890	33,380	41,440	51,580	62,720
Environmental engineering technicians .....	19,840	40,660	23,760	29,310	38,550	50,180	62,490
Industrial engineering technicians .....	68,210	47,080	28,530	34,690	43,590	56,090	72,150



Appendix table 3-3

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**Employment and earnings in S&E and related occupations, by occupation: May 2004**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Mechanical engineering technicians.....	46,990	45,050	28,550	35,030	43,400	54,020	65,870
Engineering technicians, except drafters, all other.....	88,100	49,630	28,740	38,020	49,440	60,070	71,220
Surveying and mapping technicians.....	60,530	32,780	19,140	23,600	30,380	40,100	51,070
Agricultural and food science technicians.....	18,940	31,980	19,100	23,800	29,730	38,050	48,120
Biological technicians.....	59,710	35,450	21,960	26,480	33,210	42,320	53,360
Chemical technicians.....	61,700	39,600	23,550	29,740	38,170	47,910	57,550
Geological and petroleum technicians.....	10,420	43,360	19,830	28,590	40,260	54,510	70,220
Nuclear technicians.....	7,210	58,830	29,490	47,470	59,200	71,470	86,120
Environmental science and protection technicians, including health.....	29,460	37,230	21,560	27,470	35,340	45,030	56,190
Forensic science technicians.....	9,230	47,490	27,310	34,570	44,010	56,260	71,650
Forest and conservation technicians.....	29,910	30,770	20,070	23,460	27,330	35,630	44,420
Life, physical, and social science technicians, all other....	72,580	42,680	21,600	28,000	37,840	52,520	70,230
Other S&E-related.....	6,914,070	58,640	25,510	35,520	48,650	67,130	98,890
Actuaries.....	16,350	87,460	43,380	54,770	76,340	107,650	D
Architects, except landscape and naval.....	94,280	66,230	38,060	46,690	60,300	79,230	99,800
Landscape architects.....	17,960	57,680	32,390	40,930	53,120	70,400	90,850
Cartographers and photogrammetrists.....	9,870	48,830	28,210	35,160	46,080	59,830	74,440
Architecture teachers, postsecondary.....	5,700	65,510	34,010	47,080	59,990	77,580	97,790
Healthcare practitioner and technical workers.....	6,769,900	58,080	25,140	35,000	48,000	66,370	97,750
Medical and health services managers.....	224,070	75,140	41,450	52,530	67,430	88,210	117,990
Health educators.....	46,490	42,120	23,270	29,480	38,480	52,140	67,340
Health specialties teachers, postsecondary.....	105,610	76,720	28,360	42,180	64,630	96,750	D
Nursing instructors and teachers, postsecondary.....	34,360	55,770	32,470	41,270	52,060	66,130	84,410
Chiropractors.....	21,830	87,390	33,740	46,710	69,910	118,280	D
Dentists, general.....	84,240	132,850	58,600	83,790	123,060	D	D
Oral and maxillofacial surgeons.....	4,950	165,750	66,720	126,860	D	D	D
Orthodontists.....	6,190	150,700	34,710	92,730	D	D	D
Prosthodontists.....	730	145,670	65,540	81,970	D	D	D
Dentists, all other specialists.....	2,710	130,300	47,180	69,350	126,130	D	D
Dietitians and nutritionists.....	46,530	44,640	27,500	35,940	43,630	53,370	63,760
Optometrists.....	22,780	96,780	41,590	63,840	88,410	118,320	D
Pharmacists.....	222,960	84,370	61,200	75,720	84,900	94,850	109,850
Anesthesiologists.....	25,130	174,250	102,680	145,590	D	D	D
Family and general practitioners.....	106,750	138,490	50,500	98,110	137,090	D	D
Internists, general.....	51,180	158,200	84,650	121,560	D	D	D
Obstetricians and gynecologists.....	20,850	176,270	96,170	D	D	D	D
Pediatricians, general.....	26,520	141,520	75,000	103,240	135,730	D	D
Psychiatrists.....	22,440	150,110	72,820	118,640	D	D	D
Surgeons.....	55,800	181,610	120,150	D	D	D	D
Physicians and surgeons, all other.....	162,720	137,610	43,360	88,260	140,270	D	D
Physician assistants.....	59,470	68,780	37,320	57,110	69,410	83,560	94,880
Podiatrists.....	7,550	108,400	42,230	63,030	94,400	D	D
Registered nurses.....	2,311,970	54,210	37,300	43,370	52,330	63,360	74,760
Audiologists.....	9,810	55,050	34,990	42,160	51,470	62,210	75,990
Occupational therapists.....	83,560	56,550	37,430	45,690	54,660	67,010	81,600
Physical therapists.....	142,940	62,390	42,010	50,330	60,180	71,760	88,580
Radiation therapists.....	14,470	60,420	38,550	47,380	57,700	69,650	83,340
Recreational therapists.....	23,050	34,280	20,130	25,520	32,900	42,130	51,800
Respiratory therapists.....	91,350	44,180	32,220	37,650	43,140	50,860	57,580
Speech-language pathologists.....	89,260	55,550	34,720	42,090	52,410	65,750	82,420
Therapists, all other.....	8,090	44,620	20,190	27,750	40,180	54,130	72,010
Veterinarians.....	46,090	75,030	39,020	51,420	66,590	88,060	118,430
Health diagnosing and treating practitioners, all other.....	56,920	92,300	28,070	40,060	57,970	D	D
Medical and clinical laboratory technologists.....	151,240	46,600	32,240	38,740	45,730	54,310	63,120
Medical and clinical laboratory technicians.....	141,720	32,120	20,410	24,890	30,840	37,770	45,680
Dental hygienists.....	155,810	59,440	37,540	47,260	58,350	70,340	84,660

Appendix table 3-3

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**Employment and earnings in S&E and related occupations, by occupation: May 2004**

(Dollars)

Occupation	All employed (n)	Annual earnings					
		Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Cardiovascular technologists and technicians.....	43,540	39,710	21,790	27,890	38,690	50,130	59,000
Diagnostic medical sonographers.....	41,280	53,620	37,800	44,720	52,490	61,360	72,230
Nuclear medicine technologists.....	17,520	61,210	41,800	48,720	56,450	67,460	80,300
Radiologic technologists and technicians .....	177,220	44,530	30,020	36,170	43,350	52,430	60,210
Emergency medical technicians and paramedics .....	187,900	27,650	16,090	19,970	25,310	33,210	43,240
Dietetic technicians.....	24,630	24,730	14,830	17,650	22,990	30,080	36,390
Pharmacy technicians .....	255,290	24,700	16,550	19,550	23,650	28,820	34,560
Psychiatric technicians.....	59,010	27,940	17,330	20,450	25,540	33,630	43,340
Respiratory therapy technicians .....	24,190	37,440	24,640	30,490	36,740	43,830	52,280
Surgical technologists.....	82,280	34,770	23,940	28,560	34,010	40,750	45,990
Veterinary technologists and technicians.....	58,570	25,990	17,710	20,540	24,940	30,290	35,620
Licensed practical and licensed vocational nurses.....	702,740	34,840	24,480	28,830	33,970	40,670	46,270
Medical records and health information technicians .....	155,030	27,660	17,720	20,650	25,590	32,990	41,760
Opticians, dispensing .....	62,350	29,880	17,390	21,360	27,950	35,940	45,340
Orthotists and prosthetists .....	4,930	57,130	28,580	38,130	50,260	68,000	89,350
Health technologists and technicians, all other .....	72,390	37,650	20,790	25,930	34,230	44,270	56,530
Occupational health and safety specialists .....	36,360	53,110	30,590	39,580	51,570	65,370	79,530
Occupational health and safety technicians.....	11,190	44,320	22,860	29,900	42,130	56,640	70,460
Athletic trainers.....	13,100	36,350	20,770	27,140	33,940	42,380	53,760
Healthcare practitioners and technical workers, all other .....	52,240	37,860	18,830	24,320	33,360	46,660	61,730

D = suppressed to avoid disclosure of confidential information

SOURCE: Bureau of Labor Statistics, Occupational Employment Statistics Survey, May 2004.

Appendix table 3-4

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2006**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Computer systems design and related services.....	5415	1,254,320	609,590	48.6	72,380	75,040	69,900
Software publishers.....	5112	240,130	116,260	48.4	77,570	79,120	76,100
Scientific research and development services.....	5417	586,220	247,310	42.2	71,190	81,220	63,900
Computer and peripheral equipment manufacturing.....	3341	199,370	79,040	39.6	74,990	90,710	64,700
Internet service providers and Web search portals.....	5181	119,560	46,120	38.6	64,900	69,720	61,900
Data processing, hosting, and related services.....	5182	264,320	83,470	31.6	57,450	70,460	51,400
Internet publishing and broadcasting.....	5161	33,220	9,810	29.5	63,230	69,800	60,500
Architectural, engineering, and related services.....	5413	1,361,280	397,910	29.2	59,680	74,570	53,500
Communications equipment manufacturing.....	3342	144,200	39,270	27.2	60,560	83,400	52,000
Navigational, measuring, electromedical, and control instruments manufacturing.....	3345	435,510	117,950	27.1	59,710	82,190	51,400
Aerospace product and parts manufacturing.....	3364	464,990	114,620	24.6	60,070	80,410	53,400
Securities and commodity exchanges.....	5232	8,850	1,930	21.8	70,100	74,000	69,000
Semiconductor and other electronic component manufacturing.....	3344	452,060	93,940	20.8	53,720	83,490	45,900
Pharmaceutical and medicine manufacturing.....	3254	288,270	55,640	19.3	53,810	73,710	49,100
Other telecommunications.....	5179	5,300	980	18.5	54,940	73,820	50,700
Management, scientific, and technical consulting services.....	5416	909,540	165,380	18.2	62,430	71,690	60,400
Audio and video equipment manufacturing.....	3343	31,260	5,520	17.7	47,350	76,430	41,100
Oil and gas extraction.....	2111	129,000	22,190	17.2	64,110	96,180	57,400
Manufacturing and reproducing magnetic and optical media.....	3346	41,660	7,070	17.0	47,830	75,150	42,200
Telecommunications resellers.....	5173	129,260	21,790	16.9	54,970	72,420	51,400
Wired telecommunications carriers.....	5171	485,830	78,540	16.2	58,090	74,920	54,800
Professional and commercial equipment and supplies merchant wholesalers.....	4234	643,370	97,150	15.1	55,990	75,870	52,500
Monetary authorities – central bank.....	5211	20,710	3,090	14.9	52,740	69,760	49,800
Colleges, universities, and professional schools.....	6113	2,677,900	385,700	14.4	51,360	66,230	48,900
Federal government.....	9991	1,787,830	250,940	14.0	63,730	81,870	60,800
Commercial and service industry machinery manufacturing.....	3333	108,770	15,110	13.9	48,410	74,000	44,300
Junior colleges.....	6112	715,380	92,520	12.9	48,090	57,370	46,700
Management of companies and enterprises.....	5511	1,786,440	222,830	12.5	59,080	70,600	57,400
Industrial machinery manufacturing.....	3332	123,340	15,170	12.3	48,920	73,780	45,400
Wireless telecommunications carriers (except satellite).....	5172	196,740	23,110	11.7	46,610	71,370	43,300
Satellite telecommunications.....	5174	16,340	1,770	10.8	54,830	74,740	52,400
Electric power generation, transmission, and distribution.....	2211	394,660	39,850	10.1	57,660	76,180	55,600
Basic chemical manufacturing.....	3251	146,490	13,880	9.5	51,990	73,400	49,700
Business schools and computer and management training.....	6114	82,220	7,780	9.5	50,320	60,290	49,300
Pipeline transportation of crude oil.....	4861	7,330	680	9.3	61,930	83,160	59,800
Electrical equipment manufacturing.....	3353	153,360	14,100	9.2	40,800	69,310	37,900
Engine, turbine, and power transmission equipment manufacturing.....	3336	99,240	8,650	8.7	43,940	71,650	41,300
Pipeline transportation of natural gas.....	4862	25,950	2,260	8.7	55,360	75,210	53,500
Securities and commodity contracts intermediation and brokerage.....	5231	494,530	42,140	8.5	77,000	80,320	76,700
Electrical and electronic goods merchant wholesalers.....	4236	342,930	29,090	8.5	51,190	75,670	48,900
Cable and other subscription programming.....	5152	89,190	7,450	8.4	49,120	60,100	48,100
Pesticide, fertilizer, and other agricultural chemical manufacturing.....	3253	39,490	3,240	8.2	45,140	77,640	42,200
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing.....	3252	103,820	8,150	7.9	48,010	72,760	45,900
Petroleum and coal products manufacturing.....	3241	112,750	8,790	7.8	53,380	82,930	50,900
Insurance carriers.....	5241	1,263,470	97,220	7.7	52,190	66,280	51,000
Other general purpose machinery manufacturing.....	3339	270,990	20,560	7.6	42,310	64,900	40,500
Other financial investment activities.....	5239	303,310	22,270	7.3	75,850	76,500	75,800
State government.....	9992	2,257,680	165,600	7.3	44,850	57,240	43,900
Paint, coating, and adhesive manufacturing.....	3255	67,530	4,880	7.2	45,060	73,410	42,900
Other chemical product and preparation manufacturing.....	3259	106,430	7,620	7.2	43,420	67,830	41,500
Cable and other program distribution.....	5175	140,850	10,080	7.2	43,020	60,490	41,700
Other electrical equipment and component manufacturing.....	3359	135,910	9,130	6.7	40,220	69,180	38,100

Appendix table 3-4

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2006**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Medical equipment and supplies manufacturing .....	3391	305,530	19,890	6.5	42,190	70,370	40,200
Natural gas distribution.....	2212	106,400	6,880	6.5	55,680	78,560	54,100
Lessors of nonfinancial intangible assets (except copyrighted works) .....	5331	27,310	1,750	6.4	54,310	66,010	53,500
Office administrative services .....	5611	361,540	23,120	6.4	52,400	70,300	51,200
Other professional, scientific, and technical services.....	5419	542,500	34,020	6.3	36,490	52,180	35,400
Ship and boat building .....	3366	152,650	9,570	6.3	39,070	64,570	37,400
Educational support services .....	6117	99,010	6,020	6.1	43,900	58,080	43,000
Other transportation equipment manufacturing.....	3369	39,820	2,400	6.0	39,850	70,410	37,900
Motor vehicle parts manufacturing.....	3363	667,720	39,480	5.9	42,340	71,430	40,500
Other information services .....	5191	50,750	2,910	5.7	41,450	68,310	39,800
Metal ore mining.....	2122	29,990	1,710	5.7	48,190	67,870	47,000
Electronic and precision equipment repair and maintenance .....	8112	105,820	6,030	5.7	41,940	64,600	40,600
Insurance and employee benefit funds.....	5251	47,880	2,720	5.7	53,900	71,820	52,800
Facilities support services.....	5612	119,170	6,700	5.6	38,060	68,400	36,300
Other fabricated metal product manufacturing .....	3329	281,870	15,500	5.5	39,160	65,320	37,600
Electronics and appliance stores.....	4431	562,120	29,890	5.3	33,430	58,320	32,000
Tobacco manufacturing.....	3122	23,340	1,240	5.3	46,630	71,280	45,200
Agriculture, construction, and mining machinery manufacturing.....	3331	214,120	11,130	5.2	38,790	65,940	37,300
Metalworking machinery manufacturing .....	3335	199,800	9,650	4.8	42,590	62,820	41,600
Household appliance manufacturing .....	3352	79,860	3,660	4.6	36,490	36,490	36,500
Railroad rolling stock manufacturing .....	3365	27,070	1,240	4.6	40,140	66,370	38,900
Newspaper, periodical, book, and directory publishers .....	5111	662,000	30,060	4.5	44,110	64,270	43,200
Soap, cleaning compound, and toilet preparation manufacturing .....	3256	111,750	4,890	4.4	39,950	66,500	38,700
Pulp, paper, and paperboard mills .....	3221	137,960	5,980	4.3	47,450	69,670	46,400
Specialized design services .....	5414	135,750	5,840	4.3	49,810	67,040	49,000
Ventilation, heating, air conditioning, and commercial refrigeration equipment .....	3334	154,370	6,580	4.3	36,410	63,980	35,200
Remediation and other waste management services .....	5629	114,900	4,810	4.2	41,140	70,920	39,800
Wholesale electronic markets and agents and brokers.....	4251	774,770	31,960	4.1	52,730	73,520	51,800
Drugs and druggists' sundries merchant wholesalers .....	4242	213,040	8,560	4.0	53,050	70,560	52,300
Advertising and related services .....	5418	452,840	17,990	4.0	52,620	62,720	52,200
Support activities for mining .....	2131	241,950	9,540	3.9	41,200	80,400	39,600
Cutlery and handtool manufacturing .....	3322	54,300	2,140	3.9	37,940	71,210	36,600
Social advocacy organizations .....	8133	166,570	6,250	3.8	37,470	57,480	36,700
Waste treatment and disposal.....	5622	102,260	3,820	3.7	41,960	68,690	40,900
Sound recording industries .....	5122	21,190	790	3.7	51,890	66,040	51,300
Electric lighting equipment manufacturing.....	3351	63,430	2,340	3.7	36,800	D	36,800
Nonferrous metal (except aluminum) production and processing .....	3314	72,440	2,610	3.6	42,050	64,870	41,200
Alumina and aluminum production and processing .....	3313	73,150	2,600	3.6	38,660	70,450	37,500
Business, professional, labor, political, and similar organizations.....	8139	425,760	14,740	3.5	45,990	60,360	45,500
Iron and steel mills and ferroalloy manufacturing.....	3311	95,350	3,290	3.5	42,960	69,700	42,000
Grantmaking and giving services .....	8132	118,940	4,080	3.4	46,130	53,270	45,900
Electronic shopping and mail order houses .....	4541	239,920	8,210	3.4	34,470	58,540	33,600
Activities related to credit intermediation .....	5223	346,270	11,790	3.4	46,830	63,490	46,200
Medical and diagnostic laboratories.....	6215	199,960	6,760	3.4	45,740	66,150	45,000
Accounting, tax preparation, bookkeeping, and payroll services .....	5412	826,340	27,840	3.4	51,480	67,100	50,900
Boiler, tank, and shipping container manufacturing .....	3324	92,570	3,100	3.3	39,120	63,600	38,300
Hardware manufacturing .....	3325	34,330	1,100	3.2	36,040	62,170	35,200
Business support services .....	5614	778,670	24,250	3.1	31,270	52,220	30,600
Depository credit intermediation .....	5221	1,790,830	55,150	3.1	41,450	65,360	40,700
Grain and oilseed milling.....	3112	60,410	1,820	3.0	37,860	66,210	37,000
Local government .....	9993	5,437,200	157,910	2.9	40,710	60,710	40,100
Radio and television broadcasting.....	5151	238,500	6,720	2.8	48,380	64,280	47,900
Machinery, equipment, and supplies merchant wholesalers .....	4238	670,230	18,650	2.8	44,340	69,460	43,600
Other miscellaneous manufacturing.....	3399	345,560	9,610	2.8	36,000	62,750	35,200
Foundries.....	3315	163,450	4,530	2.8	37,050	63,890	36,300
Rubber product manufacturing .....	3262	163,390	4,520	2.8	36,650	63,320	35,900

Appendix table 3-4

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2006**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Other support services.....	5619	293,790	7,940	2.7	36,100	63,540	35,300
Forging and stamping.....	3321	111,470	3,010	2.7	38,030	61,770	37,400
Other food manufacturing.....	3119	159,120	4,290	2.7	35,680	65,300	34,900
Nonresidential building construction.....	2362	776,590	20,840	2.7	47,790	70,630	47,200
Technical and trade schools.....	6115	129,460	3,470	2.7	42,460	52,790	42,200
Museums, historical sites, and similar institutions.....	7121	120,230	3,220	2.7	32,300	47,200	31,900
Chemical and allied products merchant wholesalers.....	4246	130,180	3,430	2.6	48,350	69,970	47,800
Water, sewage, and other systems.....	2213	45,340	1,170	2.6	39,290	73,820	38,400
Specialty (except psychiatric and substance abuse) hospitals....	6223	191,620	4,840	2.5	47,610	62,200	47,200
Psychiatric and substance abuse hospitals.....	6222	237,250	5,870	2.5	40,830	66,300	40,200
Employment services.....	5613	3,657,860	90,070	2.5	29,740	66,350	28,800
Deep sea, coastal, and Great Lakes water transportation.....	4831	39,010	940	2.4	48,910	81,300	48,100
Plastics product manufacturing.....	3261	639,290	15,350	2.4	33,820	65,160	33,000
Agencies, brokerages, and other insurance-related activities....	5242	888,390	20,340	2.3	47,920	60,940	47,600
Offices of other health practitioners.....	6213	570,330	12,760	2.2	43,740	76,940	43,000
Office furniture (including fixtures) manufacturing.....	3372	133,710	2,980	2.2	35,960	60,510	35,400
Travel arrangement and reservation services.....	5615	226,000	4,910	2.2	35,450	57,360	35,000
Motor vehicle body and trailer manufacturing.....	3362	175,600	3,790	2.2	34,210	63,160	33,600
Glass and glass product manufacturing.....	3272	105,710	2,270	2.1	34,760	63,710	34,100
Clay product and refractory manufacturing.....	3271	60,850	1,270	2.1	33,460	62,510	32,800
Hardware, and plumbing and heating equipment and supplies merchant wholesale.....	4237	251,200	4,970	2.0	43,530	66,980	43,100
Commercial and industrial machinery and equipment rental and leasing.....	5324	115,420	2,280	2.0	42,690	71,180	42,100
Machine shops; turned product; and screw, nut, and bolt manufacturing.....	3327	349,520	6,790	1.9	38,500	61,520	38,000
Motor vehicle and motor vehicle parts and supplies merchant wholesalers.....	4231	347,780	6,680	1.9	37,640	68,600	37,000
Land subdivision.....	2372	97,150	1,790	1.8	53,120	67,540	52,800
Outpatient care centers.....	6214	485,110	8,920	1.8	46,190	55,250	46,000
Architectural and structural metals manufacturing.....	3323	407,270	7,330	1.8	36,190	59,910	35,800
Steel product manufacturing from purchased steel.....	3312	60,130	1,070	1.8	37,760	62,970	37,300
Spring and wire product manufacturing.....	3326	58,340	1,010	1.7	35,110	64,420	34,600
Dairy product manufacturing.....	3115	130,680	2,180	1.7	35,340	57,150	35,000
Miscellaneous durable goods merchant wholesalers.....	4239	287,370	4,720	1.6	38,430	63,470	38,000
Other heavy and civil engineering construction.....	2379	110,110	1,680	1.5	41,210	71,600	40,700
Inland water transportation.....	4832	22,540	340	1.5	45,570	63,760	45,300
Coating, engraving, heat treating, and allied activities.....	3328	147,680	2,110	1.4	33,900	60,870	33,500
Community food and housing, and emergency and other relief services.....	6242	129,920	1,840	1.4	31,800	58,370	31,400
Support activities for air transportation.....	4881	152,980	2,160	1.4	36,390	68,110	35,900
Motion picture and video industries.....	5121	363,000	5,060	1.4	40,620	65,450	40,300
Miscellaneous nondurable goods merchant wholesalers.....	4249	364,930	5,070	1.4	35,560	60,950	35,200
Lime and gypsum product manufacturing.....	3274	18,770	260	1.4	37,080	63,790	36,700
Beverage manufacturing.....	3121	169,700	2,330	1.4	37,890	65,550	37,500
Coal mining.....	2121	78,170	1,070	1.4	43,530	69,140	43,200
Paper and paper product merchant wholesalers.....	4241	151,840	1,990	1.3	44,260	65,770	44,000
Converted paper product manufacturing.....	3222	335,370	4,390	1.3	37,540	68,240	37,100
General medical and surgical hospitals.....	6221	4,887,130	63,320	1.3	46,480	61,030	46,300
Other nonmetallic mineral product manufacturing.....	3279	78,850	1,020	1.3	35,730	65,250	35,300
Offices of real estate agents and brokers.....	5312	373,630	4,810	1.3	42,380	52,910	42,200
Footwear manufacturing.....	3162	17,340	220	1.3	28,630	58,420	28,200
Metal and mineral (except petroleum) merchant wholesalers.....	4235	127,120	1,610	1.3	44,120	67,690	43,800
Apparel, piece goods, and notions merchant wholesalers.....	4243	150,230	1,900	1.3	44,090	57,900	43,900
Legal services.....	5411	1,174,330	14,680	1.3	64,200	60,150	64,300
Scheduled air transportation.....	4811	441,800	5,520	1.2	60,970	66,330	60,900
Rail transportation.....	4821	207,440	2,590	1.2	54,500	79,960	54,200
Furniture and home furnishing merchant wholesalers.....	4232	115,250	1,430	1.2	42,590	58,820	42,400



Appendix table 3-4

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2006**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Nonmetallic mineral mining and quarrying.....	2123	111,400	1,340	1.2	38,240	70,020	37,900
Fabric mills.....	3132	93,710	1,100	1.2	30,770	60,760	30,400
Other furniture-related product manufacturing.....	3379	51,170	600	1.2	31,940	63,030	31,600
Individual and family services.....	6241	960,750	11,050	1.2	28,980	54,350	28,700
Sawmills and wood preservation.....	3211	118,530	1,350	1.1	30,380	56,180	30,100
Other residential care facilities.....	6239	164,290	1,870	1.1	28,710	53,570	28,400
Logging.....	1133	63,100	710	1.1	32,980	59,120	32,700
Elementary and secondary schools.....	6111	8,313,570	92,920	1.1	40,850	54,360	40,700
Highway, street, and bridge construction.....	2373	360,640	4,000	1.1	42,180	68,430	41,900
Other ambulatory health care services.....	6219	213,430	2,360	1.1	34,640	61,260	34,300
Printing and related support activities.....	3231	638,120	7,050	1.1	37,510	56,750	37,300
Petroleum and petroleum products merchant wholesalers.....	4247	101,410	1,120	1.1	39,650	72,310	39,300
Textile and fabric finishing and fabric coating mills.....	3133	60,110	650	1.1	32,030	61,880	31,700
Sugar and confectionery product manufacturing.....	3113	75,860	820	1.1	31,530	65,550	31,200
Veneer, plywood, and engineered wood product manufacturing.....	3212	124,000	1,340	1.1	31,380	57,260	31,100
Fruit and vegetable preserving and specialty food manufacturing.....	3114	168,750	1,820	1.1	30,930	58,000	30,600
Promoters of performing arts, sports, and similar events.....	7113	82,230	880	1.1	33,830	52,120	33,600
Commercial and industrial machinery and equipment (except automotive and electronic).....	8113	174,760	1,800	1.0	38,150	66,150	37,900
Utility system construction.....	2371	423,810	4,310	1.0	40,860	71,230	40,500
Leather and hide tanning and finishing.....	3161	6,100	60	1.0	31,130	54,770	30,900
Other textile product mills.....	3149	72,190	700	1.0	28,550	53,500	28,300
Activities related to real estate.....	5313	513,590	4,970	1.0	39,570	56,620	39,400
Freight transportation arrangement.....	4885	180,200	1,680	0.9	43,310	59,980	43,200
Spectator sports.....	7112	130,110	1,210	0.9	36,740	61,130	36,500
Farm product raw material merchant wholesalers.....	4245	73,580	680	0.9	30,820	55,830	30,600
Other wood product manufacturing.....	3219	323,390	2,890	0.9	30,480	56,610	30,200
Couriers.....	4921	530,720	4,500	0.8	36,420	64,730	36,200
Performing arts companies.....	7111	117,630	960	0.8	45,640	47,670	45,600
Agents and managers for artists, athletes, entertainers, and other public figures.....	7114	17,190	140	0.8	64,020	59,710	64,100
Household and institutional furniture and kitchen cabinet manufacturing.....	3371	378,900	3,010	0.8	30,940	53,580	30,800
Offices of physicians.....	6211	2,128,760	16,200	0.8	58,180	71,910	58,100
Religious organizations.....	8131	181,260	1,340	0.7	32,110	50,410	32,000
Warehousing and storage.....	4931	624,920	4,570	0.7	32,440	60,130	32,200
Other schools and instruction.....	6116	273,780	1,980	0.7	36,220	54,930	36,100
Cement and concrete product manufacturing.....	3273	250,640	1,700	0.7	35,850	59,050	35,700
Support activities for water transportation.....	4883	98,610	660	0.7	48,780	65,360	48,700
Amusement parks and arcades.....	7131	147,940	990	0.7	23,910	50,850	23,700
Vocational rehabilitation services.....	6243	310,390	2,070	0.7	28,340	48,590	28,200
Nonscheduled air transportation.....	4812	43,980	290	0.7	52,320	D	D
Fiber, yarn, and thread mills.....	3131	48,740	320	0.7	27,310	51,310	27,200
Independent artists, writers, and performers.....	7115	47,800	310	0.6	49,600	55,940	49,600
Lumber and other construction materials merchant wholesalers.....	4233	263,730	1,670	0.6	40,590	60,370	40,500
Support activities for animal production.....	1152	27,450	170	0.6	27,030	58,450	26,800
Beer, wine, and distilled alcoholic beverage merchant wholesalers.....	4248	149,000	920	0.6	44,230	56,540	44,200
Lessors of real estate.....	5311	595,020	3,640	0.6	33,870	57,790	33,700
Textile furnishings mills.....	3141	92,280	560	0.6	28,430	57,530	28,300
Residential mental retardation, mental health, and substance abuse facilities.....	6232	503,160	2,970	0.6	27,090	54,730	26,900
Grocery and related product wholesalers.....	4244	704,470	4,100	0.6	37,110	57,320	37,000
Office supplies, stationery, and gift stores.....	4532	383,860	2,120	0.6	25,010	54,200	24,800
Civic and social organizations.....	8134	408,740	2,240	0.5	25,030	46,670	24,900
Scenic and sightseeing transportation, water.....	4872	14,740	80	0.5	31,290	66,060	31,100
Support activities for rail transportation.....	4882	22,540	120	0.5	34,050	65,470	33,900

Appendix table 3-4

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2006**

Industry	NAICS code	Workers employed (number)			Mean earnings (\$)		
		All occupations	S&E occupations	S&E workers as percent of all employed	All occupations	S&E occupations	Non-S&E occupations
Building equipment contractors .....	2382	1,987,440	10,040	0.5	43,850	D	D
Residential building construction .....	2361	1,005,950	4,960	0.5	42,420	63,890	42,300
Cut and sew apparel manufacturing.....	3152	191,620	910	0.5	27,690	58,780	27,500
Postal service .....	4911	791,120	3,630	0.5	45,010	71,010	44,900
Automotive equipment rental and leasing .....	5321	197,310	900	0.5	30,410	65,440	30,200
Other personal services .....	8129	219,740	970	0.4	25,100	54,460	25,000
Apparel accessories and other apparel manufacturing .....	3159	20,570	90	0.4	28,170	48,760	28,100
Other support activities for transportation .....	4889	29,780	130	0.4	29,850	55,500	29,700
Seafood product preparation and packaging .....	3117	36,810	160	0.4	27,410	62,120	27,300
Building material and supplies dealers.....	4441	1,172,660	4,980	0.4	29,510	43,620	29,400
Other leather and allied product manufacturing .....	3169	14,180	60	0.4	26,770	50,860	26,700
Gambling industries.....	7132	139,470	590	0.4	24,550	48,180	24,400
Investigation and security services.....	5616	750,860	2,690	0.4	25,680	62,360	25,500
Animal slaughtering and processing .....	3116	505,310	1,750	0.3	25,490	53,150	25,400
Direct selling establishments .....	4543	143,520	480	0.3	34,630	55,290	34,600
Jewelry, luggage, and leather goods stores.....	4483	169,850	560	0.3	30,230	55,230	30,100
Bakeries and tortilla manufacturing .....	3118	282,070	830	0.3	28,560	62,340	28,500
General rental centers.....	5323	58,170	170	0.3	33,750	71,240	33,600
Local messengers and local delivery.....	4922	45,440	120	0.3	30,260	56,240	30,200
Other miscellaneous store retailers.....	4539	301,930	780	0.3	26,500	42,560	26,500
Automotive parts, accessories, and tire stores.....	4413	496,480	1,140	0.2	28,860	57,890	28,800
Furniture stores .....	4421	300,070	670	0.2	32,040	48,570	32,000
Waste collection .....	5621	130,690	290	0.2	35,150	58,520	35,100
General freight trucking .....	4841	993,590	2,130	0.2	38,390	55,750	38,400
Other specialty trade contractors .....	2389	718,180	1,420	0.2	38,360	67,270	38,300
Community care facilities for the elderly .....	6233	626,110	1,220	0.2	25,350	47,160	25,300
Book, periodical, and music stores.....	4512	196,140	380	0.2	21,830	44,310	21,800
Support activities for crop production.....	1151	289,140	530	0.2	20,380	55,370	20,300
Other motor vehicle dealers .....	4412	170,940	310	0.2	36,670	52,080	36,600
Support activities for road transportation .....	4884	79,360	140	0.2	31,260	62,640	31,200
Used merchandise stores.....	4533	112,960	170	0.2	22,040	43,940	22,000
Consumer goods rental .....	5322	268,260	400	0.1	25,030	58,200	25,000
Traveler accommodation.....	7211	1,744,610	2,410	0.1	23,970	49,170	23,900
Specialized freight trucking.....	4842	426,070	530	0.1	35,220	D	D
Home furnishings stores .....	4422	290,530	350	0.1	30,820	47,310	30,800
Nursing care facilities .....	6231	1,576,160	1,840	0.1	29,570	50,300	29,500
Health and personal care stores.....	4461	962,630	1,080	0.1	33,600	55,810	33,600
Other transit and ground passenger transportation .....	4859	63,650	70	0.1	25,870	50,880	25,800
Foundation, structure, and building exterior contractors .....	2381	1,134,580	1,200	0.1	38,680	71,170	38,600
Child day care services.....	6244	765,430	760	0.1	22,160	44,330	22,100
Automobile dealers.....	4411	1,246,790	1,180	0.1	42,680	53,410	42,700
Other amusement and recreation industries.....	7139	1,064,320	980	0.1	25,720	48,040	25,700
Clothing stores.....	4481	1,102,150	900	0.1	23,060	48,480	23,000
Florists .....	4531	102,030	80	0.1	22,160	36,460	22,100
Death care services .....	8122	135,170	100	0.1	33,210	44,900	33,200
Services to buildings and dwellings .....	5617	1,814,420	1,310	0.1	24,710	55,250	24,700
Lawn and garden equipment and supplies stores.....	4442	153,870	110	0.1	26,480	52,050	26,500
Special food services.....	7223	551,890	350	0.1	23,360	63,730	23,300
Vending machine operators .....	4542	50,350	30	0.1	28,830	44,170	28,800
Taxi and limousine service.....	4853	69,910	40	0.1	27,170	63,240	27,100
Automotive repair and maintenance.....	8111	885,830	490	0.1	31,440	50,990	31,400
Grocery stores .....	4451	2,444,440	1,330	0.1	23,080	39,000	23,100
Department stores .....	4521	1,617,510	850	0.1	22,200	D	D
Other general merchandise stores .....	4529	1,400,940	730	0.1	22,580	30,770	22,600
Personal and household goods repair and maintenance.....	8114	77,390	40	0.1	31,200	51,530	31,200
Beer, wine, and liquor stores.....	4453	136,440	70	0.1	24,610	48,150	24,600
Building finishing contractors.....	2383	1,018,630	510	0.1	38,920	59,650	38,900
Shoe stores .....	4482	181,570	90	0.1	22,720	54,080	22,700

Appendix table 3-4

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2006**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Gasoline stations .....	4471	865,500	350	0.0	19,800	54,880	19,800
Specialty food stores .....	4452	235,670	90	0.0	24,260	46,570	24,300
Drycleaning and laundry services .....	8123	345,160	120	0.0	22,760	57,930	22,700
Personal care services .....	8121	587,950	130	0.0	25,260	39,580	25,300
School and employee bus transportation.....	4854	185,270	30	0.0	27,270	44,950	27,300
Full-service restaurants .....	7221	4,377,620	270	0.0	19,470	57,010	19,500
Limited-service eating places .....	7222	3,961,970	200	0.0	17,410	45,420	17,400
Animal food manufacturing .....	3111	49,170	D	D	34,880	62,070	D
Apparel knitting mills .....	3151	34,270	D	D	26,950	D	D
Motor vehicle manufacturing .....	3361	250,210	D	D	54,060	D	D
Sporting goods, hobby, and musical instrument stores .....	4511	475,420	D	D	23,600	42,710	D
Urban transit systems .....	4851	37,860	D	D	33,260	D	D
Interurban and rural bus transportation .....	4852	19,440	D	D	31,570	D	D
Charter bus industry .....	4855	32,060	D	D	27,010	D	D
Other pipeline transportation .....	4869	5,440	D	D	59,200	D	D
Scenic and sightseeing transportation, land .....	4871	9,690	D	D	27,090	D	D
Scenic and sightseeing transportation, other .....	4879	2,490	D	D	40,350	D	D
Nondepository credit intermediation .....	5222	784,090	D	D	50,500	70,100	D
Other investment pools and funds .....	5259	44,240	D	D	58,570	D	D
Offices of dentists .....	6212	783,380	D	D	51,710	40,090	D
Home health care services .....	6216	853,480	D	D	31,740	52,860	D
RV (recreational vehicle) parks and recreational camps .....	7212	43,640	D	D	24,590	41,130	D
Rooming and boarding houses .....	7213	11,160	D	D	22,360	D	D
Drinking places (alcoholic beverages) .....	7224	358,120	D	D	19,150	D	D

D = suppressed to avoid disclosure of confidential information

NAICS = North American Industry Classification System

NOTE: Industries ordered by S&amp;E share of total employment.

SOURCE: Bureau of Labor Statistics, Occupational Employment Statistics Survey, May 2006.



Appendix table 3-5

(Page 1 of 6)

**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2005**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Software publishers.....	5112	235,550	115,830	49.2	76,080	76,840	75,300
Computer systems design and related services.....	5415	1,181,910	567,700	48.0	70,230	72,490	68,100
Scientific research and development services.....	5417	570,450	234,870	41.2	68,330	77,560	61,900
Computer and peripheral equipment manufacturing.....	3341	205,090	81,090	39.5	73,280	87,140	64,200
Internet service providers and Web search portals.....	5181	115,990	43,320	37.3	60,380	65,030	57,600
Data processing, hosting, and related services.....	5182	265,260	79,860	30.1	55,200	68,360	49,500
Internet publishing and broadcasting.....	5161	30,540	8,960	29.3	62,460	68,200	60,100
Architectural, engineering, and related services.....	5413	1,290,340	374,660	29.0	57,920	71,740	52,300
Navigational, measuring, electromedical, and control instruments manufacturing.....	3345	432,620	118,350	27.4	58,030	79,040	50,100
Communications equipment manufacturing.....	3342	147,210	38,400	26.1	58,070	79,040	50,700
Aerospace product and parts manufacturing.....	3364	447,890	113,910	25.4	58,670	77,420	52,300
Semiconductor and other electronic component manufacturing.....	3344	449,870	93,770	20.8	51,720	80,720	44,100
Securities and commodity exchanges.....	5232	8,940	1,780	19.9	69,430	71,020	69,000
Pharmaceutical and medicine manufacturing.....	3254	287,050	56,990	19.9	52,930	72,150	48,200
Manufacturing and reproducing magnetic and optical media.....	3346	45,530	8,420	18.5	48,410	73,700	42,700
Management, scientific, and technical consulting services.....	5416	828,790	152,550	18.4	60,010	70,140	57,700
Oil and gas extraction.....	2111	122,360	21,230	17.4	63,100	95,570	56,300
Telecommunications resellers.....	5173	138,980	23,150	16.7	53,230	69,880	49,900
Wired telecommunications carriers.....	5171	516,600	86,010	16.6	55,450	71,910	52,200
Other telecommunications.....	5179	5,510	850	15.4	54,470	D	D
Audio and video equipment manufacturing.....	3343	32,520	4,990	15.3	44,070	75,240	38,400
Colleges, universities, and professional schools.....	6113	2,626,890	392,730	15.0	48,990	64,490	46,300
Professional and commercial equipment and supplies merchant wholesalers.....	4234	633,890	94,140	14.9	54,050	74,130	50,500
Monetary authorities – central bank.....	5211	20,470	3,020	14.8	51,940	70,120	48,800
Commercial and service industry machinery manufacturing.....	3333	111,760	16,160	14.5	47,260	72,370	43,000
Federal government.....	9991	1,799,620	247,350	13.7	62,030	80,070	59,200
Wireless telecommunications carriers (except satellite).....	5172	190,950	26,120	13.7	44,990	68,250	41,300
Junior colleges.....	6112	703,790	89,000	12.6	45,670	52,580	44,700
Satellite telecommunications.....	5174	16,210	1,950	12.0	54,300	72,510	51,800
Management of companies and enterprises.....	5511	1,739,370	204,200	11.7	56,430	68,680	54,800
Industrial machinery manufacturing.....	3332	122,310	13,850	11.3	47,180	69,740	44,300
Electric power generation, transmission, and distribution.....	2211	399,170	39,460	9.9	55,640	73,510	53,700
Electrical equipment manufacturing.....	3353	152,720	14,590	9.6	40,130	66,990	37,300
Basic chemical manufacturing.....	3251	152,540	14,340	9.4	50,510	70,170	48,500
Lessors of nonfinancial intangible assets (except copyrighted works).....	5331	26,140	2,340	9.0	56,580	66,810	55,600
Building equipment contractors.....	2382	110,800	9,880	8.9	46,340	65,310	44,500
Pipeline transportation of natural gas.....	4862	24,710	2,190	8.9	53,990	71,450	52,300
Business schools and computer and management training.....	6114	83,850	7,320	8.7	47,630	57,730	46,700
Cable and other subscription programming.....	5152	86,270	7,160	8.3	48,820	59,130	47,900
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing.....	3252	106,640	8,810	8.3	46,940	70,950	44,800
Other general purpose machinery manufacturing.....	3339	265,530	21,570	8.1	41,760	63,560	39,800
Electrical and electronic goods merchant wholesalers.....	4236	338,090	26,350	7.8	49,160	71,100	47,300
Insurance carriers.....	5241	1,259,920	97,490	7.7	50,770	64,880	49,600
Other chemical product and preparation manufacturing.....	3259	105,810	8,020	7.6	43,040	68,370	41,000
Pipeline transportation of crude oil.....	4861	7,180	540	7.5	60,820	78,690	59,400
Petroleum and coal products manufacturing.....	3241	112,500	8,440	7.5	51,200	78,290	49,000
Pesticide, fertilizer, and other agricultural chemical manufacturing.....	3253	41,330	3,090	7.5	44,080	76,130	41,500
State government.....	9992	2,250,070	165,610	7.4	42,410	55,210	41,400
Securities and commodity contracts intermediation and brokerage.....	5231	488,460	35,620	7.3	73,590	79,090	73,200
Engine, turbine, and power transmission equipment manufacturing.....	3336	95,810	6,670	7.0	41,610	65,650	39,800
Other financial investment activities.....	5239	283,890	19,490	6.9	73,370	75,570	73,200

Appendix table 3-5

(Page 2 of 6)

**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2005**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Paint, coating, and adhesive manufacturing .....	3255	68,130	4,620	6.8	42,690	64,700	41,100
Cable and other program distribution .....	5175	133,330	8,910	6.7	41,620	57,680	40,500
Other electrical equipment and component manufacturing.....	3359	136,810	9,060	6.6	39,790	68,090	37,800
Natural gas distribution.....	2212	107,600	7,120	6.6	53,260	73,960	51,800
Office administrative services .....	5611	343,210	22,620	6.6	50,950	69,030	49,700
Other pipeline transportation.....	4869	5,860	380	6.5	54,250	72,090	53,000
Other information services.....	5191	49,750	3,150	6.3	40,520	65,700	38,800
Other transportation equipment manufacturing .....	3369	38,920	2,460	6.3	39,130	67,310	37,200
Agriculture, construction, and mining machinery manufacturing .....	3331	201,940	12,670	6.3	39,070	64,850	37,300
Medical equipment and supplies manufacturing .....	3391	301,810	18,580	6.2	40,620	67,820	38,800
Railroad rolling stock manufacturing .....	3365	26,180	1,540	5.9	40,490	64,790	39,000
Other professional, scientific, and technical services.....	5419	523,940	30,530	5.8	35,420	49,530	34,500
Electronics and appliance stores.....	4431	538,960	30,850	5.7	33,370	56,040	32,000
Electronic and precision equipment repair and maintenance.....	8112	104,630	5,870	5.6	40,470	64,260	39,100
Motor vehicle parts manufacturing.....	3363	693,120	38,330	5.5	40,770	67,970	39,200
Other fabricated metal product manufacturing .....	3329	279,660	15,310	5.5	38,430	63,190	37,000
Educational support services .....	6117	90,080	4,830	5.4	41,620	56,800	40,800
Metal ore mining.....	2122	28,430	1,500	5.3	46,330	64,580	45,300
Facilities support services .....	5612	115,330	6,020	5.2	36,220	65,310	34,600
Waste treatment and disposal.....	5622	105,950	5,460	5.2	41,390	71,350	39,800
Household appliance manufacturing .....	3352	87,420	4,440	5.1	35,730	65,740	34,100
Ship and boat building .....	3366	153,170	7,560	4.9	37,450	61,530	36,200
Metalworking machinery manufacturing .....	3335	201,030	9,760	4.9	41,870	61,600	40,900
Newspaper, periodical, book, and directory publishers.....	5111	670,540	29,920	4.5	42,280	62,360	41,300
Nondepository credit intermediation.....	5222	760,030	33,540	4.4	48,140	67,370	47,300
Pulp, paper, and paperboard mills .....	3221	141,920	6,200	4.4	46,330	67,570	45,400
Soap, cleaning compound, and toilet preparation manufacturing .....	3256	114,140	4,980	4.4	38,700	63,920	37,500
Wholesale electronic markets and agents and brokers.....	4251	729,120	31,240	4.3	50,280	72,680	49,300
Ventilation, heating, air conditioning, and commercial refrigeration equipment .....	3334	152,550	6,390	4.2	35,760	62,400	34,600
Cutlery and handtool manufacturing .....	3322	56,370	2,350	4.2	36,770	67,820	35,400
Electric lighting equipment manufacturing .....	3351	62,290	2,570	4.1	36,640	68,830	35,300
Support activities for mining .....	2131	206,990	8,460	4.1	39,800	76,950	38,200
Remediation and other waste management services .....	5629	107,380	4,340	4.0	40,450	69,300	39,200
Nonferrous metal (except aluminum) production and processing .....	3314	72,410	2,770	3.8	40,410	62,860	39,500
Accounting, tax preparation, bookkeeping, and payroll services....	5412	800,290	29,980	3.7	49,770	67,000	49,100
Iron and steel mills and ferroalloy manufacturing .....	3311	94,510	3,510	3.7	42,880	68,200	41,900
Electronic shopping and mail order houses .....	4541	237,580	8,500	3.6	33,960	59,330	33,000
Advertising and related services.....	5418	441,170	15,680	3.6	50,740	60,590	50,400
Alumina and aluminum production and processing .....	3313	73,700	2,560	3.5	37,540	68,190	36,400
Grantmaking and giving services .....	8132	119,220	4,140	3.5	43,620	50,590	43,400
Social advocacy organizations .....	8133	167,270	5,800	3.5	35,330	52,950	34,700
Sound recording industries .....	5122	21,570	740	3.4	47,720	59,710	47,300
Activities related to credit intermediation .....	5223	323,920	11,020	3.4	44,770	60,700	44,200
Business, professional, labor, political, and similar organizations.....	8139	425,310	14,390	3.4	44,180	57,740	43,700
Specialized design services .....	5414	127,080	4,290	3.4	47,630	62,310	47,100
Business support services .....	5614	766,200	25,730	3.4	30,460	51,010	29,700
Medical and diagnostic laboratories.....	6215	194,460	6,150	3.2	43,460	61,800	42,900
Rubber product manufacturing .....	3262	169,950	5,360	3.2	36,480	63,580	35,600
Technical and trade schools.....	6115	129,000	4,050	3.1	41,540	50,570	41,200
Boiler, tank, and shipping container manufacturing .....	3324	91,060	2,840	3.1	38,070	60,660	37,300
Depository credit intermediation .....	5221	1,759,190	52,670	3.0	39,600	61,440	38,900
Other support services.....	5619	289,340	8,540	3.0	35,670	62,770	34,800
Chemical and allied products merchant wholesalers.....	4246	130,340	3,840	2.9	47,310	69,080	46,600
Hardware manufacturing .....	3325	36,340	1,060	2.9	34,320	59,520	33,600
Local government.....	9993	5,390,210	151,300	2.8	39,080	59,180	38,500
Other miscellaneous manufacturing.....	3399	351,090	9,780	2.8	35,070	61,680	34,300
Forging and stamping .....	3321	108,930	3,020	2.8	37,480	59,780	36,800

Appendix table 3-5

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2005**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Radio and television broadcasting.....	5151	239,150	6,550	2.7	47,710	60,920	47,300
Nonresidential building construction .....	2362	741,060	19,610	2.6	46,460	67,780	45,900
Other food manufacturing.....	3119	159,580	4,190	2.6	35,510	67,040	34,700
Psychiatric and substance abuse hospitals .....	6222	235,240	6,130	2.6	39,320	65,040	38,600
Glass and glass product manufacturing .....	3272	109,260	2,820	2.6	34,080	61,840	33,300
Foundries.....	3315	167,120	4,310	2.6	36,300	62,500	35,600
Machinery, equipment, and supplies merchant wholesalers .....	4238	654,720	16,880	2.6	43,130	67,200	42,500
Grain and oilseed milling.....	3112	60,780	1,520	2.5	36,730	60,270	36,100
Museums, historical sites, and similar institutions.....	7121	119,190	2,860	2.4	31,360	46,320	31,000
Offices of other health practitioners .....	6213	545,580	13,090	2.4	42,640	78,330	41,800
Agencies, brokerages, and other insurance-related activities .....	5242	870,010	20,580	2.4	46,480	60,180	46,100
Water, sewage, and other systems.....	2213	45,670	1,080	2.4	38,010	65,870	37,300
Deep sea, coastal, and Great Lakes water transportation .....	4831	36,420	860	2.4	46,970	78,290	46,200
Office furniture (including fixtures) manufacturing.....	3372	133,520	3,110	2.3	34,970	58,450	34,400
Plastics product manufacturing.....	3261	634,460	14,380	2.3	33,030	62,360	32,300
Employment services.....	5613	3,537,170	76,910	2.2	28,960	65,860	28,100
Specialty (except psychiatric and substance abuse) hospitals .....	6223	184,970	3,960	2.1	44,650	62,320	44,300
Motor vehicle body and trailer manufacturing .....	3362	168,840	3,540	2.1	33,270	61,040	32,700
Clay product and refractory manufacturing .....	3271	63,170	1,300	2.1	33,010	60,300	32,400
Steel product manufacturing from purchased steel .....	3312	59,770	1,180	2.0	37,060	62,660	36,500
Hardware, and plumbing and heating equipment and supplies merchant wholesale .....	4237	241,620	4,710	1.9	41,760	65,300	41,300
Travel arrangement and reservation services.....	5615	227,370	4,430	1.9	34,990	54,510	34,600
Machine shops; turned product; and screw, nut, and bolt manufacturing .....	3327	339,110	6,460	1.9	37,470	57,850	37,100
Outpatient care centers .....	6214	465,560	8,850	1.9	45,210	54,160	45,000
Architectural and structural metals manufacturing.....	3323	394,810	7,390	1.9	35,340	58,410	34,900
Land subdivision.....	2372	89,230	1,660	1.9	50,720	63,270	50,500
Spring and wire product manufacturing .....	3326	60,470	1,110	1.8	34,630	58,370	34,200
Motor vehicle and motor vehicle parts and supplies merchant wholesalers .....	4231	344,360	6,230	1.8	36,770	66,510	36,200
Community food and housing, and emergency and other relief services.....	6242	129,550	1,970	1.5	30,670	50,390	30,400
Coal mining .....	2121	72,340	1,070	1.5	42,310	68,330	41,900
Dairy product manufacturing .....	3115	131,590	1,910	1.5	34,210	53,420	33,900
Lime and gypsum product manufacturing .....	3274	19,350	280	1.4	36,190	60,670	35,800
Leather and hide tanning and finishing .....	3161	6,990	100	1.4	31,430	D	D
Coating, engraving, heat treating, and allied activities.....	3328	145,190	2,040	1.4	32,810	59,050	32,400
Support activities for air transportation .....	4881	144,100	1,990	1.4	35,470	65,420	35,100
Beverage manufacturing.....	3121	164,910	2,260	1.4	36,880	61,670	36,500
Commercial and industrial machinery and equipment rental and leasing.....	5324	107,370	1,470	1.4	41,250	68,900	40,900
Furniture and home furnishing merchant wholesalers .....	4232	112,960	1,540	1.4	42,020	58,200	41,800
Footwear manufacturing.....	3162	18,410	250	1.4	27,550	60,010	27,100
Miscellaneous nondurable goods merchant wholesalers.....	4249	365,110	4,930	1.4	34,500	60,410	34,100
Converted paper product manufacturing .....	3222	345,640	4,580	1.3	36,470	66,290	36,100
Offices of real estate agents and brokers.....	5312	346,320	4,530	1.3	41,290	52,200	41,100
Apparel, piece goods, and notions merchant wholesalers.....	4243	147,070	1,920	1.3	43,060	56,130	42,900
Fabric mills.....	3132	107,800	1,400	1.3	30,050	62,420	29,600
Animal food manufacturing.....	3111	48,540	630	1.3	33,730	60,430	33,400
Metal and mineral (except petroleum) merchant wholesalers.....	4235	122,300	1,580	1.3	42,510	67,590	42,200
Scheduled air transportation .....	4811	463,930	5,980	1.3	58,730	65,780	58,600
Motion picture and video industries .....	5121	365,320	4,700	1.3	39,260	64,110	38,900
Legal services.....	5411	1,164,070	14,640	1.3	62,220	58,260	62,300
Other nonmetallic mineral product manufacturing.....	3279	75,790	950	1.3	34,720	61,880	34,400
General medical and surgical hospitals .....	6221	4,826,410	59,770	1.2	44,080	58,120	43,900
Petroleum and petroleum products merchant wholesalers .....	4247	101,060	1,250	1.2	38,230	70,190	37,800
Other heavy and civil engineering construction .....	2379	104,590	1,280	1.2	40,180	69,110	39,800

Appendix table 3-5

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2005**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Other furniture-related product manufacturing.....	3379	52,310	640	1.2	31,420	59,780	31,100
Highway, street, and bridge construction.....	2373	356,910	4,270	1.2	41,010	66,490	40,700
Textile and fabric finishing and fabric coating mills .....	3133	65,200	780	1.2	31,090	61,090	30,700
Nonmetallic mineral mining and quarrying.....	2123	109,840	1,290	1.2	37,080	65,450	36,700
Sawmills and wood preservation .....	3211	119,940	1,360	1.1	29,370	52,330	29,100
Elementary and secondary schools.....	6111	8,244,670	91,020	1.1	39,400	53,060	39,200
Individual and family services.....	6241	902,420	9,910	1.1	28,170	51,440	27,900
Printing and related support activities .....	3231	652,360	7,030	1.1	36,580	53,940	36,400
Fruit and vegetable preserving and specialty food manufacturing .....	3114	171,010	1,770	1.0	30,290	55,820	30,000
Sugar and confectionery product manufacturing.....	3113	78,820	810	1.0	30,430	62,430	30,100
Freight transportation arrangement.....	4885	175,690	1,800	1.0	42,530	60,330	42,300
Commercial and industrial machinery and equipment (except automotive and electronic).....	8113	165,710	1,690	1.0	37,060	66,140	36,800
Veneer, plywood, and engineered wood product manufacturing....	3212	121,800	1,240	1.0	30,570	55,000	30,300
Utility system construction.....	2371	395,840	4,010	1.0	39,850	67,850	39,600
Activities related to real estate .....	5313	494,390	4,950	1.0	38,590	55,040	38,400
Other residential care facilities.....	6239	165,060	1,580	1.0	27,880	52,140	27,600
Rail transportation .....	4821	212,880	2,020	0.9	52,240	74,900	52,000
Support activities for animal production .....	1152	26,610	250	0.9	27,030	60,140	26,700
Inland water transportation .....	4832	21,500	200	0.9	43,940	70,240	43,700
Other wood product manufacturing.....	3219	315,940	2,900	0.9	30,010	55,130	29,800
Independent artists, writers, and performers.....	7115	43,590	400	0.9	45,270	55,930	45,200
Paper and paper product merchant wholesalers .....	4241	152,910	1,340	0.9	42,890	56,410	42,800
Other textile product mills.....	3149	75,000	650	0.9	27,930	53,100	27,700
Offices of physicians.....	6211	2,079,650	16,680	0.8	55,920	66,300	55,800
Farm product raw material merchant wholesalers.....	4245	74,630	590	0.8	29,610	54,470	29,400
Couriers.....	4921	518,990	4,080	0.8	35,160	61,030	35,000
Warehousing and storage .....	4931	582,250	4,560	0.8	31,550	57,870	31,300
Agents and managers for artists, athletes, entertainers, and other public figures.....	7114	15,510	120	0.8	54,560	51,180	54,600
Household and institutional furniture and kitchen cabinet manufacturing .....	3371	382,120	2,840	0.7	29,760	51,540	29,600
Beer, wine, and distilled alcoholic beverage merchant wholesalers .....	4248	144,500	1,060	0.7	43,070	55,290	43,000
Support activities for water transportation.....	4883	97,060	700	0.7	46,890	66,530	46,700
Cement and concrete product manufacturing.....	3273	239,790	1,670	0.7	35,220	57,370	35,100
Textile furnishings mills .....	3141	97,890	650	0.7	27,530	55,700	27,300
Nonscheduled air transportation .....	4812	43,730	290	0.7	51,690	67,730	51,600
Other schools and instruction.....	6116	259,150	1,710	0.7	34,870	49,550	34,800
Vocational rehabilitation services .....	6243	307,110	2,010	0.7	27,210	46,820	27,100
Apparel knitting mills .....	3151	38,950	250	0.6	25,860	60,800	25,600
Amusement parks and arcades.....	7131	148,650	920	0.6	23,300	49,610	23,100
Lumber and other construction materials merchant wholesalers ....	4233	251,200	1,540	0.6	39,270	57,410	39,200
Office supplies, stationery, and gift stores .....	4532	402,330	2,390	0.6	24,420	53,740	24,200
Logging .....	1133	65,050	380	0.6	31,210	50,220	31,100
Civic and social organizations .....	8134	409,140	2,340	0.6	24,490	45,690	24,400
Grocery and related product wholesalers .....	4244	696,070	3,920	0.6	36,210	55,050	36,100
Residential mental retardation, mental health and substance abuse facilities .....	6232	495,620	2,750	0.6	26,140	50,850	26,000
Lessors of real estate.....	5311	597,130	3,260	0.5	32,720	57,110	32,600
Automotive equipment rental and leasing .....	5321	196,590	980	0.5	29,420	69,130	29,200
Postal service .....	4911	799,570	3,870	0.5	45,470	68,490	45,400
Other personal services .....	8129	218,960	1,020	0.5	25,240	52,410	25,100
Support activities for rail transportation.....	4882	21,490	100	0.5	34,110	60,830	34,000
Other support activities for transportation .....	4889	30,210	140	0.5	29,580	56,200	29,500
Other leather and allied product manufacturing .....	3169	15,180	70	0.5	26,360	55,090	26,200
Apparel accessories and other apparel manufacturing .....	3159	21,710	100	0.5	27,080	48,210	27,000

Appendix table 3-5

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**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2005**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Residential building construction .....	2361	940,390	4,280	0.5	41,230	65,070	41,100
Building material and supplies dealers.....	4441	1,123,630	4,910	0.4	28,760	42,580	28,700
Gambling industries.....	7132	141,580	590	0.4	23,550	46,070	23,500
Cut and sew apparel manufacturing.....	3152	208,410	860	0.4	26,920	55,630	26,800
Direct selling establishments .....	4543	145,960	550	0.4	33,560	52,780	33,500
Local messengers and local delivery.....	4922	46,100	170	0.4	28,920	56,700	28,800
Animal slaughtering and processing .....	3116	505,990	1,720	0.3	24,850	50,900	24,800
Seafood product preparation and packaging .....	3117	39,150	130	0.3	26,890	57,700	26,800
General freight trucking .....	4841	973,260	3,110	0.3	37,180	57,810	37,100
General rental centers.....	5323	62,360	180	0.3	33,190	65,100	33,100
Other miscellaneous store retailers .....	4539	299,840	830	0.3	25,860	40,610	25,800
Bakeries and tortilla manufacturing .....	3118	283,500	780	0.3	28,010	62,150	27,900
Used merchandise stores.....	4533	113,680	300	0.3	21,450	50,290	21,400
Furniture stores .....	4421	298,260	750	0.3	31,060	48,980	31,000
Other specialty trade contractors .....	2389	668,040	1,590	0.2	37,250	D	D
Waste collection .....	5621	122,090	270	0.2	34,580	56,920	34,500
Book, periodical, and music stores.....	4512	205,740	450	0.2	21,310	46,630	21,300
Support activities for road transportation .....	4884	78,250	170	0.2	30,560	62,930	30,500
Automotive parts, accessories, and tire stores.....	4413	488,720	940	0.2	28,410	53,170	28,400
Community care facilities for the elderly .....	6233	602,640	1,040	0.2	24,710	48,180	24,700
Support activities for crop production.....	1151	277,650	470	0.2	19,990	49,730	19,900
Consumer goods rental.....	5322	278,300	440	0.2	24,490	53,170	24,400
Other motor vehicle dealers .....	4412	166,820	250	0.1	35,080	50,790	35,100
Specialized freight trucking.....	4842	414,080	570	0.1	34,290	52,230	34,300
Traveler accommodation.....	7211	1,735,460	2,300	0.1	23,140	47,610	23,100
Sporting goods, hobby, and musical instrument stores.....	4511	454,740	570	0.1	22,910	42,030	22,900
Foundation, structure, and building exterior contractors.....	2381	1,068,960	1,280	0.1	37,750	71,250	37,700
RV (recreational vehicle) parks and recreational camps.....	7212	42,410	50	0.1	24,160	41,790	24,100
Child day care services.....	6244	743,600	830	0.1	21,390	39,510	21,400
Health and personal care stores.....	4461	947,950	1,030	0.1	32,270	55,000	32,200
Other amusement and recreation industries.....	7139	1,049,180	1,080	0.1	25,010	47,130	25,000
Nursing care facilities .....	6231	1,576,680	1,610	0.1	28,400	49,790	28,400
Automobile dealers .....	4411	1,257,910	1,250	0.1	41,770	49,660	41,800
Other transit and ground passenger transportation .....	4859	60,820	60	0.1	25,160	46,060	25,100
Vending machine operators .....	4542	52,190	50	0.1	28,120	40,970	28,100
Lawn and garden equipment and supplies stores.....	4442	155,560	120	0.1	25,900	50,100	25,900
Florists .....	4531	106,720	80	0.1	21,570	33,790	21,600
Shoe stores .....	4482	177,720	120	0.1	22,250	49,540	22,200
Beer, wine, and liquor stores.....	4453	137,200	90	0.1	24,250	53,710	24,200
Taxi and limousine service.....	4853	67,300	40	0.1	26,420	62,740	26,400
Death care services.....	8122	136,350	80	0.1	32,750	42,420	32,700
Automotive repair and maintenance.....	8111	885,800	490	0.1	30,550	48,140	30,500
Grocery stores .....	4451	2,441,990	1,210	0.0	22,440	38,830	22,400
Building finishing contractors.....	2383	963,920	470	0.0	38,190	51,840	38,200
Gasoline stations .....	4471	871,700	350	0.0	19,210	D	D
Drycleaning and laundry services .....	8123	350,510	130	0.0	22,370	58,110	22,400
Offices of dentists.....	6212	768,790	260	0.0	50,110	D	D
Special food services.....	7223	544,080	180	0.0	22,690	61,340	22,700
Personal care services.....	8121	572,110	150	0.0	24,340	58,800	24,300
Full-service restaurants .....	7221	4,278,520	270	0.0	18,830	54,530	18,800
Limited-service eating places .....	7222	3,867,210	110	0.0	17,030	47,910	17,000
Tobacco manufacturing.....	3122	26,100	D	D	46,100	D	D
Fiber, yarn, and thread mills.....	3131	51,390	D	D	27,560	D	D
Insurance and employee benefit funds.....	5251	47,810	D	D	51,970	69,880	D
Other investment pools and funds.....	5259	40,700	D	D	58,170	D	D
Investigation and security services.....	5616	735,250	D	D	24,840	D	D
Services to buildings and dwellings .....	5617	1,752,950	D	D	24,060	D	D
Home health care services.....	6216	806,460	D	D	30,570	48,600	D



Appendix table 3-5

(Page 6 of 6)

**Employment and earnings in S&E occupations and non-S&E occupations, by 4-digit NAICS industry classification: May 2005**

Industry	NAICS code	Workers employed (number)		S&E workers as percent of all employed	Mean earnings (\$)		
		All occupations	S&E occupations		All occupations	S&E occupations	Non-S&E occupations
Other ambulatory health care services.....	6219	204,120	D	D	33,410	63,660	D
Performing arts companies.....	7111	119,310	D	D	41,440	45,710	D
Spectator sports.....	7112	128,070	D	D	34,710	59,240	D
Promoters of performing arts, sports, and similar events.....	7113	78,650	D	D	31,770	53,940	D
Motor vehicle manufacturing.....	3361	256,700	D	D	51,400	D	D
Miscellaneous durable goods merchant wholesalers.....	4239	278,950	D	D	36,950	61,350	D
Drugs and druggists' sundries merchant wholesalers.....	4242	217,120	D	D	51,610	69,670	D
Home furnishings stores.....	4422	281,160	D	D	29,920	48,750	D
Specialty food stores.....	4452	242,670	D	D	24,340	D	D
Clothing stores.....	4481	1,072,060	D	D	22,620	D	D
Jewelry, luggage, and leather goods stores.....	4483	171,690	D	D	29,460	D	D
Department stores.....	4521	1,636,890	D	D	21,680	D	D
Other general merchandise stores.....	4529	1,339,790	D	D	21,770	D	D
Urban transit systems.....	4851	35,900	D	D	34,430	D	D
Interurban and rural bus transportation.....	4852	20,320	D	D	31,140	D	D
School and employee bus transportation.....	4854	188,820	D	D	26,180	D	D
Charter bus industry.....	4855	33,230	D	D	26,540	D	D
Scenic and sightseeing transportation, land.....	4871	9,250	D	D	26,740	D	D
Scenic and sightseeing transportation, water.....	4872	15,950	D	D	29,740	84,070	D
Scenic and sightseeing transportation, other.....	4879	2,320	D	D	41,520	D	D
Rooming and boarding houses.....	7213	11,560	D	D	21,880	D	D
Drinking places (alcoholic beverages).....	7224	363,330	D	D	18,530	D	D
Personal and household goods repair and maintenance.....	8114	77,490	D	D	30,640	49,960	D
Religious organizations.....	8131	178,620	D	D	31,000	48,570	D

D = suppressed to avoid disclosure of confidential information

NAICS = North American Industry Classification System

NOTE: Industries ordered by S&amp;E share of total employment.

SOURCE: Bureau of Labor Statistics, Occupational Employment Statistics Survey, May 2005.

Appendix table 3-6

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**Employment and earnings in S&E occupations and non-S&E occupations, by metropolitan area: May 2006**

Metropolitan area	Employment			Annual earnings (\$)					
	All employed (n)	in S&E occupations	Percent S&E occupations	Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
All areas .....	132,604,980	5,407,710	4.1	71,150	37,070	49,840	67,780	89,160	112,140
Abilene, TX .....	62,670	880	1.4	53,310	28,710	36,840	49,090	66,480	86,100
Aguaadilla-Isabela-San Sebastian, PR .....	41,300	460	1.1	51,340	26,330	36,610	50,560	63,730	76,920
Akron, OH .....	330,760	13,300	4.0	65,370	38,040	50,090	63,000	79,370	96,670
Albany, GA .....	63,480	2,050	3.2	39,150	17,940	24,680	30,260	52,870	73,690
Albany-Schenectady-Troy, NY .....	432,960	21,970	5.1	68,110	38,820	50,010	65,560	82,650	102,570
Albuquerque, NM .....	378,540	17,700	4.7	74,050	37,210	50,380	69,700	94,060	118,640
Alexandria, LA .....	62,290	880	1.4	57,170	32,640	42,630	56,320	70,620	82,590
Allentown-Bethlehem-Easton, PA-NJ .....	331,810	10,710	3.2	73,900	35,420	49,800	69,270	94,630	120,600
Alltoona, PA .....	61,070	1,430	2.3	54,190	29,810	36,470	51,300	66,480	81,540
Amarillo, TX .....	106,470	2,720	2.6	63,800	31,140	42,880	59,030	80,820	102,070
Ames, IA .....	40,860	3,440	8.4	73,870	37,330	49,360	67,270	91,540	123,120
Anchorage, AK .....	163,660	6,280	3.8	71,590	41,510	52,710	70,830	89,170	104,730
Anderson, IN .....	41,190	660	1.6	59,880	33,590	42,950	58,510	73,870	89,110
Anderson, SC .....	59,260	840	1.4	57,770	32,520	43,140	56,950	71,110	83,410
Ann Arbor, MI .....	197,810	14,950	7.6	69,370	37,610	48,430	66,350	86,360	105,050
Anniston-Oxford, AL .....	49,910	1,260	2.5	60,660	33,540	44,190	59,140	74,650	90,190
Appleton, WI .....	115,540	3,110	2.7	62,300	37,290	48,070	60,960	75,110	91,010
Asheville, NC .....	167,700	3,630	2.2	52,580	23,230	36,710	51,240	65,710	80,950
Athens-Clarke County, GA .....	77,590	D	D	61,240	30,180	40,000	56,310	76,110	96,370
Atlanta-Sandy Springs-Marietta, GA .....	2,338,380	100,560	4.3	68,110	35,800	48,900	66,100	85,500	103,020
Atlantic City, NJ .....	148,270	3,280	2.2	74,890	40,470	52,610	72,900	95,320	116,950
Auburn-Opelika, AL .....	47,630	D	D	D	D	D	D	D	D
Augusta-Richmond County, GA-SC .....	209,870	5,690	2.7	68,230	35,770	49,720	67,590	86,440	102,370
Austin-Round Rock, TX .....	711,080	56,100	7.9	71,660	35,110	46,660	67,270	91,480	117,430
Bakersfield, CA .....	260,230	8,010	3.1	79,970	40,800	59,180	80,580	98,760	120,820
Baltimore-Towson, MD .....	1,273,460	67,930	5.3	75,150	40,110	53,110	72,200	93,680	117,920
Bangor, ME .....	64,970	1,860	2.9	59,040	32,990	42,290	55,740	74,310	89,680
Barnstable Town, MA .....	99,140	2,760	2.8	71,980	39,380	51,050	68,430	87,370	110,170
Baton Rouge, LA .....	355,830	12,090	3.4	58,320	31,820	40,860	54,760	72,760	92,450
Battle Creek, MI .....	57,750	1,560	2.7	66,150	39,180	49,500	64,590	80,930	95,890
Bay City, MI .....	37,350	1,100	2.9	71,790	33,510	52,050	69,870	91,880	112,740
Beaumont-Port Arthur, TX .....	154,910	4,210	2.7	71,280	34,420	47,830	69,820	92,340	113,180
Bellingham, WA .....	77,430	2,180	2.8	61,410	36,150	44,940	57,840	74,990	93,160
Bend, OR .....	65,610	1,440	2.2	56,790	29,260	41,350	56,130	72,320	87,130
Billings, MT .....	79,930	2,450	3.1	56,210	28,590	35,740	50,140	69,240	93,680
Binghamton, NY .....	111,320	5,850	5.3	67,680	35,940	48,660	64,740	83,300	105,100
Birmingham-Hoover, AL .....	503,930	16,780	3.3	63,420	34,500	45,130	61,000	78,310	94,970
Bismarck, ND .....	57,330	1,980	3.5	52,750	26,730	39,370	51,310	64,160	79,990
Blacksburg-Christiansburg-Radford, VA .....	65,050	3,560	5.5	68,990	37,200	48,150	65,070	86,090	108,340
Bloomington, IN .....	73,930	2,440	3.3	61,860	34,030	42,610	56,350	72,900	99,580
Bloomington-Normal, IL .....	83,710	5,220	6.2	65,010	30,020	39,810	58,370	79,200	110,850
Boise City-Nampa, ID .....	268,600	13,470	5.0	63,600	32,410	44,340	62,410	80,420	98,420
Boston-Cambridge-Quincy, MA-NH .....	2,429,420	180,110	7.4	81,820	45,860	60,350	78,770	100,000	122,350
Boulder, CO .....	157,680	22,520	14.3	81,610	43,430	57,790	77,900	101,520	125,510
Bowling Green, KY .....	55,400	1,310	2.4	56,570	31,220	41,660	54,880	70,300	86,360
Bremerton-Silverdale, WA .....	82,380	4,220	5.1	69,410	41,270	54,820	70,630	86,500	97,730
Bridgeport-Stamford-Norwalk, CT .....	423,840	20,410	4.8	78,970	46,110	59,450	75,330	94,690	117,670
Brownsville-Harlingen, TX .....	117,680	1,200	1.0	52,530	26,570	34,450	50,150	67,060	81,630
Brunswick, GA .....	41,930	550	1.3	61,990	37,830	46,520	58,180	76,090	94,150
Buffalo-Niagara Falls, NY .....	534,940	15,360	2.9	61,550	32,120	44,170	59,450	76,320	94,990
Burlington, NC .....	58,010	1,280	2.2	58,860	34,210	43,660	57,390	72,640	87,510
Burlington-South Burlington, VT .....	112,130	7,200	6.4	69,230	37,840	48,310	64,150	87,610	111,130
Canton-Massillon, OH .....	171,570	3,760	2.2	61,400	34,360	46,980	59,400	74,810	92,470
Cape Coral-Fort Myers, FL .....	221,190	3,720	1.7	68,770	32,700	40,750	55,890	78,100	126,420
Carson City, NV .....	32,000	1,260	3.9	59,540	36,020	47,190	58,410	71,560	84,500
Casper, WY .....	38,570	1,120	2.9	63,810	32,610	41,440	54,710	73,960	132,670

Appendix table 3-6

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**Employment and earnings in S&E occupations and non-S&E occupations, by metropolitan area: May 2006**

Metropolitan area	All employed (n)	Employment in S&E occupations	Percent S&E occupations	Annual earnings (\$)					
				Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Cedar Rapids, IA.....	133,050	7,630	5.7	64,390	37,240	48,000	63,160	78,950	94,990
Champaign-Urbana, IL.....	99,230	5,130	5.2	68,960	33,300	45,010	62,160	86,490	114,660
Charleston, WV.....	142,370	3,900	2.7	51,040	26,830	34,010	46,660	65,410	82,590
Charleston-North Charleston, SC.....	277,960	9,300	3.3	61,990	35,840	46,170	59,840	76,100	93,040
Charlotte-Gastonia-Concord, NC-SC.....	814,920	30,400	3.7	65,770	36,020	47,060	62,090	81,720	101,370
Charlottesville, VA.....	94,140	6,320	6.7	65,120	33,560	44,130	59,520	81,400	103,260
Chattanooga, TN-GA.....	233,400	4,550	1.9	55,860	29,840	38,690	51,720	70,730	89,540
Cheyenne, WY.....	41,180	1,730	4.2	51,280	32,990	39,700	49,400	60,600	74,400
Chicago-Naperville-Joilet, IL-IN-WI.....	4,413,800	179,560	4.1	71,130	36,770	50,580	68,080	88,730	111,210
Chico, CA.....	75,720	1,320	1.7	60,590	32,830	41,950	58,200	74,610	93,730
Cincinnati-Middletown, OH-KY-IN.....	1,023,340	41,150	4.0	66,840	37,040	49,280	65,100	82,520	100,220
Clarksville, TN-KY.....	77,870	1,390	1.8	53,510	30,660	41,120	53,540	65,390	75,690
Cleveland, TN.....	39,130	590	1.5	57,260	29,930	39,020	50,700	69,200	88,060
Cleveland-Elyria-Mentor, OH.....	1,063,460	38,060	3.6	65,860	36,830	48,500	63,990	81,600	97,410
Coeur d'Alene, ID.....	54,490	1,080	2.0	62,030	31,270	38,830	55,720	76,250	100,930
College Station-Bryan, TX.....	88,910	5,650	6.4	60,540	29,120	36,600	47,990	73,570	110,710
Colorado Springs, CO.....	251,920	17,610	7.0	73,530	42,220	54,640	70,800	88,720	110,040
Columbia, MO.....	84,190	3,190	3.8	57,650	31,140	40,210	54,240	71,000	90,000
Columbia, SC.....	340,400	11,530	3.4	58,470	32,320	41,750	56,020	73,340	90,540
Columbus, GA-AL.....	116,910	D	D	D	D	D	D	D	D
Columbus, IN.....	42,170	1,910	4.5	66,830	36,620	49,420	63,430	83,460	98,460
Columbus, OH.....	911,480	42,220	4.6	67,460	37,530	49,150	65,840	83,500	101,190
Corpus Christi, TX.....	170,810	3,740	2.2	63,790	28,730	40,850	59,040	82,000	104,520
Corvallis, OR.....	38,950	4,150	10.7	63,650	35,500	43,580	59,230	79,340	102,140
Cumberland, MD-WV.....	39,360	790	2.0	58,850	27,390	39,530	56,670	74,840	93,160
Dallas-Fort Worth-Arlington, TX.....	2,808,880	140,140	5.0	37,190	50,730	70,840	92,220	112,710	45,020
Dalton, GA.....	76,710	1,690	2.2	59,160	33,780	43,460	59,550	72,920	87,590
Danbury, CT.....	69,400	2,390	3.4	69,330	42,910	53,380	66,830	83,200	100,800
Danville, IL.....	29,500	430	1.5	52,810	31,600	39,860	48,010	62,420	81,890
Danville, VA.....	42,330	700	1.7	56,690	31,610	37,420	49,060	68,020	93,360
Davenport-Moline-Rock Island, IA-IL.....	187,040	5,220	2.8	62,490	32,840	43,740	61,190	78,040	95,120
Dayton, OH.....	400,250	20,700	5.2	70,480	37,520	52,000	70,150	88,990	104,480
Decatur, AL.....	55,750	820	1.5	64,960	31,710	45,170	62,350	82,440	101,510
Decatur, IL.....	54,910	1,190	2.2	57,560	28,410	43,390	55,980	71,890	88,630
Deltona-Daytona Beach-Ormond Beach, FL.....	167,650	3,050	1.8	55,830	30,390	39,020	50,440	69,920	88,640
Denver-Aurora, CO.....	1,203,200	75,690	6.3	72,900	40,230	53,420	71,220	90,290	110,450
Des Moines-West Des Moines, IA.....	312,980	12,290	3.9	61,810	36,350	46,050	59,990	75,410	91,730
Detroit-Warren-Livonia, MI.....	1,993,350	128,430	6.4	74,330	43,550	56,960	73,730	91,030	107,730
Dothan, AL.....	62,950	740	1.2	56,390	27,320	37,930	55,850	72,510	87,850
Dover, DE.....	57,810	1,830	3.2	65,430	36,620	48,920	63,180	80,380	99,280
Dubuque, IA.....	53,210	1,070	2.0	51,260	31,510	38,480	49,360	61,530	74,170
Duluth, MN-WI.....	125,200	3,180	2.5	58,020	35,060	43,950	55,540	68,730	83,240
Durham, NC.....	260,450	27,770	10.7	79,630	41,880	55,470	75,880	99,360	124,220
Eau Claire, WI.....	77,140	3,080	4.0	63,090	38,090	46,260	58,400	74,790	92,720
El Centro, CA.....	50,270	620	1.2	62,210	32,120	42,310	59,220	77,940	100,430
El Paso, TX.....	258,140	6,530	2.5	59,490	30,820	39,780	56,090	74,100	93,660
Elizabethtown, KY.....	45,300	1,010	2.2	59,110	33,860	46,060	58,680	72,500	85,600
Elkhart-Goshen, IN.....	130,280	2,070	1.6	56,420	31,740	40,960	53,450	68,430	84,810
Elmira, NY.....	38,550	680	1.8	60,920	38,400	48,110	56,210	70,900	91,040
Erie, PA.....	129,480	3,600	2.8	59,300	31,680	41,010	56,300	74,560	93,070
Eugene-Springfield, OR.....	147,930	4,110	2.8	58,530	31,340	44,470	55,970	70,900	89,050
Evansville, IN-KY.....	175,270	3,680	2.1	58,170	31,200	40,660	55,610	72,590	89,970
Fairbanks, AK.....	37,040	1,460	3.9	66,400	40,250	49,520	64,500	80,680	98,940
Fajardo, PR.....	12,520	180	1.4	49,150	22,180	30,440	47,350	63,730	82,720
Fargo, ND-MN.....	112,080	4,400	3.9	54,900	31,590	39,850	50,900	66,640	84,140
Farmington, NM.....	49,970	1,030	2.1	55,400	28,550	38,910	53,730	69,780	85,390
Fayetteville, NC.....	122,190	2,640	2.2	60,160	35,720	45,700	58,010	73,210	88,220



Appendix table 3-6

**Employment and earnings in S&E occupations and non-S&E occupations, by metropolitan area: May 2006**

Metropolitan area	All employed (n)	Employment		Annual earnings (\$)					
		in S&E occupations	Percent S&E occupations	Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Fayetteville-Springdale-Rogers, AR-MO .....	196,850	6,820	3.0	57,010	29,770	39,070	54,640	72,950	90,500
Flagstaff, AZ .....	58,040	2,030	3.5	56,570	30,170	40,340	53,070	68,290	89,350
Flint, MI .....	151,780	3,810	2.5	65,060	35,170	50,470	64,560	80,170	93,980
Florence, SC .....	84,180	1,650	2.0	60,990	30,530	42,500	58,430	77,180	95,500
Florence-Muscle Shoals, AL .....	51,910	530	1.0	50,050	27,010	34,710	46,390	61,880	78,800
Fond du Lac, WI .....	44,890	1,060	2.4	61,410	39,450	49,490	61,090	72,880	86,350
Fort Collins-Loveland, CO .....	125,710	7,670	6.1	71,250	37,170	50,700	68,750	90,110	112,010
Fort Smith, AR-OK .....	119,460	1,460	1.2	53,930	29,530	38,820	49,880	65,410	81,350
Fort Walton Beach-Crestview-Destin, FL .....	86,390	5,970	6.9	69,920	38,070	51,780	69,750	88,240	102,920
Fort Wayne, IN .....	210,470	7,250	3.4	63,730	34,810	46,640	60,220	77,810	99,400
Fresno, CA .....	327,480	6,290	1.9	65,420	35,910	48,320	62,910	79,750	99,990
Gadsden, AL .....	36,220	390	1.1	52,410	26,150	35,280	50,010	68,110	82,090
Gainesville, FL .....	118,330	5,880	5.0	63,510	33,310	41,050	56,480	78,580	103,340
Gainesville, GA .....	69,690	1,530	2.2	55,710	34,690	42,560	53,770	66,830	80,650
Glens Falls, NY .....	52,330	1,030	2.0	56,050	32,440	41,390	54,040	67,320	81,940
Goldsboro, NC .....	43,190	490	1.1	61,870	33,840	43,620	55,960	70,870	90,510
Grand Forks, ND-MN .....	50,060	1,280	2.6	57,780	33,910	43,620	56,010	70,020	83,280
Grand Junction, CO .....	55,900	1,180	2.1	64,750	35,560	46,730	58,250	75,860	102,850
Grand Rapids-Wyoming, MI .....	389,970	12,430	3.2	63,370	33,580	45,240	60,180	76,950	94,390
Great Falls, MT .....	34,020	610	1.8	49,090	25,640	33,080	47,770	59,420	74,290
Greeley, CO .....	76,250	2,530	3.3	64,700	32,710	45,080	58,910	77,350	104,250
Green Bay, WI .....	165,890	4,130	2.5	60,480	35,830	45,410	58,750	73,640	89,780
Greensboro-High Point, NC .....	361,730	9,290	2.6	63,300	35,210	45,560	60,320	78,220	95,720
Greenville, NC .....	71,470	1,850	2.6	58,700	35,070	43,310	54,730	69,700	87,940
Greenville, SC .....	293,750	11,680	4.0	65,360	35,420	47,630	63,070	81,620	98,000
Guayama, PR .....	13,490	440	3.3	52,130	32,880	38,240	49,960	63,380	78,040
Gulfport-Biloxi, MS .....	93,660	3,250	3.5	65,020	35,190	46,480	63,420	81,510	98,130
Hagerstown-Martinsburg, MD-WV .....	100,240	2,200	2.2	63,630	32,010	44,440	63,080	82,540	96,550
Hanford-Corcoran, CA .....	37,260	320	0.9	62,940	34,630	47,870	65,120	76,000	88,350
Harrisburg-Carlisle, PA .....	311,880	14,740	4.7	62,980	35,940	47,400	61,740	76,940	93,060
Harrisonburg, VA .....	57,890	1,650	2.9	59,450	32,750	43,190	55,290	72,660	92,510
Hartford-West Hartford-East Hartford, CT .....	554,690	32,440	5.8	71,030	43,730	55,380	69,500	85,120	101,630
Hattiesburg, MS .....	56,740	890	1.6	53,160	25,790	34,940	52,120	68,080	86,090
Hickory-Lenoir-Morgantown, NC .....	161,980	2,390	1.5	53,820	30,780	39,940	51,400	64,900	80,610
Hinesville-Fort Stewart, GA .....	15,120	340	2.2	60,490	34,850	47,470	58,860	72,210	90,170
Holland-Grand Haven, MI .....	111,220	5,080	4.6	63,590	39,570	50,780	62,470	76,850	91,760
Honolulu, HI .....	427,810	16,640	3.9	68,110	37,640	48,900	65,900	84,320	101,370
Hot Springs, AR .....	36,250	410	1.1	51,310	28,640	38,660	48,880	61,240	77,030
Houma-Bayou Cane-Thibodaux, LA .....	86,330	850	1.0	60,610	32,940	43,130	56,250	75,370	94,650
Houston-Sugar Land-Baytown, TX .....	2,378,080	117,310	4.9	78,960	38,160	52,750	73,950	98,540	127,390
Huntington-Ashland, WV-KY-OH .....	111,740	1,970	1.8	57,710	29,430	37,560	55,980	73,030	91,710
Huntsville, AL .....	196,350	24,030	12.2	77,940	42,240	58,150	79,360	96,570	115,740
Idaho Falls, ID .....	50,130	1,830	3.7	61,060	29,530	39,000	57,830	80,400	99,560
Indianapolis-Carmel, IN .....	876,030	32,770	3.7	65,720	34,990	46,990	62,430	80,900	103,350
Iowa City, IA .....	76,270	D	D	D	D	D	D	D	D
Ithaca, NY .....	49,370	D	D	D	D	D	D	D	D
Jackson, MI .....	59,150	2,040	3.4	69,020	42,870	53,270	65,870	83,640	98,310
Jackson, MS .....	247,700	6,450	2.6	53,210	30,730	39,270	51,300	64,560	78,530
Jackson, TN .....	58,430	920	1.6	55,700	29,960	39,020	51,910	68,330	86,390
Jacksonville, FL .....	599,380	18,620	3.1	64,880	34,770	45,000	61,550	80,100	99,040
Jacksonville, NC .....	40,290	600	1.5	51,050	30,090	39,750	48,910	62,290	75,090
Janesville, WI .....	68,080	1,530	2.2	59,880	32,950	44,710	59,180	73,660	89,930
Jefferson City, MO .....	71,740	2,830	3.9	52,530	32,960	39,260	47,790	60,770	80,340
Johnson City, TN .....	75,590	1,320	1.7	53,350	28,220	36,160	50,140	66,310	82,580
Johnstown, PA .....	57,980	1,680	2.9	54,570	25,340	35,130	50,350	70,810	89,910
Jonesboro, AR .....	48,570	700	1.4	50,800	22,850	30,430	45,420	62,460	90,120
Joplin, MO .....	77,760	1,140	1.5	53,820	29,810	38,240	49,090	61,280	81,980

Appendix table 3-6

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**Employment and earnings in S&E occupations and non-S&E occupations, by metropolitan area: May 2006**

Metropolitan area	All employed (n)	Employment		Annual earnings (\$)					
		in S&E occupations	Percent S&E occupations	Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Kalamazoo-Portage, MI.....	140,760	5,490	3.9	63,070	35,880	46,280	59,360	77,260	96,760
Kankakee-Bradley, IL.....	42,900	600	1.4	54,820	25,270	41,370	54,660	69,480	83,010
Kansas City, MO-KS.....	976,360	46,320	4.7	65,190	37,420	48,440	63,220	80,910	96,830
Kennewick-Richland-Pasco, WA.....	84,340	7,880	9.3	79,240	48,610	61,790	79,680	95,370	114,130
Killeen-Temple-Fort Hood, TX.....	113,000	2,970	2.6	59,650	27,820	39,010	56,210	75,100	96,680
Kingsport-Bristol-Bristol, TN-VA.....	117,890	2,500	2.1	52,010	28,640	37,870	51,130	62,980	76,800
Kingston, NY.....	60,730	1,620	2.7	74,970	40,060	51,410	69,790	94,600	118,240
Knoxville, TN.....	322,310	9,620	3.0	63,150	32,870	43,530	60,070	78,410	97,050
Kokomo, IN.....	45,910	1,120	2.4	66,460	36,450	51,420	66,090	81,940	96,120
La Crosse, WI-MN.....	72,630	2,410	3.3	58,840	35,630	44,990	56,280	71,550	88,450
Lafayette, IN.....	83,910	4,010	4.8	73,200	37,600	50,210	71,320	94,120	113,770
Lafayette, LA.....	139,550	2,890	2.1	61,760	30,490	39,340	52,240	72,830	121,750
Lake Charles, LA.....	86,360	1,460	1.7	63,970	30,260	41,780	62,860	83,780	102,760
Lakeland, FL.....	215,810	4,310	2.0	59,100	32,540	41,550	54,990	73,180	92,830
Lancaster, PA.....	228,550	4,990	2.2	60,790	31,440	42,060	56,580	74,570	96,100
Lansing-East Lansing, MI.....	209,900	9,730	4.6	66,240	39,070	50,990	63,660	78,530	95,310
Laredo, TX.....	82,410	1,120	1.4	57,770	22,330	35,000	51,990	73,440	103,440
Las Cruces, NM.....	65,940	3,080	4.7	68,610	35,770	49,030	65,170	86,450	104,650
Las Vegas-Paradise, NV.....	906,970	16,560	1.8	62,830	27,190	40,440	59,490	80,920	103,730
Lawrence, KS.....	48,330	2,310	4.8	64,230	30,940	41,500	58,930	82,060	109,700
Lawton, OK.....	40,540	850	2.1	55,510	31,080	40,970	53,650	68,270	84,710
Lebanon, PA.....	46,150	750	1.6	59,890	29,850	41,970	56,040	74,090	92,120
Leominster-Fitchburg-Gardner, MA.....	50,240	920	1.8	71,280	37,890	50,310	67,640	89,180	112,380
Lewiston, ID-WA.....	24,940	480	1.9	54,420	30,160	40,940	51,360	65,870	80,610
Lewiston-Auburn, ME.....	48,070	830	1.7	54,530	31,570	39,280	52,010	65,050	84,770
Lexington-Fayette, KY.....	242,720	9,940	4.1	62,770	32,690	42,720	56,810	76,910	101,460
Lima, OH.....	56,300	890	1.6	64,040	35,460	46,030	60,840	80,880	97,990
Lincoln, NE.....	159,400	7,800	4.9	55,220	30,950	38,890	51,290	67,740	85,530
Little Rock-North Little Rock, AR.....	326,210	9,740	3.0	55,290	29,440	39,080	52,130	69,180	86,770
Logan, UT-ID.....	44,030	2,550	5.8	50,660	16,550	29,060	48,850	67,290	89,040
Longview, TX.....	88,160	1,760	2.0	62,310	32,970	41,950	57,400	77,760	102,470
Longview, WA.....	35,600	620	1.7	59,870	37,270	46,740	57,350	71,520	89,280
Los Angeles-Long Beach-Santa Ana, CA.....	5,631,300	231,900	4.1	77,280	40,090	54,390	74,500	96,680	119,310
Louisville-Jefferson County, KY-IN.....	597,090	16,110	2.7	59,860	33,670	42,890	56,500	73,440	91,300
Lubbock, TX.....	122,380	D	D	96,690	37,740	52,410	77,980	135,690	D
Lynchburg, VA.....	100,880	2,770	2.7	59,590	33,880	44,030	55,910	72,660	92,860
Macon, GA.....	98,150	1,700	1.7	62,750	33,950	40,260	53,140	70,880	96,070
Madera, CA.....	39,460	470	1.2	58,440	36,220	46,530	57,100	71,810	82,470
Madison, WI.....	327,680	22,640	6.9	61,340	36,280	43,290	56,070	73,860	93,540
Manchester, NH.....	98,730	3,720	3.8	69,120	40,220	51,380	66,290	84,730	103,920
Mansfield, OH.....	58,260	910	1.6	56,100	29,770	42,310	54,360	68,850	86,060
Mayaguez, PR.....	33,740	1,010	3.0	47,680	22,140	29,120	45,470	65,150	76,230
McAllen-Edinburg-Mission, TX.....	203,380	2,290	1.1	55,120	26,400	34,700	48,490	69,670	91,450
Medford, OR.....	82,000	1,500	1.8	58,660	31,930	42,110	56,890	72,150	89,060
Memphis, TN-MS-AR.....	619,540	13,690	2.2	64,320	36,040	47,340	61,850	78,350	94,820
Merced, CA.....	59,020	750	1.3	58,380	30,720	40,710	55,850	72,670	93,560
Miami-Fort Lauderdale-Miami Beach, FL.....	2,337,560	65,940	2.8	62,620	32,370	42,870	58,530	77,870	97,610
Michigan City-La Porte, IN.....	45,530	810	1.8	49,690	14,240	33,390	49,770	64,430	79,480
Midland, TX.....	60,170	2,060	3.4	78,860	35,590	48,520	72,280	102,600	135,760
Milwaukee-Waukesha-West Allis, WI.....	827,870	34,630	4.2	66,080	38,010	48,960	62,970	78,800	94,990
Minneapolis-St. Paul-Bloomington, MN-WI.....	1,769,130	100,540	5.7	70,210	41,850	52,380	67,720	85,990	103,140
Missoula, MT.....	56,130	2,430	4.3	44,250	13,890	26,710	43,070	59,260	76,890
Mobile, AL.....	171,950	4,310	2.5	59,680	31,310	41,870	57,960	75,840	91,740
Modesto, CA.....	167,260	2,230	1.3	71,520	35,130	47,820	64,220	84,710	110,230
Monroe, LA.....	76,480	1,390	1.8	54,070	26,780	34,000	49,530	67,890	94,950
Monroe, MI.....	40,280	1,070	2.7	68,340	33,160	52,730	68,710	86,150	100,280
Montgomery, AL.....	163,260	5,550	3.4	61,390	33,680	43,280	58,740	75,550	94,220

Appendix table 3-6

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**Employment and earnings in S&E occupations and non-S&E occupations, by metropolitan area: May 2006**

Metropolitan area	All employed (n)	Employment in S&E occupations	Percent S&E occupations	Annual earnings (\$)					
				Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Morgantown, WV .....	56,100	2,490	4.4	62,530	30,040	40,240	58,950	78,920	101,370
Morristown, TN .....	48,560	580	1.2	57,200	25,870	37,540	53,060	68,710	85,370
Mount Vernon-Anacortes, WA.....	44,460	1,270	2.9	58,590	28,570	43,110	55,460	71,460	92,570
Muncie, IN .....	49,750	1,050	2.1	52,530	29,790	38,370	50,060	64,520	79,110
Muskegon-Norton Shores, MI .....	64,440	1,360	2.1	59,250	30,970	46,470	57,330	71,050	87,810
Myrtle Beach-Conway-North Myrtle Beach, SC....	117,200	1,270	1.1	49,760	26,520	38,460	45,750	61,100	78,080
Napa, CA .....	63,840	1,500	2.3	72,040	41,130	52,870	67,470	87,710	110,410
Naples-Marco Island, FL .....	129,570	1,980	1.5	58,730	32,310	40,460	54,230	73,120	93,180
Nashville-Davidson-Murfreesboro, TN .....	743,470	23,910	3.2	61,620	33,030	43,070	57,190	75,340	94,000
New Bedford, MA.....	65,420	1,110	1.7	69,220	36,730	50,630	64,780	82,270	108,250
New Haven, CT .....	274,620	10,220	3.7	70,130	41,400	52,500	68,180	85,450	101,790
New Orleans-Metairie-Kenner, LA.....	454,550	13,770	3.0	64,520	33,380	44,670	60,870	80,520	101,120
New York-Northern New Jersey-Long Island, NY-NJ-PA .....	8,197,010	D	D	78,880	42,150	55,660	75,420	97,910	121,300
Niles-Benton Harbor, MI.....	62,500	2,170	3.5	67,760	41,530	53,990	66,560	80,170	96,150
Norwich-New London, CT-RI.....	135,360	7,980	5.9	73,020	47,020	57,180	70,340	87,550	103,870
Ocala, FL .....	100,100	1,560	1.6	53,720	29,460	38,010	48,790	66,590	87,300
Ocean City, NJ .....	40,130	270	0.7	64,430	33,090	45,030	61,900	77,520	96,830
Odessa, TX .....	55,430	880	1.6	63,110	26,080	39,900	57,110	82,740	110,830
Ogden-Clearfield, UT.....	191,380	6,840	3.6	63,900	34,220	48,300	65,240	78,910	93,380
Oklahoma City, OK .....	557,280	23,130	4.2	59,330	27,430	38,270	54,530	75,490	97,710
Olympia, WA .....	94,240	7,440	7.9	61,660	41,110	51,780	60,980	72,590	81,360
Omaha-Council Bluffs, NE-IA .....	440,600	19,900	4.5	62,880	34,080	44,730	60,230	77,820	94,610
Orlando-Kissimmee, FL.....	1,019,280	35,830	3.5	63,530	32,650	43,800	60,240	80,000	99,780
Oshkosh-Neenah, WI .....	87,710	3,420	3.9	63,610	36,130	48,860	60,870	76,460	94,370
Owensboro, KY .....	48,280	830	1.7	57,950	32,070	42,370	57,450	73,460	87,820
Oxnard-Thousand Oaks-Ventura, CA.....	304,640	15,740	5.2	79,910	44,040	58,630	76,890	97,700	120,390
Palm Bay-Melbourne-Titusville, FL.....	208,730	16,490	7.9	71,300	40,110	53,290	71,090	89,620	103,250
Panama City-Lynn Haven, FL .....	70,670	2,540	3.6	67,850	33,030	47,900	66,620	87,800	102,190
Parkersburg-Marietta-Vienna, WV-OH .....	70,990	1,790	2.5	59,020	30,700	40,410	58,040	74,380	90,890
Pascagoula, MS .....	52,100	D	D	62,820	40,560	48,520	63,900	76,430	87,940
Pensacola-Ferry Pass-Brent, FL.....	163,690	4,530	2.8	59,790	33,170	42,710	58,350	73,360	89,110
Peoria, IL .....	180,030	6,210	3.4	64,010	32,690	44,290	60,830	79,920	100,350
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD .....	2,738,620	134,980	4.9	71,680	38,040	50,670	68,670	89,820	112,280
Phoenix-Mesa-Scottsdale, AZ .....	1,836,860	70,070	3.8	65,480	34,930	47,090	62,480	81,790	100,120
Pine Bluff, AR.....	38,200	860	2.3	66,470	35,780	48,760	66,160	81,010	98,150
Pittsburgh, PA.....	1,107,950	46,740	4.2	63,610	30,620	42,670	60,680	81,300	100,590
Pittsfield, MA .....	35,470	1,270	3.6	69,840	35,300	51,240	69,230	88,630	105,890
Pocatello, ID .....	37,180	1,110	3.0	62,280	28,060	42,830	58,340	78,610	102,710
Ponce, PR .....	53,320	780	1.5	35,420	18,020	22,600	32,560	45,350	57,790
Port St. Lucie-Fort Pierce, FL.....	128,430	2,440	1.9	58,300	31,860	39,840	53,730	72,920	92,540
Portland-South Portland-Biddeford, ME.....	194,090	6,080	3.1	62,540	35,770	45,480	60,890	76,890	92,850
Portland-Vancouver-Beaverton, OR-WA.....	990,560	49,060	5.0	72,300	40,490	53,140	69,790	89,000	108,420
Portsmouth, NH-ME.....	57,070	4,140	7.3	71,220	41,090	54,280	71,480	89,270	102,490
Poughkeepsie-Newburgh-Middletown, NY .....	249,420	D	D	D	D	D	D	D	D
Prescott, AZ .....	62,990	970	1.5	55,430	25,890	36,090	51,290	65,880	88,090
Providence-Fall River-Warwick, RI-MA.....	576,050	19,820	3.4	73,010	40,920	53,470	70,700	90,230	109,730
Provo-Orem, UT .....	165,320	9,980	6.0	60,320	24,920	38,330	56,500	76,420	99,360
Pueblo, CO .....	54,230	1,270	2.3	69,640	36,020	47,110	64,790	84,360	107,650
Punta Gorda, FL.....	41,900	350	0.8	56,180	29,110	37,460	49,310	71,670	91,150
Racine, WI .....	77,670	2,090	2.7	64,190	36,010	48,750	63,020	77,640	94,430
Raleigh-Cary, NC .....	477,480	32,920	6.9	68,080	38,210	48,960	64,600	84,250	104,250
Rapid City, SD.....	58,480	1,540	2.6	54,870	29,900	40,550	54,010	65,630	80,930
Reading, PA .....	167,130	3,980	2.4	61,750	28,650	41,590	58,110	76,800	99,060
Redding, CA.....	66,900	1,700	2.5	67,470	35,110	47,420	64,170	82,340	104,480
Reno-Sparks, NV .....	219,660	6,090	2.8	64,330	32,570	44,450	60,770	80,930	101,030

Appendix table 3-6

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**Employment and earnings in S&E occupations and non-S&E occupations, by metropolitan area: May 2006**

Metropolitan area	All employed (n)	Employment in S&E occupations	Percent S&E occupations	Annual earnings (\$)					
				Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Richmond, VA .....	599,230	28,650	4.8	69,270	37,670	50,270	67,570	87,010	104,370
Riverside-San Bernardino-Ontario, CA .....	1,268,920	25,270	2.0	69,120	38,070	50,020	65,790	86,060	104,560
Roanoke, VA .....	155,920	5,390	3.5	64,150	34,310	45,080	59,000	79,010	101,650
Rochester, MN .....	101,090	6,580	6.5	74,370	41,750	53,710	71,940	93,150	116,040
Rochester, NY .....	495,960	24,730	5.0	66,120	38,200	48,400	62,350	80,690	99,950
Rochester-Dover, NH-ME .....	52,960	2,160	4.1	62,670	31,330	44,690	59,820	77,860	98,030
Rockford, IL .....	152,130	3,500	2.3	59,970	33,440	46,390	58,640	73,510	90,350
Rocky Mount, NC .....	61,200	940	1.5	52,380	28,210	37,580	50,320	65,330	81,180
Rome, GA .....	40,820	780	1.9	55,140	30,790	40,970	53,300	69,230	83,080
Sacramento-Arden-Arcade-Roseville, CA .....	895,390	48,270	5.4	72,460	42,730	55,610	70,750	86,290	104,860
Saginaw-Saginaw Township North, MI .....	90,020	2,190	2.4	62,480	34,410	48,410	61,730	78,560	90,910
Salem, OR .....	146,330	3,950	2.7	57,640	35,670	45,310	56,470	68,150	80,350
Salinas, CA .....	158,090	2,980	1.9	71,770	31,560	49,820	68,760	90,320	115,850
Salisbury, MD .....	53,170	1,100	2.1	56,340	30,700	39,610	52,690	70,330	89,520
Salt Lake City, UT .....	592,560	26,490	4.5	65,160	33,610	45,600	62,500	81,470	99,730
San Angelo, TX .....	42,270	1,480	3.5	57,860	32,880	41,670	56,880	71,980	88,370
San Antonio, TX .....	789,240	28,640	3.6	65,040	33,950	46,270	59,730	78,960	102,660
San Diego-Carlsbad-San Marcos, CA .....	1,304,990	76,830	5.9	76,770	40,670	54,490	73,200	94,770	118,730
San Francisco-Oakland-Fremont, CA .....	1,993,170	137,150	6.9	84,980	48,500	63,020	82,500	103,810	126,620
San German-Cabo Rojo, PR .....	21,270	330	1.6	59,350	29,120	45,520	60,460	74,360	88,090
San Jose-Sunnyvale-Santa Clara, CA .....	891,170	126,090	14.1	96,310	54,650	72,320	93,930	117,980	143,440
San Juan-Caguas-Guaynabo, PR .....	809,520	19,680	2.4	47,230	23,840	31,650	43,830	59,880	76,680
San Luis Obispo-Paso Robles, CA .....	106,490	2,990	2.8	71,570	40,210	52,190	67,870	86,960	109,410
Sandusky, OH .....	37,890	480	1.3	66,700	35,310	47,580	65,220	84,350	100,470
Santa Barbara-Santa Maria, CA .....	176,770	8,380	4.7	75,570	40,920	54,410	72,900	93,080	115,270
Santa Cruz-Watsonville, CA .....	90,740	4,130	4.6	76,830	39,370	53,390	72,900	96,090	120,360
Santa Fe, NM .....	64,260	2,380	3.7	56,700	34,160	42,550	51,270	63,590	79,690
Santa Rosa-Petaluma, CA .....	191,490	7,070	3.7	79,930	41,130	55,740	76,760	100,720	122,470
Sarasota-Bradenton-Venice, FL .....	288,840	5,810	2.0	57,610	30,710	39,800	53,630	71,670	91,330
Savannah, GA .....	149,960	3,920	2.6	63,530	32,960	45,900	62,200	78,520	96,040
Scranton-Wilkes-Barre, PA .....	255,930	5,870	2.3	57,310	30,460	40,130	54,410	70,960	90,300
Seattle-Tacoma-Bellevue, WA .....	1,621,620	127,070	7.8	77,400	44,940	59,320	75,550	93,190	114,520
Sebastian-Vero Beach, FL .....	48,930	1,040	2.1	61,550	30,460	45,400	58,490	76,910	95,200
Sheboygan, WI .....	61,650	2,490	4.0	62,180	36,710	48,620	59,930	73,970	90,680
Sherman-Denison, TX .....	41,810	1,140	2.7	67,200	32,530	48,360	65,880	84,520	102,080
Shreveport-Bossier City, LA .....	172,180	2,410	1.4	56,190	30,210	38,810	52,790	72,350	89,450
Sioux City, IA-NE-SD .....	70,650	1,230	1.7	55,370	30,190	38,460	52,440	71,370	89,090
Sioux Falls, SD .....	127,520	3,450	2.7	51,760	29,590	36,800	48,440	63,360	81,280
South Bend-Mishawaka, IN-MI .....	136,180	3,470	2.5	52,100	25,880	35,560	49,520	66,010	83,370
Spartanburg, SC .....	119,830	4,320	3.6	68,660	36,450	51,520	69,180	86,340	100,250
Spokane, WA .....	201,900	6,220	3.1	59,580	35,310	46,010	57,510	71,530	88,470
Springfield, IL .....	108,690	4,630	4.3	63,660	33,310	47,760	62,290	76,970	95,540
Springfield, MA-CT .....	295,130	9,630	3.3	66,140	37,220	49,700	64,320	80,240	99,120
Springfield, MO .....	188,800	3,660	1.9	54,270	30,110	37,970	49,980	67,090	85,940
Springfield, OH .....	48,760	910	1.9	57,620	36,410	46,250	56,270	68,810	82,050
St. Cloud, MN .....	97,240	2,320	2.4	55,460	34,550	42,540	53,060	65,630	81,160
St. George, UT .....	50,140	930	1.9	46,900	16,250	24,300	42,980	62,370	82,790
St. Joseph, MO-KS .....	51,540	860	1.7	56,500	32,510	39,880	53,690	69,770	86,520
St. Louis, MO-IL .....	1,325,790	56,520	4.3	66,390	35,960	48,900	64,900	81,640	97,250
State College, PA .....	65,720	3,920	6.0	72,010	28,460	42,450	66,740	96,020	124,200
Stockton, CA .....	212,370	3,500	1.6	66,710	32,980	44,680	63,390	81,500	102,350
Sumter, SC .....	37,930	660	1.7	53,490	31,440	40,200	53,390	66,480	77,920
Syracuse, NY .....	308,110	10,950	3.6	62,640	34,400	44,790	60,620	76,180	94,730
Tallahassee, FL .....	165,290	9,880	6.0	56,530	32,250	39,920	51,960	69,050	86,810
Tampa-St. Petersburg-Clearwater, FL .....	1,247,670	45,680	3.7	61,730	30,280	41,620	58,140	78,940	99,850
Terre Haute, IN .....	69,020	1,470	2.1	57,210	28,690	39,820	54,660	71,470	90,700
Texarkana-Texarkana, TX-AR .....	53,740	750	1.4	60,820	25,780	38,770	56,800	74,610	95,930

Appendix table 3-6

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**Employment and earnings in S&E occupations and non-S&E occupations, by metropolitan area: May 2006**

Metropolitan area	All employed (n)	Employment in S&E occupations	Percent S&E occupations	Annual earnings (\$)					
				Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile
Toledo, OH .....	323,960	8,090	2.5	60,960	32,530	43,580	58,120	76,090	93,390
Topeka, KS .....	106,180	3,600	3.4	57,330	33,740	42,660	54,820	68,940	83,780
Trenton-Ewing, NJ .....	228,060	15,210	6.7	71,360	41,520	53,450	69,810	87,330	106,900
Tucson, AZ .....	368,440	19,110	5.2	69,780	36,280	48,240	67,240	88,240	110,850
Tulsa, OK .....	414,470	15,770	3.8	57,110	25,450	38,450	54,790	72,610	91,840
Tuscaloosa, AL .....	90,880	2,320	2.6	66,770	33,060	45,490	62,660	82,920	110,760
Tyler, TX .....	93,100	1,460	1.6	57,980	27,850	38,730	52,710	72,340	94,950
Utica-Rome, NY .....	129,090	4,240	3.3	64,400	33,710	44,370	59,940	80,110	102,730
Valdosta, GA .....	53,660	870	1.6	66,970	31,540	39,640	57,130	81,960	117,950
Vallejo-Fairfield, CA .....	129,710	2,640	2.0	69,800	36,560	50,450	66,180	86,180	110,400
Victoria, TX .....	48,020	1,030	2.1	65,040	35,990	49,020	62,430	78,070	101,140
Vineland-Millville-Bridgeton, NJ .....	62,560	710	1.1	70,370	37,400	47,600	67,490	88,870	108,360
Virginia Beach-Norfolk-Newport News, VA-NC .....	745,140	35,320	4.7	67,500	36,820	49,390	66,150	83,750	101,530
Visalia-Porterville, CA .....	134,310	1,500	1.1	62,380	33,220	42,730	57,830	77,000	99,140
Waco, TX .....	97,530	2,190	2.2	61,080	32,840	42,010	56,220	76,130	99,860
Warner Robins, GA .....	53,790	3,610	6.7	68,040	43,010	55,380	69,000	80,990	95,120
Washington-Arlington-Alexandria, DC-VA-MD-WV .....	2,827,470	297,670	10.5	82,990	44,330	59,720	81,520	103,310	126,500
Waterbury, CT .....	69,190	1,400	2.0	63,880	38,540	48,530	58,850	76,910	93,750
Waterloo-Cedar Falls, IA .....	86,230	2,120	2.5	55,760	30,360	41,530	52,800	65,160	85,770
Wausau, WI .....	68,690	2,070	3.0	55,890	32,160	42,230	54,190	68,600	82,470
Weirton-Steubenville, WV-OH .....	45,330	930	2.1	63,720	32,620	45,930	62,560	80,450	95,500
Wenatchee, WA .....	39,080	940	2.4	64,100	36,270	49,520	60,630	76,090	97,120
Wheeling, WV-OH .....	65,250	1,000	1.5	60,370	31,730	40,660	58,010	77,140	94,700
Wichita Falls, TX .....	59,760	930	1.6	62,200	33,630	41,820	57,670	74,920	99,050
Wichita, KS .....	287,490	13,780	4.8	66,070	37,860	49,740	65,210	82,090	96,750
Williamsport, PA .....	51,420	1,210	2.4	55,300	27,050	39,750	53,390	68,130	84,490
Wilmington, NC .....	140,540	3,990	2.8	60,070	33,680	42,100	57,060	75,230	90,380
Winchester, VA-WV .....	55,010	1,360	2.5	73,840	39,460	53,710	72,900	92,100	109,830
Winston-Salem, NC .....	212,450	6,720	3.2	65,940	36,790	47,700	62,610	80,910	100,860
Worcester, MA-CT .....	244,480	11,220	4.6	74,440	42,760	54,850	70,690	91,240	113,900
Yakima, WA .....	79,900	1,480	1.9	56,110	33,870	42,990	54,950	66,940	81,040
Yauco, PR .....	11,800	50	0.4	43,610	27,560	33,550	39,520	52,370	69,130
York-Hanover, PA .....	175,640	4,160	2.4	59,720	29,610	42,000	57,940	74,300	90,820
Youngstown-Warren-Boardman, OH-PA .....	239,030	3,450	1.4	61,050	29,160	40,630	57,020	75,920	93,170
Yuba City, CA .....	40,730	740	1.8	59,350	29,430	43,100	57,990	73,480	88,750
Yuma, AZ .....	61,870	1,230	2.0	54,650	28,340	34,970	50,870	70,620	89,610

D = suppressed to avoid disclosure of confidential information

SOURCE: Bureau of Labor Statistics, Occupational Employment Statistics Survey, May 2006.



Appendix table 3-7

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**Bureau of Labor Statistics projections of occupational employment: 2004–14**

(Thousands)

Occupation	BLS National Employment Matrix 2004 estimate	BLS projected 2014 employment	Job openings from growth and net replacements, 2004–14	10-year growth in total employment (%)	10-year job openings as percent of 2004 employment
All occupations .....	145,612	164,540	54,680	13.0	37.6
All S&E .....	5,101	6,416	2,174	25.8	42.6
Computer and mathematical scientists .....	2,678	3,632	1,261	35.6	47.1
Mathematicians .....	3	3	1	-1.3	44.0
Operations research analysts .....	58	62	17	8.4	30.3
Statisticians .....	19	20	6	4.6	30.9
Mathematical scientists, all other .....	9	9	2	6.2	28.9
Computer and information scientists, research .....	22	28	8	25.6	36.9
Computer software engineers, applications .....	460	682	268	48.4	58.3
Computer software engineers, systems software .....	340	486	180	43.0	52.8
Computer support specialists .....	518	638	183	23.0	35.3
Computer systems analysts .....	487	640	208	31.4	42.8
Database administrators .....	104	144	51	38.2	48.6
Network and computer systems administrators .....	278	385	138	38.4	49.5
Network systems and data communications analysts .....	231	357	153	54.6	66.3
Computer specialists, all other .....	149	177	45	19.0	30.3
Engineers .....	1,449	1,644	507	13.4	35.0
Aerospace engineers .....	76	82	25	8.3	33.0
Agricultural engineers .....	3	4	2	12.0	44.9
Biomedical engineers .....	10	13	5	30.7	47.8
Chemical engineers .....	31	34	12	10.6	40.5
Civil engineers .....	237	276	77	16.5	32.4
Computer hardware engineers .....	77	84	20	10.1	26.8
Electrical engineers .....	156	174	49	11.8	31.4
Electronics engineers, except computer .....	143	157	42	9.7	29.4
Environmental engineers .....	49	64	23	30.0	47.0
Health and safety engineers, except mining safety engineers and inspectors.....	27	30	10	13.4	37.6
Industrial engineers .....	177	205	71	16.0	40.2
Marine engineers and naval architects .....	7	7	4	8.5	55.7
Materials engineers .....	21	24	8	12.2	38.5
Mechanical engineers .....	226	251	87	11.1	38.5
Mining and geological engineers, including mining safety engineers .....	5	5	2	-1.5	28.9
Nuclear engineers .....	17	19	6	7.3	37.1
Petroleum engineers .....	16	16	5	-0.1	31.8
Engineers, all other .....	172	198	59	15.4	34.5
Life scientists .....	232	280	103	20.8	44.6
Animal scientists .....	3	3	1	12.9	30.7
Food scientists and technologists .....	11	12	3	10.9	28.7
Soil and plant scientists .....	17	19	5	13.9	31.6
Biochemists and biophysicists .....	16	20	8	21.0	52.3
Microbiologists .....	15	18	7	17.2	48.5
Zoologists and wildlife biologists .....	16	19	7	13.0	44.3
Biological scientists, all other .....	29	34	14	17.1	48.3
Conservation scientists .....	19	20	7	6.3	35.5
Foresters .....	13	14	5	6.7	35.9
Epidemiologists .....	5	6	2	26.2	43.8
Medical scientists, except epidemiologists .....	72	97	37	34.1	51.7
Life scientists, all other .....	15	19	6	20.6	38.2
Physical scientists .....	250	281	94	12.2	37.4
Astronomers .....	1	1	0	10.4	43.0
Physicists .....	15	16	6	7.0	39.4
Atmospheric and space scientists .....	7	9	4	16.5	55.9
Chemists .....	82	88	33	7.3	40.0
Materials scientists .....	8	8	3	8.0	40.7
Environmental scientists and specialists, including health .....	73	86	26	17.1	34.9
Geoscientists, except hydrologists and geographers .....	28	30	7	8.3	26.0
Hydrologists .....	8	11	4	31.6	49.3

Appendix table 3-7

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**Bureau of Labor Statistics projections of occupational employment: 2004–14**

(Thousands)

Occupation	BLS National Employment Matrix 2004 estimate	BLS projected 2014 employment	Job openings from growth and net replacements, 2004–14	10-year growth in total employment (%)	10-year job openings as percent of 2004 employment
Physical scientists, all other.....	29	33	11	14.6	37.4
Social scientists .....	492	580	209	17.9	42.5
Economists .....	13	13	4	5.6	34.6
Market research analysts .....	190	227	86	19.6	45.5
Survey researchers .....	22	28	12	25.9	51.8
Clinical, counseling, and school psychologists .....	167	199	68	19.1	41.0
Industrial-organizational psychologists .....	2	3	1	20.4	42.3
Psychologists, all other.....	10	11	3	9.9	31.1
Sociologists.....	5	5	2	4.7	39.8
Urban and regional planners.....	32	37	16	15.2	48.5
Anthropologists and archeologists .....	5	6	2	17.0	37.1
Geographers .....	1	1	0	6.8	26.9
Historians.....	3	3	1	4.3	24.5
Political scientists.....	5	5	1	7.3	27.5
Social scientists and related workers, all other .....	38	42	13	12.3	33.5
Selected other occupations					
Science and engineering managers.....	513	616	200	20.1	39.0
Engineering managers .....	190	215	63	13.0	32.9
Natural sciences managers .....	42	48	14	13.6	32.9
Computer and information systems managers.....	280	353	124	25.9	44.1
Education administrators, postsecondary .....	132	160	61	21.3	46.2
Science and engineering technicians.....	874	986	303	12.8	34.7
Aerospace engineering and operations technicians .....	10	10	3	8.5	29.5
Civil engineering technicians .....	94	107	33	14.1	35.0
Electrical and electronic engineering technicians.....	182	199	56	9.8	30.7
Electro-mechanical technicians.....	19	21	6	9.7	30.6
Environmental engineering technicians .....	20	25	9	24.4	45.4
Industrial engineering technicians .....	69	76	22	10.5	31.4
Mechanical engineering technicians.....	48	54	16	12.3	33.2
Engineering technicians, except drafters, all other .....	91	102	33	12.3	36.4
Agricultural and food science technicians.....	23	26	7	13.4	32.7
Biological technicians.....	64	75	22	17.2	34.1
Chemical technicians .....	62	65	18	4.4	29.4
Geological and petroleum technicians .....	11	12	3	6.5	32.0
Nuclear technicians.....	7	8	3	13.7	40.6
Social science research assistants .....	18	21	7	17.4	41.0
Environmental science and protection technicians, including health .....	31	36	12	16.3	39.8
Forensic science technicians.....	10	13	6	36.4	60.0
Forest and conservation technicians.....	33	35	10	6.6	30.2
Life, physical, and social science technicians, all other .....	83	100	36	20.0	43.6
Computer programmers .....	455	464	117	2.0	25.6
Postsecondary teachers and administrators.....	1,760	2,312	953	31.4	54.1
Postsecondary teachers .....	1,628	2,153	892	32.2	54.8
Postsecondary administrators .....	132	160	61	21.3	46.2
Health diagnosing and treating practitioners.....	4,190	5,330	1,960	27.2	46.8
Chiropractors .....	53	64	22	22.4	41.3
Dentists.....	150	171	46	13.5	30.3
Dentists, general.....	128	145	39	13.5	30.3
Oral and maxillofacial surgeons.....	6	7	2	16.2	32.9
Orthodontists .....	10	11	3	12.8	29.5
Prosthodontists .....	1	1	0	13.6	30.4
Dentists, all other specialists .....	5	6	1	12.2	29.0
Dietitians and nutritionists .....	50	59	22	18.3	44.4
Optometrists .....	34	40	16	19.7	47.5
Pharmacists .....	230	287	101	24.6	44.0
Physicians and surgeons .....	567	702	212	24.0	37.3
Physician assistants .....	62	93	40	49.6	65.0

Appendix table 3-7

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**Bureau of Labor Statistics projections of occupational employment: 2004–14**

(Thousands)

Occupation	BLS National Employment Matrix 2004 estimate	BLS projected 2014 employment	Job openings from growth and net replacements, 2004–14	10-year growth in total employment (%)	10-year job openings as percent of 2004 employment
Podiatrists .....	10	12	4	16.2	40.6
Registered nurses .....	2,394	3,096	1,203	29.4	50.3
Audiologists .....	10	11	3	9.1	33.3
Occupational therapists.....	92	123	43	33.6	47.1
Physical therapists .....	155	211	72	36.7	46.6
Radiation therapists .....	15	19	7	26.3	49.1
Recreational therapists.....	24	25	7	5.7	29.6
Respiratory therapists .....	94	120	57	28.4	61.3
Speech-language pathologists .....	96	110	38	14.6	39.4
Therapists, all other.....	24	28	9	15.0	36.7
Veterinarians .....	61	71	25	17.4	41.5
Health diagnosing and treating practitioners, all other .....	72	88	32	22.5	44.2

BLS = Bureau of Labor Statistics

NOTES: BLS National Employment Matrix is special estimate of employment in occupations distributed across specific industries used by BLS in forecasting. It is proper baseline for comparison of BLS's occupational projections, but is not BLS's principal estimate of occupational employment in United States.

SOURCE: BLS, Office of Occupational Statistics and Employment Projections, National Industry-Occupation Employment Projections 2004–2014 (2004).

*Science and Engineering Indicators 2008*



Appendix table 3-8

(Page 1 of 4)

**U.S. residents with S&E as highest degree receiving degrees from non-U.S. institutions, by degree level and place of birth: 2003**

Degree level/place of birth	Individuals (n)	Highest degree from outside United States (%)
All degree levels		
U.S. born .....	9,641,000	0.5
All foreign born .....	2,239,000	40.4
India .....	361,000	56.5
China .....	245,000	24.9
Philippines .....	132,000	66.2
Former Soviet Union .....	110,000	72.9
Canada .....	98,000	41.6
United Kingdom .....	93,000	60.1
Taiwan .....	86,000	20.7
Germany .....	80,000	20.6
South Korea .....	78,000	29.4
Vietnam .....	65,000	7.6
Mexico .....	63,000	43.3
Iran .....	60,000	15.5
Japan .....	45,000	32.9
Cuba .....	33,000	32.6
Poland .....	32,000	64.9
Pakistan .....	32,000	50.2
France .....	23,000	47.5
Peru .....	22,000	54.0
Columbia .....	21,000	37.7
Jamaica .....	20,000	11.1
Egypt .....	19,000	58.9
Nigeria .....	18,000	19.9
Ireland .....	16,000	44.7
Bangladesh .....	15,000	39.8
Italy .....	15,000	19.3
Romania .....	15,000	52.2
Argentina .....	14,000	43.3
Venezuela .....	13,000	25.3
Thailand .....	13,000	27.4
Brazil .....	13,000	49.8
Israel .....	13,000	32.0
Malaysia .....	12,000	15.1
Turkey .....	12,000	32.2
Greece .....	12,000	18.2
Lebanon .....	12,000	12.2
Dominican Republic .....	11,000	30.3
Equador .....	10,000	33.0
Spain .....	10,000	20.4
Netherlands .....	9,000	58.6
Haiti .....	9,000	39.2
South Africa .....	8,000	53.5
Australia .....	8,000	33.5
Bulgaria .....	8,000	89.9
Trinidad/Tobago .....	8,000	7.0
Surinam .....	8,000	38.8
Indonesia .....	7,000	16.2
Panama .....	7,000	1.1
Hungary .....	7,000	26.7
Sri Lanka .....	7,000	12.5
Ghana .....	7,000	22.7
Chile .....	7,000	28.0
Kenya .....	7,000	39.9
El Salvador .....	7,000	17.8
Iraq .....	6,000	64.5
Burma .....	6,000	57.5
Ethiopia .....	6,000	27.0
Costa Rica .....	5,000	6.5

Appendix table 3-8

(Page 2 of 4)

**U.S. residents with S&E as highest degree receiving degrees from non-U.S. institutions, by degree level and place of birth: 2003**

Degree level/place of birth	Individuals (n)	Highest degree from outside United States (%)
Guatemala.....	5,000	9.1
Afghanistan.....	5,000	65.0
Belgium.....	5,000	45.6
Sweden.....	5,000	32.2
All other foreign born.....	143,000	65.6
<b>Bachelor's</b>		
U.S. born.....	7,394,000	0.3
All foreign born.....	1,322,000	45.7
India.....	166,000	79.6
Philippines.....	121,000	70.4
China.....	82,000	40.7
Canada.....	74,000	40.7
United Kingdom.....	58,000	58.7
Former Soviet Union.....	57,000	68.2
Vietnam.....	55,000	7.6
South Korea.....	55,000	35.9
Germany.....	53,000	16.2
Mexico.....	49,000	40.4
Taiwan.....	34,000	40.3
Iran.....	34,000	17.9
Japan.....	33,000	34.4
Cuba.....	23,000	34.8
Pakistan.....	19,000	54.6
Peru.....	17,000	59.7
Jamaica.....	15,000	9.8
Columbia.....	14,000	43.8
Poland.....	14,000	50.5
France.....	12,000	37.1
Egypt.....	12,000	80.8
Venezuela.....	11,000	27.4
Nigeria.....	11,000	17.8
Bangladesh.....	10,000	40.7
Italy.....	10,000	5.9
Dominican Republic.....	9,000	32.5
Ireland.....	9,000	52.5
Israel.....	8,000	39.9
Thailand.....	8,000	43.6
Equador.....	8,000	37.7
Malaysia.....	8,000	20.7
Brazil.....	7,000	55.2
Argentina.....	7,000	47.4
Surinam.....	7,000	41.7
Haiti.....	7,000	45.3
Romania.....	6,000	33.4
Lebanon.....	6,000	9.5
Greece.....	6,000	22.8
Spain.....	6,000	20.6
Turkey.....	6,000	39.4
El Salvador.....	6,000	21.4
South Africa.....	6,000	60.6
Australia.....	6,000	37.1
Indonesia.....	5,000	11.7
Kenya.....	5,000	47.3
Panama.....	5,000	0.0
Sri Lanka.....	5,000	16.1
Trinidad/Tobago.....	5,000	11.3
Netherlands.....	5,000	51.3
All other foreign born.....	130,000	37.4

Appendix table 3-8

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**U.S. residents with S&E as highest degree receiving degrees from non-U.S. institutions, by degree level and place of birth: 2003**

Degree level/place of birth	Individuals (n)	Highest degree from outside United States (%)
<b>Master's</b>		
U.S. born .....	1,709,000	1.1
All foreign born.....	639,000	31.5
India.....	156,000	37.5
China .....	103,000	14.0
Taiwan .....	40,000	9.7
Former Soviet Union.....	37,000	76.6
Iran .....	20,000	9.5
Germany .....	16,000	19.7
United Kingdom.....	16,000	47.9
South Korea .....	16,000	18.1
Poland.....	15,000	79.2
Mexico .....	12,000	56.1
Canada .....	12,000	40.8
Pakistan .....	10,000	48.4
Philippines .....	9,000	19.8
Cuba .....	8,000	30.3
Vietnam.....	8,000	5.7
France.....	7,000	59.3
Japan.....	6,000	20.5
Romania.....	6,000	78.8
Ireland.....	5,000	26.2
Nigeria .....	5,000	12.3
Columbia.....	5,000	23.8
Peru .....	5,000	39.5
Bangladesh .....	5,000	26.0
All other foreign born.....	115,000	10.2
<b>Doctorate</b>		
U.S. born .....	520,500	0.9
All foreign born.....	275,500	36.0
China .....	59,500	21.9
India.....	38,900	34.4
United Kingdom.....	18,600	75.9
Former Soviet Union .....	16,200	80.6
Canada .....	12,100	48.8
Taiwan .....	11,600	1.2
Germany .....	10,100	45.1
South Korea .....	7,600	7.2
Iran .....	5,800	22.9
Japan.....	5,100	39.4
France.....	3,700	59.2
Other Africa.....	3,400	41.2
Poland.....	3,400	60.4
Italy.....	3,200	59.4
Egypt .....	3,100	20.6
Cameroon .....	3,100	22.3
Pakistan .....	2,800	28.4
Turkey.....	2,700	11.7
Mexico .....	2,600	42.3
Greece .....	2,400	16.4
Romania.....	2,300	32.0
Nigeria .....	2,100	48.8
Argentina .....	2,100	39.4
Brazil .....	2,000	46.3
Hungary .....	2,000	37.7
Israel.....	2,000	35.3
Philippines .....	1,900	20.5
Yugoslavia.....	1,700	24.1

Appendix table 3-8

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**U.S. residents with S&E as highest degree receiving degrees from non-U.S. institutions, by degree level and place of birth: 2003**

Degree level/place of birth	Individuals (n)	Highest degree from outside United States (%)
Austria .....	1,700	66.0
Ireland.....	1,700	62.9
Ghana .....	1,700	51.9
Spain .....	1,600	38.8
Vietnam.....	1,600	16.3
Netherlands.....	1,500	58.3
Columbia.....	1,400	26.0
Australia.....	1,400	50.5
Lebanon.....	1,300	6.6
Bulgaria .....	1,200	60.4
Belgium .....	1,100	42.2
Sri Lanka.....	1,100	6.1
Cuba .....	1,000	12.0
South Africa .....	1,000	39.8
Malaysia .....	1,000	21.0
Czechoslovakia .....	1,000	39.6
Bangladesh .....	900	97.1
Switzerland .....	800	45.7
Indonesia .....	800	27.5
Surinam .....	700	11.6
Thailand .....	600	0.0
Palestine .....	600	0.0
Kenya.....	600	11.5
Nepal .....	600	0.0
Jamaica .....	600	0.0
Chile .....	500	13.0
Jordan .....	500	0.0
Cyprus .....	500	9.9
Peru .....	500	0.0
Ethiopia.....	500	12.7
Haiti .....	500	61.4
Sweden.....	500	0.0
All other foreign born.....	12,200	26.4

NOTES: Data do not include individuals with only foreign degrees who were not in United States in 2000. Doctorate-level data rounded to hundreds, reflecting lower sample weights than for individuals with other degrees.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Scientists and Engineers Statistical Data System (SESTAT), 2003, <http://sestat.nsf.gov>.

Appendix table 4-1

**Gross domestic product and implicit price deflators: 1953–2007**

Year	Calendar year			Fiscal year		
	GDP (\$billions)		GDP price deflator <sup>a</sup>	GDP (\$billions)		GDP price deflator <sup>a</sup>
	Current	Constant 2000		Current	Constant 2000	
1953.....	379.4	2,079.5	0.182	372.9	2,044.0	0.182
1954.....	380.4	2,065.4	0.184	377.3	2,044.6	0.185
1955.....	414.8	2,212.8	0.187	394.6	2,119.9	0.186
1956.....	437.5	2,255.8	0.194	427.2	2,236.2	0.191
1957.....	461.1	2,301.1	0.200	450.3	2,271.6	0.198
1958.....	467.2	2,279.2	0.205	460.5	2,254.8	0.204
1959.....	506.6	2,441.3	0.208	491.5	2,369.5	0.207
1960.....	526.4	2,501.8	0.210	517.9	2,467.0	0.210
1961.....	544.7	2,560.0	0.213	530.8	2,492.8	0.213
1962.....	585.6	2,715.2	0.216	567.6	2,636.0	0.215
1963.....	617.7	2,834.0	0.218	598.7	2,746.0	0.218
1964.....	663.6	2,998.6	0.221	640.4	2,902.6	0.221
1965.....	719.1	3,191.1	0.225	687.1	3,061.6	0.224
1966.....	787.8	3,399.1	0.232	752.9	3,284.6	0.229
1967.....	832.6	3,484.6	0.239	811.8	3,430.8	0.237
1968.....	910.0	3,652.7	0.249	866.6	3,536.9	0.245
1969.....	984.6	3,765.4	0.261	948.6	3,702.4	0.256
1970.....	1,038.5	3,771.9	0.275	1,012.2	3,746.0	0.270
1971.....	1,127.1	3,898.6	0.289	1,079.9	3,806.4	0.284
1972.....	1,238.3	4,105.0	0.302	1,178.3	3,966.0	0.297
1973.....	1,382.7	4,341.5	0.318	1,307.6	4,215.4	0.310
1974.....	1,500.0	4,319.6	0.347	1,439.3	4,327.6	0.333
1975.....	1,638.3	4,311.2	0.380	1,560.7	4,250.5	0.367
1976.....	1,825.3	4,540.9	0.402	1,736.5	4,411.1	0.394
1977.....	2,030.9	4,750.5	0.428	1,974.3	4,665.6	0.423
1978.....	2,294.7	5,015.0	0.458	2,217.0	4,908.7	0.452
1979.....	2,563.3	5,173.4	0.495	2,500.7	5,124.0	0.488
1980.....	2,789.5	5,161.7	0.540	2,726.7	5,136.7	0.531
1981.....	3,128.4	5,291.7	0.591	3,054.7	5,241.4	0.583
1982.....	3,255.0	5,189.3	0.627	3,227.6	5,183.3	0.623
1983.....	3,536.7	5,423.8	0.652	3,440.7	5,291.9	0.650
1984.....	3,933.2	5,813.6	0.677	3,840.2	5,696.1	0.674
1985.....	4,220.3	6,053.7	0.697	4,141.5	5,949.8	0.696
1986.....	4,462.8	6,263.6	0.712	4,412.4	6,194.9	0.712
1987.....	4,739.5	6,475.1	0.732	4,647.1	6,358.4	0.731
1988.....	5,103.8	6,742.7	0.757	5,008.6	6,644.0	0.754
1989.....	5,484.4	6,981.4	0.786	5,400.5	6,896.0	0.783
1990.....	5,803.1	7,112.5	0.816	5,735.4	7,061.3	0.812
1991.....	5,995.9	7,100.5	0.844	5,935.1	7,042.8	0.843
1992.....	6,337.7	7,336.6	0.864	6,239.9	7,223.0	0.864
1993.....	6,657.4	7,532.7	0.884	6,575.5	7,445.3	0.883
1994.....	7,072.2	7,835.5	0.903	6,961.3	7,714.8	0.902
1995.....	7,397.7	8,031.7	0.921	7,325.8	7,948.2	0.922
1996.....	7,816.9	8,328.9	0.939	7,694.1	8,194.5	0.939
1997.....	8,304.3	8,703.5	0.954	8,182.4	8,564.8	0.955
1998.....	8,747.0	9,066.9	0.965	8,627.9	8,918.5	0.967
1999.....	9,268.4	9,470.3	0.979	9,125.3	9,311.0	0.980
2000.....	9,817.0	9,817.0	1.000	9,709.8	9,709.8	1.000
2001.....	10,128.0	9,890.7	1.024	10,057.9	9,885.1	1.017
2002.....	10,469.6	10,048.9	1.042	10,377.4	10,002.4	1.037
2003.....	10,960.8	10,301.1	1.064	10,808.6	10,208.3	1.059
2004.....	11,712.5	10,703.5	1.094	11,517.5	10,614.5	1.085
2005.....	12,455.8	11,048.6	1.127	12,265.8	10,963.4	1.119
2006.....	13,248.3	11,412.4	1.161	13,061.1	11,325.3	1.153
2007.....	13,946.2	11,721.4	1.190	13,761.2	11,637.4	1.182

GDP = gross domestic product

<sup>a</sup>2000 = 1.

NOTE: Projected data for 2007.

SOURCE: Office of Management and Budget, Budget of the United States, Fiscal Year 2008 (2007), based on Bureau of Economic Analysis (various years), <http://www.bea.gov>.

Appendix table 4-2

**Purchasing power parity and market exchange rate/purchasing power parity ratios, by selected country: 1981–2006**

(Foreign currency/U.S. dollars)

Year	PPP										MER/PPP				
	Canada	China	France	Germany <sup>a</sup>	Italy	Japan	South Korea	Russian Federation	Taiwan	United Kingdom	China	Germany <sup>a</sup>	Japan	South Korea	Taiwan
1981.....	1.17	—	0.84	1.07	0.41	220.04	415.89	—	—	0.49	—	1.08	1.00	1.64	—
1982.....	1.20	—	0.89	1.06	0.46	211.84	418.15	—	—	0.50	—	1.17	1.18	1.75	—
1983.....	1.21	—	0.94	1.05	0.50	208.60	427.23	—	—	0.50	—	1.24	1.14	1.82	—
1984.....	1.21	—	0.97	1.03	0.54	207.48	436.49	—	—	0.51	—	1.41	1.14	1.85	—
1985.....	1.21	—	0.99	1.02	0.57	205.95	443.68	—	—	0.52	—	1.47	1.16	1.96	—
1986.....	1.22	—	1.02	1.03	0.60	204.82	457.91	—	—	0.53	—	1.07	0.82	1.92	—
1987.....	1.24	—	1.02	1.02	0.62	199.88	470.79	—	—	0.54	—	0.90	0.72	1.75	—
1988.....	1.25	—	1.02	1.01	0.64	194.73	489.80	—	—	0.55	—	0.89	0.66	1.49	—
1989.....	1.26	—	1.01	0.99	0.66	191.94	498.96	—	—	0.57	—	0.97	0.72	1.35	—
1990.....	1.25	1.25	0.99	0.98	0.69	189.24	530.91	—	20.12	0.59	3.81	0.84	0.77	1.33	1.35
1991.....	1.25	1.29	0.98	0.99	0.72	188.22	567.69	—	20.19	0.61	4.12	0.86	0.72	1.29	1.28
1992.....	1.23	1.36	0.98	1.01	0.73	186.98	597.20	0.02	20.44	0.62	4.05	0.79	0.68	1.31	1.24
1993.....	1.22	1.54	0.97	1.02	0.74	183.75	620.86	0.17	20.68	0.62	3.74	0.82	0.61	1.29	1.29
1994.....	1.21	1.82	0.97	1.03	0.75	180.12	655.67	0.69	20.70	0.62	4.73	0.81	0.57	1.23	1.27
1995.....	1.22	2.00	0.96	1.03	0.78	175.49	690.04	1.65	20.72	0.62	4.17	0.71	0.54	1.12	1.32
1996.....	1.21	2.10	0.95	1.01	0.79	170.87	711.81	2.35	20.99	0.63	3.97	0.76	0.64	1.13	1.31
1997.....	1.21	2.10	0.93	1.01	0.81	168.68	732.44	2.63	21.04	0.62	3.95	0.88	0.72	1.30	1.55
1998.....	1.19	2.05	0.93	1.01	0.80	166.54	766.56	3.02	21.40	0.63	4.04	0.89	0.79	1.83	1.51
1999.....	1.19	1.99	0.93	1.00	0.81	162.04	754.89	5.15	20.90	0.64	4.15	0.94	0.70	1.57	1.50
2000.....	1.23	2.00	0.92	0.98	0.81	154.90	753.19	7.04	20.12	0.63	4.14	1.11	0.70	1.50	1.64
2001.....	1.22	1.99	0.90	0.98	0.82	149.29	761.49	8.10	19.76	0.62	4.16	1.14	0.81	1.70	1.77
2002.....	1.23	1.98	0.90	0.96	0.82	143.67	778.77	9.17	19.31	0.61	4.19	1.11	0.87	1.61	1.80
2003.....	1.24	2.00	0.90	0.95	0.84	138.87	784.03	10.14	18.56	0.63	4.13	0.93	0.83	1.52	1.83
2004.....	1.25	2.09	0.91	0.93	0.85	133.72	784.26	11.94	17.87	0.63	3.96	0.86	0.81	1.46	1.79
2005.....	1.25	2.13	0.90	0.91	0.85	128.78	763.64	13.85	17.38	0.63	3.85	0.88	0.86	1.34	1.89
2006.....	1.25	—	0.89	0.89	0.84	124.27	748.70	—	16.73	0.62	—	—	—	—	—

— = data not used

MER = market exchange rate; PPP = purchasing power parity

<sup>a</sup>Data for 1981–90 for West Germany.

SOURCE: Organisation for Economic Co-operation and Development, Main Science and Technology Indicators (2006).

Science and Engineering Indicators 2008

Appendix table 4-3

**U.S. R&D expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

(Page 1 of 2)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C <sup>a</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs <sup>b</sup>	
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>c</sup>	Industry	Nonprofit	Federal <sup>e</sup>
1953.....		5,160	1,015	3,630	1,430	2,200	NA	273	149	40	21	37	27	131	112	58	26	28	NA
1954.....		5,617	963	4,070	1,750	2,320	NA	301	165	45	24	40	29	161	123	61	31	31	NA
1955.....		6,281	973	4,517	2,057	2,460	123	342	191	50	27	42	32	187	131	64	35	32	9
1956.....		8,500	1,130	6,272	2,995	3,277	333	391	221	57	32	46	36	217	146	71	37	38	11
1957.....		9,908	1,297	7,324	3,928	3,396	407	433	242	64	37	51	40	267	167	79	37	51	14
1958.....		10,915	1,507	8,066	4,436	3,630	323	491	280	72	39	56	45	316	195	95	38	62	18
1959.....		12,490	1,681	9,200	5,217	3,983	418	586	356	81	40	61	50	349	234	125	42	67	22
1960.....		13,711	1,801	10,032	5,604	4,428	477	705	453	90	40	67	55	385	264	148	48	68	48
1961.....		14,564	1,987	10,353	5,685	4,668	555	834	557	101	40	75	62	440	304	169	49	86	92
1962.....		15,636	2,188	11,037	6,008	5,029	426	993	687	112	41	84	70	500	363	200	54	109	130
1963.....		17,519	2,558	12,216	6,856	5,360	414	1,178	839	125	41	96	78	580	408	234	55	119	165
1964.....		19,103	2,965	13,049	7,257	5,792	463	1,375	995	138	41	114	88	629	417	250	55	112	205
1965.....		20,252	3,156	13,812	7,367	6,445	373	1,595	1,167	150	42	136	101	630	472	286	62	124	215
1966.....		22,072	3,308	15,193	7,977	7,216	355	1,818	1,335	160	45	165	114	652	537	329	70	138	210
1967.....		23,346	3,444	15,966	7,946	8,020	419	2,035	1,491	168	52	200	126	696	561	342	74	145	225
1968.....		24,666	3,497	17,014	8,145	8,869	415	2,187	1,586	185	58	221	139	722	596	364	81	151	235
1969.....		25,996	3,790	17,844	7,987	9,857	464	2,280	1,624	208	61	233	155	731	642	388	93	161	245
1970.....		26,271	4,154	17,594	7,306	10,288	473	2,418	1,686	237	66	259	171	727	677	410	95	172	230
1971.....		26,952	4,409	17,829	7,175	10,654	491	2,565	1,760	262	72	290	182	735	709	427	98	184	215
1972.....		28,740	4,676	19,004	7,469	11,535	548	2,757	1,890	282	79	312	195	785	771	472	101	198	200
1973.....		30,952	4,837	20,704	7,600	13,104	545	2,953	2,009	302	90	343	211	841	882	566	105	211	190
1974.....		33,359	5,132	22,239	7,572	14,667	648	3,216	2,160	320	104	393	239	926	988	639	114	235	210
1975.....		35,671	5,561	23,460	7,878	15,582	727	3,570	2,400	348	118	432	272	1,067	1,062	675	124	262	225
1976.....		39,435	5,890	26,107	8,671	17,436	890	3,899	2,619	369	131	480	300	1,266	1,139	711	135	292	245
1977.....		43,338	6,211	28,863	9,523	19,340	962	4,346	2,893	394	155	569	337	1,467	1,213	740	147	326	275
1978.....		48,719	6,962	32,222	10,107	22,115	1,082	4,996	3,329	443	182	679	364	1,772	1,353	830	160	363	333
1979.....		55,379	7,471	37,062	11,354	25,708	1,164	5,715	3,848	482	215	785	386	2,013	1,564	985	174	405	390
1980.....		63,224	7,831	43,228	12,752	30,476	1,277	6,455	4,335	519	264	920	419	2,306	1,658	1,017	189	452	469
1981.....		72,292	8,605	50,425	14,997	35,428	1,385	7,085	4,670	581	314	1,058	463	2,484	1,784	1,075	206	504	524
1982.....		80,748	9,501	57,166	17,061	40,105	1,484	7,603	4,879	621	363	1,207	534	2,544	1,915	1,129	224	561	536
1983.....		89,950	10,830	63,683	19,095	44,588	1,585	8,251	5,210	658	432	1,357	595	2,840	2,176	1,306	244	626	585
1984.....		102,244	11,916	73,061	21,657	51,404	1,739	9,154	5,748	721	518	1,514	654	3,243	2,511	1,548	265	698	620
1985.....		114,671	13,093	82,376	25,333	57,043	1,863	10,308	6,388	834	630	1,743	713	3,616	2,761	1,694	289	778	655
1986.....		120,249	13,504	85,932	26,000	59,932	1,891	11,540	7,028	969	745	2,019	780	3,973	2,867	1,686	314	867	541
1987.....		126,360	13,588	90,160	28,757	61,403	1,995	12,807	7,768	1,065	831	2,262	882	4,287	3,013	1,704	342	967	509
1988.....		133,880	14,342	94,893	28,221	66,672	2,122	14,220	8,592	1,165	933	2,527	1,003	4,581	3,213	1,762	372	1,078	510
1989.....		141,889	15,231	99,860	26,359	73,501	2,195	15,632	9,315	1,274	1,061	2,852	1,131	4,756	3,669	2,062	405	1,202	547
1990.....		151,990	15,671	107,404	25,802	81,602	2,323	16,936	9,936	1,399	1,166	3,187	1,249	4,894	4,126	2,346	440	1,340	636
1991.....		160,872	15,249	114,675	24,095	90,580	2,277	18,203	10,664	1,483	1,242	3,457	1,358	5,120	4,652	2,679	479	1,494	696

**U.S. R&D expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

Year	Performing sector:		Industry				U&C <sup>a</sup>						Other nonprofit institutions				Nonprofit FFRDCs <sup>b</sup>	
	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>g</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>c</sup>	Industry	Nonprofit	Federal <sup>c</sup>
1992.....	165,347	15,853	116,757	22,369	94,388	2,353	19,385	11,525	1,525	1,320	3,568	1,448	5,259	4,993	2,806	521	1,666	748
1993.....	165,726	16,531	115,435	20,844	94,591	1,965	20,490	12,304	1,557	1,391	3,709	1,531	5,289	5,267	2,843	567	1,857	749
1994.....	169,201	16,355	117,392	20,261	97,131	2,202	21,601	12,992	1,622	1,456	3,938	1,594	5,294	5,599	2,911	617	2,071	758
1995.....	183,618	16,904	129,830	21,178	108,652	2,273	22,610	13,587	1,751	1,547	4,110	1,616	5,367	5,827	2,847	671	2,308	808
1996.....	197,338	16,585	142,371	21,356	121,015	2,297	23,709	14,078	1,860	1,671	4,435	1,666	5,395	6,209	2,906	730	2,574	772
1997.....	212,142	16,819	155,409	21,798	133,611	2,130	24,875	14,523	1,921	1,807	4,837	1,786	5,463	6,626	3,014	809	2,804	821
1998.....	226,455	17,362	167,102	22,086	145,016	2,078	26,169	15,166	1,971	1,949	5,162	1,921	5,559	7,341	3,281	880	3,180	843
1999.....	245,036	17,851	182,090	20,496	161,594	2,039	28,163	16,253	2,098	2,082	5,618	2,111	5,652	8,249	3,761	984	3,504	993
2000.....	267,557	17,917	199,961	17,117	182,844	2,001	30,688	17,714	2,246	2,174	6,230	2,325	5,742	9,782	4,447	1,118	4,217	1,465
2001.....	277,736	20,426	202,017	16,899	185,118	2,020	33,723	19,769	2,396	2,189	6,824	2,545	6,225	11,133	5,289	1,132	4,712	2,192
2002.....	276,591	21,499	193,868	16,401	177,467	2,263	37,191	22,376	2,556	2,160	7,341	2,758	7,102	12,348	5,731	1,084	5,534	2,319
2003.....	289,025	22,752	200,724	17,798	182,926	2,458	40,457	25,106	2,740	2,129	7,648	2,833	7,301	12,839	5,686	1,118	6,035	2,494
2004.....	300,060	23,044	208,301	20,266	188,035	2,485	43,090	27,140	2,882	2,190	7,932	2,946	7,658	12,838	5,671	1,151	6,016	2,644
2005.....	323,041	24,744	226,159	21,909	204,250	2,565	45,148	28,177	2,945	2,332	8,573	3,122	7,786	13,824	5,791	1,253	6,779	2,815
2006.....	340,429	24,408	242,129	22,560	219,569	2,426	46,642	28,548	3,057	2,452	9,297	3,288	7,720	14,272	5,721	1,350	7,200	2,834

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 on not directly comparable with data for 1997 and earlier. For FY 1998, \$479 million in passthrough funds reported. For FY 2006, \$1,630 million in passthrough funds estimated.

<sup>b</sup>Beginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

<sup>c</sup>Expenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–54.

<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).



**U.S. inflation-adjusted R&D expenditures, by performing and funding sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C <sup>a</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs <sup>b</sup>	
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>c</sup>	Industry	Nonprofit	Federal <sup>g</sup>
1953.....		28,282	5,563	19,896	7,838	12,058	NA	1,494	817	217	112	200	148	718	611	315	143	153	NA
1954.....		30,495	5,226	22,098	9,502	12,597	NA	1,634	893	242	128	214	157	871	665	328	168	168	NA
1955.....		33,508	5,189	24,096	10,973	13,123	656	1,824	1,019	267	144	224	171	998	699	341	187	171	45
1956.....		43,827	5,829	32,339	15,443	16,897	1,717	2,016	1,140	291	162	237	186	1,119	750	364	191	196	57
1957.....		49,447	6,474	36,550	19,603	16,948	2,031	2,161	1,205	319	182	255	200	1,330	831	392	185	255	70
1958.....		53,248	7,350	39,349	21,641	17,709	1,576	2,395	1,366	351	190	271	217	1,539	951	463	185	302	88
1959.....		60,187	8,101	44,335	25,141	19,194	2,014	2,824	1,713	388	190	294	239	1,682	1,125	600	202	323	106
1960.....		65,164	8,558	47,679	26,634	21,045	2,267	3,348	2,151	428	190	318	261	1,830	1,255	703	228	323	228
1961.....		68,450	9,340	48,657	26,719	21,939	2,608	3,917	2,615	472	188	350	291	2,068	1,429	794	230	404	430
1962.....		72,499	10,143	51,174	27,857	23,318	1,975	4,602	3,183	519	188	389	322	2,318	1,683	927	250	505	603
1963.....		80,377	11,738	56,047	31,455	24,592	1,899	5,405	3,847	573	186	440	358	2,659	1,872	1,074	252	546	757
1964.....		86,320	13,399	58,964	32,792	26,172	2,092	6,211	4,496	621	183	513	398	2,842	1,884	1,130	249	506	926
1965.....		89,872	14,006	61,293	32,692	28,601	1,655	7,076	5,179	663	184	604	446	2,793	2,095	1,269	275	550	954
1966.....		95,232	14,272	65,553	34,418	31,135	1,532	7,844	5,760	690	194	710	490	2,811	2,315	1,417	302	595	906
1967.....		97,709	14,416	66,821	33,256	33,565	1,754	8,517	6,238	703	216	835	525	2,913	2,348	1,431	310	607	942
1968.....		99,009	14,037	68,293	32,694	35,600	1,666	8,779	6,366	741	231	885	556	2,898	2,392	1,461	325	606	943
1969.....		99,415	14,495	68,241	30,545	37,696	1,774	8,719	6,209	795	231	891	593	2,796	2,453	1,482	356	616	937
1970.....		95,419	15,087	63,903	26,536	37,367	1,718	8,781	6,122	861	238	939	621	2,639	2,457	1,487	345	625	835
1971.....		93,225	15,250	61,670	24,818	36,852	1,698	8,872	6,086	906	249	1,001	630	2,541	2,451	1,475	339	636	744
1972.....		95,275	15,500	62,999	24,760	38,239	1,817	9,140	6,265	935	262	1,033	645	2,602	2,554	1,563	335	656	663
1973.....		97,184	15,186	65,008	23,863	41,145	1,711	9,272	6,306	947	281	1,077	661	2,641	2,769	1,777	330	663	597
1974.....		96,065	14,780	64,042	21,805	42,237	1,866	9,260	6,220	922	299	1,130	688	2,667	2,845	1,839	329	677	605
1975.....		93,870	14,635	61,735	20,731	41,004	1,913	9,393	6,316	916	311	1,135	716	2,808	2,793	1,776	327	690	592
1976.....		98,104	14,653	64,948	21,571	43,377	2,214	9,699	6,515	918	326	1,194	745	3,148	2,833	1,769	336	727	610
1977.....		101,372	14,529	67,514	22,275	45,238	2,250	10,166	6,766	922	361	1,330	787	3,432	2,838	1,732	344	763	643
1978.....		106,474	15,216	70,420	22,089	48,332	2,365	10,918	7,274	968	397	1,484	794	3,872	2,958	1,814	350	794	727
1979.....		111,769	15,079	74,801	22,915	51,885	2,349	11,533	7,766	972	433	1,584	778	4,062	3,157	1,988	351	818	787
1980.....		116,990	14,490	79,989	23,596	56,393	2,363	11,944	8,021	959	488	1,701	775	4,267	3,069	1,882	351	836	867
1981.....		122,282	14,555	85,294	25,367	59,927	2,343	11,984	7,898	983	531	1,789	783	4,202	3,018	1,818	349	852	886
1982.....		128,733	15,147	91,137	27,200	63,938	2,366	12,120	7,778	990	579	1,923	851	4,055	3,053	1,800	358	895	854
1983.....		137,944	16,608	97,663	29,284	68,379	2,431	12,654	7,990	1,009	663	2,080	912	4,356	3,336	2,002	374	960	898
1984.....		151,125	17,612	107,990	32,011	75,979	2,570	13,530	8,495	1,066	765	2,238	966	4,794	3,712	2,288	392	1,032	917
1985.....		164,486	18,781	118,162	36,338	81,824	2,672	14,785	9,163	1,196	904	2,500	1,023	5,187	3,960	2,429	414	1,116	939
1986.....		168,770	18,954	120,607	36,491	84,115	2,654	16,197	9,863	1,360	1,046	2,833	1,095	5,576	4,024	2,366	441	1,218	759
1987.....		172,633	18,565	123,176	39,288	83,889	2,726	17,497	10,613	1,454	1,135	3,090	1,204	5,857	4,117	2,328	467	1,321	696
1988.....		176,871	18,948	125,364	37,283	88,081	2,803	18,786	11,351	1,539	1,233	3,338	1,325	6,052	4,244	2,328	491	1,424	673
1989.....		180,618	19,388	127,117	33,554	93,564	2,794	19,899	11,857	1,622	1,350	3,630	1,440	6,054	4,670	2,625	515	1,530	696
1990.....		186,284	19,207	131,638	31,624	100,015	2,847	20,757	12,178	1,715	1,428	3,905	1,531	5,998	5,057	2,875	540	1,643	780
1991.....		190,509	18,059	135,801	28,534	107,267	2,696	21,556	12,628	1,756	1,470	4,094	1,608	6,064	5,509	3,172	567	1,769	824

**U.S. inflation-adjusted R&D expenditures, by performing and funding sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:		Federal	Industry			Industry FFRDCs	U&C <sup>a</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs <sup>b</sup>
	Total	Federal		Total	Federal <sup>c</sup>	Industry <sup>d</sup>		Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C		Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>c</sup>	
1992.....	191,408	18,352	135,159	25,895	109,265	2,724	22,440	13,341	1,765	1,527	4,130	1,676	6,088	5,780	3,248	603	1,928	865
1993.....	187,515	18,704	130,612	23,585	107,028	2,223	23,184	13,921	1,761	1,574	4,196	1,732	5,984	5,960	3,217	642	2,101	848
1994.....	187,463	18,120	130,062	22,448	107,614	2,440	23,932	14,394	1,797	1,613	4,363	1,766	5,865	6,203	3,225	683	2,294	840
1995.....	199,355	18,352	140,957	22,993	117,964	2,468	24,548	14,751	1,901	1,680	4,462	1,754	5,827	6,326	3,091	729	2,506	877
1996.....	210,263	17,671	151,696	22,755	128,941	2,447	25,262	15,000	1,982	1,780	4,725	1,775	5,748	6,616	3,096	778	2,742	822
1997.....	222,340	17,628	162,880	22,846	140,034	2,232	26,070	15,221	2,014	1,894	5,070	1,872	5,725	6,945	3,159	848	2,938	860
1998.....	234,737	17,997	173,213	22,894	150,320	2,154	27,126	15,721	2,043	2,020	5,351	1,991	5,763	7,610	3,401	912	3,297	874
1999.....	250,374	18,240	186,056	20,942	165,114	2,084	28,776	16,608	2,143	2,127	5,741	2,157	5,775	8,429	3,843	1,006	3,581	1,014
2000.....	267,556	17,917	199,961	17,117	182,844	2,001	30,688	17,714	2,246	2,174	6,230	2,325	5,742	9,782	4,447	1,118	4,217	1,465
2001.....	271,229	19,948	197,284	16,503	180,781	1,973	32,933	19,305	2,340	2,138	6,664	2,485	6,080	10,872	5,165	1,106	4,601	2,140
2002.....	265,475	20,635	186,077	15,742	170,335	2,172	35,696	21,477	2,453	2,073	7,046	2,647	6,817	11,852	5,501	1,040	5,311	2,226
2003.....	271,630	21,383	188,644	16,727	171,917	2,310	38,022	23,595	2,575	2,001	7,188	2,662	6,861	12,066	5,344	1,051	5,671	2,344
2004.....	274,211	21,059	190,357	18,520	171,837	2,271	39,378	24,802	2,634	2,002	7,249	2,692	6,998	11,732	5,183	1,051	5,498	2,416
2005.....	286,545	21,948	200,609	19,434	181,175	2,275	40,048	24,993	2,612	2,068	7,605	2,769	6,906	12,262	5,137	1,112	6,013	2,497
2006.....	293,254	21,025	208,576	19,434	189,142	2,090	40,178	24,592	2,634	2,113	8,009	2,832	6,650	12,294	4,928	1,163	6,202	2,441

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 on not directly comparable with data for 1997 and earlier. For FY 1998, \$479 million in passthrough funds reported. For FY 2006, \$1,630 million in passthrough funds estimated.

<sup>b</sup>Beginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

<sup>c</sup>Expenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–54.

<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

**U.S. R&D expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Total	Total	Federal	Industry <sup>b</sup>	Industry FFRDCs <sup>b</sup>	U&C <sup>c</sup>	U&C FFRDCs <sup>d</sup>	Nonprofit <sup>e</sup>	Nonprofit FFRDCs <sup>b,e</sup>	Total	Industry <sup>f</sup>	U&C <sup>c</sup>	Nonprofit	U&C <sup>c</sup>	Total	Nonprofit	U&C <sup>c</sup>	U&C <sup>c</sup>	
1953.....	5,160	2,783	1,015	1,430	NA	149	131	58	NA	2,247	2,200	21	26	37	55	28	27	40	
1954.....	5,617	3,098	963	1,750	NA	165	161	61	NA	2,375	2,320	24	31	40	60	31	29	45	
1955.....	6,281	3,603	973	2,057	123	191	187	64	9	2,522	2,460	27	35	42	64	32	32	50	
1956.....	8,500	4,978	1,130	2,995	333	221	217	71	11	3,346	3,277	32	37	46	74	38	36	57	
1957.....	9,908	6,233	1,297	3,928	407	242	267	79	14	3,470	3,396	37	37	51	91	51	40	64	
1958.....	10,915	6,974	1,507	4,436	323	280	316	95	18	3,707	3,630	39	38	56	107	62	45	72	
1959.....	12,490	8,167	1,681	5,217	418	356	349	125	22	4,065	3,983	40	42	61	117	67	50	81	
1960.....	13,711	8,915	1,801	5,604	477	453	385	148	48	4,516	4,428	40	48	67	123	68	55	90	
1961.....	14,564	9,484	1,987	5,685	555	557	440	169	92	4,757	4,668	40	49	75	148	86	62	101	
1962.....	15,636	10,138	2,188	6,008	426	687	500	200	130	5,124	5,029	41	54	84	179	109	70	112	
1963.....	17,519	11,645	2,558	6,856	414	839	580	234	165	5,456	5,360	41	55	96	197	119	78	125	
1964.....	19,103	12,764	2,965	7,257	463	995	629	250	205	5,888	5,792	41	55	114	200	112	88	138	
1965.....	20,252	13,194	3,156	7,367	373	1,167	630	286	215	6,549	6,445	42	62	136	225	124	101	150	
1966.....	22,072	14,165	3,308	7,977	355	1,335	652	329	210	7,331	7,216	45	70	165	252	138	114	160	
1967.....	23,346	14,563	3,444	7,946	419	1,491	696	342	225	8,146	8,020	52	74	200	271	145	126	168	
1968.....	24,666	14,964	3,497	8,145	415	1,586	722	364	235	9,008	8,869	58	81	221	290	151	139	185	
1969.....	25,996	15,228	3,790	7,987	464	1,624	731	388	245	10,011	9,857	61	93	233	316	161	155	208	
1970.....	26,271	14,984	4,154	7,306	473	1,686	727	410	230	10,449	10,288	66	95	259	343	172	171	237	
1971.....	26,952	15,210	4,409	7,175	491	1,760	735	427	215	10,824	10,654	72	98	290	366	184	182	262	
1972.....	28,740	16,039	4,676	7,469	548	1,890	785	472	200	11,715	11,535	79	101	312	393	198	195	282	
1973.....	30,952	16,587	4,837	7,600	545	2,009	841	566	190	13,299	13,104	90	105	343	422	211	211	302	
1974.....	33,359	17,287	5,132	7,572	648	2,160	926	639	210	14,885	14,667	104	114	393	474	235	239	320	
1975.....	35,671	18,533	5,561	7,878	727	2,400	1,067	675	225	15,824	15,582	118	124	432	534	262	272	348	
1976.....	39,435	20,292	5,890	8,671	890	2,619	1,266	711	245	17,702	17,436	131	135	480	592	292	300	369	
1977.....	43,338	22,071	6,211	9,523	962	2,893	1,467	740	275	19,642	19,340	155	147	569	662	326	337	394	
1978.....	48,719	24,414	6,962	10,107	1,082	3,329	1,772	830	333	22,457	22,115	182	160	679	727	363	364	443	
1979.....	55,379	27,225	7,471	11,354	1,164	3,848	2,013	985	390	26,097	25,708	215	174	785	791	405	386	482	
1980.....	63,224	29,986	7,831	12,752	1,277	4,335	2,306	1,017	469	30,929	30,476	264	189	920	871	452	419	519	
1981.....	72,292	33,739	8,605	14,997	1,385	4,670	2,484	1,075	524	35,948	35,428	314	206	1,058	967	504	463	581	
1982.....	80,748	37,133	9,501	17,061	1,484	4,879	2,544	1,129	536	40,692	40,105	363	224	1,207	1,095	561	534	621	
1983.....	89,950	41,451	10,830	19,095	1,585	5,210	2,840	1,306	585	45,264	44,588	432	244	1,357	1,220	626	595	658	
1984.....	102,244	46,470	11,916	21,657	1,739	5,748	3,243	1,548	620	52,187	51,404	518	265	1,514	1,351	698	654	721	
1985.....	114,671	52,641	13,093	25,333	1,863	6,388	3,616	1,694	655	57,962	57,043	630	289	1,743	1,491	778	713	834	
1986.....	120,249	54,622	13,504	26,000	1,891	7,028	3,973	1,686	541	60,991	59,932	745	314	2,019	1,647	867	780	969	
1987.....	126,360	58,609	13,588	28,757	1,995	7,768	4,287	1,704	509	62,576	61,403	831	342	2,262	1,849	967	882	1,065	
1988.....	133,880	60,130	14,342	28,221	2,122	8,592	4,581	1,762	510	67,977	66,672	933	372	2,527	2,081	1,078	1,003	1,165	
1989.....	141,889	60,464	15,231	26,359	2,195	9,315	4,756	2,062	547	74,966	73,501	1,061	405	2,852	2,333	1,202	1,131	1,274	
1990.....	151,990	61,607	15,671	25,802	2,323	9,936	4,894	2,346	636	83,208	81,602	1,166	440	3,187	2,589	1,340	1,249	1,399	
1991.....	160,872	60,780	15,249	24,095	2,277	10,664	5,120	2,679	696	92,300	90,580	1,242	479	3,457	2,852	1,494	1,358	1,483	

**U.S. R&D expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:	Performing sector:																	
	Total	Total	Federal							Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>		
	Total	Total	Federal	Industry <sup>b</sup>	FFRDCs <sup>b</sup>	U&C <sup>c</sup>	U&C FFRDCs <sup>d</sup>	Nonprofit <sup>e</sup>	FFRDCs <sup>b,e</sup>	Total	Industry <sup>f</sup>	U&C <sup>c</sup>	Nonprofit	U&C <sup>c</sup>	Total	Nonprofit	U&C <sup>c</sup>	U&C <sup>c</sup>	
1992.....	165,347	60,912	15,853	22,369	2,353	11,525	5,259	2,806	748	96,229	94,388	1,320	521	3,568	3,113	1,666	1,448	1,525	
1993.....	165,726	60,524	16,531	20,844	1,965	12,304	5,289	2,843	749	96,549	94,591	1,391	567	3,709	3,388	1,857	1,531	1,557	
1994.....	169,201	60,773	16,355	20,261	2,202	12,992	5,294	2,911	758	99,203	97,131	1,456	617	3,938	3,665	2,071	1,594	1,622	
1995.....	183,618	62,964	16,904	21,178	2,273	13,587	5,367	2,847	808	110,870	108,652	1,547	671	4,110	3,924	2,308	1,616	1,751	
1996.....	197,338	63,388	16,585	21,356	2,297	14,078	5,395	2,906	772	123,416	121,015	1,671	730	4,435	4,239	2,574	1,666	1,860	
1997.....	212,142	64,567	16,819	21,798	2,130	14,523	5,463	3,014	821	136,227	133,611	1,807	809	4,837	4,590	2,804	1,786	1,921	
1998.....	226,455	66,375	17,362	22,086	2,078	15,166	5,559	3,281	843	147,845	145,016	1,949	880	5,162	5,101	3,180	1,921	1,971	
1999.....	245,036	67,045	17,851	20,496	2,039	16,253	5,652	3,761	993	164,660	161,594	2,082	984	5,618	5,616	3,504	2,111	2,098	
2000.....	267,557	66,403	17,917	17,117	2,001	17,714	5,742	4,447	1,465	186,135	182,844	2,174	1,118	6,230	6,542	4,217	2,325	2,246	
2001.....	277,736	72,820	20,426	16,899	2,020	19,769	6,225	5,289	2,192	188,439	185,118	2,189	1,132	6,824	7,256	4,712	2,545	2,396	
2002.....	276,591	77,691	21,499	16,401	2,263	22,376	7,102	5,731	2,319	180,711	177,467	2,160	1,084	7,341	8,291	5,534	2,758	2,556	
2003.....	289,025	83,596	22,752	17,798	2,458	25,106	7,301	5,686	2,494	186,174	182,926	2,129	1,118	7,648	8,868	6,035	2,833	2,740	
2004.....	300,060	88,908	23,044	20,266	2,485	27,140	7,658	5,671	2,644	191,376	188,035	2,190	1,151	7,932	8,962	6,016	2,946	2,882	
2005.....	323,041	93,787	24,744	21,909	2,565	28,177	7,786	5,791	2,815	207,835	204,250	2,332	1,253	8,573	9,901	6,779	3,122	2,945	
2006.....	340,429	94,216	24,408	22,560	2,426	28,548	7,720	5,721	2,834	223,371	219,569	2,452	1,350	9,297	10,488	7,200	3,288	3,057	

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–63.

<sup>c</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 on not directly comparable with data for 1997 and earlier. For FY 1998, \$479 million in passthrough funds reported. For FY 2006, \$1,630 million in passthrough funds estimated.

<sup>d</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>e</sup>Beginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

Appendix table 4-6

**U.S. inflation-adjusted R&D expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Total	Total	Federal	Industry <sup>b</sup>	Industry FFRDCs <sup>b</sup>	U&C <sup>c</sup>	U&C FFRDCs <sup>d</sup>	Nonprofit <sup>e</sup>	Nonprofit FFRDCs <sup>b,e</sup>	Total	Industry <sup>f</sup>	U&C <sup>c</sup>	Nonprofit	U&C <sup>c</sup>	Total	Nonprofit	U&C <sup>c</sup>	U&C <sup>c</sup>	
1953.....		28,282	15,251	5,563	7,838	NA	817	718	315	NA	12,313	12,058	112	143	200	301	153	148	217
1954.....		30,495	16,821	5,226	9,502	NA	893	871	328	NA	12,892	12,597	128	168	214	326	168	157	242
1955.....		33,508	19,222	5,189	10,973	656	1,019	998	341	45	13,454	13,123	144	187	224	341	171	171	267
1956.....		43,827	25,667	5,829	15,443	1,717	1,140	1,119	364	57	17,250	16,897	162	191	237	382	196	186	291
1957.....		49,447	31,104	6,474	19,603	2,031	1,205	1,330	392	70	17,314	16,948	182	185	255	454	255	200	319
1958.....		53,248	34,023	7,350	21,641	1,576	1,366	1,539	463	88	18,084	17,709	190	185	271	520	302	217	351
1959.....		60,187	39,357	8,101	25,141	2,014	1,713	1,682	600	106	19,587	19,194	190	202	294	561	323	239	388
1960.....		65,164	42,371	8,558	26,634	2,267	2,151	1,830	703	228	21,463	21,045	190	228	318	585	323	261	428
1961.....		68,450	44,575	9,340	26,719	2,608	2,615	2,068	794	430	22,357	21,939	188	230	350	696	404	291	472
1962.....		72,499	47,007	10,143	27,857	1,975	3,183	2,318	927	603	23,756	23,318	188	250	389	828	505	322	519
1963.....		80,377	53,429	11,738	31,455	1,899	3,847	2,659	1,074	757	25,030	24,592	186	252	440	904	546	358	573
1964.....		86,320	57,678	13,399	32,792	2,092	4,496	2,842	1,130	926	26,604	26,172	183	249	513	904	506	398	621
1965.....		89,872	58,549	14,006	32,692	1,655	5,179	2,793	1,269	954	29,060	28,601	184	275	604	996	550	446	663
1966.....		95,232	61,116	14,272	34,418	1,532	5,760	2,811	1,417	906	31,631	31,135	194	302	710	1,085	595	490	690
1967.....		97,709	60,949	14,416	33,256	1,754	6,238	2,913	1,431	942	34,091	33,565	216	310	835	1,132	607	525	703
1968.....		99,009	60,066	14,037	32,694	1,666	6,366	2,898	1,461	943	36,156	35,600	231	325	885	1,162	606	556	741
1969.....		99,415	58,237	14,495	30,545	1,774	6,209	2,796	1,482	937	38,283	37,696	231	356	891	1,208	616	593	795
1970.....		95,419	54,424	15,087	26,536	1,718	6,122	2,639	1,487	835	37,950	37,367	238	345	939	1,246	625	621	861
1971.....		93,225	52,612	15,250	24,818	1,698	6,086	2,541	1,475	744	37,440	36,852	249	339	1,001	1,266	636	630	906
1972.....		95,275	53,170	15,500	24,760	1,817	6,265	2,602	1,563	663	38,836	38,239	262	335	1,033	1,301	656	645	935
1973.....		97,184	52,081	15,186	23,863	1,711	6,306	2,641	1,777	597	41,756	41,145	281	330	1,077	1,323	663	661	947
1974.....		96,065	49,782	14,780	21,805	1,866	6,220	2,667	1,839	605	42,866	42,237	299	329	1,130	1,366	677	688	922
1975.....		93,870	48,771	14,635	20,731	1,913	6,316	2,808	1,776	592	41,642	41,004	311	327	1,135	1,406	690	716	916
1976.....		98,104	50,481	14,653	21,571	2,214	6,515	3,148	1,769	610	44,039	43,377	326	336	1,194	1,472	727	745	918
1977.....		101,372	51,627	14,529	22,275	2,250	6,766	3,432	1,732	643	45,944	45,238	361	344	1,330	1,550	763	787	922
1978.....		106,474	53,355	15,216	22,089	2,365	7,274	3,872	1,814	727	49,078	48,332	397	350	1,484	1,589	794	794	968
1979.....		111,769	54,947	15,079	22,915	2,349	7,766	4,062	1,988	787	52,670	51,885	433	351	1,584	1,596	818	778	972
1980.....		116,990	55,487	14,490	23,596	2,363	8,021	4,267	1,882	867	57,231	56,393	488	351	1,701	1,611	836	775	959
1981.....		122,282	57,069	14,555	25,367	2,343	7,898	4,202	1,818	886	60,806	59,927	531	349	1,789	1,635	852	783	983
1982.....		128,733	59,200	15,147	27,200	2,366	7,778	4,055	1,800	854	64,874	63,938	579	358	1,923	1,746	895	851	990
1983.....		137,944	63,568	16,608	29,284	2,431	7,990	4,356	2,002	898	69,416	68,379	663	374	2,080	1,872	960	912	1,009
1984.....		151,125	68,687	17,612	32,011	2,570	8,495	4,794	2,288	917	77,137	75,979	765	392	2,238	1,997	1,032	966	1,066
1985.....		164,486	75,510	18,781	36,338	2,672	9,163	5,187	2,429	939	83,142	81,824	904	414	2,500	2,139	1,116	1,023	1,196
1986.....		168,770	76,663	18,954	36,491	2,654	9,863	5,576	2,366	759	85,602	84,115	1,046	441	2,833	2,312	1,218	1,095	1,360
1987.....		172,633	80,072	18,565	39,288	2,726	10,613	5,857	2,328	696	85,491	83,889	1,135	467	3,090	2,526	1,321	1,204	1,454
1988.....		176,871	79,438	18,948	37,283	2,803	11,351	6,052	2,328	673	89,805	88,081	1,233	491	3,338	2,750	1,424	1,325	1,539
1989.....		180,618	76,967	19,388	33,554	2,794	11,857	6,054	2,625	696	95,429	93,564	1,350	515	3,630	2,970	1,530	1,440	1,622
1990.....		186,284	75,508	19,207	31,624	2,847	12,178	5,998	2,875	780	101,983	100,015	1,428	540	3,905	3,173	1,643	1,531	1,715
1991.....		190,509	71,977	18,059	28,534	2,696	12,628	6,064	3,172	824	109,305	107,267	1,470	567	4,094	3,378	1,769	1,608	1,756

**U.S. inflation-adjusted R&D expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Performing sector:	Total	Total	Federal	Industry <sup>b</sup>	FFRDCs <sup>b</sup>	U&C <sup>c</sup>	U&C	Nonprofit	FFRDCs <sup>d</sup>	Nonprofit <sup>b,e</sup>	Total	Industry <sup>f</sup>	U&C <sup>c</sup>	Nonprofit	U&C <sup>c</sup>	Total	Nonprofit	U&C <sup>c</sup>
1992.....		191,408	70,513	18,352	25,895	2,724	13,341	6,088	3,248	865	111,395	109,265	1,527	603	4,130	3,604	1,928	1,676	1,765
1993.....		187,515	68,482	18,704	23,585	2,223	13,921	5,984	3,217	848	109,243	107,028	1,574	642	4,196	3,833	2,101	1,732	1,761
1994.....		187,463	67,332	18,120	22,448	2,440	14,394	5,865	3,225	840	109,910	107,614	1,613	683	4,363	4,060	2,294	1,766	1,797
1995.....		199,355	68,360	18,352	22,993	2,468	14,751	5,827	3,091	877	120,372	117,964	1,680	729	4,462	4,261	2,506	1,754	1,901
1996.....		210,263	67,540	17,671	22,755	2,447	15,000	5,748	3,096	822	131,500	128,941	1,780	778	4,725	4,517	2,742	1,775	1,982
1997.....		222,340	67,671	17,628	22,846	2,232	15,221	5,725	3,159	860	142,776	140,034	1,894	848	5,070	4,810	2,938	1,872	2,014
1998.....		234,737	68,803	17,997	22,894	2,154	15,721	5,763	3,401	874	153,252	150,320	2,020	912	5,351	5,288	3,297	1,991	2,043
1999.....		250,374	68,505	18,240	20,942	2,084	16,608	5,775	3,843	1,014	168,247	165,114	2,127	1,006	5,741	5,738	3,581	2,157	2,143
2000.....		267,556	66,403	17,917	17,117	2,001	17,714	5,742	4,447	1,465	186,135	182,844	2,174	1,118	6,230	6,542	4,217	2,325	2,246
2001.....		271,229	71,114	19,948	16,503	1,973	19,305	6,080	5,165	2,140	184,024	180,781	2,138	1,106	6,664	7,086	4,601	2,485	2,340
2002.....		265,475	74,569	20,635	15,742	2,172	21,477	6,817	5,501	2,226	173,449	170,335	2,073	1,040	7,046	7,958	5,311	2,647	2,453
2003.....		271,630	78,565	21,383	16,727	2,310	23,595	6,861	5,344	2,344	174,969	171,917	2,001	1,051	7,188	8,334	5,671	2,662	2,575
2004.....		274,211	81,249	21,059	18,520	2,271	24,802	6,998	5,183	2,416	174,890	171,837	2,002	1,051	7,249	8,190	5,498	2,692	2,634
2005.....		286,545	83,191	21,948	19,434	2,275	24,993	6,906	5,137	2,497	184,355	181,175	2,068	1,112	7,605	8,783	6,013	2,769	2,612
2006.....		293,254	81,160	21,025	19,434	2,090	24,592	6,650	4,928	2,441	192,417	189,142	2,113	1,163	8,009	9,034	6,202	2,832	2,634

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–63.

<sup>c</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 on not directly comparable with data for 1997 and earlier. For FY 1998, \$479 million in passthrough funds reported. For FY 2006, \$1,630 million in passthrough funds estimated.

<sup>d</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>e</sup>Beginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

Appendix table 4-7

**U.S. basic research expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

Year	Performing sector:						U&C <sup>b</sup>							Other nonprofit institutions				Nonprofit
	Total	Federal	Industry <sup>a</sup>			Industry FFRDCs	Total	Federal	U&C <sup>b</sup>			U&C FFRDCs	Total	Federal <sup>c</sup>	Industry	Nonprofit	FFRDCs	
	Funding sector: Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>c</sup>	Industry	Nonprofit	Federal <sup>g</sup>
1953.....	460	102	151	19	132	NA	123	82	7	13	6	16	36	48	27	9	12	NA
1954.....	509	96	166	23	143	NA	148	97	10	15	8	18	44	55	31	11	13	NA
1955.....	579	98	189	27	162	NA	180	117	14	17	12	21	50	63	36	13	14	NA
1956.....	718	114	253	37	216	NA	220	143	19	20	15	24	58	74	42	15	17	NA
1957.....	814	124	271	41	230	NA	261	167	25	23	20	27	72	87	49	15	23	NA
1958.....	944	149	295	43	252	NA	312	202	31	24	24	31	85	103	59	16	28	NA
1959.....	1,087	165	320	72	248	NA	388	263	38	24	28	36	95	120	72	18	30	NA
1960.....	1,286	184	376	79	297	NA	485	341	45	25	33	41	106	136	85	21	30	NA
1961.....	1,512	230	395	81	314	NA	598	432	54	25	40	48	126	164	105	22	37	NA
1962.....	1,824	252	488	143	345	NA	737	546	64	25	48	55	148	200	130	24	46	NA
1963.....	2,115	285	522	147	375	NA	909	689	75	25	58	63	175	225	150	25	50	NA
1964.....	2,396	339	507	123	384	42	1,071	824	84	25	70	68	200	238	166	25	47	NA
1965.....	2,664	375	563	157	406	29	1,221	944	94	27	86	70	218	260	179	29	52	NA
1966.....	2,930	410	593	142	451	31	1,380	1,066	104	29	106	75	239	278	188	32	58	NA
1967.....	3,168	434	595	168	427	34	1,554	1,188	114	34	136	83	263	289	194	34	61	NA
1968.....	3,376	482	607	145	462	35	1,681	1,265	131	38	156	91	276	296	196	37	63	NA
1969.....	3,491	545	581	123	458	37	1,754	1,288	153	40	171	103	272	302	192	43	67	NA
1970.....	3,594	562	566	122	444	36	1,855	1,323	179	43	196	115	265	311	195	44	72	NA
1971.....	3,720	581	557	101	456	33	1,968	1,385	194	50	214	127	252	329	207	45	77	NA
1972.....	3,850	603	554	91	463	39	2,038	1,437	195	55	216	134	270	347	216	47	84	NA
1973.....	4,099	652	595	96	499	36	2,103	1,489	196	59	223	137	343	371	232	49	90	NA
1974.....	4,511	715	650	114	536	49	2,282	1,609	204	66	250	153	415	401	245	54	102	NA
1975.....	4,875	760	677	104	573	53	2,480	1,768	212	72	264	164	476	430	255	59	116	NA
1976.....	5,373	850	750	116	634	69	2,675	1,924	218	75	283	175	556	474	278	65	131	NA
1977.....	6,008	943	836	135	701	75	2,967	2,114	232	89	334	198	667	521	301	72	148	NA
1978.....	6,959	1,044	941	156	785	94	3,376	2,399	260	107	398	213	906	598	351	79	168	NA
1979.....	7,836	1,112	1,054	161	893	104	3,828	2,719	286	128	466	229	1,050	689	413	87	190	NA
1980.....	8,745	1,212	1,205	170	1,035	120	4,315	3,061	307	156	544	248	1,167	726	416	95	215	NA
1981.....	9,658	1,343	1,477	164	1,313	137	4,737	3,331	338	183	615	269	1,284	671	324	105	243	9
1982.....	10,651	1,522	1,776	253	1,523	128	5,091	3,475	368	215	716	317	1,366	759	369	115	275	9
1983.....	11,880	1,733	2,106	346	1,760	117	5,518	3,689	396	260	816	358	1,536	863	426	127	311	8
1984.....	13,332	1,877	2,472	340	2,132	136	6,145	4,087	436	313	915	395	1,709	984	494	139	351	9
1985.....	14,748	1,947	2,731	358	2,373	131	7,024	4,606	514	389	1,075	440	1,793	1,110	560	153	397	13
1986.....	17,154	2,026	3,930	434	3,496	117	7,943	5,122	606	466	1,262	488	1,915	1,210	594	168	449	13
1987.....	18,481	2,047	4,181	598	3,583	142	8,644	5,527	659	514	1,399	545	2,086	1,367	675	185	507	14
1988.....	19,786	2,116	4,163	656	3,507	337	9,343	5,937	705	565	1,529	607	2,272	1,531	756	203	573	24
1989.....	21,889	2,309	4,818	986	3,832	398	10,218	6,422	766	637	1,714	680	2,371	1,730	860	223	647	46
1990.....	23,028	2,319	4,629	869	3,760	499	11,125	6,888	847	705	1,929	756	2,470	1,922	947	245	730	65
1991.....	27,139	2,378	7,376	1,251	6,125	461	12,061	7,423	912	764	2,127	836	2,657	2,129	1,036	269	825	77



**U.S. basic research expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

Year	Performing sector:		Industry <sup>a</sup>				Industry FFRDCs	U&C <sup>b</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>g</sup>	Industry	Nonprofit	Federal <sup>h</sup>
1992.....	27,604	2,419	6,528	712	5,816	474	12,910	8,058	941	814	2,202	893	2,867	2,340	1,114	295	931	67
1993.....	28,742	2,621	6,427	466	5,961	492	13,645	8,638	952	851	2,268	936	2,953	2,532	1,157	324	1,051	72
1994.....	29,649	2,547	6,514	436	6,078	503	14,399	9,139	991	889	2,406	974	2,934	2,678	1,137	356	1,186	75
1995.....	29,609	2,689	5,569	190	5,379	530	15,145	9,634	1,069	945	2,510	987	2,702	2,899	1,170	390	1,338	75
1996.....	32,797	2,680	7,498	650	6,848	708	16,040	10,092	1,149	1,032	2,739	1,028	2,606	3,187	1,248	428	1,510	79
1997.....	36,915	2,746	9,795	1,029	8,766	625	17,648	10,920	1,248	1,175	3,144	1,161	2,671	3,322	1,317	449	1,557	108
1998.....	35,331	3,003	5,853	1,002	4,851	568	19,320	11,895	1,330	1,315	3,483	1,296	2,660	3,715	1,461	489	1,766	213
1999.....	38,872	3,347	6,645	1,108	5,537	557	20,935	12,802	1,433	1,422	3,837	1,442	2,765	4,226	1,734	546	1,946	397
2000.....	42,763	3,765	7,040	925	6,115	547	22,860	13,912	1,549	1,499	4,296	1,603	2,874	5,061	2,099	621	2,341	616
2001.....	47,785	4,260	8,053	754	7,299	552	25,192	15,515	1,661	1,518	4,733	1,765	3,104	5,709	2,464	629	2,616	915
2002.....	51,400	4,511	7,547	888	6,659	534	27,867	17,635	1,765	1,492	5,070	1,905	3,714	6,249	2,575	602	3,072	979
2003.....	55,109	4,664	8,330	1,386	6,944	299	30,354	19,823	1,880	1,461	5,246	1,943	3,747	6,686	2,714	621	3,351	1,029
2004.....	56,670	4,734	7,835	1,072	6,763	175	32,397	21,380	1,991	1,513	5,479	2,035	3,729	6,728	2,749	639	3,340	1,071
2005.....	59,686	4,921	8,667	1,108	7,559	135	33,798	22,053	2,038	1,614	5,933	2,161	3,780	7,216	2,756	696	3,764	1,169
2006.....	61,519	4,938	9,267	1,141	8,126	128	34,752	22,267	2,109	1,692	6,415	2,268	3,746	7,515	2,768	750	3,998	1,173

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>b</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>c</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and NSF/SRS, Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).



**U.S. inflation-adjusted basic research expenditures, by performing and funding sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry <sup>a</sup>			Industry FFRDCs	U&C <sup>b</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs	
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>g</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>h</sup>	Industry	Nonprofit	Federal <sup>i</sup>
1953.....		2,519	556	828	104	723	NA	674	447	36	71	33	88	197	263	148	49	66	NA
1954.....		2,761	521	901	125	776	NA	801	524	52	81	46	98	239	299	168	60	71	NA
1955.....		3,089	520	1,008	144	864	NA	958	621	74	91	62	109	267	336	192	69	75	NA
1956.....		3,702	585	1,304	191	1,114	NA	1,134	735	98	101	80	121	299	379	214	77	88	NA
1957.....		4,060	619	1,352	205	1,148	NA	1,300	831	124	112	98	135	357	432	242	75	115	NA
1958.....		4,603	727	1,439	210	1,229	NA	1,522	985	152	117	117	151	415	500	285	78	137	NA
1959.....		5,238	793	1,542	347	1,195	NA	1,870	1,265	181	116	137	171	455	578	347	87	145	NA
1960.....		6,112	872	1,787	375	1,412	NA	2,303	1,618	214	116	159	195	504	646	404	100	143	NA
1961.....		7,104	1,079	1,856	381	1,476	NA	2,808	2,028	252	117	187	223	590	771	493	103	174	NA
1962.....		8,457	1,168	2,263	663	1,600	NA	3,415	2,529	295	116	222	253	684	927	603	111	213	NA
1963.....		9,704	1,305	2,395	674	1,720	NA	4,168	3,161	344	112	264	287	803	1,032	688	115	229	NA
1964.....		10,827	1,532	2,291	556	1,735	190	4,837	3,721	381	113	315	307	901	1,075	750	113	212	NA
1965.....		11,822	1,662	2,498	697	1,802	129	5,416	4,187	419	118	382	311	965	1,152	792	129	231	NA
1966.....		12,642	1,769	2,559	613	1,946	134	5,954	4,599	447	125	459	324	1,029	1,197	809	138	250	NA
1967.....		13,257	1,814	2,490	703	1,787	142	6,502	4,970	477	140	568	347	1,101	1,207	810	142	255	NA
1968.....		13,551	1,935	2,436	582	1,854	140	6,745	5,078	525	151	627	365	1,106	1,188	787	149	253	NA
1969.....		13,350	2,085	2,222	470	1,752	141	6,706	4,924	585	151	655	392	1,040	1,155	734	164	256	NA
1970.....		13,053	2,041	2,056	443	1,613	131	6,737	4,803	651	156	711	416	961	1,128	706	160	262	NA
1971.....		12,868	2,010	1,927	349	1,577	114	6,807	4,789	670	171	740	438	872	1,138	716	156	266	NA
1972.....		12,763	1,997	1,837	302	1,535	129	6,754	4,764	648	182	716	444	895	1,150	716	156	278	NA
1973.....		12,872	2,047	1,868	301	1,567	113	6,603	4,674	617	184	701	429	1,077	1,163	727	154	283	NA
1974.....		12,989	2,058	1,872	328	1,544	141	6,570	4,633	587	190	720	439	1,194	1,154	706	155	294	NA
1975.....		12,828	1,999	1,782	274	1,508	139	6,525	4,653	559	188	694	432	1,251	1,131	671	156	304	NA
1976.....		13,367	2,115	1,866	289	1,577	172	6,654	4,786	542	187	705	434	1,383	1,178	690	162	325	NA
1977.....		14,054	2,205	1,955	316	1,640	175	6,939	4,945	542	208	782	462	1,560	1,219	705	168	346	NA
1978.....		15,208	2,282	2,057	341	1,716	205	7,378	5,243	568	233	870	464	1,979	1,306	768	172	366	NA
1979.....		15,816	2,245	2,127	325	1,802	210	7,725	5,488	577	257	941	462	2,118	1,391	833	175	383	NA
1980.....		16,181	2,243	2,230	315	1,915	222	7,984	5,663	568	288	1,006	459	2,158	1,343	769	176	397	NA
1981.....		16,336	2,271	2,498	277	2,221	232	8,012	5,634	572	309	1,041	456	2,172	1,136	548	177	411	15
1982.....		16,980	2,426	2,831	403	2,428	204	8,116	5,539	587	344	1,142	505	2,178	1,210	588	184	438	14
1983.....		18,219	2,657	3,230	531	2,699	179	8,462	5,657	607	398	1,252	549	2,355	1,323	653	194	476	12
1984.....		19,705	2,774	3,654	503	3,151	201	9,082	6,040	644	462	1,352	584	2,526	1,455	730	206	519	14
1985.....		21,155	2,793	3,917	514	3,404	188	10,075	6,606	738	558	1,543	631	2,572	1,592	803	219	569	18
1986.....		24,075	2,843	5,516	609	4,907	164	11,147	7,188	850	654	1,771	684	2,688	1,698	833	236	630	18
1987.....		25,249	2,797	5,712	817	4,895	194	11,809	7,550	900	702	1,912	745	2,850	1,867	923	252	692	20
1988.....		26,140	2,796	5,500	867	4,633	445	12,343	7,843	932	746	2,021	802	3,001	2,023	999	268	756	31
1989.....		27,864	2,939	6,133	1,255	4,878	507	13,006	8,174	974	811	2,181	865	3,018	2,202	1,095	283	823	59
1990.....		28,223	2,842	5,673	1,065	4,608	612	13,635	8,442	1,038	865	2,364	927	3,027	2,356	1,161	300	895	79
1991.....		32,139	2,816	8,735	1,481	7,253	546	14,283	8,790	1,080	905	2,519	990	3,146	2,521	1,227	318	977	91

**U.S. inflation-adjusted basic research expenditures, by performing and funding sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:		Industry <sup>a</sup>				Industry FFRDCs	U&C <sup>b</sup>						U&C FFRDCs				Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>g</sup>	Industry	Nonprofit	Federal <sup>h</sup>			
1992.....		31,955	2,800	7,557	824	6,733	549	14,944	9,328	1,090	943	2,550	1,034	3,319	2,709	1,290	341	1,078	78			
1993.....		32,520	2,965	7,272	527	6,745	557	15,439	9,774	1,077	963	2,566	1,059	3,341	2,865	1,309	366	1,189	82			
1994.....		32,849	2,822	7,217	483	6,734	557	15,953	10,125	1,098	985	2,666	1,079	3,251	2,967	1,259	394	1,314	83			
1995.....		32,146	2,920	6,046	206	5,840	575	16,443	10,459	1,161	1,026	2,725	1,072	2,933	3,147	1,270	424	1,453	82			
1996.....		34,946	2,855	7,989	693	7,297	754	17,091	10,752	1,224	1,100	2,919	1,096	2,776	3,396	1,330	457	1,609	84			
1997.....		38,690	2,878	10,266	1,078	9,187	655	18,497	11,445	1,308	1,232	3,295	1,217	2,800	3,482	1,380	471	1,631	113			
1998.....		36,624	3,112	6,067	1,039	5,028	589	20,026	12,330	1,379	1,363	3,611	1,344	2,757	3,851	1,514	507	1,831	221			
1999.....		39,718	3,420	6,789	1,132	5,658	570	21,391	13,081	1,464	1,453	3,921	1,473	2,825	4,318	1,772	558	1,988	405			
2000.....		42,763	3,765	7,040	925	6,115	547	22,860	13,912	1,549	1,499	4,296	1,603	2,874	5,061	2,099	621	2,341	616			
2001.....		46,666	4,161	7,864	736	7,128	539	24,601	15,151	1,623	1,482	4,622	1,724	3,031	5,575	2,406	614	2,555	894			
2002.....		49,335	4,329	7,244	852	6,391	513	26,747	16,926	1,694	1,432	4,866	1,828	3,564	5,998	2,471	578	2,949	940			
2003.....		51,793	4,384	7,829	1,303	6,526	281	28,527	18,630	1,767	1,373	4,931	1,826	3,521	6,284	2,551	584	3,149	967			
2004.....		51,788	4,327	7,160	980	6,180	160	29,606	19,539	1,819	1,383	5,007	1,859	3,408	6,148	2,512	584	3,053	979			
2005.....		52,943	4,365	7,688	983	6,705	119	29,980	19,562	1,808	1,431	5,262	1,916	3,353	6,401	2,445	617	3,339	1,037			
2006.....		52,994	4,254	7,983	983	7,000	110	29,936	19,182	1,817	1,458	5,526	1,954	3,227	6,474	2,384	646	3,444	1,010			

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>b</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>c</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

**U.S. basic research expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:	Federal									Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Performing sector:	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	Nonprofit FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>
1953.....		460	265	102	19	NA	82	36	27	NA	154	132	13	9	6	28	12	16	7
1954.....		509	291	96	23	NA	97	44	31	NA	169	143	15	11	8	31	13	18	10
1955.....		579	327	98	27	NA	117	50	36	NA	192	162	17	13	12	35	14	21	14
1956.....		718	393	114	37	NA	143	58	42	NA	251	216	20	15	15	41	17	24	19
1957.....		814	452	124	41	NA	167	72	49	NA	268	230	23	15	20	50	23	27	25
1958.....		944	538	149	43	NA	202	85	59	NA	292	252	24	16	24	59	28	31	31
1959.....		1,087	666	165	72	NA	263	95	72	NA	290	248	24	18	28	66	30	36	38
1960.....		1,286	794	184	79	NA	341	106	85	NA	343	297	25	21	33	71	30	41	45
1961.....		1,512	973	230	81	NA	432	126	105	NA	361	314	25	22	40	85	37	48	54
1962.....		1,824	1,218	252	143	NA	546	148	130	NA	394	345	25	24	48	101	46	55	64
1963.....		2,115	1,446	285	147	NA	689	175	150	NA	425	375	25	25	58	113	50	63	75
1964.....		2,396	1,693	339	123	42	824	200	166	NA	434	384	25	25	70	115	47	68	84
1965.....		2,664	1,900	375	157	29	944	218	179	NA	462	406	27	29	86	122	52	70	94
1966.....		2,930	2,075	410	142	31	1,066	239	188	NA	512	451	29	32	106	133	58	75	104
1967.....		3,168	2,280	434	168	34	1,188	263	194	NA	495	427	34	34	136	144	61	83	114
1968.....		3,376	2,399	482	145	35	1,265	276	196	NA	537	462	38	37	156	154	63	91	131
1969.....		3,491	2,457	545	123	37	1,288	272	192	NA	541	458	40	43	171	170	67	103	153
1970.....		3,594	2,501	562	122	36	1,323	265	195	NA	531	444	43	44	196	187	72	115	179
1971.....		3,720	2,559	581	101	33	1,385	252	207	NA	551	456	50	45	214	204	77	127	194
1972.....		3,850	2,656	603	91	39	1,437	270	216	NA	565	463	55	47	216	218	84	134	195
1973.....		4,099	2,847	652	96	36	1,489	343	232	NA	607	499	59	49	223	227	90	137	196
1974.....		4,511	3,146	715	114	49	1,609	415	245	NA	656	536	66	54	250	254	102	153	204
1975.....		4,875	3,415	760	104	53	1,768	476	255	NA	704	573	72	59	264	280	116	164	212
1976.....		5,373	3,793	850	116	69	1,924	556	278	NA	774	634	75	65	283	305	131	175	218
1977.....		6,008	4,235	943	135	75	2,114	667	301	NA	862	701	89	72	334	346	148	198	232
1978.....		6,959	4,950	1,044	156	94	2,399	906	351	NA	970	785	107	79	398	380	168	213	260
1979.....		7,836	5,558	1,112	161	104	2,719	1,050	413	NA	1,107	893	128	87	466	419	190	229	286
1980.....		8,745	6,145	1,212	170	120	3,061	1,167	416	NA	1,286	1,035	156	95	544	463	215	248	307
1981.....		9,658	6,591	1,343	164	137	3,331	1,284	324	9	1,600	1,313	183	105	615	512	243	269	338
1982.....		10,651	7,121	1,522	253	128	3,475	1,366	369	9	1,854	1,523	215	115	716	591	275	317	368
1983.....		11,880	7,853	1,733	346	117	3,689	1,536	426	8	2,146	1,760	260	127	816	668	311	358	396
1984.....		13,332	8,651	1,877	340	136	4,087	1,709	494	9	2,584	2,132	313	139	915	746	351	395	436
1985.....		14,748	9,407	1,947	358	131	4,606	1,793	560	13	2,915	2,373	389	153	1,075	837	397	440	514
1986.....		17,154	10,220	2,026	434	117	5,122	1,915	594	13	4,130	3,496	466	168	1,262	936	449	488	606
1987.....		18,481	11,090	2,047	598	142	5,527	2,086	675	14	4,282	3,583	514	185	1,399	1,052	507	545	659
1988.....		19,786	12,097	2,116	656	337	5,937	2,272	756	24	4,274	3,507	565	203	1,529	1,180	573	607	705
1989.....		21,889	13,392	2,309	986	398	6,422	2,371	860	46	4,692	3,832	637	223	1,714	1,326	647	680	766
1990.....		23,028	14,056	2,319	869	499	6,888	2,470	947	65	4,710	3,760	705	245	1,929	1,486	730	756	847
1991.....		27,139	15,283	2,378	1,251	461	7,423	2,657	1,036	77	7,157	6,125	764	269	2,127	1,660	825	836	912

**U.S. basic research expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C	Nonprofit <sup>e</sup>	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1992.....	27,604	15,710	2,419	712	474	8,058	2,867	1,114	67	6,925	5,816	814	295	2,202	1,824	931	893	941	
1993.....	28,742	16,399	2,621	466	492	8,638	2,953	1,157	72	7,136	5,961	851	324	2,268	1,987	1,051	936	952	
1994.....	29,649	16,770	2,547	436	503	9,139	2,934	1,137	75	7,323	6,078	889	356	2,406	2,160	1,186	974	991	
1995.....	29,609	16,990	2,689	190	530	9,634	2,702	1,170	75	6,714	5,379	945	390	2,510	2,326	1,338	987	1,069	
1996.....	32,797	18,062	2,680	650	708	10,092	2,606	1,248	79	8,308	6,848	1,032	428	2,739	2,539	1,510	1,028	1,149	
1997.....	36,915	19,416	2,746	1,029	625	10,920	2,671	1,317	108	10,390	8,766	1,175	449	3,144	2,718	1,557	1,161	1,248	
1998.....	35,331	20,801	3,003	1,002	568	11,895	2,660	1,461	213	6,655	4,851	1,315	489	3,483	3,062	1,766	1,296	1,330	
1999.....	38,872	22,709	3,347	1,108	557	12,802	2,765	1,734	397	7,505	5,537	1,422	546	3,837	3,388	1,946	1,442	1,433	
2000.....	42,763	24,738	3,765	925	547	13,912	2,874	2,099	616	8,235	6,115	1,499	621	4,296	3,945	2,341	1,603	1,549	
2001.....	47,785	27,565	4,260	754	552	15,515	3,104	2,464	915	9,446	7,299	1,518	629	4,733	4,381	2,616	1,765	1,661	
2002.....	51,400	30,835	4,511	888	534	17,635	3,714	2,575	979	8,753	6,659	1,492	602	5,070	4,977	3,072	1,905	1,765	
2003.....	55,109	33,663	4,664	1,386	299	19,823	3,747	2,714	1,029	9,026	6,944	1,461	621	5,246	5,294	3,351	1,943	1,880	
2004.....	56,670	34,911	4,734	1,072	175	21,380	3,729	2,749	1,071	8,915	6,763	1,513	639	5,479	5,375	3,340	2,035	1,991	
2005.....	59,686	35,922	4,921	1,108	135	22,053	3,780	2,756	1,169	9,868	7,559	1,614	696	5,933	5,925	3,764	2,161	2,038	
2006.....	61,519	36,161	4,938	1,141	128	22,267	3,746	2,768	1,173	10,568	8,126	1,692	750	6,415	6,266	3,998	2,268	2,109	

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.

<sup>c</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>d</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>e</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

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**U.S. inflation-adjusted basic research expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Total	Total	Federal	Industry <sup>b,c</sup>	Industry FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	Nonprofit FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1953.....	2,519	1,452	556	104	NA	447	197	148	NA	844	723	71	49	33	153	66	88	36	
1954.....	2,761	1,577	521	125	NA	524	239	168	NA	918	776	81	60	46	168	71	98	52	
1955.....	3,089	1,744	520	144	NA	621	267	192	NA	1,024	864	91	69	62	184	75	109	74	
1956.....	3,702	2,024	585	191	NA	735	299	214	NA	1,292	1,114	101	77	80	209	88	121	98	
1957.....	4,060	2,253	619	205	NA	831	357	242	NA	1,335	1,148	112	75	98	250	115	135	124	
1958.....	4,603	2,622	727	210	NA	985	415	285	NA	1,425	1,229	117	78	117	288	137	151	152	
1959.....	5,238	3,207	793	347	NA	1,265	455	347	NA	1,398	1,195	116	87	137	316	145	171	181	
1960.....	6,112	3,774	872	375	NA	1,618	504	404	NA	1,628	1,412	116	100	159	337	143	195	214	
1961.....	7,104	4,571	1,079	381	NA	2,028	590	493	NA	1,697	1,476	117	103	187	397	174	223	252	
1962.....	8,457	5,647	1,168	663	NA	2,529	684	603	NA	1,827	1,600	116	111	222	466	213	253	295	
1963.....	9,704	6,632	1,305	674	NA	3,161	803	688	NA	1,948	1,720	112	115	264	516	229	287	344	
1964.....	10,827	7,650	1,532	556	190	3,721	901	750	NA	1,961	1,735	113	113	315	520	212	307	381	
1965.....	11,822	8,431	1,662	697	129	4,187	965	792	NA	2,048	1,802	118	129	382	541	231	311	419	
1966.....	12,642	8,953	1,769	613	134	4,599	1,029	809	NA	2,209	1,946	125	138	459	574	250	324	447	
1967.....	13,257	9,540	1,814	703	142	4,970	1,101	810	NA	2,070	1,787	140	142	568	603	255	347	477	
1968.....	13,551	9,627	1,935	582	140	5,078	1,106	787	NA	2,153	1,854	151	149	627	618	253	365	525	
1969.....	13,350	9,395	2,085	470	141	4,924	1,040	734	NA	2,067	1,752	151	164	655	648	256	392	585	
1970.....	13,053	9,085	2,041	443	131	4,803	961	706	NA	1,929	1,613	156	160	711	677	262	416	651	
1971.....	12,868	8,850	2,010	349	114	4,789	872	716	NA	1,904	1,577	171	156	740	704	266	438	670	
1972.....	12,763	8,803	1,997	302	129	4,764	895	716	NA	1,873	1,535	182	156	716	723	278	444	648	
1973.....	12,872	8,939	2,047	301	113	4,674	1,077	727	NA	1,904	1,567	184	154	701	711	283	429	617	
1974.....	12,989	9,060	2,058	328	141	4,633	1,194	706	NA	1,889	1,544	190	155	720	733	294	439	587	
1975.....	12,828	8,987	1,999	274	139	4,653	1,251	671	NA	1,852	1,508	188	156	694	736	304	432	559	
1976.....	13,367	9,435	2,115	289	172	4,786	1,383	690	NA	1,926	1,577	187	162	705	760	325	434	542	
1977.....	14,054	9,906	2,205	316	175	4,945	1,560	705	NA	2,016	1,640	208	168	782	808	346	462	542	
1978.....	15,208	10,819	2,282	341	205	5,243	1,979	768	NA	2,121	1,716	233	172	870	831	366	464	568	
1979.....	15,816	11,218	2,245	325	210	5,488	2,118	833	NA	2,235	1,802	257	175	941	845	383	462	577	
1980.....	16,181	11,371	2,243	315	222	5,663	2,158	769	NA	2,380	1,915	288	176	1,006	856	397	459	568	
1981.....	16,336	11,149	2,271	277	232	5,634	2,172	548	15	2,707	2,221	309	177	1,041	867	411	456	572	
1982.....	16,980	11,353	2,426	403	204	5,539	2,178	588	14	2,955	2,428	344	184	1,142	943	438	505	587	
1983.....	18,219	12,044	2,657	531	179	5,657	2,355	653	12	3,292	2,699	398	194	1,252	1,025	476	549	607	
1984.....	19,705	12,787	2,774	503	201	6,040	2,526	730	14	3,819	3,151	462	206	1,352	1,103	519	584	644	
1985.....	21,155	13,494	2,793	514	188	6,606	2,572	803	18	4,181	3,404	558	219	1,543	1,200	569	631	738	
1986.....	24,075	14,344	2,843	609	164	7,188	2,688	833	18	5,796	4,907	654	236	1,771	1,314	630	684	850	
1987.....	25,249	15,151	2,797	817	194	7,550	2,850	923	20	5,849	4,895	702	252	1,912	1,437	692	745	900	
1988.....	26,140	15,982	2,796	867	445	7,843	3,001	999	31	5,647	4,633	746	268	2,021	1,558	756	802	932	
1989.....	27,864	17,047	2,939	1,255	507	8,174	3,018	1,095	59	5,973	4,878	811	283	2,181	1,688	823	865	974	
1990.....	28,223	17,227	2,842	1,065	612	8,442	3,027	1,161	79	5,773	4,608	865	300	2,364	1,822	895	927	1,038	
1991.....	32,139	18,098	2,816	1,481	546	8,790	3,146	1,227	91	8,476	7,253	905	318	2,519	1,966	977	990	1,080	

**U.S. inflation-adjusted basic research expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>		
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C	Nonprofit	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1992.....	31,955	18,187	2,800	824	549	9,328	3,319	1,290	78	8,017	6,733	943	341	2,550	2,112	1,078	1,034	1,090	
1993.....	32,520	18,555	2,965	527	557	9,774	3,341	1,309	82	8,074	6,745	963	366	2,566	2,248	1,189	1,059	1,077	
1994.....	32,849	18,580	2,822	483	557	10,125	3,251	1,259	83	8,113	6,734	985	394	2,666	2,393	1,314	1,079	1,098	
1995.....	32,146	18,446	2,920	206	575	10,459	2,933	1,270	82	7,290	5,840	1,026	424	2,725	2,525	1,453	1,072	1,161	
1996.....	34,946	19,245	2,855	693	754	10,752	2,776	1,330	84	8,853	7,297	1,100	457	2,919	2,705	1,609	1,096	1,224	
1997.....	38,690	20,349	2,878	1,078	655	11,445	2,800	1,380	113	10,890	9,187	1,232	471	3,295	2,849	1,631	1,217	1,308	
1998.....	36,624	21,562	3,112	1,039	589	12,330	2,757	1,514	221	6,898	5,028	1,363	507	3,611	3,174	1,831	1,344	1,379	
1999.....	39,718	23,204	3,420	1,132	570	13,081	2,825	1,772	405	7,668	5,658	1,453	558	3,921	3,462	1,988	1,473	1,464	
2000.....	42,763	24,738	3,765	925	547	13,912	2,874	2,099	616	8,235	6,115	1,499	621	4,296	3,945	2,341	1,603	1,549	
2001.....	46,666	26,919	4,161	736	539	15,151	3,031	2,406	894	9,224	7,128	1,482	614	4,622	4,278	2,555	1,724	1,623	
2002.....	49,335	29,596	4,329	852	513	16,926	3,564	2,471	940	8,401	6,391	1,432	578	4,866	4,777	2,949	1,828	1,694	
2003.....	51,793	31,637	4,384	1,303	281	18,630	3,521	2,551	967	8,482	6,526	1,373	584	4,931	4,975	3,149	1,826	1,767	
2004.....	51,788	31,903	4,327	980	160	19,539	3,408	2,512	979	8,147	6,180	1,383	584	5,007	4,912	3,053	1,859	1,819	
2005.....	52,943	31,864	4,365	983	119	19,562	3,353	2,445	1,037	8,754	6,705	1,431	617	5,262	5,255	3,339	1,916	1,808	
2006.....	52,994	31,150	4,254	983	110	19,182	3,227	2,384	1,010	9,103	7,000	1,458	646	5,526	5,398	3,444	1,954	1,817	

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D. For example, nonfederal government support to nonprofits is included in nonprofits' support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to the industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.

<sup>c</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>d</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>e</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (2007); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

**U.S. applied research expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

Year	Performing sector:	Total	Federal	Industry <sup>a</sup>			Industry FFRDCs	U&C <sup>b</sup>						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>a</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>g</sup>	Industry	Nonprofit	Federal <sup>h</sup>
1953.....		1,289	347	726	288	438	NA	134	59	30	7	28	10	48	35	14	11	10	NA
1954.....		1,378	330	814	322	492	NA	137	60	32	8	28	10	58	40	16	13	11	NA
1955.....		1,514	333	928	368	560	NA	142	63	32	9	27	11	68	43	18	14	11	NA
1956.....		1,928	387	1,268	474	794	NA	146	65	33	10	27	11	79	49	21	14	14	NA
1957.....		2,414	446	1,670	678	992	NA	147	63	34	12	27	11	94	58	24	14	20	NA
1958.....		2,758	516	1,911	774	1,137	NA	152	66	35	12	27	12	111	69	30	14	25	NA
1959.....		2,940	577	1,991	813	1,178	NA	167	78	37	13	28	12	121	85	43	15	27	NA
1960.....		3,065	615	2,029	833	1,196	NA	186	93	39	13	29	12	129	108	63	17	28	NA
1961.....		3,123	668	1,977	812	1,165	NA	199	104	40	13	30	13	145	135	83	17	35	NA
1962.....		3,698	709	2,449	1,011	1,438	NA	216	119	41	14	30	13	163	162	98	19	45	NA
1963.....		3,865	809	2,457	1,007	1,450	NA	230	128	42	14	32	14	186	183	115	19	49	NA
1964.....		4,201	947	2,538	978	1,560	62	256	142	45	14	37	18	203	196	130	19	47	NA
1965.....		4,374	994	2,612	992	1,620	46	304	176	46	13	42	27	206	213	140	21	52	NA
1966.....		4,653	1,012	2,790	986	1,804	53	351	208	47	14	48	34	213	234	153	24	57	NA
1967.....		4,848	1,069	2,832	983	1,849	83	389	238	46	16	54	36	225	251	166	25	60	NA
1968.....		5,137	1,112	3,037	956	2,081	87	405	250	46	16	55	39	221	276	186	28	62	NA
1969.....		5,454	1,229	3,192	920	2,272	95	417	257	48	16	54	43	213	308	210	32	66	NA
1970.....		5,752	1,334	3,330	952	2,378	97	451	280	51	18	56	47	213	328	225	33	70	NA
1971.....		5,833	1,355	3,348	907	2,441	67	499	306	61	19	67	47	216	349	241	34	74	NA
1972.....		6,147	1,434	3,407	845	2,562	107	619	391	74	21	82	52	224	357	243	35	79	NA
1973.....		6,655	1,527	3,715	883	2,832	110	725	450	88	26	100	62	203	376	257	36	83	NA
1974.....		7,344	1,652	4,168	905	3,263	120	794	477	96	32	118	72	191	420	290	39	91	NA
1975.....		8,091	1,912	4,431	991	3,440	139	934	550	113	39	141	92	219	456	315	42	100	NA
1976.....		8,976	2,068	4,945	1,033	3,912	167	1,042	596	127	45	166	109	263	492	338	45	109	NA
1977.....		9,662	2,081	5,424	1,113	4,311	212	1,126	626	134	51	194	121	297	523	355	48	120	NA
1978.....		10,704	2,242	6,065	1,195	4,870	235	1,247	676	151	61	232	128	324	592	409	52	132	NA
1979.....		12,097	2,415	6,975	1,305	5,670	250	1,418	793	161	71	263	129	360	680	480	55	144	NA
1980.....		13,714	2,546	8,175	1,625	6,550	275	1,622	912	174	88	308	140	421	675	458	60	158	NA
1981.....		16,329	2,731	10,401	2,042	8,359	298	1,781	953	199	108	363	159	422	628	391	64	173	68
1982.....		18,218	2,802	11,956	2,593	9,363	367	1,915	1,007	207	121	402	178	433	655	398	69	189	91
1983.....		20,298	2,991	13,513	3,227	10,286	414	2,116	1,122	215	141	443	194	473	713	433	74	207	78
1984.....		22,451	2,961	15,218	3,677	11,541	547	2,332	1,226	234	168	491	212	548	764	459	79	226	80
1985.....		25,401	3,135	17,625	4,717	12,908	630	2,527	1,296	262	198	547	224	580	822	490	85	247	82
1986.....		27,240	3,204	19,131	4,049	15,082	629	2,780	1,393	298	229	620	240	554	867	506	91	270	75
1987.....		27,951	3,366	19,190	4,037	15,153	623	3,219	1,643	333	260	707	276	532	948	555	98	295	74
1988.....		29,528	3,362	20,377	3,846	16,531	371	3,779	1,957	377	302	818	325	547	1,026	599	105	322	66
1989.....		32,277	3,566	22,317	4,324	17,993	374	4,188	2,120	417	347	933	370	603	1,159	695	112	352	70
1990.....		34,896	3,652	24,399	5,967	18,432	386	4,405	2,139	453	377	1,031	404	689	1,284	780	120	384	81
1991.....		38,629	4,093	27,013	5,588	21,425	433	4,608	2,230	468	392	1,091	428	927	1,468	921	129	419	86



**U.S. applied research expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

Year	Performing sector:		Industry <sup>a</sup>				Industry FFRDCs	U&C <sup>b</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs	
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>f</sup>	Industry	U&C	Nonprofit	Federal <sup>g</sup>	Total	Federal <sup>h</sup>	Industry	Nonprofit	Federal <sup>i</sup>
1992.....		37,933	4,337	25,660	4,476	21,184	507	4,880	2,413	479	414	1,120	454	940	1,528	933	138	456	81
1993.....		37,280	4,838	24,251	4,295	19,956	435	5,146	2,539	496	443	1,181	487	962	1,544	900	148	497	103
1994.....		36,615	4,985	22,988	3,616	19,372	503	5,388	2,641	517	464	1,256	509	982	1,659	960	158	541	111
1995.....		40,932	4,952	26,919	3,164	23,755	535	5,655	2,775	559	494	1,311	516	1,050	1,692	934	170	589	129
1996.....		43,165	4,872	29,010	3,640	25,370	231	5,879	2,860	583	524	1,390	522	1,270	1,781	960	182	640	122
1997.....		46,551	4,997	32,430	2,648	29,782	213	5,520	2,548	552	518	1,388	512	1,337	1,926	1,011	205	711	128
1998.....		46,388	5,146	32,208	2,632	29,576	230	5,220	2,286	526	520	1,376	512	1,372	2,089	1,060	223	806	123
1999.....		52,096	5,530	36,638	2,817	33,821	274	5,836	2,740	545	541	1,461	549	1,251	2,437	1,300	249	888	130
2000.....		56,932	6,105	39,176	2,682	36,494	269	6,652	3,350	572	553	1,586	592	1,329	3,183	1,831	283	1,069	217
2001.....		64,706	7,052	44,012	3,603	40,409	935	7,260	3,752	602	550	1,715	639	1,485	3,631	2,150	287	1,194	332
2002.....		51,033	7,487	28,533	2,452	26,081	1,103	7,972	4,214	648	548	1,862	700	1,685	3,944	2,267	275	1,402	309
2003.....		61,448	7,672	37,334	4,473	32,861	1,434	8,589	4,637	705	548	1,969	729	1,756	4,300	2,487	283	1,529	363
2004.....		70,093	7,532	45,432	4,775	40,657	1,521	8,997	4,951	731	556	2,012	747	1,935	4,312	2,496	292	1,525	364
2005.....		71,207	7,870	45,284	5,289	39,995	1,532	9,584	5,298	744	589	2,165	788	1,918	4,611	2,576	318	1,718	407
2006.....		74,653	7,750	48,441	5,446	42,995	1,482	10,050	5,451	777	623	2,363	836	1,805	4,726	2,559	342	1,825	399

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>b</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>c</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (2007); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).



**U.S. inflation-adjusted applied research expenditures, by performing sector and source of funds: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry <sup>a</sup>			Industry FFRDCs	U&C <sup>b</sup>						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>g</sup>	Industry	Nonprofit	Federal <sup>h</sup>
1953.....		7,065	1,902	3,979	1,579	2,401	NA	732	323	165	36	153	55	260	192	77	60	55	NA
1954.....		7,482	1,789	4,420	1,748	2,671	NA	741	323	171	41	152	54	315	217	87	71	60	NA
1955.....		8,074	1,776	4,951	1,963	2,987	NA	755	336	172	45	145	56	363	229	96	75	59	NA
1956.....		9,938	1,993	6,538	2,444	4,094	NA	753	335	171	52	139	57	405	250	106	72	72	NA
1957.....		12,044	2,223	8,334	3,384	4,951	NA	731	314	169	57	135	55	469	287	117	70	100	NA
1958.....		13,455	2,517	9,323	3,776	5,547	NA	739	320	172	59	133	56	539	337	146	68	122	NA
1959.....		14,165	2,778	9,595	3,918	5,677	NA	805	373	178	60	135	58	581	407	205	72	130	NA
1960.....		14,567	2,921	9,643	3,959	5,684	NA	882	442	184	62	137	57	611	511	297	81	133	NA
1961.....		14,678	3,139	9,292	3,816	5,475	NA	933	486	188	61	139	59	681	632	388	80	164	NA
1962.....		17,144	3,285	11,355	4,688	6,667	NA	1,002	549	188	63	141	60	753	749	452	88	209	NA
1963.....		17,730	3,712	11,273	4,620	6,653	NA	1,053	585	193	64	148	62	853	840	528	87	225	NA
1964.....		18,983	4,277	11,468	4,419	7,049	280	1,155	642	204	61	169	79	917	886	587	86	212	NA
1965.....		19,408	4,409	11,591	4,402	7,189	204	1,347	779	206	58	187	118	912	945	621	93	231	NA
1966.....		20,074	4,366	12,038	4,254	7,784	229	1,514	897	203	60	209	145	919	1,007	658	104	246	NA
1967.....		20,290	4,472	11,852	4,114	7,738	347	1,626	994	191	65	225	151	942	1,050	695	105	251	NA
1968.....		20,620	4,462	12,190	3,837	8,353	349	1,626	1,001	185	64	221	155	885	1,108	747	112	249	NA
1969.....		20,859	4,701	12,207	3,518	8,689	363	1,595	981	184	61	206	163	815	1,178	803	122	252	NA
1970.....		20,893	4,845	12,095	3,458	8,637	352	1,636	1,015	186	64	203	169	774	1,191	817	120	254	NA
1971.....		20,176	4,687	11,581	3,137	8,443	232	1,726	1,058	209	64	232	163	745	1,205	832	118	256	NA
1972.....		20,377	4,754	11,294	2,801	8,493	355	2,050	1,295	246	68	271	171	743	1,182	804	116	262	NA
1973.....		20,897	4,796	11,665	2,773	8,892	345	2,275	1,411	275	82	314	193	636	1,181	807	113	261	NA
1974.....		21,149	4,758	12,003	2,606	9,397	346	2,285	1,372	277	91	339	206	549	1,209	835	111	262	NA
1975.....		21,292	5,031	11,660	2,608	9,052	366	2,458	1,446	298	101	370	242	576	1,201	829	109	263	NA
1976.....		22,331	5,146	12,302	2,570	9,732	415	2,592	1,481	317	111	412	271	653	1,223	840	111	272	NA
1977.....		22,601	4,867	12,687	2,603	10,084	496	2,633	1,463	315	119	454	282	695	1,223	830	112	281	NA
1978.....		23,394	4,899	13,255	2,612	10,643	514	2,725	1,477	330	132	507	279	708	1,294	893	113	287	NA
1979.....		24,415	4,874	14,077	2,634	11,444	505	2,861	1,600	326	144	531	260	726	1,371	969	112	291	NA
1980.....		25,377	4,711	15,127	3,007	12,120	509	3,002	1,688	321	163	570	260	779	1,250	848	110	292	NA
1981.....		27,621	4,620	17,593	3,454	14,139	504	3,012	1,611	337	182	613	269	714	1,062	661	108	292	115
1982.....		29,044	4,466	19,061	4,134	14,927	585	3,052	1,605	331	193	641	283	690	1,045	634	109	301	145
1983.....		31,129	4,587	20,723	4,949	15,774	635	3,245	1,721	330	217	680	298	726	1,094	664	113	317	119
1984.....		33,184	4,376	22,493	5,435	17,059	809	3,446	1,812	346	248	726	313	811	1,130	679	117	334	119
1985.....		36,435	4,497	25,282	6,766	18,516	904	3,625	1,860	375	284	785	321	831	1,179	702	122	355	118
1986.....		38,231	4,497	26,851	5,683	21,168	883	3,901	1,955	418	321	871	337	777	1,217	710	128	379	106
1987.....		38,186	4,598	26,217	5,515	20,702	851	4,398	2,244	455	355	966	377	726	1,295	758	133	403	101
1988.....		39,009	4,442	26,920	5,081	21,839	490	4,993	2,586	498	399	1,081	429	722	1,355	791	138	426	87
1989.....		41,087	4,540	28,409	5,504	22,904	476	5,331	2,699	531	442	1,188	471	767	1,475	884	143	448	89
1990.....		42,769	4,476	29,904	7,313	22,591	473	5,399	2,622	555	462	1,264	495	844	1,573	955	147	470	100
1991.....		45,746	4,848	31,989	6,617	25,372	513	5,457	2,641	554	464	1,292	507	1,097	1,739	1,091	153	496	102

**U.S. inflation-adjusted applied research expenditures, by performing sector and source of funds: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:		Federal	Industry <sup>a</sup>			Industry FFRDCs		U&C <sup>b</sup>				U&C FFRDCs		Other nonprofit institutions			Nonprofit FFRDCs
	Total	Federal		Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>f</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>c</sup>	Industry	Nonprofit
1992.....	43,912	5,020	29,704	5,181	24,523	587	5,649	2,793	554	479	1,296	526	1,089	1,769	1,081	160	528	94
1993.....	42,182	5,474	27,439	4,860	22,580	492	5,823	2,873	561	501	1,336	552	1,089	1,748	1,018	167	562	116
1994.....	40,567	5,523	25,469	4,006	21,463	557	5,969	2,926	573	514	1,392	563	1,087	1,838	1,063	176	599	123
1995.....	44,440	5,377	29,226	3,435	25,791	581	6,140	3,013	607	536	1,424	560	1,140	1,837	1,014	184	639	140
1996.....	45,992	5,191	30,910	3,878	27,032	246	6,264	3,047	622	558	1,481	557	1,353	1,898	1,022	193	682	130
1997.....	48,789	5,237	33,989	2,775	31,214	223	5,785	2,671	579	543	1,455	537	1,402	2,019	1,059	215	745	135
1998.....	48,084	5,334	33,386	2,728	30,658	238	5,411	2,370	545	539	1,427	531	1,422	2,165	1,099	231	836	128
1999.....	53,231	5,650	37,436	2,878	34,558	280	5,964	2,800	557	553	1,492	561	1,278	2,490	1,328	255	907	132
2000.....	56,931	6,105	39,176	2,682	36,494	269	6,652	3,350	572	553	1,586	592	1,329	3,183	1,831	283	1,069	217
2001.....	63,190	6,887	42,981	3,519	39,462	913	7,090	3,664	588	538	1,675	624	1,450	3,546	2,100	280	1,166	324
2002.....	48,982	7,187	27,386	2,353	25,033	1,059	7,651	4,045	622	526	1,787	671	1,618	3,785	2,176	264	1,346	296
2003.....	57,750	7,210	35,087	4,204	30,883	1,348	8,072	4,358	663	515	1,851	686	1,651	4,041	2,337	266	1,437	341
2004.....	64,055	6,883	41,518	4,364	37,155	1,390	8,222	4,525	668	508	1,838	683	1,769	3,941	2,281	266	1,393	333
2005.....	63,162	6,981	40,168	4,691	35,477	1,359	8,502	4,700	660	522	1,921	699	1,702	4,090	2,285	282	1,524	361
2006.....	64,308	6,676	41,728	4,691	37,037	1,277	8,657	4,695	669	537	2,036	720	1,555	4,071	2,204	295	1,572	344

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>b</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>c</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (2007); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

**U.S. applied research expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>		
	Total	Total	Federal	Industry <sup>b,c</sup>	Industry FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	Nonprofit FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1953.....	1,289	756	347	288	NA	59	48	14	NA	456	438	7	11	28	20	10	10	30	
1954.....	1,378	785	330	322	NA	60	58	16	NA	513	492	8	13	28	21	11	10	32	
1955.....	1,514	850	333	368	NA	63	68	18	NA	583	560	9	14	27	22	11	11	32	
1956.....	1,928	1,025	387	474	NA	65	79	21	NA	818	794	10	14	27	25	14	11	33	
1957.....	2,414	1,304	446	678	NA	63	94	24	NA	1,018	992	12	14	27	31	20	11	34	
1958.....	2,758	1,496	516	774	NA	66	111	30	NA	1,163	1,137	12	14	27	37	25	12	35	
1959.....	2,940	1,630	577	813	NA	78	121	43	NA	1,206	1,178	13	15	28	39	27	12	37	
1960.....	3,065	1,732	615	833	NA	93	129	63	NA	1,226	1,196	13	17	29	40	28	12	39	
1961.....	3,123	1,811	668	812	NA	104	145	83	NA	1,195	1,165	13	17	30	48	35	13	40	
1962.....	3,698	2,098	709	1,011	NA	119	163	98	NA	1,471	1,438	14	19	30	58	45	13	41	
1963.....	3,865	2,245	809	1,007	NA	128	186	115	NA	1,483	1,450	14	19	32	63	49	14	42	
1964.....	4,201	2,462	947	978	62	142	203	130	NA	1,593	1,560	14	19	37	65	47	18	45	
1965.....	4,374	2,553	994	992	46	176	206	140	NA	1,654	1,620	13	21	42	79	52	27	46	
1966.....	4,653	2,625	1,012	986	53	208	213	153	NA	1,842	1,804	14	24	48	91	57	34	47	
1967.....	4,848	2,763	1,069	983	83	238	225	166	NA	1,890	1,849	16	25	54	96	60	36	46	
1968.....	5,137	2,811	1,112	956	87	250	221	186	NA	2,125	2,081	16	28	55	101	62	39	46	
1969.....	5,454	2,924	1,229	920	95	257	213	210	NA	2,320	2,272	16	32	54	109	66	43	48	
1970.....	5,752	3,100	1,334	952	97	280	213	225	NA	2,429	2,378	18	33	56	117	70	47	51	
1971.....	5,833	3,091	1,355	907	67	306	216	241	NA	2,494	2,441	19	34	67	121	74	47	61	
1972.....	6,147	3,243	1,434	845	107	391	224	243	NA	2,618	2,562	21	35	82	131	79	52	74	
1973.....	6,655	3,429	1,527	883	110	450	203	257	NA	2,894	2,832	26	36	100	145	83	62	88	
1974.....	7,344	3,634	1,652	905	120	477	191	290	NA	3,333	3,263	32	39	118	163	91	72	96	
1975.....	8,091	4,125	1,912	991	139	550	219	315	NA	3,520	3,440	39	42	141	192	100	92	113	
1976.....	8,976	4,464	2,068	1,033	167	596	263	338	NA	4,001	3,912	45	45	166	218	109	109	127	
1977.....	9,662	4,683	2,081	1,113	212	626	297	355	NA	4,410	4,311	51	48	194	241	120	121	134	
1978.....	10,704	5,080	2,242	1,195	235	676	324	409	NA	4,982	4,870	61	52	232	259	132	128	151	
1979.....	12,097	5,602	2,415	1,305	250	793	360	480	NA	5,797	5,670	71	55	263	273	144	129	161	
1980.....	13,714	6,237	2,546	1,625	275	912	421	458	NA	6,698	6,550	88	60	308	298	158	140	174	
1981.....	16,329	6,837	2,731	2,042	298	953	422	391	68	8,531	8,359	108	64	363	332	173	159	199	
1982.....	18,218	7,599	2,802	2,593	367	1,007	433	398	91	9,553	9,363	121	69	402	367	189	178	207	
1983.....	20,298	8,660	2,991	3,227	414	1,122	473	433	78	10,501	10,286	141	74	443	401	207	194	215	
1984.....	22,451	9,419	2,961	3,677	547	1,226	548	459	80	11,788	11,541	168	79	491	438	226	212	234	
1985.....	25,401	10,848	3,135	4,717	630	1,296	580	490	82	13,191	12,908	198	85	547	471	247	224	262	
1986.....	27,240	10,334	3,204	4,049	629	1,393	554	506	75	15,402	15,082	229	91	620	510	270	240	298	
1987.....	27,951	10,755	3,366	4,037	623	1,643	532	555	74	15,511	15,153	260	98	707	571	295	276	333	
1988.....	29,528	10,748	3,362	3,846	371	1,957	547	599	66	16,938	16,531	302	105	818	647	322	325	377	
1989.....	32,277	11,752	3,566	4,324	374	2,120	603	695	70	18,452	17,993	347	112	933	722	352	370	417	
1990.....	34,896	13,694	3,652	5,967	386	2,139	689	780	81	18,930	18,432	377	120	1,031	788	384	404	453	
1991.....	38,629	14,278	4,093	5,588	433	2,230	927	921	86	21,946	21,425	392	129	1,091	847	419	428	468	

**U.S. applied research expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1992.....	37,933	13,688	4,337	4,476	507	2,413	940	933	81	21,736	21,184	414	138	1,120	911	456	454	479	
1993.....	37,280	14,072	4,838	4,295	435	2,539	962	900	103	20,547	19,956	443	148	1,181	984	497	487	496	
1994.....	36,615	13,797	4,985	3,616	503	2,641	982	960	111	19,995	19,372	464	158	1,256	1,050	541	509	517	
1995.....	40,932	13,540	4,952	3,164	535	2,775	1,050	934	129	24,418	23,755	494	170	1,311	1,104	589	516	559	
1996.....	43,165	13,954	4,872	3,640	231	2,860	1,270	960	122	26,076	25,370	524	182	1,390	1,162	640	522	583	
1997.....	46,551	12,882	4,997	2,648	213	2,548	1,337	1,011	128	30,505	29,782	518	205	1,388	1,223	711	512	552	
1998.....	46,388	12,849	5,146	2,632	230	2,286	1,372	1,060	123	30,319	29,576	520	223	1,376	1,318	806	512	526	
1999.....	52,096	14,042	5,530	2,817	274	2,740	1,251	1,300	130	34,612	33,821	541	249	1,461	1,437	888	549	545	
2000.....	56,932	15,783	6,105	2,682	269	3,350	1,329	1,831	217	37,330	36,494	553	283	1,586	1,660	1,069	592	572	
2001.....	64,706	19,309	7,052	3,603	935	3,752	1,485	2,150	332	41,246	40,409	550	287	1,715	1,834	1,194	639	602	
2002.....	51,033	19,518	7,487	2,452	1,103	4,214	1,685	2,267	309	26,903	26,081	548	275	1,862	2,102	1,402	700	648	
2003.....	61,448	22,822	7,672	4,473	1,434	4,637	1,756	2,487	363	33,693	32,861	548	283	1,969	2,259	1,529	729	705	
2004.....	70,093	23,575	7,532	4,775	1,521	4,951	1,935	2,496	364	41,504	40,657	556	292	2,012	2,272	1,525	747	731	
2005.....	71,207	24,890	7,870	5,289	1,532	5,298	1,918	2,576	407	40,901	39,995	589	318	2,165	2,506	1,718	788	744	
2006.....	74,653	24,892	7,750	5,446	1,482	5,451	1,805	2,559	399	43,960	42,995	623	342	2,363	2,660	1,825	836	777	

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.

<sup>c</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>d</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>e</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

**U.S. inflation-adjusted applied research expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1953.....	7,065	4,141	1,902	1,579	NA	323	260	77	NA	2,497	2,401	36	60	153	110	55	55	165	
1954.....	7,482	4,262	1,789	1,748	NA	323	315	87	NA	2,783	2,671	41	71	152	114	60	54	171	
1955.....	8,074	4,534	1,776	1,963	NA	336	363	96	NA	3,107	2,987	45	75	145	115	59	56	172	
1956.....	9,938	5,282	1,993	2,444	NA	335	405	106	NA	4,218	4,094	52	72	139	129	72	57	171	
1957.....	12,044	6,508	2,223	3,384	NA	314	469	117	NA	5,078	4,951	57	70	135	155	100	55	169	
1958.....	13,455	7,298	2,517	3,776	NA	320	539	146	NA	5,674	5,547	59	68	133	178	122	56	172	
1959.....	14,165	7,855	2,778	3,918	NA	373	581	205	NA	5,809	5,677	60	72	135	188	130	58	178	
1960.....	14,567	8,229	2,921	3,959	NA	442	611	297	NA	5,827	5,684	62	81	137	190	133	57	184	
1961.....	14,678	8,511	3,139	3,816	NA	486	681	388	NA	5,616	5,475	61	80	139	223	164	59	188	
1962.....	17,144	9,728	3,285	4,688	NA	549	753	452	NA	6,818	6,667	63	88	141	269	209	60	188	
1963.....	17,730	10,298	3,712	4,620	NA	585	853	528	NA	6,804	6,653	64	87	148	287	225	62	193	
1964.....	18,983	11,123	4,277	4,419	280	642	917	587	NA	7,196	7,049	61	86	169	291	212	79	204	
1965.....	19,408	11,327	4,409	4,402	204	779	912	621	NA	7,340	7,189	58	93	187	348	231	118	206	
1966.....	20,074	11,324	4,366	4,254	229	897	919	658	NA	7,948	7,784	60	104	209	390	246	145	203	
1967.....	20,290	11,564	4,472	4,114	347	994	942	695	NA	7,908	7,738	65	105	225	402	251	151	191	
1968.....	20,620	11,281	4,462	3,837	349	1,001	885	747	NA	8,530	8,353	64	112	221	403	249	155	185	
1969.....	20,859	11,181	4,701	3,518	363	981	815	803	NA	8,872	8,689	61	122	206	415	252	163	184	
1970.....	20,893	11,261	4,845	3,458	352	1,015	774	817	NA	8,820	8,637	64	120	203	423	254	169	186	
1971.....	20,176	10,692	4,687	3,137	232	1,058	745	832	NA	8,625	8,443	64	118	232	419	256	163	209	
1972.....	20,377	10,750	4,754	2,801	355	1,295	743	804	NA	8,677	8,493	68	116	271	433	262	171	246	
1973.....	20,897	10,768	4,796	2,773	345	1,411	636	807	NA	9,087	8,892	82	113	314	454	261	193	275	
1974.....	21,149	10,466	4,758	2,606	346	1,372	549	835	NA	9,599	9,397	91	111	339	468	262	206	277	
1975.....	21,292	10,856	5,031	2,608	366	1,446	576	829	NA	9,263	9,052	101	109	370	505	263	242	298	
1976.....	22,331	11,105	5,146	2,570	415	1,481	653	840	NA	9,954	9,732	111	111	412	544	272	271	317	
1977.....	22,601	10,955	4,867	2,603	496	1,463	695	830	NA	10,316	10,084	119	112	454	563	281	282	315	
1978.....	23,394	11,103	4,899	2,612	514	1,477	708	893	NA	10,888	10,643	132	113	507	566	287	279	330	
1979.....	24,415	11,307	4,874	2,634	505	1,600	726	969	NA	11,699	11,444	144	112	531	551	291	260	326	
1980.....	25,377	11,541	4,711	3,007	509	1,688	779	848	NA	12,394	12,120	163	110	570	552	292	260	321	
1981.....	27,621	11,565	4,620	3,454	504	1,611	714	861	115	14,430	14,139	182	108	613	561	292	269	337	
1982.....	29,044	12,114	4,466	4,134	585	1,605	690	634	145	15,229	14,927	193	109	641	585	301	283	331	
1983.....	31,129	13,281	4,587	4,949	635	1,721	726	664	119	16,104	15,774	217	113	680	615	317	298	330	
1984.....	33,184	13,921	4,376	5,435	809	1,812	811	679	119	17,424	17,059	248	117	726	648	334	313	346	
1985.....	36,435	15,560	4,497	6,766	904	1,860	831	702	118	18,921	18,516	284	122	785	676	355	321	375	
1986.....	38,231	14,504	4,497	5,683	883	1,955	777	710	106	21,617	21,168	321	128	871	716	379	337	418	
1987.....	38,186	14,694	4,598	5,515	851	2,244	726	758	101	21,190	20,702	355	133	966	780	403	377	455	
1988.....	39,009	14,199	4,442	5,081	490	2,586	722	791	87	22,377	21,839	399	138	1,081	855	426	429	498	
1989.....	41,087	14,960	4,540	5,504	476	2,699	767	884	89	23,489	22,904	442	143	1,188	919	448	471	531	
1990.....	42,769	16,784	4,476	7,313	473	2,622	844	955	100	23,201	22,591	462	147	1,264	966	470	495	555	
1991.....	45,746	16,909	4,848	6,617	513	2,641	1,097	1,091	102	25,989	25,372	464	153	1,292	1,003	496	507	554	

**U.S. inflation-adjusted applied research expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1992.....	43,912	15,846	5,020	5,181	587	2,793	1,089	1,081	94	25,162	24,523	479	160	1,296	1,054	528	526	554	
1993.....	42,182	15,922	5,474	4,860	492	2,873	1,089	1,018	116	23,248	22,580	501	167	1,336	1,114	562	552	561	
1994.....	40,567	15,286	5,523	4,006	557	2,926	1,087	1,063	123	22,153	21,463	514	176	1,392	1,163	599	563	573	
1995.....	44,440	14,700	5,377	3,435	581	3,013	1,140	1,014	140	26,511	25,791	536	184	1,424	1,199	639	560	607	
1996.....	45,992	14,868	5,191	3,878	246	3,047	1,353	1,022	130	27,783	27,032	558	193	1,481	1,239	682	557	622	
1997.....	48,789	13,502	5,237	2,775	223	2,671	1,402	1,059	135	31,972	31,214	543	215	1,455	1,282	745	537	579	
1998.....	48,084	13,319	5,334	2,728	238	2,370	1,422	1,099	128	31,428	30,658	539	231	1,427	1,366	836	531	545	
1999.....	53,231	14,347	5,650	2,878	280	2,800	1,278	1,328	132	35,366	34,558	553	255	1,492	1,468	907	561	557	
2000.....	56,931	15,783	6,105	2,682	269	3,350	1,329	1,831	217	37,330	36,494	553	283	1,586	1,660	1,069	592	572	
2001.....	63,190	18,856	6,887	3,519	913	3,664	1,450	2,100	324	40,280	39,462	538	280	1,675	1,791	1,166	624	588	
2002.....	48,982	18,733	7,187	2,353	1,059	4,045	1,618	2,176	296	25,822	25,033	526	264	1,787	2,017	1,346	671	622	
2003.....	57,750	21,448	7,210	4,204	1,348	4,358	1,651	2,337	341	31,665	30,883	515	266	1,851	2,123	1,437	686	663	
2004.....	64,055	21,544	6,883	4,364	1,390	4,525	1,769	2,281	333	37,929	37,155	508	266	1,838	2,076	1,393	683	668	
2005.....	63,162	22,078	6,981	4,691	1,359	4,700	1,702	2,285	361	36,281	35,477	522	282	1,921	2,223	1,524	699	660	
2006.....	64,308	21,442	6,676	4,691	1,277	4,695	1,555	2,204	344	37,868	37,037	537	295	2,036	2,292	1,572	720	669	

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.

<sup>c</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>d</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>e</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCE: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

**U.S. development expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

Year	Performing sector:	Total	Federal	Industry <sup>a</sup>			Industry FFRDCs	U&C <sup>b</sup>						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>g</sup>	Industry	Nonprofit	Federal <sup>h</sup>
1953.....		3,412	567	2,753	1,123	1,630	NA	16	9	3	1	3	1	48	29	17	6	6	NA
1954.....		3,734	537	3,090	1,405	1,685	NA	17	9	3	1	3	1	59	32	18	7	7	NA
1955.....		4,189	543	3,523	1,785	1,738	NA	21	12	4	2	3	1	69	34	19	8	7	NA
1956.....		5,855	631	5,084	2,817	2,267	NA	25	14	4	2	4	2	81	35	20	8	7	NA
1957.....		6,681	728	5,790	3,616	2,174	NA	26	12	5	3	4	2	101	37	21	8	8	NA
1958.....		7,214	842	6,183	3,942	2,241	NA	28	13	6	3	4	2	120	42	25	8	9	NA
1959.....		8,463	940	7,307	4,750	2,557	NA	31	16	6	3	5	2	134	51	32	9	10	NA
1960.....		9,360	1,003	8,104	5,169	2,935	NA	35	19	6	3	5	2	151	69	49	10	10	NA
1961.....		9,930	1,090	8,536	5,347	3,189	NA	38	22	7	2	5	2	170	97	73	10	14	NA
1962.....		10,115	1,227	8,526	5,280	3,246	NA	40	23	8	2	6	2	190	132	103	11	18	NA
1963.....		11,540	1,465	9,651	6,116	3,535	NA	40	22	8	2	6	2	219	165	134	11	20	NA
1964.....		12,506	1,680	10,004	6,156	3,848	359	49	30	8	2	7	3	227	188	159	11	18	NA
1965.....		13,215	1,789	10,637	6,218	4,419	298	71	48	9	2	8	4	207	215	183	12	20	NA
1966.....		14,490	1,886	11,810	6,849	4,961	271	87	61	9	2	10	5	200	236	199	14	23	NA
1967.....		15,332	1,943	12,539	6,795	5,744	302	93	66	9	3	10	7	208	247	208	15	24	NA
1968.....		16,154	1,904	13,370	7,044	6,326	293	102	72	8	4	9	9	226	259	217	16	26	NA
1969.....		17,051	2,016	14,071	6,944	7,127	332	110	80	7	5	8	10	246	277	231	18	28	NA
1970.....		16,925	2,258	13,698	6,232	7,466	340	112	84	6	5	7	10	249	268	220	18	30	NA
1971.....		17,399	2,473	13,924	6,167	7,757	391	98	69	8	4	9	9	267	246	194	19	33	NA
1972.....		18,743	2,639	15,043	6,533	8,510	402	101	63	12	4	14	9	291	267	213	19	35	NA
1973.....		20,197	2,657	16,394	6,621	9,773	399	126	71	18	5	20	13	296	326	268	20	38	NA
1974.....		21,504	2,765	17,421	6,553	10,868	479	141	75	20	7	25	15	321	377	314	22	42	NA
1975.....		22,706	2,890	18,352	6,783	11,569	535	156	83	22	8	27	16	373	400	330	23	47	NA
1976.....		25,085	2,972	20,412	7,522	12,890	654	182	100	24	12	31	16	447	418	341	25	52	NA
1977.....		27,667	3,188	22,603	8,275	14,328	675	254	153	28	15	40	19	503	444	359	27	58	NA
1978.....		31,056	3,676	25,216	8,756	16,460	753	373	254	32	15	49	24	542	496	403	30	64	NA
1979.....		35,445	3,944	29,033	9,888	19,145	810	469	336	34	16	56	28	603	586	483	32	71	NA
1980.....		40,765	4,072	33,848	10,957	22,891	882	518	362	38	19	68	31	719	726	612	35	79	NA
1981.....		46,305	4,530	38,547	12,791	25,756	950	568	386	44	24	80	35	778	845	660	37	88	447
1982.....		51,879	5,178	43,434	14,215	29,219	989	597	397	46	27	88	39	745	900	690	40	98	436
1983.....		57,771	6,106	48,064	15,522	32,542	1,054	617	399	47	31	97	43	832	991	747	44	109	500
1984.....		66,461	7,078	55,371	17,640	37,731	1,056	677	435	51	37	108	47	986	1,117	814	47	120	530
1985.....		74,522	8,011	62,020	20,258	41,762	1,102	756	486	57	43	120	49	1,244	1,373	1,013	51	134	560
1986.....		75,855	8,275	62,871	21,517	41,354	1,145	818	513	65	50	136	53	1,504	1,633	1,262	55	149	453
1987.....		79,929	8,176	66,789	24,122	42,667	1,230	945	599	73	57	155	61	1,670	1,808	1,417	60	165	421
1988.....		84,566	8,864	70,353	23,719	46,634	1,414	1,098	698	83	66	180	71	1,762	1,917	1,514	65	183	420
1989.....		87,723	9,355	72,725	21,049	51,676	1,423	1,227	773	92	76	205	81	1,782	1,960	1,557	70	203	430
1990.....		94,067	9,700	78,376	18,966	59,410	1,438	1,407	909	99	83	226	89	1,735	1,924	1,613	75	226	490
1991.....		95,104	8,778	80,286	17,256	63,030	1,383	1,533	1,011	103	86	239	94	1,537	1,654	1,432	82	251	533



**U.S. development expenditures, by performing and funding sectors: 1953–2006**

(Millions of current dollars)

Year	Performing sector:	Total	Federal	Industry <sup>a</sup>			Industry FFRDCs	U&C <sup>b</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs	
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>f</sup>	Industry	U&C	Nonprofit	Federal <sup>g</sup>	Total	Federal <sup>h</sup>	Industry	Nonprofit	Federal <sup>i</sup>
1992.....		99,810	9,098	84,569	17,181	67,388	1,372	1,595	1,054	105	91	246	100	1,452	1,125	758	88	279	599
1993.....		99,704	9,071	84,757	16,083	68,674	1,038	1,699	1,126	109	97	259	107	1,374	1,191	787	95	309	574
1994.....		102,937	8,823	87,890	16,209	71,681	1,196	1,815	1,212	114	102	276	112	1,378	1,261	815	103	343	573
1995.....		113,077	9,262	97,342	17,824	79,518	1,208	1,810	1,178	123	108	288	113	1,616	1,236	744	111	381	603
1996.....		121,375	9,033	105,863	17,066	88,797	1,358	1,790	1,127	128	115	305	115	1,520	1,241	698	120	423	571
1997.....		128,676	9,077	113,184	18,121	95,063	1,292	1,707	1,055	121	114	305	112	1,454	1,378	687	155	536	585
1998.....		144,736	9,214	129,041	18,452	110,589	1,280	1,629	985	115	114	302	112	1,527	1,537	760	168	609	507
1999.....		154,068	8,974	138,807	16,571	122,236	1,208	1,391	711	120	119	321	120	1,636	1,586	727	188	671	467
2000.....		167,862	8,047	153,745	13,510	140,235	1,185	1,177	452	125	121	348	130	1,539	1,537	517	214	807	632
2001.....		165,245	9,114	149,952	12,542	137,410	534	1,271	501	132	121	377	140	1,637	1,793	675	217	901	945
2002.....		174,157	9,501	157,788	13,061	144,727	625	1,352	528	142	120	409	154	1,703	2,156	890	207	1,059	1,031
2003.....		172,468	10,416	155,060	11,939	143,121	725	1,514	646	155	120	432	160	1,798	1,853	485	214	1,155	1,102
2004.....		173,297	10,778	155,034	14,419	140,615	789	1,696	808	161	122	442	164	1,993	1,798	426	220	1,151	1,209
2005.....		192,148	11,952	172,208	15,512	156,696	899	1,766	825	163	129	475	173	2,088	1,996	460	240	1,297	1,239
2006.....		204,257	11,720	184,421	15,973	168,448	816	1,840	830	171	137	519	183	2,168	2,031	395	258	1,378	1,262

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>b</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>c</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).



**U.S. inflation-adjusted development expenditures, by performing and funding sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry <sup>a</sup>			Industry FFRDCs	U&C <sup>b</sup>						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>g</sup>	Industry	Nonprofit	Federal <sup>h</sup>
1953.....		18,699	3,105	15,089	6,155	8,934	NA	88	47	16	5	14	5	260	156	90	33	33	NA
1954.....		20,274	2,916	16,777	7,629	9,149	NA	92	46	19	5	17	5	318	171	95	38	38	NA
1955.....		22,347	2,894	18,794	9,522	9,272	NA	112	61	20	8	17	5	368	179	99	43	37	NA
1956.....		30,186	3,251	26,214	14,525	11,689	NA	129	70	23	10	19	8	415	178	101	41	36	NA
1957.....		33,341	3,631	28,895	18,045	10,849	NA	130	60	26	12	21	10	504	182	102	40	40	NA
1958.....		35,191	4,105	30,163	19,231	10,933	NA	134	61	28	15	21	10	585	202	120	39	44	NA
1959.....		40,783	4,530	35,212	22,890	12,322	NA	149	75	29	14	22	10	646	246	154	43	48	NA
1960.....		44,485	4,765	38,516	24,566	13,949	NA	164	90	30	12	22	10	715	326	231	48	48	NA
1961.....		46,667	5,120	40,118	25,130	14,988	NA	176	101	32	9	24	9	797	456	343	47	66	NA
1962.....		46,897	5,689	39,532	24,481	15,050	NA	185	104	36	9	27	9	881	610	475	51	83	NA
1963.....		52,943	6,721	44,279	28,060	16,219	NA	184	101	36	9	28	9	1,002	757	615	50	92	NA
1964.....		56,511	7,591	45,205	27,817	17,388	1,622	219	133	36	9	30	11	1,023	850	718	50	81	NA
1965.....		58,643	7,937	47,203	27,593	19,610	1,322	313	213	38	9	35	18	916	952	810	53	89	NA
1966.....		62,517	8,137	50,956	29,551	21,405	1,169	375	263	40	9	42	22	863	1,016	856	60	99	NA
1967.....		64,165	8,132	52,478	28,438	24,040	1,264	389	274	36	10	42	27	871	1,032	868	63	100	NA
1968.....		64,839	7,643	53,667	28,274	25,392	1,176	407	287	31	16	37	36	907	1,040	871	64	104	NA
1969.....		65,207	7,709	53,812	26,556	27,256	1,270	419	304	27	19	30	38	941	1,057	881	69	107	NA
1970.....		61,472	8,201	49,752	22,635	27,117	1,235	407	303	23	18	26	36	904	973	799	65	109	NA
1971.....		60,181	8,553	48,163	21,331	26,831	1,352	339	239	27	14	30	29	924	851	671	66	114	NA
1972.....		62,134	8,749	49,868	21,657	28,211	1,333	335	207	41	12	45	30	965	885	706	63	116	NA
1973.....		63,415	8,343	51,475	20,789	30,686	1,253	394	221	55	16	63	39	928	1,022	840	63	119	NA
1974.....		61,927	7,964	50,168	18,871	31,297	1,379	405	215	58	19	71	43	924	1,087	903	62	122	NA
1975.....		59,750	7,605	48,293	17,850	30,444	1,408	411	217	58	21	72	42	980	1,053	868	62	123	NA
1976.....		62,406	7,393	50,780	18,713	32,067	1,627	453	248	60	29	77	40	1,112	1,041	848	63	130	NA
1977.....		64,717	7,457	52,871	19,356	33,515	1,579	594	358	65	34	94	43	1,177	1,039	840	64	135	NA
1978.....		67,872	8,034	55,109	19,136	35,973	1,646	815	555	70	32	107	51	1,184	1,085	880	65	140	NA
1979.....		71,538	7,959	58,596	19,957	38,640	1,635	948	679	69	31	113	56	1,218	1,182	974	65	144	NA
1980.....		75,431	7,536	62,632	20,275	42,358	1,632	958	670	71	36	125	57	1,330	1,343	1,133	64	147	NA
1981.....		78,325	7,663	65,202	21,636	43,566	1,607	960	653	74	40	135	59	1,316	821	608	63	149	756
1982.....		82,709	8,255	69,245	22,662	46,583	1,577	952	634	73	42	141	62	1,187	798	578	64	156	696
1983.....		88,597	9,363	73,710	23,804	49,906	1,616	947	612	72	48	149	65	1,275	919	686	67	166	766
1984.....		98,235	10,462	81,843	26,073	55,770	1,561	1,001	643	76	54	159	69	1,458	1,127	879	70	178	784
1985.....		106,896	11,491	88,963	29,059	59,904	1,581	1,085	697	82	62	172	71	1,784	1,189	924	73	192	803
1986.....		106,464	11,614	88,240	30,199	58,041	1,607	1,148	720	92	71	191	74	2,111	1,109	823	78	209	635
1987.....		109,198	11,169	91,247	32,955	58,292	1,680	1,291	818	100	78	212	83	2,281	954	647	82	225	576
1988.....		111,722	11,710	92,944	31,335	61,609	1,868	1,450	922	109	88	237	94	2,328	866	538	85	242	555
1989.....		111,667	11,909	92,576	26,794	65,781	1,811	1,562	984	117	97	261	103	2,268	993	645	89	259	548
1990.....		115,292	11,889	96,061	23,245	72,815	1,762	1,724	1,115	122	102	277	109	2,127	1,128	759	92	277	601
1991.....		112,624	10,395	95,077	20,435	74,642	1,638	1,816	1,197	122	102	284	111	1,820	1,249	855	97	297	631

**U.S. inflation-adjusted development expenditures, by performing and funding sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Performing sector:		Industry <sup>a</sup>				Industry FFRDCs	U&C <sup>b</sup>					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Total	Federal	Total	Federal <sup>c</sup>	Industry <sup>d</sup>	Federal <sup>e</sup>	Total	Federal	Nonfederal <sup>e</sup>	Industry	U&C	Nonprofit	Federal <sup>f</sup>	Total	Federal <sup>g</sup>	Industry	Nonprofit	Federal <sup>h</sup>
1992.....	115,541	10,531	97,898	19,889	78,009	1,588	1,847	1,220	122	105	285	115	1,681	1,302	878	102	322	694
1993.....	112,813	10,264	95,901	18,198	77,703	1,174	1,922	1,274	123	110	293	121	1,554	1,348	890	108	350	650
1994.....	114,046	9,776	97,376	17,958	79,418	1,325	2,011	1,343	126	113	306	124	1,527	1,397	903	114	381	634
1995.....	122,768	10,056	105,684	19,352	86,333	1,312	1,965	1,279	133	118	313	123	1,754	1,342	807	121	414	655
1996.....	129,325	9,625	112,797	18,184	94,613	1,447	1,907	1,201	136	123	325	122	1,619	1,322	743	128	451	608
1997.....	134,861	9,513	118,625	18,992	99,633	1,354	1,789	1,105	127	119	319	118	1,524	1,444	720	162	562	613
1998.....	150,029	9,551	133,760	19,127	114,634	1,327	1,689	1,021	120	118	313	117	1,583	1,593	788	175	631	526
1999.....	157,425	9,170	141,831	16,932	124,899	1,234	1,421	727	122	121	328	123	1,672	1,620	743	192	685	477
2000.....	167,862	8,047	153,745	13,510	140,235	1,185	1,177	452	125	121	348	130	1,539	1,537	517	214	807	632
2001.....	161,373	8,900	146,439	12,248	134,190	521	1,242	490	129	118	368	137	1,598	1,751	659	212	880	923
2002.....	167,158	9,119	151,447	12,536	138,911	600	1,298	506	137	115	392	147	1,635	2,069	854	199	1,016	989
2003.....	162,088	9,789	145,728	11,220	134,508	682	1,423	607	146	113	406	150	1,690	1,742	455	201	1,085	1,036
2004.....	158,368	9,849	141,679	13,177	128,502	721	1,550	738	147	111	404	150	1,822	1,643	390	201	1,052	1,105
2005.....	170,440	10,602	152,753	13,760	138,993	797	1,566	732	145	115	422	154	1,852	1,771	408	213	1,151	1,099
2006.....	175,952	10,095	158,865	13,760	145,105	703	1,585	715	147	118	447	158	1,868	1,749	340	223	1,187	1,087

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>b</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.<sup>c</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.<sup>d</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.<sup>e</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.<sup>f</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

**U.S. development expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:																			
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>		
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C	Nonprofit	FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>
1953.....	3,412	1,762	567	1,123	NA	9	48	17	NA	1,637	1,630	1	6	3	7	6	1	3		
1954.....	3,734	2,027	537	1,405	NA	9	59	18	NA	1,693	1,685	1	7	3	8	7	1	3		
1955.....	4,189	2,427	543	1,785	NA	12	69	19	NA	1,748	1,738	2	8	3	8	7	1	4		
1956.....	5,855	3,561	631	2,817	NA	14	81	20	NA	2,277	2,267	2	8	4	9	7	2	4		
1957.....	6,681	4,477	728	3,616	NA	12	101	21	NA	2,185	2,174	3	8	4	10	8	2	5		
1958.....	7,214	4,941	842	3,942	NA	13	120	25	NA	2,252	2,241	3	8	4	11	9	2	6		
1959.....	8,463	5,872	940	4,750	NA	16	134	32	NA	2,569	2,557	3	9	5	12	10	2	6		
1960.....	9,360	6,390	1,003	5,169	NA	19	151	49	NA	2,948	2,935	3	10	5	12	10	2	6		
1961.....	9,930	6,701	1,090	5,347	NA	22	170	73	NA	3,201	3,189	2	10	5	16	14	2	7		
1962.....	10,115	6,822	1,227	5,280	NA	23	190	103	NA	3,259	3,246	2	11	6	20	18	2	8		
1963.....	11,540	7,956	1,465	6,116	NA	22	219	134	NA	3,548	3,535	2	11	6	22	20	2	8		
1964.....	12,506	8,610	1,680	6,156	359	30	227	159	NA	3,861	3,848	2	11	7	21	18	3	8		
1965.....	13,215	8,742	1,789	6,218	298	48	207	183	NA	4,433	4,419	2	12	8	24	20	4	9		
1966.....	14,490	9,466	1,886	6,849	271	61	200	199	NA	4,977	4,961	2	14	10	28	23	5	9		
1967.....	15,332	9,521	1,943	6,795	302	66	208	208	NA	5,762	5,744	3	15	10	31	24	7	9		
1968.....	16,154	9,756	1,904	7,044	293	72	226	217	NA	6,346	6,326	4	16	9	35	26	9	8		
1969.....	17,051	9,848	2,016	6,944	332	80	246	231	NA	7,150	7,127	5	18	8	38	28	10	7		
1970.....	16,925	9,382	2,258	6,232	340	84	249	220	NA	7,489	7,466	5	18	7	40	30	10	6		
1971.....	17,399	9,561	2,473	6,167	391	69	267	194	NA	7,780	7,757	4	19	9	42	33	9	8		
1972.....	18,743	10,141	2,639	6,533	402	63	291	213	NA	8,533	8,510	4	19	14	44	35	9	12		
1973.....	20,197	10,311	2,657	6,621	399	71	296	268	NA	9,798	9,773	5	20	20	51	38	13	18		
1974.....	21,504	10,506	2,765	6,553	479	75	321	314	NA	10,896	10,868	7	22	25	57	42	15	20		
1975.....	22,706	10,993	2,890	6,783	535	83	373	330	NA	11,600	11,569	8	23	27	63	47	16	22		
1976.....	25,085	12,035	2,972	7,522	654	100	447	341	NA	12,927	12,890	12	25	31	68	52	16	24		
1977.....	27,667	13,153	3,188	8,275	675	153	503	359	NA	14,370	14,328	15	27	40	76	58	19	28		
1978.....	31,056	14,383	3,676	8,756	753	254	542	403	NA	16,504	16,460	15	30	49	88	64	24	32		
1979.....	35,445	16,064	3,944	9,888	810	336	603	483	NA	19,193	19,145	16	32	56	99	71	28	34		
1980.....	40,765	17,604	4,072	10,957	882	362	719	612	NA	22,945	22,891	19	35	68	110	79	31	38		
1981.....	46,305	19,795	4,530	12,791	950	386	778	360	447	25,817	25,756	24	37	80	123	88	35	44		
1982.....	51,879	21,886	5,178	14,215	989	397	745	362	436	29,286	29,219	27	40	88	137	98	39	46		
1983.....	57,771	24,360	6,106	15,522	1,054	399	832	447	500	32,617	32,542	31	44	97	151	109	43	47		
1984.....	66,461	27,789	7,078	17,640	1,056	435	986	594	530	37,815	37,731	37	47	108	167	120	47	51		
1985.....	74,522	31,745	8,011	20,258	1,102	486	1,244	644	560	41,857	41,762	43	51	120	183	134	49	57		
1986.....	75,855	33,540	8,275	21,517	1,145	513	1,504	587	453	41,460	41,354	50	55	136	201	149	53	65		
1987.....	79,929	36,270	8,176	24,122	1,230	599	1,670	474	421	42,784	42,667	57	60	155	226	165	61	73		
1988.....	84,566	37,285	8,864	23,719	1,414	698	1,762	407	420	46,765	46,634	66	65	180	255	183	71	83		
1989.....	87,723	35,320	9,355	21,049	1,423	773	1,782	507	430	51,822	51,676	76	70	205	285	203	81	92		
1990.....	94,067	33,858	9,700	18,966	1,438	909	1,735	619	490	59,568	59,410	83	75	226	315	226	89	99		
1991.....	95,104	31,219	8,778	17,256	1,383	1,011	1,537	722	533	63,197	63,030	86	82	239	345	251	94	103		

**U.S. development expenditures, by funding and performing sectors: 1953–2006**

(Millions of current dollars)

Year	Funding sector:	Performing sector:																	
	Total	Total	Federal							Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>		
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1992.....	99,810	31,514	9,098	17,181	1,372	1,054	1,452	758	599	67,567	67,388	91	88	246	378	279	100	105	
1993.....	99,704	30,053	9,071	16,083	1,038	1,126	1,374	787	574	68,866	68,674	97	95	259	416	309	107	109	
1994.....	102,937	30,206	8,823	16,209	1,196	1,212	1,378	815	573	71,886	71,681	102	103	276	455	343	112	114	
1995.....	113,077	32,435	9,262	17,824	1,208	1,178	1,616	744	603	79,738	79,518	108	111	288	495	381	113	123	
1996.....	121,375	31,372	9,033	17,066	1,358	1,127	1,520	698	571	89,032	88,797	115	120	305	538	423	115	128	
1997.....	128,676	32,269	9,077	18,121	1,292	1,055	1,454	687	585	95,332	95,063	114	155	305	649	536	112	121	
1998.....	144,736	32,726	9,214	18,452	1,280	985	1,527	760	507	110,871	110,589	114	168	302	721	609	112	115	
1999.....	154,068	30,294	8,974	16,571	1,208	711	1,636	727	467	122,543	122,236	119	188	321	791	671	120	120	
2000.....	167,862	25,882	8,047	13,510	1,185	452	1,539	517	632	140,570	140,235	121	214	348	937	807	130	125	
2001.....	165,245	25,947	9,114	12,542	534	501	1,637	675	945	137,747	137,410	121	217	377	1,042	901	140	132	
2002.....	174,157	27,339	9,501	13,061	625	528	1,703	890	1,031	145,055	144,727	120	207	409	1,212	1,059	154	142	
2003.....	172,468	27,111	10,416	11,939	725	646	1,798	485	1,102	143,455	143,121	120	214	432	1,315	1,155	160	155	
2004.....	173,297	30,422	10,778	14,419	789	808	1,993	426	1,209	140,957	140,615	122	220	442	1,315	1,151	164	161	
2005.....	192,148	32,975	11,952	15,512	899	825	2,088	460	1,239	157,065	156,696	129	240	475	1,470	1,297	173	163	
2006.....	204,257	33,164	11,720	15,973	816	830	2,168	395	1,262	168,843	168,448	137	258	519	1,561	1,378	183	171	

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.

<sup>c</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>d</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>e</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

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**U.S. inflation-adjusted development expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:	Federal										Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>	
	Performing sector:	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	Nonprofit FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1953.....		18,699	9,658	3,105	6,155	NA	47	260	90	NA	8,972	8,934	5	33	14	38	33	5	16	
1954.....		20,274	11,003	2,916	7,629	NA	46	318	95	NA	9,192	9,149	5	38	17	43	38	5	19	
1955.....		22,347	12,944	2,894	9,522	NA	61	368	99	NA	9,322	9,272	8	43	17	43	37	5	20	
1956.....		30,186	18,361	3,251	14,525	NA	70	415	101	NA	11,740	11,689	10	41	19	44	36	8	23	
1957.....		33,341	22,342	3,631	18,045	NA	60	504	102	NA	10,902	10,849	12	40	21	50	40	10	26	
1958.....		35,191	24,102	4,105	19,231	NA	61	585	120	NA	10,986	10,933	15	39	21	54	44	10	28	
1959.....		40,783	28,295	4,530	22,890	NA	75	646	154	NA	12,380	12,322	14	43	22	58	48	10	29	
1960.....		44,485	30,367	4,765	24,566	NA	90	715	231	NA	14,008	13,949	12	48	22	57	48	10	30	
1961.....		46,667	31,491	5,120	25,130	NA	101	797	343	NA	15,044	14,988	9	47	24	75	66	9	32	
1962.....		46,897	31,631	5,689	24,481	NA	104	881	475	NA	15,111	15,050	9	51	27	93	83	9	36	
1963.....		52,943	36,500	6,721	28,060	NA	101	1,002	615	NA	16,278	16,219	9	50	28	101	92	9	36	
1964.....		56,511	38,906	7,591	27,817	1,622	133	1,023	718	NA	17,447	17,388	9	50	30	93	81	11	36	
1965.....		58,643	38,792	7,937	27,593	1,322	213	916	810	NA	19,672	19,610	9	53	35	107	89	18	38	
1966.....		62,517	40,841	8,137	29,551	1,169	263	863	856	NA	21,474	21,405	9	60	42	121	99	22	40	
1967.....		64,165	39,847	8,132	28,438	1,264	274	871	868	NA	24,113	24,040	10	63	42	128	100	27	36	
1968.....		64,839	39,158	7,643	28,274	1,176	287	907	871	NA	25,473	25,392	16	64	37	140	104	36	31	
1969.....		65,207	37,661	7,709	26,556	1,270	304	941	881	NA	27,344	27,256	19	69	30	145	107	38	27	
1970.....		61,472	34,077	8,201	22,635	1,235	303	904	799	NA	27,201	27,117	18	65	26	145	109	36	23	
1971.....		60,181	33,070	8,553	21,331	1,352	239	924	671	NA	26,911	26,831	14	66	30	144	114	29	27	
1972.....		62,134	33,617	8,749	21,657	1,333	207	965	706	NA	28,285	28,211	12	63	45	146	116	30	41	
1973.....		63,415	32,374	8,343	20,789	1,253	221	928	840	NA	30,764	30,686	16	63	63	159	119	39	55	
1974.....		61,927	30,256	7,964	18,871	1,379	215	924	903	NA	31,378	31,297	19	62	71	165	122	43	58	
1975.....		59,750	28,928	7,605	17,850	1,408	217	980	868	NA	30,527	30,444	21	62	72	165	123	42	58	
1976.....		62,406	29,941	7,393	18,713	1,627	248	1,112	848	NA	32,159	32,067	29	63	77	169	130	40	60	
1977.....		64,717	30,767	7,457	19,356	1,579	358	1,177	840	NA	33,613	33,515	34	64	94	179	135	43	65	
1978.....		67,872	31,434	8,034	19,136	1,646	555	1,184	880	NA	36,069	35,973	32	65	107	192	140	51	70	
1979.....		71,538	32,421	7,959	19,957	1,635	679	1,218	974	NA	38,735	38,640	31	65	113	200	144	56	69	
1980.....		75,431	32,575	7,536	20,275	1,632	670	1,330	1,133	NA	42,457	42,358	36	64	125	204	147	57	71	
1981.....		78,325	33,483	7,663	21,636	1,607	653	1,316	608	756	43,670	43,566	40	63	135	208	149	59	74	
1982.....		82,709	34,892	8,255	22,662	1,577	634	1,187	578	696	46,689	46,583	42	64	141	218	156	62	73	
1983.....		88,597	37,357	9,363	23,804	1,616	612	1,275	686	766	50,020	49,906	48	67	149	232	166	65	72	
1984.....		98,235	41,075	10,462	26,073	1,561	643	1,458	879	784	55,894	55,770	54	70	159	247	178	69	76	
1985.....		106,896	45,535	11,491	29,059	1,581	697	1,784	924	803	60,040	59,904	62	73	172	262	192	71	82	
1986.....		106,464	47,074	11,614	30,199	1,607	720	2,111	823	635	58,189	58,041	71	78	191	282	209	74	92	
1987.....		109,198	49,551	11,169	32,955	1,680	818	2,281	647	576	58,451	58,292	78	82	212	308	225	83	100	
1988.....		111,722	49,257	11,710	31,335	1,868	922	2,328	538	555	61,782	61,609	88	85	237	336	242	94	109	
1989.....		111,667	44,960	11,909	26,794	1,811	984	2,268	645	548	65,967	65,781	97	89	261	362	259	103	117	
1990.....		115,292	41,498	11,889	23,245	1,762	1,115	2,127	759	601	73,009	72,815	102	92	277	386	277	109	122	
1991.....		112,624	36,971	10,395	20,435	1,638	1,197	1,820	855	631	74,840	74,642	102	97	284	408	297	111	122	

**U.S. inflation-adjusted development expenditures, by funding and performing sectors: 1953–2006**

(Millions of constant 2000 dollars)

Year	Funding sector:	Performing sector:																	
	Total	Total	Federal							Industry				U&C	Nonprofit		Nonfederal <sup>a</sup>		
	Total	Total	Federal	Industry <sup>b,c</sup>	FFRDCs <sup>b</sup>	U&C <sup>d</sup>	U&C FFRDCs <sup>e</sup>	Nonprofit <sup>b</sup>	FFRDCs <sup>b</sup>	Total	Industry <sup>c,f</sup>	U&C <sup>d</sup>	Nonprofit	U&C <sup>d</sup>	Total	Nonprofit	U&C <sup>d</sup>	U&C <sup>d</sup>	
1992.....	115,541	36,480	10,531	19,889	1,588	1,220	1,681	878	694	78,216	78,009	105	102	285	438	322	115	122	
1993.....	112,813	34,005	10,264	18,198	1,174	1,274	1,554	890	650	77,921	77,703	110	108	293	471	350	121	123	
1994.....	114,046	33,466	9,776	17,958	1,325	1,343	1,527	903	634	79,644	79,418	113	114	306	504	381	124	126	
1995.....	122,768	35,214	10,056	19,352	1,312	1,279	1,754	807	655	86,571	86,333	118	121	313	537	414	123	133	
1996.....	129,325	33,427	9,625	18,184	1,447	1,201	1,619	743	608	94,864	94,613	123	128	325	573	451	122	136	
1997.....	134,861	33,821	9,513	18,992	1,354	1,105	1,524	720	613	99,914	99,633	119	162	319	680	562	118	127	
1998.....	150,029	33,922	9,551	19,127	1,327	1,021	1,583	788	526	114,926	114,634	118	175	313	747	631	117	120	
1999.....	157,425	30,954	9,170	16,932	1,234	727	1,672	743	477	125,213	124,899	121	192	328	808	685	123	122	
2000.....	167,862	25,882	8,047	13,510	1,185	452	1,539	517	632	140,570	140,235	121	214	348	937	807	130	125	
2001.....	161,373	25,339	8,900	12,248	521	490	1,598	659	923	134,520	134,190	118	212	368	1,017	880	137	129	
2002.....	167,158	26,240	9,119	12,536	600	506	1,635	854	989	139,225	138,911	115	199	392	1,164	1,016	147	137	
2003.....	162,088	25,479	9,789	11,220	682	607	1,690	455	1,036	134,822	134,508	113	201	406	1,236	1,085	150	146	
2004.....	158,368	27,802	9,849	13,177	721	738	1,822	390	1,105	128,814	128,502	111	201	404	1,202	1,052	150	147	
2005.....	170,440	29,249	10,602	13,760	797	732	1,852	408	1,099	139,321	138,993	115	213	422	1,304	1,151	154	145	
2006.....	175,952	28,568	10,095	13,760	703	715	1,868	340	1,087	145,446	145,105	118	223	447	1,345	1,187	158	147	

NA = not available

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>Because of limitations in survey information, data on nonfederal government funding to other performers not available and consequently included in other sectors' support for their own R&D, e.g., nonfederal government support to nonprofits is included in nonprofit support for their own R&D.

<sup>b</sup>Expenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector; therefore, value for federal support to industry includes support to FFRDCs for those years. Similarly for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–80.

<sup>c</sup>Character-of-work estimates for industry R&D revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>d</sup>Adjustments made to university R&D for 1998 on to eliminate double counting of funds passed through from one academic institution to another. Character-of-work estimation procedure for university and college R&D also revised for 1998 on; therefore, data not directly comparable with data for 1997 and earlier.

<sup>e</sup>Includes all R&D expenditures of FFRDCs administered by academic institutions.

<sup>f</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data for calendar years. For some performers, these levels are approximations based on fiscal year data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. Academic expenditures in all years and federal government expenditures before 1977 each 50% because those fiscal years (for most academic institutions and federal government before 1977) began on 1 July instead of 1 October. Technical notes explaining methodological issues of measurement available from National Science Foundation (NSF), Division of Science Resources Statistics (SRS) on request. Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2005 and 2006. For trend comparisons, use only historical data reported here. Table incorporates latest revisions to prior-year data. Do not use data published earlier.

SOURCES: NSF/SRS, Research and Development in Industry 2005 (forthcoming); Academic Research and Development Expenditures: Fiscal Year 2005 (2007); Federal Funds for Research and Development: Fiscal Years 2004, 2005, and 2006 (2007); and Survey of Research and Development Funding and Performance by Nonprofit Organizations: FY 1996–97 (2001).

Appendix table 4-19

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**Total (federal plus company and other) funds for industrial R&D performance in United States, by industry and company size: 2001–05**

(Millions of dollars)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
All industries.....	21–23, 31–33, 42, 44–81	202,017	193,868	200,724	208,301	226,159
Manufacturing industries.....	31–33	124,217	112,089	120,858	147,288	158,190
Food.....	311	1,819	D	D	2,254	2,716
Beverage and tobacco products.....	312	152	170	173	555 i	539 i
Textiles, apparel, and leather.....	313–16	D	D	D	570	816
Wood products.....	321	182	D	D	D	D
Paper, printing, and support activities.....	322, 323	D	D	D	D	D
Petroleum and coal products.....	324	D	D	D	1,603	D
Chemicals.....	325	17,892	20,641	23,001	D	42,995
Basic chemicals.....	3251	1,876	1,782	2,061	2,393	2,277
Resin, synthetic rubber, fibers, and filament.....	3252	D	2,426	2,406	2,096	2,294
Pharmaceuticals and medicines.....	3254	10,137	D	D	31,477	34,839
Other chemicals.....	Other 325	D	D	D	D	3,584
Plastics and rubber products.....	326	D	D	1,764	D	1,760
Nonmetallic mineral products.....	327	990	D	474	787	894
Primary metals.....	331	485	473	530	727	631
Fabricated metal products.....	332	1,599	1,355	1,374	1,512	1,375
Machinery.....	333	6,404	6,429	6,304	6,579	8,531
Computer and electronic products.....	334	50,591	38,881	39,001	48,296	D
Computers and peripheral equipment.....	3341	D	3,040	2,587	5,734	4,955
Communications equipment.....	3342	19,019	9,739	9,198	D	D
Semiconductor and other electronic components.....	3344	14,358	11,919	12,635	D	18,724
Navigational, measuring, electromedical, and control instruments.....	3345	12,947	13,729	14,014	15,214	15,204
Other computer and electronic products.....	Other 334	D	453	566	1,148	997
Electrical equipment, appliances, and components.....	335	4,980	2,039	2,073	2,664	2,424
Transportation equipment.....	336	25,965	26,145	31,747	D	D
Motor vehicles, trailers, and parts.....	3361–63	D	D	D	15,677	D
Aerospace products and parts.....	3364	7,868	9,654	13,205	13,086	15,005
Other transportation equipment.....	Other 336	D	D	D	D	D
Furniture and related products.....	337	301	258	D	408	400
Miscellaneous manufacturing.....	339	6,606	7,457	7,455	4,388	5,143
Medical equipment and supplies.....	3391	D	D	6,386	3,343	4,374
Other miscellaneous manufacturing.....	Other 339	D	D	1,069	1,045	769
Nonmanufacturing industries.....	21–23, 42, 44–81	77,799	81,779	79,866	61,013	67,969
Mining, extraction, and support activities.....	21	D	D	D	D	D
Utilities.....	22	133	D	D	202	210
Construction.....	23	320	164	333	1,481	D
Wholesale trade.....	42	NA	D	25,092	D	D
Retail trade.....	44, 45	NA	932	1,488	1,596	D
Transportation and warehousing.....	48, 49	1,848	D	272	D	D
Information.....	51	D	17,870	D	22,593	23,836
Publishing.....	511	13,760	13,541	D	D	17,747
Newspaper, periodical, book, and database.....	5111	649	614	665	D	821
Software.....	5112	13,111	12,927	D	D	16,926
Broadcasting and telecommunications.....	513	D	D	1,663	2,215	NA
Telecommunications.....	5133	D	D	1,625	2,052	NA
Other broadcasting and telecommunications.....	Other 513	NA	NA	38	163	NA
Telecommunications.....	517	NA	NA	NA	NA	2,539
Wired and wireless (except satellite) telecommunications carriers.....	5171, 5172	NA	NA	NA	NA	2,358
Satellite telecommunications.....	5174	NA	NA	NA	NA	13
Other telecommunications.....	Other 517	NA	NA	NA	NA	168
Internet service providers, Web search portals, and data processing services.....	518	NA	NA	NA	NA	3,337
Internet service providers and Web search portals.....	5181	NA	NA	NA	NA	1,042
Data processing, hosting, and related services.....	5182	NA	NA	NA	NA	2,295
Other information.....	Other 51	D	D	D	D	213
Finance, insurance, and real estate.....	52, 53	D	1,903	1,455	1,708	3,030
Professional, scientific, and technical services.....	54	27,704	30,358	27,967	28,709	32,021
Architectural, engineering, and related services.....	5413	3,386	4,159	5,159	4,265	4,687



Appendix table 4-19

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**Total (federal plus company and other) funds for industrial R&D performance in United States, by industry and company size: 2001–05**

(Millions of dollars)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
Computer systems design and related services .....	5415	9,154	11,983	9,032	11,575	13,592
Scientific R&D services .....	5417	14,244	13,034	12,460	11,355	12,299
Other professional, scientific, and technical services .....	Other 54	920	1,182	1,316	1,514	1,444
Management of companies and enterprises <sup>a</sup> .....	55	381	148	67	NA	NA
Health care services .....	621–23	1,149	D	717	500	989
Other nonmanufacturing .....	56, 61, 624, 71, 72, 81	1,259	D	1,679	1,595	2,137
<b>Company size (employees)</b>						
All companies .....	na	202,017	193,868	200,724	208,301	226,159
5–24 .....	na	4,828	4,261	5,578	6,295	7,373
25–49 .....	na	3,750	3,845	6,449	5,906	7,488
50–99 .....	na	8,202	6,164	4,829	6,456	7,144
100–249 .....	na	12,916	13,227	9,559	11,045	10,327
250–499 .....	na	8,702	8,055	9,536	8,380	8,149
500–999 .....	na	10,564	9,925	10,383	10,821	13,992
1,000–4,999 .....	na	26,748	28,625	30,484	31,475	34,969
5,000–9,999 .....	na	17,438	17,942	15,434	18,191	18,170
10,000–24,999 .....	na	27,065	26,458	26,817	31,208	33,564
25,000 or more .....	na	81,804	75,365	81,654	78,523	84,983

D = suppressed to avoid disclosure of confidential information; i = imputation of >50%; NA = not available; na = not applicable  
 NAICS = North American Industry Classification System (1997 Rev. used to classify 2001–04 statistics; 2002 Rev. used for 2005)

<sup>a</sup>Estimates for management of companies and enterprises (NAICS 55), shown separately for 2001–03, included in other manufacturing for 2004 and 2005.

NOTES: R&D is industrial R&D performed within company facilities funded from all sources. Funds are company's own; funds from outside organizations, such as other companies, research institutions, universities and colleges, nonprofit organizations, and state governments; and funds from federal government. Excluded are R&D not performed within company (e.g., R&D contracted out to other organizations) and R&D not performed within 50 United States or District of Columbia (e.g., R&D performed outside United States by foreign subsidiaries or other foreign organizations). For more technical information, see <http://www.nsf.gov/statistics/srvyindustry>, accessed 17 April 2007.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development.



Appendix table 4-20

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**Company and other nonfederal funds for industrial R&D performance in United States, by industry and company size: 2001–05**

(Millions of dollars)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
All industries.....	21–23, 31–33, 42, 44–81	185,118	177,467	182,926	188,035	204,250
Manufacturing industries.....	31–33	112,733	101,344	107,725	131,887	142,555
Food.....	311	1,818	2,034	1,987	2,249	2,710
Beverage and tobacco products.....	312	152	170	173	555 i	539 i
Textiles, apparel, and leather.....	313–16	255	248	309	568	811
Wood products.....	321	181	132	138	152	218
Paper, printing, and support activities.....	322, 323	2,664	2,620	2,909	2,308	2,451
Petroleum and coal products.....	324	1,057	1,233	1,308	1,595	1,442
Chemicals.....	325	17,713	20,395	22,693	39,070	42,826
Basic chemicals.....	3251	1,835	1,710	1,991	2,312	2,179
Resin, synthetic rubber, fibers, and filament.....	3252	2,745	2,413	2,390	2,080	2,280
Pharmaceuticals and medicines.....	3254	10,137	14,186	15,949	31,444	34,798
Other chemicals.....	Other 325	2,996	2,087	2,364	3,234	3,569
Plastics and rubber products.....	326	2,245	1,508	1,729	1,879	1,747
Nonmetallic mineral products.....	327	978	420	470	783	889
Primary metals.....	331	479	461	518	705	609
Fabricated metal products.....	332	1,545	1,251	1,329	1,465	1,323
Machinery.....	333	6,337	6,366	6,224	6,473	8,422
Computer and electronic products.....	334	44,744	33,411	32,495	40,691	42,463
Computers and peripheral equipment.....	3341	3,165	3,015	2,561	5,707	4,902
Communications equipment.....	3342	18,721	9,524	8,932	8,433	9,660
Semiconductor and other electronic components.....	3344	14,210	11,871	12,607	17,524	18,602
Navigational, measuring, electromedical, and control instruments.....	3345	7,565	8,549	7,834	7,882	8,325
Other computer and electronic products.....	Other 334	1,083	452	560	1,144	974
Electrical equipment, appliances, and components.....	335	4,680	1,978	2,002	2,622	2,322
Transportation equipment.....	336	21,004	21,452	25,757	26,019	28,321
Motor vehicles, trailers, and parts.....	3361–63	16,089	15,199	16,874	15,610	16,025
Aerospace products and parts.....	3364	4,083	5,349	7,849	9,224	10,928
Other transportation equipment.....	Other 336	832i	905	1,034	1,185	1,368
Furniture and related products.....	337	301	251	275	406	400
Miscellaneous manufacturing.....	339	6,581	7,414	7,408	4,348	5,061
Medical equipment and supplies.....	3391	5,903	6,179	6,370	3,313	4,343
Other miscellaneous manufacturing.....	Other 339	678	1,235	1,038	1,035	718
Nonmanufacturing industries.....	21–23, 42, 44–81	72,384	76,123	75,201	56,148	61,695
Mining, extraction, and support activities.....	21	846	715	750	714	669
Utilities.....	22	114	117	128	176	180
Construction.....	23	320	164	254	1,466	1,248
Wholesale trade.....	42	NA	24,037	24,970	1,540	2,144
Retail trade.....	44, 45	NA	932	1,462	1,596	1,285
Transportation and warehousing.....	48, 49	1,776	339	272	347	312
Information.....	51	17,259	17,764	19,811	22,285	23,617
Publishing.....	511	13,716	13,488	15,760	D	17,687
Newspaper, periodical, book, and database.....	5111	649	614	665	D	794
Software.....	5112	13,067	12,874	15,095	16,510	16,893
Broadcasting and telecommunications.....	513	1,270	1,637	1,663	2,215	NA
Telecommunications.....	5133	1,101	1,608	1,625	2,052	NA
Other broadcasting and telecommunications.....	Other 513	NA	NA	38	163	NA
Telecommunications.....	517	NA	NA	NA	NA	2,539
Wired and wireless (except satellite) telecommunications carriers ...	5171, 5172	NA	NA	NA	NA	2,358
Satellite telecommunications.....	5174	NA	NA	NA	NA	13
Other telecommunications.....	Other 517	NA	NA	NA	NA	168 i
Internet service providers, Web search portals, and data processing services.....	518	NA	NA	NA	NA	3,178
Internet service providers and Web search portals.....	5181	NA	NA	NA	NA	1,042
Data processing, hosting, and related services.....	5182	NA	NA	NA	NA	2,136
Other information.....	Other 51	2,273	2,639	2,388	D	213
Finance, insurance, and real estate.....	52, 53	2,424	1,903	1,455	1,708	3,030
Professional, scientific, and technical services.....	54	22,640	24,946	23,730	24,245	26,181
Architectural, engineering, and related services.....	5413	2,365	2,822	3,261	2,295	2,448
Computer systems design and related services.....	5415	8,656	10,394	8,613	11,197	13,046

Appendix table 4-20

(Page 2 of 2)

**Company and other nonfederal funds for industrial R&D performance in United States, by industry and company size: 2001–05**

(Millions of dollars)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
Scientific R&D services .....	5417	10,893	10,735	10,574	9,383	9,473
Other professional, scientific, and technical services .....	Other 54	726	996	1,283	1,370	1,214
Management of companies and enterprises <sup>a</sup> .....	55	381	148 i	67 i	NA	NA
Health care services .....	621–23	1,120	4,163	681	495	981
Other nonmanufacturing .....	56, 61, 624, 71, 72, 81	1,221	894	1,619	1,576	2,047
Company size (employees)						
All companies .....	na	185,118	177,467	182,926	188,035	204,250
5–24 .....	na	4,175	3,471	4,824	5,610	6,297
25–49 .....	na	3,548	3,586	5,540	5,293	6,813
50–99 .....	na	7,654	5,701	4,271	5,849	6,498
100–249 .....	na	12,012	12,622	8,924	9,987	9,375
250–499 .....	na	8,143	7,370	8,869	7,832	7,738
500–999 .....	na	9,936	9,394	9,624	10,060	13,097
1,000–4,999 .....	na	26,140	27,640	29,396	30,982	33,605
5,000–9,999 .....	na	15,787	16,369	14,333	16,173	17,550
10,000–24,999 .....	na	26,161	25,232	25,551	29,647	31,646
25,000 or more .....	na	71,561	66,083	71,595	66,600	71,631

D = suppressed to avoid disclosure of confidential information; i = imputation of &gt;50%; NA = not available; na = not applicable

NAICS = North American Industry Classification System (1997 Rev. used to classify 2001–04 statistics; 2002 Rev. used for 2005)

<sup>a</sup>Estimates for management of companies and enterprises (NAICS 55), shown separately for 2001–03, included in other manufacturing for 2004 and 2005.

NOTES: R&D is industrial R&D performed within company facilities funded from all sources except federal government. Funds predominantly company's own, but also include funds from outside organizations, such as other companies, research institutions, universities and colleges, nonprofit organizations, and state governments. Excluded are R&D not performed within company (e.g., R&D contracted out to other organizations) and R&D not performed within 50 United States or District of Columbia (e.g., R&D performed outside United States by foreign subsidiaries or other foreign organizations). For more technical information, see <http://www.nsf.gov/statistics/srvyindustry>, accessed 17 April 2007.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development.

Appendix table 4-21

(Page 1 of 2)

**Federal funds for industrial R&D performance in United States, by industry and company size: 2001–05**

(Millions of dollars)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
All industries.....	21–23, 31–33, 42, 44–81	16,899	16,401	17,798	20,266	21,909
Manufacturing industries.....	31–33	11,484	10,745	13,133	15,401	15,635
Food.....	311	0	D	D	5	6
Beverage and tobacco products.....	312	0	0	0	0	0
Textiles, apparel, and leather.....	313–16	D	D	D	3	5
Wood products.....	321	0	D	D	D	D
Paper, printing, and support activities.....	322, 323	D	D	D	D	D
Petroleum and coal products.....	324	D	D	D	9	D
Chemicals.....	325	180	246	307	D	169
Basic chemicals.....	3251	42	72	70	80	98
Resin, synthetic rubber, fibers, and filament.....	3252	D	13	16	16	15
Pharmaceuticals and medicines.....	3254	0	D	D	33	41
Other chemicals.....	Other 325	D	D	D	D	15
Plastics and rubber products.....	326	D	D	35	D	12
Nonmetallic mineral products.....	327	11	D	4	5	6
Primary metals.....	331	6	12	12	21	22 i
Fabricated metal products.....	332	54	104	45	47	52
Machinery.....	333	67	62	80	105	109
Computer and electronic products.....	334	5,848	5,470	6,506	7,605	D
Computers and peripheral equipment.....	3341	D	25	27 i	27	53
Communications equipment.....	3342	298	215	266	D	D
Semiconductor and other electronic components.....	3344	148	48	28	D	122
Navigational, measuring, electromedical, and control instruments.....	3345	5,382	5,180	6,180	7,332	6,879
Other computer and electronic products.....	Other 334	D	1	6	3	23
Electrical equipment, appliances, and components.....	335	301 i	61	71	42	103
Transportation equipment.....	336	4,961	4,692	5,990	D	D
Motor vehicles, trailers, and parts.....	3361–63	D	D	D	67	D
Aerospace products and parts.....	3364	3,785	4,306	5,356	3,862	4,076
Other transportation equipment.....	Other 336	D	D	D	D	D
Furniture and related products.....	337	0	7	D	2	*
Miscellaneous manufacturing.....	339	25	44	47	39	82
Medical equipment and supplies.....	3391	D	D	17	30	31
Other miscellaneous manufacturing.....	Other 339	D	D	31	10	51
Nonmanufacturing industries.....	21–23, 42, 44–81	5,415	5,656	4,665	4,865	6,274
Mining, extraction, and support activities.....	21	D	D	D	D	D
Utilities.....	22	19	D	D	26	30
Construction.....	23	1	*	79	15	D
Wholesale trade.....	42	NA	D	122	D	D
Retail trade.....	44, 45	NA	0	26	0	D
Transportation and warehousing.....	48, 49	72	D	*	D	D
Information.....	51	D	106	D	307	219
Publishing.....	511	44	53	D	D	60
Newspaper, periodical, book, and database.....	5111	0	0	*	D	27
Software.....	5112	44	53	D	D	33
Broadcasting and telecommunications.....	513	D	D	0	0	0
Telecommunications.....	5133	D	D	0	0	0
Other broadcasting and telecommunications.....	Other 513	NA	NA	0	0	0
Telecommunications.....	517	NA	NA	NA	NA	0
Wired and wireless (except satellite) telecommunications carriers.....	5171, 5172	NA	NA	NA	NA	0
Satellite telecommunications.....	5174	NA	NA	NA	NA	0
Other telecommunications.....	Other 517	NA	NA	NA	NA	0
Internet service providers, Web search portals, and data processing services.....	518	NA	NA	NA	NA	159
Internet service providers and Web search portals.....	5181	NA	NA	NA	NA	0
Data processing, hosting, and related services.....	5182	NA	NA	NA	NA	159
Other information.....	Other 51	D	D	D	D	0
Finance, insurance, and real estate.....	52, 53	D	0	0	0	0
Professional, scientific, and technical services.....	54	5,065	5,412	4,237	4,464	5,839
Architectural, engineering, and related services.....	5413	1,021	1,337	1,898	1,970	2,239
Computer systems design and related services.....	5415	498	1,590	419	378	545

Appendix table 4-21

(Page 2 of 2)

**Federal funds for industrial R&D performance in United States, by industry and company size: 2001–05**

(Millions of dollars)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
Scientific R&D services .....	5417	3,352	2,299	1,886	1,972	2,826
Other professional, scientific, and technical services .....	Other 54	194	186	34	144	229
Management of companies and enterprises <sup>a</sup> .....	55	0	0	0	NA	NA
Health care services .....	621–23	29	D	36	5	7
Other nonmanufacturing .....	56, 61, 624, 71, 72, 81	38	D	60 i	19	90
Company size (employees)						
All companies .....	na	16,899	16,401	17,798	20,266	21,909
5–24 .....	na	653	789	754	685	1,076
25–49 .....	na	201	259	910	612	675
50–99 .....	na	548	463	559	608	646
100–249 .....	na	903	606	636	1,058	951
250–499 .....	na	560	686	668	547	411
500–999 .....	na	627	531	759	762	895
1,000–4,999 .....	na	608	985	1,088	493	1,364
5,000–9,999 .....	na	1,651	1,574	1,101	2,018	620
10,000–24,999 .....	na	904	1,226	1,266	1,561	1,918
25,000 or more .....	na	10,243	9,282	10,059	11,923	13,352

\* = ≤\$500,000; D = suppressed to avoid disclosure of confidential information; i = imputation of >50%; NA = not available; na = not applicable

NAICS = North American Industry Classification System (1997 Rev. used to classify 2001–04 statistics; 2002 Rev. used for 2005)

<sup>a</sup>Estimates for management of companies and enterprises (NAICS 55), shown separately for 2001–03, included in other manufacturing for 2004 and 2005.

NOTES: R&D is industrial R&D performed within company facilities funded by federal government. Excluded are R&D not performed within company (e.g., R&D contracted out to other organizations) and R&D not performed within 50 United States or District of Columbia (e.g., R&D performed outside United States by foreign subsidiaries or other foreign organizations). Totals exclude R&D at industry-administered federally funded research and development centers. For more technical information, see <http://www.nsf.gov/statistics/srvyindustry>, accessed 17 April 2007.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development.

Appendix table 4-22

**Company and other (nonfederal) R&D fund share of net sales in R&D-performing companies, by industry and company size: 2001–05**

(Percent)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
All industries.....	21–23, 31–33, 42, 44–81	3.8	3.6	3.2	3.4	3.3
Manufacturing industries.....	31–33	3.7	3.3	3.1	3.4	3.6
Food.....	311	0.5	0.6	0.6	0.6	0.7
Beverage and tobacco products.....	312	0.4	0.5	0.5	1.3 i	1.4 i
Textiles, apparel, and leather.....	313–16	0.8	0.8	1.0	1.2	1.6
Wood products.....	321	1.1	0.7	0.7	0.4	0.8
Paper, printing, and support activities.....	322, 323	2.1	1.3	1.1	1.5	1.5
Petroleum and coal products.....	324	0.3	0.4	0.3	0.4	0.4
Chemicals.....	325	4.8	5.9	5.6	6.6	6.9
Basic chemicals.....	3251	2.2	2.5	2.7	2.1	2.0
Resin, synthetic rubber, fibers, and filament.....	3252	4.5	3.9	3.6	3.1	1.7
Pharmaceuticals and medicines.....	3254	7.8	9.6	8.3	10.0	12.7
Other chemicals.....	Other 325	3.2	3.1	3.2	3.1	3.3
Plastics and rubber products.....	326	2.9	1.8	2.1	1.6	1.9
Nonmetallic mineral products.....	327	2.3	1.2	1.0	1.8	1.8
Primary metals.....	331	0.7	0.7	0.7	0.7	0.5
Fabricated metal products.....	332	1.6	1.4	1.5	1.4	0.8
Machinery.....	333	4.2	4.3	4.2	3.6	3.6
Computer and electronic products.....	334	11.0	8.0	9.3	8.0	9.0
Computers and peripheral equipment.....	3341	7.6	7.5	5.8	4.7	5.4
Communications equipment.....	3342	16.3	12.8	12.7	9.5	14.0
Semiconductor and other electronic components.....	3344	10.5	8.6	11.1	10.8	10.6
Navigational, measuring, electromedical, and control instruments.....	3345	7.3	5.4	7.2	7.1	7.0
Other computer and electronic products.....	Other 334	13.5	5.3	5.8	5.1	5.6
Electrical equipment, appliances, and components.....	335	2.9 i	2.7	2.2	2.7	2.3
Transportation equipment.....	336	3.4	2.8	2.7	2.7	3.0
Motor vehicles, trailers, and parts.....	3361–63	3.5	3.1	2.4	2.4	2.5
Aerospace products and parts.....	3364	3.0	2.3	3.5	4.0	4.8
Other transportation equipment.....	Other 336	2.5 i	2.9	2.7	1.6	1.6
Furniture and related products.....	337	0.9	0.8	0.8	0.8	0.8
Miscellaneous manufacturing.....	339	6.6	7.9	5.6	4.9	6.1
Medical equipment and supplies.....	3391	9.0	9.7	6.3	5.8	7.7
Other miscellaneous manufacturing.....	Other 339	2.0	4.1	3.2	3.2	2.7
Nonmanufacturing industries.....	21–23, 42, 44–81	4.0	4.1	3.3	3.2	2.9
Mining, extraction, and support activities.....	21	1.3	3.2	3.3	2.4	2.0
Utilities.....	22	0.0	0.1	0.1	0.1	0.1
Construction.....	23	1.4	0.6	1.2	2.6	2.2
Wholesale trade.....	42	NA	NA	3.6	2.2	2.0
Retail trade.....	44, 45	NA	NA	0.8	0.8	0.6
Transportation and warehousing.....	48, 49	2.4	0.5	0.4	0.5	0.4
Information.....	51	4.4	4.0	5.7	5.0	5.3
Publishing.....	511	15.0	16.4	17.9	19.1	17.1
Newspaper, periodical, book, and database.....	5111	2.7	2.8	2.8	4.0	3.0
Software.....	5112	19.3	21.4	23.4	23.3	21.9
Broadcasting and telecommunications.....	513	0.5	0.7 i	0.8	0.8	NA
Telecommunications.....	5133	0.5	0.7 i	0.8	D	NA
Other broadcasting and telecommunications.....	Other 513	NA	NA	4.3	D	NA
Telecommunications.....	517	NA	NA	NA	NA	1.0
Wired and wireless (except satellite) telecommunications carriers....	5171, 5172	NA	NA	NA	NA	1.1
Satellite telecommunications.....	5174	NA	NA	NA	NA	3.4
Other telecommunications.....	Other 517	NA	NA	NA	NA	0.5 i
Internet service providers, Web search portals, and data processing services.....	518	NA	NA	NA	NA	8.7
Internet service providers and Web search portals.....	5181	NA	NA	NA	NA	9.0
Data processing, hosting, and related services.....	5182	NA	NA	NA	NA	8.6
Other information.....	Other 51	4.7	2.0	5.0	4.4	0.5
Finance, insurance, and real estate.....	52, 53	0.7	0.6	0.3	0.4	0.5
Professional, scientific, and technical services.....	54	13.7	11.2	10.2	13.0	10.0
Architectural, engineering, and related services.....	5413	5.2	5.3	7.8	6.6	4.9
Computer systems design and related services.....	5415	16.5	14.3	9.8	11.7	9.6

Appendix table 4-22

(Page 2 of 2)

**Company and other (nonfederal) R&D fund share of net sales in R&D-performing companies, by industry and company size: 2001–05**

(Percent)

Industry/size of company	NAICS code	2001	2002	2003	2004	2005
Scientific R&D services .....	5417	36.5	17.6	16.5 i	29.6	27.4
Other professional, scientific, and technical services .....	Other 54	1.9	2.8	3.3	5.8	3.0
Management of companies and enterprises <sup>a</sup> .....	55	7.8	7.6	4.1 i	NA	NA
Health care services .....	621–23	4.1	15.1	2.2	1.8	3.9
Other nonmanufacturing .....	56, 61, 624, 71, 72, 81	1.4	1.9	4.9	3.9	2.7
<b>Company size (employees)</b>						
All companies .....	na	3.8	3.6	3.2	3.4	3.3
5–24 .....	na	12.9	7.1	2.2	5.0 i	8.7
25–49 .....	na	10.6	8.9	2.9	11.5	8.7
50–99 .....	na	10.4	7.1	3.9	5.8	7.8
100–249 .....	na	10.8	9.0	1.7	5.5	6.0
250–499 .....	na	8.0	4.0	6.6	5.1	4.9
500–999 .....	na	5.7	6.9	5.8	4.6	4.4
1,000–4,999 .....	na	4.2	4.0	4.1	3.7	3.5
5,000–9,999 .....	na	2.5	3.4	2.6	2.8	2.5
10,000–24,999 .....	na	3.5	2.9	2.8	3.0	3.1
25,000 or more .....	na	3.1	2.9	3.2	2.8	2.8

D = suppressed to avoid disclosure of confidential information; i = imputation of >50%; NA = not available; na = not applicable  
 NAICS = North American Industry Classification System (1997 Rev. used to classify 2001–04 statistics; 2002 Rev. used for 2005)

<sup>a</sup>Data for management of companies and enterprises (NAICS 55), reported separately for 2001–03, included in other manufacturing for 2004 and 2005.

NOTES: R&D is industrial R&D performed within company facilities funded from all sources except federal government. Funds predominantly company's own, but also include funds from outside organizations, such as other companies, research institutions, universities and colleges, nonprofit organizations, and state governments. Excluded are R&D not performed within company (e.g., R&D contracted out to other organizations) and R&D not performed within 50 United States or District of Columbia (e.g., R&D performed outside United States by foreign subsidiaries or other foreign organizations). For more technical information, see <http://www.nsf.gov/statistics/srvyindustry>, accessed 17 April 2007.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (2003).

**R&D expenditures, by state, performing sector, and funding sector: 2004**

(Millions of current dollars)

State	Performing sector:		Federal					Industry			U&C <sup>a</sup>					Other nonprofit institutions
	Funding sector:	R&D rank	FFRDCs		Non-federal <sup>b</sup>		Total	Federal	Industry <sup>c</sup>	Other					Federal <sup>d</sup>	
			Federal	Total	Federal	Non-federal <sup>b</sup>				Federal	Industry <sup>c</sup>	U&C	Nonprofit			
All states <sup>e</sup>	283,439	na	21,438	12,704	12,351	353	201,131	20,655	176,180	42,832	27,294	2,836	2,103	7,760	2,839	5,335
Alabama	2,760	26	911	0	0	0	1,227	583	644	571	417	9	16	107	22	51
Alaska	271	49	81	0	0	0	35	8	28	147	83	3	17	41	3	9
Arizona	3,544	23	263	43	43	0	2,570	245	2,325	651	377	25	39	187	24	17
Arkansas	514	45	41	0	0	0	287	27	259	183	94	45	10	25	8	4
California	59,607	1	2,572	3,759	3,660	99	46,614	3,980	42,634	5,714	3,561	269	243	1,049	593	948
Colorado	5,497	16	277	381	374	7	4,008	118	3,890	772	605	24	36	71	36	58
Connecticut	7,881	11	30	0	0	0	7,177	1,717	5,460	650	469	7	25	82	67	25
Delaware	1,182	34	3	0	0	0	1,059	14	1,045	114	81	4	3	23	4	5
District of Columbia	2,383	27	1,641	4	4	0	182	68	114	303	240	4	8	17	35	253
Florida	5,409	17	554	0	0	0	3,486	1,270	2,216	1,307	747	200	72	237	51	62
Georgia	3,655	22	251	0	0	0	2,160	58	2,102	1,221	699	84	68	335	36	22
Hawaii	490	46	80	0	0	0	131	52	78	241	191	9	21	20	0	38
Idaho	1,006	35	27	180	168	13	681	11	670	117	65	21	5	24	2	1
Illinois	11,300	8	120	839	792	47	8,554	267	8,286	1,708	1,066	72	53	417	100	79
Indiana	5,130	18	77	0	0	0	4,208	232	3,976	841	365	54	55	311	56	5
Iowa	1,625	31	47	27	27	0	963	7	956	532	306	51	30	131	15	56
Kansas	2,169	28	31	0	0	0	1,804	D	D	333	171	46	9	93	14	2
Kentucky	1,006	36	11	0	0	0	565	11	554	424	195	53	10	126	40	6
Louisiana	972	37	90	0	0	0	311	19	293	568	239	114	29	135	50	4
Maine	384	47	11	0	0	0	213	D	D	87	39	11	4	31	3	74
Maryland	14,341	4	7,692	335	335	0	3,826	1,286	2,540	2,269	1,710	61	94	286	118	218
Massachusetts	15,987	3	368	595	589	6	11,819	2,331	9,488	2,000	1,581	42	122	107	149	1,205
Michigan	16,722	2	110	0	0	0	15,170	204	14,966	1,397	821	84	61	353	78	45
Minnesota	5,992	15	51	0	0	0	5,199	261	4,938	524	314	53	22	74	61	218
Mississippi	651	40	138	0	0	0	160	D	D	348	211	53	10	69	6	6
Missouri	3,038	25	32	0	0	0	2,151	84	2,067	842	543	37	29	191	42	14
Montana	295	48	62	0	0	0	70	3	67	155	97	21	6	29	1	9
Nebraska	740	39	27	0	0	0	383	6	377	325	130	12	21	142	20	6
Nevada	623	41	36	0	0	0	417	23	394	164	105	12	7	37	3	6
New Hampshire	1,665	30	55	0	0	0	1,330	D	D	277	191	7	11	48	20	3
New Jersey	12,460	7	563	75	75	1	10,993	294	10,699	806	420	59	35	219	74	24
New Mexico	5,114	19	417	3,927	3,867	61	450	176	275	304	204	13	14	64	9	17
New York	13,113	6	150	450	432	18	8,793	721	8,071	3,366	2,225	197	146	529	269	354
North Carolina	6,491	14	394	0	0	0	4,565	87	4,478	1,443	933	124	152	191	43	90
North Dakota	558	42	26	0	0	0	379	2	377	152	82	29	6	31	5	1
Ohio	7,816	12	751	0	0	0	5,516	395	5,121	1,318	848	109	73	230	59	231
Oklahoma	814	38	89	0	0	0	410	22	387	283	141	34	15	78	16	31

**R&D expenditures, by state, performing sector, and funding sector: 2004**

(Millions of current dollars)

State	Performing sector:		Federal					Industry			U&C <sup>a</sup>				Other nonprofit institutions	
	Funding sector:	R&D rank	Federal	FFRDCs		Non-federal <sup>b</sup>	Total	Federal	Industry <sup>c</sup>	Total	Other			Federal <sup>d</sup>		
				Total	Federal						Other government	Industry	U&C		Nonprofit	
Oregon .....	3,664	21	65	0	0	0	3,057	20	3,036	505	371	37	14	61	21	37
Pennsylvania .....	10,813	10	171	58	56	2	8,005	160	7,845	2,206	1,595	99	155	227	130	373
Rhode Island.....	1,840	29	260	0	0	0	1,320	D	D	192	133	7	4	43	5	68
South Carolina.....	1,599	33	54	94	94	0	961	37	924	456	245	19	23	155	13	34
South Dakota.....	149	50	16	0	0	0	72	3	69	57	38	11	1	6	2	4
Tennessee .....	3,180	24	50	776	750	26	1,630	322	1,308	658	436	54	20	112	36	67
Texas.....	14,266	5	260	17	15	1	10,992	610	10,382	2,881	1,647	355	162	411	305	117
Utah .....	1,602	32	95	0	0	0	1,089	174	915	414	286	25	10	67	27	4
Vermont.....	546	43	4	0	0	0	423	34	389	116	80	5	7	16	7	4
Virginia.....	7,345	13	1,976	406	398	9	4,006	1,499	2,507	849	527	85	51	138	48	109
Washington .....	10,936	9	222	693	629	64	8,840	146	8,694	897	706	41	50	71	29	285
West Virginia.....	523	44	131	42	42	0	202	D	D	130	80	5	4	39	3	18
Wisconsin.....	3,675	20	56	0	0	0	2,645	47	2,598	956	563	41	22	247	82	18
Wyoming .....	98	51	8	0	0	0	23	3	21	60	23	2	3	29	3	6
Other and unknown <sup>f</sup> .....	7,169	na	0	0	0	0	7,169	44	7,125	0	0	0	0	0	0	0

na = not applicable; D = suppressed to avoid disclosure of confidential information

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

<sup>a</sup>State-level university R&D data not adjusted to eliminate double counting of funds passed through from one academic institution to another. At national level, funds passed through to educational subrecipients account for 2.9% of total R&D expenditures reported by universities and colleges in FY 2004.

<sup>b</sup>Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2004 included state and local governments (\$37 million), industry (\$134 million), FFRDC institutional funds (\$34 million), and other sources (\$149 million).

<sup>c</sup>Industry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

<sup>d</sup>Other sources of support for nonprofit institutions unavailable by state. For 2004, total nonprofit performance is estimated at \$12.8 billion. Industry provided estimated \$1.2 billion to nonprofit sector, and nonprofit institutions provided estimated \$6.0 billion.

<sup>e</sup>State totals differ from U.S. totals reported elsewhere for four reasons: some R&D expenditures cannot be allocated to 1 of 50 states or District of Columbia; nonfederal sources of nonprofit R&D expenditures, totaling an estimated \$7.1 billion in 2004, could not be allocated by state; state-level university R&D data not adjusted to eliminate double counting of funds passed through from one academic institution to another; and state R&D data not converted from fiscal years to calendar years.

<sup>f</sup>Other and unknown category is reported data that could not be assigned to 1 of 50 states or District of Columbia.

NOTE: Industry R&D data for calendar years; other R&D data for fiscal years but may serve as approximations to calendar-year data.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (2004); Survey of Research and Development Expenditures at Universities and Colleges: FY 2004; and Survey of Federal Funds for Research and Development: FY 2004.

Science and Engineering Indicators 2008



Appendix table 4-24

**Total R&D and gross domestic product, by state: 2004**

Rank/state	R&D (current \$millions)	GDP (current \$millions)	R&D/GDP (%)	Rank in R&D/GDP	U.S. R&D (%)	Cumulative percent
1 California.....	59,607	1,515,453	3.93	8	21.0	21.0
2 Michigan.....	16,722	363,380	4.60	4	5.9	26.9
3 Massachusetts.....	15,987	309,483	5.17	3	5.6	32.6
4 Maryland.....	14,341	229,158	6.26	2	5.1	37.6
5 Texas.....	14,266	904,412	1.58	30	5.0	42.7
6 New York.....	13,113	908,308	1.44	34	4.6	47.3
7 New Jersey.....	12,460	409,156	3.05	11	4.4	51.7
8 Illinois.....	11,300	534,464	2.11	23	4.0	55.7
9 Washington.....	10,936	252,384	4.33	6	3.9	59.5
10 Pennsylvania.....	10,813	464,467	2.33	18	3.8	63.3
11 Connecticut.....	7,881	183,873	4.29	7	2.8	66.1
12 Ohio.....	7,816	424,562	1.84	27	2.8	68.9
13 Virginia.....	7,345	325,467	2.26	19	2.6	71.5
14 North Carolina.....	6,491	324,622	2.00	24	2.3	73.8
15 Minnesota.....	5,992	222,628	2.69	14	2.1	75.9
16 Colorado.....	5,497	198,407	2.77	12	1.9	77.8
17 Florida.....	5,409	607,201	0.89	41	1.9	79.7
18 Indiana.....	5,130	229,618	2.23	21	1.8	81.5
19 New Mexico.....	5,114	63,861	8.01	1	1.8	83.3
20 Wisconsin.....	3,675	208,269	1.76	29	1.3	84.6
21 Oregon.....	3,664	135,014	2.71	13	1.3	85.9
22 Georgia.....	3,655	337,622	1.08	37	1.3	87.2
23 Arizona.....	3,544	194,134	1.83	28	1.3	88.5
24 Tennessee.....	3,180	214,400	1.48	31	1.1	89.6
25 Missouri.....	3,038	204,733	1.48	31	1.1	90.7
26 Alabama.....	2,760	141,702	1.95	26	1.0	91.6
27 District of Columbia.....	2,383	77,782	3.06	10	0.8	92.5
28 Kansas.....	2,169	99,125	2.19	22	0.8	93.2
29 Rhode Island.....	1,840	42,213	4.36	5	0.6	93.9
30 New Hampshire.....	1,665	51,656	3.22	9	0.6	94.5
31 Iowa.....	1,625	111,626	1.46	33	0.6	95.1
32 Utah.....	1,602	81,059	1.98	25	0.6	95.6
33 South Carolina.....	1,599	132,348	1.21	35	0.6	96.2
34 Delaware.....	1,182	52,454	2.25	20	0.4	96.6
35 Idaho.....	1,006	42,697	2.36	17	0.4	97.0
36 Kentucky.....	1,006	131,839	0.76	45	0.4	97.3
37 Louisiana.....	972	162,646	0.60	49	0.3	97.7
38 Oklahoma.....	814	111,400	0.73	46	0.3	97.9
39 Nebraska.....	740	67,976	1.09	36	0.3	98.2
40 Mississippi.....	651	76,534	0.85	43	0.2	98.4
41 Nevada.....	623	99,342	0.63	47	0.2	98.6
42 North Dakota.....	558	22,715	2.46	16	0.2	98.8
43 Vermont.....	546	22,020	2.48	15	0.2	99.0
44 West Virginia.....	523	49,903	1.05	39	0.2	99.2
45 Arkansas.....	514	81,752	0.63	47	0.2	99.4
46 Hawaii.....	490	50,781	0.96	40	0.2	99.6
47 Maine.....	384	43,131	0.89	41	0.1	99.7
48 Montana.....	295	27,790	1.06	38	0.1	99.8
49 Alaska.....	271	34,729	0.78	44	0.1	99.9
50 South Dakota.....	149	29,519	0.50	50	0.1	100.0
51 Wyoming.....	98	23,876	0.41	51	0.0	100.0

GDP = gross domestic product

NOTE: U.S. R&amp;D total attributable to states is \$283,439 million.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (2004); Survey of Research and Development Expenditures at Universities and Colleges: FY 2004; Survey of Federal Funds for Research and Development: FY 2004; and Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm>, accessed 25 August 2007.

Appendix table 4-25

**R&D expenditures at federally funded research and development centers: FY 2005**

(Thousands of dollars)

FFRDC	All expenditures	Federal	Sponsoring agency	Location
All FFRDCs.....	13,249,816	12,892,042	na	na
University-administered FFRDCs.....	7,821,054	7,660,415	na	na
Ames Laboratory.....	29,293	29,293	Department of Energy	Ames, IA
Argonne National Laboratory.....	482,051	431,591	Department of Energy	Argonne, IL
Ernest Orlando Lawrence Berkeley National Laboratory.....	482,672	425,090	Department of Energy	Berkeley, CA
Fermi National Accelerator Laboratory.....	323,153	323,153	Department of Energy	Batavia, IL
Jet Propulsion Laboratory.....	1,606,409	1,606,409	NASA	Pasadena, CA
Lawrence Livermore National Laboratory.....	1,456,368	1,435,094	Department of Energy	Livermore, CA
Lincoln Laboratory.....	627,201	622,794	DOD, Department of the Air Force	Lexington, MA
Los Alamos National Laboratory.....	2,101,211	2,086,116	Department of Energy	Los Alamos, NM
National Astronomy and Ionosphere Center.....	13,831	12,257	NSF	Arecibo, PR
National Center for Atmospheric Research.....	135,893	130,662	NSF	Boulder, CO
National Optical Astronomy Observatory.....	47,845	47,845	NSF	Tucson, AZ
National Radio Astronomy Observatory.....	52,023	51,166	NSF	Green Bank, WV
Princeton Plasma Physics Laboratory.....	81,803	81,205	Department of Energy	Princeton, NJ
Software Engineering Institute.....	62,262	59,453	DOD, Office of the Secretary of Defense	Pittsburgh, PA
Stanford Linear Accelerator Center.....	205,690	205,690	Department of Energy	Stanford, CA
Thomas Jefferson National Accelerator Facility.....	113,349	112,597	Department of Energy	Newport News, VA
Industry-administered FFRDCs.....	2,611,774	2,544,351	na	na
Idaho National Engineering and Environmental Laboratory.....	232,289	216,972	Department of Energy	Idaho Falls, ID
National Cancer Institute at Frederick.....	334,400	334,400	NIH	Frederick, MD
Sandia National Laboratory.....	1,946,435	1,894,329	Department of Energy	Albuquerque, NM
Savannah River Technology.....	98,650	98,650	Department of Energy	Aiken, SC
Nonprofit-administered FFRDC.....	2,816,988	2,687,276	na	na
Aerospace FFRDC.....	32,500	14,500	DOD, Department of the Air Force	El Segundo, CA
Arroyo Center.....	28,152	28,152	DOD, Department of the Army	Santa Monica, CA
Brookhaven National Laboratory.....	483,039	464,439	Department of Energy	Upton, NY
C3I FFRDC.....	37,213	13,900	DOD, Office of the Secretary of Defense	Bedford, MA/McLean, VA
Center for Advanced Aviation System Development.....	6,429	3,378	FAA	McLean, VA
Center for Naval Analyses.....	83,837	73,099	DOD, Department of the Navy	Alexandria, VA
Center for Nuclear Waste Regulatory Analyses.....	16,615	15,732	Nuclear Regulatory Commission	San Antonio, TX
Homeland Security Institute.....	NA	NA	Department of Homeland Security	Arlington, VA
Institute for Defense Analyses Communications and Computing.....	50,800	50,800	National Security Agency	Alexandria, VA
Institute for Defense Analysis Studies.....	118,600	118,600	DOD, Office of the Secretary of Defense	Alexandria, VA
Internal Revenue Service FFRDC.....	4,802	4,802	IRS	McLean, VA
National Defense Research Institute.....	25,747	25,747	DOD, Office of the Secretary of Defense	Santa Monica, CA
National Renewable Energy Laboratory.....	211,323	206,419	Department of Energy	Golden, CO
Oak Ridge National Laboratory.....	897,252	870,103	Department of Energy	Oak Ridge, TN
Pacific Northwest National Laboratory.....	779,522	756,448	Department of Energy	Richland, WA
Project Air Force.....	35,742	35,742	DOD, Department of the Air Force	Santa Monica, CA
Science and Technology Policy Institute.....	5,415	5,415	NSF	Washington, DC

na = not applicable; NA = not available

DOD = Department of Defense; FAA = Federal Aviation Administration; FFRDC = federally funded research and development center; IRS = Internal Revenue Service; NASA = National Aeronautics and Space Administration; NIH = National Institutes of Health; NSF = National Science Foundation

NOTE: More information about FFRDCs can be found on NSF website, <http://www.nsf.gov/statistics/ffrdc/>, accessed 18 April 2007.

SOURCE: NSF, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2005 (2007).

Appendix table 4-26

(Page 1 of 3)

**Federal R&D budget authority, by budget function: FY 1980–2008**

Year	All functions	All defense	All nondefense	Health	Space research/ technology	Energy	General science	Natural resources/ environment	Transportation
Current \$millions									
1980.....	29,739	14,946	14,793	3,694	2,738	3,603	1,233	999	887
1981.....	33,735	18,413	15,322	3,871	3,111	3,501	1,340	1,061	869
1982.....	36,115	22,070	14,045	3,869	2,584	3,012	1,359	965	791
1983.....	38,768	24,936	13,832	4,298	2,134	2,578	1,502	952	876
1984.....	44,214	29,287	14,927	4,779	2,300	2,581	1,676	963	1,040
1985.....	49,887	33,698	16,189	5,418	2,725	2,389	1,862	1,059	1,030
1986.....	53,249	36,926	16,323	5,565	2,894	2,286	1,873	1,062	917
1987.....	57,069	39,152	17,917	6,556	3,398	2,053	2,042	1,133	908
1988.....	59,106	40,099	19,007	7,076	3,683	2,126	2,160	1,160	896
1989.....	62,115	40,642	21,473	7,773	4,555	2,419	2,373	1,255	1,064
1990.....	63,781	39,925	23,856	8,308	5,765	2,726	2,410	1,386	1,045
1991.....	65,898	39,328	26,570	9,226	6,511	2,953	2,635	1,582	1,231
1992.....	68,398	40,083	28,315	10,055	6,744	3,099	2,659	1,688	1,523
1993.....	69,884	41,249	28,635	10,280	6,988	2,677	2,691	1,802	1,703
1994.....	68,331	37,764	30,567	10,993	7,414	2,873	2,712	2,062	1,888
1995.....	68,791	37,204	31,587	11,407	7,916	2,844	2,794	1,988	1,833
1996.....	69,049	37,801	31,248	11,867	7,844	2,521	2,846	1,802	1,795
1997.....	71,653	39,591	32,062	12,670	7,844	2,372	2,944	1,886	1,785
1998.....	73,569	39,823	33,746	13,576	8,198	948	4,360	1,855	1,833
1999.....	77,637	41,306	36,331	15,553	8,245	1,131	4,690	1,842	1,725
2000.....	78,664	42,580	36,084	17,869	5,363	996	4,977	1,999	1,636
2001.....	86,756	45,713	41,043	20,758	6,126	1,314	5,468	2,096	1,640
2002.....	97,624	53,016	44,608	23,560	6,270	1,327	5,753	2,160	1,838
2003.....	112,544	63,048	49,496	26,517	7,355	1,403	6,129	2,151	1,869
2004.....	121,867	69,593	52,274	28,251	7,612	1,343	6,466	2,168	1,863
2005.....	126,601	74,047	52,554	28,824	7,300	1,296	6,570	2,168	1,847
2006.....	131,624	78,037	53,587	28,797	8,204	1,195	6,691	2,120	1,711
2007.....	137,026	81,667	55,359	29,481	8,933	1,581	7,185	1,932	1,490
2008.....	138,332	82,383	55,949	29,242	9,506	1,468	7,752	1,944	1,368
FY 2000 constant \$millions									
1980.....	56,024	28,156	27,868	6,959	5,158	6,788	2,323	1,882	1,671
1981.....	57,884	31,594	26,290	6,642	5,338	6,007	2,299	1,820	1,491
1982.....	57,998	35,443	22,555	6,213	4,150	4,837	2,182	1,550	1,270
1983.....	59,626	38,352	21,274	6,610	3,282	3,965	2,310	1,464	1,347
1984.....	65,582	43,441	22,141	7,089	3,412	3,828	2,486	1,428	1,543
1985.....	71,670	48,412	23,258	7,784	3,915	3,432	2,675	1,521	1,480
1986.....	74,760	51,843	22,917	7,813	4,063	3,209	2,630	1,491	1,287
1987.....	78,085	53,570	24,515	8,970	4,649	2,809	2,794	1,550	1,242
1988.....	78,405	53,192	25,213	9,386	4,886	2,820	2,865	1,539	1,189
1989.....	79,315	51,896	27,419	9,925	5,816	3,089	3,030	1,603	1,359
1990.....	78,526	49,155	29,371	10,229	7,098	3,356	2,967	1,706	1,287
1991.....	78,197	46,668	31,529	10,948	7,726	3,504	3,127	1,877	1,461
1992.....	79,174	46,398	32,776	11,639	7,807	3,587	3,078	1,954	1,763
1993.....	79,129	46,706	32,423	11,640	7,912	3,031	3,047	2,040	1,928
1994.....	75,727	41,852	33,876	12,183	8,217	3,184	3,006	2,285	2,092
1995.....	74,636	40,365	34,271	12,376	8,589	3,086	3,031	2,157	1,989
1996.....	73,540	40,260	33,280	12,639	8,354	2,685	3,031	1,919	1,912
1997.....	75,002	41,441	33,560	13,262	8,211	2,483	3,082	1,974	1,868
1998.....	76,047	41,164	34,883	14,033	8,474	980	4,507	1,917	1,895
1999.....	79,217	42,147	37,070	15,870	8,413	1,154	4,785	1,879	1,760
2000.....	78,664	42,580	36,084	17,869	5,363	996	4,977	1,999	1,636
2001.....	85,265	44,928	40,338	20,401	6,021	1,291	5,374	2,060	1,612
2002.....	94,096	51,100	42,996	22,709	6,043	1,279	5,545	2,082	1,772
2003.....	106,293	59,546	46,747	25,044	6,947	1,325	5,789	2,032	1,765
2004.....	112,313	64,137	48,176	26,036	7,015	1,238	5,959	1,998	1,717
2005.....	113,158	66,185	46,974	25,763	6,525	1,158	5,872	1,938	1,651
2006.....	114,131	67,666	46,465	24,970	7,114	1,036	5,802	1,838	1,484
2007.....	115,878	69,063	46,815	24,931	7,554	1,337	6,076	1,634	1,260
2008.....	114,221	68,024	46,197	24,145	7,849	1,212	6,401	1,605	1,130

Appendix table 4-26

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**Federal R&D budget authority, by budget function: FY 1980–2008**

Year	Agriculture	Education, training, employment, and social services	International affairs	Veterans benefits/ services	Commerce/ housing/ credit	Community/ regional development	Administration of justice	Income security	General government
1980.....	585	468	125	126	101	119	45	47	22
1981.....	659	298	160	143	106	104	34	43	22
1982.....	693	228	165	139	104	63	31	32	10
1983.....	745	189	177	157	107	44	37	32	6
1984.....	762	200	192	218	110	46	24	26	8
1985.....	836	220	210	193	114	50	47	21	17
1986.....	815	248	211	183	111	88	41	14	14
1987.....	822	267	223	215	110	99	49	25	17
1988.....	882	285	224	195	122	108	51	23	17
1989.....	907	347	279	212	128	74	45	27	15
1990.....	950	374	375	216	140	67	44	33	17
1991.....	1,052	433	378	219	178	88	51	30	4
1992.....	1,155	365	371	245	192	127	51	37	4
1993.....	1,152	348	382	250	220	57	49	36	*
1994.....	1,193	373	254	265	380	68	46	45	0
1995.....	1,194	369	287	257	525	70	59	43	1
1996.....	1,176	331	252	259	432	50	56	16	2
1997.....	1,203	373	190	267	409	48	59	9	2
1998.....	1,249	444	163	587	398	42	72	18	2
1999.....	1,288	403	190	644	432	59	88	38	3
2000.....	1,426	418	200	645	406	46	73	25	6
2001.....	1,657	411	252	719	429	54	88	30	3
2002.....	1,606	411	279	756	467	50	91	37	3
2003.....	1,708	430	269	817	463	48	299	38	0
2004.....	1,750	459	264	866	454	47	684	47	0
2005.....	1,820	470	255	742	423	45	758	35	0
2006.....	1,869	495	255	769	390	55	1,008	27	0
2007.....	1,824	504	255	851	433	50	813	27	0
2008.....	1,629	548	255	822	425	65	897	27	0
	FY 2000 constant \$millions								
1980.....	1,102	882	235	237	190	224	85	89	41
1981.....	1,131	511	275	245	182	178	58	74	38
1982.....	1,113	366	265	223	167	101	50	51	16
1983.....	1,146	291	272	241	165	68	57	49	9
1984.....	1,130	297	285	323	163	68	36	39	12
1985.....	1,201	316	302	277	164	72	68	30	24
1986.....	1,144	348	296	257	156	124	58	20	20
1987.....	1,125	365	305	294	151	135	67	34	23
1988.....	1,170	378	297	259	162	143	68	31	23
1989.....	1,158	443	356	271	163	94	57	34	19
1990.....	1,170	460	462	266	172	82	54	41	21
1991.....	1,248	514	449	260	211	104	61	36	5
1992.....	1,337	423	429	284	222	147	59	43	5
1993.....	1,304	394	433	283	249	65	55	41	*
1994.....	1,322	413	281	294	421	75	51	50	0
1995.....	1,295	400	311	279	570	76	64	47	1
1996.....	1,252	353	268	276	460	53	60	17	2
1997.....	1,259	390	199	279	428	50	62	9	2
1998.....	1,291	459	168	607	411	43	74	19	2
1999.....	1,314	411	194	657	441	60	90	39	3
2000.....	1,426	418	200	645	406	46	73	25	6
2001.....	1,629	404	248	707	422	53	86	29	3
2002.....	1,548	396	269	729	450	48	88	36	3
2003.....	1,613	406	254	772	437	45	282	36	0

Appendix table 4-26

(Page 3 of 3)

**Federal R&D budget authority, by budget function: FY 1980–2008**

Year	Agriculture	Education, training, employment, and social services	International affairs	Veterans benefits/ services	Commerce/ housing/ credit	Community/ regional development	Administration of justice	Income security	General government
2004.....	1,613	423	243	798	418	43	630	43	0
2005.....	1,627	420	228	663	378	40	678	31	0
2006.....	1,621	429	221	667	338	48	874	23	0
2007.....	1,542	426	216	720	366	42	688	23	0
2008.....	1,345	452	211	679	351	54	741	22	0

\* = ≤\$500,000

NOTES: Data for 1980–2006 actual budget authority, data for 2007 preliminary estimates, and data for 2008 proposed based on FY 2008 budget. See appendix table 4-1 for fiscal year gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars. In FY 2004 Department of Homeland Security changed its R&D portfolio to reclassify funding in general science and basic research and in agriculture as administration of justice. In FY 2000 National Aeronautics and Space Administration transferred funding for space station program from R&D to R&D plant; this change reflected in budget authority for space research and technology. In FY 2000 National Institutes of Health in Department of Health and Human Services classified all of its previous development activities as basic research or applied research, which resulted in an increase in health basic research. In FY 1998 many Department of Energy programs were reclassified from energy to general science and basic research. In FY 1998 Department of Veterans Affairs began reporting medical care support funds as part of its total research budgetary resources; this change reflected in budget authority for veteran benefits and services.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Federal R&D Funding by Budget Function: Fiscal Years 2006–08 (2007).

*Science and Engineering Indicators 2008*

Appendix table 4-27

## Federal basic research budget authority, by budget function: FY 1998–2008

Budget function	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Current \$millions											
All functions.....	15,523	17,433	19,470	21,376	23,848	25,323	26,529	27,678	27,336	28,311	28,230
Health.....	7,356	8,634	10,099	11,642	12,957	14,162	14,850	15,826	15,532	15,944	15,554
General science.....	4,121	4,464	4,722	5,187	5,561	5,907	6,198	6,238	6,406	6,879	7,371
Space research/technology.....	1,610	1,667	1,616	1,695	1,912	2,206	2,473	2,486	2,299	2,259	2,226
Energy.....	34	36	36	40	45	40	32	31	8	33	9
National defense.....	1,067	1,110	1,184	1,303	1,404	1,409	1,380	1,508	1,490	1,601	1,458
Agriculture.....	571	602	651	749	762	824	780	789	805	784	740
Transportation.....	411	358	542	17	17	23	20	65	0	0	0
Natural resources/environment.....	145	142	146	215	471	185	201	195	195	168	162
Education, training, employment/social services.....	133	99	107	112	115	125	125	130	131	137	145
Commerce/housing credit.....	35	41	39	50	56	53	46	53	66	78	102
Veterans benefits/services.....	23	263	266	289	465	327	347	297	318	328	330
Administration of justice.....	16	18	20	27	30	42	58	42	68	81	114
International affairs.....	1	0	42	50	53	18	18	18	18	18	18
Community/regional development.....	0	0	0	0	0	1	0	0	0	0	0
General government.....	0	0	0	0	0	0	0	0	0	0	0
Income security.....	0	0	0	0	0	0	0	0	0	0	0
FY 2000 constant \$millions											
All functions.....	16,046	17,788	19,470	21,009	22,986	23,917	24,449	24,739	23,703	23,942	23,310
Health.....	7,604	8,810	10,099	11,442	12,489	13,375	13,686	14,146	13,468	13,483	12,843
General science.....	4,260	4,555	4,722	5,098	5,360	5,579	5,712	5,576	5,555	5,817	6,086
Space research/technology.....	1,664	1,701	1,616	1,666	1,843	2,083	2,279	2,222	1,993	1,910	1,838
Energy.....	35	37	36	39	43	38	29	28	7	28	7
National defense.....	1,103	1,133	1,184	1,281	1,353	1,331	1,272	1,348	1,292	1,354	1,204
Agriculture.....	590	614	651	736	734	778	719	705	698	663	611
Transportation.....	425	365	542	17	16	22	18	58	0	0	0
Natural resources/environment.....	150	145	146	211	454	175	185	174	169	142	134
Education, training, employment/social services.....	137	101	107	110	111	118	115	116	114	116	120
Commerce/housing credit.....	36	42	39	49	54	50	42	47	57	66	84
Veterans benefits/services.....	24	268	266	284	448	309	320	265	276	277	272
Administration of justice.....	17	18	20	27	29	40	53	38	59	68	94
International affairs.....	1	0	42	49	51	17	17	16	16	15	15
Community/regional development.....	0	0	0	0	0	1	0	0	0	0	0
General government.....	0	0	0	0	0	0	0	0	0	0	0
Income security.....	0	0	0	0	0	0	0	0	0	0	0

NOTES: Data for 1980–2006 actual budget authority, data for 2007 preliminary estimates, and data for 2008 proposed based on FY 2008 budget. See appendix table 4-1 for fiscal year gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars. In FY 2004 Department of Homeland Security changed its R&D portfolio to reclassify funding in general science and basic research and in agriculture as administration of justice. In FY 2000 National Aeronautics and Space Administration transferred funding for space station program from R&D to R&D plant; this change reflected budget authority for space research and technology. In FY 2000 National Institutes of Health in Department of Health and Human Services classified all of its previous development activities as basic research or applied research, which resulted in an increase in health basic research. In FY 1998 many Department of Energy programs were reclassified from energy to general science and basic research, and Department of Veterans Affairs began reporting medical care support funds as part of its total research budgetary resources; this change reflected in budget authority for veteran benefits and services.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Federal R&D Funding by Budget Function: Fiscal Years 2006–08 (2007).

Appendix table 4-28

## Trends in R&amp;D and federal outlays: Selected fiscal years, 1970–2008

Composition of federal outlays	1970	1980	1990	2000	2002	2004	2006	2008 <sup>a</sup>
Current \$billions								
Federal outlays .....	195.6	590.9	1,253.1	1,789.2	2,011.2	2,293.0	2,655.4	2,901.9
Mandatory programs <sup>b</sup> .....	61.0	262.1	568.2	951.4	1,105.9	1,237.3	1,412.1	1,526.8
Net interest .....	14.4	52.5	184.3	222.9	170.9	160.2	226.6	261.3
All discretionary .....	120.3	276.3	500.6	614.8	734.3	895.5	1,016.7	1,113.8
Defense .....	81.9	134.6	300.1	295.0	349.0	454.1	520.0	602.9
R&D .....	8.0	14.6	41.1	41.1	48.2	65.3	73.0	72.9
Nondefense .....	38.3	141.7	200.4	319.8	385.3	441.4	496.7	510.9
R&D .....	7.1	15.6	22.7	32.9	39.7	48.0	49.8	54.1
All federal R&D outlays .....	15.2	30.2	63.8	73.9	87.9	113.4	122.8	127.0
Percent distribution								
Federal outlays .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mandatory programs <sup>b</sup> .....	31.2	44.4	45.3	53.2	55.0	54.0	53.2	52.6
Net interest .....	7.4	8.9	14.7	12.5	8.5	7.0	8.5	9.0
All discretionary .....	61.5	46.8	39.9	34.4	36.5	39.1	38.3	38.4
Defense .....	41.9	22.8	23.9	16.5	17.4	19.8	19.6	20.8
R&D .....	4.1	2.5	3.3	2.3	2.4	2.8	2.7	2.5
Nondefense .....	19.6	24.0	16.0	17.9	19.2	19.2	18.7	17.6
R&D .....	3.6	2.6	1.8	1.8	2.0	2.1	1.9	1.9
All federal R&D outlays .....	7.7	5.1	5.1	4.1	4.4	4.9	4.6	4.4
Percent								
Federal R&D outlays as proportion of corresponding discretionary outlays								
All federal R&D/total discretionary outlays .....	12.6	10.9	12.7	12.0	12.0	12.7	12.1	11.4
Defense .....	9.8	10.9	13.7	13.9	13.8	14.4	14.0	12.1
Nondefense .....	18.6	11.0	11.3	10.3	10.3	10.9	10.0	10.6

<sup>a</sup>Estimate.<sup>b</sup>Includes Social Security, Medicare, Medicaid, and other programs.

SOURCE: Office of Management and Budget, Historical Tables, Budget of the United States Government: Fiscal Year 2008 (2007).

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Appendix table 4-29

**Discrepancy between federal R&D support, as reported by performers and federal agencies: 1980–2006**

(Billions of dollars)

Year	All performers			Industrial performers <sup>a</sup>		
	Performer reported	Agency reported	Difference	Performer reported	Agency reported	Difference
1980.....	30.0	29.8	0.2	12.8	13.0	-0.2
1981.....	33.7	33.1	0.6	15.0	14.9	0.1
1982.....	37.1	36.4	0.7	17.1	17.2	-0.1
1983.....	41.5	38.7	2.8	19.1	17.0	2.1
1984.....	46.5	42.2	4.3	21.7	18.6	3.1
1985.....	52.6	48.4	4.2	25.3	21.7	3.6
1986.....	54.6	51.4	3.2	26.0	24.2	1.8
1987.....	58.6	55.3	3.3	28.8	26.8	2.0
1988.....	60.1	56.8	3.3	28.2	26.7	1.5
1989.....	60.5	61.4	-0.9	26.4	28.5	-2.1
1990.....	61.6	63.6	-2.0	25.8	29.4	-3.6
1991.....	60.8	61.3	-0.5	24.1	26.4	-2.3
1992.....	60.9	65.6	-4.7	22.4	29.7	-7.3
1993.....	60.5	67.3	-6.8	20.8	30.2	-9.4
1994.....	60.8	67.2	-6.4	20.3	30.5	-10.2
1995.....	63.0	68.2	-5.2	21.2	30.2	-9.0
1996.....	63.4	67.7	-4.3	21.4	30.4	-9.0
1997.....	64.6	69.8	-5.2	21.8	31.4	-9.6
1998.....	66.4	72.1	-5.7	22.1	32.0	-9.9
1999.....	67.0	75.3	-8.3	20.5	31.9	-11.4
2000.....	66.4	72.9	-6.5	17.1	27.7	-10.6
2001.....	72.8	79.9	-7.1	16.9	27.0	-10.1
2002.....	77.7	85.9	-8.2	16.4	29.5	-13.1
2003.....	83.6	93.7	-10.1	17.8	33.9	-16.1
2004.....	88.9	101.4	-12.5	20.3	39.2	-18.9
2005.....	93.8	109.3	-15.5	21.9	44.1	-22.2
2006.....	94.2	113.3	-19.1	22.6	46.1	-23.5

<sup>a</sup>Excludes industry-administered federally funded research and development centers.

NOTE: Performer-reported data are expenditures; agency-reported data are obligations.

SOURCES: National Science Foundation, Division of Science Resources Statistics, National Patterns of R&amp;D Resources (annual series); and Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).



Appendix table 4-30

**Estimated federal obligations for R&D and R&D plant, by selected agency, performer, and character of work: FY 2007**

(Millions of current dollars)

Agency	All federal obligations	Federal intramural	Industrial firms	FFRDCs administered by industry	U&C	FFRDCs administered by U&C	Other nonprofits	FFRDCs administered by nonprofits	State and local government	Foreign
<b>Total R&amp;D and R&amp;D plant</b>										
All agencies.....	116,416.5	25,439.8	48,042.9	1,498.8	25,305.2	6,731.3	5,889.8	2,152.0	700.3	656.7
Department of Agriculture.....	1,995.5	1,380.4	13.8	0.0	584.3	0.0	11.7	0.0	2.3	3.0
Department of Commerce .....	1,022.8	790.9	16.4	0.1	194.6	3.9	14.1	0.1	2.3	0.4
Department of Defense.....	56,671.9	13,205.9	39,511.2	210.3	1,977.1	470.5	406.1	659.3	6.0	225.5
Department of Energy.....	8,741.4	566.0	1,209.6	868.4	811.1	3,838.4	73.9	1,371.5	0.3	2.3
Department of Health and Human Services .....	29,018.6	5,687.5	1,836.4	354.1	16,262.9	74.1	4,313.5	25.8	178.7	285.6
Department of Homeland Security .....	1,107.0	310.2	353.5	50.3	32.6	233.9	56.1	70.4	0.0	0.0
Department of the Interior .....	574.6	486.4	18.3	0.0	57.5	0.0	2.8	0.0	8.9	0.6
Department of Transportation .....	521.3	162.4	264.5	1.0	38.7	15.8	37.0	0.0	1.9	0.0
Environmental Protection Agency.....	557.3	433.6	21.2	0.0	72.5	0.0	25.2	0.0	4.4	0.4
National Aeronautics and Space Administration .....	9,790.2	1,506.8	4,428.8	0.0	1,251.1	1,782.4	245.3	0.0	457.8	118.0
National Science Foundation .....	4,522.5	45.4	218.5	0.0	3,541.5	300.0	385.5	6.2	6.9	18.5
All other agencies.....	1,893.4	864.3	150.7	14.6	481.3	12.3	318.6	18.7	30.8	2.5
<b>R&amp;D</b>										
All agencies.....	112,829.7	24,741.5	46,502.1	1,477.8	24,968.5	6,136.3	5,751.6	1,949.2	663.8	639.1
Department of Agriculture.....	1,966.1	1,351.0	13.8	0.0	584.3	0.0	11.7	0.0	2.3	3.0
Department of Commerce .....	940.3	722.9	16.4	0.1	180.1	3.9	14.1	0.1	2.3	0.4
Department of Defense.....	56,348.0	13,015.2	39,378.0	210.3	1,977.1	470.5	406.1	659.3	6.0	225.5
Department of Energy.....	7,956.6	540.2	1,175.3	851.0	803.7	3,340.1	69.9	1,173.8	0.3	2.3
Department of Health and Human Services .....	28,901.8	5,622.9	1,836.4	354.1	16,212.6	74.1	4,311.5	25.8	178.7	285.6
Department of Homeland Security .....	1,027.9	288.2	328.7	46.7	29.9	217.0	52.1	65.3	0.0	0.0
Department of the Interior .....	570.0	484.4	15.7	0.0	57.5	0.0	2.8	0.0	8.9	0.6
Department of Transportation .....	502.2	162.4	245.4	1.0	38.7	15.8	37.0	0.0	1.9	0.0
Environmental Protection Agency.....	557.3	433.6	21.2	0.0	72.5	0.0	25.2	0.0	4.4	0.4
National Aeronautics and Space Administration .....	8,152.8	1,272.2	3,173.5	0.0	1,210.3	1,781.7	190.2	0.0	422.0	102.9
National Science Foundation .....	4,049.4	20.3	147.0	0.0	3,320.5	220.9	312.4	6.2	6.2	15.9
All other agencies.....	1,857.3	828.2	150.7	14.6	481.3	12.3	318.6	18.7	30.8	2.5
<b>Basic research</b>										
All agencies.....	28,264.4	4,846.4	2,211.1	269.1	14,272.5	2,364.3	2,927.9	897.7	253.6	221.8
Department of Agriculture.....	850.6	589.2	0.2	0.0	253.2	0.0	5.0	0.0	1.4	1.6
Department of Commerce .....	92.8	79.4	2.3	0.1	10.7	0.1	0.1	0.1	0.0	0.0
Department of Defense.....	1,349.5	365.8	149.6	4.4	691.3	7.0	114.6	3.1	0.0	13.6
Department of Energy.....	3,259.6	47.5	147.1	57.1	626.4	1,483.2	19.0	878.0	0.0	1.3
Department of Health and Human Services .....	16,026.1	3,024.6	975.7	204.9	9,122.7	42.9	2,413.6	12.2	66.2	163.3
Department of Homeland Security .....	47.4	13.0	15.1	2.2	1.4	10.2	2.4	3.1	0.0	0.0
Department of the Interior .....	37.7	35.4	0.1	0.0	1.0	0.0	0.0	0.0	1.3	0.0
Department of Transportation .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Environmental Protection Agency.....	94.5	73.5	3.6	0.0	12.3	0.0	4.3	0.0	0.8	0.1
National Aeronautics and Space Administration .....	2,469.2	281.5	859.3	0.0	456.8	600.0	64.2	0.0	177.8	29.6
National Science Foundation .....	3,670.6	18.3	56.1	0.0	3,068.5	220.9	287.0	1.3	6.2	12.3
All other agencies.....	366.4	318.2	2.0	0.4	28.2	0.0	17.7	0.0	0.0	0.0
<b>Applied research</b>										
All agencies.....	26,824.8	7,828.1	4,575.3	708.5	9,088.9	1,701.5	2,413.3	256.4	102.9	150.0
Department of Agriculture.....	940.3	596.7	13.5	0.0	321.8	0.0	6.2	0.0	0.9	1.2
Department of Commerce .....	757.0	575.2	11.5	0.0	151.8	2.2	14.0	0.0	2.2	0.2
Department of Defense.....	5,100.4	2,074.8	2,124.5	15.3	590.3	73.0	137.7	65.3	0.6	18.9
Department of Energy.....	2,779.0	264.0	219.9	514.9	134.6	1,478.9	27.4	139.3	0.0	0.0
Department of Health and Human Services .....	12,775.2	2,572.8	860.7	149.2	7,077.9	31.2	1,886.6	8.9	65.4	122.3
Department of Homeland Security .....	314.7	89.8	99.9	14.3	9.1	66.2	15.6	19.9	0.0	0.0
Department of the Interior .....	476.5	401.3	12.9	0.0	53.1	0.0	1.6	0.0	7.1	0.6
Department of Transportation .....	329.1	128.8	118.3	0.8	38.3	15.8	25.5	0.0	1.5	0.0

Appendix table 4-30

(Page 2 of 2)

**Estimated federal obligations for R&D and R&D plant, by selected agency, performer, and character of work: FY 2007**

(Millions of current dollars)

Agency	All federal obligations	Federal intramural	Industrial firms	FFRDCs administered by industry	U&C	FFRDCs administered by U&C	Other nonprofits	FFRDCs administered by nonprofits	State and local government	Foreign
Environmental Protection Agency.....	358.9	279.2	13.6	0.0	46.7	0.0	16.2	0.0	2.9	0.3
National Aeronautics and Space Administration .....	1,642.1	477.4	895.6	0.0	183.7	21.8	49.2	0.0	13.8	0.5
National Science Foundation .....	378.8	2.0	90.9	0.0	252.0	0.0	25.4	4.9	0.0	3.6
All other agencies.....	972.8	366.1	114.0	14.0	229.6	12.4	207.9	18.1	8.5	2.4
<b>Development</b>										
All agencies.....	57,740.5	12,067.0	39,715.7	500.1	1,607.1	2,070.5	410.4	795.1	307.3	267.3
Department of Agriculture.....	175.2	165.1	0.0	0.0	9.3	0.0	0.5	0.0	0.0	0.2
Department of Commerce .....	90.6	68.4	2.6	0.0	17.6	1.6	0.1	0.0	0.0	0.2
Department of Defense.....	49,898.0	10,574.6	37,103.9	190.6	695.5	390.4	153.8	590.9	5.3	193.0
Department of Energy.....	1,918.0	228.6	808.3	279.0	42.8	377.9	23.4	156.6	0.3	1.0
Department of Health and Human Services .....	100.5	25.5	0.0	0.0	12.0	0.0	11.2	4.7	47.1	0.0
Department of Homeland Security .....	665.8	185.4	213.7	30.3	19.3	140.6	34.1	42.3	0.0	0.0
Department of the Interior .....	55.8	47.8	2.8	0.0	3.4	0.0	1.2	0.0	0.6	0.0
Department of Transportation .....	173.1	33.6	127.1	0.2	0.4	0.0	11.5	0.0	0.4	0.0
Environmental Protection Agency.....	103.9	80.8	3.9	0.0	13.5	0.0	4.7	0.0	0.8	0.1
National Aeronautics and Space Administration .....	4,041.5	513.3	1,418.6	0.0	569.8	1,159.9	76.8	0.0	230.4	72.7
National Science Foundation .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All other agencies.....	518.1	143.9	34.8	0.0	223.5	0.0	93.1	0.6	22.4	0.0
<b>R&amp;D plant</b>										
All agencies.....	3,586.8	698.3	1,540.8	21.0	336.7	595.0	138.2	202.8	36.5	17.6
Department of Agriculture.....	29.4	29.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Commerce .....	82.5	68.0	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0
Department of Defense.....	323.9	190.7	133.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Energy.....	784.8	25.8	34.3	17.4	7.4	498.3	4.0	197.7	0.0	0.0
Department of Health and Human Services .....	116.8	64.6	0.0	0.0	50.3	0.0	2.0	0.0	0.0	0.0
Department of Homeland Security .....	79.1	22.0	24.8	3.6	2.7	16.9	4.0	5.1	0.0	0.0
Department of the Interior .....	4.6	2.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Transportation .....	19.1	0.0	19.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Environmental Protection Agency.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
National Aeronautics and Space Administration .....	1,637.4	234.6	1,255.3	0.0	40.8	0.7	55.1	0.0	35.8	15.1
National Science Foundation .....	473.1	25.1	71.5	0.0	221.0	79.1	73.1	0.0	0.7	2.6
All other agencies.....	36.1	36.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

FFRDC = federally funded research and development center; U&amp;C = universities and colleges

NOTE: Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).

Appendix table 4-31

**Estimated federal obligations for research, by agency and S&E field: FY 2007**

(Thousands of current dollars)

Agency	All federal obligations	Environmental sciences	Life sciences	Mathematics and computer sciences	Physical sciences	Psychology	Social sciences	Engineering	Other sciences nec
All agencies.....	55,089,189	3,635,733	27,810,551	3,181,945	5,647,627	1,911,694	1,215,330	9,487,433	2,198,876
Agency for International Development.....	215,000	3,772	138,403	0	0	0	54,154	0	18,671
Appalachian Regional Commission.....	650	0	0	0	0	0	650	0	0
Broadcasting Board of Governors.....	213	0	0	0	0	0	0	213	0
Department of Agriculture.....	1,790,912	14,752	1,431,443	18,230	93,097	482	152,132	70,580	10,196
Department of Commerce.....	849,766	367,504	71,678	71,224	157,224	376	9,910	168,255	3,595
Department of Defense.....	6,449,923	339,647	546,789	1,017,846	521,041	61,205	17,192	3,647,220	298,983
Department of Education.....	251,888	0	19,959	0	0	4,533	212,661	14,735	0
Department of Energy.....	6,038,669	340,874	294,192	926,519	2,416,646	0	0	2,047,146	13,292
Department of Health and Human Services.....	28,801,264	448,630	23,618,852	185,931	415,433	1,755,446	335,634	921,794	1,119,544
Department of Homeland Security.....	362,142	778	118,399	14,676	70,631	7,310	19,429	79,058	51,861
Department of Housing and Urban Development.....	14,217	188	0	142	0	0	9,900	2,293	1,694
Department of Justice.....	52,860	0	0	0	0	0	43,860	0	9,000
Department of Labor.....	37,880	0	0	0	0	0	37,880	0	0
Department of State.....	4,100	0	0	0	0	0	4,100	0	0
Department of the Interior.....	514,156	308,387	176,603	10,937	1,866	0	5,913	10,157	293
Department of the Treasury.....	66,897	0	0	0	6,059	0	0	0	60,838
Department of Transportation.....	329,105	44,283	12,444	10,399	125	17,747	7,345	180,344	56,418
Department of Veterans Affairs.....	391,880	0	329,483	0	0	44,904	0	17,493	0
Environmental Protection Agency.....	453,400	161,913	186,540	16,584	13,186	0	3,994	62,189	8,994
Federal Communications Commission.....	6,853	0	0	375	1,350	0	2,802	2,326	0
Federal Trade Commission.....	1,880	0	0	0	0	0	1,880	0	0
Library of Congress.....	547	0	0	0	328	0	0	0	219
National Aeronautics and Space Administration.....	4,111,274	954,192	233,372	69,579	1,131,763	15,227	760	1,495,915	210,466
National Archives and Records Administration.....	120	0	0	0	120	0	0	0	0
National Science Foundation.....	4,049,417	645,694	582,813	839,503	766,437	4,464	183,286	693,539	333,681
Nuclear Regulatory Commission.....	74,176	0	0	0	0	0	0	74,176	0
Smithsonian Institution.....	130,000	5,119	49,581	0	52,321	0	21,848	0	1,131
Social Security Administration.....	90,000	0	0	0	0	0	90,000	0	0

nec = not elsewhere classified

SOURCE: National Science Foundation, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).

Science and Engineering Indicators 2008

**Federal obligations for total research, by detailed S&E field: FY 1986–2007**

(Millions of constant 2000 dollars)

Field	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
All fields.....	23,168.7	24,547.2	24,739.8	26,515.7	26,621.0	28,441.7	28,349.1	30,447.7	30,378.3	30,850.2	30,097.8	30,737.7
Engineering .....	5,249.3	5,344.8	5,248.3	5,672.3	5,203.7	5,867.3	5,761.1	6,226.9	6,072.5	6,193.4	6,050.4	5,956.2
Aeronautical .....	1,088.9	1,108.8	1,063.6	1,260.1	1,141.4	1,205.9	1,012.4	1,350.8	1,355.0	1,354.4	1,330.7	1,415.9
Astronautical .....	739.8	854.6	763.3	865.0	715.1	775.0	729.7	559.3	553.1	592.9	560.8	624.2
Chemical .....	345.1	295.3	342.4	181.6	297.8	361.1	344.4	278.0	264.0	267.0	229.1	246.0
Civil .....	284.9	279.7	285.1	293.4	391.1	361.9	382.2	285.3	308.0	368.2	319.7	288.5
Electrical .....	946.8	1,075.9	969.8	1,076.6	788.0	866.1	878.6	998.1	822.1	820.6	713.3	651.3
Mechanical.....	332.0	319.5	319.4	328.7	330.3	398.1	390.3	528.7	419.0	447.5	313.1	266.5
Metallurgy and materials .....	624.8	495.3	605.8	665.3	682.7	843.3	841.8	787.7	943.6	884.6	1,053.3	900.9
Engineering nec .....	886.9	915.8	899.1	1,001.7	857.3	1,055.9	1,181.6	1,439.0	1,407.7	1,458.2	1,530.5	1,563.0
Environmental sciences .....	2,080.3	2,068.3	2,131.7	2,264.2	2,676.7	2,551.0	2,555.4	2,953.6	3,145.4	3,096.9	3,216.1	3,188.0
Atmospheric sciences.....	731.9	756.5	779.7	750.8	952.2	952.5	888.2	1,114.3	1,213.5	1,232.1	1,156.3	1,218.7
Geological sciences.....	623.2	604.4	585.8	693.1	813.9	864.7	851.6	903.4	928.7	920.4	835.3	724.1
Oceanography .....	603.3	584.8	610.7	628.1	640.3	473.0	531.2	529.2	550.6	441.9	611.7	625.6
Environmental sciences nec .....	121.9	122.5	155.3	192.2	270.2	260.8	284.5	406.7	452.7	502.7	612.8	619.5
Life sciences .....	9,075.7	10,044.9	10,246.7	10,847.5	10,871.0	11,417.8	11,471.9	12,197.1	12,505.8	12,814.5	12,849.0	13,253.0
Biological and agricultural .....	5,421.2	5,963.5	6,066.7	6,410.1	6,375.5	6,642.7	6,521.2	6,860.9	6,763.6	6,946.5	7,061.1	6,849.8
Agricultural sciences .....	847.7	775.7	783.6	854.3	851.2	807.3	795.8	807.2	805.9	727.3	656.1	671.3
Biological sciences (excluding environmental) .....	4,202.7	4,791.6	4,883.9	5,086.2	5,102.7	5,289.8	5,133.9	5,423.5	5,259.5	5,343.9	5,655.3	5,588.8
Environmental biology .....	370.8	396.2	399.3	469.6	421.4	545.5	591.5	630.1	698.1	875.5	749.8	609.7
Medical sciences.....	3,313.9	3,646.1	3,901.3	4,114.8	4,164.3	4,106.1	4,525.9	4,987.0	5,388.4	5,394.6	5,296.9	5,791.3
Life sciences nec.....	340.6	435.4	278.7	322.5	331.3	669.0	424.8	349.1	353.9	473.4	491.1	611.9
Mathematics and computer sciences.....	864.0	876.5	852.8	939.0	1,035.1	1,072.4	1,343.1	1,387.5	1,442.5	1,713.3	1,673.8	1,749.9
Computer sciences.....	424.6	407.5	388.3	465.6	692.0	694.1	893.4	935.4	920.1	1,100.0	1,192.6	1,323.8
Mathematics .....	259.0	279.8	289.0	301.5	297.1	270.1	368.9	329.3	379.4	280.6	271.1	315.7
Mathematics and computer sciences nec.....	180.4	189.2	175.5	172.1	45.9	108.1	80.9	122.9	143.1	332.6	210.1	110.4
Physical sciences .....	4,308.9	4,450.4	4,400.5	4,731.2	4,689.2	5,025.7	5,138.6	5,012.6	4,713.9	4,641.8	4,178.2	4,343.1
Astronomy .....	657.3	714.5	624.5	692.0	735.3	749.6	855.5	777.1	828.5	829.5	776.4	810.9
Chemistry.....	930.0	930.8	932.7	999.3	937.8	983.0	1,037.4	954.7	969.0	936.9	938.4	885.3
Physics.....	2,535.4	2,536.2	2,620.3	2,797.5	2,776.2	2,920.2	2,984.4	2,987.4	2,707.5	2,659.5	2,120.8	2,164.2
Physical sciences nec.....	186.2	269.0	223.0	242.5	240.1	373.0	261.3	293.5	208.7	216.1	342.5	482.5
Psychology .....	468.9	505.6	517.1	538.5	552.3	572.4	345.1	623.5	607.8	675.5	559.1	570.9
Biological aspects.....	126.5	134.5	139.7	155.5	160.8	166.4	40.1	42.1	53.3	63.8	66.9	60.5
Social aspects .....	201.5	211.4	198.2	191.4	218.5	234.4	116.8	152.5	129.4	169.6	88.8	101.2
Psychological sciences nec .....	141.0	159.7	179.3	191.4	173.0	171.8	188.2	428.8	424.9	442.1	403.4	409.2
Social sciences.....	583.4	656.8	644.4	703.6	775.6	863.0	798.4	764.2	717.5	736.4	697.2	728.8
Anthropology .....	19.1	20.8	19.0	17.7	17.7	19.0	16.3	15.5	18.0	23.5	19.5	22.0
Economics.....	184.3	203.2	211.6	213.0	242.8	222.4	244.9	231.8	214.2	224.0	206.8	214.8
Political science.....	16.3	15.5	16.2	17.2	16.1	20.2	26.2	33.1	28.1	24.2	17.8	14.8
Sociology .....	94.1	101.3	108.5	120.2	143.1	218.3	93.4	86.8	75.5	51.9	43.9	27.1
Social sciences nec.....	269.6	316.1	289.2	335.6	355.9	383.2	417.6	396.9	381.7	412.6	409.2	450.3
Other sciences nec.....	538.1	599.7	698.4	819.3	817.1	1,072.0	935.6	1,282.3	1,173.0	978.4	874.1	947.6

## Federal obligations for total research, by detailed S&amp;E field: FY 1986–2007

(Millions of constant 2000 dollars)

Field	1998	1999	2000	2001	2002	2003	2004	2005	Average growth rate (%)			
									2006 (preliminary)	2007 (preliminary)	1986–2005	1986–2007
All fields.....	31,963.9	34,209.9	38,470.6	43,945.4	46,271.9	48,235.3	49,174.5	48,032.2	47,658.9	46,587.1	3.9	3.4
Engineering .....	6,094.0	6,390.9	6,346.4	8,056.2	7,975.9	7,938.3	8,171.3	7,644.7	7,782.9	8,023.2	2.0	2.0
Aeronautical .....	1,650.2	1,642.5	1,463.9	2,388.3	2,079.2	1,636.0	1,512.2	1,140.8	NA	NA	0.2	NA
Astronautical .....	652.4	633.2	515.0	739.8	733.3	663.5	612.8	441.6	NA	NA	-2.7	NA
Chemical .....	196.5	207.3	196.5	195.6	194.3	309.7	293.8	253.7	NA	NA	-1.6	NA
Civil .....	252.3	335.2	239.2	283.4	291.8	320.7	304.4	249.6	NA	NA	-0.7	NA
Electrical .....	660.8	712.9	744.8	874.4	779.5	897.2	821.1	923.8	NA	NA	-0.1	NA
Mechanical.....	258.0	245.3	289.3	313.7	256.3	281.8	278.2	289.3	NA	NA	-0.7	NA
Metallurgy and materials.....	815.7	804.0	918.1	1,062.2	964.3	1,023.5	955.9	1,058.4	NA	NA	2.8	NA
Engineering nec .....	1,608.0	1,810.4	1,979.6	2,198.6	2,677.2	2,805.8	3,393.0	3,287.7	NA	NA	7.1	NA
Environmental sciences.....	3,165.1	3,158.3	3,328.8	3,195.8	3,294.8	3,533.1	3,448.3	3,130.7	3,164.1	3,074.6	2.2	1.9
Atmospheric sciences.....	1,214.0	1,200.4	1,104.3	1,094.5	1,121.5	1,189.5	1,160.9	1,059.3	NA	NA	2.0	NA
Geological sciences.....	623.6	673.6	639.2	662.2	650.5	684.7	649.3	602.0	NA	NA	-0.2	NA
Oceanography.....	578.7	670.0	673.0	669.4	756.2	799.1	745.7	689.6	NA	NA	0.7	NA
Environmental sciences nec .....	748.8	614.3	912.2	769.8	766.5	859.7	892.5	779.9	NA	NA	10.3	NA
Life sciences .....	14,014.3	15,736.4	17,964.7	22,661.1	24,556.2	26,229.8	25,554.6	25,141.2	24,627.4	23,518.5	5.5	4.6
Biological and agricultural .....	7,312.1	8,211.5	12,375.0	13,873.8	15,735.2	19,273.9	13,684.6	13,536.7	NA	NA	4.9	NA
Agricultural sciences.....	788.5	866.7	895.0	990.4	1,009.7	987.9	1,001.6	978.0	NA	NA	0.8	NA
Biological sciences (excluding environmental).....	5,898.8	6,609.4	10,740.0	12,167.3	13,974.6	17,608.1	12,065.5	11,933.9	NA	NA	5.6	NA
Environmental biology.....	624.9	735.3	740.0	716.3	750.8	678.0	617.5	624.8	NA	NA	2.8	NA
Medical sciences.....	6,198.3	6,939.6	4,463.8	6,472.0	6,195.1	5,818.2	10,044.3	9,708.7	NA	NA	5.8	NA
Life sciences nec.....	503.8	585.3	1,125.9	2,315.2	2,626.0	1,137.7	1,825.7	1,895.7	NA	NA	9.5	NA
Mathematics and computer sciences.....	1,898.7	2,020.9	2,205.6	2,565.7	2,535.6	2,524.1	2,718.2	2,666.6	2,657.3	2,690.8	6.1	5.6
Computer sciences.....	1,445.8	1,547.0	1,659.6	1,988.0	1,969.4	1,938.8	1,976.7	1,928.1	NA	NA	8.3	NA
Mathematics .....	345.4	352.3	432.9	389.6	387.5	427.7	569.4	613.7	NA	NA	4.6	NA
Mathematics and computer sciences nec.....	107.5	121.6	113.1	188.1	178.8	157.4	172.1	124.9	NA	NA	-1.9	NA
Physical sciences .....	4,351.5	4,149.0	4,788.0	4,521.7	4,803.1	4,742.7	4,802.5	4,910.4	4,824.8	4,776.0	0.7	0.5
Astronomy.....	756.9	773.3	880.3	746.2	724.3	823.4	848.6	790.9	NA	NA	1.0	NA
Chemistry.....	846.6	831.5	1,225.6	1,007.3	1,139.0	1,074.7	1,097.6	1,070.3	NA	NA	0.7	NA
Physics.....	2,203.6	2,267.1	2,405.4	2,419.4	2,526.7	2,361.3	2,394.9	2,718.4	NA	NA	0.4	NA
Physical sciences nec.....	544.4	276.9	276.7	348.8	413.1	483.3	461.5	330.7	NA	NA	3.1	NA
Psychology .....	610.9	645.5	1,626.7	729.2	873.2	1,043.1	1,709.5	1,690.9	1,648.1	1,616.7	7.0	6.1
Biological aspects.....	43.0	18.4	8.2	13.4	10.2	21.9	5.5	2.1	NA	NA	-19.4	NA
Social aspects.....	100.8	68.0	56.0	58.8	50.6	47.8	47.6	41.7	NA	NA	-8.0	NA
Psychological sciences nec .....	467.1	559.1	1,562.5	657.0	812.3	973.4	1,656.3	1,647.1	NA	NA	13.8	NA
Social sciences.....	833.3	872.3	1,050.4	991.3	947.5	968.8	1,004.2	980.6	1,042.8	1,027.7	2.8	2.7
Anthropology .....	18.8	18.7	15.9	15.3	15.8	13.7	13.8	16.1	NA	NA	-0.9	NA
Economics.....	238.3	221.0	249.5	230.1	219.1	221.5	188.6	193.0	NA	NA	0.2	NA
Political science.....	20.9	20.6	22.6	19.2	17.7	17.5	17.2	29.2	NA	NA	3.1	NA
Sociology .....	104.2	85.5	90.6	93.9	92.6	117.8	110.7	62.7	NA	NA	-2.1	NA
Social sciences nec.....	451.1	526.5	671.8	632.9	602.1	598.4	673.9	679.7	NA	NA	5.0	NA
Other sciences nec.....	996.2	1,236.8	1,160.2	1,224.4	1,285.8	1,255.5	1,766.1	1,867.1	1,911.4	1,859.5	6.8	6.1

NA = not available

nec = not elsewhere classified

NOTE: Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).

## Federal research and experimentation tax credit claims and number of corporate tax returns claiming credit, by NAICS industry: 1998–2003

Industry	NAICS code	Tax credit claims (current US\$)						Corporate tax returns (number)					
		1998	1999	2000	2001	2002	2003	1998	1999	2000	2001	2002	2003
All industries .....	11,21–23,31–33, 42, 44–81	5,208,204,378	5,280,611,545	7,078,532,813	6,355,803,103	5,655,666,261	5,488,336,994	9,849	10,019	10,495	10,389	10,254	10,369
Manufacturing .....	31–33	3,394,757,885	3,890,850,544	4,854,498,745	4,208,606,957	3,787,024,581	3,797,439,125	4,990	4,721	4,826	4,766	4,750	4,623
Food .....	311	26,617,632	28,273,616	37,090,616	33,715,656	30,971,331	49,119,579	105	99	122	132	135	121
Beverage and tobacco products .....	312	16,432,950	8,486,438	7,877,006	12,114,650	19,204,143	3,113,803	10	8	7	10	10	10
Textiles, apparel, and leather .....	313–16	6,675,658	8,992,144	7,827,501	7,786,558	12,286,345	12,090,638	41	41	36	31	30	39
Wood products .....	321	1,351,960	1,596,321	1,998,961	1,974,311	2,073,336	1,735,367	34	29	26	31	23	16
Paper, printing, and support activities .....	322, 323	47,729,382	34,565,678	34,821,705	59,463,459	64,289,068	68,927,414	127	101	110	78	97	86
Petroleum and coal products .....	324	20,447,496	9,531,585	NA	34,958,942	36,256,972	39,399,563	26	27	NA	30	28	29
Chemicals .....	325	861,290,342	960,697,803	1,070,257,259	999,405,006	949,114,502	1,001,643,789	711	580	564	650	634	593
Pharmaceuticals and medicines .....	3254	628,383,791	713,343,320	800,554,948	805,557,884	777,855,951	736,269,385	381	250	247	297	275	267
Plastics and rubber products .....	326	20,933,570	26,256,213	25,050,356	18,884,096	24,218,141	21,244,655	163	113	108	118	97	116
Nonmetallic mineral products .....	327	11,248,751	10,713,531	8,441,334	9,735,261	9,515,868	9,670,349	42	36	36	27	29	42
Primary metals .....	331	6,767,782	6,547,936	6,190,892	6,010,051	8,095,937	8,076,961	31	36	55	43	43	44
Fabricated metal products .....	332	23,807,870	24,697,929	23,402,704	24,242,590	27,911,533	59,387,415	368	310	271	260	220	273
Machinery .....	333	178,546,039	130,311,168	148,768,078	154,209,760	148,667,638	134,808,162	446	417	450	425	388	344
Computer and electronic products .....	334	1,144,966,262	1,566,081,043	2,209,995,767	1,677,193,981	1,152,787,771	1,168,467,482	1,623	1,626	1,617	1,604	1,663	1,565
Computers and peripheral equipment .....	3341	345,841,988	587,412,049	691,381,426	487,777,264	380,276,292	386,139,566	279	252	245	346	320	256
Communications equipment .....	3342	362,243,083	432,631,722	650,858,905	433,269,462	220,147,480	212,289,405	424	377	285	345	312	287
Semiconductor and other electronic components .....	3344	338,137,521	426,997,184	739,596,876	567,390,088	411,722,978	461,353,261	555	539	596	552	564	482
Navigational, measuring, electromedical, and control instruments .....	3345	67,639,973	81,700,450	72,234,154	138,872,257	100,472,191	72,155,806	291	304	331	209	318	408
Electrical equipment, appliances, and components .....	335	119,075,737	136,135,082	177,766,599	180,985,392	163,536,246	117,260,306	418	401	397	411	536	516
Transportation equipment .....	336	747,814,159	778,059,211	902,709,530	785,698,593	957,277,133	896,992,236	162	125	195	186	191	201
Motor vehicles, trailers, and parts .....	3361–63	612,474,928	663,472,479	761,717,964	638,560,145	590,750,372	649,790,415	80	72	84	83	117	130
Aerospace products and parts .....	3364	108,369,587	95,696,637	122,514,132	130,821,135	348,498,093	220,373,933	43	34	47	53	46	44
Furniture and related products .....	337	7,255,743	6,217,049	7,497,398	8,898,678	10,374,375	6,610,441	43	38	57	32	60	20
Miscellaneous manufacturing .....	339	153,796,611	153,687,798	161,798,268	193,329,974	170,444,240	198,890,965	639	734	751	699	566	608
Medical equipment and supplies .....	3391	130,882,112	132,983,329	137,501,336	155,123,972	146,312,410	171,825,110	382	488	433	431	353	380
Nonmanufacturing .....	11,21–23,42,44–81	1,813,446,493	1,389,761,001	2,224,034,068	2,147,196,147	1,868,641,681	1,690,897,869	4,859	5,298	5,669	5,623	5,504	5,746
Agriculture, forestry, fishing, and hunting .....	11	11,859,000	10,494,000	3,927,000	3,023,522	3,491,115	4,499,337	55	36	39	35	51	60
Mining, extraction, and support activities .....	21	9,162,970	3,700,120	14,650,217	9,668,927	7,199,079	18,136,928	15	12	15	44	20	21
Utilities .....	22	21,915,554	18,402,766	10,339,854	8,546,207	6,307,200	4,496,035	44	34	29	23	18	18
Construction .....	23	2,286,487	6,743,738	13,031,010	9,360,211	11,060,055	11,002,452	31	33	11	15	31	20
Trade .....	42, 44 (NO 45)	139,605,447	123,894,399	186,537,254	186,161,921	193,814,270	198,050,156	392	751	608	693	616	594
Transportation and warehousing .....	48 (NO 49)	14,237,060	13,664,409	20,840,334	16,185,949	13,722,160	12,681,010	18	17	21	19	17	17
Information .....	51	1,019,709,638	634,297,902	1,146,523,854	1,001,296,299	801,073,348	633,275,236	953	1,466	1,506	1,502	1,242	1,149
Publishing .....	511	698,708,900	277,080,208	707,071,152	623,169,602	493,094,358	357,527,734	635	858	913	975	835	761
Software .....	5112	686,171,119	263,723,192	685,882,458	603,049,452	477,847,254	336,343,705	612	840	890	952	816	442
Broadcasting and telecommunications .....	515–517	198,149,661	187,927,589	211,282,105	184,987,303	171,658,781	159,731,274	111	206	182	179	203	167

**Federal research and experimentation tax credit claims and number of corporate tax returns claiming credit, by NAICS industry: 1998–2003**

Industry	NAICS code	Tax credit claims (current US\$)						Corporate tax returns (number)					
		1998	1999	2000	2001	2002	2003	1998	1999	2000	2001	2002	2003
Finance, insurance, and real estate .....	52, 53	93,988,006	111,181,349	141,444,980	126,024,549	96,250,322	99,506,745	109	98	109	124	208	206
Professional, scientific, and technical services.....	54	419,791,370	417,648,250	611,640,352	649,800,520	576,581,251	549,140,532	2,383	2,645	2,959	2,887	2,900	3,446
Architectural, engineering, and related services.....	5413	14,566,820	33,775,708	42,999,419	43,499,333	28,175,238	23,408,193	142	211	163	136	98	326
Computer systems design and related services.....	5415	230,416,196	170,513,781	261,491,092	231,064,404	177,595,938	156,690,957	741	1,193	1,329	1,204	1,230	1,340
Scientific R&D services .....	5417	149,915,617	174,422,007	254,308,119	307,839,482	320,343,249	315,495,430	1,298	929	1,122	1,190	1,200	1,276
Management of companies and enterprises .....	55	43,107,833	12,537,433	36,706,057	82,294,839	100,337,133	94,894,187	55	39	66	52	55	50
Administrative and support and waste management and remediation services .....	56	NA	NA	NA	26,060,049	25,913,688	30,787,944	NA	NA	NA	47	31	82
Health care and social assistance .....	62	NA	NA	NA	22,101,503	24,105,289	29,355,831	NA	NA	NA	137	73	64

NA = not available;

NAICS = North American Industry Classification System

NOTE: Data exclude Internal Revenue Service (IRS) forms 1120S (S corporations), 1120-REIT (Real Estate Investment Trusts), and 1120-RIC (Regulated Investment Companies).

SOURCE: IRS, Statistics of Income program, special tabulations.

Science and Engineering Indicators 2008



Appendix table 4-34

**Number of external users at Department of Energy facilities, by science program and facility: FY 2006**

Science program and facilities	FY 2006
All.....	21,198
Basic Energy Sciences (BES).....	10,024
Synchrotron Radiation Light Sources	
National Synchrotron Light Source (NSLS).....	2,105
Stanford Synchrotron Radiation Laboratory (SSRL).....	1,124
Advanced Light Source (ALS).....	2,158
Advanced Photon Source (APS).....	3,274
High-Flux Neutron Sources	
High Flux Isotope Reactor (HFIR).....	42
Intense Pulsed Neutron Source (IPNS).....	211
Manuel Lujan Jr. Neutron Scattering Center (Lujan Center).....	297
Electron Beam Microcharacterization Centers	
Electron Microscopy Center for Materials Research.....	140
National Center for Electron Microscopy.....	205
Shared Research Equipment Program.....	132
Specialized Single-Purpose Centers	
Combustion Research Facility (CRF).....	77
Materials Preparation Center.....	220
Pulse Radiolysis Facility.....	39
Advanced Scientific Computing Research.....	3,203
National Energy Research Scientific Computing Center.....	2,815
Oak Ridge Leadership Computing Facility.....	388
High Energy Physics (HEP).....	3,026
Tevatron.....	2,125
B-Factory/SLAC.....	901
Biological and Environmental Research (BER).....	2,480
Environmental Molecular Sciences Laboratory.....	1,600
Production Genomics Facility.....	80
Atmospheric Radiation Measurement.....	800
Nuclear Physics (NP).....	1,990
Relativistic Heavy Ion Collider (RHIC), Continuous Electron Beam Accelerator Facility (CEBAF), Argonne Tandem Linear Accelerator System (ATLAS), Holifield Radioactive Ion Beam Facility (HRIBF).....	1,990
Fusion Energy Sciences.....	475
DIII-D.....	240
Alcator C-Mod.....	105
NSTX.....	130

NOTES: External users are non-Department of Energy (DOE) researchers. One facility user may represent an individual researcher or a research team.

SOURCE: DOE, special tabulations, 1 June 2007.



Appendix table 4-35

**R&D expenditures and R&D as percentage of gross domestic product, by selected country and for all OECD countries: 1981–2006**

Year	U.S. <sup>a</sup>	Japan <sup>b</sup>	Germany <sup>c</sup>	France	UK	Italy	Canada	Russian Federation	All OECD
2000 constant US\$billions <sup>d</sup>									
1981.....	122.3	42.8	29.6	19.3	21.5	8.6	6.3	NA	276.1
1982.....	128.7	45.8	30.3	20.6	NA	8.9	6.8	NA	288.7
1983.....	137.9	49.3	30.9	21.4	20.9	9.4	6.9	NA	304.5
1984.....	151.1	52.6	31.7	22.6	NA	10.4	7.5	NA	327.6
1985.....	164.5	58.3	34.8	23.7	22.6	11.8	8.1	NA	356.3
1986.....	168.8	59.3	36.0	24.1	23.7	12.3	8.5	NA	367.4
1987.....	172.6	63.3	38.1	25.2	24.1	13.3	8.5	NA	381.5
1988.....	176.9	68.1	39.3	26.3	24.7	14.2	8.8	NA	396.1
1989.....	180.6	74.2	40.6	28.0	25.3	14.9	9.5	NA	412.6
1990.....	186.3	80.4	41.0	30.0	25.5	15.8	9.9	33.0	431.2
1991.....	190.5	82.2	44.2	30.5	24.2	15.2	10.1	23.8	450.8
1992.....	191.4	81.3	43.1	31.0	23.7	14.8	10.5	9.3	452.8
1993.....	187.5	79.3	41.4	31.2	24.6	14.0	11.1	8.8	448.7
1994.....	187.5	78.5	40.8	31.1	25.1	13.3	12.0	8.4	452.0
1995.....	199.4	83.5	41.6	31.3	25.1	13.1	12.1	8.1	478.5
1996.....	210.3	89.1	42.1	31.4	24.8	13.3	12.0	8.9	499.8
1997.....	222.3	92.6	43.7	31.0	24.6	14.2	12.5	9.8	522.8
1998.....	234.7	95.0	45.3	31.3	25.3	14.6	13.8	8.5	544.2
1999.....	250.4	95.4	48.7	32.7	27.1	14.5	14.9	9.4	572.1
2000.....	267.6	98.8	51.5	33.8	28.0	15.4	16.7	10.9	606.8
2001.....	271.2	101.6	52.3	35.2	28.2	16.3	18.6	12.8	625.3
2002.....	265.5	103.3	52.9	36.1	28.8	17.0	18.7	14.2	626.4
2003.....	271.6	105.8	53.5	35.5	28.8	16.6	18.7	15.7	642.4
2004.....	274.2	107.7	53.8	35.9	28.8	16.7	19.4	15.2	663.2
2005.....	286.5	NA	54.5	36.1	NA	NA	19.6	14.9	NA
2006.....	293.3	NA	NA	NA	NA	NA	19.9	NA	NA
GDP (%)									
1981.....	2.31	2.33	2.35	1.90	2.38	0.86	1.22	NA	1.91
1982.....	2.48	2.42	2.42	1.98	NA	0.88	1.37	NA	2.00
1983.....	2.54	2.56	2.43	2.01	2.20	0.93	1.34	NA	2.05
1984.....	2.60	2.64	2.43	2.10	NA	0.99	1.38	NA	2.11
1985.....	2.72	2.58	2.60	2.15	2.24	1.10	1.42	NA	2.22
1986.....	2.69	2.55	2.63	2.14	2.26	1.11	1.46	NA	2.22
1987.....	2.67	2.62	2.74	2.18	2.19	1.16	1.41	NA	2.23
1988.....	2.62	2.64	2.73	2.18	2.14	1.19	1.38	NA	2.22
1989.....	2.59	2.73	2.71	2.23	2.15	1.21	1.45	NA	2.22
1990.....	2.62	2.81	2.61	2.33	2.15	1.25	1.51	2.03	2.26
1991.....	2.68	2.78	2.47	2.33	2.07	1.19	1.57	1.43	2.19
1992.....	2.61	2.73	2.35	2.33	2.02	1.15	1.62	0.74	2.16
1993.....	2.49	2.65	2.28	2.37	2.05	1.10	1.68	0.77	2.11
1994.....	2.39	2.60	2.18	2.32	2.01	1.02	1.73	0.84	2.06
1995.....	2.48	2.71	2.19	2.29	1.95	0.97	1.70	0.85	2.07
1996.....	2.52	2.82	2.19	2.27	1.87	0.99	1.65	0.97	2.10
1997.....	2.55	2.89	2.24	2.19	1.81	1.03	1.66	1.04	2.12
1998.....	2.59	3.02	2.27	2.14	1.80	1.05	1.76	0.95	2.15
1999.....	2.64	3.04	2.40	2.16	1.87	1.02	1.80	1.00	2.19
2000.....	2.73	3.05	2.45	2.15	1.86	1.05	1.92	1.05	2.23
2001.....	2.74	3.13	2.46	2.20	1.83	1.09	2.09	1.18	2.27
2002.....	2.64	3.18	2.49	2.23	1.83	1.13	2.04	1.25	2.24
2003.....	2.64	3.20	2.52	2.17	1.79	1.11	2.01	1.28	2.25
2004.....	2.56	3.18	2.50	2.14	1.73	1.10	2.01	1.16	2.25
2005.....	2.59	NA	2.51	2.13	NA	NA	1.98	1.07	NA
2006.....	2.57	NA	NA	NA	NA	NA	1.95	NA	NA

NA = not available

GDP = gross domestic product; OECD = Organisation for Economic Co-operation and Development; UK = United Kingdom

<sup>a</sup>Data for United States do not include capital expenditures for R&D, business sector social sciences R&D, or humanities R&D.<sup>b</sup>Data for 1996 on may not be consistent with earlier data because of changes in methodology.<sup>c</sup>1981–90 data for West Germany.<sup>d</sup>Conversions of foreign currencies to U.S. dollars calculated with each country's GDP implicit price deflator and with OECD purchasing power parity exchange rates.

SOURCES: National Science Foundation, Division of Science Resources Statistics, National Patterns of R&amp;D Resources (annual series); and OECD, Main Science and Technology Indicators (2006).

Appendix table 4-36

**International nondefense R&D expenditures and nondefense R&D as percentage of gross domestic product, by selected country: 1981–2006**

Year	U.S. <sup>a</sup>	Japan <sup>b</sup>	Germany <sup>c</sup>	France	UK	Italy	Canada
	2000 constant US\$billions <sup>d</sup>						
1981.....	92	39	28	16	17	8	6
1982.....	95	42	29	17	NA	9	7
1983.....	100	45	30	17	16	9	7
1984.....	108	48	31	19	NA	10	7
1985.....	115	58	33	19	18	11	8
1986.....	116	59	34	20	19	12	8
1987.....	118	63	36	20	20	13	8
1988.....	123	68	38	21	21	14	8
1989.....	131	74	39	23	19	15	9
1990.....	140	80	39	24	20	16	10
1991.....	148	82	42	25	20	15	10
1992.....	150	80	42	26	20	15	10
1993.....	148	78	40	26	21	14	11
1994.....	150	78	39	26	21	13	12
1995.....	162	89	40	27	21	13	12
1996.....	173	88	41	28	21	13	12
1997.....	185	91	42	28	21	14	12
1998.....	198	94	44	29	21	15	14
1999.....	214	94	48	30	23	15	15
2000.....	232	98	51	31	24	15	16
2001.....	233	101	51	32	25	16	18
2002.....	225	102	52	33	26	NA	18
2003.....	227	104	53	31	25	NA	18
2004.....	228	106	53	32	26	NA	19
2005.....	238	NA	54	NA	NA	NA	19
2006.....	245	NA	NA	NA	NA	NA	20
	GDP (%)						
1981.....	1.7	2.1	2.3	1.5	1.9	0.8	1.2
1982.....	1.8	2.2	2.3	1.6	NA	0.9	1.3
1983.....	1.8	2.3	2.3	1.6	1.7	0.9	1.3
1984.....	1.9	2.4	2.3	1.7	NA	0.9	1.3
1985.....	1.9	2.6	2.5	1.8	1.8	1.0	1.4
1986.....	1.8	2.5	2.5	1.8	1.8	1.1	1.4
1987.....	1.8	2.6	2.6	1.8	1.8	1.2	1.3
1988.....	1.8	2.6	2.6	1.8	1.8	1.2	1.3
1989.....	1.9	2.7	2.6	1.8	1.7	1.2	1.4
1990.....	2.0	2.8	2.5	1.9	1.7	1.2	1.5
1991.....	2.1	2.8	2.4	1.9	1.7	1.2	1.5
1992.....	2.0	2.7	2.3	1.9	1.7	1.1	1.6
1993.....	2.0	2.6	2.2	2.0	1.7	1.1	1.6
1994.....	1.9	2.6	2.1	2.0	1.7	1.0	1.7
1995.....	2.0	2.9	2.1	2.0	1.7	1.0	1.7
1996.....	2.1	2.8	2.1	2.0	1.6	1.0	1.6
1997.....	2.1	2.9	2.2	2.0	1.5	1.0	1.6
1998.....	2.2	3.0	2.2	2.0	1.5	1.1	1.7
1999.....	2.3	3.0	2.3	2.0	1.6	1.0	1.8
2000.....	2.4	3.0	2.4	2.0	1.6	1.0	1.9
2001.....	2.4	3.1	2.4	2.0	1.6	1.1	2.1
2002.....	2.2	3.2	2.5	2.1	1.6	NA	2.0
2003.....	2.2	3.2	2.5	1.9	1.6	NA	2.0
2004.....	2.1	3.1	2.5	1.9	1.6	NA	2.0
2005.....	2.1	NA	2.5	NA	NA	NA	2.0
2006.....	2.1	NA	NA	NA	NA	NA	1.9

NA = not available; GDP = gross domestic product; UK = United Kingdom

<sup>a</sup>Data for United States do not include capital expenditures for R&D, business sector social sciences R&D, or humanities R&D.

<sup>b</sup>Data for 1996 on may not be consistent with earlier data because of changes in methodology.

<sup>c</sup>1981–90 data for West Germany.

<sup>d</sup>Estimated nondefense R&D data. Nondefense R&D/GDP obtained directly from Organisation for Economic Co-operation and Development (OECD) reports, or for following countries and years, estimated by National Science Foundation (NSF) from OECD data: United States, all years; Japan, 1995 on; Germany, 1990 and earlier; UK, 1981–84 and 1986–88; Italy, 1986 and earlier; and Canada, 1990 on. Conversions of foreign currency to U.S. dollars calculated with OECD purchasing power parity exchange rates.

NOTE: Nondefense R&D/GDP for Russian Federation was 1.2 in 1990, 0.6 in 1995, 0.8 in 2000, and 0.9 in 2002.

SOURCES: National Science Foundation, Division of Science Resources Statistics, National Patterns of R&D Resources (annual series); and OECD, Main Science and Technology Indicators (2006).

Appendix table 4-37

**International R&D expenditures for selected countries, by funding and performing sectors: Selected years, 2004–06**

Country/R&D performer	Source of R&D funds						Performers (% distribution)
	All sources	Industry	Government	Higher education	Private nonprofit	Abroad	
Japan (2004) (billions yen).....	15,782,743	11,807,293	2,852,667	962,235	109,716	50,833	100.0
Industry.....	11,867,276	11,658,708	148,798	1,249	9,667	48,854	75.2
Government.....	1,497,546	12,853	1,481,095	1,203	2,333	64	9.5
Higher education.....	2,119,125	58,639	1,081,542	959,343	19,128	473	13.4
Private nonprofit.....	298,796	77,093	141,232	440	78,588	1,442	1.9
Percent distribution, sources.....	100.0	74.8	18.1	6.1	0.7	0.3	na
Germany (2004) (millions euros).....	55,215	36,866	16,771	0	215	1,363	100.0
Industry.....	38,611	35,449	2,251	NA	23	888	69.9
Government.....	7,514	219	6,917	NA	192	186	13.6
Higher education.....	9,089	1,198	7,603	NA	NA	289	16.5
Private nonprofit.....	NA	NA	NA	NA	NA	NA	NA
Percent distribution, sources.....	100.0	66.8	30.4	0.0	0.4	2.5	na
France (2004) (millions euros).....	35,534	18,383	13,348	349	316	3,139	100.0
Industry.....	22,210	17,736	2,067	2	8	2,396	62.5
Government.....	6,059	388	5,111	21	18	521	17.1
Higher education.....	6,806	185	6,097	310	33	182	19.2
Private nonprofit.....	458	74	72	16	257	40	1.3
Percent distribution, sources.....	100.0	51.7	37.6	1.0	0.9	8.8	na
Italy (2004) (millions euros).....	15,253	NA	NA	NA	NA	NA	100.0
Industry.....	7,293	5,473	1,005	3	6	806	47.8
Government.....	2,722	78	2,402	4	81	157	17.8
Higher education.....	5,005	NA	NA	NA	NA	NA	32.8
Private nonprofit.....	233	23	80	1	113	16	1.5
Percent distribution, sources.....	NA	NA	NA	NA	NA	NA	na
United Kingdom (2004) (millions pounds).....	20,331	8,991	6,659	215	960	3,507	100.0
Industry.....	12,816	8,484	1,334	NA	5	2,993	63.0
Government.....	2,089	195	1,726	11	89	69	10.3
Higher education.....	4,759	243	3,169	198	761	388	23.4
Private nonprofit.....	667	69	430	6	105	57	3.3
Percent distribution, sources.....	100.0	44.2	32.8	1.1	4.7	17.2	na
Canada (2006) (millions Canadian dollars).....	28,357	13,245	9,568	2,251	877	2,416	100.0
Industry.....	14,850	12,239	325	NA	NA	2,286	52.4
Government.....	2,490	92	2,398	NA	NA	0	8.8
Higher education.....	10,890	899	6,780	2,253	842	116	38.4
Private nonprofit.....	127	15	63	0	35	14	0.4
Percent distribution, sources.....	100.0	46.7	33.7	7.9	3.1	8.5	na
Russian Federation (2005) (billions rubles).....	230,785	69,245	142,961	983	68	17,528	100.0
Industry.....	156,880	58,461	84,033	47	15	14,325	68.0
Government.....	60,158	6,846	50,590	47	22	2,654	26.1
Higher education.....	13,338	3,911	7,982	889	21	535	5.8
Private nonprofit.....	409	28	356	1	11	14	0.2
Percent distribution, sources.....	100.0	30.0	61.9	0.4	0.0	7.6	na
South Korea (2005) (billions won).....	24,155,414	18,106,814	5,561,734	218,794	96,638	171,433	100.0
Industry.....	18,564,243	17,532,346	861,770	3,559	6,766	159,802	76.9
Government.....	2,865,008	122,762	2,720,917	11,273	7,574	2,482	11.9
Higher education.....	2,398,284	364,406	1,787,765	198,947	41,991	5,175	9.9
Private nonprofit.....	327,879	87,300	191,282	5,015	40,307	3,974	1.4
Percent distribution, sources.....	100.0	75.0	23.0	0.9	0.4	0.7	na
United States (2006) (US\$millions).....	340,429	223,371	97,274	9,297	10,488	NA	100.0
Industry.....	242,129	219,569	22,560	NA	NA	NA	71.1
Government.....	37,388	0	37,388	NA	NA	NA	11.0
Higher education.....	46,642	2,452	31,605	9,297	3,288	NA	13.7
Private nonprofit.....	14,271	1,350	5,721	NA	7,200	NA	4.2
Percent distribution, sources.....	100.0	65.6	28.6	2.7	3.1	NA	na

na = not applicable; NA = not available

NOTE: Data for United States do not include capital expenditures for R&amp;D, business sector social sciences R&amp;D, or humanities R&amp;D.

SOURCES: National Science Foundation, Division of Science Resources Statistics, National Patterns of R&amp;D Resources (annual series); and Organisation for Economic Co-operation and Development, special tabulations (2007).

Appendix table 4-38

**Proportion of industry R&D expenditures financed by foreign sources, by selected country/region: 1981–2005**

(Percent)

Year	Canada	France	Germany <sup>a</sup>	Italy	UK	Japan	Russian Federation	EU-15
1981.....	7.4	7.1	1.2	4.3	8.7	0.1	NA	4.5
1982.....	10.7	4.8	1.3	4.7	NA	0.1	NA	NA
1983.....	16.6	4.6	1.4	4.3	6.8	0.1	NA	3.7
1984.....	17.1	6.5	1.5	6.2	NA	0.1	NA	NA
1985.....	14.3	6.9	1.4	6.1	11.1	0.1	NA	5.0
1986.....	13.6	8.0	1.4	7.3	12.2	0.1	NA	5.5
1987.....	16.8	8.7	1.5	6.9	12.0	0.1	NA	5.5
1988.....	18.0	9.2	2.1	6.6	12.0	0.1	NA	5.7
1989.....	17.1	10.9	2.7	6.5	13.4	0.1	NA	6.8
1990.....	17.9	11.1	2.7	7.3	15.5	0.1	NA	7.4
1991.....	18.5	11.4	2.6	9.6	16.0	0.1	NA	7.5
1992.....	17.8	12.0	2.5	6.3	14.9	0.1	NA	7.4
1993.....	17.7	11.3	1.9	6.9	15.4	0.1	NA	7.6
1994.....	19.4	11.2	2.0	9.5	16.0	0.1	1.9	8.2
1995.....	19.5	11.1	2.2	8.2	19.1	0.1	5.1	8.8
1996.....	20.8	11.4	2.3	9.6	21.7	0.1	6.1	9.2
1997.....	20.0	10.6	2.8	9.0	18.8	0.4	8.5	9.1
1998.....	25.8	9.4	2.7	8.1	22.1	0.4	11.1	9.2
1999.....	25.4	8.8	2.1	8.1	22.7	0.5	19.8	9.0
2000.....	28.5	9.0	2.1	8.2	21.5	0.6	13.6	8.8
2001.....	19.8	8.7	2.4	6.6	27.0	0.5	9.2	9.7
2002.....	13.5	10.2	2.4	10.3	29.7	0.5	8.4	11.1
2003.....	14.9	10.4	2.3	9.6	28.1	0.4	10.0	10.7
2004.....	15.4	10.8	2.3	11.1	23.4	0.4	8.9	10.1
2005.....	15.4	NA	NA	NA	NA	NA	9.1	NA

NA = not available

EU = European Union; UK = United Kingdom

<sup>a</sup>1981–90 data for West Germany.

SOURCE: Organisation for Economic Co-operation and Development, Main Science and Technology Indicators (2006).

Appendix table 4-39

**Source of all R&D and industry R&D expenditures for OECD countries: 1981–2004**

(Percent)

Year	All R&D			Industry R&D	
	Government	Industry	Other	Government	Other
1981.....	44.0	51.8	4.2	21.1	78.9
1982.....	43.5	52.4	4.1	21.3	78.7
1983.....	43.0	52.9	4.1	21.1	78.9
1984.....	42.2	53.6	4.2	20.8	79.2
1985.....	41.4	54.3	4.3	20.9	79.1
1986.....	41.0	54.6	4.5	20.7	79.3
1987.....	40.9	54.4	4.7	20.7	79.3
1988.....	39.4	55.8	4.9	19.0	81.0
1989.....	37.8	57.1	5.2	16.8	83.2
1990.....	36.8	57.8	5.4	15.7	84.3
1991.....	35.6	58.8	5.6	13.9	86.1
1992.....	35.0	59.2	5.8	12.6	87.4
1993.....	35.2	58.6	6.2	12.0	88.0
1994.....	34.5	58.9	6.6	11.2	88.8
1995.....	34.0	59.4	6.6	11.0	89.0
1996.....	32.4	60.8	6.8	10.2	89.8
1997.....	31.2	61.9	7.0	9.6	90.4
1998.....	30.6	62.2	7.2	9.2	90.8
1999.....	29.6	63.1	7.3	8.4	91.6
2000.....	28.3	64.4	7.3	7.0	93.0
2001.....	28.7	63.8	7.5	6.8	93.2
2002.....	29.7	62.5	7.8	6.5	93.5
2003.....	30.4	61.9	7.7	7.4	92.6
2004.....	30.3	62.2	7.6	7.6	92.5

OECD = Organisation for Economic Co-operation and Development

SOURCE: OECD, Main Science and Technology Indicators (2006).

Appendix table 4-40

**Academic R&D financed by industry, by selected OECD countries: 1981–2006**

(Percent)

Year	Canada	France	Germany	Japan	South Korea	Spain	UK	U.S.	All OECD	China	Russia
1981.....	4.1	1.3	1.8	1.0	NA	NA	2.8	4.4	2.9	NA	NA
1982.....	3.3	1.3	3.5	1.1	NA	NA	NA	4.8	3.2	NA	NA
1983.....	3.9	1.3	5.2	1.2	NA	NA	3.1	5.2	3.5	NA	NA
1984.....	3.9	1.5	5.3	1.5	NA	1.2	NA	5.7	3.9	NA	NA
1985.....	4.3	1.9	5.4	1.6	NA	1.1	5.2	6.1	4.2	NA	NA
1986.....	4.1	2.0	5.8	1.7	NA	1.5	5.7	6.5	4.5	NA	NA
1987.....	5.0	3.6	6.4	1.8	NA	2.7	5.7	6.5	4.8	NA	NA
1988.....	5.1	4.0	6.8	2.2	NA	8.1	7.3	6.6	5.4	NA	NA
1989.....	4.9	4.6	7.1	2.2	NA	9.2	7.7	6.8	5.7	NA	NA
1990.....	5.0	4.9	7.9	2.3	NA	8.9	7.6	6.9	5.8	NA	NA
1991.....	7.0	4.2	7.0	2.4	NA	10.0	7.8	6.8	6.0	NA	NA
1992.....	8.3	3.7	7.6	2.5	NA	7.4	7.8	6.8	6.1	NA	NA
1993.....	8.6	3.3	8.4	2.4	NA	5.9	7.6	6.8	6.1	NA	NA
1994.....	8.1	3.2	8.3	2.3	NA	5.9	6.0	6.7	6.0	NA	27.0
1995.....	8.1	3.3	8.2	2.4	22.4	8.3	6.3	6.8	6.2	NA	27.5
1996.....	9.1	3.2	9.2	2.4	50.5	7.5	6.7	7.1	6.9	NA	23.7
1997.....	9.8	3.1	9.7	2.4	14.9	6.5	7.1	7.3	6.4	NA	22.8
1998.....	9.4	3.4	10.5	2.3	13.1	7.0	7.3	7.5	6.4	NA	24.7
1999.....	9.1	3.4	11.3	2.3	10.8	7.7	7.3	7.4	6.5	NA	23.8
2000.....	9.6	2.7	11.6	2.5	15.9	6.9	7.1	7.1	6.6	32.4	27.3
2001.....	9.4	3.1	12.2	2.3	14.3	8.7	6.2	6.5	6.4	NA	26.5
2002.....	8.6	2.9	11.8	2.8	13.9	7.6	5.8	5.8	6.2	NA	27.2
2003.....	8.3	2.7	12.6	2.9	13.6	6.4	5.6	5.3	6.0	35.9	27.9
2004.....	8.2	2.7	13.2	2.8	15.9	7.5	5.1	5.1	6.2	37.1	32.6
2005.....	8.3	NA	NA	NA	15.2	NA	NA	5.2	NA	36.7	29.3
2006.....	8.3	NA	NA	NA	NA	NA	NA	5.3	NA	NA	NA

NA = not available

OECD = Organisation for Economic Co-operation and Development; UK = United Kingdom

SOURCES: National Science Foundation, Division of Science Resources Statistics, National Patterns of R&amp;D Resources (annual series); and OECD, Main Science and Technology Indicators (2006).

Appendix table 4-41

**Government R&D budget appropriations, by selected country and socioeconomic objective: 2005 or 2006**

(Percent)

Socioeconomic objective	U.S. (2006)	Japan (2005)	France (2005)	Germany (2005)	UK (2005)	Italy (2006)	South Korea (2005)	Canada (2006)
All objectives (2000 US\$millions) .....	117,942	24,740	15,809	16,661	12,284	9,162	8,000	5,781
Exploration and exploitation of Earth .....	0.8	1.8	0.9	1.8	2.3	2.1	1.2	1.9
Infrastructure and general planning of land use .....	1.3	4.4	0.6	1.8	1.1	0.9	4.5	2.7
Control and care of environment .....	0.5	0.8	2.7	3.4	1.8	2.5	4.5	4.2
Protection and improvement of human health .....	21.8	3.9	6.1	4.3	14.7	10.0	7.8	15.0
Energy .....	0.9	16.8	4.5	2.8	0.4	4.1	6.4	4.8
Agriculture production and technology .....	2.0	3.3	2.3	1.8	3.3	3.8	8.0	6.7
Industrial production and technology .....	0.3	7.3	6.2	12.6	1.7	10.2	26.9	11.4
Social structures and relationships .....	1.3	0.7	0.4	3.9	3.5	5.0	3.8	3.2
Exploration and exploitation of space .....	7.6	6.7	9.0	4.9	2.0	9.5	3.0	4.2
General university funds .....	NA	33.9	24.8	40.6	21.7	44.2	NA	32.6
Nonoriented research .....	5.5	16.3	17.8	16.3	16.0	6.3	20.7	8.0
Other civil research .....	0.0	0.0	2.3	0.7	0.5	0.0	0.0	1.6
Defense .....	57.9	4.0	22.3	5.8	31.0	1.4	13.3	3.6

NA = not available

UK = United Kingdom

NOTES: United States, Russian Federation, and South Korea do not have category equivalent to general university funds (GUF). Conversions of foreign currency to U.S. dollars calculated with Organisation for Economic Co-operation and Development (OECD) purchasing power parity exchange rates. U.S. data based on budget authority. Because of GUF and slight differences in accounting practices, distribution of government budgets among socioeconomic objectives may not completely reflect actual distribution of government-funded research in particular objectives. Japanese data based on science and technology budget data, which include items other than R&D. Such items are small proportion of budget; therefore, data may still be used as approximate indicator of relative government emphasis on R&D by objective. Detail may not add to total because of rounding.

SOURCES: OECD, special tabulations (2007); and Main Science and Technology Indicators (2006).

Science and Engineering Indicators 2008

**Share of business expenditures for R&D, by industry and selected country/economy: 2003 or 2004**

(Percent)

Industry	ISIC	Czech Republic						
		EU (2003)	Australia (2003)	Belgium (2004)	Canada (2004)	(2004)	Denmark (2004)	Finland (2004)
All business enterprise.....	na	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing .....	15–37	82.8	45.6	78.4	58.3	61.3	65.5	83.1
Food products, beverages, and tobacco .....	15–16	1.9	3.6	2.9	0.8	0.7	5.2	1.4
Textiles, textile products, leather, and footwear .....	17–19	0.5	0.5	1.1	0.7	0.9	0.1	0.3
Wood, paper, printing, and publishing .....	20–22	0.7	2.1	0.5	3.6	0.1	1.8	3.1
Chemical, rubber, plastics, and fuel products .....	23–25	22.5	8.1	39.7	11.3	8.5	30.6	9.1
Coke, refined petroleum products, and nuclear fuel .....	23	0.7	0.9	1.6	0.9	0.1	0.0	0.3
Chemicals and chemical products .....	24	20.0	6.4	35.7	9.8	7.0	29.2	7.3
Chemicals excluding pharmaceuticals.....	24 (minus 2423)	6.5	2.7	13.1	1.4	2.7	4.8	4.9
Pharmaceuticals .....	2,423	13.4	3.7	22.5	8.3	4.4	24.4	2.4
Rubber and plastics products .....	25	1.8	0.8	2.4	0.6	1.5	1.4	1.5
Other nonmetallic mineral products .....	26	0.7	1.3	1.2	0.1	2.1	0.4	0.4
Basic metals.....	27	0.9	3.6	2.9	2.0	1.2	0.2	1.0
Fabricated metal products (excluding machinery and equipment) .....	28	1.1	1.2	2.9	1.7	1.7	0.4	2.3
Machinery and equipment, instruments, and transportation equipment.....	29–35	53.9	24.8	26.6	37.2	45.2	26.2	64.5
Machinery and equipment nec .....	29	7.8	3.4	5.0	2.5	6.9	8.9	6.2
Office, accounting, and computing machinery .....	30	2.0	0.7	0.4	2.9	0.2	0.8	0.1
Electrical machinery and apparatus nec .....	31	3.1	1.1	3.1	1.5	3.5	3.5	4.4
Radio, TV, and communication equipment.....	32	11.0	3.1	11.5	17.4	3.4	3.6	49.5
Instruments, watches, and clocks.....	33	5.4	4.6	2.3	2.0	1.6	9.2	2.8
Motor vehicles.....	34	16.9	10.0	2.2	3.8	26.2	0.1	0.2
Other transportation equipment.....	35	7.6	2.0	2.2	7.0	3.5	0.1	1.3
Building and repairing ships and boats .....	351	0.3	1.2	0.0	NA	0.0	NA	0.4
Aircraft and spacecraft.....	353	6.8	0.1	2.1	6.8	2.0	NA	0.4
Railroad and other transportation equipment nec .....	352+359	0.5	0.7	0.1	0.2	1.6	NA	0.5
Furniture, manufacturing nec.....	36	0.6	0.3	0.5	0.7	0.5	0.4	0.7
Recycling.....	37	NA	0.1	0.1	NA	0.2	NA	0.2
Electricity, gas, and water .....	40–41	0.7	1.0	0.7	0.9	0.1	0.1	0.6
Construction .....	45	0.4	1.8	1.6	0.3	1.2	0.4	1.2
Services .....	50–99	15.0	41.1	17.8	37.9	36.9	33.3	14.5
Wholesale and retail trade, repairs.....	50–52	0.8	4.4	0.8	4.8	2.2	0.9	0.2
Hotels and restaurants .....	55	NA	0.2	0.2	NA	0.0	NA	NA
Transport and storage.....	60–63	NA	0.5	1.1	0.3	0.3	NA	0.3
Post and telecommunications .....	64	NA	3.4	2.3	3.4	0.1	3.6	6.1
Post and courier activities .....	641	NA	0.3	0.0	NA	0.1	NA	NA
Telecommunications .....	642	NA	3.1	2.3	NA	0.1	2.5	NA
Financial intermediation .....	65–67	NA	8.6	0.7	2.1	1.1	7.7	NA
Real estate, renting, and business activities.....	70–74	NA	23.2	12.3	27.3	30.9	21.0	NA
Computer and related activities .....	72	5.6	10.1	7.1	9.3	8.6	14.0	6.2
Software consultancy and supply .....	722	NA	9.8	5.1	NA	6.5	12.9	NA
Other computer and related activities nec .....	72 (minus 722)	NA	0.3	2.0	NA	2.1	1.2	NA
R&D .....	73	NA	6.4	0.1	14.1	18.9	0.0	NA
Other business activities .....	74	2.2	6.3	5.0	3.9	3.4	7.0	1.0
Community, social, and personal services.....	75–99	NA	0.7	0.5	NA	2.3	0.1	0.7



**Share of business expenditures for R&D, by industry and selected country/economy: 2003 or 2004**

(Percent)

Industry	ISIC	France (2003)	Germany (2004)	Ireland (2004)	Italy (2004)	Japan (2003)	South Korea (2004)	Netherlands (2004)
All business enterprise.....	na	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing .....	15–37	86.3	91.2	60.9	74.8	88.9	88.0	77.4
Food products, beverages, and tobacco .....	15–16	2.1	0.7	3.5	1.9	2.8	1.2	4.5
Textiles, textile products, leather, and footwear .....	17–19	0.6	0.4	0.5	1.4	0.3	0.5	0.4
Wood, paper, printing, and publishing .....	20–22	0.4	0.5	0.9	0.3	1.1	0.2	1.0
Chemical, rubber, plastics, and fuel products .....	23–25	24.5	18.3	20.8	15.8	17.9	8.9	25.7
Coke, refined petroleum products, and nuclear fuel .....	23	0.9	0.1	0.0	0.1	0.4	0.8	0.1
Chemicals and chemical products .....	24	20.1	16.4	19.1	13.2	15.1	6.8	24.9
Chemicals excluding pharmaceuticals .....	24 (minus 2423)	6.3	8.0	1.8	5.2	7.6	5.0	14.8
Pharmaceuticals .....	2423	13.8	8.4	17.4	8.0	7.5	1.8	10.0
Rubber and plastics products .....	25	3.6	1.8	1.8	2.5	2.5	1.3	0.8
Other nonmetallic mineral products .....	26	1.0	0.9	0.9	0.8	1.0	0.7	0.6
Basic metals .....	27	1.1	0.8	0.1	0.5	2.2	2.0	1.0
Fabricated metal products (excluding machinery and equipment) .....	28	0.9	1.5	0.7	0.9	0.7	0.5	0.7
Machinery and equipment, instruments, and transportation equipment .....	29–35	54.8	67.8	32.6	52.4	62.0	73.7	43.2
Machinery and equipment nec .....	29	4.8	10.0	3.3	11.2	7.7	4.8	10.0
Office, accounting, and computing machinery .....	30	1.0	1.4	4.4	0.6	12.7	1.0	23.8
Electrical machinery and apparatus nec .....	31	3.7	2.8	8.2	2.2	8.4	1.4	1.4
Radio, TV, and communication equipment .....	32	12.8	9.2	6.1	9.8	13.1	47.4	1.8
Instruments, watches, and clocks .....	33	6.6	7.0	10.2	7.1	4.3	1.6	2.6
Motor vehicles .....	34	14.7	32.2	0.3	11.1	15.1	14.7	2.2
Other transportation equipment .....	35	11.1	5.1	0.2	10.4	0.7	2.9	1.4
Building and repairing ships and boats .....	351	0.2	0.1	0.0	0.2	0.1	1.5	0.1
Aircraft and spacecraft .....	353	10.5	4.5	0.2	9.3	0.5	1.2	1.2
Railroad and other transportation equipment nec .....	352+359	0.4	0.4	0.0	0.9	0.2	0.3	0.1
Furniture, manufacturing nec .....	36	0.9	0.2	0.9	0.7	0.8	0.2	0.2
Recycling .....	37	0.0	0.0	NA	0.0	NA	0.0	0.0
Electricity, gas, and water .....	40–41	1.8	0.2	NA	0.3	0.7	1.1	0.5
Construction .....	45	0.4	0.1	NA	0.1	1.2	4.0	1.3
Services .....	50–99	9.4	8.3	38.7	24.4	9.1	6.9	18.3
Wholesale and retail trade, repairs .....	50–52	0.0	NA	0.3	3.0	0.7	0.1	4.5
Hotels and restaurants .....	55	0.0	NA	0.0	0.0	NA	0.0	NA
Transport and storage .....	60–63	NA	1.1	0.0	0.3	0.2	0.0	0.6
Post and telecommunications .....	64	3.9	NA	1.3	2.2	NA	1.4	0.2
Post and courier activities .....	641	NA	NA	0.0	0.0	NA	0.0	NA
Telecommunications .....	642	3.8	NA	1.3	2.2	NA	1.4	0.2
Financial intermediation .....	65–67	NA	NA	0.0	2.5	0.0	0.0	2.8
Real estate, renting, and business activities .....	70–74	5.5	6.7	37.0	16.3	8.2	5.1	10.1
Computer and related activities .....	72	4.2	NA	35.2	3.5	2.1	3.6	3.3
Software consultancy and supply .....	722	3.8	NA	33.9	3.2	NA	3.1	3.0
Other computer and related activities nec .....	72 (minus 722)	0.4	NA	1.3	0.4	NA	0.5	0.3
R&D .....	73	NA	NA	0.9	8.2	5.8	0.3	3.3
Other business activities .....	74	1.3	NA	0.9	4.5	0.2	1.3	3.5
Community, social, and personal services .....	75–99	NA	NA	0.2	0.1	NA	0.2	0.2

**Share of business expenditures for R&D, by industry and selected country/economy: 2003 or 2004**

(Percent)

Industry	ISIC	Norway (2004)	Poland (2004)	Spain (2004)	Sweden (2003)	United Kingdom (2004)	United States (2004)
All business enterprise.....	na	100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing .....	15–37	49.4	63.6	68.7	87.9	76.7	71.5
Food products, beverages, and tobacco.....	15–16	5.1	1.6	3.5	0.6	1.9	1.3
Textiles, textile products, leather, and footwear.....	17–19	0.6	1.1	1.8	0.1	0.2	0.3
Wood, paper, printing, and publishing .....	20–22	3.1	2.1	1.2	2.1	0.3	1.2
Chemical, rubber, plastics, and fuel products.....	23–25	9.1	17.3	19.6	21.8	30.6	20.4
Coke, refined petroleum products, and nuclear fuel.....	23	0.0	1.8	0.9	0.2	1.8	0.8
Chemicals and chemical products.....	24	8.6	13.4	16.8	21.1	28.2	18.8
Chemicals excluding pharmaceuticals.....	24 (minus 2423)	4.9	4.0	4.7	1.6	4.2	3.6
Pharmaceuticals .....	2423	3.6	9.3	12.1	19.5	24.0	15.1
Rubber and plastics products.....	25	0.5	2.1	1.8	0.4	0.5	0.9
Other nonmetallic mineral products.....	26	0.5	1.0	1.5	0.3	0.5	0.4
Basic metals.....	27	2.7	1.1	1.8	1.7	0.3	0.3
Fabricated metal products (excluding machinery and equipment).....	28	1.4	0.6	2.1	0.6	0.6	0.7
Machinery and equipment, instruments, and transportation equipment.....	29–35	25.9	37.5	36.0	60.4	42.1	41.8
Machinery and equipment nec .....	29	7.3	10.3	6.6	7.0	7.7	3.2
Office, accounting, and computing machinery .....	30	0.1	0.4	1.1	1.0	0.4	2.8
Electrical machinery and apparatus nec .....	31	2.0	6.1	4.6	2.1	3.1	1.3
Radio, TV, and communication equipment.....	32	6.2	2.6	2.8	22.1	6.0	13.0
Instruments, watches, and clocks.....	33	5.4	2.6	2.1	5.5	2.7	7.3
Motor vehicles.....	34	1.6	8.8	10.0	18.9	6.5	7.5
Other transportation equipment.....	35	3.2	6.6	8.9	3.8	15.7	6.9
Building and repairing ships and boats.....	351	2.8	0.9	1.3	0.1	0.7	NA
Aircraft and spacecraft.....	353	0.2	4.4	6.6	3.2	14.8	6.3
Railroad and other transportation equipment nec .....	352+359	0.1	1.3	1.0	0.4	0.2	NA
Furniture, manufacturing nec.....	36	1.0	1.0	0.9	0.3	0.3	0.2
Recycling.....	37	0.1	0.1	0.2	NA	0.0	NA
Electricity, gas, and water .....	40–41	1.6	1.1	1.2	0.7	0.3	0.1
Construction .....	45	1.7	3.4	2.1	0.2	0.3	0.7
Services .....	50–99	35.2	24.7	25.6	10.4	21.1	28.5
Wholesale and retail trade, repairs.....	50–52	4.1	2.6	2.3	0.0	0.9	14.9
Hotels and restaurants .....	55	0.0	0.0	0.4	0.0	NA	NA
Transport and storage.....	60–63	1.0	3.3	0.9	0.1	0.1	0.2
Post and telecommunications.....	64	3.6	3.2	5.6	1.5	4.6	NA
Post and courier activities .....	641	0.0	0.0	0.0	NA	NA	NA
Telecommunications .....	642	3.6	3.2	5.6	NA	NA	1.0
Financial intermediation .....	65–67	3.4	1.5	1.4	1.3	NA	0.8
Real estate, renting, and business activities.....	70–74	23.1	5.2	13.0	6.5	15.3	NA
Computer and related activities.....	72	12.2	2.8	6.6	2.6	8.2	13.5
Software consultancy and supply .....	722	9.2	2.8	5.6	1.6	NA	7.9
Other computer and related activities nec .....	72 (minus 722)	3.0	0.0	0.9	1.0	NA	5.6
R&D .....	73	3.7	1.6	0.2	3.7	4.6	5.5
Other business activities .....	74	7.2	0.8	6.2	0.3	2.4	2.8
Community, social, and personal services.....	75–99	0.0	9.0	2.0	0.9	0.3	NA

na = not applicable; NA = not available

EU = European Union; ISIC = International Standard Industrial Classification; nec = not elsewhere classified; UK = United Kingdom

NOTES: Because Organisation for Economic Co-operation and Development (OECD) and National Science Foundation (NSF) adjust country data to achieve internationally comparable estimates, data may differ from individual countries' survey estimates. Detail may not add to total because of rounding.

SOURCES: OECD, ANBERD database, [http://www1.oecd.org/dsti/sti/stat-ana/stats/eas\\_anb.htm](http://www1.oecd.org/dsti/sti/stat-ana/stats/eas_anb.htm), accessed 1 March 2007; and NSF, special tabulations.

Appendix table 4-43

**R&D expenditures by majority-owned affiliates of foreign companies in United States, by country/region of ultimate beneficial owner: 1980 and 1987–2004**

(Millions of current U.S. dollars)

R&D expenditure	1980	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
All countries.....	1,517	4,497	5,485	6,720	8,511	9,127	10,745	11,262	12,671	14,846	15,641	17,216	22,375	24,027	26,180	26,463	27,507	29,803	29,900
Canada.....	113	D	D	D	D	D	D	D	D	1,337	1,452	1,668	2,352	2,385	3,693	2,136	1,599	1,380	1,458
Europe.....	1,217	3,458	4,241	5,414	6,762	7,275	8,325	8,628	9,487	11,442	11,535	12,327	16,425	18,055	18,634	19,973	20,532	22,518	22,648
France.....	39	332	402	510	766	913	1,230	1,190	1,383	1,529	1,680	1,783	1,881	2,434	2,596	2,662	2,860	3,777	3,738
Germany.....	281	824	963	1,216	1,435	1,596	1,855	2,003	2,147	3,563	2,747	2,923	5,381	6,135	5,603	5,686	5,863	5,976	5,929
Italy.....	D	D	73	93	151	143	91	132	157	172	D	D	D	294	D	D	261	225	221
Netherlands.....	D	540	615	690	757	642	685	674	719	786	937	990	964	1,296	1,421	1,660	1,696	1,612	1,316
Sweden.....	D	124	160	205	271	225	322	180	263	D	D	687	713	428	373	465	270	261	271
Switzerland.....	329	D	D	1,060	1,455	1,637	1,873	2,117	2,127	2,490	2,699	2,369	3,076	3,008	2,922	3,107	2,920	3,791	4,004
United Kingdom.....	247	790	1,085	1,568	1,809	1,987	2,090	2,139	2,428	2,316	2,575	2,984	3,720	3,678	4,632	4,819	5,427	5,723	5,924
Asia/Pacific.....	D	179	345	412	796	834	1,080	1,232	1,397	1,611	2,116	2,642	2,961	2,820	2,864	2,946	3,413	3,763	3,725
Japan.....	D	133	282	369	709	741	938	1,112	1,200	1,259	1,531	2,036	2,584	2,535	2,644	2,719	3,159	3,470	3,413
Latin America/OWH.....	155	329	302	352	314	330	534	D	610	317	364	373	396	564	735	1,126	1,066	D	D
Middle East.....	2	14	9	10	9	9	20	38	62	72	100	103	132	D	D	177	175	D	D
Africa.....	D	D	D	D	D	D	4	5	2	D	D	D	D	D	D	36	33	31	36

D = suppressed to avoid disclosure of confidential information

OWH = other Western Hemisphere

NOTES: Preliminary estimates for 2004. Data for majority-owned (>50%) nonbank U.S. affiliates of foreign parent companies. Data for 1980 and 1987–96 for R&D funded by affiliates; 1997 to latest data for R&D performed by affiliates. Manufacturing data exclude petroleum manufacturing before 1997. Total R&D funded based on R&D spending according to funding source. Total R&D performed refers to R&D expenditures according to who conducts R&D activity, whether for performer or for others under contract, and excludes R&D expenditures conducted by others under contract. Ultimate beneficial owner is person proceeding up U.S. affiliate's ownership chain beginning with and including foreign parent not owned >50% by another person.

SOURCE: Bureau of Economic Analysis, Survey of Foreign Direct Investment in the United States (annual series), <http://www.bea.gov/bea/di/di1fdiop.htm>, accessed 20 April 2007.

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**R&D performed by majority-owned affiliates of foreign companies in United States, by NAICS industry of affiliate: 1997–2004**

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1997	1998	1999	2000	2001	2002	2003	2004
All industries.....	na	17,216	22,375	24,027	26,180	26,463	27,507	29,803	29,900
Manufacturing.....	31–33	14,270	18,788	19,991	20,990	20,054	20,128	20,988	20,891
Food.....	311	239	224	205	200	197	368	166	176
Printing and related support activities.....	323	34	42	76	54	43	39	50	D
Petroleum and coal products.....	324	272	479	D	D	D	D	D	D
Chemicals.....	325	6,754	7,770	7,679	7,341	7,563	7,610	9,957	10,045
Basic chemicals.....	3251	617	623	832	D	D	608	589	595
Pharmaceuticals and medicines.....	3254	5,304	6,381	6,191	5,943	6,124	6,373	8,505	8,605
Other chemicals.....	325 (minus 3251, 3254)	833	766	656	NA	NA	629	863	845
Plastics and rubber products.....	326	331	349	372	301	305	275	423	423
Nonmetallic mineral products.....	327	214	146	172	199	206	204	198	201
Primary metals.....	331	60	65	61	67	D	46	28	81
Fabricated metal products.....	332	203	181	149	213	D	208	165	157
Machinery.....	333	721	677	898	1,748	D	1,681	1,572	1,547
Agriculture, construction, and mining machinery.....	3331	103	69	290	237	201	387	361	220
Industrial machinery.....	3332	83	90	D	119	D	192	223	273
Other machinery.....	333 (minus 3331, 3332)	535	518	D	1,392	1,408	1,103	988	1,054
Computer and electronic products.....	334	3,413	4,487	5,031	6,152	4,867	4,985	3,340	3,279
Computers and peripheral equipment.....	3341	120	324	D	D	104	D	145	144
Communications equipment.....	3342	2,243	3,045	3,431	4,607	2,998	2,055	1,403	1,418
Semiconductors and other electronic components.....	3344	586	635	917	1,003	1,077	D	444	369
Navigational, measuring, and other instruments.....	3345	NA	NA	NA	NA	NA	1,734	1,278	1,254
Other electronic products.....	334 (minus 3341, 3342, 3344, 3345)	NA	NA	NA	NA	NA	42	70	94
Electrical equipment, appliances, and components.....	335	781	885	1,195	823	875	380	336	238
Transportation equipment.....	336	641	2,762	3,204	3,344	3,193	3,302	3,669	3,728
Motor vehicles, bodies, and trailers.....	3361, 3362, 3363	500	2,555	D	3,082	2,910	3,041	3,386	3,307
Other transportation equipment.....	336 (minus 3361, 3362, 3363)	141	207	D	262	283	261	283	421
Other manufacturing.....	607	721	NA	NA	NA	NA	708	681	666
Wholesale trade.....	42	D	D	D	D	D	4,855	6,030	6,113
Motor vehicles and motor vehicle parts and supplies.....	4211	NA	NA	NA	NA	NA	337	466	527
Electrical goods.....	4216	NA	NA	NA	NA	NA	1,079	1,554	1,536
Petroleum and petroleum products.....	4227	NA	NA	NA	NA	NA	D	D	D
Information.....	51	260	329	548	790	D	803	852	898
Publishing industries.....	511	D	D	D	D	D	763	632	591
Motion picture and sound recording industries.....	512	5	1	*	*	*	3	1	*
Broadcasting and telecommunications.....	513	7	6	D	D	13	11	9	D
Information services and data processing services.....	514	D	D	D	D	180	26	210	D
Finance and insurance (except depository institutions).....	52	12	D	D	D	D	D	13	10
Professional, scientific, and technical services.....	54	597	685	836	828	804	1,119	1,379	1,442
Architectural, engineering, and related services.....	5413	12	13	36	18	13	86	75	68
Computer systems design and related services.....	5415	281	333	315	314	204	171	278	266
Management, scientific, and technical consulting.....	5416	*	*	0	0	D	3	3	0
Other professional, scientific, and technical services.....	54 (minus 5413, 5415, 5416)	303	339	485	495	D	859	1,023	1,108

na = not applicable; D = suppressed to avoid disclosure of confidential information; \* = ≤\$500,000; NA = not available

NAICS = North American Industry Classification System

NOTES: Preliminary estimates for 2004. Data for majority-owned (&gt;50%) nonbank U.S. affiliates of foreign parent companies. Data exclude expenditures for R&amp;D conducted by others under contract.

SOURCE: Bureau of Economic Analysis, Survey of Foreign Direct Investment in the United States (annual series), <http://www.bea.gov/bea/di/di1fdiop.htm>, accessed 20 April 2007.

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**R&D performed abroad by majority-owned foreign affiliates of U.S. parent companies,  
by country/economy/region: 2002–04**

(Millions of current U.S. dollars)

Country/economy/region	2002	2003	2004
All countries.....	21,063	22,793	27,529
Canada.....	2,274	2,444	2,702
Europe.....	13,453	14,890	18,148
Austria.....	52	34	134
Belgium.....	502	463	628
Czech Republic.....	11	18	20
Denmark.....	D	60	143
Finland.....	72	102	106
France.....	1,690	1,777	1,854
Germany.....	3,598	3,907	4,693
Greece.....	15	16	8
Hungary.....	19	15	25
Ireland.....	D	583	876
Italy.....	548	625	727
Luxembourg.....	D	91	101
Netherlands.....	419	513	533
Norway.....	35	21	33
Poland.....	29	37	38
Portugal.....	29	21	9
Russia.....	2	1	17
Spain.....	209	290	327
Sweden.....	1,317	1,398	1,525
Switzerland.....	392	523	868
Turkey.....	13	17	12
United Kingdom.....	3,856	4,368	5,462
Other.....	9	8	14
Latin America/OWH.....	785	680	882
Argentina.....	24	22	23
Brazil.....	305	316	340
Chile.....	6	9	9
Colombia.....	10	7	4
Costa Rica.....	7	6	5
Mexico.....	280	D	D
Venezuela.....	42	12	14
Africa.....	29	31	36
Egypt.....	5	4	3
South Africa.....	D	24	30
Middle East.....	736	687	826
Israel.....	736	687	824
Asia and Pacific.....	3,786	4,062	4,934
Australia.....	310	420	471
China.....	645	565	622
Hong Kong.....	D	227	220
India.....	75	81	163
Indonesia.....	3	4	4
Japan.....	1,541	1,649	1,742
Malaysia.....	D	251	301
New Zealand.....	6	9	25
Philippines.....	50	52	44
Singapore.....	398	514	711
South Korea.....	169	202	246
Taiwan.....	69	64	363

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**R&D performed abroad by majority-owned foreign affiliates of U.S. parent companies,  
by country/economy/region: 2002–04**

(Millions of current U.S. dollars)

Country/economy/region	2002	2003	2004
Thailand .....	19	24	23
Other .....	1	*	*
EU .....	12,941	14,249	17,217
OPEC .....	45	17	21

D = suppressed to avoid disclosure of confidential information; \* = ≤\$500,000

EU = European Union; OPEC = Organization of the Petroleum Exporting Countries; OWH = other Western Hemisphere

NOTES: Data for majority-owned (> 50%) nonbank foreign affiliates of nonbank U.S. parents. Data include R&D expenditures performed by affiliates, whether for themselves or for others under contract. Data exclude R&D expenditures by others for affiliates under contract. Manufacturing data exclude petroleum manufacturing before 1999. EU includes 15 countries for 2002 and 2003; 25 countries in 2004. Preliminary estimates for 2004.

SOURCE: Bureau of Economic Analysis, Survey of U.S. Direct Investment Abroad (annual series), <http://www.bea.gov/beat/di/di1usdop.htm>, accessed 20 April 2007.

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**R&D performed abroad by majority-owned foreign affiliates of U.S. parent companies, by selected NAICS industry of affiliate: 2002-04**

(Millions of current U.S. dollars)

Industry/sector	2002	2003	2004
All industries.....	21,063	22,793	27,529
Mining.....	12	11	8
Oil and gas extraction.....	8	5	3
Other.....	4	6	4
Utilities.....	1	2	2
Manufacturing.....	18,736	19,819	23,288
Food.....	341	420	634
Beverages and tobacco products.....	D	8	23
Textiles, apparel, and leather products.....	56	61	68
Wood products.....	1	8	1
Paper.....	81	73	88
Printing and related support activities.....	2	9	11
Petroleum and coal products.....	D	44	43
Chemicals.....	5,141	5,528	6,254
Basic chemicals.....	117	115	147
Resins and synthetic rubber, fibers, and filaments.....	218	215	242
Pharmaceuticals and medicines.....	4,230	4,630	5,302
Soap, cleaning compounds, and toilet preparations.....	265	181	186
Other.....	311	386	377
Plastics and rubber products.....	316	290	293
Nonmetallic mineral products.....	66	54	378
Primary and fabricated metals.....	180	228	197
Primary metals.....	32	35	40
Fabricated metal products.....	148	193	157
Machinery.....	634	783	791
Agriculture, construction, and mining machinery.....	173	220	230
Industrial machinery.....	128	131	118
Other.....	334	433	443
Computers and electronic products.....	4,975	4,796	5,283
Computers and peripheral equipment.....	388	402	479
Communications equipment.....	3,131	2,987	3,179
Audio and video equipment.....	67	67	D
Semiconductors and other electronic components.....	1,043	949	1,057
Navigational, measuring, and other instruments.....	346	391	500
Magnetic and optical media.....	0	0	D
Electrical equipment, appliances, and components.....	425	498	551
Transportation equipment.....	5,964	6,455	7,741
Motor vehicles, bodies and trailers, and parts.....	5,553	5,928	7,161
Other.....	410	527	579
Furniture and related products.....	57	27	44
Miscellaneous manufacturing.....	432	535	887
Wholesale trade.....	610	692	1,205
Professional and commercial equipment and supplies.....	233	295	724
Other durable goods.....	67	70	*
Petroleum and petroleum products.....	1	2	136
Other nondurable goods.....	309	325	345
Information.....	591	818	843
Publishing industries.....	556	773	781
Motion picture and sound recording industries.....	*	*	0
Broadcasting and telecommunications.....	11	15	42
Broadcasting, cable networks, and program distribution.....	0	1	0
Telecommunications.....	11	15	42
Information services and data processing services.....	24	29	20
Finance (except depository institutions) and insurance.....	14	1	1
Finance, except depository institutions.....	13	1	1
Securities, commodity contracts, and other intermediation and related activities.....	13	*	1
Other finance, except depository institutions.....	0	*	0
Insurance carriers and related activities.....	1	0	*
Professional, scientific, and technical services.....	1,019	1,351	2,120
Architectural, engineering, and related services.....	120	51	152

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**R&D performed abroad by majority-owned foreign affiliates of U.S. parent companies, by selected NAICS industry of affiliate: 2002–04**

(Millions of current U.S. dollars)

Industry/sector	2002	2003	2004
Computer systems design and related services .....	447	532	888
Management, scientific, and technical consulting .....	23	26	97
Advertising and related services .....	1	2	0
Other .....	428	741	982
Other industries .....	80	98	64
Agriculture, forestry, fishing, and hunting .....	D	D	D
Construction .....	0	*	8
Retail trade .....	D	8	4
Transportation and warehousing .....	1	*	*
Real estate and rental and leasing .....	2	2	2
Real estate .....	0	0	0
Rental and leasing (except real estate) .....	2	2	2
Management of nonbank companies and enterprises .....	42	D	D
Administration, support, and waste management .....	6	4	5
Health care and social assistance .....	*	*	0
Accommodation and food services .....	3	3	*
Accommodation .....	0	0	0
Food services and drinking places .....	3	3	*
Miscellaneous services .....	5	6	7

D = suppressed to avoid disclosure of confidential information; \* = ≤\$500,000

NAICS = North American Industry Classification System

NOTES: Data for majority-owned (> 50%) nonbank foreign affiliates of nonbank U.S. parents. Data include R&D expenditures performed by affiliates, whether for themselves or for others under contract. Data exclude R&D expenditures by others for affiliates under contract. Preliminary estimates for 2004.

SOURCE: Bureau of Economic Analysis, Survey of U.S. Direct Investment Abroad (annual series), <http://www.bea.gov/bea/di/di1usdop.htm>, accessed 20 April 2007.

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**R&D performed in United States by U.S. multinational corporation parent companies, by NAICS industry: 1999–2004**

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1999	2000	2001	2002	2003	2004
All industries.....	na	126,291	135,467	143,017	136,977	139,884	152,384
Mining.....	21	212	329	411	274	472	D
Oil and gas extraction.....	211	53	46	49	33	25	D
Other.....	na	159	284	362	241	447	447
Utilities.....	22	81	108	59	53	60	18
Manufacturing.....	31–33	104,842	109,744	115,118	110,062	112,681	120,851
Food.....	311	934	890	914	1,370	1,367	1,400
Beverages and tobacco products.....	312	501	467	469	D	448	452
Textiles, apparel, and leather products.....	313	275	248	125	D	85	102
Wood products.....	321	31	D	D	78	84	105
Paper.....	322	1,478	1,498	1,358	1,376	1,325	1,336
Printing and related support activities.....	323	129	148	D	157	174	220
Petroleum and coal products.....	324	990	977	1,002	1,153	1,266	1,251
Chemicals.....	325	28,198	29,212	31,927	32,273	35,500	40,270
Basic chemicals.....	3251	1,627	1,569	1,742	1,456	1,502	1,881
Resins and synthetic rubber, fibers and filaments.....	3252	2,784	2,963	2,972	2,530	2,553	2,392
Pharmaceuticals and medicines.....	3254	18,382	20,591	23,169	24,279	26,471	31,046
Soap, cleaning compounds, and toilet preparations.....	3256	1,957	2,249	2,153	1,768	2,683	2,584
Other chemicals.....	na	3,449	1,841	1,892	2,239	2,292	2,368
Plastics and rubber products.....	326	1,031	955	929	937	978	925
Nonmetallic mineral products.....	327	371	406	339	373	435	426
Primary and fabricated metals.....	na	1,320	1,417	1,038	1,340	1,412	1,211
Primary metals.....	331	760	818	484	498	501	472
Fabricated metal products.....	332	560	600	554	841	911	739
Machinery.....	333	5,252	7,196	8,561	8,405	5,431	5,780
Agriculture, construction, and mining machinery.....	3331	1,340	1,343	1,484	1,733	1,700	1,722
Industrial machinery.....	3332	1,250	1,607	1,579	1,583	1,469	1,652
Other machinery.....	na	2,662	4,247	5,497	5,088	2,263	2,405
Computers and electronic products.....	334	30,298	35,616	38,356	33,948	33,255	35,810
Computers and peripheral equipment.....	3341	5,659	6,952	7,727	7,065	7,064	7,371
Communications equipment.....	3342	13,276	14,614	14,526	11,497	10,359	10,473
Audio and video equipment.....	3343	407	436	359	D	D	433
Semiconductors and other electronic components.....	3344	8,997	10,252	11,114	10,620	11,508	12,369
Navigational, measuring, and other instruments.....	3345	1,579	2,960	4,158	4,244	3,824	D
Magnetic and optical media.....	3346	381	402	473	D	D	D
Electrical equipment, appliances, and components.....	335	2,958	2,511	2,008	1,729	1,350	1,266
Transportation equipment.....	336	29,162	25,834	25,147	23,167	25,565	25,795
Motor vehicles, bodies and trailers, and parts.....	3361, 3362, 3363	17,513	16,223	18,183	16,535	17,251	14,662
Other transportation equipment.....	na	11,649	9,611	6,964	6,632	8,314	11,133
Furniture and related products.....	337	90	D	128	130	116	106
Miscellaneous manufacturing.....	339	1,826	2,176	2,570	3,067	3,890	4,397
Wholesale trade.....	42	4,000	3,755	4,032	2,798	2,850	D
Professional and commercial equipment and supplies.....	4214	2,635	2,404	2,489	1,388	1,164	D
Petroleum and petroleum products.....	4227	D	231	238	218	195	78
Information.....	51	6,763	8,251	9,514	9,679	9,933	14,003
Publishing industries.....	511	4,050	5,510	6,452	6,718	7,202	11,018
Motion picture and sound recording industries.....	512	D	12	12	27	30	18
Broadcasting and telecommunications.....	513	869	820	796	625	442	486
Broadcasting, cable networks, and program distribution.....	5131, 5132	D	14	14	37	72	203
Telecommunications.....	5133	D	806	782	588	369	283
Information services and data processing services.....	514	D	1,909	2,254	2,308	2,259	2,481
Finance (except depository institutions) and insurance.....	52	315	510	617	560	369	350
Finance (except depository institutions).....	na	240	458	477	430	249	183
Securities, commodity contracts, and related activities.....	523	D	254	D	290	126	D
Other finance (except depository institutions).....	na	D	204	D	140	123	D
Insurance carriers and related activities.....	524	75	52	141	130	120	167
Professional, scientific, and technical services.....	54	8,522	10,042	10,348	10,479	10,560	12,787
Architectural, engineering, and related services.....	5413	49	24	18	D	D	91
Computer systems design and related services.....	5415	7,453	8,359	8,929	8,917	8,920	8,689
Management, scientific, and technical consulting.....	5416	D	D	D	533	554	580

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**R&D performed in United States by U.S. multinational corporation parent companies, by NAICS industry: 1999–2004**

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1999	2000	2001	2002	2003	2004
Advertising and related services .....	5418	D	D	D	D	D	1
Other professional, scientific, and technical services .....	na	716	874	802	978	982	3,427
Other industries .....	na	1,556	2,729	2,918	3,073	2,958	1,028
Agriculture, forestry, fishing and hunting.....	11	2	2	D	D	D	32
Construction.....	23	D	D	D	D	D	3
Retail trade.....	44–45	D	D	D	D	D	53
Transportation and warehousing.....	48–49	26	8	12	5	1	*
Real estate and rental and leasing.....	53	D	6	7	D	5	D
Real estate.....	531	0	0	0	0	0	0
Rental and leasing (except real estate) .....	532	D	6	7	D	5	D
Management of companies and enterprises (except bank companies)....	55	0	0	0	D	0	0
Administration, support, and waste management .....	56	6	D	D	D	D	D
Health care and social assistance.....	62	D	30	32	31	32	32
Accommodation and food services .....	72	25	31	42	29	37	9
Accommodation .....	721	0	0	0	0	0	0
Food services and drinking places.....	722	25	31	42	29	37	9
Miscellaneous services.....	na	15	16	17	128	143	163

na = not applicable; D = suppressed to avoid disclosure of confidential information; \* = ≤\$500,000

NAICS = North American Industry Classification System

NOTES: Preliminary estimates for 2004. U.S. multinational corporation (MNC) parent company is a company that resides in United States and owns or controls at least 10% of voting securities or equivalent of foreign business enterprise. Data include R&D performed by U.S. MNC parent companies, regardless of funding source, whether for performer itself or for others, including R&D performed for federal government; data exclude R&D conducted by others under contract.

SOURCE: Bureau of Economic Analysis, Survey of U.S. Direct Investment Abroad (annual series), <http://www.bea.gov/bea/di/di1usdop.htm>, accessed 20 April 2007.*Science and Engineering Indicators 2008*

Appendix table 4-48

**Company and other nonfederal funds for industrial R&D performed abroad, by industrial sector: 1985–2005**

(Millions of current U.S. dollars)

Year	All industrial R&D	Manufacturing	Nonmanufacturing
1985.....	3,650	3,632	18
1986.....	4,624	4,597	27
1987.....	5,226	5,162	64
1988.....	6,208	6,062	146
1989.....	6,706	6,450	256
1990.....	7,952	7,537	415
1991.....	9,147	8,369	778
1992.....	10,063	9,228	835
1993.....	9,565	7,795	1,770
1994.....	9,395	7,895	1,500
1995.....	13,052	10,846	2,206
1996.....	14,050	11,540	2,510
1997.....	13,107	11,743	1,364
1998.....	16,008	12,658	3,350
1999.....	16,765	12,354	4,411
2000.....	17,463	12,252	5,211
2001.....	17,869	10,998	6,871
2002.....	24,868	17,093	7,775
2003.....	28,768	17,509	11,259
2004.....	31,393	26,293	5,100
2005.....	31,025	25,221	5,804

NOTES: Data for industrial R&D performed outside 50 U.S. states and District of Columbia funded by U.S. R&D-performing companies and other sources except federal government. Starting with 1999 survey, estimates based on North American Industry Classification System. In prior years, estimates based on Standard Industrial Classification System.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (annual series), <http://www.nsf.gov/statistics/srvyindustry/>, accessed 17 April 2007.*Science and Engineering Indicators 2008*

Appendix table 4-49

(Page 1 of 2)

**Company and other nonfederal funds for industrial R&D performed abroad, by NAICS industry: 2001–05**

(Millions of current U.S. dollars)

Industry/sector	NAICS code	2001	2002	2003	2004	2005
All industries.....	21–23, 31–33, 42, 44–81	17,869	24,868	28,768	31,393	31,025
Manufacturing industries.....	31–33	10,998	17,093	17,509	26,293	25,221
Food.....	311	210	300	278	377	488
Beverage and tobacco products.....	312	0	D	D	D	D
Textiles, apparel, and leather.....	313–16	26	25	31	63	89
Wood products.....	321	D	D	7	1	D
Paper, printing, and support activities.....	322, 323	D	544	694	620 i	84
Petroleum and coal products.....	324	D	16	20	25	18
Chemicals.....	325	2,328	3,989	4,492	8,893	8,133
Basic chemicals.....	3251	152	249	230	436	287
Resin, synthetic rubber, fibers, and filament.....	3252	D	366	385	411	385
Pharmaceuticals and medicines.....	3254	1,720	3,268	3,751	7,654	6,872
Other chemicals.....	Other 325	D	107	126	392	589
Plastics and rubber products.....	326	181	218	234	343	306
Nonmetallic mineral products.....	327	15	32	27	52	64
Primary metals.....	331	12	23	19	16	8
Fabricated metal products.....	332	61	371	311	328	174
Machinery.....	333	527	788	772	861	1,138
Computer and electronic products.....	334	2,562	3,763	2,927	7,520	8,767
Computers and peripheral equipment.....	3341	478 i	383 i	172	3,842	3,695
Communications equipment.....	3342	633	969	983	900	1,039
Semiconductor and other electronic components.....	3344	852	1,647	1,006	1,594	2,471
Navigational, measuring, electromedical, and control instruments.....	3345	586	756	758	1,000	1,392 i
Other computer and electronic products.....	Other 334	12	7	9	184	170
Electrical equipment, appliances, and components.....	335	418 i	279	306	409	369
Transportation equipment.....	336	2,832	5,160	5,314	6,302	4,989
Motor vehicles, trailers, and parts.....	3361–63	D	4,598	4,680	5,429	3,969
Aerospace products and parts.....	3364	138	552	624	D	1,014
Other transportation equipment.....	Other 336	D	10	9	D	6 i
Furniture and related products.....	337	D	*	D	D	4
Miscellaneous manufacturing.....	339	1,226	1,578	2,076	480	582
Medical equipment and supplies.....	3391	1,150	1,472	1,963	375	497
Other miscellaneous manufacturing.....	Other 339	76	106	113	105	85
Nonmanufacturing industries.....	21–23, 42, 44–81	6,871	7,775	11,258	5,100	5,804
Mining, extraction, and support activities.....	21	37	48	46	50	53
Utilities.....	22	0	D	D	5	10
Construction.....	23	D	D	D	13	D
Wholesale trade.....	42	NA	NA	7,521	140	476
Retail trade.....	44, 45	NA	NA	299	26	110
Transportation and warehousing.....	48, 49	0	0	D	D	D
Information.....	51	1,672	1,806	2,074	2,591	2,853
Publishing.....	511	983	D	1,359	1,867	1,983
Newspaper, periodical, book, and database.....	5111	8	D	24	28 i	29
Software.....	5112	975	1,058	1,336	1,840	1,954
Broadcasting and telecommunications.....	513	D	D	D	29	NA
Telecommunications.....	5133	D	D	D	D	NA
Other broadcasting and telecommunications.....	Other 513	NA	NA	0	D	NA
Telecommunications.....	517	NA	NA	NA	NA	156
Wired and wireless (except satellite) telecommunications carriers.....	5171, 5172	NA	NA	NA	NA	156
Satellite telecommunications.....	5174	NA	NA	NA	NA	0
Other telecommunications.....	Other 517	NA	NA	NA	NA	0
Internet service providers, Web search portals, and data processing services.....	518	NA	NA	NA	NA	699
Internet service providers and Web search portals.....	5181	NA	NA	NA	NA	49
Data processing, hosting, and related services.....	5182	NA	NA	NA	NA	649
Other information.....	Other 51	D	D	D	695	15
Finance, insurance, and real estate.....	52, 53	24	113	72	76	87
Professional, scientific, and technical services.....	54	881	964	1,145	1,993	1,951
Architectural, engineering, and related services.....	5413	78	D	98	459	138

Appendix table 4-49

(Page 2 of 2)

**Company and other nonfederal funds for industrial R&D performed abroad, by NAICS industry: 2001–05**

(Millions of current U.S. dollars)

Industry/sector	NAICS code	2001	2002	2003	2004	2005
Computer systems design and related services .....	5415	302	600	592	908	1,311
Scientific R&D services.....	5417	488	297	449	572	485
Other professional, scientific, and technical services .....	Other 54	12	D	5	55 i	16
Management of companies and enterprises <sup>a</sup> .....	55	D	D	D	NA	NA
Health care services .....	621–23	D	D	3	D	11
Other nonmanufacturing .....	56, 61, 624, 71, 72, 81	43	65	76	204	246

D = suppressed to avoid disclosure of confidential information; i = imputation of >50%; \* = ≤\$500,000; NA = not available  
 NAICS = North American Industry Classification System

<sup>a</sup>Estimates for management of companies and enterprises (NAICS 55), shown separately for 2001–03, included in other manufacturing for 2004 and 2005.

NOTES: NAICS (1997 Rev. used to classify 2001–04 statistics; 2002 Rev. used for 2005). Data for industrial R&D performed outside 50 U.S. states and District of Columbia funded by U.S. R&D-performing companies and other sources except federal government. Starting with 1999 survey, estimates based on NAICS. In prior years, estimates based on Standard Industrial Classification System.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (annual series), <http://www.nsf.gov/statistics/srvyindustry/>, accessed 17 April 2007.

Appendix table 4-50

**Company-funded and -performed R&D expenditures and R&D contracted out to other organizations in United States: 1993–2005**

(Millions of dollars)

Sector	Company funded and performed		Contracted out		Ratio (%)
	Current\$	Constant\$	Current\$	Constant\$	
<b>All industries</b>					
1993 .....	94,591	107,028	3,462	3,917	3.7
1994 .....	97,131	107,614	3,618	4,008	3.7
1995 .....	108,652	117,964	5,177	5,621	4.8
1996 .....	121,015	128,941	5,833	6,215	4.8
1997 .....	133,611	140,034	6,000	6,288	4.5
1998 .....	145,016	150,320	6,710	6,955	4.6
1999 .....	161,594	165,114	9,240	9,441	5.7
2000 .....	182,844	182,844	NA	NA	NA
2001 .....	185,118	180,781	8,723	8,519	4.7
2002 .....	177,467	170,335	7,846	7,531	4.4
2003 .....	182,926	171,917	10,236	9,620	5.6
2004 .....	188,035	171,837	12,385	11,318	6.6
2005 .....	204,250	181,175	11,742	10,415	5.7
<b>Manufacturing</b>					
1993 .....	69,901	79,091	2,339	2,647	3.3
1994 .....	73,375	81,294	2,450	2,714	3.3
1995 .....	81,236	88,198	3,812	4,139	4.7
1996 .....	91,845	97,861	4,293	4,574	4.7
1997 .....	101,202	106,067	4,143	4,342	4.1
1998 .....	102,211	105,949	4,641	4,811	4.5
1999 .....	101,283	103,489	4,080	4,169	4.0
2000 .....	113,173	113,173	4,794	4,794	4.2
2001 .....	112,733	110,092	3,957	3,864	3.5
2002 .....	101,344	97,271	4,428	4,250	4.4
2003 .....	107,725	101,242	5,212	4,898	4.8
2004 .....	131,887	120,526	8,642	7,898	6.6
2005 .....	142,555	126,450	8,926	7,918	6.3

NA = not available

NOTES: Company and other nonfederal funds for industrial R&D performance in United States. Starting with 1999 survey, estimates based on North American Industry Classification System. Prior-year estimates based on Standard Industrial Classification System. Constant dollars based on calendar-year gross domestic product price deflator (2000 = 100).

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (annual series), <http://www.nsf.gov/statistics/srvyindustry/>, accessed 18 April 2007.

Appendix table 4-51

**R&D expenditures contracted out in United States, by selected NAICS industry: 1999–2005**

(Millions of dollars)

Industry	NAICS code	1999	2000	2001	2002	2003	2004	2005
All industries.....	21–23, 31–33, 42, 44–81	9,240	NA	8,723	7,846	10,236	12,385	11,742
Manufacturing.....	31–33	4,080	4,794	3,957	4,428	5,212	8,642	8,926
Chemicals.....	325	2,386	2,783	2,065	2,485	2,838	4,909	4,918
Pharmaceuticals and medicines.....	3254	2,274	2,658	1,899	2,368	2,716	4,656	4,587
Computer and electronic products.....	334	101	168	565	411	409	1,205	1,209
Computers and peripheral equipment.....	3341	24	44	118	83	76	140	169
Communications equipment.....	3342	D	D	80	19	72	264	137
Semiconductor and other electronic components.....	3344	33	D	86	41	123	260	235
Navigational, measuring, electromedical, and control instruments.....	3345	12	31	278	264	130	530	655
Electrical equipment, appliances, and components.....	335	D	84	60 i	35	39	49	37
Transportation equipment.....	336	812	771	708	799	1,135	1,436	1,629
Motor vehicles, trailers, and parts.....	3361–63	D	D	657	617	946	1,085	1,159
Aerospace products and parts.....	3364	80	D	D	178	182	340	450
Selected nonmanufacturing industries								
Information.....	51	504	597	577	363	813	1,427	558
Publishing.....	511	D	161	187	113	410	D	211
Software.....	5112	181	157	177	102	395	195	178
Professional, scientific, and technical services.....	54	957	1,200	1,676	1,113	1,828	1,347	1,437
Computer systems design and related services.....	5415	51	119	233	86	153	151	269
Scientific R&D services.....	5417	832	907	1,310	890	1,533	1,031	1,077

NA = not available; D = suppressed to avoid disclosure of confidential information; i = imputation of &gt;50%

NAICS = North American Industry Classification System

NOTE: Company and other nonfederal funds for industrial R&amp;D performance in United States.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (annual series), <http://www.nsf.gov/statistics/srvyindustry/>, accessed 18 April 2007.*Science and Engineering Indicators 2008*

**U.S. trade in research, development, and testing services: affiliated and unaffiliated trade, and unaffiliated trade by selected region/country: 2001–05**

(Millions of dollars)

Region/country	2001			2002			2003			2004			2005		
	Exports	Imports	Trade balance	Exports	Imports	Trade balance	Exports	Imports	Trade balance	Exports	Imports	Trade balance	Exports	Imports	Trade balance
All trade.....	6,746	2,425	4,321	8,142	3,028	5,114	9,376	4,410	4,966	8,760	4,993	3,767	10,095	6,717	3,378
Affiliated.....	5,700	1,700	4,000	7,000	2,000	5,000	8,200	3,100	5,100	7,500	3,100	4,400	8,800	4,400	4,400
Unaffiliated.....	1,046	725	321	1,142	1,028	114	1,176	1,310	-134	1,260	1,893	-633	1,295	2,317	-1,022
Unaffiliated by country															
Canada.....	82	91	-9	93	141	-48	139	188	-49	126	179	-53	106	226	-120
Europe.....	461	419	42	571	640	-69	630	798	-168	655	1,308	-653	693	1,551	-858
Belgium-Luxembourg.....	22	16	6	28	13	15	22	22	-7	20	25	-5	18	28	-10
France.....	59	30	29	61	42	19	46	45	1	58	47	11	48	63	-15
Germany.....	102	42	60	120	96	24	148	126	22	135	157	-22	141	200	-59
Italy.....	9	6	3	9	15	-6	11	14	-3	9	31	-22	8	37	-29
Netherlands.....	14	10	4	15	23	-8	14	28	-14	19	75	-56	23	106	-83
Norway.....	4	3	1	3	3	0	3	9	-6	4	11	-7	3	10	-7
Spain.....	7	6	1	7	3	4	9	3	6	11	5	6	9	21	-12
Sweden.....	15	14	1	15	19	-4	18	20	-2	18	35	-17	17	25	-8
Switzerland.....	79	42	37	127	52	75	117	48	69	136	55	81	142	88	54
United Kingdom.....	98	187	-89	142	290	-148	185	377	-192	192	744	-552	235	828	-593
Other.....	53	64	-11	44	83	-39	63	104	-41	54	122	-68	50	146	-96
Latin America/OWH.....	54	37	17	48	32	16	41	93	-52	55	93	-38	57	105	-48
South and Central America.....	40	25	15	36	27	9	33	90	-57	55	84	-29	55	95	-40
Argentina.....	7	7	0	2	7	-5	3	18	-15	9	10	-1	26	13	13
Brazil.....	7	6	1	11	6	5	5	31	-26	D	25	NA	4	35	-31
Chile.....	1	2	-1	1	1	0	*	3	NA	*	3	NA	1	4	-3
Mexico.....	13	3	10	10	6	4	16	23	-7	17	30	-13	16	21	-5
Venezuela.....	4	1	3	4	1	3	2	*	NA	D	*	NA	1	1	0
Other.....	8	6	2	9	7	2	7	13	-6	9	16	-7	7	21	-14
Other Western Hemisphere.....	14	12	2	12	5	7	8	3	5	1	9	-8	2	9	-7
Bermuda.....	13	9	4	D	3	NA	6	*	NA	*	*	NA	*	1	NA
Other.....	1	3	-2	D	2	NA	2	3	-1	1	9	-8	2	8	-6
Africa.....	60	60	0	21	48	-27	10	57	-47	10	79	-69	11	121	-110
South Africa.....	42	32	10	3	16	-13	2	7	-5	3	7	-4	3	8	-5
Other.....	19	28	-9	18	32	-14	8	49	-41	7	72	-65	8	113	-105
Middle East.....	44	28	16	57	9	48	35	16	19	65	13	52	99	23	76
Israel.....	12	23	-11	11	8	3	16	14	2	13	11	2	16	16	0
Saudi Arabia.....	19	4	15	33	*	NA	1	*	NA	2	*	NA	1	*	NA
Other.....	12	1	11	13	1	12	18	2	16	50	2	48	82	6	76
Asia/Pacific.....	338	91	247	344	158	186	313	159	154	330	221	109	323	292	31
Australia.....	19	11	8	17	12	5	12	21	-9	13	26	-13	11	29	-18
China.....	12	9	3	14	5	9	14	6	8	15	18	-3	7	22	-15
Hong Kong.....	3	1	2	3	5	-2	2	14	-12	1	16	-15	2	13	-11
India.....	8	16	-8	4	15	-11	6	18	-12	17	48	-31	18	61	-43

**U.S. trade in research, development, and testing services: affiliated and unaffiliated trade, and unaffiliated trade by selected region/country: 2001–05**

(Millions of dollars)

Region/country	2001			2002			2003			2004			2005		
	Exports	Imports	Trade balance	Exports	Imports	Trade balance	Exports	Imports	Trade balance	Exports	Imports	Trade balance	Exports	Imports	Trade balance
Indonesia.....	5	3	2	2	5	-3	*	D	NA	1	7	-6	1	9	-8
Japan.....	235	22	213	263	23	240	234	32	202	228	38	190	221	52	169
Malaysia.....	2	*	NA	1	1	0	2	*	NA	1	1	0	1	1	0
New Zealand.....	1	*	NA	1	3	-2	*	7	NA	1	9	-8	1	11	-10
Philippines.....	2	1	1	1	2	-1	1	1	0	1	1	0	*	2	NA
Singapore.....	5	14	-9	4	D	NA	3	16	-13	5	9	-4	21	10	11
South Korea.....	27	3	24	15	4	11	25	4	21	31	9	22	21	9	12
Taiwan.....	12	4	8	9	13	-4	10	15	-5	11	D	NA	15	27	-12
Thailand.....	4	2	2	6	2	4	2	4	-2	3	5	-2	2	6	-4
Other.....	3	6	-3	3	D	NA	1	D	NA	1	D	NA	2	39	-37
Addenda															
EU.....	358	333	25	427	544	-117	482	696	-214	498	1,201	-703	539	1,394	-855

\* = ≤\$500,000; D = suppressed to avoid disclosure of confidential information; NA = not available

EU = European Union; OWH = other Western Hemisphere

SOURCE: Bureau of Economic Analysis, U.S. International Services: Cross-Border Trade 1986–2005, and Sales Through Affiliates, 1986–2004, <http://www.bea.gov/international/intlserv.htm>, accessed 10 December 2006.*Science & Engineering Indicators 2008*



Appendix table 4-53

**Federal technology transfer indicators and intellectual property measures, by selected U.S. agency: FY 2002–05**

Agency	2002	2003	2004	2005
<b>Invention disclosures and patenting</b>				
USDA				
Inventions disclosed .....	151	121	142	125
Patent applications filed .....	90	60	81	88
Patents issued .....	53	64	50	27
DOD				
Inventions disclosed .....	1,122	1,332	1,369	1,220
Patent applications filed .....	829	810	778	798
Patents issued .....	617	619	559	430
DOE				
Inventions disclosed .....	1,498	1,469	1,617	1,776
Patent applications filed .....	711	866	661	812
Patents issued .....	551	627	520	467
NIH/FDA				
Inventions disclosed .....	331	400	403	388
Patent applications filed .....	173	196	199	186
Patents issued .....	88	86	122	66
NASA				
Inventions disclosed .....	775	736	687	NA
Patent applications filed .....	166	163	154	NA
Patents issued .....	128	136	157	NA
<b>Invention licenses</b>				
USDA				
Active invention licenses .....	267	270	296	320
New invention licenses .....	26	27	29	33
DOD				
Active invention licenses .....	350	361	364	406
New invention licenses .....	39	49	360	60
DOE				
Active invention licenses .....	1,327	1,223	1,362	1,535
New invention licenses .....	206	172	168	198
NIH/FDA				
Active invention licenses .....	NA	NA	NA	NA
New invention licenses .....	231	209	276	313
NASA				
Active invention licenses .....	290	295	345	NA
New invention licenses .....	52	66	90	NA

NA = not available

DOD = Department of Defense; DOE = Department of Energy; NASA = National Aeronautics and Space Administration; NIH/FDA = National Institutes of Health/Food and Drug Administration; USDA = U.S. Department of Agriculture

SOURCES: USDA, FY 2006 Annual Reporting on Agency Technology Transfer (2006); DOD, Report to Congress on the activities of the DOD Office of Technology Transition (2006); DOE, Annual Report on Tech Transfer and Related Technology Partnering Activities at the National Laboratories and Other Facilities – Fiscal Year 2005 (2006); NASA, Annual Report on Technology Transfer, Programs, Plans, FY 2004 Activities and Achievements (2006); NIH, Office of Technology Transfer Activities, Statistical Tables (2006), [http://www.ott.nih.gov/about\\_nih/statistics.html](http://www.ott.nih.gov/about_nih/statistics.html), accessed 28 February 2007.

Appendix table 4-54

**SBIR award funding, by type of award and federal agency: FY 1983–2005**

(Millions of current dollars)

FY	All	Phase I	Phase II	DOD	HHS	NASA	DOE	NSF	DHS <sup>1</sup>	USDA	DOT	EPA	ED	DOC
1983.....	44.5	44.5	0.0	20	7	5	5	5	na	1	*	*	*	0
1984.....	108.4	48.0	60.4	45	23	13	16	7	na	2	2	1	1	0
1985.....	199.1	69.1	130.0	78	45	29	26	10	na	3	3	2	1	0
1986.....	297.9	98.5	199.4	151	57	36	29	15	na	4	4	3	2	1
1987.....	350.5	109.6	240.9	194	67	32	28	17	na	4	3	3	2	2
1988.....	389.1	101.9	248.9	208	73	47	30	17	na	4	3	3	2	1
1989.....	431.9	107.7	321.7	233	79	52	33	19	na	4	4	3	2	1
1990.....	460.7	118.1	341.8	241	84	62	39	20	na	4	4	3	2	1
1991.....	483.1	127.9	335.9	241	93	69	39	22	na	5	6	4	3	1
1992.....	508.4	127.9	371.2	242	102	79	43	23	na	6	3	4	2	2
1993.....	698.0	154.0	490.7	385	126	86	50	29	na	7	4	5	3	2
1994.....	717.6	220.4	473.6	354	133	116	53	34	na	7	7	5	3	4
1995.....	834.5	232.2	601.9	414	181	118	70	42	na	9	10	7	3	8
1996.....	916.3	228.9	645.8	479	189	114	62	41	na	9	7	5	3	6
1997.....	1106.9	277.6	789.1	569	252	121	75	54	na	10	8	6	4	7
1998.....	1066.7	262.3	804.4	540	267	96	76	53	na	13	6	5	5	7
1999.....	1096.5	299.5	797.0	514	314	89	81	60	na	13	6	5	5	7
2000.....	1190.2	302.0	888.2	549	355	93	86	65	na	15	6	8	6	7
2001.....	1294.3	317.0	977.3	576	412	106	87	72	na	16	6	6	7	7
2002.....	1434.7	411.4	1023.3	621	487	110	96	78	na	17	6	6	8	7
2003.....	1670.3	455.3	1215.0	804	531	109	94	90	na	17	3	6	8	8
2004.....	1867.6	498.8	1368.8	929	572	106	104	90	19	19	4	8	9	9
2005.....	1865.9	461.2	1404.7	926	580	113	100	79	22	19	4	6	8	9

\* = ≤\$500,000; na = not applicable

DOC = Department of Commerce; DHS = Department of Homeland Security; DOD = Department of Defense; DOE = Department of Energy; DOT = Department of Transportation; ED = Department of Education; EPA = Environmental Protection Agency; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; SBIR = Small Business Innovation Research program; USDA = U.S. Department of Agriculture

<sup>1</sup>DHS, established by Homeland Security Act of 2002 and formed in January 2003, held first SBIR competition in FY 2004.

NOTES: Agency obligations based on information from Small Business Administration (SBA). Data do not necessarily contain subsequent-year revisions and may not add to total.

SOURCE: SBA, SBIR Annual Report (annual series).

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Appendix table 4-55

**Small Business Technology Transfer Program award funding, by type of award and federal agency: FY 1994–2005**

(Millions of current dollars)

FY	All	Phase I	Phase II	DOD	HHS	NASA	DOE	NSF
1994.....	18.9	18.9	0.0	9	5	2	2	1
1995.....	33.8	23.0	10.8	15	9	3	5	2
1996.....	64.4	22.7	41.8	29	18	9	5	3
1997.....	69.0	24.1	44.8	37	13	12	4	3
1998.....	64.8	19.7	45.1	33	17	6	5	3
1999.....	65.0	24.3	41.0	31	20	6	5	3
2000.....	70.0	24.0	46.0	33	22	6	5	5
2001.....	71.4	25.4	46.0	27	25	6	5	8
2002.....	91.6	36.3	55.3	43	31	7	6	6
2003.....	92.1	41.1	51.0	43	31	6	6	6
2004.....	184.6	76.8	107.8	89	67	13	11	10
2005.....	220.3	74.0	146.3	114	73	13	12	9

DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation

NOTES: Agency obligations based on information from Small Business Administration (SBA). Data do not necessarily contain subsequent-year revisions and may not add to total.

SOURCE: SBA, Small Business Technology Transfer Program Annual Report (annual series).

Appendix table 4-56

**Advanced Technology Program projects, number of participants, and funding: FY 1990–2004**

Year	Projects	SA	JV	Participants	Total	Project funding (current \$millions)					
						ATP			Industry		
						All	To JV	To SA	All	From JV	From SA
1990.....	11	6	5	35	98	46	38	8	52	45	7
1991.....	28	18	10	83	202	93	65	28	109	83	26
1992.....	21	18	3	32	97	48	19	29	49	19	30
1993.....	29	24	5	50	118	60	19	41	58	20	38
1994.....	88	50	38	211	640	309	216	93	331	233	98
1995.....	103	62	41	318	827	414	304	110	413	340	73
1996.....	8	6	2	12	37	19	9	10	18	10	8
1997.....	64	49	15	101	304	162	75	87	142	81	61
1998.....	79	52	27	168	460	235	143	92	225	157	68
1999.....	37	26	11	57	212	110	61	49	102	64	38
2000.....	54	39	15	95	274	144	70	74	130	74	56
2001.....	59	46	13	88	286	164	79	85	122	81	41
2002.....	61	51	10	79	289	156	59	97	133	61	72
2003.....	67	55	12	104	257	154	49	105	103	51	52
2004.....	59	48	11	78	270	155	62	93	115	66	49

ATP = Advanced Technology Program; JV = joint ventures; SA = single applicants

NOTES: For multiyear projects, total funding attributed to year award made. Participants include SAs, JV leaders, and JV members and exclude subcontractors and informal collaborators.

SOURCE: National Institute of Standards and Technology, ATP, special tabulations.

*Science and Engineering Indicators 2008*

Appendix table 5-1

**Academic R&D expenditures directed to basic research, applied research, and development: 1970–2006**

(Percent distribution)

Year	All academic R&D	Basic research	Applied research	Development
1970.....	100.0	76.7	18.6	4.6
1971.....	100.0	76.7	19.5	3.8
1972.....	100.0	73.9	22.4	3.7
1973.....	100.0	71.2	24.5	4.2
1974.....	100.0	71.0	24.7	4.4
1975.....	100.0	69.5	26.2	4.4
1976.....	100.0	68.6	26.7	4.7
1977.....	100.0	68.3	25.9	5.8
1978.....	100.0	67.6	25.0	7.5
1979.....	100.0	67.0	24.8	8.2
1980.....	100.0	66.8	25.1	8.0
1981.....	100.0	66.9	25.1	8.0
1982.....	100.0	67.0	25.2	7.9
1983.....	100.0	66.9	25.6	7.5
1984.....	100.0	67.1	25.5	7.4
1985.....	100.0	68.1	24.5	7.3
1986.....	100.0	68.8	24.1	7.1
1987.....	100.0	67.5	25.1	7.4
1988.....	100.0	65.7	26.6	7.7
1989.....	100.0	65.4	26.8	7.8
1990.....	100.0	65.7	26.0	8.3
1991.....	100.0	66.3	25.3	8.4
1992.....	100.0	66.6	25.2	8.2
1993.....	100.0	66.6	25.1	8.3
1994.....	100.0	66.7	24.9	8.4
1995.....	100.0	67.0	25.0	8.0
1996.....	100.0	67.7	24.8	7.5
1997.....	100.0	70.9	22.2	6.9
1998.....	100.0	73.8	19.9	6.2
1999.....	100.0	74.3	20.7	4.9
2000.....	100.0	74.5	21.7	3.8
2001.....	100.0	74.7	21.5	3.8
2002.....	100.0	74.9	21.4	3.6
2003.....	100.0	75.0	21.2	3.7
2004.....	100.0	75.2	20.9	3.9
2005.....	100.0	74.9	21.2	3.9
2006.....	100.0	74.5	21.5	3.9

NOTES: Expenditure levels for academic R&D refer to calendar years and are based on fiscal year data approximations. Because of changes in estimation procedures, character of work data before FY 1998 not comparable with that of later years. For details of methodological issues of measurement, see National Science Foundation, Division of Science Resources Statistics (NSF/SRS), National Patterns of Research and Development Resources: Methodology Report (forthcoming). Data based on annual reports by performers. See appendix tables 4-3, 4-7, 4-11, and 4-15.

SOURCE: NSF/SRS, National Patterns of R&D Resources (annual series, preliminary data for 2005 and 2006).

Appendix table 5-2  
**Support for academic R&D, by sector: 1972–2006**

(Page 1 of 2)

Year	All sources	Federal government	State/local government	Industry	Academic institutions	All other sources
1972.....	2,630	1,795	269	74	305	187
1973.....	2,884	1,985	295	84	318	202
1974.....	3,022	2,032	308	95	368	219
1975.....	3,409	2,288	332	113	417	259
1976.....	3,729	2,512	364	123	446	285
1977.....	4,067	2,726	374	139	514	314
1978.....	4,625	3,059	414	170	623	359
1979.....	5,366	3,598	472	193	735	368
1980.....	6,063	4,098	491	236	835	403
1981.....	6,847	4,571	546	291	1,004	435
1982.....	7,324	4,768	616	337	1,111	491
1983.....	7,882	4,989	626	389	1,302	576
1984.....	8,620	5,431	690	475	1,411	613
1985.....	9,687	6,064	752	560	1,617	694
1986.....	10,928	6,712	915	700	1,869	732
1987.....	12,153	7,343	1,023	790	2,168	828
1988.....	13,463	8,193	1,106	872	2,356	935
1989.....	14,977	8,991	1,224	994	2,698	1,071
1990.....	16,286	9,638	1,324	1,127	3,006	1,191
1991.....	17,585	10,234	1,474	1,204	3,367	1,307
1992.....	18,818	11,093	1,491	1,279	3,547	1,409
1993.....	19,951	11,957	1,559	1,360	3,589	1,486
1994.....	21,030	12,650	1,555	1,422	3,828	1,575
1995.....	22,174	13,333	1,690	1,489	4,048	1,614
1996.....	23,049	13,842	1,812	1,605	4,171	1,619
1997.....	24,373	14,316	1,910	1,737	4,698	1,712
1998.....	25,859	15,153	1,944	1,888	5,003	1,870
1999.....	27,534	16,103	2,022	2,033	5,381	1,995
2000.....	30,073	17,538	2,200	2,156	5,924	2,254
2001.....	32,811	19,233	2,321	2,219	6,614	2,425
2002.....	36,394	21,864	2,506	2,191	7,133	2,700
2003.....	40,087	24,759	2,646	2,162	7,663	2,857
2004.....	43,242	27,631	2,879	2,129	7,752	2,852
2005.....	45,777	29,191	2,942	2,294	8,258	3,093
2006.....	47,760	30,033	3,016	2,428	9,062	3,221
2000 constant \$millions						
1972.....	8,852	6,042	905	249	1,027	629
1973.....	9,297	6,399	951	271	1,025	651
1974.....	9,086	6,110	926	286	1,106	658
1975.....	9,284	6,231	904	308	1,136	705
1976.....	9,472	6,381	925	312	1,133	724
1977.....	9,611	6,442	884	328	1,215	742
1978.....	10,240	6,773	917	376	1,379	795
1979.....	10,995	7,372	967	395	1,506	754
1980.....	11,422	7,720	925	445	1,573	759
1981.....	11,748	7,843	937	499	1,723	746
1982.....	11,762	7,657	989	541	1,784	789
1983.....	12,123	7,673	963	598	2,003	886
1984.....	12,786	8,056	1,023	705	2,093	909
1985.....	13,917	8,712	1,080	805	2,323	997
1986.....	15,343	9,423	1,285	983	2,624	1,028
1987.....	16,628	10,047	1,400	1,081	2,966	1,133
1988.....	17,859	10,868	1,467	1,157	3,125	1,240
1989.....	19,124	11,481	1,563	1,269	3,445	1,368
1990.....	20,051	11,866	1,630	1,388	3,701	1,466
1991.....	20,867	12,144	1,749	1,429	3,995	1,551
1992.....	21,783	12,841	1,726	1,481	4,106	1,631

Appendix table 5-2

(Page 2 of 2)

**Support for academic R&D, by sector: 1972–2006**

Year	All sources	Federal government	State/local government	Industry	Academic institutions	All other sources
1993.....	22,590	13,539	1,765	1,540	4,064	1,683
1994.....	23,306	14,019	1,723	1,576	4,242	1,745
1995.....	24,058	14,466	1,834	1,616	4,392	1,751
1996.....	24,548	14,742	1,930	1,709	4,442	1,724
1997.....	25,512	14,985	1,999	1,818	4,918	1,792
1998.....	26,730	15,663	2,009	1,952	5,172	1,933
1999.....	28,094	16,431	2,063	2,074	5,491	2,036
2000.....	30,073	17,538	2,200	2,156	5,924	2,254
2001.....	32,247	18,903	2,281	2,181	6,500	2,383
2002.....	35,079	21,074	2,415	2,112	6,875	2,602
2003.....	37,861	23,384	2,499	2,042	7,237	2,698
2004.....	39,852	25,465	2,653	1,962	7,144	2,628
2005.....	40,916	26,091	2,630	2,050	7,381	2,765
2006.....	41,413	26,042	2,615	2,105	7,858	2,793
	Percent distribution					
1972.....	100.0	68.3	10.2	2.8	11.6	7.1
1973.....	100.0	68.8	10.2	2.9	11.0	7.0
1974.....	100.0	67.2	10.2	3.1	12.2	7.2
1975.....	100.0	67.1	9.7	3.3	12.2	7.6
1976.....	100.0	67.4	9.8	3.3	12.0	7.6
1977.....	100.0	67.0	9.2	3.4	12.6	7.7
1978.....	100.0	66.1	9.0	3.7	13.5	7.8
1979.....	100.0	67.1	8.8	3.6	13.7	6.9
1980.....	100.0	67.6	8.1	3.9	13.8	6.6
1981.....	100.0	66.8	8.0	4.3	14.7	6.4
1982.....	100.0	65.1	8.4	4.6	15.2	6.7
1983.....	100.0	63.3	7.9	4.9	16.5	7.3
1984.....	100.0	63.0	8.0	5.5	16.4	7.1
1985.....	100.0	62.6	7.8	5.8	16.7	7.2
1986.....	100.0	61.4	8.4	6.4	17.1	6.7
1987.....	100.0	60.4	8.4	6.5	17.8	6.8
1988.....	100.0	60.9	8.2	6.5	17.5	6.9
1989.....	100.0	60.0	8.2	6.6	18.0	7.2
1990.....	100.0	59.2	8.1	6.9	18.5	7.3
1991.....	100.0	58.2	8.4	6.8	19.1	7.4
1992.....	100.0	58.9	7.9	6.8	18.8	7.5
1993.....	100.0	59.9	7.8	6.8	18.0	7.4
1994.....	100.0	60.2	7.4	6.8	18.2	7.5
1995.....	100.0	60.1	7.6	6.7	18.3	7.3
1996.....	100.0	60.1	7.9	7.0	18.1	7.0
1997.....	100.0	58.7	7.8	7.1	19.3	7.0
1998.....	100.0	58.6	7.5	7.3	19.3	7.2
1999.....	100.0	58.5	7.3	7.4	19.5	7.2
2000.....	100.0	58.3	7.3	7.2	19.7	7.5
2001.....	100.0	58.6	7.1	6.8	20.2	7.4
2002.....	100.0	60.1	6.9	6.0	19.6	7.4
2003.....	100.0	61.8	6.6	5.4	19.1	7.1
2004.....	100.0	63.9	6.7	4.9	17.9	6.6
2005.....	100.0	63.8	6.4	5.0	18.0	6.8
2006.....	100.0	62.9	6.3	5.1	19.0	6.7

NOTE: See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006.

Appendix table 5-3

**Federal and nonfederal R&D expenditures at academic institutions, by field and source of funds: 2006**

Field	All R&D expenditures		Federally financed expenditures		Nonfederally financed expenditures	
	Amount (\$millions)	Percent distribution	Amount (\$millions)	Percent distribution	Amount (\$millions)	Percent distribution
All fields.....	47,760	100.0	30,033	100.0	17,727	100.0
Science .....	40,684	85.2	25,797	85.9	14,887	84.0
Computer sciences.....	1,438	3.0	1,015	3.4	422	2.4
Environmental sciences.....	2,602	5.4	1,763	5.9	839	4.7
Atmospheric sciences.....	507	1.1	406	1.4	100	0.6
Earth sciences.....	897	1.9	591	2.0	307	1.7
Oceanography.....	840	1.8	558	1.9	282	1.6
Environmental sciences nec.....	358	0.7	208	0.7	150	0.8
Life sciences.....	28,831	60.4	18,268	60.8	10,563	59.6
Agricultural sciences.....	2,794	5.8	881	2.9	1,912	10.8
Biological sciences.....	9,044	18.9	6,240	20.8	2,805	15.8
Medical sciences.....	15,808	33.1	10,434	34.7	5,373	30.3
Life sciences nec.....	1,186	2.5	713	2.4	473	2.7
Mathematical sciences.....	530	1.1	373	1.2	158	0.9
Physical sciences.....	3,823	8.0	2,705	9.0	1,119	6.3
Astronomy.....	470	1.0	317	1.1	152	0.9
Chemistry.....	1,424	3.0	974	3.2	451	2.5
Physics.....	1,608	3.4	1,213	4.0	395	2.2
Physical sciences nec.....	321	0.7	201	0.7	120	0.7
Psychology.....	875	1.8	629	2.1	246	1.4
Social sciences.....	1,703	3.6	711	2.4	992	5.6
Economics.....	339	0.7	119	0.4	220	1.2
Political science.....	317	0.7	107	0.4	210	1.2
Sociology.....	400	0.8	216	0.7	183	1.0
Social sciences nec.....	649	1.4	269	0.9	380	2.1
Sciences nec.....	882	1.8	334	1.1	548	3.1
Engineering.....	7,076	14.8	4,236	14.1	2,840	16.0
Aeronautical/astronautical.....	381	0.8	282	0.9	99	0.6
Bioengineering/biomedical.....	476	1.0	294	1.0	182	1.0
Chemical.....	547	1.1	313	1.0	235	1.3
Civil.....	858	1.8	331	1.1	527	3.0
Electrical.....	1,614	3.4	1,073	3.6	541	3.1
Mechanical.....	1,048	2.2	684	2.3	363	2.1
Metallurgical/materials.....	644	1.3	387	1.3	256	1.4
Engineering nec.....	1,508	3.2	871	2.9	637	3.6

nec = not elsewhere classified

NOTES: Detail may not add to total because of rounding. See appendix table 5-2 for detail on nonfederal sources.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006.



## Expenditures for academic R&amp;D, by field: Selected years, 1975–2006

Field	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Current \$millions																
All fields.....	3,409	6,063	9,687	16,286	22,174	23,049	24,373	25,859	27,534	30,073	32,811	36,394	40,087	43,242	45,777	47,760
Computer sciences.....	46	124	281	515	682	690	710	747	861	876	956	1,125	1,305	1,404	1,406	1,438
Environmental sciences.....	255	508	705	1,069	1,434	1,489	1,533	1,625	1,692	1,765	1,829	2,017	2,194	2,353	2,551	2,602
Atmospheric sciences.....	NA	76	108	173	208	224	246	269	288	288	301	341	396	414	457	507
Earth sciences.....	NA	188	254	355	457	446	450	514	546	563	555	640	724	828	919	897
Oceanography.....	NA	176	258	377	473	533	537	546	604	633	673	718	770	779	812	840
Environmental sciences nec.....	255	68	86	164	295	285	301	296	254	282	300	318	305	332	363	358
Life sciences.....	1,901	3,218	5,279	8,725	12,189	12,717	13,593	14,598	15,632	17,471	19,229	21,439	23,757	25,948	27,604	28,831
Agricultural sciences.....	384	676	999	1,349	1,815	1,910	1,966	1,996	2,036	2,177	2,322	2,450	2,555	2,695	2,657	2,794
Biological sciences.....	630	1,028	1,781	2,859	3,837	3,913	4,184	4,586	5,041	5,621	5,957	6,602	7,384	8,152	8,843	9,044
Medical sciences.....	811	1,423	2,318	4,154	6,070	6,391	6,908	7,472	8,003	8,986	10,191	11,488	12,779	14,037	14,877	15,808
Life sciences nec.....	75	91	181	363	468	503	534	545	552	686	760	898	1,038	1,064	1,227	1,186
Mathematical sciences.....	40	78	128	222	279	289	290	311	314	342	360	388	428	448	495	530
Physical sciences.....	350	677	1,148	1,807	2,257	2,259	2,372	2,484	2,606	2,713	2,805	3,017	3,276	3,546	3,704	3,823
Astronomy.....	27	59	96	170	304	276	288	303	385	386	378	402	392	420	454	470
Chemistry.....	121	244	422	648	772	802	821	877	920	962	1,008	1,129	1,226	1,318	1,365	1,424
Physics.....	174	323	551	842	990	988	1,059	1,079	1,149	1,208	1,241	1,287	1,418	1,522	1,604	1,608
Physical sciences nec.....	29	52	80	147	191	193	204	226	153	158	178	199	240	286	280	321
Psychology.....	80	110	158	253	371	382	397	445	465	517	583	673	770	782	826	875
Social sciences.....	256	339	383	703	1,019	1,097	1,126	1,132	1,252	1,299	1,444	1,596	1,675	1,676	1,685	1,703
Economics.....	56	91	118	201	250	271	261	261	266	255	272	284	313	317	324	339
Political science.....	29	54	59	115	173	180	176	176	200	230	255	283	304	308	324	317
Sociology.....	69	87	75	132	215	231	257	253	272	301	328	375	368	355	370	400
Social sciences nec.....	102	107	131	255	381	415	432	442	514	513	588	654	689	695	667	649
Sciences nec.....	100	146	186	336	427	419	515	449	452	535	585	616	690	774	769	882
Engineering.....	381	862	1,418	2,656	3,516	3,708	3,839	4,070	4,261	4,555	5,019	5,522	5,993	6,310	6,738	7,076
Aeronautical/astronautical.....	NA	53	81	164	241	233	247	250	261	257	339	343	402	432	441	381
Bioengineering/biomedical.....	NA	NA	NA	NA	NA	NA	77	102	137	174	213	282	314	370	420	476
Chemical.....	NA	61	116	218	297	317	317	327	349	376	414	431	453	493	506	547
Civil.....	NA	83	153	284	431	455	472	495	529	601	664	717	776	789	788	858
Electrical.....	NA	183	337	663	819	888	942	1,043	1,017	1,118	1,164	1,306	1,401	1,437	1,581	1,614
Mechanical.....	NA	140	208	391	521	519	518	568	625	633	687	780	821	875	936	1,048
Metallurgical/materials.....	NA	NA	NA	274	330	349	389	391	384	399	453	468	548	565	612	644
Engineering nec.....	381	341	523	663	877	946	878	894	960	998	1,085	1,195	1,278	1,348	1,455	1,508
2000 constant \$millions																
All fields.....	9,283	11,421	13,917	20,051	24,057	24,548	25,512	26,730	28,095	30,073	32,247	35,079	37,861	39,852	40,916	41,413
Computer sciences.....	124	234	403	634	740	735	743	772	879	876	940	1,085	1,233	1,294	1,256	1,247
Environmental sciences.....	695	957	1,013	1,316	1,556	1,586	1,605	1,679	1,726	1,765	1,797	1,944	2,072	2,169	2,280	2,256
Atmospheric sciences.....	NA	143	155	213	226	239	257	278	294	288	296	329	374	382	408	439
Earth sciences.....	NA	354	365	437	496	475	471	531	557	563	546	617	684	763	821	778
Oceanography.....	NA	332	370	464	514	568	562	564	616	633	661	692	727	718	726	728

## Expenditures for academic R&amp;D, by field: Selected years, 1975–2006

Field	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Environmental sciences nec .....	695	128	123	202	320	303	315	306	259	282	294	306	288	306	324	310
Life sciences .....	5,177	6,062	7,584	10,743	13,225	13,544	14,228	15,090	15,950	17,471	18,899	20,664	22,437	23,914	24,673	25,000
Agricultural sciences .....	1,045	1,273	1,436	1,660	1,969	2,035	2,058	2,063	2,077	2,177	2,282	2,361	2,413	2,484	2,375	2,422
Biological sciences .....	1,716	1,937	2,559	3,520	4,163	4,167	4,380	4,740	5,143	5,621	5,854	6,364	6,974	7,513	7,904	7,842
Medical sciences .....	2,210	2,681	3,330	5,115	6,586	6,807	7,231	7,723	8,166	8,986	10,016	11,073	12,069	12,936	13,298	13,707
Life sciences nec .....	205	171	260	447	508	536	559	563	563	686	747	866	980	981	1,096	1,028
Mathematical sciences .....	108	147	184	273	303	307	303	321	320	342	354	374	404	413	442	460
Physical sciences .....	954	1,276	1,650	2,225	2,449	2,406	2,483	2,568	2,659	2,713	2,757	2,908	3,094	3,268	3,311	3,315
Astronomy .....	72	110	138	210	330	294	301	313	392	386	372	388	370	387	406	407
Chemistry .....	329	460	606	798	837	854	860	906	938	962	991	1,088	1,158	1,214	1,220	1,235
Physics .....	473	608	792	1,036	1,074	1,052	1,108	1,115	1,173	1,208	1,219	1,240	1,340	1,403	1,434	1,394
Physical sciences nec .....	80	98	115	181	208	205	214	233	156	158	175	191	227	264	250	278
Psychology .....	219	207	227	311	402	407	415	460	474	517	573	649	727	721	738	759
Social sciences .....	698	639	551	866	1,106	1,168	1,178	1,170	1,278	1,299	1,419	1,539	1,582	1,544	1,506	1,477
Economics .....	152	171	170	247	272	289	273	270	272	255	267	274	296	292	290	294
Political science .....	80	103	85	142	188	192	184	182	204	230	251	273	288	284	289	274
Sociology .....	187	164	107	162	234	246	270	261	277	301	323	362	348	327	331	346
Social sciences nec .....	278	201	188	314	413	442	452	457	524	513	578	630	650	641	596	563
Sciences nec .....	272	275	268	414	463	446	539	464	461	535	575	594	651	714	688	764
Engineering .....	1,037	1,624	2,037	3,270	3,814	3,949	4,019	4,207	4,348	4,555	4,933	5,322	5,660	5,815	6,023	6,136
Aeronautical/astronautical .....	NA	100	116	201	262	248	259	258	266	257	333	331	380	399	394	331
Bioengineering/biomedical .....	NA	NA	NA	NA	NA	NA	80	105	139	174	209	272	296	341	375	413
Chemical .....	NA	114	167	269	322	338	331	338	356	376	407	415	428	454	452	475
Civil .....	NA	157	220	350	467	484	494	512	540	601	653	691	733	727	704	744
Electrical .....	NA	345	485	816	888	946	986	1,078	1,038	1,118	1,144	1,259	1,323	1,325	1,413	1,399
Mechanical .....	NA	264	298	481	565	553	542	587	638	633	675	752	775	806	836	909
Metallurgical/materials .....	NA	NA	NA	337	358	372	407	405	392	399	445	451	518	521	547	558
Engineering nec .....	1,037	643	751	817	952	1,008	919	924	979	998	1,067	1,152	1,207	1,242	1,301	1,307
Percent distribution																
All fields .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Computer sciences .....	1.3	2.1	2.9	3.2	3.1	3.0	2.9	2.9	3.1	2.9	2.9	3.1	3.3	3.2	3.1	3.0
Environmental sciences .....	7.5	8.4	7.3	6.6	6.5	6.5	6.3	6.3	6.1	5.9	5.6	5.5	5.5	5.4	5.6	5.4
Atmospheric sciences .....	NA	1.3	1.1	1.1	0.9	1.0	1.0	1.0	1.1	1.0	0.9	0.9	1.0	1.0	1.0	1.1
Earth sciences .....	NA	3.1	2.6	2.2	2.1	1.9	1.8	2.0	2.0	1.9	1.7	1.8	1.8	1.9	2.0	1.9
Oceanography .....	NA	2.9	2.7	2.3	2.1	2.3	2.2	2.1	2.2	2.1	2.1	2.0	1.9	1.8	1.8	1.8
Environmental sciences nec .....	7.5	1.1	0.9	1.0	1.3	1.2	1.2	1.1	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.7
Life sciences .....	55.8	53.1	54.5	53.6	55.0	55.2	55.8	56.5	56.8	58.1	58.6	58.9	59.3	60.0	60.3	60.4
Agricultural sciences .....	11.3	11.1	10.3	8.3	8.2	8.3	8.1	7.7	7.4	7.2	7.1	6.7	6.4	6.2	5.8	5.8
Biological sciences .....	18.5	17.0	18.4	17.6	17.3	17.0	17.2	17.7	18.3	18.7	18.2	18.1	18.4	18.9	19.3	18.9
Medical sciences .....	23.8	23.5	23.9	25.5	27.4	27.7	28.3	28.9	29.1	29.9	31.1	31.6	31.9	32.5	32.5	33.1
Life sciences nec .....	2.2	1.5	1.9	2.2	2.1	2.2	2.2	2.1	2.0	2.3	2.3	2.5	2.6	2.5	2.7	2.5
Mathematical sciences .....	1.2	1.3	1.3	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.1	1.1

**Expenditures for academic R&D, by field: Selected years, 1975–2006**

Field	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Physical sciences .....	10.3	11.2	11.9	11.1	10.2	9.8	9.7	9.6	9.5	9.0	8.6	8.3	8.2	8.2	8.1	8.0
Astronomy.....	0.8	1.0	1.0	1.1	1.4	1.2	1.2	1.2	1.4	1.3	1.2	1.1	1.0	1.0	1.0	1.0
Chemistry.....	3.5	4.0	4.4	4.0	3.5	3.5	3.4	3.4	3.3	3.2	3.1	3.1	3.1	3.0	3.0	3.0
Physics.....	5.1	5.3	5.7	5.2	4.5	4.3	4.3	4.2	4.2	4.0	3.8	3.5	3.5	3.5	3.5	3.4
Physical sciences nec.....	0.9	0.9	0.8	0.9	0.9	0.8	0.8	0.9	0.6	0.5	0.5	0.5	0.6	0.7	0.6	0.7
Psychology .....	2.4	1.8	1.6	1.6	1.7	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.9	1.8	1.8	1.8
Social sciences.....	7.5	5.6	4.0	4.3	4.6	4.8	4.6	4.4	4.5	4.3	4.4	4.4	4.2	3.9	3.7	3.6
Economics.....	1.6	1.5	1.2	1.2	1.1	1.2	1.1	1.0	1.0	0.8	0.8	0.8	0.8	0.7	0.7	0.7
Political science.....	0.9	0.9	0.6	0.7	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.7
Sociology .....	2.0	1.4	0.8	0.8	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	0.9	0.8	0.8	0.8
Social sciences nec.....	3.0	1.8	1.4	1.6	1.7	1.8	1.8	1.7	1.9	1.7	1.8	1.8	1.7	1.6	1.5	1.4
Sciences nec .....	2.9	2.4	1.9	2.1	1.9	1.8	2.1	1.7	1.6	1.8	1.8	1.7	1.7	1.8	1.7	1.8
Engineering .....	11.2	14.2	14.6	16.3	15.9	16.1	15.8	15.7	15.5	15.1	15.3	15.2	14.9	14.6	14.7	14.8
Aeronautical/astronautical .....	NA	0.9	0.8	1.0	1.1	1.0	1.0	1.0	0.9	0.9	1.0	0.9	1.0	1.0	1.0	0.8
Bioengineering/biomedical .....	NA	NA	NA	NA	NA	NA	0.3	0.4	0.5	0.6	0.6	0.8	0.8	0.9	0.9	1.0
Chemical.....	NA	1.0	1.2	1.3	1.3	1.4	1.3	1.3	1.3	1.2	1.3	1.2	1.1	1.1	1.1	1.1
Civil.....	NA	1.4	1.6	1.7	1.9	2.0	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.8	1.7	1.8
Electrical .....	NA	3.0	3.5	4.1	3.7	3.9	3.9	4.0	3.7	3.7	3.5	3.6	3.5	3.3	3.5	3.4
Mechanical.....	NA	2.3	2.1	2.4	2.3	2.3	2.1	2.2	2.3	2.1	2.1	2.1	2.0	2.0	2.0	2.2
Metallurgical/materials.....	NA	NA	NA	1.7	1.5	1.5	1.6	1.5	1.4	1.3	1.4	1.3	1.4	1.3	1.3	1.3
Engineering nec .....	11.2	5.6	5.4	4.1	4.0	4.1	3.6	3.5	3.5	3.3	3.3	3.3	3.2	3.1	3.2	3.2

NA = not available; nec = not elsewhere classified

NOTES: Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 5-5

**Academic R&D funds provided by federal government, by field: Selected years, 1975–2006**

(Percent)

Field	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All fields.....	67.1	67.6	62.6	59.2	60.1	60.1	58.7	58.6	58.5	58.3	58.6	60.1	61.8	63.9	63.8	62.9
Computer sciences.....	74.3	70.4	69.7	66.5	70.9	72.7	71.4	68.8	67.7	66.6	67.4	68.4	71.8	73.0	72.7	70.6
Environmental sciences.....	70.8	73.1	67.2	63.7	67.1	67.6	66.1	66.3	65.2	64.2	64.9	64.0	65.9	67.8	67.7	67.8
Atmospheric sciences.....	NA	84.1	79.8	75.7	78.6	78.4	76.0	77.8	77.5	77.5	77.3	73.3	75.2	77.4	78.5	80.2
Earth sciences.....	NA	69.7	60.7	57.7	59.9	60.1	59.8	60.8	58.9	58.9	59.3	57.8	60.8	64.8	67.0	65.8
Oceanography.....	NA	77.6	72.7	69.6	70.0	69.6	66.2	66.4	67.1	66.7	66.8	67.6	69.8	70.2	67.2	66.5
Environmental sciences nec.....	70.8	59.1	53.9	50.8	65.3	67.1	66.9	65.1	60.1	55.8	58.5	58.3	56.2	57.7	57.0	58.0
Life sciences.....	65.1	64.9	60.4	58.3	58.4	58.2	57.1	57.1	57.3	57.6	58.3	60.0	61.7	64.2	64.1	63.4
Agricultural sciences.....	29.4	30.9	29.4	26.2	29.3	29.3	27.9	26.7	26.8	26.6	26.6	28.1	29.9	32.2	31.8	31.5
Biological sciences.....	72.5	74.0	67.9	64.5	64.9	64.7	64.2	64.1	64.0	65.1	65.0	67.0	68.0	70.5	70.1	69.0
Medical sciences.....	75.6	74.4	68.0	64.3	63.1	63.0	61.2	61.0	60.8	60.6	61.4	62.7	64.5	66.9	66.5	66.0
Life sciences nec.....	71.8	67.3	60.0	59.1	56.7	58.0	56.9	55.5	58.2	56.8	59.3	59.7	60.3	62.7	61.4	60.1
Mathematical sciences.....	78.6	78.4	75.9	72.6	73.5	72.1	69.8	69.0	67.0	67.3	67.3	69.2	68.9	70.9	70.0	70.3
Physical sciences.....	81.4	81.9	77.5	72.8	72.6	72.2	71.0	70.9	71.5	70.6	70.3	70.7	71.9	72.4	72.2	70.7
Astronomy.....	73.4	75.6	67.0	66.1	68.2	66.1	63.7	62.2	70.9	71.8	68.7	69.0	69.3	68.8	68.4	67.5
Chemistry.....	76.8	77.7	74.2	68.7	69.1	69.0	67.2	67.0	67.1	65.6	65.5	65.3	66.9	69.9	69.5	68.4
Physics.....	86.4	86.8	82.2	77.5	77.0	76.7	75.9	75.8	75.6	74.7	74.7	75.8	76.7	76.8	76.9	75.4
Physical sciences nec.....	77.7	78.7	75.1	71.8	70.8	71.0	71.0	74.7	68.7	66.9	70.7	71.4	73.7	66.2	65.0	62.6
Psychology.....	76.8	73.3	66.9	64.8	67.1	67.7	68.5	67.2	66.7	67.9	68.4	70.7	71.9	75.0	74.0	71.9
Social sciences.....	55.2	53.8	40.1	32.2	38.1	38.6	36.3	37.6	37.7	37.8	38.0	38.7	39.9	41.6	41.4	41.7
Economics.....	48.2	48.8	37.0	27.1	32.0	33.4	34.4	35.3	33.8	34.9	33.0	35.1	34.0	34.4	33.6	35.1
Political science.....	41.8	43.4	33.1	22.0	34.5	34.6	29.5	30.3	27.0	27.3	28.9	28.2	31.9	36.6	34.9	33.8
Sociology.....	65.5	65.0	53.5	45.5	48.5	51.6	46.9	47.0	44.9	45.5	45.3	47.5	48.8	51.2	52.2	54.1
Social sciences nec.....	55.9	54.1	38.5	33.9	37.8	36.4	33.9	36.5	40.1	39.3	40.1	39.7	41.4	42.2	42.4	41.5
Sciences nec.....	57.2	53.6	49.3	41.2	45.0	41.7	40.8	38.5	34.6	34.5	32.0	35.9	34.9	34.8	38.4	37.8
Engineering.....	68.1	68.6	61.2	57.4	59.8	60.2	58.8	57.8	57.4	56.6	56.8	58.5	60.2	61.9	61.2	59.9
Aeronautical/astronautical.....	NA	79.5	76.4	77.7	76.2	73.5	74.2	68.4	70.4	70.7	75.1	72.1	76.1	76.3	75.0	73.9
Bioengineering/biomedical.....	NA	NA	NA	NA	NA	NA	61.9	55.5	52.9	52.3	56.9	59.4	60.8	63.7	60.8	61.8
Chemical.....	NA	64.4	55.6	50.6	54.2	54.8	52.4	51.8	51.6	52.3	51.8	53.4	54.7	54.4	58.4	57.1
Civil.....	NA	64.0	51.5	41.1	43.2	43.5	42.5	39.8	41.0	39.4	39.8	41.9	42.1	44.1	42.8	38.6
Electrical.....	NA	75.7	67.7	65.1	66.4	67.6	66.3	66.4	64.0	62.7	62.4	62.8	66.0	67.5	66.2	66.5
Mechanical.....	NA	67.0	64.6	61.0	65.2	64.5	62.3	61.8	62.1	60.6	60.6	65.1	64.9	67.2	67.0	65.3
Metallurgical and materials.....	NA	NA	NA	50.9	53.2	54.5	57.2	56.6	56.8	56.8	53.2	56.2	57.2	62.3	60.3	60.2
Engineering nec.....	68.1	65.7	57.3	54.6	58.4	59.7	55.8	55.4	55.9	56.4	56.4	58.1	60.0	60.2	59.4	57.7

NA = not available; nec = not elsewhere classified

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Science and Engineering Indicators 2008

Appendix table 5-6

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**Federal obligations for academic R&D, by agency: 1970–2007**

Year	All agencies	DOD	DOE <sup>a</sup>	NASA	NIH <sup>b</sup>	NSF	USDA	All other agencies
1970.....	1,476	216	100	131	518	228	65	217
1971.....	1,645	211	94	134	603	267	72	264
1972.....	1,904	217	85	119	756	362	87	277
1973.....	1,917	204	83	111	761	374	94	289
1974.....	2,214	197	94	99	1,027	389	95	312
1975.....	2,411	203	132	108	1,077	435	108	348
1976.....	2,552	240	145	119	1,185	437	120	307
1977.....	2,905	273	188	118	1,311	511	140	364
1978.....	3,375	383	240	127	1,493	537	186	408
1979.....	3,889	438	260	139	1,880	617	200	355
1980.....	4,263	495	285	158	2,012	685	216	412
1981.....	4,466	573	300	171	2,101	702	243	376
1982.....	4,605	664	277	186	2,140	715	255	369
1983.....	4,966	724	297	189	2,392	783	275	306
1984.....	5,547	830	321	204	2,715	880	261	335
1985.....	6,340	940	357	237	3,158	1,002	293	352
1986.....	6,559	1,098	345	254	3,243	992	274	355
1987.....	7,337	1,017	386	294	3,903	1,096	280	361
1988.....	7,828	1,071	406	338	4,199	1,143	305	366
1989.....	8,672	1,189	454	434	4,565	1,254	328	449
1990.....	9,138	1,213	500	471	4,779	1,321	348	505
1991.....	10,169	1,152	621	534	5,521	1,436	386	520
1992.....	10,271	1,403	640	586	5,064	1,540	438	600
1993.....	11,208	1,616	583	614	5,848	1,562	433	553
1994.....	11,797	1,703	565	641	6,191	1,680	439	577
1995.....	11,928	1,589	594	708	6,271	1,734	435	597
1996.....	11,978	1,447	601	665	6,620	1,740	376	529
1997.....	12,559	1,345	583	719	7,057	1,819	441	595
1998.....	13,381	1,419	623	787	7,565	1,875	415	697
1999.....	14,959	1,474	630	787	8,761	2,076	492	739
2000.....	16,821	1,606	668	845	10,087	2,265	554	796
2001.....	19,588	2,285	743	942	11,528	2,498	652	939
2002.....	21,290	2,219	762	1,075	13,062	2,696	592	885
2003.....	22,693	1,934	790	1,096	14,350	2,978	641	904
2004.....	24,170	2,036	854	1,171	15,184	3,122	653	1,150
2005.....	24,842	2,192	831	1,098	15,657	3,072	710	1,282
2006 (estimated).....	25,332	2,399	730	1,153	15,696	3,107	813	1,433
2007 (estimated).....	24,968	1,977	804	1,210	15,768	3,321	584	1,304
	2000 constant \$millions							
1970.....	5,462	799	370	485	1,917	844	241	803
1971.....	5,798	744	331	472	2,125	941	254	931
1972.....	6,409	730	286	401	2,545	1,218	293	932
1973.....	6,180	658	268	358	2,453	1,206	303	932
1974.....	6,657	592	283	298	3,088	1,170	286	938
1975.....	6,566	553	359	294	2,933	1,185	294	948
1976.....	6,483	610	368	302	3,010	1,110	305	780
1977.....	6,865	645	444	279	3,098	1,208	331	860
1978.....	7,473	848	531	281	3,306	1,189	412	903
1979.....	7,969	897	533	285	3,852	1,264	410	727
1980.....	8,031	933	537	298	3,790	1,290	407	776
1981.....	7,663	983	515	293	3,605	1,205	417	645
1982.....	7,395	1,066	445	299	3,437	1,148	410	593
1983.....	7,638	1,114	457	291	3,679	1,204	423	471
1984.....	8,228	1,231	476	303	4,027	1,305	387	497
1985.....	9,108	1,350	513	340	4,537	1,440	421	506

Appendix table 5-6

(Page 2 of 3)

**Federal obligations for academic R&D, by agency: 1970–2007**

Year	All agencies	DOD	DOE <sup>a</sup>	NASA	NIH <sup>b</sup>	NSF	USDA	All other agencies
1986.....	9,209	1,542	484	357	4,553	1,393	385	498
1987.....	10,039	1,392	528	402	5,340	1,500	383	494
1988.....	10,384	1,421	539	448	5,570	1,516	405	486
1989.....	11,073	1,518	580	554	5,829	1,601	419	573
1990.....	11,250	1,493	616	580	5,884	1,626	429	622
1991.....	12,067	1,367	737	633	6,551	1,703	458	617
1992.....	11,889	1,624	741	679	5,861	1,783	507	695
1993.....	12,691	1,830	660	695	6,621	1,769	490	626
1994.....	13,074	1,887	626	711	6,862	1,862	486	639
1995.....	12,941	1,724	645	768	6,804	1,881	472	648
1996.....	12,757	1,541	640	708	7,051	1,853	401	563
1997.....	13,146	1,408	611	753	7,387	1,904	461	623
1998.....	13,832	1,467	644	813	7,820	1,938	429	720
1999.....	15,263	1,504	643	803	8,940	2,119	502	754
2000.....	16,821	1,606	668	845	10,087	2,265	554	796
2001.....	19,251	2,246	730	926	11,330	2,455	641	923
2002.....	20,521	2,139	734	1,036	12,590	2,598	570	853
2003.....	21,433	1,827	747	1,035	13,553	2,813	606	854
2004.....	22,275	1,876	787	1,079	13,994	2,878	602	1,059
2005.....	22,204	1,959	743	981	13,994	2,746	634	1,146
2006 (estimated) .....	21,966	2,081	633	1,000	13,610	2,694	705	1,243
2007 (estimated) .....	21,115	1,672	680	1,024	13,335	2,808	494	1,103
Percent distribution								
1970.....	100.0	14.6	6.8	8.9	35.1	15.4	4.4	14.7
1971.....	100.0	12.8	5.7	8.1	36.7	16.2	4.4	16.0
1972.....	100.0	11.4	4.5	6.3	39.7	19.0	4.6	14.5
1973.....	100.0	10.6	4.3	5.8	39.7	19.5	4.9	15.1
1974.....	100.0	8.9	4.2	4.5	46.4	17.6	4.3	14.1
1975.....	100.0	8.4	5.5	4.5	44.7	18.0	4.5	14.4
1976.....	100.0	9.4	5.7	4.7	46.4	17.1	4.7	12.0
1977.....	100.0	9.4	6.5	4.1	45.1	17.6	4.8	12.5
1978.....	100.0	11.3	7.1	3.8	44.2	15.9	5.5	12.1
1979.....	100.0	11.3	6.7	3.6	48.3	15.9	5.1	9.1
1980.....	100.0	11.6	6.7	3.7	47.2	16.1	5.1	9.7
1981.....	100.0	12.8	6.7	3.8	47.0	15.7	5.4	8.4
1982.....	100.0	14.4	6.0	4.0	46.5	15.5	5.5	8.0
1983.....	100.0	14.6	6.0	3.8	48.2	15.8	5.5	6.2
1984.....	100.0	15.0	5.8	3.7	48.9	15.9	4.7	6.0
1985.....	100.0	14.8	5.6	3.7	49.8	15.8	4.6	5.6
1986.....	100.0	16.7	5.3	3.9	49.4	15.1	4.2	5.4
1987.....	100.0	13.9	5.3	4.0	53.2	14.9	3.8	4.9
1988.....	100.0	13.7	5.2	4.3	53.6	14.6	3.9	4.7
1989.....	100.0	13.7	5.2	5.0	52.6	14.5	3.8	5.2
1990.....	100.0	13.3	5.5	5.2	52.3	14.5	3.8	5.5
1991.....	100.0	11.3	6.1	5.2	54.3	14.1	3.8	5.1
1992.....	100.0	13.7	6.2	5.7	49.3	15.0	4.3	5.8
1993.....	100.0	14.4	5.2	5.5	52.2	13.9	3.9	4.9
1994.....	100.0	14.4	4.8	5.4	52.5	14.2	3.7	4.9
1995.....	100.0	13.3	5.0	5.9	52.6	14.5	3.6	5.0
1996.....	100.0	12.1	5.0	5.5	55.3	14.5	3.1	4.4
1997.....	100.0	10.7	4.6	5.7	56.2	14.5	3.5	4.7
1998.....	100.0	10.6	4.7	5.9	56.5	14.0	3.1	5.2
1999.....	100.0	9.9	4.2	5.3	58.6	13.9	3.3	4.9
2000.....	100.0	9.5	4.0	5.0	60.0	13.5	3.3	4.7
2001.....	100.0	11.7	3.8	4.8	58.9	12.8	3.3	4.8
2002.....	100.0	10.4	3.6	5.0	61.4	12.7	2.8	4.2
2003.....	100.0	8.5	3.5	4.8	63.2	13.1	2.8	4.0

Appendix table 5-6

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**Federal obligations for academic R&D, by agency: 1970–2007**

Year	All agencies	DOD	DOE <sup>a</sup>	NASA	NIH <sup>b</sup>	NSF	USDA	All other agencies
2004.....	100.0	8.4	3.5	4.8	62.8	12.9	2.7	4.8
2005.....	100.0	8.8	3.3	4.4	63.0	12.4	2.9	5.2
2006 (estimated) .....	100.0	9.5	2.9	4.6	62.0	12.3	3.2	5.7
2007 (estimated) .....	100.0	7.9	3.2	4.8	63.2	13.3	2.3	5.2

DOD = Department of Defense; DOE = Department of Energy; NASA = National Aeronautics and Space Administration; NIH = National Institutes of Health; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

<sup>a</sup>DOE data for 1970–73 from Atomic Energy Commission, for 1974–76 from Energy Research and Development Administration, and for 1977 and thereafter from DOE.

<sup>b</sup>NIH data include Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), an agency in the Department of Health and Human Services replaced in 1992 by the Substance Abuse and Mental Health Services Administration. Three research entities of ADAMHA (National Institute of Mental Health, National Institute on Alcohol Abuse and Alcoholism, and National Institute on Drug Abuse) merged at that time into NIH.

NOTES: Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming); and Federal Funds for Research and Development: Detailed Historical Tables: Fiscal Years 1951–2002, NSF 03-325 (2003), <http://www.nsf.gov/sbe/srs/nsf03325/start.htm>.

Appendix table 5-7

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**Federal obligations for academic research, by agency: 1970–2007**

Year	All agencies	DOD	DOE <sup>a</sup>	NASA	NIH <sup>b</sup>	NSF	USDA	All other agencies
Current \$millions								
1970.....	1,276	173	97	65	480	223	65	174
1971.....	1,430	184	90	70	551	254	72	210
1972.....	1,643	177	81	48	677	346	87	226
1973.....	1,691	161	79	80	749	370	94	158
1974.....	1,958	167	86	85	1,004	369	94	153
1975.....	2,079	165	112	91	1,036	420	108	148
1976.....	2,250	192	116	98	1,138	429	119	158
1977.....	2,584	221	134	105	1,269	505	139	211
1978.....	2,928	243	175	116	1,437	534	181	241
1979.....	3,333	271	204	125	1,657	612	198	266
1980.....	3,699	313	224	146	1,835	680	214	287
1981.....	3,920	363	248	157	1,929	698	240	284
1982.....	4,045	413	236	156	1,995	713	253	280
1983.....	4,468	472	273	170	2,246	783	273	250
1984.....	5,030	539	311	177	2,573	880	260	290
1985.....	5,726	587	336	213	2,990	1,002	292	305
1986.....	5,883	707	334	225	3,054	992	273	298
1987.....	6,640	681	372	263	3,651	1,096	279	298
1988.....	7,023	729	384	310	3,856	1,143	304	297
1989.....	7,793	840	437	387	4,167	1,254	326	382
1990.....	8,137	795	479	422	4,349	1,321	346	426
1991.....	8,868	794	596	474	4,729	1,436	384	456
1992.....	9,061	912	605	512	4,517	1,540	436	538
1993.....	9,892	1,090	547	539	5,253	1,562	429	472
1994.....	10,292	1,079	529	555	5,517	1,680	436	496
1995.....	10,354	1,047	558	588	5,481	1,734	431	516
1996.....	10,707	1,071	566	560	5,924	1,740	373	471
1997.....	11,173	945	552	596	6,309	1,819	437	515
1998.....	11,739	963	564	648	6,716	1,875	408	566
1999.....	13,204	989	562	745	7,733	2,076	482	617
2000.....	16,022	1,113	619	721	10,087	2,265	547	670
2001.....	18,657	1,697	695	812	11,528	2,498	643	785
2002.....	20,285	1,591	702	933	13,062	2,696	581	721
2003.....	21,676	1,302	729	937	14,350	2,978	627	754
2004.....	22,699	1,282	797	661	15,184	3,122	638	1,015
2005.....	23,156	1,348	776	581	15,657	3,072	694	1,028
2006 (estimated).....	23,447	1,461	696	610	15,696	3,107	802	1,076
2007 (estimated).....	23,361	1,282	761	640	15,768	3,321	575	1,015
2000 constant \$millions								
1970.....	4,722	640	359	241	1,776	825	241	644
1971.....	5,040	649	317	247	1,942	895	254	740
1972.....	5,530	596	273	162	2,279	1,165	293	761
1973.....	5,451	519	255	258	2,415	1,193	303	509
1974.....	5,887	502	259	256	3,019	1,109	283	460
1975.....	5,662	449	305	248	2,822	1,144	294	403
1976.....	5,715	488	295	249	2,891	1,090	302	401
1977.....	6,106	522	317	248	2,999	1,193	328	499
1978.....	6,483	538	387	257	3,182	1,182	401	534
1979.....	6,829	555	418	256	3,395	1,254	406	545
1980.....	6,968	590	422	275	3,457	1,281	403	541
1981.....	6,726	623	426	269	3,310	1,198	412	487
1982.....	6,496	663	379	251	3,204	1,145	406	450
1983.....	6,872	726	420	261	3,454	1,204	420	385
1984.....	7,461	799	461	263	3,817	1,305	386	430
1985.....	8,226	843	483	306	4,296	1,440	419	438



Appendix table 5-7

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**Federal obligations for academic research, by agency: 1970–2007**

Year	All agencies	DOD	DOE <sup>a</sup>	NASA	NIH <sup>b</sup>	NSF	USDA	All other agencies
1986.....	8,260	993	469	316	4,288	1,393	383	418
1987.....	9,085	932	509	360	4,995	1,500	382	408
1988.....	9,316	967	509	411	5,115	1,516	403	394
1989.....	9,951	1,073	558	494	5,321	1,601	416	488
1990.....	10,018	979	590	520	5,354	1,626	426	524
1991.....	10,523	942	707	562	5,612	1,703	456	541
1992.....	10,488	1,056	701	593	5,229	1,783	505	623
1993.....	11,201	1,234	620	610	5,948	1,769	486	534
1994.....	11,406	1,195	586	615	6,114	1,862	483	550
1995.....	11,234	1,136	605	638	5,947	1,881	468	560
1996.....	11,403	1,140	603	596	6,309	1,853	398	502
1997.....	11,695	990	578	624	6,604	1,904	457	539
1998.....	12,134	995	583	670	6,942	1,938	422	585
1999.....	13,473	1,009	573	760	7,890	2,119	491	630
2000.....	16,022	1,113	619	721	10,087	2,265	547	670
2001.....	18,336	1,667	683	798	11,330	2,455	632	772
2002.....	19,552	1,533	677	899	12,590	2,598	560	695
2003.....	20,473	1,229	689	885	13,553	2,813	592	712
2004.....	20,920	1,181	735	609	13,994	2,878	588	935
2005.....	20,697	1,205	694	519	13,994	2,746	620	919
2006 (estimated) .....	20,331	1,267	603	529	13,610	2,694	695	933
2007 (estimated) .....	19,756	1,084	644	542	13,335	2,808	486	858
Percent distribution								
1970.....	100.0	13.6	7.6	5.1	37.6	17.5	5.1	13.6
1971.....	100.0	12.9	6.3	4.9	38.5	17.8	5.0	14.7
1972.....	100.0	10.8	4.9	2.9	41.2	21.1	5.3	13.8
1973.....	100.0	9.5	4.7	4.7	44.3	21.9	5.6	9.3
1974.....	100.0	8.5	4.4	4.3	51.3	18.8	4.8	7.8
1975.....	100.0	7.9	5.4	4.4	49.8	20.2	5.2	7.1
1976.....	100.0	8.5	5.2	4.4	50.6	19.1	5.3	7.0
1977.....	100.0	8.6	5.2	4.1	49.1	19.5	5.4	8.2
1978.....	100.0	8.3	6.0	4.0	49.1	18.2	6.2	8.2
1979.....	100.0	8.1	6.1	3.8	49.7	18.4	5.9	8.0
1980.....	100.0	8.5	6.1	3.9	49.6	18.4	5.8	7.8
1981.....	100.0	9.3	6.3	4.0	49.2	17.8	6.1	7.2
1982.....	100.0	10.2	5.8	3.9	49.3	17.6	6.3	6.9
1983.....	100.0	10.6	6.1	3.8	50.3	17.5	6.1	5.6
1984.....	100.0	10.7	6.2	3.5	51.2	17.5	5.2	5.8
1985.....	100.0	10.3	5.9	3.7	52.2	17.5	5.1	5.3
1986.....	100.0	12.0	5.7	3.8	51.9	16.9	4.6	5.1
1987.....	100.0	10.3	5.6	4.0	55.0	16.5	4.2	4.5
1988.....	100.0	10.4	5.5	4.4	54.9	16.3	4.3	4.2
1989.....	100.0	10.8	5.6	5.0	53.5	16.1	4.2	4.9
1990.....	100.0	9.8	5.9	5.2	53.5	16.2	4.2	5.2
1991.....	100.0	9.0	6.7	5.3	53.3	16.2	4.3	5.1
1992.....	100.0	10.1	6.7	5.7	49.9	17.0	4.8	5.9
1993.....	100.0	11.0	5.5	5.4	53.1	15.8	4.3	4.8
1994.....	100.0	10.5	5.1	5.4	53.6	16.3	4.2	4.8
1995.....	100.0	10.1	5.4	5.7	52.9	16.7	4.2	5.0
1996.....	100.0	10.0	5.3	5.2	55.3	16.3	3.5	4.4
1997.....	100.0	8.5	4.9	5.3	56.5	16.3	3.9	4.6
1998.....	100.0	8.2	4.8	5.5	57.2	16.0	3.5	4.8
1999.....	100.0	7.5	4.3	5.6	58.6	15.7	3.6	4.7
2000.....	100.0	6.9	3.9	4.5	63.0	14.1	3.4	4.2
2001.....	100.0	9.1	3.7	4.4	61.8	13.4	3.4	4.2
2002.....	100.0	7.8	3.5	4.6	64.4	13.3	2.9	3.6
2003.....	100.0	6.0	3.4	4.3	66.2	13.7	2.9	3.5

Appendix table 5-7

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**Federal obligations for academic research, by agency: 1970–2007**

Year	All agencies	DOD	DOE <sup>a</sup>	NASA	NIH <sup>b</sup>	NSF	USDA	All other agencies
2004.....	100.0	5.6	3.5	2.9	66.9	13.8	2.8	4.5
2005.....	100.0	5.8	3.4	2.5	67.6	13.3	3.0	4.4
2006 (estimated) .....	100.0	6.2	3.0	2.6	66.9	13.3	3.4	4.6
2007 (estimated) .....	100.0	5.5	3.3	2.7	67.5	14.2	2.5	4.3

DOD = Department of Defense; DOE = Department of Energy; NASA = National Aeronautics and Space Administration; NIH = National Institutes of Health; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

<sup>a</sup>DOE data for 1970–73 from Atomic Energy Commission, for 1974–76 from Energy Research and Development Administration, and for 1977 and thereafter from DOE.

<sup>b</sup>NIH data include Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), an agency in the Department of Health and Human Services replaced in 1992 by the Substance Abuse and Mental Health Services Administration. Three research entities of ADAMHA (National Institute of Mental Health, National Institute on Alcohol Abuse and Alcoholism, and National Institute on Drug Abuse) merged at that time into NIH.

NOTES: Academic research includes basic and applied research. Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming); and Federal Funds for Research and Development: Detailed Historical Tables: Fiscal Years 1951–2002, NSF 03-325 (2003), <http://www.nsf.gov/sbe/srs/nsf03325/start.htm>.

*Science and Engineering Indicators 2008*

Appendix table 5-8

**Federal agencies' academic research obligations, by field: FY 2005**

(Percent distribution)

Field	DHS	DOD	DOE	HHS	NASA	NSF	USDA
All fields.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Science .....	78.7	59.9	84.7	97.2	68.7	83.4	97.1
Physical sciences .....	20.0	10.1	52.8	1.8	30.9	18.6	3.2
Astronomy.....	0.0	0.0	0.0	0.0	19.3	2.2	0.0
Chemistry .....	8.6	3.3	11.9	1.6	1.4	5.7	3.1
Physics .....	11.1	5.0	40.9	0.0	8.8	7.0	0.0
Physical sciences nec .....	0.2	1.8	0.0	0.1	1.4	3.8	0.0
Mathematics .....	1.4	4.8	2.6	0.6	0.1	6.0	0.1
Computer sciences.....	2.3	15.1	1.8	0.0	1.4	17.7	0.0
Earth, atmospheric, and ocean sciences .....	0.0	9.3	11.1	1.6	24.7	13.0	1.5
Atmospheric sciences .....	0.0	1.2	3.7	0.0	15.5	3.4	1.4
Earth sciences.....	0.0	0.7	4.1	0.0	5.3	3.8	0.1
Oceanography.....	0.0	6.6	0.1	0.0	2.0	5.6	0.0
Other.....	0.0	0.8	3.3	1.6	1.9	0.2	0.0
Life sciences .....	33.4	14.1	16.4	84.2	5.3	15.6	83.3
Agricultural sciences .....	0.9	0.1	0.0	0.0	0.0	0.0	44.1
Biological sciences (excluding environmental) .....	31.3	4.4	9.4	43.5	2.7	12.7	21.5
Environmental biology.....	0.3	0.9	0.0	0.0	0.2	2.9	16.3
Medical sciences.....	1.0	6.7	6.9	34.8	1.7	0.0	1.5
Life sciences nec .....	0.0	2.0	0.1	5.9	0.6	0.0	0.0
Psychology.....	1.5	0.7	0.0	6.6	0.3	0.1	0.0
Biological aspects .....	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Social aspects.....	1.0	0.1	0.0	0.0	0.2	0.1	0.0
Psychology nec .....	0.3	0.5	0.0	6.6	0.1	0.0	0.0
Social sciences.....	5.5	0.0	0.0	1.2	0.0	4.8	8.9
Anthropology.....	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Economics .....	0.8	0.0	0.0	0.0	0.0	0.6	6.9
Political science .....	3.8	0.0	0.0	0.0	0.0	0.3	0.0
Sociology .....	0.7	0.0	0.0	0.0	0.0	0.1	2.0
Social sciences nec.....	0.2	0.0	0.0	1.2	0.0	3.3	0.0
Other sciences nec.....	14.7	5.8	0.0	1.2	6.0	7.6	0.0
Engineering .....	21.3	40.1	15.3	2.8	31.3	16.6	2.9
Aeronautical .....	0.3	3.2	0.0	0.0	19.9	0.0	0.0
Astronautical .....	0.0	0.5	0.0	0.0	8.0	0.0	0.0
Chemical .....	0.2	0.4	4.4	0.0	0.1	1.9	0.1
Civil.....	1.3	0.5	0.7	0.0	0.0	1.8	0.0
Electrical .....	0.2	11.8	1.9	0.0	0.6	2.2	0.0
Mechanical.....	0.3	3.9	0.3	0.0	0.4	0.2	0.0
Materials.....	0.4	8.5	3.1	0.3	0.5	4.1	0.0
Engineering nec .....	18.6	11.4	5.0	2.5	2.0	6.5	2.8

nec = not elsewhere classified

DHS = Department of Homeland Security; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

NOTES: Academic research includes both basic and applied research. Agencies shown are only ones that report research obligations to academia by S&E field and represent approximately 97% of academic research obligations. Detail may not add to total because of rounding.

SOURCE: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).

Appendix table 5-9

**Federal academic research obligations provided by major agencies, by field: FY 2005**

(Percent distribution)

Field	All agencies	DHS	DOD	DOE	HHS	NASA	NSF	USDA
All fields .....	100.0	0.1	6.0	3.4	71.3	2.6	13.6	3.1
Science .....	100.0	0.0	3.9	3.2	75.4	1.9	12.4	3.2
Physical sciences .....	100.0	0.2	8.5	25.6	17.6	11.2	35.7	1.4
Astronomy.....	100.0	0.0	0.0	0.0	0.0	62.9	37.1	0.0
Chemistry .....	100.0	0.2	7.3	15.2	43.7	1.3	28.7	3.6
Physics .....	100.0	0.2	10.2	48.6	0.0	7.8	33.0	0.0
Physical sciences nec .....	100.0	0.0	14.8	0.0	10.1	4.9	70.2	0.0
Mathematics .....	100.0	0.0	17.5	5.3	26.2	0.2	49.9	0.2
Computer sciences.....	100.0	0.0	26.5	1.8	0.1	1.0	70.7	0.0
Earth, atmospheric, and ocean sciences .....	100.0	0.0	12.3	8.5	24.9	14.1	39.2	1.1
Atmospheric sciences .....	100.0	0.0	6.5	11.4	0.0	36.1	42.1	3.9
Earth sciences.....	100.0	0.0	5.1	16.8	0.0	16.4	61.3	0.5
Ocean sciences.....	100.0	0.0	32.6	0.2	0.0	4.3	62.9	0.0
Other.....	100.0	0.0	3.4	8.4	82.7	3.5	2.0	0.0
Life sciences .....	100.0	0.0	1.3	0.9	90.6	0.2	3.2	3.9
Agricultural sciences .....	100.0	0.0	0.4	0.0	0.0	0.1	0.0	99.5
Biological sciences (excluding environmental) .....	100.0	0.0	0.8	1.0	91.0	0.2	5.1	1.9
Environmental biology .....	100.0	0.0	5.5	0.0	0.7	0.6	40.9	52.2
Medical sciences.....	100.0	0.0	1.6	0.9	97.1	0.2	0.0	0.2
Life sciences nec .....	100.0	0.0	2.7	0.0	96.9	0.4	0.0	0.0
Psychology .....	100.0	0.0	0.8	0.0	98.6	0.2	0.4	0.0
Biological aspects .....	100.0	1.5	95.6	0.0	0.0	2.9	0.0	0.0
Social aspects.....	100.0	1.9	18.8	0.0	0.5	16.8	62.1	0.0
Psychology nec .....	100.0	0.0	0.6	0.0	99.3	0.1	0.0	0.0
Social sciences.....	100.0	0.2	0.0	0.0	48.4	0.0	36.2	15.2
Anthropology.....	100.0	0.0	0.3	0.0	0.0	0.0	99.7	0.0
Economics .....	100.0	0.1	0.0	0.0	1.4	0.0	27.6	70.8
Political science .....	100.0	4.8	0.0	0.0	0.0	0.0	95.2	0.0
Sociology .....	100.0	0.5	0.0	0.0	0.2	0.3	23.5	75.6
Social sciences nec.....	100.0	0.0	0.0	0.0	65.7	0.0	34.3	0.0
Other sciences nec.....	100.0	0.3	14.4	0.0	35.8	6.4	43.0	0.0

**Federal academic research obligations provided by major agencies, by field: FY 2005**

(Percent distribution)

Field	All agencies	DHS	DOD	DOE	HHS	NASA	NSF	USDA
Engineering .....	100.0	0.1	29.7	6.5	24.7	10.0	27.9	1.1
Aeronautical .....	100.0	0.0	27.0	0.0	0.0	73.0	0.0	0.0
Astronautical .....	100.0	0.0	13.3	0.0	0.0	86.7	0.0	0.0
Chemical .....	100.0	0.0	6.1	33.9	0.0	0.6	59.1	0.4
Civil .....	100.0	0.3	9.3	7.8	0.0	0.1	82.4	0.2
Electrical .....	100.0	0.0	65.3	6.0	0.0	1.3	27.3	0.0
Mechanical .....	100.0	0.1	85.1	3.5	0.0	3.7	7.6	0.1
Materials .....	100.0	0.0	36.5	7.8	14.8	0.9	40.0	0.0
Engineering nec .....	100.0	0.3	18.5	4.7	48.7	1.4	24.1	2.3

nec = not elsewhere classified

DHS = Department of Homeland Security; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = U.S. Department of Agriculture

NOTES: Academic research includes both basic and applied research. Agencies shown are only ones that report research obligations to academia by S&amp;E field and represent approximately 97% of academic research obligations.

SOURCE: NSF, Division of Science Resources Statistics, Federal Funds for Research and Development: Fiscal Years 2005, 2006, and 2007 (forthcoming).

*Science and Engineering Indicators 2008*

Appendix table 5-10

**Sources of R&D funds at private and public institutions: 1986, 1996, and 2006**

Source of funds	All institutions		Private institutions		Public institutions	
	Amount (current \$millions)	Percent distribution	Amount (current \$millions)	Percent distribution	Amount (current \$millions)	Percent distribution
<b>1986</b>						
All sources.....	10,928	100.0	3,817	100.0	7,111	100.0
Federal government.....	6,712	61.4	2,872	75.2	3,840	54.0
State/local government.....	915	8.4	84	2.2	832	11.7
Industry.....	700	6.4	260	6.8	440	6.2
Academic institutions.....	1,869	17.1	319	8.4	1,550	21.8
Other.....	732	6.7	283	7.4	449	6.3
<b>1996</b>						
All sources.....	23,049	100.0	7,461	100.0	15,588	100.0
Federal government.....	13,842	60.1	5,375	72.1	8,466	54.3
State/local government.....	1,812	7.9	161	2.2	1,650	10.6
Industry.....	1,605	7.0	529	7.1	1,076	6.9
Academic institutions.....	4,171	18.1	752	10.1	3,419	21.9
Other.....	1,619	7.0	643	8.6	976	6.3
<b>2006</b>						
All sources.....	47,760	100.0	15,404	100.0	32,357	100.0
Federal government.....	30,033	62.9	11,569	75.1	18,464	57.1
State/local government.....	3,016	6.3	304	2.0	2,713	8.4
Industry.....	2,428	5.1	764	5.0	1,663	5.1
Academic institutions.....	9,062	19.0	1,626	10.6	7,436	23.0
Other.....	3,221	6.7	1,140	7.4	2,081	6.4

NOTE: Detail may not add to total because of rounding.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

Appendix table 5-11

(Page 1 of 2)

**Top 100 academic institutions in R&D expenditures, by source of funds: 2006**

(Millions of current dollars)

Rank/academic institution	All sources	Federal government	State/local government	Industry	Academic institutions	All other sources
All institutions .....	47,760	30,033	3,016	2,428	9,062	3,221
1 Johns Hopkins University <sup>a</sup> (private) .....	1,500	1,307	6	25	70	92
2 University of Wisconsin—Madison (public) .....	832	492	31	20	224	65
3 University of California—Los Angeles (public) .....	811	484	15	24	162	126
4 University of Michigan, all campuses (public) .....	800	566	10	32	153	40
5 University of California—San Francisco (public) .....	796	465	27	36	130	140
6 University of Washington (public) .....	778	650	9	57	43	19
7 University of California—San Diego (public) .....	755	464	26	40	125	100
8 Stanford University (private) .....	679	540	5	35	41	59
9 University of Pennsylvania (private) .....	676	479	7	38	64	88
10 Duke University (private) .....	657	414	18	133	69	23
Total, top 10 .....	8,285	5,861	152	440	1,081	750
11 Ohio State University, all campuses (public) .....	652	316	98	106	103	29
12 Cornell University, all campuses (private) .....	649	390	64	20	128	46
13 Pennsylvania State University, all campuses (public) .....	644	367	70	89	117	1
14 Massachusetts Institute of Technology (private) .....	601	476	1	76	11	37
15 University of Minnesota, all campuses (public) .....	595	326	53	26	108	82
16 University of California—Davis (public) .....	573	248	45	26	193	61
17 University of Florida (public) .....	565	248	91	33	164	29
18 Washington University in St. Louis (private) .....	548	408	15	14	72	38
19 University of California—Berkeley (public) .....	546	262	36	25	146	77
20 University of Arizona (public) .....	536	302	10	33	144	48
Total, top 20 .....	14,194	9,205	635	889	2,267	1,198
21 University of Pittsburgh, all campuses (public) .....	530	422	13	9	62	24
22 Columbia University in the City of New York (private) .....	530	451	13	6	43	18
23 University of Colorado, all campuses (public) .....	513	448	2	11	29	22
24 Texas A&M University, all campuses (public) .....	493	206	116	34	127	10
25 University of Illinois at Urbana-Champaign (public) .....	476	265	35	12	150	14
26 Baylor College of Medicine (private) .....	462	288	3	16	61	94
27 Yale University (private) .....	460	349	1	17	30	64
28 University of Texas M.D. Anderson Cancer Center (public) .....	458	182	122	28	76	50
29 Harvard University (private) .....	453	403	1	6	0	43
30 University of Southern California (private) .....	450	333	5	25	87	0
Total, top 30 .....	19,020	12,553	946	1,052	2,932	1,537
31 University of North Carolina at Chapel Hill (public) .....	444	329	18	7	89	0
32 Georgia Institute of Technology, all campuses (public) .....	441	258	12	37	129	5
33 University of Texas at Austin (public) .....	431	273	24	33	78	23
34 Northwestern University (private) .....	420	250	5	12	108	44
35 University of Maryland at Baltimore (public) .....	405	186	28	34	111	46
36 Vanderbilt University (private) .....	377	300	0	7	54	16
37 Purdue University, all campuses (public) .....	373	157	53	46	115	2
38 Case Western Reserve University (private) .....	369	307	16	6	19	21
39 Scripps Research Institute (private) .....	367	269	0	16	60	23
40 University of Rochester (private) .....	367	278	11	29	32	16
Total, top 40 .....	23,014	15,161	1,113	1,279	3,728	1,733
41 Michigan State University (public) .....	358	169	49	12	116	13
42 Indiana University, all campuses (public) .....	355	171	5	6	120	53
43 University of Maryland at College Park (public) .....	354	210	17	11	110	7
44 University of Iowa (public) .....	346	217	10	19	91	10
45 Emory University (private) .....	346	268	12	6	32	28
46 Louisiana State University, all campuses (public) .....	344	127	85	16	90	26
47 University of Nebraska, all campuses (public) .....	333	139	7	14	149	24
48 University of Texas Southwestern Medical Center Dallas (public) .....	333	197	34	15	14	74
49 University of Illinois at Chicago (public) .....	332	204	6	9	91	22
50 University of Alabama at Birmingham (public) .....	331	293	0	8	15	15
Total, top 50 .....	26,448	17,154	1,339	1,395	4,555	2,005
51 North Carolina State University (public) .....	331	131	87	42	68	3
52 University of Kentucky, all campuses (public) .....	324	151	45	9	98	20
53 University of Georgia (public) .....	324	93	50	6	163	13

Appendix table 5-11

(Page 2 of 2)

**Top 100 academic institutions in R&D expenditures, by source of funds: 2006**

(Millions of current dollars)

Rank/academic institution	All sources	Federal government	State/local government	Industry	Academic institutions	All other sources
54 Virginia Polytechnic Institute and State University (public) .....	322	120	93	16	77	16
55 Rutgers, the State University of New Jersey, all campuses (public).....	308	129	36	10	103	30
56 University of Chicago (private).....	305	253	5	5	20	22
57 University of California–Irvine (public) .....	300	170	10	16	65	39
58 SUNY at Buffalo, all campuses (public).....	298	153	12	18	82	32
59 University of Cincinnati, all campuses (public).....	294	202	16	5	53	18
60 University of South Florida (public).....	286	154	29	35	68	0
Total, top 60 .....	29,540	18,710	1,722	1,557	5,351	2,199
61 New York University (private).....	284	189	5	8	37	46
62 SUNY at Albany (public).....	274	104	62	16	76	17
63 Mt. Sinai School of Medicine (private) .....	273	225	2	11	8	27
64 Oregon Health & Science University (public).....	272	223	5	12	18	13
65 California Institute of Technology (private) .....	270	249	2	8	4	8
66 Boston University (private) .....	256	239	1	7	0	9
67 Colorado State University (public).....	254	183	15	14	36	6
68 University of Hawaii at Manoa (public).....	250	202	9	13	26	0
69 University of Tennessee, all campuses (public).....	249	114	56	20	43	17
70 University of Utah (public) .....	248	175	2	8	45	18
Total, top 70 .....	32,171	20,612	1,880	1,673	5,645	2,360
71 University of Medicine and Dentistry of New Jersey (public).....	246	141	12	17	51	24
72 University of Virginia, all campuses (public) .....	239	204	1	5	20	9
73 SUNY at Stony Brook, all campuses (public).....	235	113	4	5	93	20
74 Iowa State University (public).....	222	105	40	11	62	5
75 Wayne State University (public).....	221	118	14	9	63	16
76 Rockefeller University (private).....	215	94	0	3	110	8
77 University of Missouri, Columbia (public).....	215	102	17	3	89	5
78 University of Connecticut, all campuses (public).....	215	125	7	7	62	14
79 University of Miami (private).....	214	150	3	20	15	24
80 Carnegie Mellon University (private) .....	213	185	4	12	5	6
Total, top 80 .....	34,404	21,949	1,983	1,766	6,214	2,493
81 Arizona State University, main campus (public) .....	202	110	15	12	61	4
82 Dartmouth College (private) .....	200	140	5	5	37	14
83 Washington State University (public) .....	196	81	32	3	70	11
84 University of Kansas, all campuses (public) .....	196	116	5	3	64	9
85 University of Massachusetts at Worcester (public).....	192	136	35	9	2	8
86 Mississippi State University (public) .....	190	94	30	7	58	0
87 Oregon State University (public) .....	190	117	37	3	30	3
88 Yeshiva University (private).....	189	154	0	2	22	12
89 Princeton University (private) .....	188	118	1	6	52	11
90 Florida State University (public).....	186	110	11	1	57	7
Total, top 90 .....	36,333	23,125	2,152	1,818	6,667	2,571
91 Wake Forest University (private).....	183	140	11	15	1	17
92 University of New Mexico, all campuses (public) .....	181	128	2	5	44	2
93 University of Texas Medical Branch (public).....	180	120	11	6	26	16
94 Clemson University (public).....	180	56	29	12	79	3
95 University of Oklahoma, all campuses (public).....	179	91	13	9	52	13
96 Medical University of South Carolina (public).....	176	104	1	12	56	3
97 University of Texas Health Science Center Houston (public).....	175	123	15	9	13	16
98 University of California–Santa Barbara (public).....	174	106	3	14	30	22
99 New Mexico State University, all campuses (public).....	169	56	19	21	64	10
100 Brown University (private) .....	158	97	0	12	48	1
Total, top 100 .....	38,089	24,146	2,256	1,933	7,080	2,674

0 = &lt;\$500,000

<sup>a</sup>Johns Hopkins University includes Applied Physics Laboratory, with \$709 million in total R&D expenditures and \$672 million in federally financed R&D expenditures.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Research and Development Expenditures at Universities and Colleges, FY 2006.



Appendix table 5-12

**Academic institutions receiving federal R&D support, by selected Carnegie classification: 1971–2005**

Year	All academic institutions	Carnegie institution type	
		Doctorate-granting— very high or high research activity	Other
1971.....	567	192	375
1972.....	623	194	429
1973.....	541	192	349
1974.....	553	192	361
1975.....	559	194	365
1976.....	574	195	379
1977.....	621	193	428
1978.....	677	196	481
1979.....	668	196	472
1980.....	684	195	489
1981.....	620	195	425
1982.....	588	195	393
1983.....	598	194	404
1984.....	600	194	406
1985.....	645	194	451
1986.....	649	194	455
1987.....	737	194	543
1988.....	683	194	489
1989.....	712	194	518
1990.....	747	194	553
1991.....	775	193	582
1992.....	837	196	641
1993.....	889	195	694
1994.....	902	195	707
1995.....	891	196	695
1996.....	838	196	642
1997.....	840	196	644
1998.....	796	195	601
1999.....	789	196	593
2000.....	818	196	622
2001.....	847	196	651
2002.....	858	196	662
2003.....	870	196	674
2004.....	842	196	646
2005.....	877	196	681

NOTES: Institutions designated by 2005 Carnegie classification code. Other institutions include all institutions except very high and high research activity institutions. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, <http://www.carnegiefoundation.org/classifications/index.asp>, accessed 17 August 2007.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions: FY 2005 (forthcoming); and Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

## Current expenditures for research equipment at academic institutions, by field: Selected years, 1985–2006

Field	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Current \$millions													
All fields.....	672	1,013	1,240	1,215	1,289	1,295	1,326	1,436	1,512	1,701	1,817	1,891	1,876	1,839
Computer sciences.....	35	48	77	67	71	63	63	56	65	101	99	105	72	69
Environmental sciences.....	48	72	83	88	94	101	99	100	87	132	121	125	122	144
Atmospheric sciences.....	8	11	14	14	15	14	14	12	12	14	17	20	25	54
Earth sciences.....	18	27	27	31	35	37	35	37	29	33	42	43	44	34
Oceanography.....	16	20	28	29	31	33	37	34	34	74	50	41	40	45
Environmental sciences nec.....	5	13	15	14	13	17	13	17	11	11	11	22	13	10
Life sciences.....	283	420	464	444	479	496	557	630	689	737	819	836	825	755
Agricultural sciences.....	52	54	63	63	70	76	72	77	83	72	78	79	72	75
Biological sciences.....	105	171	192	181	196	191	245	269	284	296	337	347	326	300
Medical sciences.....	114	177	187	183	198	213	221	263	303	339	371	376	378	343
Life sciences nec.....	12	19	22	18	15	16	19	21	20	29	33	34	49	37
Mathematical sciences.....	6	10	14	13	15	14	12	10	12	10	8	8	9	9
Physical sciences.....	142	191	240	234	244	254	249	250	241	275	297	337	324	328
Astronomy.....	7	13	22	21	26	25	29	25	15	19	19	25	23	20
Chemistry.....	54	73	81	88	90	91	102	103	101	122	119	117	112	121
Physics.....	71	91	114	105	109	122	106	110	113	122	139	160	160	153
Physical sciences nec.....	10	14	22	19	19	16	11	13	13	12	20	36	30	34
Psychology.....	9	11	12	12	13	13	12	14	14	19	23	18	15	18
Social sciences.....	10	15	27	25	24	22	18	19	17	17	18	14	18	12
Economics.....	3	4	7	6	5	4	4	3	2	2	3	2	2	2
Political science.....	1	1	3	3	3	3	2	2	2	2	2	2	2	1
Sociology.....	2	3	4	4	4	4	3	3	3	4	3	2	3	2
Social sciences nec.....	4	7	12	11	11	11	9	11	9	9	9	8	11	7
Sciences nec.....	15	25	51	45	48	33	32	51	54	47	49	53	53	66
Engineering.....	124	220	272	285	301	298	285	306	333	363	385	394	438	439
Aeronautical/astronautical.....	7	13	17	16	19	19	22	20	23	24	22	21	20	19
Bioengineering/biomedical.....	NA	NA	NA	NA	4	6	8	14	15	18	20	19	29	25
Chemical.....	11	18	22	24	23	28	27	26	31	30	32	55	37	38
Civil.....	10	20	22	26	28	21	23	29	32	43	31	34	29	27
Electrical.....	33	58	68	75	83	82	70	72	79	79	86	81	91	94
Mechanical.....	17	32	42	43	46	51	51	54	48	54	55	55	76	84
Metallurgical/materials.....	NA	27	28	32	36	29	28	30	49	41	61	38	51	55
Engineering nec.....	46	51	73	69	62	60	57	61	55	74	78	91	106	98
	2000 constant \$millions													
All fields.....	965	1,247	1,345	1,294	1,350	1,338	1,353	1,436	1,486	1,640	1,716	1,742	1,676	1,595
Computer sciences.....	51	59	83	72	75	66	64	56	64	97	93	97	65	60
Environmental sciences.....	69	89	90	94	98	105	101	100	86	127	114	116	109	125
Atmospheric sciences.....	12	14	15	14	16	15	15	12	12	14	16	18	22	47
Earth sciences.....	26	34	29	33	37	39	35	37	29	31	40	40	40	30
Oceanography.....	23	25	30	31	32	34	38	34	34	71	47	38	36	39

## Current expenditures for research equipment at academic institutions, by field: Selected years, 1985–2006

Field	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Environmental sciences nec .....	7	16	16	15	13	17	14	17	11	10	11	20	11	9
Life sciences .....	406	517	503	473	501	512	568	630	677	710	773	770	737	654
Agricultural sciences .....	74	66	69	67	73	79	74	77	81	70	74	73	64	65
Biological sciences .....	151	210	208	192	205	197	250	269	279	286	318	320	291	260
Medical sciences .....	164	218	203	195	207	220	225	263	297	327	350	347	338	297
Life sciences nec .....	17	23	24	19	16	16	19	21	20	28	31	31	44	32
Mathematical sciences .....	9	13	16	14	16	15	12	10	11	10	7	7	8	7
Physical sciences .....	204	235	260	249	255	263	254	250	237	265	281	311	290	284
Astronomy .....	10	16	24	23	28	26	29	25	15	19	18	23	20	18
Chemistry .....	78	90	88	94	94	94	104	103	99	118	112	108	100	105
Physics .....	102	112	124	112	114	126	109	110	111	117	131	147	143	132
Physical sciences nec .....	14	17	23	21	20	16	12	13	13	12	19	33	27	30
Psychology .....	13	13	13	13	14	14	12	14	14	18	21	16	13	16
Social sciences .....	14	18	29	27	25	23	18	19	16	17	17	13	16	10
Economics .....	4	5	8	7	6	4	4	3	2	2	3	2	2	1
Political science .....	2	2	3	4	3	3	2	2	2	2	2	2	1	1
Sociology .....	3	4	5	5	5	4	3	3	3	4	3	2	2	2
Social sciences nec .....	6	8	13	12	12	11	9	11	9	9	9	8	10	6
Sciences nec .....	21	31	55	48	51	34	33	51	53	46	46	49	47	57
Engineering .....	179	271	295	304	315	308	291	306	327	350	363	363	392	380
Aeronautical/astronautical .....	9	16	18	17	20	20	22	20	23	23	21	20	17	16
Bioengineering/biomedical .....	NA	NA	NA	NA	4	6	8	14	15	17	19	17	26	22
Chemical .....	16	22	24	26	24	29	28	26	30	29	30	50	33	33
Civil .....	15	25	24	27	29	22	24	29	32	41	29	31	26	23
Electrical .....	47	72	74	80	87	85	71	72	77	76	81	75	81	81
Mechanical .....	25	40	45	45	48	53	52	54	47	52	52	51	68	72
Metallurgical/materials .....	NA	33	30	34	38	30	29	30	48	39	58	35	45	47
Engineering nec .....	66	63	80	74	65	62	58	61	54	72	73	83	95	85
Percent distribution														
All fields .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Computer sciences .....	5.3	4.7	6.2	5.5	5.5	4.9	4.8	3.9	4.3	5.9	5.4	5.5	3.9	3.8
Environmental sciences .....	7.1	7.1	6.7	7.2	7.3	7.8	7.5	6.9	5.8	7.7	6.7	6.6	6.5	7.8
Atmospheric sciences .....	1.2	1.1	1.1	1.1	1.2	1.1	1.1	0.8	0.8	0.9	1.0	1.0	1.3	3.0
Earth sciences .....	2.7	2.7	2.2	2.6	2.7	2.9	2.6	2.6	1.9	1.9	2.3	2.3	2.4	1.9
Oceanography .....	2.4	2.0	2.2	2.4	2.4	2.5	2.8	2.3	2.3	4.3	2.8	2.2	2.1	2.4
Environmental sciences nec .....	0.8	1.3	1.2	1.2	1.0	1.3	1.0	1.2	0.7	0.6	0.6	1.1	0.7	0.5
Life sciences .....	42.1	41.5	37.4	36.6	37.2	38.3	42.0	43.9	45.6	43.3	45.0	44.2	44.0	41.0
Agricultural sciences .....	7.7	5.3	5.1	5.2	5.4	5.9	5.5	5.4	5.5	4.2	4.3	4.2	3.8	4.1
Biological sciences .....	15.6	16.9	15.4	14.9	15.2	14.7	18.4	18.7	18.8	17.4	18.5	18.4	17.4	16.3
Medical sciences .....	17.0	17.5	15.1	15.1	15.4	16.4	16.7	18.3	20.0	19.9	20.4	19.9	20.1	18.6
Life sciences nec .....	1.7	1.9	1.8	1.5	1.2	1.2	1.4	1.5	1.3	1.7	1.8	1.8	2.6	2.0
Mathematical sciences .....	0.9	1.0	1.2	1.1	1.2	1.1	0.9	0.7	0.8	0.6	0.4	0.4	0.5	0.5

**Current expenditures for research equipment at academic institutions, by field: Selected years, 1985–2006**

Field	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Physical sciences .....	21.1	18.9	19.4	19.3	18.9	19.6	18.8	17.4	15.9	16.2	16.4	17.8	17.3	17.8
Astronomy.....	1.0	1.3	1.8	1.8	2.1	2.0	2.2	1.7	1.0	1.1	1.0	1.3	1.2	1.1
Chemistry.....	8.0	7.2	6.6	7.2	7.0	7.0	7.7	7.2	6.7	7.2	6.6	6.2	6.0	6.6
Physics.....	10.6	9.0	9.2	8.7	8.4	9.4	8.0	7.6	7.5	7.1	7.7	8.5	8.5	8.3
Physical sciences nec.....	1.4	1.4	1.7	1.6	1.5	1.2	0.9	0.9	0.8	0.7	1.1	1.9	1.6	1.9
Psychology .....	1.3	1.1	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.1	1.3	0.9	0.8	1.0
Social sciences.....	1.5	1.5	2.1	2.1	1.9	1.7	1.3	1.3	1.1	1.0	1.0	0.8	0.9	0.7
Economics.....	0.4	0.4	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1
Political science.....	0.2	0.1	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sociology .....	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Social sciences nec.....	0.6	0.7	1.0	0.9	0.9	0.8	0.6	0.8	0.6	0.5	0.5	0.4	0.6	0.4
Sciences nec .....	2.2	2.5	4.1	3.7	3.8	2.5	2.4	3.5	3.6	2.8	2.7	2.8	2.8	3.6
Engineering .....	18.5	21.7	22.0	23.5	23.3	23.0	21.5	21.3	22.0	21.4	21.2	20.8	23.4	23.8
Aeronautical/astronautical .....	1.0	1.2	1.3	1.3	1.5	1.5	1.6	1.4	1.5	1.4	1.2	1.1	1.0	1.0
Bioengineering/biomedical .....	NA	NA	NA	NA	0.3	0.5	0.6	0.9	1.0	1.1	1.1	1.0	1.6	1.4
Chemical .....	1.7	1.8	1.8	2.0	1.8	2.2	2.1	1.8	2.0	1.8	1.8	2.9	2.0	2.1
Civil.....	1.6	2.0	1.8	2.1	2.1	1.7	1.8	2.0	2.1	2.5	1.7	1.8	1.5	1.5
Electrical .....	4.9	5.8	5.5	6.2	6.4	6.4	5.3	5.0	5.2	4.7	4.7	4.3	4.8	5.1
Mechanical.....	2.6	3.2	3.4	3.5	3.5	3.9	3.8	3.8	3.2	3.2	3.0	2.9	4.1	4.5
Metallurgical/materials.....	NA	2.7	2.3	2.6	2.8	2.2	2.1	2.1	3.3	2.4	3.4	2.0	2.7	3.0
Engineering nec .....	6.8	5.1	5.9	5.7	4.8	4.7	4.3	4.3	3.6	4.4	4.3	4.8	5.6	5.3

NA = not available; nec = not elsewhere classified

NOTES: Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.*Science and Engineering Indicators 2008*

Appendix table 5-14

**Federal share of current funding for research equipment at academic institutions, by field: Selected years, 1985–2006**

(Percent)

Field	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All fields.....	64.4	59.9	59.3	59.5	58.6	59.8	58.2	56.3	55.5	59.1	63.3	62.0	62.7	58.9
Computer sciences.....	83.0	65.8	63.5	70.8	68.9	70.4	69.0	60.4	64.1	73.7	83.4	80.6	78.9	73.7
Environmental sciences.....	67.7	65.9	69.9	70.0	73.2	67.8	67.4	63.9	61.4	61.5	73.1	74.3	76.6	62.8
Atmospheric sciences.....	84.2	76.8	71.5	64.1	74.6	81.2	79.0	79.3	74.4	76.3	80.9	80.7	86.9	55.7
Earth sciences.....	56.4	56.8	63.0	65.6	70.2	66.4	59.3	50.9	55.3	58.2	61.6	67.0	67.6	63.6
Oceanography.....	74.2	75.1	76.5	81.7	76.3	70.8	72.1	74.4	63.4	61.5	81.2	79.5	79.0	67.5
Environmental sciences nec.....	60.7	61.4	68.5	61.2	72.3	53.8	63.0	60.8	56.8	51.5	67.2	73.2	80.4	77.6
Life sciences.....	55.6	53.2	48.6	50.2	50.2	50.9	49.9	52.8	52.6	55.5	59.9	60.7	61.7	56.4
Agricultural sciences.....	29.1	28.3	31.9	30.3	31.6	32.0	33.3	28.0	28.3	29.8	40.5	39.5	42.5	36.4
Biological sciences.....	67.3	60.2	55.9	58.7	55.7	56.5	57.0	60.2	58.7	59.6	63.8	63.3	62.6	59.8
Medical sciences.....	57.4	54.3	48.3	49.9	51.4	53.2	48.3	53.1	53.7	58.3	61.2	62.7	66.4	57.6
Life sciences nec.....	49.1	50.6	34.6	36.5	48.3	43.1	41.2	43.9	49.3	45.5	51.3	60.9	48.0	58.2
Mathematical sciences.....	82.1	65.8	65.5	74.6	59.2	70.5	64.3	67.1	51.9	66.5	71.2	72.7	75.2	68.1
Physical sciences.....	79.8	75.3	74.6	72.9	70.8	73.9	74.8	70.0	66.9	70.2	73.2	68.2	69.9	67.5
Astronomy.....	69.3	63.1	61.5	70.7	65.1	81.6	86.5	83.4	83.1	80.6	74.4	79.5	77.4	82.0
Chemistry.....	76.6	71.4	70.0	68.6	65.4	67.0	67.3	61.4	57.7	62.1	65.1	66.3	71.9	65.7
Physics.....	84.5	81.1	81.7	77.1	76.1	76.4	79.7	76.8	71.9	76.5	78.8	71.5	73.2	73.0
Physical sciences nec.....	70.9	69.5	67.6	72.3	73.8	81.5	67.1	55.2	76.3	72.8	81.2	52.6	39.2	40.2
Psychology.....	71.5	63.8	63.3	62.4	62.5	62.4	65.3	64.0	62.8	70.8	74.1	71.7	63.1	68.6
Social sciences.....	40.1	32.4	39.5	40.0	37.0	39.7	38.0	32.3	36.8	36.6	45.0	44.4	38.9	39.2
Economics.....	35.6	27.2	38.9	40.2	31.2	34.3	37.3	54.3	40.1	36.7	56.9	35.6	42.0	36.8
Political science.....	32.1	24.4	36.8	33.7	35.9	46.9	31.8	36.7	35.6	21.3	51.0	72.2	56.8	54.1
Sociology.....	53.5	43.2	46.7	48.4	43.3	47.5	42.3	44.6	35.3	42.8	50.6	47.9	39.4	29.2
Social sciences nec.....	39.1	32.8	38.0	38.6	37.6	36.6	38.1	22.1	36.7	37.4	38.0	39.1	35.6	40.8
Science nec.....	46.1	46.1	63.9	39.9	63.3	47.0	26.1	24.9	38.6	18.3	19.4	20.2	25.6	32.8
Engineering.....	62.9	58.9	60.4	61.1	56.0	59.6	58.5	55.1	53.4	58.5	60.4	56.3	57.6	57.0
Aeronautical/astronautical.....	75.0	81.1	77.5	71.3	70.2	69.0	70.6	63.6	71.2	79.0	83.4	71.8	66.8	59.6
Bioengineering/biomedical.....	NA	NA	NA	NA	53.1	42.3	46.7	43.1	47.4	52.7	57.8	53.0	43.5	46.2
Chemical.....	58.7	46.1	58.8	56.7	55.0	55.5	49.1	52.3	51.7	55.2	55.7	32.4	54.0	57.1
Civil.....	58.5	58.7	44.2	44.3	43.7	43.2	49.2	35.3	39.2	59.2	60.9	61.2	58.5	46.6
Electrical.....	68.5	61.8	61.7	68.6	61.5	66.7	65.3	61.8	58.4	59.9	67.7	69.1	66.7	66.6
Mechanical.....	65.1	56.8	63.7	63.2	62.7	64.2	63.7	64.9	59.2	63.6	69.1	65.8	69.7	77.8
Metallurgical/materials.....	NA	66.5	50.5	53.3	51.4	59.4	60.9	60.9	45.1	53.2	45.8	65.1	66.1	58.1
Engineering nec.....	58.5	52.2	62.7	60.6	47.9	52.7	49.5	46.3	52.2	51.9	53.6	45.1	40.3	34.5

NA = not available; nec = not elsewhere classified

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

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Appendix table 5-15

**Expenditures of current funds for research equipment at academic institutions as percentage of total academic R&D expenditures, by field: Selected years, 1985–2006**

(Percent)

Field	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
All fields.....	6.9	6.2	5.6	5.3	5.3	5.0	4.8	4.8	4.6	4.7	4.5	4.4	4.1	3.9
Computer sciences.....	12.6	9.3	11.2	9.7	10.0	8.5	7.3	6.4	6.8	9.0	7.6	7.5	5.1	4.8
Environmental sciences.....	6.8	6.8	5.8	5.9	6.1	6.2	5.9	5.6	4.8	6.5	5.5	5.3	4.8	5.5
Atmospheric sciences.....	7.7	6.6	6.6	6.0	6.1	5.4	5.0	4.2	4.1	4.2	4.4	4.8	5.5	10.8
Earth sciences.....	7.2	7.7	5.9	7.0	7.8	7.3	6.3	6.6	5.3	5.1	5.8	5.2	4.8	3.8
Oceanography.....	6.3	5.3	5.8	5.5	5.7	6.0	6.2	5.3	5.1	10.3	6.5	5.3	4.9	5.3
Environmental sciences nec.....	6.0	8.1	5.0	4.9	4.2	5.7	5.2	5.9	3.8	3.4	3.7	6.5	3.5	2.8
Life sciences.....	5.4	4.8	3.8	3.5	3.5	3.4	3.6	3.6	3.6	3.4	3.4	3.2	3.0	2.6
Agricultural sciences.....	5.2	4.0	3.5	3.3	3.5	3.8	3.6	3.5	3.6	3.0	3.1	2.9	2.7	2.7
Biological sciences.....	5.9	6.0	5.0	4.6	4.7	4.2	4.9	4.8	4.8	4.5	4.6	4.3	3.7	3.3
Medical sciences.....	4.9	4.3	3.1	2.9	2.9	2.8	2.8	2.9	3.0	3.0	2.9	2.7	2.5	2.2
Life sciences nec.....	6.5	5.2	4.8	3.6	2.9	2.9	3.4	3.1	2.7	3.3	3.2	3.2	4.0	3.1
Mathematical sciences.....	4.7	4.6	5.2	4.6	5.3	4.7	3.7	2.9	3.2	2.6	1.8	1.8	1.8	1.6
Physical sciences.....	12.4	10.6	10.6	10.4	10.3	10.2	9.5	9.2	8.6	9.1	9.1	9.5	8.8	8.6
Astronomy.....	7.3	7.8	7.4	7.7	9.2	8.4	7.5	6.4	3.9	4.8	4.8	5.8	5.0	4.3
Chemistry.....	12.8	11.3	10.5	11.0	10.9	10.4	11.1	10.8	10.0	10.8	9.7	8.9	8.2	8.5
Physics.....	12.9	10.8	11.6	10.6	10.2	11.3	9.3	9.1	9.1	9.4	9.8	10.5	9.9	9.5
Physical sciences nec.....	12.0	9.5	11.3	10.1	9.3	6.9	7.5	7.9	7.2	6.2	8.4	12.7	10.7	10.7
Psychology.....	5.5	4.2	3.3	3.2	3.3	3.0	2.5	2.8	2.5	2.8	3.0	2.3	1.8	2.1
Social sciences.....	2.6	2.1	2.6	2.3	2.1	1.9	1.4	1.5	1.1	1.1	1.1	0.9	1.0	0.7
Economics.....	2.3	2.0	2.9	2.4	2.0	1.5	1.4	1.2	0.8	0.9	0.9	0.6	0.7	0.5
Political science.....	2.0	1.3	1.8	1.9	1.9	1.9	1.0	0.7	0.7	0.7	0.8	0.6	0.5	0.3
Sociology.....	2.6	2.2	1.9	1.9	1.7	1.6	1.2	1.1	0.9	1.0	0.9	0.7	0.7	0.6
Social sciences nec.....	3.2	2.6	3.1	2.6	2.5	2.5	1.7	2.2	1.6	1.4	1.4	1.2	1.7	1.1
Science nec.....	7.9	7.5	11.9	10.8	9.4	7.2	7.1	9.4	9.3	7.7	7.1	6.9	6.8	7.5
Engineering.....	8.8	8.3	7.7	7.7	7.8	7.3	6.7	6.7	6.6	6.6	6.4	6.2	6.5	6.2
Aeronautical/astronautical.....	8.2	7.7	6.9	6.9	7.8	7.8	8.3	7.8	6.9	7.0	5.5	4.9	4.4	4.9
Bioengineering/biomedical.....	NA	NA	NA	NA	4.8	6.1	5.6	7.8	7.1	6.4	6.5	5.0	7.0	5.2
Chemical.....	9.8	8.3	7.4	7.6	7.4	8.7	7.8	6.9	7.5	7.0	7.0	11.1	7.3	6.9
Civil.....	6.8	7.1	5.2	5.7	5.9	4.3	4.4	4.8	4.9	5.9	3.9	4.3	3.7	3.1
Electrical.....	9.7	8.8	8.3	8.5	8.8	7.9	6.9	6.4	6.8	6.1	6.1	5.6	5.7	5.8
Mechanical.....	8.4	8.3	8.0	8.2	8.8	9.0	8.1	8.6	7.0	6.9	6.7	6.3	8.1	8.0
Metallurgical/materials.....	NA	9.9	8.5	9.1	9.3	7.4	7.4	7.5	10.9	8.7	11.1	6.8	8.3	8.5
Engineering nec.....	8.8	7.7	8.4	7.3	7.1	6.7	5.9	6.1	5.1	6.2	6.1	6.7	7.3	6.5

NA= not available; nec = not elsewhere classified

SOURCES: National Science Foundation, Division of Science Resources Statistics, Academic Research and Development Expenditures: Fiscal Year 2006; and Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.

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Appendix table 5-16

**Source of funds for new construction of S&E research space in academic institutions, by year of project start and type of institution: FY 1986–2005**

(Millions of dollars)

Year of project start/type of institution	All sources	Federal government	State/local government	Institutional/other <sup>a</sup>
1986 or 1987				
All institutions.....	2,050.6	145.4	779.1	1,125.4
Doctorate granting.....	1,887.7	129.9	690.4	1,066.7
Nondoctorate granting.....	162.9	15.5	88.7	58.8
1988 or 1989				
All institutions.....	2,464.5	352.0	890.7	1,219.9
Doctorate granting.....	2,315.0	339.0	807.3	1,166.9
Nondoctorate granting.....	149.5	13.0	83.4	53.1
1990 or 1991				
All institutions.....	2,975.6	476.3	956.6	1,542.7
Doctorate granting.....	2,847.2	465.5	947.9	1,433.8
Nondoctorate granting.....	128.4	10.8	8.7	108.9
1992 or 1993				
All institutions.....	2,811.9	459.3	968.6	1,384.1
Doctorate granting.....	2,719.6	452.3	893.2	1,374.2
Nondoctorate granting.....	92.2	7.0	75.4	9.9
1994 or 1995				
All institutions.....	2,767.5	206.4	1,180.9	1,380.2
Doctorate granting.....	2,436.9	201.3	890.3	1,345.3
Nondoctorate granting.....	330.5	5.2	290.5	34.9
1996 or 1997				
All institutions.....	3,110.3	270.9	966.6	1,873.0
Doctorate granting.....	2,843.2	268.3	880.6	1,694.4
Nondoctorate granting.....	267.1	2.5	86.0	178.6
1998 or 1999				
All institutions.....	2,765.4	237.8	939.0	1,588.6
Doctorate granting.....	2,562.5	206.0	869.1	1,487.5
Nondoctorate granting.....	202.9	31.8	70.0	101.0
2002 or 2003				
All institutions.....	7,388.7	351.3	2,364.5	4,672.9
Doctorate granting.....	7,185.2	318.5	2,301.4	4,565.3
Nondoctorate granting.....	203.5	32.8	63.1	107.6
2004 or 2005				
All institutions.....	6,109.9	455.2	1,413.5	4,241.2
Doctorate granting.....	5,846.8	422.1	1,276.6	4,148.1
Nondoctorate granting.....	263.0	33.1	136.9	93.1

<sup>a</sup>Institutional funds and other sources include institution's operating funds, endowments, private donations, tax-exempt bonds and other debt financing, and indirect costs recovered from federal and nonfederal sources.

NOTES: No data for 2001 because question on construction costs not asked on FY 2001 survey. FY 2003 and FY 2005 surveys only reported construction projects costing \$250,000 for a single field; construction projects costing \$100,000 reported in previous cycles. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Science and Engineering Research Facilities, Fiscal Years 1986–2005.

**S&E doctorate holders employed in academia, by type of position and degree field: 1973–2006**

(Thousands)

Position/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
<b>All positions</b>																	
All fields .....	118.0	134.1	145.4	155.3	167.1	176.1	190.2	195.9	206.6	210.6	213.8	217.5	232.5	240.2	245.5	259.5	274.2
Science .....	105.6	120.7	130.7	139.5	151.0	158.1	170.4	174.8	183.9	187.8	190.6	193.7	205.9	214.7	218.9	231.7	244.5
Physical sciences .....	25.5	27.5	29.2	28.8	30.0	29.9	32.2	32.8	33.6	33.7	35.0	35.7	37.5	38.7	38.6	39.9	39.9
Mathematics .....	9.7	11.0	11.7	12.2	12.4	12.9	13.6	13.8	14.5	15.2	15.5	14.6	15.6	15.2	14.9	16.7	17.4
Computer sciences .....	NA	NA	NA	0.1	0.3	0.5	0.8	1.1	1.5	2.0	2.5	3.1	3.3	3.7	3.8	5.2	5.8
Life sciences .....	34.9	39.4	42.6	47.0	51.3	54.9	58.7	61.3	64.8	66.9	68.2	71.6	77.3	81.9	84.3	90.0	96.1
Psychology .....	12.2	14.8	16.2	17.7	20.1	21.0	23.1	23.7	25.0	25.2	25.0	26.1	27.3	29.0	30.4	31.8	35.3
Social sciences .....	23.4	28.0	31.1	33.6	36.9	38.9	42.0	42.2	44.5	44.8	44.4	42.5	44.9	46.2	46.9	48.1	50.0
Engineering .....	12.4	13.4	14.8	15.8	16.1	18.1	19.9	21.2	22.9	22.8	23.1	23.8	26.6	25.5	26.6	27.8	29.7
<b>All full-time faculty</b>																	
All fields .....	103.3	116.4	125.6	131.2	141.9	148.4	156.9	164.4	169.8	173.1	172.4	171.4	178.4	184.0	187.4	195.0	197.7
Science .....	92.0	104.2	112.2	116.9	127.3	132.0	139.0	145.2	149.6	153.1	152.3	151.3	156.8	163.0	165.5	172.7	175.3
Physical sciences .....	20.8	22.3	23.6	23.5	24.3	24.2	25.4	26.4	26.2	26.2	25.8	25.6	26.5	27.3	27.5	28.4	27.9
Mathematics .....	9.3	10.4	10.9	11.4	11.7	12.3	12.7	12.9	13.5	14.2	14.7	13.0	13.6	13.1	12.6	14.2	14.1
Computer sciences .....	NA	NA	NA	0.1	0.3	0.4	0.7	0.9	1.3	1.8	2.3	2.8	3.0	3.3	3.3	4.2	4.9
Life sciences .....	29.5	33.1	34.9	37.3	40.9	43.5	45.6	48.1	49.3	51.1	50.8	52.8	55.2	58.1	60.4	63.7	64.8
Psychology .....	10.8	12.8	13.9	14.3	16.4	17.3	18.5	19.2	20.2	20.7	19.5	20.1	20.8	21.9	22.6	22.0	23.8
Social sciences .....	21.6	25.5	28.8	30.4	33.7	34.4	36.1	37.7	39.0	39.0	39.2	37.1	37.7	39.2	39.2	40.1	39.8
Engineering .....	11.3	12.2	13.5	14.3	14.7	16.4	17.9	19.3	20.2	20.1	20.1	20.0	21.5	21.1	21.9	22.3	22.3
<b>Full-time professors</b>																	
All fields .....	42.6	47.9	51.0	57.5	64.4	69.9	72.8	79.1	83.1	82.5	80.0	77.7	80.9	83.1	84.8	87.7	85.4
Science .....	37.8	42.4	44.7	50.1	56.4	60.9	63.7	68.7	72.5	72.6	69.7	68.6	70.2	72.4	74.1	76.8	74.8
Physical sciences .....	9.0	10.0	10.8	11.7	13.1	13.9	14.6	15.5	15.5	14.8	14.2	13.9	13.8	14.2	14.0	14.3	13.4
Mathematics .....	3.2	3.5	3.9	4.4	5.0	5.6	6.1	6.5	6.9	6.7	7.1	6.6	6.9	6.6	6.6	7.2	6.9
Computer sciences .....	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.7	0.8	1.2	1.6
Life sciences .....	12.3	13.6	13.9	15.5	17.0	19.3	19.6	21.7	22.5	22.9	21.2	22.5	22.5	23.3	24.5	25.7	25.6
Psychology .....	3.9	4.6	4.8	5.6	6.5	7.0	7.6	8.3	9.1	9.5	8.7	8.7	9.5	9.4	9.9	9.8	9.8
Social sciences .....	9.4	10.6	11.3	12.9	14.7	15.1	15.9	16.8	18.5	18.6	18.4	16.6	17.1	18.2	18.2	18.6	17.6
Engineering .....	4.7	5.6	6.4	7.4	8.0	9.0	9.2	10.4	10.6	9.9	10.3	9.1	10.7	10.6	10.7	10.9	10.6
<b>Full-time associate professors</b>																	
All fields .....	31.4	36.3	39.7	39.7	42.9	45.7	46.9	48.2	47.9	50.5	48.6	49.6	51.0	53.6	52.2	54.3	54.3
Science .....	27.4	32.2	35.3	35.5	38.5	40.9	42.2	43.3	42.6	44.7	43.3	43.5	45.2	47.6	46.1	48.4	48.7
Physical sciences .....	6.2	7.1	7.2	7.1	6.6	6.3	6.3	6.1	5.8	6.3	6.4	6.1	6.5	6.6	6.7	6.9	6.9
Mathematics .....	2.8	3.4	3.7	3.9	4.0	4.1	4.0	4.1	4.0	5.1	4.4	4.0	3.9	4.1	3.6	4.0	3.8
Computer sciences .....	NA	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.8	0.7	1.4	1.4	1.4	1.6	1.7	1.6
Life sciences .....	8.6	9.8	10.7	11.5	12.5	13.4	14.1	14.1	14.0	14.6	14.6	14.7	15.8	17.3	16.7	17.7	18.2
Psychology .....	3.3	4.1	4.3	4.3	5.2	5.9	5.9	6.0	5.9	5.9	5.6	5.8	5.8	6.2	6.0	5.9	6.4
Social sciences .....	6.5	7.9	9.4	8.8	10.2	11.2	11.8	12.7	12.6	12.0	11.6	11.5	11.7	11.9	11.4	12.1	11.8
Engineering .....	4.0	4.2	4.4	4.2	4.4	4.7	4.7	4.9	5.3	5.9	5.3	6.2	5.8	6.0	6.1	5.9	5.7
<b>Full-time junior faculty</b>																	
All fields .....	29.3	32.1	34.9	34.0	34.6	32.8	37.2	37.2	38.7	40.1	43.8	44.0	46.4	47.4	50.5	53.0	57.9



**S&E doctorate holders employed in academia, by type of position and degree field: 1973–2006**

(Thousands)

Position/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Science.....	26.7	29.6	32.2	31.3	32.3	30.2	33.1	33.2	34.4	35.8	39.3	39.3	41.5	42.9	45.4	47.5	51.8
Physical sciences.....	5.6	5.2	5.7	4.7	4.6	4.0	4.6	4.7	4.8	5.0	5.2	5.6	6.1	6.6	6.7	7.2	7.6
Mathematics.....	3.3	3.5	3.3	3.1	2.6	2.5	2.7	2.4	2.6	2.4	3.2	2.4	2.8	2.4	2.3	3.0	3.4
Computer sciences.....	NA	NA	NA	0.1	0.2	0.3	0.6	0.6	0.9	1.0	1.4	1.2	1.3	1.2	0.9	1.3	1.7
Life sciences.....	8.5	9.7	10.3	10.3	11.3	10.8	11.9	12.3	12.8	13.7	15.0	15.6	16.9	17.5	19.2	20.3	21.0
Psychology.....	3.6	4.2	4.8	4.4	4.8	4.5	5.0	4.9	5.2	5.4	5.2	5.5	5.5	6.2	6.6	6.3	7.6
Social sciences.....	5.7	7.1	8.2	8.6	8.8	8.1	8.4	8.2	7.9	8.4	9.3	9.0	8.9	9.1	9.6	9.5	10.5
Engineering.....	2.6	2.5	2.7	2.8	2.3	2.7	4.0	4.0	4.3	4.3	4.5	4.8	5.0	4.5	5.1	5.5	6.1
Full-time nonfaculty																	
All fields.....	7.6	8.3	8.8	11.4	12.6	13.4	18.1	16.4	19.2	20.2	22.2	23.9	26.4	29.3	31.7	35.4	37.3
Science.....	6.8	7.4	8.0	10.5	11.5	12.3	16.6	15.3	17.7	18.4	20.7	21.7	23.3	26.4	28.3	31.9	34.0
Physical sciences.....	2.2	2.2	2.4	2.5	2.9	3.0	3.7	3.4	4.0	4.1	4.8	4.9	6.0	7.0	7.1	7.7	6.5
Mathematics.....	0.2	0.3	0.4	0.4	0.4	0.3	0.5	0.4	0.5	0.6	0.5	0.6	0.8	0.8	1.0	1.2	1.1
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.6	0.6
Life sciences.....	2.5	2.4	2.8	3.9	4.0	4.6	6.2	6.0	6.7	7.2	7.7	8.4	8.4	9.5	10.5	12.2	14.0
Psychology.....	0.8	1.0	1.2	1.8	2.2	2.2	2.9	2.8	2.9	2.8	3.9	3.9	4.0	4.6	4.9	5.7	6.1
Social sciences.....	1.0	1.5	1.2	1.9	2.0	2.2	3.2	2.6	3.5	3.5	3.7	3.6	3.9	4.3	4.5	4.4	5.6
Engineering.....	0.8	0.9	0.8	0.9	1.1	1.1	1.5	1.1	1.5	1.8	1.5	2.1	3.1	3.0	3.4	3.6	3.3
Postdocs																	
All fields.....	4.2	6.2	7.6	8.1	8.5	8.3	8.7	9.3	11.5	9.9	13.3	16.8	18.9	18.5	17.5	15.7	23.4
Science.....	4.0	5.9	7.2	7.8	8.4	8.0	8.5	8.8	10.9	9.4	12.3	15.6	17.2	17.5	16.6	14.6	20.4
Physical sciences.....	1.8	2.2	2.4	2.0	2.1	1.6	2.1	2.3	2.7	2.2	3.5	4.4	3.8	3.4	3.0	2.6	3.9
Mathematics.....	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.0	0.5	0.5	0.6	0.8	0.5	1.0
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1
Life sciences.....	1.9	3.0	4.0	4.7	5.2	5.1	5.2	5.6	6.8	6.4	8.2	9.2	10.8	11.7	11.0	10.0	12.9
Psychology.....	0.2	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.5	0.4	1.1	1.3	1.2	1.2	0.9	1.7
Social sciences.....	0.1	0.2	0.3	0.3	0.3	0.6	0.3	0.1	0.4	0.3	0.2	0.4	0.7	0.5	0.6	0.5	0.8
Engineering.....	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.5	0.6	0.5	1.0	1.2	1.7	1.1	0.9	1.1	3.0
Part-time positions																	
All fields.....	2.9	3.2	3.4	4.5	4.0	6.0	6.5	5.7	6.2	7.4	5.9	5.5	8.9	8.2	9.0	13.3	15.9
Science.....	2.8	3.1	3.2	4.3	3.9	5.7	6.2	5.4	5.6	6.9	5.4	5.1	8.6	7.9	8.5	12.5	14.8
Physical sciences.....	0.7	0.7	0.7	0.8	0.7	1.1	1.1	0.8	0.7	1.2	1.0	0.9	1.2	1.0	1.0	1.1	1.6
Mathematics.....	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.5	0.7	0.7	0.6	0.9	1.2
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1
Life sciences.....	0.9	0.9	1.0	1.2	1.2	1.7	1.7	1.6	1.9	2.3	1.6	1.2	2.9	2.6	2.4	4.0	4.5
Psychology.....	0.4	0.5	0.6	1.0	0.8	1.0	1.0	1.0	1.2	1.2	1.1	1.1	1.3	1.8	3.2	3.7	
Social sciences.....	0.7	0.8	0.8	1.0	1.0	1.6	2.2	1.8	1.7	2.0	1.3	1.3	2.6	2.2	2.7	3.1	3.7
Engineering.....	0.1	0.1	0.1	0.3	0.2	0.4	0.3	0.3	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.8	1.1

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Junior faculty includes assistant professors and instructors. Full-time nonfaculty includes positions such as research associates, adjunct positions, lecturers, and administrative positions. Part-time employment excludes those employed part time because they are students or retired. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-18

**S&E doctorate holders employed in academia, by type of position, Carnegie institution type, and administrative control of institution: 2006**

(Thousands)

Institution type/position	All doctorates	Public	Private
<b>All academic institutions</b>			
All positions.....	274.2	176.5	86.1
Full-time senior faculty.....	139.7	93.1	41.6
Full-time junior faculty.....	57.9	37.1	18.2
Full-time nonfaculty.....	37.3	23.4	11.8
Postdocs.....	23.4	13.0	9.2
Part-time positions.....	15.9	9.9	5.3
<b>Doctorate-granting universities—very high research activity</b>			
All positions.....	116.8	80.5	36.2
Full-time senior faculty.....	52.2	39.2	13.0
Full-time junior faculty.....	21.5	14.6	7.0
Full-time nonfaculty.....	20.5	13.4	7.1
Postdocs.....	17.8	10.0	7.8
Part-time positions.....	4.8	3.4	1.4
<b>Other doctorate-granting institutions</b>			
All positions.....	48.3	35.5	12.5
Full-time senior faculty.....	28.4	21.2	7.1
Full-time junior faculty.....	10.7	8.2	2.5
Full-time nonfaculty.....	5.0	3.6	1.4
Postdocs.....	1.7	1.2	0.3
Part-time positions.....	2.5	1.3	1.2
<b>Master's colleges and universities</b>			
All positions.....	48.3	32.9	15.3
Full-time senior faculty.....	30.2	20.7	9.5
Full-time junior faculty.....	11.5	7.8	3.7
Full-time nonfaculty.....	3.1	2.2	0.9
Postdocs.....	0.4	0.3	0.1
Part-time positions.....	3.1	1.8	1.2
<b>Medical schools and medical centers</b>			
All positions.....	14.6	10.5	4.0
Full-time senior faculty.....	6.3	4.4	1.9
Full-time junior faculty.....	3.5	2.6	0.8
Full-time nonfaculty.....	2.4	1.8	0.6
Postdocs.....	1.9	1.3	0.6
Part-time positions.....	0.5	0.4	0.1
<b>Baccalaureate colleges</b>			
All positions.....	21.1	6.1	14.9
Full-time senior faculty.....	12.7	3.6	9.1
Full-time junior faculty.....	5.5	1.8	3.6
Full-time nonfaculty.....	1.3	0.2	1.1
Postdocs.....	0.3	0.1	0.2
Part-time positions.....	1.4	0.5	0.9

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Employment at associate's colleges, other specialized institutions, and institutions without Carnegie code or with unknown administrative control included in total but not shown separately. Freestanding schools of engineering and technology included under master's colleges and universities. Senior faculty includes full and associate professors; junior faculty includes assistant professors and instructors; and full-time nonfaculty includes positions such as research associates, adjunct positions, lecturers, and administrative positions. Part-time employment excludes those employed part time because they are students or retired. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and Carnegie Foundation for the Advancement of Teaching, <http://www.carnegiefoundation.org/classifications/index.asp>, accessed 24 May 2007. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

Position/sex/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
<b>All positions</b>																	
Both sexes, all fields.....	118.0	134.1	145.5	155.3	167.1	176.1	190.2	195.9	206.6	210.6	213.8	217.5	232.5	240.2	245.5	259.5	274.2
Science.....	105.6	120.7	130.7	139.5	151.0	158.1	170.4	174.8	183.9	187.8	190.6	193.7	205.9	214.7	218.9	231.7	244.5
Physical sciences.....	25.5	27.5	29.2	28.8	30.0	29.9	32.2	32.8	33.6	33.7	35.0	35.7	37.5	38.7	38.6	39.9	39.9
Mathematics.....	9.7	11.0	11.7	12.2	12.4	12.9	13.6	13.8	14.5	15.2	15.5	14.6	15.6	15.2	14.9	16.7	17.4
Computer sciences.....	NA	NA	NA	0.1	0.3	0.5	0.8	1.1	1.5	2.0	2.5	3.1	3.3	3.7	3.8	5.2	5.8
Life sciences.....	34.9	39.4	42.6	47.0	51.3	54.9	58.7	61.3	64.8	66.9	68.2	71.6	77.3	81.9	84.3	90.0	96.1
Psychology.....	12.2	14.8	16.2	17.7	20.1	21.0	23.1	23.7	25.0	25.2	25.0	26.1	27.3	29.0	30.4	31.8	35.3
Social sciences.....	23.4	28.0	31.1	33.6	36.9	38.9	42.0	42.2	44.5	44.8	44.4	42.5	44.9	46.2	46.9	48.1	50.0
Engineering.....	12.4	13.4	14.8	15.8	16.1	18.1	19.9	21.2	22.9	22.8	23.1	23.8	26.6	25.5	26.6	27.8	29.7
Male, all fields.....	107.2	120.3	129.0	136.0	144.0	149.8	159.2	162.0	168.0	168.7	166.9	165.1	173.3	175.8	175.0	180.7	183.5
Science.....	94.9	106.9	114.3	120.3	128.1	132.0	139.7	141.4	145.8	146.9	144.8	142.9	148.4	152.4	150.7	155.9	157.4
Physical sciences.....	24.0	25.9	27.4	26.9	27.8	27.7	29.8	30.0	30.5	30.8	31.4	31.4	32.4	33.4	32.8	33.7	32.6
Mathematics.....	9.0	10.3	10.8	11.3	11.3	11.8	12.3	12.5	13.0	13.9	13.7	12.8	13.5	12.9	12.6	13.8	14.1
Computer sciences.....	NA	NA	NA	0.1	0.3	0.4	0.7	0.9	1.3	1.6	2.1	2.5	2.6	2.9	2.9	4.3	4.5
Life sciences.....	30.8	34.3	36.6	40.1	42.9	44.5	46.7	47.9	49.5	50.1	49.4	50.1	52.6	55.1	54.9	56.6	58.3
Psychology.....	10.0	11.8	12.6	13.5	14.9	15.1	16.0	16.2	16.5	16.0	14.7	14.7	15.4	15.6	15.7	15.6	16.1
Social sciences.....	21.0	24.7	26.9	28.5	30.9	32.3	34.3	33.9	35.1	34.6	33.4	31.3	31.9	32.4	31.7	32.0	31.8
Engineering.....	12.3	13.3	14.7	15.7	15.9	17.8	19.5	20.6	22.2	21.8	22.1	22.3	24.8	23.4	24.3	24.8	26.1
Female, all fields.....	10.7	13.8	16.5	19.4	23.1	26.5	31.1	34.0	38.7	41.9	46.9	52.4	59.2	64.4	70.5	78.7	90.7
Science.....	10.7	13.8	16.4	19.2	22.9	26.1	30.7	33.5	38.0	40.9	45.8	50.9	57.5	62.3	68.2	75.8	87.0
Physical sciences.....	1.4	1.6	1.7	1.9	2.1	2.2	2.5	2.8	3.1	3.0	3.6	4.4	5.1	5.3	5.8	6.1	7.3
Mathematics.....	0.6	0.8	0.9	0.9	1.1	1.1	1.3	1.4	1.5	1.4	1.7	1.8	2.1	2.2	2.3	2.9	3.3
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.1	0.2	0.4	0.5	0.6	0.7	0.8	0.8	1.0	1.2
Life sciences.....	4.0	5.1	6.0	6.9	8.4	10.3	12.1	13.3	15.3	16.8	18.8	21.5	24.7	26.7	29.4	33.4	37.8
Psychology.....	2.2	3.0	3.6	4.3	5.2	5.9	7.1	7.6	8.5	9.2	10.3	11.5	11.9	13.4	14.7	16.2	19.2
Social sciences.....	2.4	3.3	4.2	5.2	6.0	6.5	7.7	8.3	9.4	10.2	10.9	11.2	13.0	13.8	15.2	16.2	18.2
Engineering.....	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	1.0	1.1	1.5	1.7	2.1	2.3	3.0	3.6
<b>Full-time senior faculty</b>																	
Both sexes, all fields.....	74.0	84.3	90.7	97.2	107.3	115.6	119.7	127.3	131.0	133.0	128.6	127.3	131.9	136.7	136.9	142.0	139.7
Science.....	65.3	74.5	80.0	85.6	94.9	101.8	105.8	112.0	115.2	117.2	113.0	112.1	115.4	120.1	120.2	125.2	123.5
Physical sciences.....	15.2	17.1	18.0	18.8	19.7	20.2	20.8	21.5	21.4	21.2	20.6	20.0	20.5	20.7	20.7	21.3	20.3
Mathematics.....	5.9	6.9	7.6	8.3	9.1	9.7	10.0	10.5	10.9	11.8	11.5	10.6	10.8	10.8	10.2	11.2	10.7
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.3	0.4	0.9	0.9	1.7	1.7	2.1	2.4	2.9	3.2
Life sciences.....	21.0	23.4	24.6	27.0	29.6	32.6	33.7	35.8	36.4	37.4	35.8	37.2	38.3	40.6	41.2	43.4	43.8
Psychology.....	7.3	8.7	9.1	9.9	11.7	12.8	13.5	14.3	15.0	15.3	14.3	14.5	15.3	15.6	15.9	15.8	16.2
Social sciences.....	15.9	18.5	20.7	21.7	24.9	26.3	27.7	29.5	31.1	30.6	29.9	28.1	28.8	30.1	29.6	30.7	29.4
Engineering.....	8.7	9.7	10.7	11.6	12.4	13.7	13.9	15.3	15.9	15.8	15.7	15.3	16.6	16.6	16.8	16.8	16.3

**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

Position/sex/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Male, all fields.....	69.7	78.9	84.7	90.2	98.7	104.9	107.4	113.2	115.2	115.5	110.3	107.0	109.4	110.6	108.3	109.7	104.8
Science.....	61.0	69.2	74.0	78.7	86.4	91.3	93.7	98.2	99.6	100.1	95.0	92.2	93.3	94.8	92.4	94.0	89.8
Physical sciences.....	14.7	16.6	17.4	18.1	19.0	19.4	20.0	20.6	20.3	20.3	19.5	18.8	18.9	19.0	18.6	18.9	17.6
Mathematics.....	5.6	6.5	7.2	7.9	8.6	9.1	9.3	9.8	10.0	10.8	10.5	9.8	10.0	9.7	9.1	9.9	9.2
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.3	0.4	0.8	0.8	1.4	1.3	1.6	2.0	2.4	2.6
Life sciences.....	19.5	21.6	22.7	24.8	26.9	29.1	29.4	31.0	31.0	31.4	29.3	29.3	30.0	31.1	30.4	30.9	30.5
Psychology.....	6.4	7.6	7.8	8.4	9.7	10.5	10.8	11.2	11.5	11.3	10.2	10.1	10.7	10.3	10.3	9.5	9.1
Social sciences.....	14.7	16.9	18.8	19.5	22.3	23.2	24.1	25.3	26.4	25.5	24.7	22.8	22.4	23.2	21.9	22.4	20.7
Engineering.....	8.7	9.7	10.7	11.5	12.2	13.6	13.7	15.1	15.7	15.4	15.3	14.8	16.1	15.8	15.9	15.7	15.1
Female, all fields.....	4.3	5.4	6.0	7.0	8.6	10.7	12.4	14.0	15.8	17.6	18.3	20.3	22.5	26.1	28.6	32.3	34.9
Science.....	4.3	5.4	6.0	6.9	8.5	10.5	12.2	13.8	15.6	17.1	18.0	19.8	22.0	25.3	27.8	31.2	33.7
Physical sciences.....	0.5	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	0.9	1.1	1.2	1.5	1.9	2.1	2.4	2.7
Mathematics.....	0.3	0.4	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	0.8	0.8	1.1	1.1	1.3	1.4
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.3	0.5	0.4	0.5	0.6
Life sciences.....	1.5	1.8	1.9	2.2	2.7	3.5	4.3	4.8	5.4	6.1	6.5	7.8	8.3	9.5	10.8	12.5	13.3
Psychology.....	0.8	1.1	1.2	1.4	2.0	2.4	2.7	3.1	3.5	4.0	4.1	4.4	4.6	5.4	5.6	6.3	7.0
Social sciences.....	1.1	1.5	1.8	2.2	2.6	3.1	3.6	4.1	4.7	5.1	5.2	5.3	6.4	7.0	7.7	8.3	8.7
Engineering.....	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.3	0.5	0.5	0.8	0.9	1.1	1.2
Full-time junior faculty																	
Both sexes, all fields.....	29.3	32.1	34.9	34.0	34.6	32.8	37.2	37.2	38.7	40.1	43.8	44.0	46.4	47.4	50.5	53.0	57.9
Science.....	26.7	29.6	32.2	31.3	32.3	30.2	33.1	33.2	34.4	35.8	39.3	39.3	41.5	42.9	45.4	47.5	51.8
Physical sciences.....	5.6	5.2	5.7	4.7	4.6	4.0	4.6	4.7	4.8	5.0	5.2	5.6	6.1	6.6	6.7	7.2	7.6
Mathematics.....	3.3	3.5	3.3	3.1	2.6	2.5	2.7	2.4	2.6	2.4	3.2	2.4	2.8	2.4	2.3	3.0	3.4
Computer sciences.....	NA	NA	NA	0.1	0.2	0.3	0.6	0.6	0.9	1.0	1.4	1.2	1.3	1.2	0.9	1.3	1.7
Life sciences.....	8.5	9.7	10.3	10.3	11.3	10.8	11.9	12.3	12.8	13.7	15.0	15.6	16.9	17.5	19.2	20.3	21.0
Psychology.....	3.6	4.2	4.8	4.4	4.8	4.5	5.0	4.9	5.2	5.4	5.2	5.5	5.5	6.2	6.6	6.3	7.6
Social sciences.....	5.7	7.1	8.2	8.6	8.8	8.1	8.4	8.2	7.9	8.4	9.3	9.0	8.9	9.1	9.6	9.5	10.5
Engineering.....	2.6	2.5	2.7	2.8	2.3	2.7	4.0	4.0	4.3	4.3	4.5	4.8	5.0	4.5	5.1	5.5	6.1
Male, all fields.....	26.0	27.5	28.9	27.3	27.1	25.2	27.8	27.2	27.6	28.1	29.7	28.5	29.5	30.1	31.0	31.5	33.4
Science.....	23.5	25.1	26.3	24.6	24.9	22.6	23.9	23.4	23.5	24.2	25.7	24.4	25.1	26.2	26.7	27.0	28.6
Physical sciences.....	5.2	4.9	5.2	4.3	4.1	3.5	3.9	4.1	4.1	4.1	4.2	4.1	4.5	5.1	5.1	5.5	5.6
Mathematics.....	3.1	3.2	2.9	2.7	2.2	2.2	2.3	2.0	2.2	2.2	2.7	2.0	2.2	1.7	1.7	2.1	2.4
Computer sciences.....	NA	NA	NA	0.1	0.2	0.3	0.5	0.5	0.8	0.8	1.1	1.0	1.0	0.9	0.7	1.0	1.3
Life sciences.....	7.5	8.1	8.4	8.1	8.9	8.1	8.5	8.5	8.4	8.8	9.5	9.5	9.8	10.4	11.0	11.2	11.2
Psychology.....	2.7	3.0	3.3	2.8	3.0	2.6	2.7	2.7	2.9	3.0	2.3	2.4	2.1	2.7	2.7	2.4	2.9
Social sciences.....	5.0	5.9	6.5	6.6	6.5	5.9	6.0	5.6	5.2	5.3	5.9	5.5	5.5	5.4	5.5	4.9	5.3
Engineering.....	2.6	2.4	2.7	2.7	2.2	2.6	3.8	3.8	4.0	3.9	4.0	4.1	4.4	3.9	4.3	4.5	4.8
Female, all fields.....	3.3	4.6	6.0	6.8	7.5	7.7	9.4	10.0	11.2	12.0	14.1	15.6	17.0	17.3	19.4	21.5	24.5
Science.....	3.3	4.6	5.9	6.7	7.4	7.6	9.2	9.7	10.8	11.6	13.6	14.9	16.4	16.7	18.7	20.5	23.2

**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

Position/sex/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Physical sciences.....	0.3	0.3	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.9	1.1	1.5	1.6	1.5	1.6	1.7	1.9
Mathematics.....	0.2	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.5	0.5	0.6	0.7	0.6	0.9	1.1
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.4
Life sciences.....	1.1	1.6	1.9	2.2	2.4	2.7	3.4	3.8	4.5	4.9	5.5	6.1	7.1	7.1	8.1	9.1	9.8
Psychology.....	0.9	1.2	1.5	1.6	1.8	1.9	2.3	2.2	2.3	2.4	2.9	3.1	3.4	3.5	3.9	3.9	4.8
Social sciences.....	0.8	1.2	1.7	2.1	2.3	2.1	2.4	2.6	2.7	3.0	3.4	3.5	3.5	3.7	4.1	4.6	5.2
Engineering.....	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.6	0.5	0.8	1.0	1.3
<b>Full-time nonfaculty</b>																	
Both sexes, all fields.....	7.6	8.3	8.8	11.4	12.6	13.4	18.1	16.4	19.2	20.2	22.2	23.9	26.4	29.3	31.7	35.4	37.3
Science.....	6.8	7.4	8.0	10.5	11.5	12.4	16.6	15.3	17.7	18.4	20.8	21.6	23.3	26.4	28.3	31.9	34.0
Physical sciences.....	2.2	2.2	2.4	2.5	2.9	3.0	3.7	3.4	4.0	4.1	4.8	4.9	6.0	7.0	7.1	7.7	6.5
Mathematics.....	0.2	0.3	0.4	0.4	0.4	0.3	0.5	0.4	0.5	0.7	0.5	0.6	0.8	0.8	1.0	1.2	1.1
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.6	0.6
Life sciences.....	2.5	2.4	2.8	3.9	4.0	4.6	6.2	6.0	6.7	7.2	7.7	8.4	8.4	9.5	10.5	12.2	14.0
Psychology.....	0.8	1.0	1.2	1.8	2.2	2.2	2.9	2.8	2.9	2.8	3.9	3.9	4.0	4.6	4.9	5.7	6.1
Social sciences.....	1.0	1.5	1.2	1.9	2.0	2.2	3.2	2.6	3.5	3.5	3.7	3.6	3.9	4.3	4.5	4.4	5.6
Engineering.....	0.8	0.9	0.8	0.9	1.1	1.1	1.5	1.1	1.5	1.8	1.5	2.1	3.1	3.0	3.4	3.6	3.3
Male, all fields.....	6.5	7.2	7.4	9.4	10.0	10.3	14.3	12.0	13.9	14.4	15.4	16.1	18.0	20.5	21.4	23.7	23.7
Science.....	5.7	6.4	6.6	8.6	8.9	9.3	12.8	10.9	12.5	12.8	13.9	14.2	15.3	17.9	18.3	20.6	20.9
Physical sciences.....	2.1	2.1	2.2	2.3	2.6	2.7	3.4	2.9	3.5	3.6	4.2	4.1	5.2	6.0	6.1	6.6	5.3
Mathematics.....	0.2	0.3	0.4	0.3	0.3	0.2	0.4	0.4	0.4	0.6	0.4	0.5	0.7	0.7	0.8	0.9	0.8
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.6	0.5
Life sciences.....	2.0	1.9	2.2	3.0	3.0	3.2	4.6	4.1	4.6	4.9	5.1	5.6	5.3	6.2	6.5	7.4	8.4
Psychology.....	0.7	0.8	0.9	1.4	1.4	1.4	1.8	1.6	1.5	1.2	1.9	1.7	1.8	2.1	2.0	2.5	2.6
Social sciences.....	0.8	1.3	0.9	1.6	1.6	1.7	2.5	1.8	2.4	2.4	2.2	2.1	2.2	2.6	2.7	2.7	3.3
Engineering.....	0.8	0.9	0.8	0.9	1.1	1.0	1.5	1.0	1.4	1.7	1.5	2.0	2.7	2.6	3.1	3.1	2.8
Female, all fields.....	1.1	1.0	1.4	2.0	2.6	3.1	3.8	4.5	5.3	5.8	6.7	7.7	8.4	8.8	10.4	11.7	13.5
Science.....	1.1	1.0	1.4	1.9	2.6	3.0	3.8	4.5	5.2	5.6	6.7	7.5	8.2	8.5	10.0	11.2	13.1
Physical sciences.....	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.5	0.5	0.5	0.6	0.8	0.9	0.8	1.0	1.1	1.2
Mathematics.....	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.3	0.3
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Life sciences.....	0.6	0.5	0.6	0.9	1.0	1.3	1.6	1.8	2.1	2.4	2.6	2.8	3.1	3.3	4.0	4.8	5.6
Psychology.....	0.2	0.2	0.3	0.5	0.8	0.8	1.1	1.3	1.4	1.6	2.0	2.2	2.2	2.5	2.9	3.1	3.5
Social sciences.....	0.2	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.1	1.5	1.5	1.7	1.7	1.8	1.7	2.3
Engineering.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.5	0.4
<b>Postdocs</b>																	
Both sexes, all fields.....	4.2	6.2	7.6	8.1	8.5	8.3	8.7	9.3	11.5	9.9	13.3	16.8	18.9	18.5	17.5	15.7	23.4
Science.....	4.0	5.9	7.2	7.8	8.4	8.0	8.5	8.8	10.9	9.4	12.3	15.6	17.2	17.5	16.6	14.6	20.4
Physical sciences.....	1.8	2.2	2.4	2.0	2.1	1.6	2.1	2.3	2.7	2.2	3.5	4.4	3.8	3.4	3.0	2.6	3.9

**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

Position/sex/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Mathematics.....	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.0	0.5	0.5	0.6	0.8	0.5	1.0
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1
Life sciences.....	1.9	3.0	4.0	4.7	5.2	5.1	5.2	5.6	6.8	6.4	8.2	9.2	10.8	11.7	11.0	10.0	12.9
Psychology.....	0.2	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.5	0.4	1.1	1.3	1.2	1.2	0.9	1.7
Social sciences.....	0.1	0.2	0.3	0.3	0.3	0.6	0.3	0.1	0.4	0.3	0.2	0.4	0.7	0.5	0.6	0.5	0.8
Engineering.....	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.5	0.6	0.5	1.0	1.2	1.7	1.1	0.9	1.1	3.0
<b>Male, all fields.....</b>	<b>3.5</b>	<b>4.9</b>	<b>6.1</b>	<b>6.3</b>	<b>6.3</b>	<b>5.8</b>	<b>6.0</b>	<b>6.8</b>	<b>8.2</b>	<b>6.8</b>	<b>9.2</b>	<b>11.1</b>	<b>12.1</b>	<b>11.2</b>	<b>10.5</b>	<b>9.8</b>	<b>13.9</b>
Science.....	3.4	4.7	5.7	6.0	6.1	5.5	5.9	6.3	7.6	6.4	8.3	10.1	10.6	10.3	9.9	8.9	11.5
Physical sciences.....	1.6	2.0	2.1	1.8	1.8	1.4	1.7	1.9	2.2	1.8	2.9	3.7	3.0	2.7	2.3	2.1	2.9
Mathematics.....	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.3	0.3	0.5	0.6	0.3	0.8
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1
Life sciences.....	1.5	2.2	2.9	3.5	3.6	3.3	3.4	3.8	4.7	4.1	5.2	5.5	6.2	6.6	6.2	5.7	6.7
Psychology.....	0.1	0.2	0.4	0.4	0.5	0.3	0.4	0.3	0.3	0.2	0.1	0.4	0.5	0.3	0.4	0.4	0.6
Social sciences.....	0.1	0.1	0.2	0.2	0.1	0.4	0.2	0.1	0.2	0.2	0.1	0.2	0.5	0.3	0.3	0.3	0.4
Engineering.....	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.5	0.5	0.4	0.9	1.0	1.4	0.9	0.7	0.9	2.4
<b>Female, all fields.....</b>	<b>0.6</b>	<b>1.3</b>	<b>1.6</b>	<b>1.8</b>	<b>2.2</b>	<b>2.5</b>	<b>2.6</b>	<b>2.6</b>	<b>3.3</b>	<b>3.0</b>	<b>4.1</b>	<b>5.7</b>	<b>6.8</b>	<b>7.3</b>	<b>6.9</b>	<b>6.0</b>	<b>9.6</b>
Science.....	0.6	1.3	1.6	1.8	2.2	2.5	2.6	2.6	3.3	3.0	4.0	5.5	6.6	7.1	6.7	5.7	8.9
Physical sciences.....	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.7	0.7	0.7	0.8	0.7	0.5	1.0
Mathematics.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.2
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Life sciences.....	0.4	0.8	1.1	1.2	1.6	1.8	1.8	1.8	2.2	2.3	3.0	3.7	4.6	5.1	4.7	4.3	6.1
Psychology.....	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.5	0.3	0.3	0.7	0.8	0.9	0.8	0.5	1.1
Social sciences.....	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.5
Engineering.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.6
<b>Part-time positions</b>																	
<b>Both sexes, all fields.....</b>	<b>2.9</b>	<b>3.2</b>	<b>3.4</b>	<b>4.5</b>	<b>4.0</b>	<b>6.0</b>	<b>6.5</b>	<b>5.7</b>	<b>6.2</b>	<b>7.4</b>	<b>5.9</b>	<b>5.5</b>	<b>8.9</b>	<b>8.2</b>	<b>9.0</b>	<b>13.3</b>	<b>15.9</b>
Science.....	2.8	3.1	3.2	4.3	3.9	5.7	6.2	5.4	5.6	6.9	5.4	5.1	8.6	7.9	8.5	12.5	14.8
Physical sciences.....	0.7	0.7	0.7	0.8	0.7	1.1	1.1	0.8	0.7	1.2	1.0	0.9	1.2	1.0	1.0	1.1	1.6
Mathematics.....	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.5	0.7	0.7	0.6	0.9	1.2
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1
Life sciences.....	0.9	0.9	1.0	1.2	1.2	1.7	1.7	1.6	1.9	2.3	1.6	1.2	2.9	2.6	2.4	4.0	4.5
Psychology.....	0.4	0.5	0.6	1.0	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.1	1.1	1.3	1.8	3.2	3.7
Social sciences.....	0.7	0.8	0.8	1.0	1.0	1.6	2.2	1.8	1.7	2.0	1.3	1.3	2.6	2.2	2.7	3.1	3.7
Engineering.....	0.1	0.1	0.1	0.3	0.2	0.4	0.3	0.3	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.8	1.1
<b>Male, all fields.....</b>	<b>1.5</b>	<b>1.8</b>	<b>1.8</b>	<b>2.7</b>	<b>1.9</b>	<b>3.5</b>	<b>3.6</b>	<b>2.7</b>	<b>3.1</b>	<b>3.8</b>	<b>2.3</b>	<b>2.4</b>	<b>4.4</b>	<b>3.4</b>	<b>3.8</b>	<b>6.1</b>	<b>7.7</b>
Science.....	1.4	1.7	1.6	2.4	1.7	3.2	3.3	2.5	2.6	3.4	1.9	2.0	4.1	3.2	3.5	5.4	6.7
Physical sciences.....	0.4	0.4	0.5	0.6	0.4	0.9	0.7	0.5	0.4	0.8	0.7	0.7	0.8	0.7	0.6	0.7	1.1
Mathematics.....	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.3	0.4	0.3	0.6	0.9
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1

**S&E doctorate holders employed in academia, by type of position, sex, and degree field: 1973–2006**

(Thousands)

Position/sex/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Life sciences.....	0.4	0.5	0.4	0.5	0.4	0.7	0.7	0.5	0.8	1.0	0.4	0.3	1.3	0.8	0.7	1.3	1.5
Psychology .....	0.1	0.2	0.2	0.5	0.3	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.3	0.3	0.3	0.8	0.9
Social sciences .....	0.4	0.5	0.4	0.6	0.5	1.1	1.4	1.0	0.8	1.2	0.5	0.7	1.4	1.0	1.4	1.7	2.2
Engineering.....	0.1	0.1	0.1	0.3	0.2	0.3	0.3	0.3	0.5	0.5	0.4	0.3	0.2	0.2	0.4	0.7	1.0
Female, all fields .....	1.4	1.5	1.6	1.9	2.1	2.5	2.9	3.0	3.1	3.5	3.6	3.1	4.5	4.9	5.1	7.3	8.2
Science.....	1.4	1.5	1.6	1.9	2.1	2.5	2.9	2.9	3.1	3.5	3.5	3.1	4.4	4.7	5.1	7.1	8.1
Physical sciences.....	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.2	0.4	0.4	0.3	0.4	0.5
Mathematics.....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.3	0.3	0.2	0.3
Computer sciences .....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Life sciences.....	0.5	0.5	0.6	0.6	0.7	0.9	1.0	1.1	1.1	1.3	1.2	0.9	1.6	1.8	1.7	2.7	3.0
Psychology .....	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.7	0.7	0.9	1.1	1.0	0.8	1.0	1.5	2.4	2.8
Social sciences .....	0.3	0.3	0.3	0.4	0.5	0.5	0.9	0.8	0.8	0.8	0.8	0.7	1.2	1.2	1.3	1.4	1.5
Engineering.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Senior faculty includes professors and associate professors; junior faculty includes assistant professors and instructors; and full-time nonfaculty includes positions such as research associates, adjunct positions, lecturers, and administrative positions. Part-time employment excludes those employed part-time because they are students or retired. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Science and Engineering Indicators 2008

**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

Position, field, and race/ethnicity	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
All positions.....	118.0	134.1	145.4	155.3	167.1	176.1	190.2	195.9	206.6	210.6	213.8	217.5	232.5	240.2	245.5	259.5	274.2
Science.....	105.6	120.6	130.7	139.5	150.9	157.9	170.3	174.7	183.8	187.8	190.6	193.7	205.9	214.7	218.9	231.7	244.5
Physical sciences.....	25.5	27.5	29.2	28.8	29.9	29.9	32.2	32.8	33.6	33.8	35.0	35.8	37.5	38.7	38.6	39.9	39.9
Mathematics.....	9.7	11.0	11.7	12.2	12.4	12.9	13.6	13.8	14.5	15.2	15.5	14.6	15.6	15.2	14.9	16.7	17.4
Computer sciences.....	NA	NA	NA	0.1	0.3	0.5	0.8	1.1	1.5	2.0	2.5	3.1	3.3	3.7	3.8	5.2	5.8
Life sciences.....	34.9	39.4	42.6	47.0	51.3	54.8	58.7	61.2	64.8	66.9	68.2	71.6	77.3	81.9	84.3	90.0	96.1
Psychology.....	12.2	14.8	16.2	17.7	20.1	21.0	23.1	23.7	25.0	25.2	25.0	26.1	27.3	29.0	30.4	31.8	35.3
Social sciences.....	23.4	28.0	31.1	33.6	36.9	38.8	41.9	42.1	44.5	44.8	44.4	42.5	44.9	46.2	46.9	48.1	50.0
Engineering.....	12.4	13.4	14.8	15.8	16.1	18.1	19.9	21.2	22.8	22.8	23.1	23.8	26.6	25.5	26.6	27.8	29.7
White.....	107.7	121.6	131.4	140.0	149.9	157.2	168.4	172.8	181.0	183.5	181.8	182.6	193.2	198.2	201.0	204.3	213.0
Science.....	96.9	109.9	118.8	126.5	135.9	142.0	152.0	155.7	163.0	165.3	164.3	165.0	173.0	178.8	180.8	185.1	193.5
Physical sciences.....	23.0	24.8	26.1	25.9	26.6	26.4	28.3	28.5	29.2	29.5	29.3	29.5	31.0	32.3	32.0	32.1	31.7
Mathematics.....	8.8	10.0	10.6	10.8	11.0	11.5	11.9	12.2	12.6	13.0	12.9	12.0	12.6	12.3	12.1	13.0	13.1
Computer sciences.....	NA	NA	NA	0.1	0.2	0.4	0.6	0.9	1.1	1.4	1.6	2.1	2.2	2.7	2.7	3.4	3.7
Life sciences.....	32.1	35.8	38.8	42.4	46.1	49.3	52.7	54.6	57.6	59.2	59.1	61.3	64.9	67.2	68.4	70.4	74.5
Psychology.....	11.6	13.9	15.2	16.8	18.8	19.6	21.3	22.0	23.2	23.2	22.9	23.6	24.4	25.5	26.6	27.1	29.8
Social sciences.....	21.4	25.3	28.2	30.5	33.1	34.7	37.2	37.5	39.4	39.1	38.6	36.5	38.0	38.9	39.0	39.1	40.6
Engineering.....	10.8	11.6	12.6	13.5	14.0	15.2	16.4	17.2	18.1	18.2	17.5	17.6	20.2	19.4	20.2	19.2	19.6
Asian/Pacific Islander.....	5.0	6.1	6.7	9.8	10.8	11.8	14.0	15.0	16.3	16.8	20.9	22.4	25.4	26.3	27.6	34.7	38.8
Science.....	4.0	5.0	5.4	7.8	9.1	9.4	11.1	11.5	12.2	13.1	16.2	17.5	20.3	21.7	22.8	28.3	30.8
Physical sciences.....	1.2	1.4	1.5	1.9	2.1	2.4	2.9	3.1	3.1	2.8	4.2	4.6	4.6	4.6	4.5	5.5	5.8
Mathematics.....	0.4	0.5	0.5	0.9	0.9	1.0	1.1	1.1	1.3	1.6	1.9	1.8	2.2	2.1	2.0	2.8	3.1
Computer sciences.....	NA	NA	NA	0.0	0.1	0.1	0.1	0.1	0.3	0.5	0.7	0.9	0.9	0.9	0.9	1.5	1.7
Life sciences.....	1.3	1.8	2.0	3.1	3.6	3.6	4.0	4.4	4.7	5.1	6.3	6.8	8.5	9.9	11.0	13.3	14.6
Psychology.....	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.7	0.8	0.9	1.1	1.5
Social sciences.....	1.0	1.1	1.2	1.6	2.0	2.0	2.5	2.2	2.4	2.6	2.7	2.8	3.2	3.5	3.6	4.1	4.0
Engineering.....	1.1	1.1	1.3	1.9	1.8	2.4	3.0	3.5	4.1	3.7	4.7	4.9	5.2	4.6	4.8	6.4	8.0
Underrepresented minority.....	2.4	3.2	3.7	4.9	5.8	6.5	7.2	7.8	9.0	9.9	10.7	12.4	13.7	15.6	16.8	20.4	22.4
Science.....	2.2	2.9	3.4	4.5	5.5	6.0	6.7	7.2	8.3	9.0	9.8	11.2	12.6	14.1	15.2	18.3	20.2
Physical sciences.....	0.5	0.5	0.6	0.8	1.0	1.0	1.0	1.1	1.2	1.3	1.5	1.6	1.9	1.8	2.0	2.3	2.4
Mathematics.....	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.7	0.8	0.7	0.8	0.8	1.0	1.1
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.3	0.3
Life sciences.....	0.8	1.1	1.2	1.3	1.5	1.7	1.8	2.1	2.4	2.6	2.7	3.5	3.9	4.7	4.9	6.2	7.0
Psychology.....	0.3	0.4	0.6	0.5	0.8	1.0	1.2	1.2	1.3	1.5	1.6	2.0	2.3	2.7	2.9	3.6	3.9
Social sciences.....	0.5	0.8	0.8	1.5	1.8	2.0	2.1	2.3	2.8	3.0	3.1	3.2	3.6	3.9	4.3	4.9	5.4
Engineering.....	0.2	0.2	0.3	0.4	0.3	0.5	0.5	0.5	0.7	0.9	0.9	1.2	1.2	1.5	1.6	2.1	2.2
Full-time faculty.....	103.3	116.4	125.6	131.2	141.9	148.4	156.9	164.4	169.8	173.1	172.4	171.4	178.4	184.0	187.4	195.0	197.7
Science.....	92.0	104.2	112.2	116.9	127.2	132.0	139.0	145.1	149.5	153.1	152.2	151.3	156.8	163.0	165.5	172.7	175.3



**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

Position, field, and race/ethnicity	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Physical sciences.....	20.8	22.3	23.6	23.5	24.3	24.2	25.4	26.4	26.2	26.2	25.8	25.6	26.5	27.3	27.5	28.4	27.9
Mathematics.....	9.3	10.4	10.9	11.4	11.7	12.3	12.7	12.9	13.5	14.2	14.7	13.0	13.6	13.1	12.6	14.2	14.1
Computer sciences.....	NA	NA	NA	0.1	0.3	0.4	0.7	0.9	1.3	1.8	2.3	2.8	3.0	3.3	3.3	4.2	4.9
Life sciences.....	29.5	33.1	34.9	37.3	40.9	43.5	45.6	48.1	49.3	51.1	50.8	52.8	55.2	58.1	60.4	63.7	64.8
Psychology.....	10.8	12.8	13.9	14.3	16.4	17.3	18.5	19.2	20.2	20.7	19.5	20.1	20.8	21.9	22.6	22.0	23.8
Social sciences.....	21.6	25.5	28.8	30.3	33.7	34.4	36.1	37.6	39.0	39.0	39.2	37.1	37.7	39.2	39.2	40.1	39.8
Engineering.....	11.3	12.2	13.5	14.3	14.7	16.4	17.9	19.3	20.2	20.1	20.1	20.0	21.5	21.1	21.9	22.3	22.3
White.....	94.9	106.2	114.3	118.7	128.1	133.4	139.7	146.2	149.8	151.8	148.7	147.1	151.1	155.4	156.3	156.6	158.9
Science.....	84.9	95.6	102.6	106.5	115.4	119.4	124.9	130.3	133.6	135.7	133.1	131.7	134.5	139.3	139.8	141.1	143.4
Physical sciences.....	19.0	20.5	21.5	21.3	22.1	21.6	22.8	23.4	23.3	23.2	22.2	22.1	22.6	23.4	23.2	23.6	23.4
Mathematics.....	8.5	9.5	9.9	10.1	10.3	10.9	11.1	11.4	11.7	12.2	12.3	10.7	11.0	10.7	10.1	11.1	10.8
Computer sciences.....	NA	NA	NA	0.0	0.2	0.3	0.5	0.7	1.0	1.3	1.5	1.9	2.0	2.4	2.3	2.6	3.0
Life sciences.....	27.5	30.4	32.1	33.9	37.2	39.7	41.3	43.3	44.4	46.0	45.1	46.7	48.3	50.2	51.4	51.9	52.9
Psychology.....	10.3	12.1	13.0	13.6	15.4	16.2	17.1	17.9	18.8	19.2	18.0	18.4	18.8	19.6	20.1	19.1	20.5
Social sciences.....	19.7	23.2	26.1	27.5	30.1	30.7	32.2	33.5	34.4	33.8	34.1	31.9	31.8	33.0	32.8	32.9	32.7
Engineering.....	10.0	10.6	11.6	12.2	12.7	14.0	14.8	15.9	16.2	16.2	15.6	15.3	16.7	16.1	16.5	15.5	15.5
Asian/Pacific Islander.....	4.0	4.7	5.0	7.8	8.4	9.1	10.9	11.7	12.3	12.6	14.8	14.5	16.5	17.0	18.4	23.0	23.0
Science.....	3.0	3.7	3.9	6.0	6.7	7.2	8.2	8.7	8.9	9.5	11.1	10.9	12.7	13.2	14.4	18.1	18.0
Physical sciences.....	0.7	0.8	1.0	1.4	1.3	1.6	1.7	2.0	1.9	1.8	2.4	2.3	2.4	2.5	2.6	3.1	2.9
Mathematics.....	0.4	0.5	0.5	0.8	0.9	1.0	1.1	1.1	1.3	1.5	1.7	1.6	2.0	1.7	1.7	2.3	2.4
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.1	0.3	0.5	0.7	0.8	0.8	0.8	0.8	1.4	1.5
Life sciences.....	0.9	1.2	1.2	2.1	2.3	2.4	2.8	3.1	3.0	3.0	3.7	3.5	4.1	4.9	5.7	7.3	7.2
Psychology.....	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.7	1.0
Social sciences.....	0.9	1.1	1.1	1.5	1.9	1.9	2.1	2.1	2.1	2.4	2.3	2.4	2.8	2.9	3.1	3.3	3.0
Engineering.....	0.9	1.0	1.1	1.8	1.7	1.9	2.7	3.0	3.4	3.1	3.7	3.6	3.8	3.8	4.0	5.0	5.1
Underrepresented minority.....	2.0	2.7	3.2	4.2	5.0	5.4	5.8	6.3	7.4	8.4	8.6	9.8	10.6	11.6	12.5	15.2	15.7
Science.....	1.9	2.5	2.9	3.9	4.8	5.0	5.4	5.9	6.8	7.6	7.8	8.7	9.6	10.4	11.2	13.5	14.0
Physical sciences.....	0.4	0.4	0.4	0.7	0.9	0.9	0.8	0.9	0.9	1.1	1.2	1.1	1.4	1.5	1.6	1.7	1.6
Mathematics.....	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.6	0.7	0.7	0.8	0.9
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
Life sciences.....	0.7	0.9	1.0	1.1	1.3	1.3	1.4	1.6	1.8	2.0	2.0	2.6	2.7	3.1	3.3	4.5	4.7
Psychology.....	0.2	0.3	0.5	0.4	0.6	0.7	0.9	0.9	1.0	1.1	1.1	1.3	1.5	1.8	2.0	2.2	2.4
Social sciences.....	0.4	0.6	0.8	1.4	1.6	1.7	1.8	2.0	2.5	2.8	2.8	2.8	3.1	3.3	3.4	4.0	4.1
Engineering.....	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.8	1.1	1.0	1.1	1.4	1.7	1.7
Postdocs.....	4.2	6.2	7.6	8.1	8.5	8.3	8.7	9.3	11.5	9.9	13.3	16.8	18.9	18.5	17.5	15.7	23.4
Science.....	4.0	5.9	7.2	7.8	8.4	8.0	8.5	8.8	10.9	9.4	12.3	15.6	17.2	17.5	16.6	14.6	20.4
Physical sciences.....	1.8	2.2	2.4	2.0	2.1	1.6	2.1	2.3	2.7	2.2	3.5	4.4	3.8	3.4	3.0	2.6	3.9
Mathematics.....	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.0	0.5	0.5	0.6	0.8	0.5	1.0

**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

Position, field, and race/ethnicity	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1
Life sciences.....	1.9	3.0	4.0	4.7	5.2	5.1	5.2	5.6	6.8	6.4	8.2	9.2	10.8	11.7	11.0	10.0	12.9
Psychology.....	0.2	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.5	0.4	1.1	1.3	1.2	1.2	0.9	1.7
Social sciences.....	0.1	0.2	0.3	0.3	0.3	0.6	0.3	0.1	0.4	0.3	0.2	0.4	0.7	0.5	0.6	0.5	0.8
Engineering.....	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.5	0.6	0.5	1.0	1.2	1.7	1.1	0.9	1.1	3.0
White.....	3.6	5.0	6.2	6.8	6.9	6.8	7.1	7.4	9.0	7.1	9.1	11.2	12.5	11.9	11.4	9.9	13.3
Science.....	3.4	4.8	6.0	6.7	6.7	6.8	7.0	7.2	8.7	6.9	8.8	10.7	11.6	11.2	10.9	9.3	12.2
Physical sciences.....	1.5	1.8	1.8	1.6	1.5	1.4	1.4	1.5	1.8	1.4	2.4	2.6	2.5	2.3	2.2	1.5	2.4
Mathematics.....	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.3	0.3	0.5	0.7	0.4	0.6
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0
Life sciences.....	1.7	2.4	3.3	4.1	4.4	4.3	4.5	4.7	5.6	4.8	5.9	6.5	7.0	7.2	6.7	6.4	7.2
Psychology.....	0.1	0.4	0.4	0.6	0.6	0.5	0.7	0.6	0.8	0.4	0.3	0.9	1.1	0.9	1.0	0.7	1.3
Social sciences.....	0.1	0.2	0.3	0.3	0.3	0.5	0.3	0.1	0.3	0.2	0.1	0.3	0.6	0.3	0.4	0.3	0.6
Engineering.....	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.5	0.9	0.7	0.6	0.5	1.2
Asian/Pacific Islander.....	0.5	1.0	1.1	1.1	1.4	1.1	1.1	1.6	1.9	2.3	3.6	4.7	5.3	5.2	4.9	4.8	8.3
Science.....	0.4	0.9	1.0	1.0	1.4	0.9	1.1	1.3	1.6	2.0	2.9	4.0	4.7	4.9	4.6	4.3	6.6
Physical sciences.....	0.2	0.4	0.4	0.4	0.6	0.2	0.5	0.6	0.7	0.7	1.0	1.5	1.2	1.1	0.8	0.9	1.3
Mathematics.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Life sciences.....	0.2	0.5	0.5	0.5	0.8	0.6	0.6	0.6	0.9	1.3	1.9	2.2	3.2	3.6	3.6	3.0	4.6
Psychology.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
Social sciences.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1
Engineering.....	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.3	0.7	0.7	0.7	0.2	0.3	0.5	1.8
Underrepresented minority.....	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.4	0.6	0.4	0.6	0.9	1.1	1.5	1.1	1.1	1.7
Science.....	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.3	0.5	0.4	0.6	0.9	1.0	1.4	1.1	1.0	1.6
Physical sciences.....	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2
Mathematics.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Life sciences.....	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.4	0.5	0.6	0.8	0.6	0.6	1.0
Psychology.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.1
Social sciences.....	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1
Engineering.....	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.1
Other positions.....	10.5	11.5	12.2	15.9	16.6	19.4	24.6	22.1	25.4	27.6	28.1	29.4	35.3	37.5	40.7	48.7	53.1
Science.....	9.6	10.5	11.3	14.8	15.3	18.0	22.8	20.7	23.3	25.4	26.0	26.8	31.9	34.2	36.8	44.4	48.8
Physical sciences.....	2.9	2.9	3.1	3.3	3.6	4.2	4.8	4.2	4.7	5.4	5.8	5.8	7.2	8.0	8.1	8.8	8.1
Mathematics.....	0.4	0.6	0.7	0.7	0.6	0.5	0.7	0.6	0.8	0.9	0.8	1.1	1.5	1.5	1.6	2.0	2.3
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.9	0.8
Life sciences.....	3.4	3.3	3.7	5.0	5.2	6.3	7.8	7.6	8.7	9.5	9.2	9.6	11.3	12.0	12.9	16.3	18.5

Appendix table 5-20

**S&E doctorate holders employed in academia, by type of position, degree field, and race/ethnicity: 1973–2006**

(Thousands)

Position, field, and race/ethnicity	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Psychology.....	1.2	1.5	1.8	2.8	3.0	3.1	3.9	3.8	4.0	4.0	5.1	5.0	5.2	5.9	6.6	8.9	9.8
Social sciences.....	1.6	2.2	1.9	2.9	2.9	3.8	5.5	4.3	5.1	5.5	5.0	5.0	6.5	6.5	7.1	7.5	9.3
Engineering.....	0.9	1.0	0.9	1.2	1.3	1.4	1.8	1.4	2.0	2.2	2.0	2.5	3.4	3.3	3.9	4.3	4.4
White.....	9.3	10.4	10.9	14.5	15.0	17.0	21.6	19.3	22.2	24.6	24.0	24.3	29.6	31.0	33.3	37.8	40.8
Science.....	8.6	9.5	10.1	13.4	13.7	15.8	20.0	18.2	20.6	22.8	22.4	22.5	27.0	28.3	30.1	34.7	37.9
Physical sciences.....	2.5	2.7	2.8	3.1	3.2	3.6	4.1	3.6	4.0	4.8	4.8	4.8	5.9	6.6	6.8	7.0	5.9
Mathematics.....	0.3	0.5	0.6	0.6	0.6	0.5	0.7	0.6	0.7	0.8	0.6	0.9	1.2	1.1	1.3	1.5	1.7
Computer sciences.....	NA	NA	NA	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.7	0.6
Life sciences.....	3.0	2.9	3.3	4.4	4.5	5.3	6.9	6.6	7.5	8.4	8.1	8.1	9.5	9.8	10.2	12.2	14.3
Psychology.....	1.1	1.5	1.7	2.6	2.8	2.9	3.5	3.5	3.6	3.6	4.5	4.3	4.5	5.0	5.6	7.4	8.0
Social sciences.....	1.5	2.0	1.7	2.7	2.7	3.5	4.7	3.9	4.7	5.1	4.4	4.3	5.6	5.5	5.9	5.9	7.3
Engineering.....	0.7	0.9	0.8	1.1	1.2	1.1	1.6	1.1	1.6	1.8	1.6	1.8	2.7	2.6	3.1	3.1	2.9
Asian/Pacific Islander.....	0.6	0.4	0.6	0.9	1.0	1.6	2.0	1.8	2.0	1.9	2.5	3.2	3.6	4.1	4.3	6.9	7.4
Science.....	0.5	0.4	0.5	0.9	1.0	1.4	1.8	1.5	1.7	1.5	2.2	2.6	2.9	3.5	3.7	5.9	6.2
Physical sciences.....	0.2	0.1	0.1	0.2	0.2	0.5	0.6	0.6	0.5	0.4	0.8	0.8	1.1	1.0	1.0	1.4	1.7
Mathematics.....	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.5
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1
Life sciences.....	0.2	0.1	0.3	0.4	0.6	0.7	0.7	0.7	0.9	0.8	0.8	1.1	1.2	1.5	1.7	3.0	2.8
Psychology.....	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4
Social sciences.....	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.7	0.9
Engineering.....	0.1	0.0	0.1	0.1	0.0	0.2	0.2	0.3	0.4	0.3	0.3	0.6	0.6	0.6	0.5	0.9	1.1
Underrepresented minority.....	0.3	0.4	0.3	0.5	0.5	0.8	1.0	1.1	1.1	1.1	1.5	1.8	2.1	2.5	3.1	4.1	4.9
Science.....	0.3	0.4	0.3	0.4	0.5	0.7	0.9	1.0	1.0	1.0	1.4	1.7	2.0	2.4	2.9	3.8	4.6
Physical sciences.....	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.5	0.5
Mathematics.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.2
Computer sciences.....	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Life sciences.....	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.6	0.8	1.0	1.1	1.3
Psychology.....	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.6	0.6	0.7	0.8	1.2	1.4
Social sciences.....	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.5	0.8	0.9	1.1
Engineering.....	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments of all kinds. Part-time employment excludes those employed part time because they are students or retired. Underrepresented minority includes blacks, Hispanics, and American Indians/Alaska Natives. Total includes other and unknown race/ethnicity not shown separately. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-21

**Full-time doctoral instructional faculty, by field of teaching, citizenship, and type of institution: Fall 1992 and fall 2003**

(Percent distribution)

Year/institution type/field of teaching	Doctoral faculty (n)	Citizen, born in U.S.	Citizen, foreign born	Noncitizen
<b>1992</b>				
All institutions.....	342,100	82.6	9.2	8.3
S&E.....	197,500	79.2	10.7	10.1
Agricultural/biological/health sciences.....	86,400	83.2	9.0	7.8
Physical sciences/mathematics/computer sciences/engineering.....	64,100	70.0	15.0	15.0
Social/behavioral sciences.....	47,100	84.3	7.9	7.8
Non-S&E.....	140,300	87.9	6.9	5.1
Research institutions.....	135,300	77.7	10.5	11.8
S&E.....	91,000	75.5	11.4	13.1
Agricultural/biological/health sciences.....	45,500	80.9	8.7	10.4
Physical sciences/mathematics/computer sciences/engineering.....	28,600	62.0	19.5	18.5
Social/behavioral sciences.....	16,900	83.8	4.8	11.4
Non-S&E.....	41,600	83.9	8.7	7.3
Other institutions.....	206,800	85.7	8.3	6.0
S&E.....	106,600	82.3	10.1	7.6
Agricultural/biological/health sciences.....	40,800	85.7	9.4	4.9
Physical sciences/mathematics/computer sciences/engineering.....	35,500	76.4	11.4	12.2
Social/behavioral sciences.....	30,200	84.6	9.7	5.7
Non-S&E.....	98,700	89.6	6.2	4.2
<b>2003</b>				
All institutions.....	420,900	76.0	13.3	10.7
S&E.....	246,100	71.7	15.6	12.7
Agricultural/biological/health sciences.....	106,500	74.7	14.3	11.0
Physical sciences/mathematics/computer sciences/engineering.....	85,500	61.1	21.0	17.9
Social/behavioral sciences.....	54,100	82.7	9.6	7.7
Non-S&E.....	174,800	82.0	10.0	8.0
Research institutions.....	168,300	70.8	14.4	14.8
S&E.....	115,000	67.3	16.4	16.4
Agricultural/biological/health sciences.....	57,900	71.9	15.5	12.6
Physical sciences/mathematics/computer sciences/engineering.....	37,000	53.2	21.9	24.9
Social/behavioral sciences.....	20,000	79.7	8.7	11.7
Non-S&E.....	53,300	78.4	10.1	11.5
Other institutions.....	252,600	79.4	12.6	8.0
S&E.....	131,100	75.7	15.0	9.4
Agricultural/biological/health sciences.....	48,600	77.9	13.0	9.1
Physical sciences/mathematics/computer sciences/engineering.....	48,400	67.2	20.4	12.5
Social/behavioral sciences.....	34,100	84.5	10.1	5.4
Non-S&E.....	121,500	83.5	10.0	6.5

NOTES: Physical sciences include earth, atmospheric, and ocean sciences. Institutions designated by 1994 Carnegie classification code. For information on these institutional categories, see Carnegie Foundation for the Advancement of Teaching, *A Classification of Institutions of Higher Education*, Princeton University Press (1994) and chapter 2 sidebar, "Carnegie Classification of Academic Institutions," in National Science Board, *Science and Engineering Indicators 2006*, volume 1, NSB 06-01, National Science Foundation (2006). Total for 1992 includes missing field and missing highest degree not shown separately. Detail may not add to total because of rounding.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 5-22

(Page 1 of 2)

**Age distribution of S&E doctorate holders employed in academia, by type of position: 1973–2006**

Position	Age (years)		Age distribution (%)					
	Mean	Median	All ages	<35	35–44	45–54	55–64	≥65
<b>All positions</b>								
1973 .....	42.0	40.0	100.0	28.3	35.2	23.3	10.9	2.2
1975 .....	42.4	39.9	100.0	25.9	36.8	23.7	11.7	2.0
1977 .....	42.7	40.0	100.0	22.9	38.9	23.8	12.4	2.0
1979 .....	43.3	40.7	100.0	20.1	40.3	23.8	13.6	2.2
1981 .....	44.0	41.5	100.0	18.3	40.5	23.7	14.5	2.9
1983 .....	44.8	42.5	100.0	14.9	40.8	25.2	15.7	3.4
1985 .....	45.2	43.2	100.0	14.2	39.2	26.8	15.9	3.8
1987 .....	45.6	44.2	100.0	12.9	36.5	30.6	16.5	3.5
1989 .....	46.1	45.0	100.0	12.1	34.7	32.2	16.9	4.1
1991 .....	46.3	45.3	100.0	11.5	33.7	34.2	16.9	3.8
1993 .....	45.8	45.0	100.0	13.3	33.3	34.4	16.1	3.0
1995 .....	46.2	45.3	100.0	12.7	32.9	33.6	17.4	3.5
1997 .....	46.6	45.8	100.0	13.3	30.7	32.8	19.6	3.6
1999 .....	47.0	46.3	100.0	12.2	30.5	31.0	22.5	3.8
2001 .....	47.4	46.9	100.0	12.0	29.1	31.8	23.1	4.0
2003 .....	47.9	48.0	100.0	11.3	28.7	30.8	24.5	4.8
2006 .....	48.2	48.2	100.0	13.1	28.4	28.2	24.0	6.2
<b>Full-time faculty</b>								
1973 .....	42.4	41.0	100.0	25.6	36.6	24.6	11.3	2.0
1975 .....	42.8	40.6	100.0	22.9	38.2	25.1	12.0	1.8
1977 .....	43.3	40.9	100.0	19.2	40.1	25.7	13.3	1.7
1979 .....	44.0	41.6	100.0	16.2	41.1	25.9	14.7	2.0
1981 .....	44.7	42.4	100.0	14.7	41.2	25.8	15.7	2.7
1983 .....	45.5	43.4	100.0	11.3	41.2	27.5	17.2	2.8
1985 .....	45.8	43.9	100.0	10.8	39.6	29.0	17.0	3.5
1987 .....	46.6	45.1	100.0	9.2	35.9	33.2	18.1	3.5
1989 .....	47.1	46.0	100.0	8.3	33.8	35.4	18.8	3.8
1991 .....	47.0	46.4	100.0	8.8	32.7	36.8	18.3	3.4
1993 .....	46.9	46.0	100.0	9.3	32.4	36.9	18.0	3.3
1995 .....	47.5	46.9	100.0	8.0	31.9	36.6	19.8	3.8
1997 .....	48.0	47.5	100.0	8.2	29.9	35.6	22.2	4.0
1999 .....	48.5	48.0	100.0	7.3	29.4	33.3	25.7	4.3
2001 .....	48.8	48.3	100.0	7.6	28.0	34.1	25.9	4.4
2003 .....	49.1	49.0	100.0	7.6	27.2	32.3	27.4	5.5
2006 .....	49.8	49.8	100.0	8.1	27.2	30.5	26.9	7.3
<b>Postdocs</b>								
1973 .....	32.1	31.0	100.0	81.2	15.2	3.0	0.6	0.0
1975 .....	32.7	31.2	100.0	78.0	18.7	2.0	1.1	0.2
1977 .....	32.9	31.1	100.0	75.3	21.7	2.4	0.6	0.0
1979 .....	33.1	31.6	100.0	71.7	25.5	2.1	0.7	0.0
1981 .....	33.1	31.6	100.0	71.9	24.6	2.6	0.6	0.3
1983 .....	33.7	31.7	100.0	68.4	27.0	3.5	1.0	0.2
1985 .....	33.3	31.9	100.0	70.6	27.2	2.1	0.1	0.0
1987 .....	33.8	32.0	100.0	68.4	28.3	2.4	0.5	0.4
1989 .....	34.6	32.6	100.0	63.9	29.9	4.5	1.0	0.7
1991 .....	34.7	33.1	100.0	57.2	39.0	2.8	1.0	0.0
1993 .....	33.9	32.7	100.0	62.3	34.7	2.5	0.5	0.0
1995 .....	35.0	33.0	100.0	56.6	35.9	5.8	1.6	0.1
1997 .....	35.0	33.0	100.0	60.7	32.3	4.6	2.1	0.3
1999 .....	34.5	33.0	100.0	57.6	36.8	5.3	0.3	0.0
2001 .....	34.6	33.0	100.0	59.9	34.6	4.5	0.8	0.1
2003 .....	35.2	34.0	100.0	56.2	36.2	6.9	0.7	0.0
2006 .....	34.7	33.6	100.0	61.9	32.9	4.6	0.6	0.0
<b>Other positions</b>								
1973 .....	41.9	39.0	100.0	34.6	30.3	18.7	10.9	5.4
1975 .....	43.3	40.0	100.0	27.5	32.0	21.8	13.4	5.4
1977 .....	42.5	38.3	100.0	28.4	37.4	17.5	10.6	6.1
1979 .....	42.5	38.6	100.0	25.2	41.6	17.0	10.9	5.2

Appendix table 5-22

(Page 2 of 2)

**Age distribution of S&E doctorate holders employed in academia, by type of position: 1973–2006**

Position	Age (years)		Age distribution (%)					
	Mean	Median	All ages	<35	35–44	45–54	55–64	≥65
1981 .....	43.3	39.6	100.0	21.8	43.6	17.0	11.1	6.4
1983 .....	44.1	39.9	100.0	19.3	43.6	17.5	10.6	8.9
1985 .....	45.3	42.5	100.0	15.9	41.0	21.6	14.7	6.8
1987 .....	43.9	41.1	100.0	16.9	43.9	23.3	10.9	5.0
1989 .....	44.9	42.2	100.0	14.2	43.3	23.5	11.2	7.8
1991 .....	46.1	44.0	100.0	11.6	38.2	28.7	14.2	7.3
1993 .....	44.6	43.2	100.0	14.2	37.9	33.9	11.3	2.7
1995 .....	44.8	43.5	100.0	15.0	37.0	31.7	12.4	3.8
1997 .....	45.8	44.7	100.0	13.4	33.9	33.5	15.7	3.4
1999 .....	46.0	45.0	100.0	13.6	33.1	32.4	17.9	3.1
2001 .....	46.8	45.6	100.0	11.5	31.8	32.6	20.2	3.9
2003 .....	46.5	46.0	100.0	11.8	32.0	32.3	20.4	3.6
2006 .....	48.2	48.2	100.0	9.9	31.1	30.1	23.8	5.1

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments of all kinds. Part-time employment excludes those employed part time because they are students or retired. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

*Science and Engineering Indicators 2008*

Appendix table 5-23

**Age distribution of S&E doctorate holders in full-time faculty positions at research universities and other academic institutions: 2006**

Institution type	S&E doctorates (thousands)	Age (% distribution)									
		All ages	<30	30–34	35–39	40–44	45–49	50–54	55–59	60–64	≥65
All academic institutions .....	197.7	100.0	0.8	7.3	13.0	14.2	15.2	15.3	15.1	11.8	7.3
Doctorate-granting universities– very high research activity .....	73.7	100.0	0.8	7.9	13.5	14.2	15.5	15.1	14.6	10.5	7.8
Other doctorate-granting institutions .....	39.1	100.0	0.7	6.4	13.3	12.5	15.1	14.3	16.2	13.8	7.7
Master's colleges and universities .....	41.7	100.0	0.8	8.0	11.6	13.7	14.5	16.3	16.3	12.6	6.2
Medical schools/medical centers .....	9.8	100.0	0.1	4.6	12.7	17.8	16.2	15.4	16.8	10.3	6.1
Baccalaureate colleges.....	18.2	100.0	1.2	8.7	15.5	17.7	14.4	14.6	11.1	10.1	6.7
Other .....	15.1	100.0	1.2	5.0	11.3	12.8	15.6	17.6	15.1	13.2	8.2

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, <http://www.carnegiefoundation.org/classifications/index.asp>, accessed 25 May 2007. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

*Science and Engineering Indicators 2008*

Appendix table 5-24

**Recent S&E doctorate holders employed in academia, by years since doctorate, type of position, and tenure status: 1973–2006**

(Percent distribution)

Years since doctorate	Total	Position			Tenure track			Not tenure tracked
		Full-time faculty	Postdocs	Other	Total	Tenured	Untenured	
<b>1–3 years</b>								
1973 .....	100.0	73.6	13.0	13.4	NA	NA	NA	NA
1975 .....	100.0	70.4	18.3	11.3	NA	NA	NA	NA
1977 .....	100.0	64.8	22.9	12.3	NA	NA	NA	NA
1979 .....	100.0	59.2	25.0	15.8	45.1	7.4	37.7	54.9
1981 .....	100.0	56.9	28.4	14.7	45.0	5.2	39.8	55.0
1983 .....	100.0	56.5	27.9	15.7	66.2	8.4	57.8	33.8
1985 .....	100.0	54.7	27.4	17.9	49.0	4.2	44.8	51.0
1987 .....	100.0	51.8	29.8	18.5	48.6	3.8	44.8	51.4
1989 .....	100.0	47.6	33.5	19.0	44.1	3.7	40.4	55.9
1991 .....	100.0	55.1	27.4	17.5	65.2	4.6	60.6	34.8
1993 .....	100.0	47.6	33.4	19.0	36.3	1.9	34.4	63.7
1995 .....	100.0	41.4	39.6	19.0	31.2	2.6	28.6	68.8
1997 .....	100.0	40.6	41.4	18.0	32.0	2.6	29.5	68.0
1999 .....	100.0	37.3	43.1	19.5	28.8	2.0	26.8	71.2
2001 .....	100.0	43.6	39.1	17.3	33.7	2.7	31.0	66.3
2003 .....	100.0	44.6	33.5	21.9	36.9	2.0	34.8	63.1
2006 .....	100.0	37.6	45.5	16.9	30.9	2.1	28.7	69.1
<b>4–7 years</b>								
1973 .....	100.0	89.2	2.3	8.4	NA	NA	NA	NA
1975 .....	100.0	87.1	4.3	8.3	NA	NA	NA	NA
1977 .....	100.0	85.0	5.3	9.7	NA	NA	NA	NA
1979 .....	100.0	81.2	6.1	12.9	65.7	26.3	39.4	32.8
1981 .....	100.0	80.8	6.3	13.2	70.3	24.9	45.3	28.4
1983 .....	100.0	76.8	5.7	17.2	65.7	23.8	42.0	26.1
1985 .....	100.0	76.9	6.9	16.4	65.2	19.4	45.8	29.0
1987 .....	100.0	75.0	7.6	17.2	60.4	16.6	43.8	28.9
1989 .....	100.0	73.2	9.1	17.8	59.5	12.6	46.9	30.1
1991 .....	100.0	75.0	7.1	17.6	65.1	21.2	43.9	24.7
1993 .....	100.0	72.1	11.1	16.7	60.4	12.4	48.0	39.6
1995 .....	100.0	70.3	12.9	16.8	59.3	12.4	46.9	40.7
1997 .....	100.0	66.3	14.8	19.0	54.1	11.6	42.5	45.9
1999 .....	100.0	65.4	14.1	20.5	52.4	10.4	42.0	47.6
2001 .....	100.0	63.1	13.2	23.7	49.6	9.0	40.6	50.4
2003 .....	100.0	64.8	9.7	25.5	53.5	12.5	41.0	46.5
2006 .....	100.0	61.0	15.5	23.6	52.8	9.3	43.5	47.2

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Recent doctorate holders earned doctorate within either 3 years or 4–7 years preceding survey. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments of all kinds. Part-time employment excludes those employed part time because they are students or retired. Detail may not add to total because of rounding and because of unreported position and tenure included in total but not shown separately.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).



Appendix table 5-25

**Recent S&E doctorate holders employed in academia, by years since doctorate, Carnegie institution type, type of position, and tenure status: 2006**

(Percent distribution)

Years since doctorate/institution type	Total	Position			Tenure track			Not tenure tracked
		Full-time faculty	Postdocs	Other	Total	Tenured	Untenured	
<b>1–3 years</b>								
All institutions .....	100.0	37.6	45.5	16.9	30.9	2.1	28.7	69.1
Doctorate-granting universities—								
very high research activity .....	100.0	20.7	65.0	14.3	15.4	0.6	14.9	84.6
Other doctorate-granting institutions ....	100.0	55.3	24.0	20.7	49.4	0.6	48.8	50.6
Master's colleges and universities .....	100.0	78.0	5.0	16.9	72.7	8.3	64.4	27.3
Medical schools/medical centers .....	100.0	15.9	63.5	20.5	7.9	0.6	7.3	92.1
Baccalaureate colleges.....	100.0	79.8	8.5	11.7	59.8	0.6	59.2	40.2
Other .....	100.0	42.0	30.5	27.5	32.8	6.9	25.9	67.2
<b>4–7 years</b>								
All institutions .....	100.0	61.0	15.5	23.6	52.8	9.3	43.5	47.2
Doctorate-granting universities—								
very high research activity .....	100.0	46.8	25.5	27.7	37.7	4.0	33.7	62.3
Other doctorate-granting institutions ....	100.0	73.4	6.1	20.5	67.0	10.8	56.2	33.0
Master's colleges and universities .....	100.0	83.8	2.1	14.1	83.9	19.9	64.0	16.1
Medical schools/medical centers .....	100.0	45.5	29.8	24.7	25.7	1.8	23.9	74.3
Baccalaureate colleges.....	100.0	86.9	2.1	11.0	77.5	17.7	59.8	22.5
Other .....	100.0	53.5	8.6	37.8	39.1	10.9	28.2	60.9

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Recent doctorate holders earned doctorate within either 3 years or 4–7 years preceding survey. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty appointments such as research associates, adjunct appointments, lecturers, administrative positions, and part-time appointments. Part-time employment excludes those employed part time because they are students or retired. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, <http://www.carnegiefoundation.org/classifications/index.asp>, accessed 25 May 2007. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

Appendix table 5-26

**S&E doctorate holders employed in academia reporting teaching or research as primary or secondary work activity, by type of position and degree field: 1973–2006**

(Thousands)

Position/work activity/field	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
<b>All positions</b>																	
<b>Teaching</b>																	
All fields .....	94.9	110.4	110.8	115.2	125.2	131.3	138.5	151.4	155.8	160.8	145.2	147.1	153.5	158.7	160.6	160.9	164.0
Physical sciences .....	20.2	22.1	21.8	21.5	22.4	22.4	23.4	25.2	24.9	25.6	22.6	23.5	23.4	25.2	24.6	23.8	24.2
Mathematics .....	8.8	10.3	10.6	10.9	11.0	11.5	12.2	12.8	13.3	14.0	13.5	12.8	13.3	13.3	12.9	13.8	13.8
Computer sciences .....	NA	NA	NA	0.1	0.3	0.4	0.6	0.8	1.3	1.8	2.0	2.5	2.6	2.9	2.9	3.7	4.0
Life sciences .....	25.3	29.6	28.3	29.8	32.9	34.6	35.0	40.5	41.4	43.3	36.5	38.6	41.6	43.6	44.4	44.0	45.8
Psychology .....	9.8	12.3	12.4	13.2	15.0	15.3	16.5	18.2	18.6	18.8	17.3	17.8	18.0	19.0	19.7	20.0	21.3
Social sciences .....	20.2	24.7	25.9	27.6	31.0	32.8	35.2	36.7	37.6	39.0	36.5	35.2	36.6	37.2	37.9	37.5	37.8
Engineering .....	10.5	11.4	11.7	12.1	12.7	14.3	15.6	17.2	18.6	18.3	16.8	16.8	18.0	17.5	18.3	18.1	17.1
<b>Research</b>																	
All fields .....	82.3	90.6	85.0	90.0	100.7	104.7	115.2	144.0	151.6	156.6	150.1	153.5	164.7	168.1	172.5	179.3	184.4
Physical sciences .....	18.8	19.7	19.2	18.1	19.5	19.4	21.4	24.9	25.7	25.9	25.0	25.7	27.4	27.3	27.3	28.2	27.2
Mathematics .....	6.8	7.5	6.8	6.9	6.8	7.2	7.6	9.7	10.2	10.7	9.5	9.4	10.1	9.9	9.8	10.7	11.4
Computer sciences .....	NA	NA	NA	0.1	0.3	0.4	0.6	1.0	1.3	1.7	2.0	2.4	2.4	2.6	2.6	3.9	4.0
Life sciences .....	26.0	29.0	28.7	32.1	37.1	38.3	41.4	48.8	51.8	53.3	51.8	53.8	57.9	60.8	63.1	65.6	67.1
Psychology .....	7.3	8.5	7.7	8.3	9.9	10.5	10.7	14.3	14.3	15.7	14.9	15.6	16.1	17.2	18.2	19.1	20.6
Social sciences .....	14.3	16.9	13.8	14.7	17.6	17.8	20.9	28.5	30.5	31.1	29.3	28.1	29.8	30.9	31.4	31.5	32.7
Engineering .....	9.0	9.0	8.9	9.8	9.5	11.2	12.5	16.8	17.6	18.2	17.5	18.5	20.9	19.4	20.2	20.3	21.5
<b>Full-time faculty</b>																	
<b>Teaching</b>																	
All fields .....	88.6	103.4	104.7	107.9	117.7	122.3	127.9	141.0	143.6	148.1	134.0	134.0	138.1	143.1	144.2	140.7	138.3
Physical sciences .....	18.5	20.5	20.4	20.2	20.9	20.9	21.8	23.5	23.1	23.4	20.6	21.1	21.3	22.7	22.3	21.5	21.3
Mathematics .....	8.5	9.9	10.1	10.5	10.6	11.1	11.7	12.3	12.7	13.3	13.1	11.8	12.0	11.8	11.4	12.1	11.7
Computer sciences .....	NA	NA	NA	0.1	0.3	0.3	0.6	0.8	1.3	1.7	1.9	2.4	2.4	2.9	2.7	3.3	3.6
Life sciences .....	23.2	27.3	26.4	27.5	30.6	31.6	31.9	36.9	37.3	38.7	32.8	34.4	36.4	38.5	39.4	37.7	37.7
Psychology .....	9.1	11.4	11.6	12.0	13.7	14.1	15.1	16.7	16.9	17.5	15.4	16.0	16.1	16.9	17.4	16.2	16.7
Social sciences .....	19.1	23.3	24.7	26.1	29.5	30.6	32.1	34.3	34.7	36.0	34.1	32.3	32.9	33.5	33.9	33.2	31.8
Engineering .....	10.1	10.9	11.4	11.5	12.2	13.7	14.8	16.5	17.6	17.5	16.1	16.0	16.9	16.8	17.1	16.6	15.4
<b>Research</b>																	
All fields .....	72.0	78.9	71.6	74.1	83.8	86.9	95.1	121.4	125.8	131.4	121.7	121.7	127.0	129.2	133.3	137.3	135.3
Physical sciences .....	15.1	15.9	14.9	13.9	15.1	15.1	16.3	19.7	20.0	20.2	18.0	17.9	18.8	18.7	19.1	20.1	18.6
Mathematics .....	6.6	7.1	6.4	6.4	6.5	6.9	7.3	9.1	9.8	10.2	9.1	8.4	8.9	8.5	8.3	9.3	9.6
Computer sciences .....	NA	NA	NA	0.0	0.2	0.3	0.5	0.8	1.2	1.6	1.8	2.2	2.2	2.4	2.3	3.3	3.6
Life sciences .....	21.8	24.1	22.9	24.7	28.7	29.6	31.9	38.3	39.0	41.0	38.4	39.5	41.2	42.5	44.6	46.4	45.2
Psychology .....	6.6	7.5	6.7	6.6	8.0	8.8	9.0	12.1	12.2	13.9	12.6	12.9	13.3	13.9	14.6	14.7	15.1
Social sciences .....	13.6	15.9	12.9	13.5	16.5	16.0	18.8	26.1	27.9	28.3	26.6	25.3	25.8	27.2	27.8	27.2	27.4
Engineering .....	8.2	8.3	8.0	8.9	8.8	10.2	11.4	15.2	15.7	16.2	15.1	15.5	16.7	15.9	16.6	16.3	15.8

NA = not available

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Total excludes those employed part time because they are students or retired. Research includes basic or applied research, development, or design. Because individuals may select both a primary and a secondary work activity, they can be counted in both groups. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-27

**S&E doctorate holders employed in research universities and other academic institutions, by position type and primary or secondary work activity: 2006**

(Thousands)

Position and primary/secondary work activity	Doctorate-granting universities—		
	All academic institutions	very high research activity	Other universities/colleges
All positions .....	274.2	116.8	157.4
Teaching.....	164.0	51.5	112.6
Research .....	184.4	94.4	90.1
Full-time faculty .....	197.7	73.7	123.9
Teaching .....	138.3	42.4	95.9
Research.....	135.3	61.4	73.9
Postdocs.....	23.4	17.8	5.6
Teaching .....	2.1	1.3	0.8
Research.....	21.9	17.1	4.8
Other positions .....	53.1	25.3	27.8
Teaching .....	23.7	7.8	15.9
Research.....	27.3	15.8	11.4

NOTES: Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other positions include full-time nonfaculty positions such as research associates, adjunct positions, lecturers, administrative positions, and part-time positions of all kinds. Part-time employment excludes those employed part time because they are students or retired. Institutions designated by 2005 Carnegie classification code. For information on these institutional categories, see chapter 2 sidebar, "Carnegie Classification of Academic Institutions," and The Carnegie Classification of Institutions of Higher Education, <http://www.carnegiefoundation.org/classifications/index.asp>, accessed 25 May 2007. Research includes basic or applied research, development, or design. Because individuals may select both a primary and a secondary work activity, they can be counted in both groups. Detail may not add to total because of rounding.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, 2006, special tabulations (preliminary data).

Appendix table 5-28

**Full-time doctoral S&E instructional faculty, by institution type; student level; and average time spent in teaching, research, administration, and other activities: Fall 1992 and fall 2003**

(Percent distribution)

Year/type of institution/student level	S&E faculty (n)	Average time (%)			
		Teaching	Doing research	Administration	Other activities
<b>1992</b>					
All institutions.....	196,440	45.1	26.9	12.7	15.2
Undergraduate only .....	92,860	56.5	19.4	12.3	11.8
Undergraduate and graduate .....	29,280	51.5	27.2	9.8	11.6
Graduate only .....	44,940	33.4	34.9	14.1	17.5
Research institutions.....	90,640	35.3	37.0	11.8	15.7
Undergraduate only .....	28,940	43.0	31.5	12.3	13.1
Undergraduate and graduate .....	14,500	46.6	33.0	9.2	11.1
Graduate only .....	28,950	32.3	39.3	13.5	14.8
Other institutions.....	105,810	53.5	18.3	13.4	14.8
Undergraduate only .....	63,930	62.6	13.9	12.3	11.1
Undergraduate and graduate .....	14,780	56.3	21.4	10.3	12.0
Graduate only.....	15,990	35.4	26.9	15.2	22.5
<b>2003</b>					
All institutions.....	245,810	52.2	27.4	NA	20.4
Undergraduate only .....	107,270	65.4	18.8	NA	15.8
Undergraduate and graduate .....	35,210	59.1	27.1	NA	13.8
Graduate only .....	66,280	40.1	34.4	NA	25.5
Research institutions.....	114,800	42.1	36.1	NA	21.8
Undergraduate only .....	30,960	54.5	29.7	NA	15.8
Undergraduate and graduate .....	15,900	52.0	34.8	NA	13.2
Graduate only .....	42,250	38.4	36.8	NA	24.8
Other institutions.....	131,010	61.0	19.7	NA	19.3
Undergraduate only .....	76,320	69.8	14.3	NA	15.9
Undergraduate and graduate .....	19,320	65.0	20.7	NA	14.3
Graduate only.....	24,030	43.1	30.0	NA	26.9

NA = not available

NOTES: Institutions designated by 1994 Carnegie classification code. For information on these institutional categories, see Carnegie Foundation for the Advancement of Teaching, A Classification of Institutions of Higher Education, Princeton University Press (1994) and chapter 2 sidebar, "Carnegie Classification of Academic Institutions," in National Science Board, *Science and Engineering Indicators 2006*, volume 1, NSB 06-01, National Science Foundation (2006). Detail may not add to total because of rounding and because total includes missing student level not shown separately.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

Appendix table 5-29

**Full-time instructional faculty, by teaching field and primary work activity: Fall 1992 and fall 2003**

(Percent)

Year/teaching field	Instructional faculty ( <i>n</i> )	Primary work activity		
		Teaching	Research	Other
<b>1992</b>				
All faculty .....	528,300	74.3	9.6	16.1
S&E .....	273,200	67.6	15.0	17.5
Agricultural/biological/health sciences .....	122,100	54.4	19.9	25.7
Physical sciences/mathematics/computer sciences/engineering .....	92,200	78.4	12.8	8.9
Social/behavioral sciences .....	59,000	78.1	8.1	13.9
Non-S&E .....	246,100	83.1	3.2	13.7
Doctoral faculty .....	342,100	69.0	14.3	16.7
S&E .....	197,500	60.7	20.1	19.2
Agricultural/biological/health sciences .....	86,400	42.9	27.5	29.7
Physical sciences/mathematics/computer sciences/engineering .....	64,100	72.5	17.8	9.8
Social/behavioral sciences .....	47,100	77.4	9.8	12.7
Non-S&E .....	140,300	81.6	5.3	13.1
Other faculty .....	183,000	84.2	1.0	14.8
S&E .....	74,900	85.6	1.5	13.0
Agricultural/biological/health sciences .....	35,500	82.3	1.8	15.9
Physical sciences/mathematics/computer sciences/engineering .....	27,800	92.0	1.4	6.6
Social/behavioral sciences .....	11,600	80.3	1.0	18.8
Non-S&E .....	103,600	85.2	0.4	14.5
<b>2003</b>				
All faculty .....	619,800	67.8	12.4	19.8
S&E .....	323,500	59.6	19.9	20.5
Agricultural/biological/health sciences .....	140,700	44.4	24.4	31.2
Physical sciences/mathematics/computer sciences/engineering .....	119,600	71.8	17.9	10.3
Social/behavioral sciences .....	63,200	70.3	13.8	15.9
Non-S&E .....	296,400	76.7	4.2	19.1
Doctoral faculty .....	420,900	63.2	17.9	19.0
S&E .....	246,100	52.8	25.8	21.4
Agricultural/biological/health sciences .....	106,500	33.7	31.9	34.4
Physical sciences/mathematics/computer sciences/engineering .....	85,500	65.9	24.6	9.5
Social/behavioral sciences .....	54,100	69.8	15.7	14.5
Non-S&E .....	174,800	77.7	6.7	15.6
Other faculty .....	199,000	77.6	0.8	21.6
S&E .....	77,400	81.2	1.3	17.5
Agricultural/biological/health sciences .....	34,200	77.9	1.1	21.0
Physical sciences/mathematics/computer sciences/engineering .....	34,100	86.6	1.2	12.2
Social/behavioral sciences .....	9,100	73.3	2.3	24.3
Non-S&E .....	121,600	75.3	0.5	24.2

NOTES: Physical sciences include earth, atmospheric, and ocean sciences. Total for 1992 includes missing field and missing highest degree not shown separately. Detail may not add to total because of rounding.

SOURCE: National Center for Education Statistics, National Survey of Postsecondary Faculty, 1993 and 2004, special tabulations (2006).

**Academic S&E doctorate holders with federal support, by degree field, research activity, and type of position: 1973–2006**

(Percent)

Field/position	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
All fields.....	44.5	40.5	39.7	38.2	35.5	39.8	31.4	46.5	47.9	48.5	36.1	39.4	38.6	45.7	45.1	45.9	46.9
Research primary/secondary activity .....	51.9	48.9	52.3	51.8	50.8	55.9	44.5	56.1	58.1	57.8	46.4	50.0	48.2	56.6	56.4	56.7	58.1
Full-time faculty .....	42.0	39.6	38.2	36.2	38.8	41.7	34.3	45.6	46.6	48.0	32.9	35.7	34.7	43.1	43.2	44.6	45.8
Full-time other.....	60.2	58.8	68.1	58.3	58.5	59.4	49.8	60.6	60.9	58.8	42.5	43.1	47.0	49.9	49.1	47.8	47.3
Postdocs.....	87.7	86.3	86.0	82.1	86.3	82.2	78.5	82.1	83.5	84.5	83.1	80.1	74.1	80.3	74.3	78.1	70.7
Physical sciences .....	47.3	44.0	43.8	42.8	42.1	46.5	38.2	54.1	57.9	57.0	45.7	49.3	48.6	57.0	55.3	56.5	56.3
Research primary/secondary activity.....	56.2	54.1	56.2	57.0	59.0	63.3	52.5	66.2	69.6	68.9	58.6	62.3	59.6	70.1	68.3	69.2	69.8
Full-time faculty .....	42.2	38.7	38.3	37.4	37.1	42.6	33.2	49.5	53.7	53.5	38.7	42.9	41.7	52.5	50.8	54.0	53.7
Full-time other.....	67.0	61.4	62.8	68.3	59.1	64.8	58.1	71.2	70.1	69.1	60.6	57.0	65.5	69.6	65.3	62.7	61.3
Postdocs .....	90.3	87.4	86.3	81.9	82.5	81.9	75.4	87.9	84.6	81.2	82.0	85.3	81.2	81.3	83.0	78.8	75.8
Mathematics .....	26.9	19.1	19.0	21.7	21.3	30.1	21.5	31.1	33.5	34.5	18.8	22.3	20.9	29.1	31.9	31.1	34.8
Research primary/secondary activity .....	32.4	23.6	25.0	27.0	27.0	41.3	26.4	36.9	40.8	40.6	24.8	27.0	26.9	35.3	41.7	38.6	43.6
Full-time faculty .....	26.8	18.8	18.0	20.4	21.0	29.9	21.4	30.4	32.8	34.0	18.3	21.1	19.4	28.3	30.1	31.3	34.6
Full-time other.....	33.6	33.5	46.9	54.6	30.1	43.4	29.1	47.8	52.8	67.2	40.6	34.6	43.9	38.4	48.0	28.2	34.9
Postdocs .....	48.8	35.8	55.1	43.2	56.3	66.3	48.5	34.4	53.4	80.4	—	45.3	35.6	54.7	61.9	65.9	64.3
Computer sciences.....	NA	NA	NA	34.8	29.7	44.6	45.0	61.7	52.4	49.4	39.9	43.2	41.1	55.6	47.2	48.9	43.9
Research primary/secondary activity.....	NA	NA	NA	34.8	26.9	44.9	36.1	55.6	52.8	54.3	41.1	46.0	46.3	59.3	57.9	54.9	54.0
Full-time faculty .....	NA	NA	NA	25.0	26.6	38.1	38.0	58.1	52.8	48.2	37.7	40.7	38.8	54.1	46.8	49.7	43.3
Full-time other.....	NA	NA	NA	—	25.0	67.9	80.6	79.7	47.1	67.7	59.1	62.9	63.1	74.9	47.2	47.7	48.3
Postdocs .....	NA	NA	NA	57.1	100.0	100.0	—	88.2	100.0	—	100.0	78.0	97.2	100.0	100.0	95.8	97.1
Life sciences .....	59.3	58.9	58.1	55.3	59.6	60.0	53.5	65.3	65.1	65.5	52.2	52.5	51.0	57.9	56.6	57.2	57.9
Research primary/secondary activity.....	65.8	64.2	66.8	65.2	63.3	68.3	57.8	72.3	73.1	72.0	62.7	63.6	61.6	69.5	67.9	68.0	69.3
Full-time faculty .....	57.1	56.4	54.9	51.4	55.6	57.8	50.5	63.4	62.1	63.7	48.6	49.0	47.6	55.1	55.5	56.9	57.5
Full-time other.....	68.1	70.9	72.1	64.8	68.5	68.5	58.4	71.0	74.1	67.2	45.8	46.3	46.2	49.9	47.4	47.2	54.7
Postdocs .....	88.8	87.7	88.4	84.6	86.0	82.6	78.3	82.1	86.8	84.4	84.1	81.9	77.7	82.6	77.6	81.3	71.5
Psychology .....	37.5	36.1	33.2	32.6	32.7	30.1	25.9	31.2	35.5	34.7	25.7	27.6	27.4	32.9	34.3	34.7	36.3
Research primary/secondary activity.....	45.4	41.7	41.9	42.7	41.9	42.6	36.6	39.8	46.6	43.5	37.0	39.5	40.5	46.5	48.1	48.2	52.0
Full-time faculty .....	36.4	34.1	30.6	28.3	27.5	27.3	23.6	28.3	34.0	32.9	25.2	25.1	24.9	31.5	32.9	34.4	37.3
Full-time other.....	48.1	41.6	65.4	46.3	52.3	40.3	32.7	37.1	39.6	36.3	23.8	30.7	28.3	30.4	38.2	36.1	31.2
Postdocs .....	84.9	86.4	82.5	86.8	92.0	84.2	70.8	88.1	66.3	95.8	71.7	71.4	71.8	71.8	59.2	69.0	69.8
Social sciences.....	25.5	23.7	23.3	20.4	21.8	23.7	17.2	27.2	27.7	28.4	14.2	16.1	15.2	22.9	21.5	21.8	23.1
Research primary/secondary activity.....	29.5	26.8	30.6	29.4	25.5	31.4	20.4	30.0	31.1	31.2	17.3	20.9	17.7	27.2	26.5	27.1	28.9
Full-time faculty .....	25.2	23.7	22.6	19.0	21.2	22.5	16.2	27.1	27.4	27.8	13.4	15.4	14.8	22.5	21.3	21.6	23.6
Full-time other.....	36.3	31.6	35.3	37.3	32.7	34.0	26.6	36.2	33.8	32.7	22.1	22.6	22.7	29.3	29.4	28.7	27.4
Postdocs .....	57.6	54.6	54.7	84.9	47.9	64.6	54.7	27.4	57.6	52.5	88.1	68.5	33.9	65.0	35.8	42.9	20.2

**Academic S&E doctorate holders with federal support, by degree field, research activity, and type of position: 1973–2006**

(Percent)

Field/position	1973	1975	1977	1979	1981	1983	1985	1987	1989	1991	1993	1995	1997	1999	2001	2003	2006
Engineering .....	53.5	50.6	51.1	49.1	51.0	54.7	43.0	57.1	56.3	63.2	42.6	49.9	49.7	56.9	56.8	57.4	58.7
Research primary/secondary activity .....	58.4	57.3	60.5	57.5	59.2	61.5	45.0	63.1	63.8	68.3	49.5	57.9	55.4	62.5	64.1	64.7	67.1
Full-time faculty .....	52.5	49.9	49.3	49.5	49.8	54.7	42.2	56.0	55.2	62.9	40.9	48.4	46.4	55.2	56.7	56.1	57.9
Full-time other .....	65.5	67.3	86.6	53.0	60.7	63.1	44.3	76.4	71.2	66.8	59.5	56.7	67.9	64.2	61.8	66.8	56.2
Postdocs .....	84.7	84.3	74.7	51.1	98.9	82.7	91.4	74.8	76.0	90.0	65.7	72.7	62.1	80.4	56.8	73.8	76.8

— = too few cases; NA = not available

NOTES: 1985 and 1993–97 not comparable with other years and understate degree of federal support by asking whether work performed during week of April 15 supported by government. In other years, question pertains to work conducted over course of year. Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Full-time faculty includes full, associate, and assistant professors plus instructors. Other full-time positions include nonfaculty appointments such as research associates, adjunct appointments, lecturers, and administrative positions. Research includes basic or applied research, development, and design. Total includes part time not shown separately, but excludes those employed part time because they are students or retired.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

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Appendix table 5-31

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**S&E doctorate holders employed in academia with federal support, by degree field, years since doctorate, and type of position: 1973–2006**

(Percent)

Field	1–3 years since doctorate				4–7 years since doctorate			
	All positions	Full-time faculty	Other full time	Postdocs	All positions	Full-time faculty	Other full time	Postdocs
1977 .....	NA	NA	NA	NA	NA	NA	NA	NA
1979 .....	34.8	25.0	—	57.1	—	—	—	—
1981 .....	27.7	24.1	25.0	100.0	52.4	52.4	—	—
1983 .....	45.7	35.1	60.0	100.0	43.5	40.4	92.3	—
1985 .....	54.1	46.4	77.2	—	36.7	31.0	100.0	—
1987 .....	47.2	46.3	42.0	100.0	73.2	66.3	100.0	—
1989 .....	33.0	29.3	50.0	100.0	70.8	78.0	35.7	100.0
1991 .....	23.1	23.1	25.1	—	66.2	63.9	100.0	100.0
1993 .....	44.7	39.5	100.0	100.0	30.7	30.9	27.3	100.0
1995 .....	38.2	31.4	61.1	75.9	38.1	38.3	23.9	—
1997 .....	40.5	29.7	74.3	97.0	40.4	37.7	75.6	—
1999 .....	59.7	50.6	77.5	100.0	56.6	56.5	85.9	—
2001 .....	31.4	25.9	44.2	100.0	49.2	47.3	53.2	—
2003 .....	41.7	32.6	22.2	95.8	43.6	40.8	59.5	—
2006 .....	35.5	10.5	55.6	100.0	44.8	42.4	66.8	—
<b>Life sciences</b>								
1973 .....	60.8	48.3	77.0	89.0	59.7	57.3	75.1	89.2
1975 .....	61.8	46.4	72.5	87.6	60.1	57.6	76.2	87.5
1977 .....	61.6	38.1	70.4	88.9	59.6	56.6	73.3	90.2
1979 .....	65.9	40.6	75.8	85.9	57.3	51.4	76.5	84.2
1981 .....	71.8	51.7	76.5	88.1	64.0	58.8	70.8	85.7
1983 .....	68.2	52.8	65.1	84.7	67.1	64.5	72.6	83.7
1985 .....	59.6	34.1	67.2	78.9	61.1	55.6	72.3	81.7
1987 .....	70.2	53.5	73.8	82.1	71.4	68.3	81.0	83.0
1989 .....	74.5	50.2	79.3	89.1	71.9	67.5	79.1	89.3
1991 .....	68.1	49.9	60.0	83.0	70.6	66.8	79.2	86.3
1993 .....	61.2	32.2	44.8	81.9	55.7	46.4	52.0	86.7
1995 .....	58.5	30.3	35.3	80.3	54.0	43.9	47.4	87.4
1997 .....	58.3	23.0	42.2	77.5	52.3	42.4	48.4	78.8
1999 .....	65.0	35.0	46.2	82.4	57.2	47.2	49.3	83.0
2001 .....	59.2	34.2	39.0	76.8	56.4	48.9	49.5	78.8
2003 .....	62.5	37.1	51.7	81.8	57.3	50.3	56.9	83.0
2006 .....	56.6	33.5	57.7	67.1	57.5	49.7	49.6	77.0
<b>Psychology</b>								
1973 .....	34.3	28.5	59.7	95.3	37.8	36.9	52.1	71.4
1975 .....	35.0	25.5	53.7	88.5	35.3	34.9	32.8	71.2
1977 .....	35.3	26.8	71.7	86.0	31.5	27.9	60.5	73.0
1979 .....	35.2	22.5	22.2	95.5	39.3	31.4	76.5	87.6
1981 .....	46.5	33.2	41.6	93.4	34.7	28.6	54.5	88.2
1983 .....	31.2	19.8	34.2	89.3	32.3	28.2	37.1	87.2
1985 .....	30.6	15.6	44.5	70.1	29.2	26.2	38.7	72.5
1987 .....	37.5	28.5	28.8	82.7	33.2	25.6	40.3	97.9
1989 .....	41.7	34.6	36.1	64.9	36.1	36.7	33.1	63.1
1991 .....	35.9	23.9	24.3	100.0	38.8	38.6	24.8	86.9
1993 .....	21.6	12.0	27.5	61.6	23.2	24.6	15.5	48.2
1995 .....	33.5	17.5	40.6	63.5	26.1	21.8	36.0	82.1
1997 .....	34.5	24.2	19.0	70.9	29.5	22.3	36.4	77.3
1999 .....	33.4	22.4	29.9	63.6	35.6	34.7	23.8	100.0
2001 .....	35.5	20.0	41.7	64.1	34.9	32.6	42.7	45.6
2003 .....	31.8	28.4	33.0	57.8	37.5	32.4	46.9	100.0
2006 .....	52.1	42.7	35.9	70.7	35.9	37.1	23.8	88.6
<b>Social sciences</b>								
1973 .....	24.7	23.7	53.7	23.9	29.0	28.7	34.1	93.1
1975 .....	23.1	22.5	29.0	61.7	26.2	26.2	42.4	39.2
1977 .....	24.8	24.2	12.3	61.4	24.6	23.2	56.3	48.0
1979 .....	26.6	22.8	37.6	97.5	20.8	19.2	52.2	70.8
1981 .....	20.4	16.3	48.7	56.0	24.3	24.3	25.2	60.0

Appendix table 5-31

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**S&E doctorate holders employed in academia with federal support, by degree field, years since doctorate, and type of position: 1973–2006**

(Percent)

Field	1–3 years since doctorate				4–7 years since doctorate			
	All positions	Full-time faculty	Other full time	Postdocs	All positions	Full-time faculty	Other full time	Postdocs
1983 .....	28.2	23.6	49.0	77.9	28.1	23.6	57.5	93.8
1985 .....	15.6	12.3	27.8	44.4	19.3	15.7	51.0	41.0
1987 .....	22.5	20.9	34.5	21.4	29.9	27.7	54.0	—
1989 .....	25.6	24.7	24.3	41.9	33.2	31.6	51.4	83.9
1991 .....	21.7	19.5	38.8	31.7	36.6	33.8	44.2	100.0
1993 .....	11.2	7.2	25.4	88.2	14.9	14.4	21.9	100.0
1995 .....	15.9	10.7	28.8	80.8	17.8	16.0	41.8	49.8
1997 .....	14.1	10.9	26.8	33.7	17.4	15.6	26.3	57.7
1999 .....	21.1	15.2	26.1	77.1	22.8	21.7	31.3	48.1
2001 .....	20.5	21.2	24.0	41.8	21.2	20.3	28.0	63.3
2003 .....	18.5	14.7	36.9	38.5	22.5	22.1	32.0	55.9
2006 .....	19.4	15.9	37.1	22.4	21.5	21.8	26.8	4.8
Engineering								
1973 .....	50.8	45.2	74.2	87.1	50.7	49.9	78.6	—
1975 .....	53.7	48.9	65.8	83.8	54.4	53.1	82.3	—
1977 .....	55.2	47.2	84.8	72.9	52.9	52.3	64.8	64.9
1979 .....	55.5	48.5	71.9	99.4	55.1	58.8	33.8	16.9
1981 .....	54.4	43.2	100.0	100.0	65.6	61.9	83.9	—
1983 .....	47.1	36.7	58.2	98.3	64.3	62.2	99.0	—
1985 .....	43.9	37.8	66.1	94.5	47.6	46.3	66.4	—
1987 .....	53.3	43.7	79.2	75.7	65.5	64.2	97.6	100.0
1989 .....	56.0	48.9	71.9	73.3	70.8	68.6	91.8	100.0
1991 .....	66.6	62.1	67.7	89.9	73.2	73.0	79.7	—
1993 .....	43.4	32.1	65.1	68.7	51.2	49.4	65.9	70.3
1995 .....	51.1	38.5	50.3	72.6	62.1	60.3	72.5	86.5
1997 .....	50.0	35.5	66.4	66.3	51.3	48.4	62.5	60.5
1999 .....	58.5	40.0	70.9	78.1	55.5	56.4	44.8	94.2
2001 .....	54.9	49.1	77.0	57.1	58.3	59.2	54.9	74.2
2003 .....	56.4	48.2	60.6	71.2	63.2	60.2	72.8	100.0
2006 .....	61.2	45.5	47.4	73.4	63.7	61.3	64.6	87.8

— = too few cases; NA = not available

NOTES: 1985 and 1993–97 not comparable with other years and understate degree of federal support by asking whether work performed during week of April 15 was supported by government. In other years, question pertains to work conducted over course of year. Academic employment limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities. Recent doctorate holders earned doctorate within either 3 years or 4–7 years preceding survey. Full-time faculty includes full, associate, and assistant professors plus instructors. Other full-time positions include nonfaculty appointments such as research associates, adjunct appointments, lecturers, and administrative positions. Total excludes those employed part time because they are students or retired.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients, special tabulations (preliminary data for 2006).

Appendix table 5-32

**Fields and subfields of S&E publications data**

Engineering	Biological sciences	Medical sciences (continued)
Aerospace engineering	General biomedical research	Urology
Chemical engineering	Miscellaneous biomedical research	Nephrology
Civil engineering	Biophysics	Allergy
Electrical engineering	Botany	Fertility
Mechanical engineering	Anatomy and morphology	Geriatrics
Metals and metallurgy	Cell biology, cytology, and histology	Embryology
Materials engineering	Ecology	Tropical medicine
Industrial engineering	Entomology	Addictive diseases
Operations research and management	Immunology	Microscopy
Biomedical engineering	Microbiology	Other life sciences
Nuclear technology	Nutrition and dietetics	Speech/language pathology and audiology
General engineering	Parasitology	Nursing
Miscellaneous engineering and technology	Genetics and heredity	Rehabilitation
Astronomy	Pathology	Health policy and services
Chemistry	Pharmacology	Psychology
Analytical chemistry	Physiology	Clinical psychology
Organic chemistry	General zoology	Behavioral and comparative psychology
Physical chemistry	Miscellaneous zoology	Developmental and child psychology
Polymers	General biology	Experimental psychology
General chemistry	Miscellaneous biology	Human factors
Applied chemistry	Biochemistry and molecular biology	Social psychology
Inorganic and nuclear chemistry	Virology	General psychology
Physics	Medical sciences	Miscellaneous psychology
Acoustics	Endocrinology	Psychoanalysis
Chemical physics	Neurology and neurosurgery	Social sciences
Nuclear and particle physics	Dentistry	Economics
Optics	Environmental and occupational health	International relations
Solid state physics	Public health	Political science and public administration
Applied physics	Surgery	Demography
Fluids and plasmas	General and internal medicine	Sociology
General physics	Ophthalmology	Anthropology and archaeology
Miscellaneous physics	Pharmacy	Area studies
Geosciences	Veterinary medicine	Criminology
Meteorology and atmospheric sciences	Miscellaneous clinical medicine	Geography and regional sciences
Geology	Anesthesiology	Planning and urban studies
Earth and planetary sciences	Cardiovascular system	General social sciences
Oceanography and limnology	Cancer	Miscellaneous social sciences
Marine biology and hydrobiology	Gastroenterology	Science studies
Environmental sciences	Hematology	Gerontology and aging
Mathematics	Obstetrics and gynecology	Social studies of medicine
Applied mathematics	Otorhinolaryngology	
Probability and statistics	Pediatrics	
General mathematics	Psychiatry	
Miscellaneous mathematics	Radiology and nuclear medicine	
Computer sciences	Dermatology and venereal disease	
Agricultural sciences	Orthopedics	
Dairy and animal sciences	Arthritis and rheumatism	
Agricultural and food sciences	Respiratory system	

SOURCES: Thomson Scientific, Science Citation Index and Social Sciences Citation Index, <http://scientific.thomson.com/products/categories/citation/>; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, Integrated Science and Engineering Resources Data System (WebCASPAR) database system, <http://webcaspar.nsf.gov>.

Appendix table 5-33

**Regions and countries/economies in S&E publications data**

United States	Other Asia	Central/South America	Sub-Saharan Africa (continued)
European Union	Afghanistan	Antigua and Barbuda	Eritrea
Austria	Bangladesh	Argentina	Ethiopia
Belgium	Bhutan	Bahamas	Gabon
Bulgaria	Brunei	Barbados	Gambia
Cyprus	Cambodia	Belize	Ghana
Czech Republic	Laos	Bolivia	Guinea
Denmark	Maldives	Brazil	Guinea-Bissau
Estonia	Mongolia	Chile	Kenya
Finland	Myanmar	Colombia	Lesotho
France	Nepal	Costa Rica	Liberia
Germany	North Korea	Cuba	Madagascar
Greece	Pakistan	Dominica	Malawi
Hungary	Sri Lanka	Dominican Republic	Mali
Ireland	Vietnam	Ecuador	Mauritania
Italy	Other former USSR	El Salvador	Mauritius
Latvia	Armenia	Grenada	Mozambique
Lithuania	Azerbaijan	Guatemala	Namibia
Luxembourg	Belarus	Guyana	Niger
Malta	Georgia	Haiti	Nigeria
Netherlands	Kazakhstan	Honduras	Rwanda
Poland	Kyrgyzstan	Jamaica	São Tomé & Príncipe
Portugal	Moldova	Mexico	Senegal
Romania	Russia	Nicaragua	Senegambia
Slovakia	Tajikistan	Panama	Seychelles
Slovenia	Turkmenistan	Paraguay	Sierra Leone
Spain	Ukraine	Peru	Somalia
Sweden	Uzbekistan	St Kitts and Nevis	South Africa
United Kingdom	Near East/North Africa	St Lucia	Sudan
Other Western Europe	Algeria	St Vincent	Swaziland
Albania	Bahrain	Suriname	Tanzania
Andorra	Egypt	Trinidad and Tobago	Togo
Bosnia and Herzegovina	Iran	Uruguay	Uganda
Croatia	Iraq	Venezuela	Zambia
Iceland	Israel	West Indies Assoc States	Zimbabwe
Liechtenstein	Jordan	Sub-Saharan Africa	Other
Macedonia	Kuwait	Angola	Australia
Monaco	Lebanon	Benin	Canada
Norway	Libya	Botswana	Fiji
San Marino	Morocco	Burkina Faso	Kiribati
Switzerland	North Yemen	Burundi	Marshall Islands
Turkey	Oman	Cameroon	Micronesia
Vatican City	Qatar	Cape Verde	Nauru
Yugoslavia	Saudi Arabia	Central African Republic	New Zealand
Asia-10	South Yemen	Chad	Palau
China (includes Hong Kong)	Syria	Comoros	Papua New Guinea
India	Tunisia	Congo (Brazzaville)	Solomon Islands
Indonesia	United Arab Emirates	Congo (Kinshasa)	Tonga
Japan	Yemen	Côte d'Ivoire	Tuvalu
Malaysia		Djibouti	Vanuatu
Philippines		Equatorial Guinea	Western Samoa
Singapore			
South Korea			
Taiwan			
Thailand			

USSR = Union of Soviet Socialist Republics

SOURCES: Thomson Scientific, Science Citation Index and Social Sciences Citation Index, <http://scientific.thomson.com/products/categories/citation/>; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics.

## S&amp;E articles in all fields, by region/country/economy: 1995–2005

Region/country/economy	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average annual change (%)		
												1995–2000	2000–2005	1995–2005
World.....	564,645	581,751	588,488	602,381	610,203	630,452	629,353	638,378	661,708	688,615	709,541	2.2	2.4	2.3
United States.....	193,337	193,153	189,752	190,395	188,004	192,743	190,592	190,495	196,427	202,075	205,320	-0.1	1.3	0.6
European Union.....	195,897	203,947	208,900	214,755	217,186	222,688	220,406	221,719	224,834	230,464	234,868	2.6	1.1	1.8
Austria.....	3,425	3,646	3,947	4,074	4,158	4,257	4,480	4,460	4,692	4,716	4,566	4.4	1.4	2.9
Belgium.....	5,172	5,554	5,532	5,688	5,713	5,735	5,827	6,037	6,302	6,625	6,841	2.1	3.6	2.8
Bulgaria.....	959	954	985	929	867	909	746	815	775	808	764	-1.1	-3.4	-2.2
Cyprus.....	43	45	57	55	49	59	68	78	76	87	90	6.5	8.9	7.7
Czech Republic.....	1,955	2,185	2,304	2,264	2,360	2,481	2,571	2,747	2,820	3,178	3,169	4.9	5.0	5.0
Denmark.....	4,330	4,369	4,597	4,717	4,783	4,883	4,915	4,761	5,006	5,009	5,040	2.4	0.6	1.5
Estonia.....	215	270	230	305	341	328	346	321	355	389	439	8.8	6.0	7.4
Finland.....	4,077	4,330	4,452	4,513	4,719	4,844	4,930	4,904	4,898	5,018	4,811	3.5	-0.1	1.7
France.....	28,847	29,746	30,322	31,392	31,345	31,427	30,598	30,531	30,302	29,891	30,309	1.7	-0.7	0.5
Germany.....	37,645	39,213	41,415	42,953	42,963	43,509	42,674	42,436	42,228	43,009	44,145	2.9	0.3	1.6
Greece.....	2,058	2,249	2,434	2,611	2,626	2,976	3,204	3,447	3,587	3,928	4,291	7.7	7.6	7.6
Hungary.....	1,764	1,813	1,992	2,202	2,200	2,358	2,397	2,323	2,451	2,409	2,614	6.0	2.1	4.0
Ireland.....	1,218	1,254	1,331	1,520	1,459	1,581	1,588	1,629	1,681	1,935	2,120	5.4	6.0	5.7
Italy.....	17,880	19,234	19,402	20,056	20,327	21,409	22,090	22,483	23,765	24,759	24,645	3.7	2.9	3.3
Latvia.....	163	144	159	162	179	150	164	175	133	157	134	-1.7	-2.2	-1.9
Lithuania.....	179	189	216	257	274	262	283	335	308	404	406	7.9	9.2	8.5
Luxembourg.....	28	18	34	32	29	40	46	39	38	62	59	7.6	8.0	7.8
Malta.....	18	12	23	20	19	18	21	23	39	21	23	-0.6	5.8	2.6
Netherlands.....	12,089	12,413	12,444	12,500	12,168	12,341	12,117	12,481	12,657	13,240	13,885	0.4	2.4	1.4
Poland.....	4,549	4,507	4,565	4,786	5,100	5,506	5,629	6,019	6,582	6,672	6,844	3.9	4.4	4.2
Portugal.....	990	1,097	1,255	1,418	1,711	1,880	2,081	2,331	2,423	2,853	2,910	13.7	9.1	11.4
Romania.....	678	823	917	847	917	971	927	965	875	938	887	7.4	-1.8	2.7
Slovakia.....	1,079	1,140	1,070	1,140	979	978	923	954	898	1,070	919	-2.0	-1.2	-1.6
Slovenia.....	434	477	603	623	708	892	851	848	951	929	1,035	15.5	3.0	9.1
Spain.....	11,316	12,495	13,075	13,719	14,514	14,795	15,323	16,062	16,099	17,025	18,336	5.5	4.4	4.9
Sweden.....	9,287	9,558	9,655	9,835	9,890	9,883	10,022	9,872	9,677	9,853	10,012	1.3	0.3	0.8
United Kingdom.....	45,498	46,213	45,884	46,138	46,788	48,216	45,587	44,642	45,218	45,479	45,572	1.2	-1.1	0.0
Other Western Europe.....	13,199	14,172	14,731	15,315	15,928	16,590	16,811	17,706	19,005	21,426	22,333	4.7	6.1	5.4
Croatia.....	600	640	580	625	647	678	696	719	798	868	953	2.5	7.0	4.7
Iceland.....	156	145	143	174	143	150	177	195	195	191	206	-0.7	6.5	2.8
Norway.....	2,920	2,932	2,965	3,038	3,043	3,136	3,215	3,100	3,130	3,370	3,644	1.4	3.0	2.2
Switzerland.....	7,220	7,568	7,864	7,984	8,195	8,504	7,950	7,879	8,134	8,674	8,749	3.3	0.6	1.9
Turkey.....	1,715	2,228	2,481	2,795	3,223	3,484	4,151	5,226	6,039	7,434	7,815	15.2	17.5	16.4
Yugoslavia.....	504	563	595	607	563	542	500	480	584	772	849	1.4	9.4	5.4
All others.....	84	95	104	93	115	96	123	107	125	117	118	2.7	4.2	3.4
Other former USSR.....	22,871	22,537	21,927	20,919	20,920	20,882	19,160	19,333	18,473	18,256	17,822	-1.8	-3.1	-2.5
Armenia.....	166	198	172	166	164	175	157	173	184	191	180	1.1	0.5	0.8
Azerbaijan.....	139	118	86	92	66	79	68	78	110	110	116	-10.8	8.1	-1.8
Belarus.....	650	568	596	583	579	572	502	492	521	497	490	-2.5	-3.1	-2.8

## S&amp;E articles in all fields, by region/country/economy: 1995–2005

Region/country/economy	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average annual change (%)		
												1995–2000	2000–2005	1995–2005
Georgia .....	118	127	136	128	132	134	116	128	112	150	145	2.6	1.5	2.0
Kazakhstan .....	158	141	115	129	105	113	114	123	119	105	96	-6.5	-3.2	-4.8
Moldova .....	137	119	108	92	93	99	73	74	83	68	89	-6.4	-2.0	-4.2
Russia .....	18,603	18,553	18,133	17,166	17,145	17,180	15,658	15,847	15,146	14,921	14,412	-1.6	-3.5	-2.5
Ukraine .....	2,516	2,420	2,265	2,284	2,355	2,268	2,237	2,183	1,992	2,012	2,105	-2.1	-1.5	-1.8
Uzbekistan .....	327	250	269	244	241	223	195	184	174	170	157	-7.4	-6.7	-7.1
All others .....	56	42	46	36	41	40	41	53	32	32	32	-6.9	-3.9	-5.4
Asia-10 .....	76,182	83,285	87,479	93,796	99,556	106,468	110,899	115,458	125,564	135,581	144,767	6.9	6.3	6.6
China .....	9,061	10,526	12,172	13,781	15,715	18,479	21,134	23,269	28,768	34,846	41,596	15.3	17.6	16.5
India .....	9,370	9,753	9,618	9,945	10,190	10,276	10,801	11,665	12,461	13,367	14,608	1.9	7.3	4.5
Indonesia .....	129	141	146	136	163	182	189	178	157	182	205	7.0	2.5	4.7
Japan .....	47,068	50,345	51,462	53,838	55,274	57,101	56,082	56,346	57,228	56,534	55,471	3.9	-0.6	1.7
Malaysia .....	366	362	349	387	471	460	472	494	479	586	615	4.7	6.0	5.3
Philippines .....	145	158	170	171	176	185	141	182	184	163	178	5.0	-0.7	2.1
Singapore .....	1,141	1,141	1,339	1,584	1,897	2,361	2,434	2,632	2,939	3,384	3,609	15.6	8.9	12.2
South Korea .....	3,803	4,771	5,802	7,057	8,478	9,572	11,007	11,735	13,401	15,255	16,396	20.3	11.4	15.7
Taiwan .....	4,759	5,701	6,016	6,355	6,643	7,190	7,912	8,123	8,929	10,133	10,841	8.6	8.6	8.6
Thailand .....	340	387	405	541	549	663	727	834	1,019	1,131	1,249	14.3	13.5	13.9
Other Asia .....	740	666	665	674	760	765	782	837	1,035	1,041	1,194	0.7	9.3	4.9
Bangladesh .....	162	156	136	141	167	155	181	151	200	187	193	-0.9	4.5	1.8
Pakistan .....	313	255	268	268	296	267	279	343	360	413	492	-3.1	13.0	4.6
Sri Lanka .....	85	71	62	83	87	98	73	103	141	119	136	2.7	6.8	4.7
Vietnam .....	103	117	121	100	111	147	155	144	205	167	221	7.2	8.5	7.9
All others .....	76	67	78	82	100	98	93	96	129	155	152	5.4	9.1	7.2
Near East/North Africa .....	9,476	9,489	9,989	10,227	10,408	11,136	11,430	11,935	12,863	13,265	13,839	3.3	4.4	3.9
Algeria .....	146	156	160	156	185	211	220	230	281	344	350	7.6	10.6	9.1
Egypt .....	1,388	1,292	1,266	1,275	1,293	1,433	1,463	1,564	1,717	1,661	1,658	0.6	3.0	1.8
Iran .....	279	318	391	541	665	841	1,035	1,314	1,790	2,116	2,635	24.7	25.7	25.2
Israel .....	5,741	5,751	6,047	6,018	5,929	6,290	6,232	6,381	6,524	6,461	6,309	1.8	0.1	0.9
Jordan .....	154	163	200	220	230	247	232	242	251	281	275	9.9	2.2	6.0
Kuwait .....	189	209	224	235	296	238	245	228	230	244	233	4.7	-0.4	2.1
Lebanon .....	55	63	103	103	124	144	195	159	211	198	234	21.3	10.2	15.6
Morocco .....	240	274	297	376	438	466	458	466	400	417	443	14.2	-1.0	6.3
Oman .....	57	52	63	80	89	92	101	113	108	99	111	10.1	3.7	6.9
Saudi Arabia .....	753	734	676	683	605	590	565	583	549	551	575	-4.8	-0.5	-2.7
Syria .....	51	45	60	44	58	55	63	49	68	79	77	1.4	7.1	4.2
Tunisia .....	143	160	220	227	257	292	351	355	436	455	571	15.4	14.3	14.9
United Arab Emirates .....	120	143	152	156	130	145	156	163	178	210	229	3.8	9.6	6.7
All others .....	160	129	129	113	109	93	114	88	119	149	139	-10.3	8.4	-1.4
Central/South America .....	9,521	10,506	11,696	13,008	13,994	15,062	16,078	17,462	18,225	19,712	20,395	9.6	6.2	7.9
Argentina .....	1,967	2,287	2,451	2,551	2,636	2,846	2,931	3,178	2,919	2,982	3,058	7.7	1.4	4.5
Brazil .....	3,436	3,813	4,498	5,234	5,859	6,407	7,052	7,881	8,330	9,573	9,889	13.3	9.1	11.1

Appendix table 5-34

**S&E articles in all fields, by region/country/economy: 1995–2005**

Region/country/economy	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average annual change (%)		
												1995–2000	2000–2005	1995–2005
Chile.....	889	920	954	992	1,059	1,115	1,159	1,311	1,406	1,464	1,559	4.6	6.9	5.8
Colombia.....	162	195	235	248	240	332	316	356	325	358	400	15.4	3.8	9.4
Costa Rica.....	66	75	77	73	69	80	90	89	89	85	105	4.0	5.5	4.7
Cuba.....	168	206	167	236	257	284	272	206	268	254	261	11.1	-1.7	4.5
Mexico.....	1,937	2,124	2,302	2,659	2,884	2,971	3,203	3,320	3,659	3,870	3,902	8.9	5.6	7.3
Peru.....	65	70	75	66	62	79	94	88	130	106	133	4.0	10.9	7.4
Uruguay.....	103	111	141	141	150	156	149	161	186	194	204	8.5	5.6	7.1
Venezuela.....	437	426	488	534	498	516	510	536	577	475	534	3.4	0.7	2.0
All others.....	290	278	310	276	281	277	301	335	335	351	351	-0.9	4.8	1.9
Sub-Saharan Africa.....	4,052	3,909	3,972	3,930	4,002	3,927	3,860	4,050	3,947	4,098	4,178	-0.6	1.2	0.3
Cameroon.....	66	60	83	74	71	73	76	107	120	127	131	2.1	12.3	7.1
Ethiopia.....	94	97	95	79	110	90	78	102	92	106	88	-0.8	-0.5	-0.7
Ghana.....	58	72	82	71	74	92	79	79	76	86	81	9.6	-2.5	3.4
Kenya.....	287	274	272	265	243	232	228	242	239	225	226	-4.2	-0.5	-2.4
Nigeria.....	450	435	437	402	417	400	304	363	358	381	362	-2.3	-2.0	-2.1
Senegal Republic.....	68	70	62	67	76	74	59	51	77	63	83	1.6	2.4	2.0
South Africa.....	2,351	2,216	2,223	2,225	2,303	2,221	2,291	2,328	2,205	2,320	2,392	-1.1	1.5	0.2
Tanzania.....	97	103	98	96	87	95	81	93	76	89	107	-0.3	2.3	1.0
Uganda.....	42	51	51	64	71	78	83	73	88	120	93	13.2	3.8	8.4
All others.....	540	532	568	586	552	572	581	612	616	582	615	1.2	1.4	1.3
Other.....	39,371	40,088	39,377	39,363	39,445	40,192	39,335	39,384	41,335	42,696	44,826	0.4	2.2	1.3
Australia.....	13,125	13,623	13,816	14,307	14,341	14,589	14,484	14,255	14,934	15,586	15,957	2.1	1.8	2.0
Canada.....	23,740	23,842	22,781	22,201	22,125	22,701	21,945	22,342	23,552	24,230	25,836	-0.9	2.6	0.8
New Zealand.....	2,442	2,575	2,726	2,802	2,915	2,851	2,851	2,740	2,800	2,825	2,983	3.1	0.9	2.0
All others.....	63	47	54	53	63	51	55	48	49	55	49	-4.1	-0.7	-2.5

USSR = Union of Soviet Socialist Republics

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year of publication and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple countries/economies, each country/economy receives fractional credit on basis of proportion of its participating institutions. Countries with article output <0.01% of world output in 2005 grouped in All others; see appendix table 5-33 for countries/economies included in each region. Detail may not add to total because of rounding.

SOURCES: Thomson Scientific, SCI and SSCI, <http://scientific.thomson.com/products/categories/citation/>; iPIQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

## Internationally coauthored S&amp;E articles, by selected country/economy pairs: 2005

Country/economy	World	United States	Austria	Belgium	Czech Republic	Denmark	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Netherlands
World.....	151,815	66,274	4,268	6,409	2,598	4,235	3,401	21,932	29,751	2,283	2,308	1,662	14,421	9,934
United States.....	66,274	na	995	1,474	542	1,196	908	5,635	8,941	751	643	417	4,761	3,023
Austria.....	4,268	995	na	174	160	127	108	498	1,591	72	148	26	502	269
Belgium.....	6,409	1,474	174	na	163	213	146	1,456	1,093	120	156	77	675	1,056
Czech Republic.....	2,598	542	160	163	na	66	81	477	669	71	83	64	270	185
Denmark.....	4,235	1,196	127	213	66	na	219	453	774	80	46	59	391	396
Finland.....	3,401	908	108	146	81	219	na	351	648	58	91	55	305	322
France.....	21,932	5,635	498	1,456	477	453	351	na	3,713	339	310	218	2,605	1,392
Germany.....	29,751	8,941	1,591	1,093	669	774	648	3,713	na	397	555	270	2,679	2,322
Greece.....	2,283	751	72	120	71	80	58	339	397	na	44	23	271	151
Hungary.....	2,308	643	148	156	83	46	91	310	555	44	na	25	224	136
Ireland.....	1,662	417	26	77	64	59	55	218	270	23	25	na	141	149
Italy.....	14,421	4,761	502	675	270	391	305	2,605	2,679	271	224	141	na	1,122
Netherlands.....	9,934	3,023	269	1,056	185	396	322	1,392	2,322	151	136	149	1,122	na
Poland.....	4,782	1,289	215	261	227	143	118	763	1,193	105	91	33	486	250
Portugal.....	2,344	448	97	131	60	78	84	397	342	42	45	22	226	158
Spain.....	10,379	2,757	264	502	160	311	238	1,909	1,697	194	143	113	1,583	762
Sweden.....	7,531	2,094	187	305	160	731	648	838	1,293	105	137	98	642	544
United Kingdom.....	28,209	8,880	564	1,119	390	877	683	3,369	4,350	509	337	652	2,668	2,197
Norway.....	2,837	873	87	111	60	367	240	375	448	58	30	45	280	327
Switzerland.....	8,667	2,655	424	427	192	233	236	1,632	2,591	147	108	67	1,147	664
Turkey.....	1,706	764	28	38	15	15	30	90	212	30	20	6	117	57
China.....	12,435	4,967	125	194	95	119	86	773	1,218	41	60	79	353	353
India.....	3,876	1,404	75	60	89	48	31	383	669	21	70	60	187	138
Japan.....	15,212	6,050	212	241	159	153	186	1,061	1,508	73	141	57	601	374
Singapore.....	1,940	596	14	18	6	14	16	55	111	1	2	9	43	31
South Korea.....	5,624	3,076	70	49	52	25	51	254	386	17	54	54	171	104
Taiwan.....	2,649	1,471	60	20	6	5	33	128	209	5	32	16	76	41
Russia.....	8,463	2,336	230	277	276	124	282	1,221	2,391	120	131	116	781	475
Ukraine.....	1,656	332	41	45	41	18	18	157	392	26	27	3	99	45
Israel.....	3,850	2,020	67	106	45	82	57	438	633	59	75	16	294	204
Argentina.....	2,059	695	27	31	41	23	12	230	253	7	19	34	142	79
Brazil.....	4,371	1,702	55	99	79	49	31	609	558	22	33	36	300	187
Mexico.....	2,528	1,082	15	54	50	15	12	282	212	28	17	40	133	88
South Africa.....	1,744	603	40	79	29	41	20	178	227	6	26	27	71	121
Australia.....	9,029	3,176	193	193	73	206	115	631	968	43	55	84	395	348
Canada.....	15,162	7,892	189	352	124	241	235	1,435	1,509	98	115	132	758	613
New Zealand.....	2,109	692	23	40	6	62	20	130	174	10	10	34	85	82



## Internationally coauthored S&amp;E articles, by selected country/economy pairs: 2005

Country/economy	World	Poland	Portugal	Spain	Sweden	United Kingdom	Norway	Switzerland	Turkey	China	India	Japan	Singapore
World.....	151,815	4,782	2,344	10,379	7,531	28,209	2,837	8,667	1,706	12,435	3,876	15,212	1,940
United States.....	66,274	1,289	448	2,757	2,094	8,880	873	2,655	764	4,967	1,404	6,050	596
Austria.....	4,268	215	97	264	187	564	87	424	28	125	75	212	14
Belgium.....	6,409	261	131	502	305	1,119	111	427	38	194	60	241	18
Czech Republic.....	2,598	227	60	160	160	390	60	192	15	95	89	159	6
Denmark.....	4,235	143	78	311	731	877	367	233	15	119	48	153	14
Finland.....	3,401	118	84	238	648	683	240	236	30	86	31	186	16
France.....	21,932	763	397	1,909	838	3,369	375	1,632	90	773	383	1,061	55
Germany.....	29,751	1,193	342	1,697	1,293	4,350	448	2,591	212	1,218	669	1,508	111
Greece.....	2,283	105	42	194	105	509	58	147	30	41	21	73	1
Hungary.....	2,308	91	45	143	137	337	30	108	20	60	70	141	2
Ireland.....	1,662	33	22	113	98	652	45	67	6	79	60	57	9
Italy.....	14,421	486	226	1,583	642	2,668	280	1,147	117	353	187	601	43
Netherlands.....	9,934	250	158	762	544	2,197	327	664	57	353	138	374	31
Poland.....	4,782	na	71	290	269	566	114	300	22	136	126	328	18
Portugal.....	2,344	71	na	442	115	469	50	136	13	57	30	73	3
Spain.....	10,379	290	442	na	407	1,922	240	553	34	209	132	332	23
Sweden.....	7,531	269	115	407	na	1,391	514	365	37	351	106	366	43
United Kingdom.....	28,209	566	469	1,922	1,391	na	663	1,405	237	1,302	459	1,334	211
Norway.....	2,837	114	50	240	514	663	na	136	14	124	17	74	11
Switzerland.....	8,667	300	136	553	365	1,405	136	na	48	210	158	399	20
Turkey.....	1,706	22	13	34	37	237	14	48	na	30	6	96	4
China.....	12,435	136	57	209	351	1,302	124	210	30	na	268	1,948	601
India.....	3,876	126	30	132	106	459	17	158	6	268	na	508	57
Japan.....	15,212	328	73	332	366	1,334	74	399	96	1,948	508	na	107
Singapore.....	1,940	18	3	23	43	211	11	20	4	601	57	107	na
South Korea.....	5,624	111	15	111	93	377	13	158	16	556	264	1,138	34
Taiwan.....	2,649	81	5	70	46	187	5	128	6	405	176	442	63
Russia.....	8,463	508	130	429	426	995	204	465	48	361	195	749	12
Ukraine.....	1,656	226	17	77	63	134	11	46	18	15	14	77	6
Israel.....	3,850	84	33	167	110	381	51	147	56	116	65	155	14
Argentina.....	2,059	17	34	403	48	176	12	34	5	46	43	41	4
Brazil.....	4,371	63	157	260	126	583	31	121	22	140	133	183	13
Mexico.....	2,528	47	20	352	72	246	7	50	9	74	72	65	7
South Africa.....	1,744	49	14	61	61	378	31	68	7	53	39	48	7
Australia.....	9,029	139	45	258	336	1,874	106	336	31	791	180	612	199
Canada.....	15,162	220	69	549	463	2,025	271	482	53	921	198	789	101
New Zealand.....	2,109	21	11	53	63	526	32	52	8	80	15	107	31

## Internationally coauthored S&amp;E articles, by selected country/economy pairs: 2005

Country/economy	World	South Korea	Taiwan	Russia	Ukraine	Israel	Argentina	Brazil	Mexico	South Africa	Australia	Canada	New Zealand
World.....	151,815	5,624	2,649	8,463	1,656	3,850	2,059	4,371	2,528	1,744	9,029	15,162	2,109
United States.....	66,274	3,076	1,471	2,336	332	2,020	695	1,702	1,082	603	3,176	7,892	692
Austria.....	4,268	70	60	230	41	67	27	55	15	40	193	189	23
Belgium.....	6,409	49	20	277	45	106	31	99	54	79	193	352	40
Czech Republic.....	2,598	52	6	276	41	45	41	79	50	29	73	124	6
Denmark.....	4,235	25	5	124	18	82	23	49	15	41	206	241	62
Finland.....	3,401	51	33	282	18	57	12	31	12	20	115	235	20
France.....	21,932	254	128	1,221	157	438	230	609	282	178	631	1,435	130
Germany.....	29,751	386	209	2,391	392	633	253	558	212	227	968	1,509	174
Greece.....	2,283	17	5	120	26	59	7	22	28	6	43	98	10
Hungary.....	2,308	54	32	131	27	75	19	33	17	26	55	115	10
Ireland.....	1,662	54	16	116	3	16	34	36	40	27	84	132	34
Italy.....	14,421	171	76	781	99	294	142	300	133	71	395	758	85
Netherlands.....	9,934	104	41	475	45	204	79	187	88	121	348	613	82
Poland.....	4,782	111	81	508	226	84	17	63	47	49	139	220	21
Portugal.....	2,344	15	5	130	17	33	34	157	20	14	45	69	11
Spain.....	10,379	111	70	429	77	167	403	260	352	61	258	549	53
Sweden.....	7,531	93	46	426	63	110	48	126	72	61	336	463	63
United Kingdom.....	28,209	377	187	995	134	381	176	583	246	378	1,874	2,025	526
Norway.....	2,837	13	5	204	11	51	12	31	7	31	106	271	32
Switzerland.....	8,667	158	128	465	46	147	34	121	50	68	336	482	52
Turkey.....	1,706	16	6	48	18	56	5	22	9	7	31	53	8
China.....	12,435	556	405	361	15	116	46	140	74	53	791	921	80
India.....	3,876	264	176	195	14	65	43	133	72	39	180	198	15
Japan.....	15,212	1,138	442	749	77	155	41	183	65	48	612	789	107
Singapore.....	1,940	34	63	12	6	14	4	13	7	7	199	101	31
South Korea.....	5,624	na	190	369	34	67	33	75	62	14	171	332	33
Taiwan.....	2,649	190	na	170	7	35	2	36	16	7	132	176	16
Russia.....	8,463	369	170	na	267	189	45	175	127	22	183	442	21
Ukraine.....	1,656	34	7	267	na	49	3	22	29	2	26	45	1
Israel.....	3,850	67	35	189	49	na	23	62	37	25	127	247	34
Argentina.....	2,059	33	2	45	3	23	na	297	105	24	48	125	14
Brazil.....	4,371	75	36	175	22	62	297	na	133	37	134	312	25
Mexico.....	2,528	62	16	127	29	37	105	133	na	16	63	194	12
South Africa.....	1,744	14	7	22	2	25	24	37	16	na	171	133	34
Australia.....	9,029	171	132	183	26	127	48	134	63	171	na	745	530
Canada.....	15,162	332	176	442	45	247	125	312	194	133	745	na	158
New Zealand.....	2,109	33	16	21	1	34	14	25	12	34	530	158	na

na = not applicable

NOTES: Each country in matrix accounts for 1% or more of internationally coauthored articles in 2005. Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database, rather than year of publication, and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on whole count basis, i.e., each collaborating country/economy credited one count. Detail adds to more than world total because of articles with three or more country coauthors.

SOURCES: Thomson Scientific, SCI and SSCI, <http://scientific.thomson.com/products/categories/citation/>; ipIQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-36

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**U.S. S&E articles, by field and sector: 1995–2005**

Field/sector	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All fields.....	194,255	192,790	189,477	189,813	190,390	188,125	193,066	187,400	202,475	192,913	214,557
FFRDCs .....	5,383	5,105	5,184	5,069	5,181	5,009	5,204	4,840	5,692	5,328	5,969
Federal government.....	15,287	14,745	14,093	13,942	13,734	13,573	13,822	13,253	13,989	13,313	14,418
State/local government.....	1,883	1,810	1,794	1,835	1,798	1,755	1,873	1,803	1,814	1,756	1,968
Academic institutions .....	139,168	139,379	137,668	138,206	138,472	137,105	140,885	137,388	148,758	142,382	159,972
Industry.....	15,671	14,822	13,988	13,894	14,030	13,644	13,839	13,287	14,184	12,988	13,489
Private nonprofit.....	15,302	15,082	14,910	14,907	15,231	15,497	15,903	15,121	16,221	15,653	16,980
Joint sectors.....	228	248	251	200	331	337	353	390	396	461	509
Unknown sector.....	1,333	1,600	1,589	1,760	1,613	1,206	1,188	1,318	1,420	1,033	1,252
Engineering .....	12,636	11,702	11,760	11,815	12,312	11,637	12,560	12,475	13,467	12,671	14,455
FFRDCs .....	737	695	884	803	778	754	906	726	887	814	928
Federal government.....	1,025	845	908	860	893	814	886	843	885	828	955
State/local government.....	45	33	36	35	96	33	31	161	91	58	86
Academic institutions .....	7,869	7,451	7,296	7,452	7,821	7,426	8,212	8,265	8,927	8,789	10,124
Industry.....	2,664	2,405	2,342	2,355	2,404	2,307	2,280	2,222	2,378	1,909	2,080
Private nonprofit.....	215	159	168	177	181	190	154	142	160	173	158
Joint sectors.....	3	3	12	6	11	22	9	15	17	30	27
Unknown sector .....	77	112	115	128	129	92	82	100	122	69	98
Astronomy .....	2,483	2,651	2,557	1,932	2,829	2,566	2,697	2,996	2,719	2,874	2,853
FFRDCs .....	245	284	235	183	264	271	273	281	268	303	308
Federal government.....	256	271	296	208	308	264	253	230	191	220	209
State/local government.....	0	1	0	0	0	0	0	0	0	0	0
Academic institutions .....	1,612	1,700	1,655	1,256	1,809	1,601	1,748	1,948	1,812	1,875	1,850
Industry.....	64	48	51	54	57	57	53	68	55	38	46
Private nonprofit.....	160	187	161	120	169	172	166	224	156	191	185
Joint sectors.....	129	145	146	102	198	173	182	215	207	214	223
Unknown sector .....	16	15	14	9	25	27	22	30	30	31	32
Chemistry.....	14,915	15,219	14,375	14,414	14,491	14,560	14,342	14,043	15,763	15,110	17,138
FFRDCs .....	612	661	625	619	664	697	687	626	736	760	974
Federal government.....	766	764	698	649	607	613	655	647	673	690	731
State/local government.....	26	27	29	27	27	35	25	21	26	23	22
Academic institutions .....	10,778	11,076	10,705	10,930	10,861	11,015	10,872	10,578	11,834	11,173	13,117
Industry.....	2,423	2,341	2,012	1,842	1,948	1,806	1,749	1,828	2,123	2,100	1,940
Private nonprofit.....	275	294	269	281	324	343	306	299	316	307	294
Joint sectors.....	1	3	2	4	4	5	6	7	4	12	12
Unknown sector .....	34	53	36	61	56	47	42	37	53	44	48
Physics.....	19,709	18,906	18,048	17,966	18,074	16,897	17,385	17,301	18,657	17,653	20,551
FFRDCs .....	2,330	2,033	2,014	2,078	2,150	1,982	2,048	2,036	2,383	2,120	2,358
Federal government.....	1,193	1,024	991	993	1,071	884	942	903	978	977	959
State/local government.....	5	6	7	5	4	2	6	2	1	7	4
Academic institutions .....	13,662	13,363	12,936	12,743	12,759	12,115	12,345	12,436	13,250	12,734	15,390
Industry.....	2,237	2,184	1,815	1,884	1,806	1,678	1,810	1,648	1,771	1,581	1,565
Private nonprofit.....	180	174	161	124	147	144	127	146	153	128	170
Joint sectors.....	36	55	41	38	51	49	59	62	59	53	56
Unknown sector .....	65	67	83	101	86	44	49	68	62	54	49
Geosciences.....	9,821	9,904	9,214	9,820	9,873	9,779	10,065	9,204	11,486	10,436	11,112
FFRDCs .....	504	505	482	507	515	495	498	412	631	498	497
Federal government.....	1,510	1,472	1,287	1,411	1,404	1,397	1,399	1,355	1,621	1,439	1,511
State/local government.....	208	192	175	210	207	220	256	218	256	223	224
Academic institutions .....	6,394	6,596	6,166	6,520	6,549	6,583	6,702	6,155	7,826	7,170	7,756
Industry.....	681	610	636	610	638	552	657	556	570	556	556
Private nonprofit.....	443	423	375	449	455	450	478	427	481	481	473
Joint sectors.....	17	12	15	13	18	21	20	20	24	20	31
Unknown sector .....	64	95	77	101	87	61	54	60	75	50	64
Mathematics.....	3,190	3,272	3,051	3,483	3,561	3,758	3,657	3,556	3,760	3,562	3,922
FFRDCs .....	32	41	41	41	38	66	35	36	39	53	61
Federal government.....	55	51	45	55	68	59	48	54	47	60	67
State/local government.....	1	4	3	2	4	2	1	1	1	1	1
Academic institutions .....	2,952	3,033	2,830	3,210	3,265	3,450	3,393	3,306	3,525	3,319	3,662
Industry.....	104	100	89	126	126	121	125	114	106	88	88

Appendix table 5-36

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**U.S. S&E articles, by field and sector: 1995–2005**

Field/sector	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Private nonprofit.....	37	35	37	43	46	50	44	36	28	33	33
Joint sectors.....	0	0	0	0	1	0	1	0	1	0	2
Unknown sector.....	8	9	6	7	11	9	9	9	12	7	8
Computer sciences.....	1,914	1,923	1,929	1,952	2,008	2,075	2,083	1,999	2,254	2,173	2,390
FFRDCs.....	27	27	42	47	51	30	44	31	36	38	41
Federal government.....	41	44	50	49	62	41	44	41	35	35	44
State/local government.....	1	1	1	1	1	1	1	0	2	0	1
Academic institutions.....	1,398	1,412	1,352	1,364	1,397	1,475	1,482	1,455	1,736	1,730	1,912
Industry.....	399	390	433	445	448	481	461	442	409	342	365
Private nonprofit.....	30	23	28	23	27	32	31	19	22	17	20
Joint sectors.....	0	0	1	0	0	1	2	1	2	1	2
Unknown sector.....	17	25	24	24	23	14	18	11	12	9	6
Agricultural sciences.....	3,648	3,346	3,605	3,464	2,804	3,640	3,203	3,924	3,903	3,526	3,561
FFRDCs.....	19	17	16	12	8	12	8	9	20	11	17
Federal government.....	635	531	610	586	464	656	548	628	669	627	649
State/local government.....	30	28	34	24	19	18	50	27	19	22	17
Academic institutions.....	2,598	2,454	2,612	2,531	2,043	2,639	2,258	2,926	2,888	2,584	2,593
Industry.....	289	228	240	234	199	251	261	260	231	220	219
Private nonprofit.....	55	49	52	38	40	44	48	43	52	47	48
Joint sectors.....	1	0	1	0	0	1	2	1	0	4	3
Unknown sector.....	23	39	40	38	32	20	28	28	23	13	16
Biological sciences.....	54,076	53,301	51,718	52,076	51,443	50,997	52,696	50,108	52,981	51,502	55,502
FFRDCs.....	649	629	634	568	550	543	549	539	537	582	620
Federal government.....	5,088	4,872	4,638	4,579	4,505	4,475	4,521	4,263	4,411	4,258	4,555
State/local government.....	542	536	505	513	483	514	531	501	506	529	557
Academic institutions.....	38,685	38,554	37,508	38,017	37,607	37,187	38,673	36,902	39,164	38,263	41,441
Industry.....	4,228	3,893	3,656	3,626	3,600	3,583	3,518	3,279	3,498	3,145	3,306
Private nonprofit.....	4,656	4,586	4,529	4,481	4,435	4,484	4,667	4,391	4,579	4,489	4,717
Joint sectors.....	16	12	11	13	15	20	36	29	41	74	74
Unknown sector.....	211	221	238	278	249	190	202	204	246	164	232
Medical sciences.....	51,943	51,404	52,146	52,402	52,550	51,886	53,437	51,384	56,128	53,541	60,130
FFRDCs.....	188	185	182	183	147	137	127	125	137	126	144
Federal government.....	3,892	4,037	3,797	3,860	3,640	3,630	3,784	3,548	3,769	3,529	3,859
State/local government.....	814	745	768	786	775	751	806	706	755	733	904
Academic institutions.....	36,547	36,010	36,922	36,833	36,968	36,272	37,221	35,964	39,331	37,522	42,330
Industry.....	2,078	2,077	2,130	2,220	2,282	2,314	2,428	2,433	2,607	2,601	2,820
Private nonprofit.....	7,906	7,741	7,754	7,877	8,098	8,285	8,601	8,067	8,949	8,555	9,525
Joint sectors.....	23	16	19	17	26	37	31	33	35	48	66
Unknown sector.....	495	593	573	627	615	460	440	508	545	427	481
Other life sciences.....	2,338	2,811	3,009	3,009	2,876	2,942	3,146	2,958	2,964	2,699	3,670
FFRDCs.....	2	0	1	0	0	1	1	1	2	0	1
Federal government.....	121	129	140	123	116	136	170	143	135	115	239
State/local government.....	44	75	47	73	51	54	59	56	49	42	50
Academic institutions.....	1,606	2,038	2,181	2,181	2,081	2,151	2,337	2,121	2,208	2,019	2,686
Industry.....	112	105	151	150	156	141	148	154	145	136	188
Private nonprofit.....	369	369	369	361	380	378	359	400	355	344	435
Joint sectors.....	0	0	0	0	1	2	1	3	2	2	5
Unknown sector.....	84	95	120	120	91	81	70	78	68	41	66
Psychology.....	7,830	8,258	8,130	7,736	7,806	7,499	7,809	7,691	7,892	7,410	8,482
FFRDCs.....	5	0	2	4	2	1	0	2	1	0	1
Federal government.....	223	280	246	225	241	237	220	217	218	208	235
State/local government.....	109	114	115	105	83	70	67	66	59	71	63
Academic institutions.....	6,858	7,116	7,049	6,754	6,850	6,575	6,869	6,794	7,056	6,613	7,582
Industry.....	170	190	166	145	168	163	177	143	132	130	168
Private nonprofit.....	317	390	386	349	345	353	375	358	336	326	349
Joint sectors.....	2	1	2	1	2	2	1	3	4	2	4
Unknown sector.....	146	167	163	154	116	99	101	108	85	59	79
Social sciences.....	9,751	10,094	9,935	9,745	9,763	9,888	9,985	9,763	10,501	9,754	10,790
FFRDCs.....	32	29	26	25	15	20	28	14	16	23	19
Federal government.....	481	425	386	344	354	368	353	381	358	326	406
State/local government.....	58	51	74	55	47	56	42	44	48	45	41

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**U.S. S&E articles, by field and sector: 1995–2005**

Field/sector	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Academic institutions .....	8,208	8,577	8,456	8,416	8,462	8,616	8,774	8,539	9,200	8,591	9,529
Industry .....	221	252	269	204	201	190	170	139	158	142	149
Private nonprofit.....	658	652	623	585	586	574	546	568	633	562	572
Joint sectors.....	1	1	1	4	4	3	2	1	1	1	2
Unknown sector .....	93	109	101	113	93	62	70	78	87	65	73

FFRDC = federally funded research and development center

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database, rather than year of publication, and assigned to sector on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple sectors, each sector receives fractional credit on basis of proportion of its participating institutions. Detail may not add to total because of rounding.

SOURCES: Thomson Scientific, SCI and SSCI, <http://scientific.thomson.com/products/categories/citation/>; iPLQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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**U.S. S&E articles with foreign coauthors, by field and U.S. sector: 1995 and 2005**

Field/sector	1995			2005			1995–2005 change (percentage points)
	All articles	Articles with foreign coauthors		All articles	Articles with foreign coauthors		
		Number	Percent		Number	Percent	
All fields.....	212,456	36,361	17.1	249,152	66,274	26.6	9.5
FFRDCs .....	9,140	2,577	28.2	11,778	4,509	38.3	10.1
Federal government.....	25,558	4,133	16.2	28,304	7,145	25.2	9.1
State/local government.....	3,653	361	9.9	4,484	688	15.3	5.5
Academic institutions .....	170,462	28,312	16.6	208,441	53,367	25.6	9.0
Industry .....	24,142	3,883	16.1	25,148	6,618	26.3	10.2
Private nonprofit.....	25,603	3,689	14.4	32,788	7,992	24.4	10.0
Agricultural sciences .....	3,867	451	11.7	4,046	950	23.5	11.8
FFRDCs .....	31	4	12.9	37	8	21.6	8.7
Federal government.....	888	60	6.8	1,048	167	15.9	9.2
State/local government.....	47	1	2.1	40	5	12.5	10.4
Academic institutions .....	3,080	378	12.3	3,383	786	23.2	11.0
Industry.....	432	46	10.6	410	81	19.8	9.1
Private nonprofit.....	84	10	11.9	96	18	18.8	6.8
Astronomy.....	3,156	1,331	42.2	4,172	2,435	58.4	16.2
FFRDCs .....	549	246	44.8	853	528	61.9	17.1
Federal government.....	547	227	41.5	607	363	59.8	18.3
State/local government.....	0	0	0.0	0	0	0.0	0.0
Academic institutions .....	2,403	947	39.4	3,253	1,866	57.4	18.0
Industry.....	163	79	48.5	129	62	48.1	–0.4
Private nonprofit.....	394	191	48.5	635	429	67.6	19.1
Biological sciences .....	59,390	10,792	18.2	64,825	18,112	27.9	9.8
FFRDCs .....	1,198	310	25.9	1,343	434	32.3	6.4
Federal government.....	8,464	1,576	18.6	8,797	2,441	27.7	9.1
State/local government.....	1,063	154	14.5	1,247	224	18.0	3.5
Academic institutions .....	47,511	8,159	17.2	54,012	14,372	26.6	9.4
Industry.....	6,654	1,202	18.1	6,043	1,729	28.6	10.5
Private nonprofit.....	8,309	1,588	19.1	9,612	2,927	30.5	11.3
Chemistry.....	16,223	2,593	16.0	19,521	4,525	23.2	7.2
FFRDCs .....	943	164	17.4	1,633	378	23.1	5.8
Federal government.....	1,071	159	14.8	1,201	257	21.4	6.6
State/local government.....	44	3	6.8	44	12	27.3	20.5
Academic institutions .....	12,582	2,012	16.0	15,961	3,613	22.6	6.6
Industry.....	3,147	454	14.4	2,743	572	20.9	6.4
Private nonprofit.....	407	62	15.2	454	101	22.2	7.0
Computer sciences.....	2,125	432	20.3	2,783	788	28.3	8.0
FFRDCs .....	47	5	10.6	64	9	14.1	3.4
Federal government.....	61	2	3.3	85	18	21.2	17.9
State/local government.....	1	0	0.0	3	0	0.0	0.0
Academic institutions .....	1,726	367	21.3	2,418	663	27.4	6.2
Industry.....	581	93	16.0	617	177	28.7	12.7
Private nonprofit.....	42	6	14.3	43	11	25.6	11.3
Engineering .....	13,694	2,105	15.4	16,707	4,324	25.9	10.5
FFRDCs .....	1,099	228	20.7	1,533	400	26.1	5.3
Federal government.....	1,564	182	11.6	1,645	307	18.7	7.0
State/local government.....	76	7	9.2	158	13	8.2	–1.0
Academic institutions .....	9,637	1,521	15.8	13,244	3,313	25.0	9.2
Industry.....	3,629	390	10.7	3,458	746	21.6	10.8
Private nonprofit.....	358	47	13.1	320	85	26.6	13.4
Geosciences.....	10,912	2,189	20.1	13,454	4,489	33.4	13.3
FFRDCs .....	843	218	25.9	1,066	383	35.9	10.1
Federal government.....	2,416	425	17.6	2,922	844	28.9	11.3
State/local government.....	341	25	7.3	468	77	16.5	9.1
Academic institutions .....	8,196	1,655	20.2	11,022	3,590	32.6	12.4
Industry.....	1,160	184	15.9	1,193	323	27.1	11.2
Private nonprofit.....	754	153	20.3	1,019	376	36.9	16.6

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## U.S. S&amp;E articles with foreign coauthors, by field and U.S. sector: 1995 and 2005

Field/sector	1995			2005			1995–2005 change (percentage points)
	All articles	Articles with foreign coauthors		All articles	Articles with foreign coauthors		
		Number	Percent		Number	Percent	
Mathematics .....	3,646	904	24.8	4,840	1,787	36.9	12.1
FFRDCs .....	53	7	13.2	105	37	35.2	22.0
Federal government.....	82	9	11.0	118	30	25.4	14.4
State/local government.....	3	0	0.0	2	1	50.0	50.0
Academic institutions .....	3,484	879	25.2	4,643	1,702	36.7	11.4
Industry.....	164	21	12.8	175	72	41.1	28.3
Private nonprofit.....	65	8	12.3	65	14	21.5	9.2
Medical sciences.....	55,602	7,351	13.2	68,305	15,693	23.0	9.8
FFRDCs .....	347	70	20.2	326	85	26.1	5.9
Federal government.....	7,337	1,078	14.7	8,521	1,997	23.4	8.7
State/local government.....	1,703	149	8.7	2,170	330	15.2	6.5
Academic institutions .....	45,541	5,715	12.5	56,490	12,361	21.9	9.3
Industry.....	4,028	706	17.5	6,687	1,964	29.4	11.8
Private nonprofit.....	12,807	1,370	10.7	17,705	3,530	19.9	9.2
Other life sciences.....	2,394	121	5.1	3,851	359	9.3	4.3
FFRDCs .....	2	0	0.0	1	0	0.0	0.0
Federal government.....	192	9	4.7	445	30	6.7	2.1
State/local government.....	79	3	3.8	117	5	4.3	0.5
Academic institutions .....	1,887	111	5.9	3,265	322	9.9	4.0
Industry.....	163	6	3.7	361	44	12.2	8.5
Private nonprofit.....	554	22	4.0	776	58	7.5	3.5
Physics.....	23,062	6,467	28.0	25,945	9,969	38.4	10.4
FFRDCs .....	3,975	1,316	33.1	4,784	2,244	46.9	13.8
Federal government.....	1,908	343	18.0	1,806	561	31.1	13.1
State/local government.....	14	3	21.4	9	1	11.1	-10.3
Academic institutions .....	17,884	5,114	28.6	21,476	8,201	38.2	9.6
Industry.....	3,456	674	19.5	2,736	761	27.8	8.3
Private nonprofit.....	329	79	24.0	371	142	38.3	14.3
Psychology .....	8,137	627	7.7	9,111	1,241	13.6	5.9
FFRDCs .....	7	1	14.3	3	0	0.0	-14.3
Federal government.....	399	30	7.5	486	58	11.9	4.4
State/local government.....	189	11	5.8	151	13	8.6	2.8
Academic institutions .....	7,531	585	7.8	8,618	1,147	13.3	5.5
Industry.....	256	10	3.9	340	51	15.0	11.1
Private nonprofit.....	549	31	5.6	692	74	10.7	5.1
Social sciences.....	10,248	998	9.7	11,592	1,602	13.8	4.1
FFRDCs .....	46	8	17.4	30	3	10.0	-7.4
Federal government.....	629	33	5.2	623	72	11.6	6.3
State/local government.....	93	5	5.4	75	7	9.3	4.0
Academic institutions .....	9,000	869	9.7	10,656	1,431	13.4	3.8
Industry.....	309	18	5.8	256	36	14.1	8.2
Private nonprofit.....	951	122	12.8	1,000	227	22.7	9.9

FFRDC = federally funded research and development center

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered the database, rather than year of publication, and assigned to sector on basis of institutional address(es) listed on article. Articles on whole-count basis, i.e., each collaborating country or sector credited one count. Detail may add to more than total because articles may have authors from more than one U.S. sector. Articles from joint or unknown sectors omitted from detail but included in total.

SOURCES: Thomson Scientific, SCI and SSCI, <http://scientific.thomson.com/products/categories/citation/>; iplQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

Field/percentile	Citations (n)	Articles (n)	U.S.	EU	Other Western			Other former USSR	Near East/ North Africa	Central/ South America	Sub-Saharan Africa	Other
					Europe	Asia-10	Other Asia					
			1991–93 articles cited by 1995 articles (%)									
All fields.....	na	1,566,024	36.0	32.8	2.2	12.5	0.1	5.6	1.6	1.5	0.8	7.0
99th .....	≥21	14,514	62.3	24.7	2.6	4.9	*	0.3	0.6	0.2	0.1	4.4
95th .....	9–20	57,132	55.8	28.4	2.4	6.1	*	0.4	0.7	0.4	0.2	5.7
90th .....	6–8	67,786	49.7	31.8	2.3	7.4	*	0.6	0.9	0.5	0.3	6.6
75th .....	3–5	213,207	43.4	33.8	2.2	9.8	*	1.2	1.0	0.8	0.4	7.3
50th .....	2	173,411	38.8	34.4	2.2	11.7	0.1	1.9	1.3	1.2	0.6	7.6
<50th.....	0–1	1,039,974	31.6	32.7	2.2	14.0	0.2	7.8	1.9	1.8	1.0	6.9
Engineering.....	na	112,876	33.1	29.0	1.9	21.3	0.1	4.5	2.0	1.0	0.5	6.8
99th .....	≥8	854	56.5	25.4	2.2	10.6	0.0	0.7	0.5	0.2	0.3	3.6
95th .....	4–7	4,129	45.3	31.0	1.5	13.9	*	0.8	0.5	0.5	0.1	6.4
90th .....	3	4,062	41.0	30.3	1.6	17.7	*	1.0	0.9	0.6	0.3	6.6
75th .....	2	8,774	37.9	29.0	2.2	19.3	*	1.4	1.3	0.9	0.4	7.7
50th .....	1	22,013	34.8	30.0	1.9	20.6	0.1	2.2	1.9	1.0	0.4	7.1
<50th.....	0	73,044	30.6	28.5	1.8	22.4	0.1	6.0	2.2	1.1	0.5	6.6
Astronomy.....	na	16,991	35.5	35.1	1.5	8.4	*	7.3	1.1	4.3	0.7	6.2
99th .....	≥20	165	56.4	25.4	4.1	2.3	0.0	0.0	0.9	2.5	0.2	8.1
95th .....	11–19	657	60.9	26.4	1.7	2.1	0.0	0.7	0.7	1.5	0.2	5.8
90th .....	7–10	794	54.5	30.5	1.2	3.3	0.0	1.1	0.4	1.9	0.5	6.8
75th .....	4–6	2,127	49.4	33.8	1.3	4.1	0.0	1.7	0.7	2.3	0.9	5.9
50th .....	2–3	3,475	41.2	37.5	1.1	6.4	0.0	2.9	0.6	3.1	1.0	6.1
<50th.....	0–1	9,773	26.8	35.6	1.6	10.9	*	11.1	1.5	5.5	0.7	6.2
Chemistry.....	na	194,636	22.8	36.2	2.3	18.6	0.2	11.7	1.8	1.3	0.5	4.5
99th .....	≥13	1,842	55.6	27.0	2.6	8.2	0.0	0.4	0.5	0.2	0.1	5.2
95th .....	7–12	6,432	45.3	32.7	2.2	11.8	0.0	0.7	0.8	0.5	0.2	5.8
90th .....	5–6	8,007	38.5	35.7	2.4	14.5	*	1.2	0.7	0.5	0.3	6.1
75th .....	3–4	20,729	31.6	38.9	2.3	17.0	*	2.2	1.0	0.9	0.3	5.9
50th .....	2	22,469	26.3	40.4	2.3	18.8	0.1	3.5	1.2	1.2	0.5	5.6
<50th.....	0–1	135,157	18.5	35.4	2.2	19.6	0.3	15.9	2.1	1.5	0.6	4.0
Physics.....	na	219,159	27.5	32.5	2.2	17.6	0.1	12.6	1.4	1.8	0.3	4.0
99th .....	≥15	2,186	52.8	30.0	3.9	7.7	0.0	1.7	1.0	0.7	0.0	2.3
95th .....	8–14	6,452	46.8	33.1	3.0	9.6	*	2.1	1.1	0.5	0.1	3.7
90th .....	5–13	11,695	41.2	35.4	2.7	12.1	*	2.8	1.2	0.8	0.1	3.8
75th .....	3–4	21,907	35.7	36.3	2.5	14.2	0.1	4.3	1.4	1.1	0.2	4.3
50th .....	2	23,394	31.8	35.9	2.3	16.3	0.1	5.8	1.3	1.6	0.2	4.6
<50th.....	0–1	153,525	23.5	31.3	2.0	19.2	0.2	16.1	1.5	2.0	0.3	3.9
Geosciences.....	na	70,976	37.2	28.7	3.0	8.8	0.1	5.4	1.6	1.6	1.4	12.2
99th .....	≥13	578	67.2	16.7	2.6	1.4	0.0	0.3	0.0	0.3	0.1	11.4
95th .....	7–12	2,391	59.4	23.3	2.1	2.1	*	0.6	0.3	0.3	0.6	11.3
90th .....	5–6	3,155	53.6	26.5	2.7	3.0	*	0.5	0.4	0.6	0.5	12.1
75th .....	3–4	8,081	46.7	29.4	3.0	4.5	*	1.1	0.9	0.9	0.9	12.6
50th .....	2	8,653	41.8	29.8	3.3	6.3	*	1.6	1.1	1.2	1.2	13.7
<50th.....	0–1	48,118	32.2	28.9	3.1	10.7	0.2	7.4	2.0	1.9	1.7	12.0
Mathematics.....	na	26,826	38.7	34.6	1.6	9.6	0.2	4.0	2.2	1.7	0.4	7.0
99th .....	≥6	210	56.1	28.5	1.3	3.9	0.2	2.9	0.9	1.6	0.5	4.1
95th .....	3–5	1,023	50.8	31.5	2.4	5.5	*	0.8	1.4	1.2	0.2	6.2
90th .....	na	0.0	na	na	na	na	na	na	na	na	na	na
75th .....	2	1,607	46.2	35.5	1.8	6.6	0.3	1.1	1.4	1.6	0.3	5.1
50th .....	1	4,929	42.9	34.5	1.6	8.0	0.2	1.9	1.9	1.6	0.2	7.1
<50th.....	0	19,057	36.1	34.8	1.6	10.5	0.2	4.9	2.4	1.8	0.5	7.2
Computer sciences.....	na	9,879	53.9	22.4	1.7	11.7	0.1	0.6	2.5	0.4	0.4	6.2
99th .....	≥7	68	72.6	12.3	0.5	4.4	0.0	0.0	1.6	0.7	0.0	7.9
95th .....	4–6	244	66.1	20.4	0.4	4.0	0.0	0.8	2.7	0.0	0.0	5.5
90th .....	3	276	59.2	22.0	0.9	7.3	0.0	0.8	3.0	0.5	0.4	5.9
75th .....	2	670	59.1	21.6	1.1	8.8	0.0	0.4	1.8	0.6	0.4	6.2
50th .....	1	1,784	55.1	21.1	1.7	10.7	0.1	0.5	2.8	0.7	0.5	6.9
<50th.....	0	6,837	52.3	23.0	1.8	12.8	0.2	0.7	2.5	0.4	0.5	6.0



Appendix table 5-38

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**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

Field/percentile	Citations (n)	Articles (n)	U.S.	EU	Other			Other former USSR	Near East/ North Africa	Central/ South America	Sub- Saharan Africa	Other
					Western Europe	Asia-10	Other Asia					
Agricultural sciences .....	na	33,904	36.0	26.2	1.2	12.3	0.3	1.2	2.1	1.8	2.2	16.6
99th .....	≥8	265	46.2	27.1	0.9	4.1	0.1	0.0	1.0	0.9	1.1	18.4
95th .....	5-7	819	43.0	30.0	0.7	8.5	0.0	0.1	0.8	0.7	0.9	15.2
90th .....	4	928	41.9	28.4	0.8	8.7	0.1	0.1	1.9	1.4	0.5	16.2
75th .....	2-3	5,262	40.0	27.4	1.2	10.6	0.2	0.1	1.5	1.4	1.3	16.3
50th .....	1	7,819	37.2	25.8	1.3	12.5	0.2	0.2	1.8	1.9	1.6	17.5
<50th .....	0	18,811	33.6	25.7	1.3	13.2	0.4	2.1	2.5	2.0	2.9	16.4
Biological sciences .....	na	399,358	38.6	32.8	2.2	10.7	0.1	4.2	1.3	1.7	0.9	7.5
99th .....	≥33	3,985	66.2	22.8	2.3	4.6	0.0	0.1	0.7	0.1	0.1	3.2
95th .....	14-31	14,159	60.5	25.7	2.7	5.0	*	0.3	0.7	0.2	0.1	4.8
90th .....	9-13	17,991	55.1	28.6	2.6	6.1	*	0.3	0.7	0.4	0.1	6.0
75th .....	5-8	42,831	49.4	32.0	2.4	7.2	*	0.5	0.9	0.6	0.3	6.9
50th .....	2-4	103,715	41.5	34.2	2.2	9.8	0.1	1.1	1.2	1.2	0.6	8.1
<50th .....	0-1	216,677	31.8	33.4	2.0	12.6	0.2	7.1	1.6	2.3	1.3	7.7
Medical sciences .....	na	379,563	39.1	36.1	2.6	9.4	0.1	1.9	1.7	1.3	1.1	6.8
99th .....	≥21	3,487	60.7	26.3	2.2	4.5	*	*	0.6	0.2	0.1	5.4
95th .....	10-20	12,588	57.4	28.8	1.8	5.3	*	0.1	0.6	0.3	0.2	5.6
90th .....	7-9	14,000	52.8	30.9	2.2	5.6	*	0.1	0.8	0.4	0.2	7.0
75th .....	4-6	38,231	48.4	33.6	2.0	6.9	*	0.1	0.9	0.6	0.4	7.2
50th .....	2-3	72,678	43.2	35.4	2.3	8.9	*	0.2	1.3	0.8	0.6	7.2
<50th .....	0-1	238,579	34.3	37.5	2.9	10.5	0.1	3.0	2.1	1.6	1.4	6.7
Other life sciences .....	na	8,844	69.4	18.3	0.5	1.2	*	0.1	0.7	0.6	0.4	8.8
99th .....	≥8	58	88.5	6.9	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.9
95th .....	5-7	220	70.2	18.1	0.2	0.2	0.0	0.2	0.5	0.0	0.1	10.5
90th .....	3-4	540	74.2	17.3	0.0	0.7	0.0	0.1	0.2	0.0	0.3	7.1
75th .....	2	789	69.6	17.5	0.8	0.9	0.0	0.0	0.5	*	0.1	10.6
50th .....	1	1,787	65.9	21.5	0.5	0.8	*	0.2	0.6	0.3	0.1	10.0
<50th .....	0	5,450	69.8	17.6	0.6	1.4	*	0.1	0.8	0.9	0.5	8.2
Psychology .....	na	36,525	59.7	21.7	1.3	2.5	*	1.2	1.4	0.7	0.5	10.9
99th .....	≥12	307	76.7	10.7	0.7	0.0	0.0	0.0	0.4	0.3	0.1	11.1
95th .....	6-11	1,390	69.4	17.1	0.8	0.4	0.0	0.0	1.1	0.3	0.3	10.8
90th .....	5	774	66.0	21.5	0.7	0.9	0.0	*	0.3	0.5	0.1	10.0
75th .....	3-4	3,258	63.6	20.9	1.2	1.1	*	0.2	0.6	0.3	0.2	11.9
50th .....	1-2	11,469	61.0	21.4	1.3	1.9	*	0.5	1.5	0.6	0.5	11.3
<50th .....	0	19,327	57.0	22.4	1.3	3.4	*	2.0	1.7	0.9	0.6	10.6
Social sciences .....	na	56,487	54.0	25.2	1.5	4.0	0.2	1.6	1.4	1.0	1.3	9.7
99th .....	≥7	485	77.3	15.6	1.3	0.9	0.0	0.0	0.7	0.2	0.0	4.1
95th .....	4-6	1,391	72.1	17.8	0.8	1.0	0.1	*	0.8	0.2	0.7	6.5
90th .....	3	1,502	68.0	17.3	0.7	1.6	0.1	0.5	1.1	0.5	0.6	9.6
75th .....	2	3,480	63.5	20.9	1.1	1.7	0.2	0.3	1.1	0.7	1.0	9.5
50th .....	1	9,720	59.1	23.4	1.3	2.6	0.2	0.5	1.3	0.6	1.0	9.9
<50th .....	0	39,909	50.5	26.7	1.7	4.8	0.2	2.2	1.5	1.1	1.5	9.8
1996-98 articles cited by 2000 articles (%)												
All fields .....	na	1,767,041	32.4	35.4	2.5	14.9	0.1	3.8	1.7	2.0	0.7	6.7
99th .....	≥20	17,418	59.9	25.9	2.6	5.6	*	0.3	0.8	0.3	0.1	4.7
95th .....	9-19	64,946	50.8	31.6	2.5	7.2	*	0.5	0.9	0.5	0.2	5.9
90th .....	6-8	81,981	44.6	34.8	2.4	9.0	*	0.7	1.0	0.8	0.2	6.5
75th .....	3-5	255,995	38.5	36.7	2.4	11.6	*	1.1	1.1	1.3	0.4	6.9
50th .....	2	206,180	33.9	37.1	2.4	13.8	0.1	1.8	1.4	1.8	0.5	7.2
<50th .....	0-1	1,140,521	28.4	35.2	2.5	16.8	0.2	5.2	2.0	2.3	0.8	6.7
Engineering .....	na	130,082	27.1	30.8	2.2	25.4	0.1	4.3	2.1	1.6	0.4	6.1
99th .....	≥8	1,028	45.3	29.5	2.6	15.3	0.0	0.9	1.1	0.6	0.0	4.8
95th .....	4-7	4,973	36.2	33.5	2.4	18.8	*	1.2	1.1	1.0	0.1	5.6
90th .....	3	5,039	33.6	32.8	2.3	21.1	*	1.6	1.4	1.1	0.3	5.8
75th .....	2	10,871	29.6	33.9	2.3	23.1	*	2.0	1.4	1.4	0.3	6.1
50th .....	1	27,082	28.0	32.0	2.2	25.1	0.1	2.2	2.2	1.8	0.4	6.2
<50th .....	0	81,089	25.3	29.8	2.2	26.6	0.1	5.7	2.2	1.6	0.4	6.1

Appendix table 5-38

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**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

Field/percentile	Citations (n)	Articles (n)	Region/Country					Other former USSR	Near East/ North Africa	Central/ South America	Sub- Saharan Africa	Other
			U.S.	EU	Other Western Europe	Asia-10	Other Asia					
Astronomy.....	na	20,959	34.1	40.3	1.4	8.5	*	6.0	0.8	3.5	0.6	4.9
99th.....	≥23	200	53.2	35.2	0.8	4.6	0.0	0.7	0.7	1.2	0.0	3.6
95th.....	11-22	758	51.0	34.4	1.3	4.7	0.0	0.4	1.2	2.8	0.2	4.2
90th.....	8-10	734	48.9	35.2	1.6	4.8	0.0	1.1	1.0	2.3	0.4	4.8
75th.....	5-7	3,148	43.3	38.2	1.3	6.5	0.0	1.9	0.7	2.9	0.4	4.8
50th.....	2-4	4,443	37.1	42.3	1.2	6.6	0.0	3.2	0.6	3.2	0.6	5.2
<50th.....	0-1	11,676	28.1	40.9	1.5	10.3	*	9.0	0.9	3.9	0.6	4.8
Chemistry.....	na	216,747	20.3	38.7	2.6	22.0	0.1	7.4	1.9	2.0	0.4	4.6
99th.....	≥15	1,841	48.6	30.2	2.4	11.5	*	0.5	1.0	0.3	0.1	5.4
95th.....	8-14	6,481	38.2	36.2	2.9	14.5	0.0	0.8	0.9	0.5	0.1	5.8
90th.....	5-7	13,054	31.0	39.3	2.6	18.1	*	1.2	1.1	1.1	0.1	5.5
75th.....	3-4	25,733	25.4	41.6	2.8	20.2	*	1.8	1.3	1.5	0.3	5.2
50th.....	2	26,815	22.4	41.0	2.6	21.9	0.1	3.1	1.5	2.0	0.3	5.0
<50th.....	0-1	142,823	16.8	38.0	2.6	23.1	0.2	10.2	2.1	2.3	0.5	4.2
Physics.....	na	251,890	21.8	35.8	2.3	22.0	0.1	9.9	1.8	2.6	0.2	3.6
99th.....	≥15	2,241	43.6	35.5	3.1	11.4	0.0	2.1	1.1	0.5	*	2.6
95th.....	7-14	9,299	36.4	39.5	3.1	12.4	*	2.9	1.4	0.9	0.1	3.3
90th.....	5-6	9,731	31.8	40.7	2.7	14.6	0.1	3.6	1.6	1.4	0.1	3.5
75th.....	3-4	24,046	28.6	39.9	2.4	17.5	*	4.1	1.7	2.0	0.1	3.7
50th.....	1-2	78,691	22.9	37.6	2.4	21.5	0.1	7.0	1.8	2.7	0.2	3.8
<50th.....	0	127,882	17.7	33.3	2.2	24.5	0.2	13.8	1.8	2.8	0.3	3.5
Geosciences.....	na	85,824	33.7	33.6	3.4	9.9	0.1	2.7	1.4	2.2	1.1	11.8
99th.....	≥12	819	56.6	26.2	2.8	3.3	0.1	0.8	0.2	0.4	0.3	9.4
95th.....	7-11	2,827	50.1	29.9	3.2	3.5	0.1	0.7	0.3	0.7	0.3	11.2
90th.....	5-6	4,166	44.4	32.7	3.7	4.4	*	1.0	0.5	1.0	0.7	11.5
75th.....	3-4	10,603	40.9	33.7	3.2	5.9	*	1.2	0.7	1.3	0.7	12.3
50th.....	2	11,539	35.7	35.4	3.3	7.5	0.1	1.5	1.0	1.7	0.8	13.0
<50th.....	0-1	55,870	30.0	33.6	3.5	12.1	0.2	3.5	1.7	2.6	1.3	11.6
Mathematics.....	na	31,139	31.5	38.9	1.8	12.0	0.3	3.6	3.0	2.1	0.4	6.5
99th.....	≥7	220	57.6	28.6	1.7	2.6	0.0	0.7	1.9	0.9	0.0	6.0
95th.....	4-6	744	44.5	35.6	1.1	8.7	0.0	1.6	1.6	0.9	0.3	5.7
90th.....	3	981	38.6	39.9	1.3	7.9	0.0	2.2	2.7	1.5	0.4	5.6
75th.....	2	2,368	37.5	38.9	1.2	10.0	0.1	1.9	2.4	2.1	0.3	5.6
50th.....	1	6,311	32.2	41.0	1.8	10.7	0.1	2.5	2.6	2.2	0.2	6.7
<50th.....	0	20,515	29.5	38.5	1.9	13.0	0.3	4.3	3.2	2.1	0.4	6.7
Computer sciences.....	na	13,342	43.5	27.4	1.9	15.6	0.1	0.8	3.4	0.8	0.1	6.4
99th.....	≥6	111	58.5	27.9	2.1	3.5	0.0	0.0	1.8	0.5	0.0	5.7
95th.....	4-5	217	61.6	22.0	2.1	7.3	0.0	0.8	2.6	0.0	0.0	3.6
90th.....	3	357	47.7	33.6	1.6	7.2	0.0	0.8	2.0	0.4	0.0	6.6
75th.....	2	858	48.9	28.8	2.2	10.3	0.0	0.4	2.8	0.6	0.1	5.9
50th.....	1	2,586	43.1	28.2	1.5	15.4	0.1	0.6	3.3	0.7	0.2	7.0
<50th.....	0	9,213	42.3	27.0	2.0	16.8	0.1	1.0	3.5	0.8	0.1	6.3
Agricultural sciences.....	na	36,002	28.9	32.9	1.9	12.2	0.3	2.3	1.8	2.8	2.2	14.6
99th.....	≥9	310	38.7	38.0	2.0	4.8	0.0	0.4	0.6	0.7	0.5	14.5
95th.....	5-8	1,327	37.6	38.0	2.1	6.6	*	0.3	0.7	0.8	0.3	13.4
90th.....	4	1,175	34.2	39.5	1.4	8.0	*	0.1	1.2	2.0	0.8	12.8
75th.....	2-3	2,123	34.4	38.1	1.6	8.8	0.1	0.1	1.0	2.3	0.6	13.0
50th.....	1	12,607	30.4	34.1	2.0	11.7	0.3	0.4	1.7	3.0	1.7	14.8
<50th.....	0	18,460	26.2	30.6	1.8	13.8	0.5	4.2	2.2	3.0	2.9	14.8
Biological sciences.....	na	429,989	36.5	34.5	2.3	12.3	0.1	2.5	1.3	2.3	0.8	7.2
99th.....	≥32	4,132	63.3	22.7	3.0	5.5	0.0	0.1	0.9	0.1	*	4.3
95th.....	14-31	15,148	59.1	26.5	2.6	5.7	*	0.2	0.8	0.3	0.1	4.8
90th.....	9-13	20,257	52.6	30.6	2.7	6.2	*	0.3	0.9	0.6	0.2	6.0
75th.....	5-8	49,259	46.4	33.8	2.6	8.0	*	0.4	0.9	0.9	0.3	6.7
50th.....	2-4	118,078	38.6	36.1	2.3	11.0	0.1	0.9	1.1	1.8	0.6	7.7
<50th.....	0-1	223,115	29.8	35.0	2.2	15.1	0.2	4.3	1.6	3.3	1.2	7.4

Appendix table 5-38

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

Field/percentile	Citations (n)	Articles (n)	U.S.	EU	Other			Other former USSR	Near East/ North Africa	Central/ South America	Sub- Saharan Africa	Other
					Western Europe	Asia-10	Other Asia					
Medical sciences.....	na	432,954	36.0	38.3	3.0	11.3	0.1	0.5	1.7	1.5	0.8	6.7
99th .....	≥21	3,926	60.6	26.5	2.0	3.9	0.0	0.1	0.5	0.4	0.1	5.9
95th .....	10–20	15,430	52.1	32.4	2.1	5.9	*	*	0.7	0.3	0.2	6.3
90th .....	7–9	17,902	47.8	34.4	2.1	7.1	*	0.1	0.9	0.5	0.2	7.0
75th .....	4–6	47,987	43.2	36.5	2.2	8.7	*	0.1	1.0	0.8	0.3	7.1
50th .....	2–3	88,374	38.2	38.0	2.7	10.8	0.1	0.2	1.3	1.1	0.5	7.1
<50th.....	0–1	259,335	31.8	39.6	3.4	12.7	0.1	0.8	2.2	1.9	1.0	6.5
Other life sciences.....	na	14,577	60.6	22.8	0.8	1.6	*	0.1	1.0	1.5	0.4	11.0
99th .....	≥7	139	76.4	17.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	5.6
95th .....	4–6	548	61.7	23.7	0.7	0.3	0.0	0.0	0.4	0.5	0.0	12.8
90th .....	3–4	647	59.0	26.7	1.4	1.2	0.0	0.0	0.5	0.5	0.5	10.0
75th .....	2	1,444	58.2	24.9	0.8	1.6	*	0.1	0.6	1.0	0.2	12.7
50th .....	1	3,117	57.2	25.6	0.8	1.6	0.0	*	1.2	1.0	0.4	12.1
<50th.....	0	8,682	62.0	21.2	0.8	1.8	0.1	0.1	1.2	1.9	0.5	10.4
Psychology.....	na	43,264	55.8	25.0	1.5	3.2	*	1.0	1.4	0.8	0.6	10.7
99th .....	≥12	429	70.2	17.8	0.7	0.2	0.0	0.0	0.5	0.2	0.0	10.5
95th .....	7–11	1,167	67.0	19.2	1.1	0.9	0.0	0.0	1.0	0.1	0.0	10.7
90th .....	5–6	1,662	64.8	22.1	0.5	1.0	*	0.1	0.9	0.2	0.3	10.0
75th .....	3–4	4,427	60.9	24.0	1.3	1.4	*	0.1	1.1	0.7	0.2	10.3
50th .....	2	4,932	58.7	24.0	1.3	2.1	*	0.2	1.3	0.6	0.2	11.6
<50th.....	0–1	30,647	53.4	25.8	1.7	3.9	*	1.3	1.5	1.0	0.8	10.6
Social sciences.....	na	60,272	49.4	29.1	2.2	4.0	0.2	1.2	1.6	1.0	1.1	10.2
99th .....	≥8	484	69.7	22.5	0.5	1.3	0.1	0.3	0.8	0.2	0.4	4.1
95th .....	4–7	2,042	63.9	24.9	1.0	1.9	0.1	0.1	0.7	0.4	0.3	6.7
90th .....	3	2,002	60.3	26.3	1.4	1.8	*	0.2	0.9	0.7	0.6	7.7
75th .....	2	4,199	56.7	27.4	1.8	2.8	0.2	0.1	1.2	0.7	0.8	8.4
50th .....	1	11,522	52.2	28.7	2.1	3.0	0.2	0.4	1.4	0.8	0.9	10.1
<50th.....	0	40,023	46.3	29.8	2.3	4.7	0.3	1.6	1.8	1.2	1.3	10.8
2001–03 articles cited by 2005 articles (%)												
All fields.....	na	1,948,584	29.9	34.6	2.8	18.2	0.1	3.0	1.9	2.7	0.6	6.2
99th .....	≥22	18,649	54.6	29.0	2.3	7.5	*	0.3	0.8	0.5	0.1	4.8
95th .....	10–21	74,268	47.0	32.4	2.5	9.9	*	0.4	0.9	0.8	0.2	5.9
90th .....	7–9	82,762	41.7	34.3	2.4	12.0	*	0.5	1.1	1.2	0.3	6.3
75th .....	4–5	221,813	36.7	35.7	2.6	14.1	0.1	0.8	1.3	1.7	0.4	6.6
50th .....	2–3	394,110	31.4	36.1	2.7	17.0	0.1	1.4	1.6	2.5	0.5	6.7
<50th.....	0–1	1,156,982	25.8	34.2	2.9	20.6	0.2	4.3	2.2	3.2	0.8	6.0
Engineering.....	na	172,182	22.4	30.9	2.6	30.6	0.1	3.3	2.3	2.5	0.4	5.1
99th .....	≥11	1,473	42.0	28.4	2.9	20.2	0.0	0.6	1.4	0.7	0.0	3.8
95th .....	5–10	4,584	32.5	31.0	2.8	24.8	0.1	1.0	1.4	1.2	0.1	5.1
90th .....	4	7,697	28.3	32.6	2.7	26.4	*	1.5	1.5	1.9	0.1	5.0
75th .....	2–3	26,148	24.9	31.9	2.6	28.8	0.1	1.8	2.0	2.4	0.3	5.2
50th .....	1	37,208	22.0	31.3	2.6	31.1	0.1	2.3	2.2	2.7	0.4	5.2
<50th.....	0	95,072	20.5	30.3	2.5	31.7	0.1	4.4	2.5	2.6	0.4	5.0
Astronomy.....	na	25,865	32.5	40.5	1.7	9.9	*	5.2	1.0	4.1	0.6	4.5
99th .....	≥27	244	52.4	36.3	1.3	2.7	0.0	0.3	0.5	1.9	0.0	4.5
95th .....	13–26	938	53.1	34.0	1.2	4.0	0.0	0.8	1.0	1.5	*	4.2
90th .....	9–12	1,166	45.8	38.5	1.5	5.4	0.0	0.9	0.8	2.4	0.3	4.5
75th .....	5–8	3,320	43.8	38.9	1.5	5.4	0.0	1.8	0.8	3.0	0.2	4.7
50th .....	2–4	7,239	34.8	41.0	1.5	9.2	*	3.3	1.0	4.0	0.5	4.6
<50th.....	0–1	12,958	25.3	41.4	1.9	12.4	*	7.9	1.1	4.8	0.7	4.5
Chemistry.....	na	236,953	18.6	35.0	2.7	27.6	0.1	6.5	2.5	2.8	0.4	3.8
99th .....	≥20	2,135	42.3	31.1	2.3	17.8	*	0.4	0.7	0.8	*	4.6
95th .....	10–19	8,311	34.7	33.8	2.8	21.8	*	0.6	1.2	0.8	0.2	4.1
90th .....	7–9	10,639	30.1	35.5	2.5	23.3	*	0.9	1.9	1.4	0.2	4.3
75th .....	4–6	29,753	24.7	37.6	2.5	25.2	0.1	1.3	1.8	2.1	0.2	4.4
50th .....	2–3	52,418	19.7	38.5	2.6	26.8	0.1	2.4	2.2	2.9	0.3	4.5
<50th.....	0–1	133,697	14.6	33.1	2.7	29.3	0.2	10.2	2.9	3.2	0.4	3.4

Appendix table 5-38

(Page 5 of 6)

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

Field/percentile	Citations (n)	Articles (n)	U.S.	EU	Other Western Europe	Asia-10	Other Asia	Other former USSR	Near East/ North Africa	Central/ South America	Sub- Saharan Africa	Other
Physics.....	na	272,123	19.6	34.7	2.2	26.8	0.2	7.8	2.0	3.3	0.2	3.1
99th.....	≥17	2,423	38.9	33.3	2.9	17.5	*	2.0	1.4	1.0	0.1	2.9
95th.....	8-16	8,478	31.7	37.3	2.6	19.6	0.1	2.4	1.3	1.5	0.1	3.5
90th.....	5-7	13,591	27.3	38.1	2.1	22.5	0.1	3.2	1.4	2.0	0.1	3.2
75th.....	3-4	25,208	23.4	37.7	2.5	24.2	0.2	4.2	1.7	2.6	0.1	3.4
50th.....	1-2	78,084	19.1	35.6	2.2	27.7	0.2	6.6	2.0	3.3	0.2	3.3
<50th.....	0	144,339	17.5	33.2	2.1	27.8	0.2	10.0	2.2	3.8	0.3	2.9
Geosciences.....	na	100,670	30.5	33.2	3.8	13.2	0.2	3.1	1.3	3.2	1.0	10.5
99th.....	≥14	887	48.3	30.0	4.1	6.3	0.3	0.3	0.3	0.5	0.1	9.9
95th.....	8-13	3,212	43.1	31.8	4.1	7.8	0.1	0.5	0.6	1.2	0.5	10.5
90th.....	6-7	3,864	39.2	33.8	3.7	8.8	0.1	0.8	0.7	1.5	0.6	10.8
75th.....	4-5	9,291	36.3	34.8	4.2	9.9	0.1	0.9	0.7	1.9	0.7	10.5
50th.....	2-3	22,979	32.3	35.4	3.8	11.2	0.1	1.3	1.0	2.7	0.8	11.3
<50th.....	0-1	60,437	27.5	32.1	3.7	15.1	0.2	4.4	1.6	3.8	1.2	10.2
Mathematics.....	na	42,850	25.6	40.5	2.0	15.6	0.2	4.6	3.1	2.9	0.4	5.1
99th.....	≥7	297	45.9	32.7	2.3	12.3	0.0	0.3	0.6	1.2	0.2	4.5
95th.....	4-6	1,156	35.5	42.1	1.8	11.6	0.0	1.0	1.3	1.8	0.0	4.8
90th.....	3	1,342	31.3	41.6	2.2	13.3	*	2.2	2.2	2.4	*	4.9
75th.....	2	3,209	29.0	42.9	2.1	13.9	0.1	1.6	2.7	2.5	0.2	4.9
50th.....	1	9,066	27.1	41.4	1.9	15.0	0.3	3.0	2.9	3.0	0.3	5.2
<50th.....	0	27,780	23.8	39.9	2.0	16.3	0.2	5.8	3.4	3.0	0.5	5.1
Computer sciences.....	na	17,554	36.1	31.6	2.0	18.5	0.1	0.8	3.0	1.3	0.3	6.3
99th.....	≥9	154	69.3	16.6	2.6	5.8	0.0	0.0	2.2	0.2	0.0	3.2
95th.....	4-8	649	50.2	24.5	2.7	13.8	0.0	0.1	3.3	1.0	0.0	4.4
90th.....	3	588	45.5	27.9	2.4	14.8	0.0	*	4.1	0.4	0.2	4.8
75th.....	2	1,383	40.6	29.4	1.9	18.0	0.0	0.2	3.0	1.2	0.2	5.6
50th.....	1	3,583	35.0	32.4	2.3	19.2	*	0.5	2.7	1.3	0.2	6.5
<50th.....	0	11,197	34.1	32.5	1.9	19.0	0.1	1.1	3.0	1.4	0.3	6.5
Agricultural sciences.....	na	40,943	26.9	33.3	3.0	15.5	0.4	1.0	1.9	4.1	2.0	11.8
99th.....	≥11	353	39.6	34.6	2.3	8.7	0.0	0.1	1.0	2.2	1.2	10.4
95th.....	6-10	1,681	30.8	41.2	3.1	8.8	0.2	0.1	1.6	2.5	0.8	11.0
90th.....	5	1,088	28.3	42.0	3.0	9.6	0.2	0.3	1.4	3.1	0.6	11.4
75th.....	3-4	4,991	28.6	37.1	2.8	13.2	0.3	0.1	1.5	3.4	1.2	11.8
50th.....	2	5,568	27.7	36.1	3.1	14.8	0.3	0.2	1.7	3.9	1.5	10.8
<50th.....	0-1	27,262	26.0	31.2	3.1	16.8	0.5	1.5	2.1	4.4	2.4	12.1
Biological sciences.....	na	445,376	35.0	33.8	2.5	14.8	0.1	1.2	1.6	3.1	0.9	7.0
99th.....	≥32	4,338	60.2	25.8	2.6	5.9	*	0.2	1.0	0.3	*	4.0
95th.....	14-31	17,636	53.3	30.5	2.5	6.7	*	0.2	0.9	0.5	0.2	5.2
90th.....	10-13	17,815	48.8	31.7	2.5	8.4	*	0.3	0.9	0.9	0.3	6.3
75th.....	5-9	69,911	43.1	33.8	2.5	10.4	*	0.4	1.1	1.4	0.4	6.9
50th.....	3-4	74,798	37.4	35.0	2.5	13.1	0.1	0.5	1.3	2.3	0.6	7.2
<50th.....	0-2	260,878	29.5	34.0	2.6	17.5	0.2	1.8	1.9	4.2	1.2	7.2
Medical sciences.....	na	467,806	34.4	37.7	3.5	13.0	0.1	0.4	1.8	2.0	0.6	6.6
99th.....	≥23	4,635	57.1	29.8	1.7	4.5	*	0.1	0.7	0.4	0.1	5.6
95th.....	11-22	18,052	50.7	32.7	2.2	6.0	*	0.1	0.7	0.6	0.2	6.8
90th.....	8-10	18,225	46.0	34.9	2.2	7.7	*	0.1	1.0	0.8	0.2	7.1
75th.....	4-7	73,306	40.9	36.5	2.6	10.0	0.1	0.1	1.2	1.2	0.3	7.1
50th.....	2-3	104,629	35.2	37.9	3.2	12.7	0.1	0.2	1.5	1.8	0.5	6.9
<50th.....	0-1	248,959	29.7	38.7	4.1	15.0	0.1	0.6	2.2	2.5	0.7	6.3
Other life sciences.....	na	16,169	56.1	24.3	1.7	3.9	0.1	0.1	1.3	1.5	0.7	10.5
99th.....	≥9	160	78.4	14.6	0.6	1.5	0.0	0.0	0.0	0.0	0.0	4.9
95th.....	5-8	540	62.5	20.9	1.2	2.0	*	0.0	0.0	0.2	0.3	12.7
90th.....	4	437	62.9	20.0	1.0	2.8	0.0	0.0	0.2	0.2	0.3	12.5
75th.....	2-3	2,679	56.4	24.7	2.0	3.2	0.1	*	0.6	0.9	0.8	11.4
50th.....	1	3,887	51.8	27.4	1.7	4.2	0.1	*	1.3	1.5	0.8	11.2
<50th.....	0	8,466	56.8	23.3	1.6	4.2	0.1	0.1	1.7	1.9	0.6	9.8

Appendix table 5-38

**S&E articles, by field, citation percentile, and region/country of institutional author: 1995, 2000, and 2005**

Field/percentile	Citations (n)	Articles (n)	U.S.	EU	Other Western Europe	Asia-10	Other Asia	Other former USSR	Near East/ North Africa	Central/ South America	Sub- Saharan Africa	Other
Psychology .....	na	44,787	52.2	27.5	1.8	3.4	*	0.8	1.6	0.9	0.5	11.1
99th .....	≥15	409	68.4	20.9	0.8	0.3	0.0	0.0	0.7	0.3	0.1	8.5
95th .....	8-14	1,545	63.5	25.1	0.8	0.7	0.0	0.1	0.8	0.1	0.2	8.8
90th .....	6-7	1,615	57.7	26.8	1.1	1.3	0.0	0.1	1.3	0.5	0.3	11.0
75th .....	3-5	7,175	54.9	28.2	1.6	1.9	0.0	0.1	1.2	0.8	0.2	11.1
50th .....	2	5,862	53.4	27.2	1.7	2.7	*	0.2	1.6	0.7	0.3	12.2
<50th.....	0-1	28,181	50.2	27.7	2.0	4.3	*	1.2	1.8	1.1	0.7	11.0
Social sciences.....	na	65,306	46.3	31.2	2.7	5.0	0.2	1.2	1.5	1.3	1.3	9.4
99th .....	≥9	486	67.1	21.2	1.5	1.4	0.0	0.1	0.7	0.6	0.8	6.7
95th .....	5-8	1,654	60.5	27.4	1.5	1.7	0.1	*	0.4	0.7	0.9	6.8
90th .....	3-4	3,890	55.7	28.8	2.1	3.0	0.2	0.1	0.8	0.8	0.8	7.4
75th .....	2	5,531	51.1	30.8	2.6	3.1	0.2	0.2	1.1	0.9	1.3	8.8
50th .....	1	13,589	48.0	31.1	2.7	4.6	0.2	0.3	1.4	0.9	1.3	9.5
<50th.....	0	40,156	43.3	31.8	2.9	5.8	0.2	1.7	1.6	1.5	1.3	9.8

\* = value rounds to zero; na = not applicable  
EU = European Union

NOTES: Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database, rather than year of publication, and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple countries/economies, each country/economy receives fractional credit on basis of proportion of its participating institutions. See appendix table 5-33 for countries/economies included in each region. Percentiles approximate because of method of counting citations and always higher than stated. Detail may not add to total because of rounding.

SOURCES: Thomson Scientific, SCI and SSCI, <http://scientific.thomson.com/products/categories/citation/>; iPLQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-39

(Page 1 of 2)

**World share of all S&E articles and top 1% of cited articles and index of highly cited articles, by field and selected region/country:  
1995, 2000, and 2005**

(Percent)

Field/citation period	Share all articles			Share top 1% cited articles			Index of highly cited articles		
	U.S.	EU	Asia-10	U.S.	EU	Asia-10	U.S.	EU	Asia-10
<b>All fields</b>									
1995 .....	36.0	32.8	12.5	62.3	24.7	4.9	1.73	0.75	0.39
2000 .....	32.4	35.4	14.9	59.9	25.9	5.6	1.85	0.73	0.38
2005 .....	29.9	34.6	18.2	54.6	29.0	7.5	1.83	0.84	0.41
<b>Engineering</b>									
1995 .....	33.1	29.0	21.3	56.5	25.4	10.6	1.71	0.88	0.50
2000 .....	27.1	30.8	25.4	45.3	29.5	15.3	1.67	0.96	0.60
2005 .....	22.4	30.9	30.6	42.0	28.4	20.2	1.88	0.92	0.66
<b>Astronomy</b>									
1995 .....	35.5	35.1	8.4	56.4	25.4	2.3	1.59	0.72	0.28
2000 .....	34.1	40.3	8.5	53.2	35.2	4.6	1.56	0.87	0.55
2005 .....	32.5	40.5	9.9	52.4	36.3	2.7	1.61	0.90	0.28
<b>Chemistry</b>									
1995 .....	22.8	36.2	18.6	55.6	27.0	8.2	2.44	0.75	0.44
2000 .....	20.3	38.7	22.0	48.6	30.2	11.5	2.39	0.78	0.52
2005 .....	18.6	35.0	27.6	42.3	31.1	17.8	2.27	0.89	0.65
<b>Physics</b>									
1995 .....	27.5	32.5	17.6	52.8	30.0	7.7	1.92	0.92	0.44
2000 .....	21.8	35.8	22.0	43.6	35.5	11.4	2.00	0.99	0.52
2005 .....	19.6	34.7	26.8	38.9	33.3	17.5	1.98	0.96	0.65
<b>Geosciences</b>									
1995 .....	37.2	28.7	8.8	67.2	16.7	1.4	1.81	0.58	0.16
2000 .....	33.7	33.6	9.9	56.6	26.2	3.3	1.68	0.78	0.33
2005 .....	30.5	33.2	13.2	48.3	30.0	6.3	1.58	0.91	0.48
<b>Mathematics</b>									
1995 .....	38.7	34.6	9.6	56.1	28.5	3.9	1.45	0.82	0.41
2000 .....	31.5	38.9	12.0	57.6	28.6	2.6	1.83	0.74	0.22
2005 .....	25.6	40.5	15.6	45.9	32.7	12.3	1.79	0.81	0.79
<b>Computer sciences</b>									
1995 .....	53.9	22.4	11.7	72.6	12.3	4.4	1.35	0.55	0.38
2000 .....	43.5	27.4	15.6	58.5	27.9	3.5	1.34	1.02	0.23
2005 .....	36.1	31.6	18.5	69.3	16.6	5.8	1.92	0.53	0.32
<b>Agricultural sciences</b>									
1995 .....	36.0	26.2	12.3	46.2	27.1	4.1	1.28	1.04	0.33
2000 .....	28.9	32.9	12.2	38.7	38.0	4.8	1.34	1.15	0.39
2005 .....	26.9	33.3	15.5	39.6	34.6	8.7	1.47	1.04	0.56
<b>Biological sciences</b>									
1995 .....	38.6	32.8	10.7	66.2	22.8	4.6	1.72	0.69	0.43
2000 .....	36.5	34.5	12.3	63.3	22.7	5.5	1.73	0.66	0.45
2005 .....	35.0	33.8	14.8	60.2	25.8	5.9	1.72	0.76	0.40
<b>Medical sciences</b>									
1995 .....	39.1	36.1	9.4	60.7	26.3	4.5	1.55	0.73	0.48
2000 .....	36.0	38.3	11.3	60.6	26.5	3.9	1.68	0.69	0.34
2005 .....	34.4	37.7	13.0	57.1	29.8	4.5	1.66	0.79	0.35
<b>Other life sciences</b>									
1995 .....	69.4	18.3	1.2	88.5	6.9	0.0	1.28	0.38	0.00
2000 .....	60.6	22.8	1.6	76.4	17.8	0.1	1.26	0.78	0.05
2005 .....	56.1	24.3	3.9	78.4	14.6	1.5	1.40	0.60	0.38
<b>Psychology</b>									
1995 .....	59.7	21.7	2.5	76.7	10.7	0.0	1.28	0.50	0.00
2000 .....	55.8	25.0	3.2	70.2	17.8	0.2	1.26	0.71	0.05
2005 .....	52.2	27.5	3.4	68.4	20.9	0.3	1.31	0.76	0.09

Appendix table 5-39

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**World share of all S&E articles and top 1% of cited articles and index of highly cited articles, by field and selected region/country: 1995, 2000, and 2005**

(Percent)

Field/citation period	Share all articles			Share top 1% cited articles			Index of highly cited articles		
	U.S.	EU	Asia-10	U.S.	EU	Asia-10	U.S.	EU	Asia-10
Social sciences									
1995 .....	54.0	25.2	4.0	77.3	15.6	0.9	1.43	0.62	0.21
2000 .....	49.4	29.1	4.0	69.7	22.5	1.3	1.41	0.77	0.33
2005 .....	46.3	31.2	5.0	67.1	21.2	1.4	1.45	0.68	0.27

EU = European Union

NOTES: Share of all articles based on a 3-year period. Article counts from set of journals covered by Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles classified by year they entered database and assigned to region/country/economy on basis of institutional address(es) listed on article. Articles on fractional-count basis, i.e., for articles with collaborating institutions from multiple countries/economies, each country/economy receives fractional credit on basis of proportion of its participating institutions. Citation data based on year article entered database. Citation counts based on 3-year period with 2-year lag, e.g., citations for 1995 are references made in articles in 1995 data tape to articles in 1991–93 data tapes. Index of highly cited articles is share of world's top 1% cited articles divided by share of world articles in cited year window. See appendix table 5-33 for countries/economies included in EU and Asia-10.

SOURCES: Thomson Scientific, SCI and SSCI, <http://scientific.thomson.com/products/categories/citation/>; iPLQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

## U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005

Characteristic	1995–2005	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Patents granted .....	1,592,031	101,419	109,645	111,984	147,518	153,485	157,494	166,035	167,331	169,023	164,291	143,806
Patents granted to U.S. owners.....	876,005	57,951	63,395	64,079	83,847	87,071	87,944	90,489	89,183	89,747	86,036	76,263
Patents granted to U.S. nongovernment owners.....	711,370	44,038	48,742	50,221	66,052	69,389	70,887	74,329	74,154	75,329	73,022	65,207
Patents granted to U.S. universities .....	31,705	1,880	2,160	2,447	3,173	3,363	3,109	3,224	3,291	3,276	3,057	2,725
Top 200 R&D institutions in 2004 .....	30,086	1,766	2,038	2,317	3,047	3,206	2,981	3,065	3,112	3,113	2,864	2,577
Public universities												
University of California .....	4,109	213	266	277	395	437	435	402	431	439	424	390
University of Texas .....	1,009	90	88	81	97	93	90	89	93	97	101	90
University of Wisconsin .....	785	48	64	62	83	87	64	72	80	84	64	77
University of Michigan.....	577	30	25	53	50	51	69	51	47	63	67	71
University of Florida .....	536	31	36	43	53	50	66	51	42	59	41	64
State University of New York.....	464	31	37	45	51	54	54	41	55	35	37	24
Michigan State University.....	431	15	32	41	59	53	42	39	49	49	28	24
University of Minnesota.....	423	25	31	32	43	49	46	38	41	39	43	36
University of Washington.....	416	17	26	37	47	47	59	43	41	36	31	32
Georgia Institute of Technology .....	383	21	26	19	26	38	41	38	48	46	37	43
Pennsylvania State University.....	378	18	20	19	26	36	37	52	50	52	39	29
Iowa State University .....	356	37	38	36	53	45	34	29	19	27	25	13
North Carolina State University.....	343	31	26	24	26	23	24	31	33	44	42	39
University of North Carolina.....	322	21	22	39	29	43	27	36	22	29	24	30
University of Maryland .....	320	21	21	18	25	37	26	33	32	45	35	27
University of Illinois .....	317	12	16	17	21	29	26	34	31	39	58	34
University of Utah.....	306	17	32	31	37	35	20	43	29	20	24	18
University of Alabama .....	290	9	13	19	27	37	26	32	29	42	39	17
University of Pittsburgh.....	275	13	12	17	32	39	38	38	22	22	24	18
Rutgers University.....	260	20	18	21	26	31	25	21	35	24	21	18
Ohio State University.....	259	17	22	27	24	22	26	20	19	19	34	29
University of Nebraska .....	241	21	29	24	25	23	27	18	24	18	20	12
University of Iowa .....	241	17	11	14	25	30	17	38	25	31	17	16
Louisiana State University .....	241	14	16	22	38	15	21	35	26	22	15	17
Texas A&M University.....	229	16	15	14	21	23	19	25	29	19	24	24
University of Kentucky.....	226	11	14	14	21	29	25	20	32	23	17	20
University of Massachusetts.....	221	12	15	15	24	52	21	18	15	17	19	13
University of Colorado .....	213	18	16	23	30	26	19	20	17	18	14	12
Purdue University.....	204	10	12	24	22	19	11	13	23	22	23	25
University of Arkansas.....	183	5	6	8	9	31	18	28	17	26	16	19
University of South Florida .....	182	6	13	14	18	18	20	15	19	11	30	18
University of Central Florida .....	179	6	9	14	12	14	11	19	16	26	29	23
University of New Mexico.....	164	15	8	14	12	15	23	13	18	19	14	13
City University of New York.....	162	6	9	17	21	19	12	13	14	30	9	12
University of Tennessee.....	150	14	8	13	9	12	16	22	32	8	8	8
University of Virginia .....	148	10	13	13	20	15	14	18	9	21	6	9
Virginia Polytechnic Institute .....	148	6	14	17	16	21	14	9	11	13	15	12



## U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005

Characteristic	1995–2005	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
University of Georgia.....	148	10	12	11	18	10	18	18	20	12	8	11
Oregon Health Sciences University.....	145	10	13	19	13	16	22	13	14	8	11	6
University of Missouri.....	138	10	8	16	13	16	6	12	14	17	18	8
Florida State University.....	136	10	8	6	13	9	14	7	20	18	15	16
University of Connecticut.....	134	8	9	13	11	17	13	7	14	13	11	18
University of Oklahoma.....	124	11	9	16	9	15	17	20	8	10	3	6
Clemson University.....	105	8	7	9	8	2	4	7	21	17	11	11
University of Cincinnati.....	103	8	7	10	5	5	16	16	12	9	8	7
Wayne State University.....	95	9	8	8	10	10	8	12	11	5	6	8
Virginia Commonwealth University.....	89	2	4	7	6	18	18	9	9	11	4	1
University of Medicine and Dentistry of New Jersey.....	88	5	3	7	15	9	5	14	6	12	8	4
University of Kansas.....	87	2	6	3	6	11	5	9	21	9	11	4
Kansas State University.....	86	11	9	4	7	12	8	9	8	7	9	2
Temple University.....	81	11	7	9	6	5	4	6	8	12	8	5
Washington State University.....	78	4	2	5	5	10	12	13	7	7	6	7
University of Houston.....	73	8	6	4	5	5	10	8	6	13	3	5
Auburn University.....	70	2	1	3	6	9	8	8	8	5	9	11
University of Hawaii.....	69	7	6	6	6	8	10	4	6	6	4	6
University of Arizona.....	65	4	4	9	8	7	5	3	6	10	6	3
Indiana University.....	63	6	8	12	12	5	7	2	2	1	0	8
Oregon State University.....	63	6	3	7	8	3	2	8	6	5	9	6
Arizona State University.....	63	6	14	8	1	4	4	6	6	5	2	7
University of Delaware.....	63	5	5	4	6	2	3	5	9	7	10	7
Mississippi State University.....	55	2	5	3	3	5	5	5	9	5	6	7
New Jersey Institute of Technology.....	55	2	2	6	6	8	9	4	6	5	7	0
Colorado State University.....	52	1	6	2	8	5	4	4	11	5	4	2
Utah State University.....	44	8	6	2	5	5	4	2	2	4	1	5
Ohio University.....	42	5	3	2	8	3	3	2	3	7	3	3
University of Wyoming.....	42	2	1	4	7	4	0	3	6	4	6	5
Oklahoma State University.....	39	3	2	0	2	5	3	1	5	4	7	7
Medical University of South Carolina.....	38	2	1	1	5	5	6	2	5	3	3	5
North Dakota State University.....	38	5	4	5	1	4	5	4	2	3	2	3
Texas Tech University.....	38	1	0	2	2	1	2	6	13	2	4	5
University of South Carolina.....	37	0	3	4	1	4	1	5	4	8	5	2
University of Vermont.....	37	1	1	3	2	6	2	3	7	5	3	4
University of Southern Mississippi.....	34	1	1	1	1	6	5	5	1	3	3	7
University of Mississippi.....	32	2	4	2	0	3	6	2	4	3	3	3
West Virginia University.....	29	2	1	2	0	1	0	4	4	12	3	0
New Mexico State University.....	27	0	1	3	2	5	3	2	2	5	3	1
Michigan Technological University.....	27	2	3	0	0	2	3	1	3	2	5	6
Southern Illinois University.....	26	0	0	0	0	4	2	7	2	4	6	1
University of Oregon.....	23	2	4	0	4	2	1	2	2	2	2	2
Montana State University.....	21	2	3	1	1	5	2	1	2	2	1	1

## U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005

Characteristic	1995–2005	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
University of Puerto Rico .....	21	4	1	0	1	0	0	5	2	7	1	0
University of Montana .....	20	2	0	3	2	3	1	3	0	2	0	4
Medical College of Georgia.....	19	0	0	0	1	0	2	0	11	1	2	2
San Diego State University.....	19	0	1	2	1	1	1	2	3	3	2	3
University of Louisville .....	17	2	0	2	0	2	0	0	1	3	4	3
George Mason University .....	17	0	1	0	1	2	0	0	4	3	3	3
California State University .....	15	4	2	0	2	0	3	1	0	1	0	2
University of Maine .....	14	0	0	0	0	1	2	2	1	2	5	1
University of New Hampshire .....	13	0	0	1	0	0	1	3	3	0	2	3
University of Alaska.....	11	2	3	2	0	0	1	0	2	0	1	0
University of North Dakota.....	11	1	1	0	1	2	1	0	3	1	1	0
University of Nevada .....	11	0	1	0	0	1	1	2	2	1	2	1
Wright State University.....	9	0	0	2	1	1	0	0	0	3	0	2
Georgia State University.....	8	1	0	3	1	0	1	1	0	0	0	1
Old Dominion University.....	7	0	1	1	1	0	1	0	1	1	0	1
Florida International University.....	6	0	0	0	0	0	1	2	1	1	1	0
College of William and Mary.....	6	0	0	0	0	0	1	0	1	1	2	1
University of Memphis.....	3	0	1	1	0	1	0	0	0	0	0	0
Wichita State University .....	3	0	1	0	0	0	0	0	2	0	0	0
Desert Research Institute.....	3	0	0	0	0	0	0	0	0	2	0	1
Jackson State University.....	3	0	0	0	0	0	0	0	0	1	1	1
San Jose State University.....	3	0	1	1	0	1	0	0	0	0	0	0
University of Louisiana.....	2	0	0	0	0	0	0	0	0	1	0	1
South Dakota State University.....	2	0	0	2	0	0	0	0	0	0	0	0
Florida Agricultural and Mechanical University.....	1	0	0	0	0	0	0	0	1	0	0	0
Uniformed Services University of The Health Sciences.....	1	0	0	0	0	0	0	0	1	0	0	0
Private universities												
Massachusetts Institute of Technology .....	1,373	104	119	102	138	142	113	125	135	127	132	136
California Institute of Technology.....	1,012	38	24	46	93	99	103	124	110	139	135	101
Stanford University.....	876	54	55	64	79	83	103	84	104	85	75	90
Johns Hopkins University .....	747	28	27	48	79	97	72	80	81	70	94	71
Cornell University.....	552	36	52	50	65	64	49	61	35	59	40	41
Columbia University .....	521	18	33	35	55	55	51	58	46	61	52	57
University of Pennsylvania.....	485	25	45	55	69	59	31	52	45	29	32	43
Harvard University.....	377	14	32	28	49	41	26	32	48	40	41	26
Duke University.....	364	20	37	21	30	36	33	57	39	40	26	25
Washington University.....	302	21	18	22	41	50	36	37	20	22	20	15
Princeton University .....	282	12	13	16	24	30	28	39	36	31	21	32
University of Chicago .....	272	18	14	25	22	25	16	27	30	29	42	24
Yale University.....	258	16	7	20	34	28	29	29	25	28	19	23
New York University .....	248	15	19	23	23	27	26	33	21	22	25	14
Northwestern University.....	248	18	10	27	35	24	17	33	27	21	18	18
Thomas Jefferson University.....	239	14	15	25	29	26	26	36	29	21	10	8

Appendix table 5-40

**U.S. utility patent awards, by selected characteristics of patent owner: 1995–2005**

Characteristic	1995–2005	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Rockefeller University .....	238	9	8	20	35	34	42	25	32	13	15	5
University of Southern California .....	227	6	15	18	16	13	15	20	31	29	33	31
Emory University .....	212	11	12	12	35	26	20	18	28	22	17	11
Carnegie-Mellon University .....	206	10	13	9	26	27	33	12	19	25	25	7
Baylor University .....	195	7	18	18	27	22	29	15	18	16	16	9
Vanderbilt University .....	175	9	6	11	16	14	21	20	20	21	21	16
Boston University .....	167	14	16	20	19	15	16	18	14	15	10	10
Case Western Reserve University .....	159	8	6	9	15	28	18	18	22	14	10	11
University of Rochester .....	131	6	3	5	15	7	12	16	19	18	15	15
Brown University .....	128	6	6	9	18	19	12	19	7	13	8	11
Yeshiva University .....	127	3	11	6	14	10	17	17	15	11	14	9
Northeastern University .....	102	16	11	12	11	9	15	6	4	2	8	8
Rensselaer Polytechnic Institute .....	98	7	12	6	4	5	9	8	6	14	13	14
Tufts University .....	95	3	8	4	11	6	9	12	12	11	11	8
Georgetown University .....	91	6	7	8	11	8	13	8	8	12	9	1
Wake Forest University .....	82	1	6	6	6	9	11	12	6	9	13	3
Dartmouth College .....	78	3	4	2	9	8	11	7	8	9	10	7
Drexel University .....	62	5	2	2	8	7	6	7	10	5	7	3
Loma Linda University .....	57	8	5	1	6	6	4	5	5	7	7	3
University of Miami .....	55	5	5	14	3	2	3	3	6	8	3	3
Tulane University .....	55	5	7	4	9	2	6	6	7	7	2	0
Brandeis University .....	49	3	6	4	9	6	4	1	2	9	4	1
University of Dayton .....	47	4	4	2	7	7	5	5	6	2	4	1
St. Louis University .....	47	1	1	2	4	11	3	6	7	4	3	5
George Washington University .....	32	0	3	3	3	2	7	3	7	3	0	1
Syracuse University .....	31	1	2	9	7	4	3	0	2	1	1	1
Loyola University of Chicago .....	25	2	2	4	2	4	3	3	1	3	0	1
Lehigh University .....	24	1	1	0	2	2	4	3	3	4	1	3
University of Notre Dame .....	22	0	2	2	4	0	1	2	3	1	2	5
Eastern Virginia Medical School .....	19	1	4	6	3	1	1	2	0	1	0	0
Medical College of Wisconsin .....	16	4	2	2	3	0	2	0	3	0	0	0
Woods Hole Oceanographic Institution .....	10	1	2	2	2	0	0	1	0	1	1	0
Howard University .....	10	3	4	1	0	1	1	0	0	0	0	0
New York Medical College .....	9	0	1	0	2	1	1	1	1	2	0	0
Boston College .....	7	0	0	0	0	0	0	0	0	0	1	6
Hampton University .....	3	0	0	0	0	0	0	0	0	1	0	2
Rush University .....	1	0	0	0	0	0	0	0	0	1	0	0

NOTES: Data include institutions affiliated with academic institutions, such as university and alumni organizations, federally funded research and development centers, foundations, and university associations. Fewer than 200 institutions shown because data for certain institutions are for entire university system and incorporate data from various campuses. Top 200 R&D institutions ranked by sum of their patents from 1995 through 2005.

SOURCES: U.S. Patent and Trademark Office, U.S. Colleges and Universities Utility Patent Grants, Calendar Years 1969–2005 (2007); and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-41

**Academic patents awarded, by patent class: 2005**

Patent class	Patent class	Patents granted	Percentage of total	Cumulative percentage
All academic patents .....	na	2,725	100.00	na
Drug, bio-affecting and body treating compositions (includes class 514).....	424	419	15.38	15.38
Chemistry: Molecular biology and microbiology .....	435	376	13.80	29.17
Organic compounds (includes classes 532–570) .....	532	152	5.58	34.75
Surgery (includes class 600).....	128	85	3.12	37.87
Radiant energy .....	250	74	2.72	40.59
Chemistry: Natural resins or derivatives; peptides or proteins; lignins or reaction products thereof.....	530	68	2.50	43.08
Stock material or miscellaneous articles .....	428	64	2.35	45.43
Active solid-state devices (e.g., transistors, solid-state diodes).....	257	64	2.35	47.78
Synthetic resins or natural rubbers (includes classes 520–528) .....	520	54	1.98	49.76
Semiconductor device manufacturing: process .....	438	54	1.98	51.74
Multicellular living organisms and unmodified parts thereof and related processes.....	800	53	1.94	53.69
Optical waveguides .....	385	51	1.87	55.56
Measuring and testing .....	73	49	1.80	57.36
Optics: Systems and elements .....	359	48	1.76	59.12
Dp: Measuring, calibrating, or testing (data processing) .....	702	47	1.72	60.84
Optics: Measuring and testing.....	356	43	1.58	62.42
Chemistry: Analytical and immunological testing.....	436	37	1.36	63.78
Electricity: Measuring and testing .....	324	35	1.28	65.06
Image analysis .....	382	29	1.06	66.13
Chemistry: Electrical and wave energy.....	204	28	1.03	67.16
Chemistry of inorganic compounds.....	423	28	1.03	68.18
Coating processes .....	427	26	0.95	69.14
Liquid purification or separation.....	210	25	0.92	70.06
Coherent light generators .....	372	22	0.81	70.86
Surgery (instruments) .....	606	21	0.77	71.63
Chemistry: Electrical current producing apparatus, product, and process.....	429	21	0.77	72.40
Surgery (medicators and receptors).....	604	20	0.73	73.14
X-ray or gamma ray systems or devices .....	378	20	0.73	73.87
Catalyst, solid sorbent, or support therefor: product or process of making.....	502	18	0.66	74.53
Chemical apparatus and process disinfecting, deodorizing, preserving, or sterilizing.....	422	16	0.59	75.12
Surgery: Light, thermal, and electrical application.....	607	16	0.59	75.71
Electrical generator or motor structure.....	310	16	0.59	76.29
Radiation imagery chemistry: process, composition, or product thereof .....	430	16	0.59	76.88

na = not applicable

NOTES: Data include institutions affiliated with academic institutions, such as university and alumni organizations, federally funded research and development centers, foundations, and university associations.

SOURCES: U.S. Patent and Trademark Office, U.S. Colleges and Universities Utility Patent Grants, Calendar Years 1969–2005 (2007); and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 5-42

**Academic patenting and licensing activities: 1991–2005**

Activity indicator	1991 (98)	1992 (98)	1993 (117)	1994 (120)	1995 (127)	1996 (131)	1997 (132)	1998 (132)	1999 (139)	2000 (142)	2001 (139)	2002 (156)	2003 (165)	2004 (164)	2005 (158)
Millions of dollars															
Net royalties <sup>a</sup> .....	NA	NA	195.0	217.4	239.1	290.1	391.1	517.3	583.0	1,012.0	753.9	868.9	866.8	924.8	1,588.1
Gross royalties <sup>a</sup> .....	130.0	172.4	242.3	265.9	299.1	365.2	482.8	613.6	675.5	1,108.9	868.3	997.8	1,033.6	1,088.4	1,775.0
Royalties paid to others .....	NA	NA	19.5	20.8	25.6	28.6	36.2	36.7	34.5	32.7	41.0	38.8	65.5	54.4	67.8
Unreimbursed legal fees expended .....	19.3	22.2	27.8	27.7	34.4	46.5	55.5	59.6	58.0	64.2	73.4	90.1	101.3	109.2	119.1
Number															
Invention disclosures received .....	4,880	5,700	6,598	6,697	7,427	8,119	9,051	9,555	10,052	10,802	11,259	12,638	13,718	15,002	15,371
New U.S. patent applications filed.....	1,335	1,608	1,993	2,015	2,373	2,734	3,644	4,140	4,871	5,623	5,784	6,509	7,203	9,462	9,306
U.S. patents granted .....	NA	NA	1,307	1,596	1,550	1,776	2,239	2,681	3,079	3,272	3,179	3,109	3,450	3,268	2,944
Startup companies formed.....	NA	NA	NA	175	169	184	258	279	275	368	402	364	348	425	418
Revenue-generating licenses/options.....	2,210	2,809	3,413	3,560	4,272	4,958	5,659	6,006	6,663	7,562	7,715	8,490	8,976	9,543	10,251
New licenses/options executed <sup>b</sup> .....	1,079	1,461	1,737	2,049	2,142	2,209	2,707	3,078	3,295	3,569	3,300	3,660	3,855	4,087	4,201
Equity licenses/options .....	NA	NA	NA	NA	99	113	203	210	181	296	328	373	316	318	278

NA = not available

<sup>a</sup>One-year spikes in royalty data reflect extraordinary one-time payments.

<sup>b</sup>Data prior to 2004 may not be comparable with data for 2004 and beyond due to change in survey wording.

NOTES: Number of institutions reporting given in parentheses. Data from nonuniversity hospitals and medical institutes not included.

SOURCE: Association of University Technology Managers, AUTM Licensing Survey (various years).

Science and Engineering Indicators 2008



## Real GDP and real GDP per capita for selected regions/countries: Selected years, 1960–2005

Year	U.S.	EU-15	EU-25	France	Former West		Italy	Spain	UK	Japan	South Korea
					Germany	Germany					
GDP (millions 2002 PPP\$)											
1960.....	2,804,909	3,083,665	NA	497,776	700,121	NA	455,807	150,164	670,120	530,366	38,678
1965.....	3,573,130	3,961,990	NA	659,335	883,919	NA	606,278	243,779	784,421	829,639	52,466
1970.....	4,223,547	4,968,058	NA	855,685	1,080,057	NA	800,409	341,543	886,574	1,433,204	88,919
1975.....	4,819,584	5,782,347	NA	1,009,834	1,202,589	NA	916,194	473,575	985,690	1,789,608	141,946
1980.....	5,797,710	6,741,131	NA	1,175,452	1,412,149	NA	1,139,283	550,417	1,077,808	2,217,753	199,589
1981.....	5,942,404	6,748,427	NA	1,187,518	1,413,448	NA	1,144,681	553,259	1,063,761	2,288,067	211,977
1982.....	5,831,028	6,811,273	NA	1,217,376	1,400,242	NA	1,149,925	563,168	1,080,231	2,358,013	228,060
1983.....	6,075,320	6,935,898	NA	1,231,615	1,424,922	NA	1,163,933	577,405	1,118,591	2,412,772	254,284
1984.....	6,517,737	7,096,652	NA	1,249,711	1,464,972	NA	1,193,833	585,810	1,146,543	2,507,286	276,348
1985.....	6,770,480	7,267,878	NA	1,267,237	1,494,631	NA	1,227,377	597,707	1,187,001	2,617,706	294,442
1986.....	7,003,587	7,476,121	NA	1,297,316	1,529,702	NA	1,262,228	617,445	1,239,217	2,693,499	328,464
1987.....	7,249,784	7,699,038	NA	1,330,095	1,552,433	NA	1,301,313	652,591	1,298,216	2,805,519	366,298
1988.....	7,555,002	8,024,172	NA	1,388,546	1,610,235	NA	1,351,656	688,269	1,362,891	2,979,322	407,588
1989.....	7,816,311	8,562,588	9,441,624	1,444,878	1,668,470	1,923,821	1,390,613	724,609	1,392,591	3,123,261	433,610
1990.....	7,952,915	8,781,282	9,608,842	1,482,730	1,763,635	1,988,568	1,420,696	756,838	1,398,071	3,282,043	474,839
1991.....	7,937,472	8,899,311	9,648,807	1,501,370	1,852,643	2,039,420	1,442,486	776,107	1,379,003	3,392,014	519,441
1992.....	8,202,268	9,011,750	9,740,436	1,528,104	1,876,742	2,084,815	1,453,636	783,319	1,382,835	3,424,984	549,962
1993.....	8,422,988	8,982,607	9,715,105	1,511,297	1,845,376	2,068,090	1,440,724	775,239	1,416,407	3,433,464	583,695
1994.....	8,765,116	9,234,015	9,992,604	1,542,038	1,882,667	2,123,042	1,471,727	793,715	1,478,833	3,471,185	633,522
1995.....	8,987,527	9,472,336	10,271,944	1,575,995	1,911,910	2,163,180	1,513,332	815,601	1,521,125	3,540,932	691,610
1996.....	9,324,131	9,636,087	10,472,817	1,592,976	1,929,788	2,184,683	1,524,159	835,314	1,562,511	3,662,560	740,013
1997.....	9,743,492	9,897,821	10,774,006	1,628,252	1,965,676	2,224,105	1,552,958	867,630	1,611,824	3,727,436	774,430
1998.....	10,150,315	10,188,530	11,096,714	1,684,805	NA	2,269,261	1,575,304	906,397	1,664,059	3,688,413	721,347
1999.....	10,601,918	10,499,588	11,436,698	1,739,338	NA	2,314,895	1,605,630	949,414	1,714,525	3,683,414	789,777
2000.....	10,990,046	10,912,604	11,889,011	1,809,335	NA	2,389,199	1,663,142	997,358	1,783,690	3,771,274	856,799
2001.....	11,072,552	11,125,052	12,126,326	1,842,887	NA	2,418,825	1,693,004	1,033,741	1,823,359	3,778,936	889,671
2002.....	11,249,544	11,251,703	12,278,151	1,861,805	NA	2,420,258	1,698,793	1,061,696	1,859,813	3,767,491	951,684
2003.....	11,531,879	11,378,631	12,445,772	1,882,050	NA	2,415,719	1,699,424	1,092,179	1,906,647	3,816,672	981,159
2004.....	11,982,475	11,630,144	12,753,133	1,925,699	NA	2,445,786	1,717,460	1,126,014	1,966,361	3,904,530	1,027,546
2005.....	12,368,811	11,805,379	12,979,805	1,948,452	NA	2,468,054	1,716,853	1,164,487	2,002,214	4,006,992	1,068,239

## Real GDP and real GDP per capita for selected regions/countries: Selected years, 1960–2005

Year	U.S.	EU-15	EU-25	France	Former West		Italy	Spain	UK	Japan	South Korea
					Germany	Germany					
Real GDP per capita (2002 PPP\$)											
1960.....	15,525	10,314	NA	10,899	12,630	NA	9,080	4,901	12,795	5,637	1,561
1965.....	18,389	12,668	NA	13,521	15,079	NA	11,662	7,598	14,433	8,390	1,828
1970.....	20,597	15,360	NA	16,849	17,808	NA	14,916	10,082	15,936	13,735	2,758
1975.....	22,316	17,368	NA	19,141	19,450	NA	16,487	13,316	17,534	16,040	4,023
1980.....	25,459	19,907	NA	21,820	22,937	NA	20,182	14,682	19,139	18,986	5,235
1981.....	25,840	19,862	NA	21,931	22,915	NA	20,259	14,656	18,867	19,448	5,474
1982.....	25,113	20,008	NA	22,364	22,717	NA	20,340	14,827	19,174	19,906	5,799
1983.....	25,929	20,345	NA	22,536	23,199	NA	20,553	15,122	19,839	20,230	6,371
1984.....	27,577	20,782	NA	22,744	23,947	NA	21,056	15,270	20,306	20,888	6,839
1985.....	28,392	21,245	NA	22,969	24,493	NA	21,635	15,511	20,964	21,678	7,216
1986.....	29,103	21,804	NA	23,423	25,050	NA	22,248	15,952	21,819	22,170	7,970
1987.....	29,859	22,401	NA	23,910	25,418	NA	22,939	16,784	22,783	22,979	8,801
1988.....	30,834	23,267	NA	24,852	26,204	NA	23,824	17,624	23,844	24,299	9,697
1989.....	31,601	23,586	21,815	25,611	26,883	24,519	24,510	18,478	24,293	25,370	10,215
1990.....	31,795	24,040	22,092	26,134	27,763	24,971	25,037	19,233	24,317	26,567	11,077
1991.....	31,312	24,250	22,087	26,314	28,914	25,416	25,419	19,667	23,914	27,367	11,991
1992.....	31,929	24,438	22,198	26,634	28,933	25,784	25,574	19,806	23,897	27,548	12,555
1993.....	32,364	24,249	22,053	26,211	28,159	25,409	25,264	19,563	24,409	27,541	13,177
1994.....	33,272	24,837	22,610	26,630	28,587	25,994	25,739	19,997	25,404	27,766	14,147
1995.....	33,717	25,399	23,173	27,102	28,900	26,407	26,422	20,518	26,035	28,250	15,279
1996.....	34,576	25,765	23,564	27,282	29,044	26,593	26,569	20,986	26,656	29,150	16,182
1997.....	35,702	26,396	24,175	27,775	29,494	27,033	27,018	21,769	27,408	29,593	16,772
1998.....	36,761	27,106	24,922	28,621	NA	27,577	27,373	22,713	28,187	29,216	15,483
1999.....	37,960	27,863	26,484	29,422	NA	28,115	27,874	23,763	28,916	29,119	16,813
2000.....	38,925	28,875	27,462	30,470	NA	28,977	28,814	24,924	29,967	29,765	18,095
2001.....	38,848	29,352	27,937	30,891	NA	29,303	29,268	25,787	30,530	29,781	18,652
2002.....	39,105	29,609	28,222	31,069	NA	29,296	29,326	26,442	31,042	29,650	19,839
2003.....	39,718	29,871	28,543	31,273	NA	29,224	29,301	27,157	31,727	30,002	20,355
2004.....	40,892	30,463	29,186	31,870	NA	29,578	29,582	27,954	32,625	30,664	21,219
2005.....	41,824	30,858	31,098	32,123	NA	29,845	29,548	28,866	33,127	31,448	21,962

NA = not available

EU = European Union; GDP = gross domestic product; PPP = purchasing power parity; UK = United Kingdom

NOTES: Real GDP converted to U.S. dollars using 1999 PPP. EU-25 excludes Bulgaria and Romania. EU-15 includes member countries before expansion of membership on 1 May 2004. EU-15 data include former West Germany between 1960 and 1988 and unified Germany between 1989 and 2005.

SOURCE: Conference Board and Groningen Growth and Development Centre, Total Economy Database, <http://www.ggdc.net>.



Appendix table 6-2

## GDP per hours worked, by selected region/country: Selected years, 1960–2005

Year	U.S.	EU-15	EU-25	France	Former West		Italy	Spain	UK	Japan	South Korea
					Germany	Germany					
1960.....	20.84	14.40	NA	13.04	12.37	NA	10.94	6.19	12.99	5.38	NA
1965.....	24.36	19.25	NA	16.47	15.92	NA	16.29	9.50	15.07	8.03	2.86
1970.....	26.84	23.77	NA	21.44	20.71	NA	21.50	12.43	18.21	12.87	4.07
1975.....	29.76	28.64	NA	26.31	25.62	NA	25.60	17.05	21.43	16.50	4.87
1980.....	31.35	34.10	NA	31.22	29.99	NA	30.92	22.48	24.20	18.89	5.74
1981.....	32.07	34.87	NA	32.12	30.44	NA	31.22	23.60	25.11	19.47	5.98
1982.....	31.94	35.87	NA	34.41	30.78	NA	31.42	24.52	26.14	19.88	6.02
1983.....	32.69	36.82	NA	35.17	31.97	NA	31.91	25.69	27.33	20.09	6.71
1984.....	33.39	38.07	NA	35.74	33.03	NA	33.70	27.47	27.60	20.63	7.39
1985.....	33.91	38.85	NA	36.99	33.90	NA	34.02	28.56	28.09	21.54	7.59
1986.....	34.67	39.85	NA	37.91	34.61	NA	34.78	29.19	29.32	21.95	8.35
1987.....	34.95	40.56	NA	38.48	35.35	NA	35.89	29.60	30.21	22.64	8.59
1988.....	35.36	41.30	NA	39.61	36.50	NA	36.51	30.13	30.47	23.69	9.22
1989.....	35.60	33.52	32.50	40.71	37.82	33.13	37.37	30.86	30.42	24.62	9.61
1990.....	36.16	34.09	32.96	41.62	39.40	34.34	37.54	31.49	30.57	25.86	10.39
1991.....	36.60	34.45	33.19	42.11	41.02	34.11	37.55	31.91	31.05	26.66	11.09
1992.....	37.79	35.54	34.18	43.27	41.48	34.98	38.98	33.01	32.71	27.08	11.62
1993.....	37.92	36.26	34.82	43.77	42.15	35.53	39.55	34.30	34.12	27.94	12.21
1994.....	38.27	37.35	35.93	44.64	43.53	36.58	41.16	35.37	35.12	28.34	12.85
1995.....	38.30	38.03	36.66	45.12	44.88	37.51	42.38	35.48	35.61	29.11	13.57
1996.....	39.25	38.54	37.26	45.27	46.33	38.39	42.41	35.44	36.47	29.85	14.31
1997.....	39.85	39.36	38.12	46.10	47.85	39.35	42.97	35.48	37.06	30.50	14.91
1998.....	40.64	39.79	38.72	47.04	NA	39.82	43.22	35.28	37.74	30.74	15.06
1999.....	41.63	40.33	39.41	47.65	NA	40.39	43.66	35.32	38.44	31.48	15.51
2000.....	42.62	41.44	40.58	49.69	NA	41.44	44.47	35.27	39.74	32.12	16.28
2001.....	43.45	41.81	41.10	50.44	NA	42.19	44.71	35.18	40.22	32.58	16.77
2002.....	44.74	42.40	41.75	51.98	NA	42.83	44.16	35.52	41.26	33.10	17.72
2003.....	46.08	42.78	42.24	52.69	NA	43.35	43.74	35.10	42.20	33.55	18.45
2004.....	47.33	43.41	42.96	53.50	NA	43.65	44.23	34.87	43.31	34.48	19.04
2005.....	48.20	43.74	43.48	54.27	NA	44.23	44.42	34.62	43.60	35.51	19.54

NA = not available

EU = European Union; GDP = gross domestic product; PPP = purchasing power parity; UK = United Kingdom

NOTES: Real GDP converted to U.S. dollars using 1999 PPP. EU-25 excludes Bulgaria and Romania. EU-15 includes member countries before expansion of membership on 1 May 2004. EU-15 data include former West Germany between 1960 and 1988 and unified Germany between 1989 and 2005.

SOURCE: Conference Board and Groningen Growth and Development Centre, Total Economy Database, <http://www.ggdc.net>.

Appendix table 6-3

**Hourly compensation costs for production workers in manufacturing, by selected region/country: Selected years, 1975–2005**

Year	U.S.	EU-15	France	Germany	Italy	Spain	UK	Japan	South Korea
1975.....	6.16	4.80	4.50	NA	4.64	2.52	3.35	2.97	0.32
1980.....	9.63	9.40	8.90	NA	8.09	5.86	7.52	5.46	0.95
1981.....	10.62	8.39	7.99	NA	7.52	5.52	7.27	3.75	1.01
1982.....	11.43	8.08	7.82	NA	7.38	5.26	6.87	3.98	1.08
1983.....	11.84	7.87	7.71	NA	7.64	4.54	6.45	5.97	1.14
1984.....	12.27	7.39	7.26	NA	7.30	4.45	5.99	6.17	1.20
1985.....	12.71	7.61	7.48	NA	7.56	4.64	6.22	6.27	1.23
1986.....	12.99	10.30	10.22	NA	10.37	6.21	7.59	9.13	1.30
1987.....	13.30	12.69	12.20	NA	12.89	7.58	9.01	10.68	1.59
1988.....	13.61	13.73	12.85	NA	13.85	8.49	10.52	12.50	2.20
1989.....	14.04	13.53	12.55	NA	14.26	8.90	10.47	12.39	3.16
1990.....	14.81	16.58	15.36	NA	17.28	11.30	12.61	12.59	3.70
1991.....	15.52	17.19	15.52	NA	18.14	12.18	13.65	14.51	4.61
1992.....	15.95	18.85	17.31	NA	18.91	13.39	14.29	16.13	5.21
1993.....	16.37	17.57	16.46	23.89	15.38	11.49	12.48	18.86	5.63
1994.....	16.78	18.46	17.10	25.33	15.40	11.39	12.97	20.98	6.38
1995.....	17.17	21.07	19.26	30.10	15.69	12.70	13.79	23.47	7.28
1996.....	17.74	21.12	18.99	29.58	17.10	13.33	14.12	20.44	8.21
1997.....	18.20	19.50	17.10	25.96	16.06	12.07	15.68	18.98	7.85
1998.....	18.52	19.59	17.32	25.17	15.83	11.94	16.97	17.62	5.67
1999.....	18.90	19.40	17.00	24.57	15.55	11.92	17.33	20.44	7.36
2000.....	19.65	17.89	15.46	22.67	13.84	10.65	16.84	21.93	8.23
2001.....	20.52	17.88	15.65	22.47	13.61	10.78	16.85	19.35	7.72
2002.....	21.33	19.53	17.13	24.22	14.75	11.95	18.36	18.60	8.77
2003.....	22.20	23.83	21.14	29.64	18.11	15.01	21.33	20.26	9.69
2004.....	22.82	26.81	23.89	32.50	20.48	17.14	24.76	21.84	11.13
2005.....	23.65	27.52	24.63	33.00	21.05	17.78	25.66	21.76	13.56

NA = not available

EU = European Union; UK = United Kingdom

NOTES: Hourly compensation costs include direct pay and employer social insurance expenditures and other labor taxes. Hourly compensation costs computed in national currencies converted to U.S. dollars at prevailing market currency exchange rates. EU-15 includes member countries before expansion of membership on 1 May 2004.

SOURCE: Bureau of Labor Statistics, International Comparisons of Hourly Compensation Costs for Production Workers in Manufacturing (November 2006), <http://www.bls.gov/news.release/ichcc.toc.htm>, accessed 15 January 2007.

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>All knowledge-intensive services</b>											
All regions/countries/economies .....	4,736,472	4,895,556	5,076,766	5,316,990	5,569,376	5,735,270	5,915,544	6,138,517	6,377,106	6,479,814	6,676,079
United States .....	2,142,758	2,196,515	2,229,405	2,312,061	2,409,421	2,500,716	2,520,306	2,578,908	2,635,177	2,671,637	2,738,873
EU .....	1,310,847	1,371,174	1,425,791	1,497,137	1,549,293	1,606,723	1,692,380	1,726,430	1,795,572	1,837,573	1,892,124
Austria .....	29,934	30,721	31,475	32,741	33,705	35,056	36,299	37,845	38,581	39,220	40,688
Belgium .....	44,743	45,893	47,240	49,249	51,383	53,386	54,649	55,414	56,692	58,301	60,632
Bulgaria .....	3,371	3,362	3,581	3,974	3,742	3,085	3,363	2,915	3,305	3,186	1,673
Czech Republic .....	10,679	11,107	11,480	11,402	12,773	12,639	12,395	11,299	11,830	12,645	9,905
Denmark .....	30,019	31,847	32,447	33,038	34,480	33,056	33,563	33,447	34,198	35,669	35,528
Finland .....	20,271	21,288	22,528	23,059	24,024	25,012	23,128	21,604	21,599	21,076	21,942
France .....	246,048	256,724	263,981	273,597	287,178	295,859	299,912	308,492	313,962	314,931	320,202
Germany .....	254,314	261,305	269,257	279,816	289,801	306,983	382,504	403,828	423,514	432,113	452,547
Greece .....	14,348	14,480	14,711	15,036	15,753	16,195	16,580	17,307	17,937	18,203	19,173
Hungary .....	5,824	6,163	6,647	7,127	7,600	7,478	7,668	8,657	9,460	10,111	9,548
Ireland .....	7,776	7,907	7,966	8,518	8,568	10,768	11,255	11,702	12,248	12,549	13,713
Italy .....	210,977	220,934	222,224	232,264	235,152	241,477	243,554	243,321	249,699	251,049	253,857
Netherlands .....	62,637	65,067	68,235	70,505	72,839	74,578	77,512	79,187	81,604	82,332	87,279
Poland .....	16,120	17,114	17,545	17,441	17,255	19,079	19,712	24,217	24,735	27,258	27,829
Portugal .....	12,300	12,938	14,193	15,053	17,083	17,939	19,995	20,783	21,108	21,036	21,377
Romania .....	2,144	1,813	2,207	2,126	2,270	2,501	2,196	3,927	3,849	5,147	4,523
Slovakia .....	1,965	2,002	2,098	2,151	2,285	2,251	1,986	2,160	2,155	2,463	3,150
Spain .....	74,777	79,251	84,042	88,972	95,772	102,373	105,285	108,868	107,854	108,485	111,923
Sweden .....	33,641	35,289	36,799	38,412	40,125	41,210	40,761	38,452	51,832	52,909	55,079
United Kingdom .....	228,958	245,969	267,134	292,655	297,506	305,800	300,065	293,004	309,409	328,889	341,554
Asia .....	599,675	638,535	683,705	745,605	812,913	855,907	909,160	967,461	1,025,285	1,076,981	1,139,598
China .....	55,924	60,978	70,606	78,530	89,193	91,786	95,519	104,961	116,228	136,421	146,992
India .....	22,823	24,556	26,308	29,360	31,529	34,202	35,740	39,146	40,094	44,162	46,639
Indonesia .....	8,510	9,053	9,495	8,782	9,829	11,105	12,049	13,191	13,913	15,247	17,232
Japan .....	450,381	476,979	500,995	540,621	581,694	606,030	642,358	669,128	697,612	707,043	739,518
Malaysia .....	4,742	4,672	4,765	5,228	5,506	5,939	6,276	7,180	8,570	9,201	10,225
Philippines .....	4,316	4,501	4,951	5,409	6,042	6,474	6,445	6,549	6,689	6,995	7,535
Singapore .....	7,905	8,031	8,964	9,700	10,847	14,293	15,574	16,935	19,567	21,834	23,068
South Korea .....	27,727	31,034	35,638	42,133	47,778	52,524	60,010	67,150	74,562	82,444	92,936
Taiwan .....	11,957	13,140	16,006	19,231	23,527	25,228	26,378	29,252	31,940	35,992	38,371
Thailand .....	5,391	5,589	5,977	6,610	6,969	8,326	8,812	13,970	16,111	17,643	17,482
All others .....	683,193	689,332	737,866	762,186	797,750	771,923	793,697	865,718	921,072	893,623	905,484
Argentina .....	32,276	35,277	35,948	34,072	28,171	33,986	40,058	45,627	47,878	52,764	52,799
Australia .....	60,164	62,934	71,285	75,818	78,041	80,028	79,472	83,658	86,633	90,115	93,232
Brazil .....	105,089	94,249	114,958	124,911	147,353	109,452	117,773	165,590	188,233	141,618	129,840
Canada .....	118,217	124,539	130,815	134,710	136,546	140,419	143,175	145,403	147,470	152,532	156,026
Chile .....	10,603	10,943	11,235	11,500	12,362	12,190	12,986	13,741	14,195	15,036	16,100
Costa Rica .....	1,343	1,291	1,456	1,531	1,660	1,783	2,228	2,347	2,601	2,832	2,939

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Egypt .....	12,589	12,642	14,675	15,782	15,606	12,732	7,346	12,139	15,756	18,702	20,805
Iran .....	4,856	4,370	3,981	4,046	3,960	4,610	4,982	5,160	4,783	5,831	6,440
Israel .....	12,520	12,562	15,293	16,437	16,739	17,670	18,023	19,428	20,381	21,697	31,728
Mexico .....	70,916	69,503	69,250	68,533	67,724	70,167	72,471	76,681	80,031	84,078	84,782
Morocco .....	3,699	3,739	3,906	3,970	3,985	4,093	4,317	4,580	4,613	4,665	4,777
Norway .....	22,780	24,251	25,369	25,759	25,204	24,999	25,551	27,022	27,874	28,890	29,224
Russia .....	43,928	45,533	48,027	52,499	56,277	57,737	52,105	43,421	48,109	43,151	39,086
Saudi Arabia .....	28,960	28,399	25,155	21,058	25,872	25,431	28,188	29,016	29,553	24,576	24,453
South Africa .....	23,117	24,196	24,778	23,980	23,462	23,546	23,790	24,308	24,438	24,401	26,127
Switzerland .....	44,705	43,211	44,209	47,821	53,257	52,770	53,766	55,278	58,548	58,868	59,126
Tunisia .....	1,235	1,276	1,411	1,450	1,441	1,496	1,531	1,687	1,750	1,828	1,913
Turkey .....	18,217	18,849	20,316	20,289	20,630	22,641	23,438	25,001	26,910	25,373	26,425
All others .....	67,981	71,568	75,801	78,019	79,457	76,174	82,499	85,631	91,316	96,665	99,662
<b>All market-oriented knowledge-intensive services</b>											
All regions/countries/economies .....	2,918,135	3,044,800	3,150,892	3,371,524	3,569,350	3,691,014	3,803,748	3,981,225	4,158,836	4,212,989	4,352,020
United States .....	1,377,571	1,427,809	1,415,253	1,497,104	1,568,024	1,638,230	1,630,543	1,664,736	1,712,592	1,741,620	1,793,142
EU .....	731,798	779,150	815,191	872,432	914,866	961,515	1,017,468	1,033,727	1,066,644	1,090,360	1,129,705
Austria .....	15,129	15,804	16,394	17,676	18,527	19,522	20,443	21,725	22,041	22,444	23,554
Belgium .....	23,287	24,131	24,998	26,737	27,855	29,571	30,499	31,607	32,027	33,372	35,258
Bulgaria .....	1,524	1,467	1,568	1,822	1,778	1,922	1,693	999	992	1,184	920
Czech Republic .....	2,262	2,278	2,054	2,070	2,269	5,128	4,953	4,322	5,023	5,021	6,204
Denmark .....	13,495	15,364	15,730	15,529	16,989	16,049	16,195	16,069	16,175	17,136	16,556
Finland .....	8,697	9,411	10,212	10,533	11,196	11,904	10,009	8,679	9,485	9,096	9,710
France .....	140,246	149,169	156,506	165,872	176,710	181,667	183,052	187,171	188,152	188,099	191,104
Germany .....	158,035	162,991	168,278	177,310	184,768	196,563	245,670	257,722	273,160	276,026	291,092
Greece .....	6,455	6,504	6,622	6,871	7,142	7,544	7,888	8,268	8,486	8,581	9,077
Hungary .....	2,985	3,178	3,565	4,036	4,262	4,286	4,740	5,285	5,732	6,489	6,068
Ireland .....	4,584	4,770	4,853	5,357	5,250	6,447	6,789	7,062	7,255	7,438	8,316
Italy .....	123,859	130,554	131,878	139,879	143,722	150,887	152,647	151,124	156,932	158,408	159,916
Netherlands .....	32,782	34,834	36,579	38,745	40,690	41,711	43,873	44,819	46,629	47,229	51,869
Poland .....	5,796	6,092	6,251	6,519	6,496	6,015	7,254	11,560	10,751	13,760	14,303
Portugal .....	5,251	5,349	6,206	6,746	8,233	8,731	9,947	10,154	10,628	9,670	10,704
Romania .....	1,750	1,456	1,782	1,709	1,726	1,857	1,475	2,809	2,824	3,746	3,004
Slovakia .....	1,465	1,476	1,531	1,560	1,614	1,588	1,422	1,249	1,231	1,432	2,027
Spain .....	44,863	48,207	51,068	54,563	58,779	63,436	64,450	64,236	62,425	61,618	63,095
Sweden .....	18,569	19,998	21,241	22,567	23,695	24,729	24,222	22,266	23,270	24,080	25,680
United Kingdom .....	120,763	136,118	147,874	166,330	173,164	181,961	180,248	176,602	183,426	195,529	201,247
Asia .....	432,835	464,595	503,053	557,794	611,247	647,217	692,271	736,288	784,954	819,774	867,837
China .....	33,140	37,183	44,955	51,626	54,796	56,995	58,714	65,233	72,964	86,365	93,621
India .....	10,730	11,754	13,034	14,938	16,573	18,492	19,675	22,428	25,130	28,548	29,961
Indonesia .....	5,111	5,538	5,835	5,428	6,287	7,202	8,026	8,849	9,243	10,552	12,003
Japan .....	343,931	366,656	388,308	425,138	462,987	486,169	520,160	544,626	570,071	574,445	599,462

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Malaysia .....	3,061	3,402	3,430	3,830	4,080	4,462	4,816	5,597	6,857	7,311	8,044
Philippines .....	2,642	2,873	3,273	3,657	4,175	4,629	4,561	4,565	4,614	4,872	5,318
Singapore.....	7,155	7,113	7,871	8,541	9,537	10,944	11,981	13,106	15,424	17,322	18,286
South Korea .....	14,191	16,172	19,657	24,415	27,844	30,822	36,215	41,542	46,925	51,826	59,424
Taiwan .....	10,035	10,934	13,178	15,983	19,722	20,863	21,023	23,362	25,444	29,093	30,600
Thailand.....	2,839	2,972	3,513	4,239	5,245	6,639	7,099	6,979	8,282	9,441	11,117
All others.....	375,931	373,246	417,395	444,193	475,213	444,052	463,467	546,475	594,646	561,236	561,337
Argentina .....	19,575	21,154	22,086	21,536	17,772	19,659	21,976	25,288	30,773	33,951	33,965
Australia.....	34,806	36,726	43,699	47,986	49,237	50,089	49,206	52,241	53,942	56,845	58,860
Brazil .....	61,677	49,640	73,871	82,416	105,122	68,484	73,180	136,009	157,542	107,378	90,270
Canada .....	55,537	60,735	65,696	68,621	69,812	72,087	72,420	72,844	74,697	79,835	83,413
Chile .....	2,306	2,472	2,691	2,981	3,427	3,564	4,294	4,901	5,315	5,820	6,545
Costa Rica.....	1,010	954	1,015	1,086	1,163	1,232	1,216	1,287	1,366	1,461	1,519
Egypt .....	3,585	3,445	3,613	3,849	4,124	4,916	5,244	7,943	9,623	11,345	12,416
Iran .....	3,156	2,881	2,625	2,699	2,703	3,155	3,466	4,431	4,170	4,171	4,666
Israel.....	8,931	8,129	9,572	10,578	10,822	11,499	12,153	13,088	10,975	11,867	20,094
Mexico .....	27,924	28,610	28,915	28,293	26,662	28,180	30,183	33,893	37,121	40,808	41,660
Morocco.....	1,131	1,142	1,235	1,334	1,348	1,490	1,623	1,821	1,831	1,836	1,934
Norway .....	10,353	11,430	11,907	12,135	11,452	10,828	10,921	11,865	12,391	13,034	13,212
Russia.....	26,697	27,787	29,766	33,096	35,873	36,812	38,158	31,738	34,886	29,764	27,178
Saudi Arabia.....	16,736	15,113	13,015	12,954	13,017	14,564	15,588	15,525	15,299	15,432	15,478
South Africa.....	15,860	16,897	17,376	16,751	16,952	17,065	17,300	17,809	17,793	17,462	18,705
Switzerland.....	31,987	28,987	29,545	34,037	40,776	36,614	38,167	40,458	44,952	44,837	44,402
Tunisia .....	439	445	509	503	516	554	579	643	688	735	787
Turkey.....	14,623	15,074	16,032	16,250	16,641	17,899	17,990	18,896	20,184	20,013	21,011
All others.....	39,598	41,626	44,228	47,089	47,794	45,361	49,802	55,796	61,099	64,644	65,222
<b>Communication services</b>											
All regions/countries/economies .....	337,595	356,385	362,968	381,030	402,870	427,585	446,133	467,530	496,347	512,341	545,748
United States.....	152,727	161,888	156,548	162,386	173,844	182,657	187,945	197,970	214,275	221,767	232,893
EU .....	77,705	81,094	85,011	89,774	94,307	101,121	108,808	113,630	119,799	120,475	126,744
Austria .....	2,872	3,008	3,192	3,406	3,473	3,588	3,824	4,023	4,203	4,416	4,292
Belgium .....	4,248	4,299	4,500	4,684	4,800	5,127	5,232	5,228	5,437	5,509	5,824
Bulgaria .....	99	88	135	144	151	150	205	208	212	216	182
Czech Republic .....	1,040	1,083	1,009	1,059	1,005	1,096	892	662	905	887	1,468
Denmark.....	1,524	1,631	1,972	1,950	1,920	2,120	2,104	2,449	2,448	2,606	2,480
Finland.....	1,116	1,157	1,269	1,354	1,453	1,554	1,597	1,639	1,613	1,645	1,774
France.....	10,884	11,496	12,084	13,095	14,286	15,231	16,249	16,608	19,151	16,238	17,063
Germany .....	14,798	15,250	15,928	16,890	17,681	18,860	23,679	25,137	26,061	26,991	28,311
Greece .....	1,380	1,369	1,362	1,472	1,540	1,570	1,580	1,669	1,751	1,779	1,959
Hungary .....	802	823	891	893	948	903	939	894	952	944	1,058
Ireland.....	743	715	799	880	941	1,227	1,260	1,295	1,343	1,476	1,595
Italy.....	9,594	10,075	10,526	10,666	10,698	11,365	12,249	13,691	14,810	14,934	15,156

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Netherlands.....	3,487	3,636	3,719	3,891	3,903	4,160	4,327	4,543	4,416	4,522	4,733
Poland.....	737	782	846	857	863	1,050	861	739	660	854	1,611
Portugal.....	730	765	829	957	1,084	1,273	1,459	1,566	1,819	1,949	2,162
Romania.....	421	375	427	419	462	393	253	507	670	908	811
Slovakia.....	193	196	158	164	172	167	200	207	217	302	456
Spain.....	7,251	7,253	7,308	7,708	8,478	9,379	10,150	11,041	11,256	11,620	11,529
Sweden.....	2,262	2,401	2,648	2,789	2,984	3,308	3,460	3,747	3,731	3,702	4,099
United Kingdom.....	13,525	14,693	15,407	16,497	17,467	18,599	18,287	17,777	18,143	18,978	20,181
Asia.....	38,008	41,860	45,253	48,314	51,118	53,451	57,417	61,052	64,515	69,491	79,186
China.....	1,903	2,210	2,743	3,573	3,885	3,977	4,966	5,782	7,323	9,498	12,797
India.....	1,387	1,415	1,511	1,683	1,740	1,816	1,891	2,082	2,338	2,667	3,126
Indonesia.....	1,450	1,508	1,595	1,510	1,675	1,834	1,988	2,138	2,180	2,533	2,871
Japan.....	28,111	30,787	32,772	34,074	35,136	35,968	37,357	38,723	38,911	38,999	42,527
Malaysia.....	553	547	590	657	719	773	898	946	1,059	1,263	1,422
Philippines.....	351	393	418	479	542	592	643	645	659	710	816
Singapore.....	1,580	1,732	1,881	2,099	2,315	2,532	2,712	2,848	3,146	3,444	3,811
South Korea.....	1,269	1,572	1,890	2,217	2,763	3,282	3,905	4,427	5,084	6,097	6,896
Taiwan.....	1,077	1,268	1,412	1,503	1,704	1,877	2,132	2,441	2,667	2,906	3,092
Thailand.....	329	429	442	520	639	799	925	1,021	1,150	1,373	1,828
All others.....	69,155	71,543	76,157	80,556	83,601	90,356	91,963	94,878	97,758	100,609	106,925
Argentina.....	2,217	2,222	2,251	2,533	2,055	2,417	2,681	2,868	3,984	4,609	4,819
Australia.....	3,373	3,466	3,882	4,014	4,324	4,553	4,937	5,403	6,116	6,750	7,571
Brazil.....	4,673	4,685	4,953	5,378	4,848	5,819	6,635	6,767	7,560	8,546	10,204
Canada.....	10,146	10,422	10,876	11,577	12,414	13,036	13,770	14,280	13,577	13,981	14,206
Chile.....	232	248	269	305	355	370	509	645	746	829	906
Costa Rica.....	346	333	362	394	432	462	325	363	403	437	471
Egypt.....	2,357	2,225	2,405	2,601	2,897	3,713	4,159	4,603	4,455	4,646	4,700
Iran.....	181	150	145	141	140	201	267	266	284	307	266
Israel.....	1,973	2,016	2,302	2,816	2,711	2,859	2,970	3,207	3,299	3,431	3,505
Mexico.....	1,512	1,394	1,430	1,472	1,864	2,402	2,785	3,459	3,974	4,495	4,887
Morocco.....	621	607	638	662	671	710	742	871	897	917	911
Norway.....	1,239	1,366	1,499	1,636	1,669	1,746	1,754	1,922	2,062	2,174	2,157
Russia.....	12,290	12,812	14,175	15,992	17,404	18,122	15,790	13,234	11,703	10,071	10,007
Saudi Arabia.....	2,658	2,978	2,760	2,838	2,872	3,339	3,573	3,558	3,491	3,512	3,532
South Africa.....	4,236	4,747	4,783	3,923	3,837	3,911	3,950	4,421	4,330	3,910	4,620
Switzerland.....	5,044	5,116	5,476	5,876	6,213	7,265	7,266	7,472	7,409	7,401	7,562
Tunisia.....	269	258	303	327	355	359	356	407	429	454	480
Turkey.....	7,058	7,085	7,781	7,869	8,102	9,067	9,028	9,782	10,824	10,644	11,253
All others.....	8,728	9,412	9,867	10,199	10,437	10,006	10,465	11,350	12,215	13,494	14,867
Financial services											
All regions/countries/economies.....	1,136,399	1,154,187	1,223,911	1,299,939	1,365,941	1,397,212	1,442,098	1,502,133	1,595,094	1,561,393	1,571,359
United States.....	537,378	516,002	514,691	532,087	539,687	559,588	573,986	570,487	585,388	575,386	590,385

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
EU.....	287,610	303,830	314,015	325,405	331,975	343,488	352,503	346,821	364,012	365,803	366,245
Austria.....	7,768	7,853	8,051	8,596	8,712	8,956	8,851	9,518	9,512	9,337	9,659
Belgium.....	7,625	7,936	8,417	8,999	9,273	9,775	9,976	10,255	9,992	10,385	10,977
Bulgaria.....	516	470	509	635	603	655	553	293	290	362	277
Czech Republic.....	552	532	467	449	560	1,795	1,729	1,507	1,543	1,476	1,049
Denmark.....	6,445	8,292	7,712	6,878	7,864	6,084	6,158	6,106	5,856	6,204	5,802
Finland.....	4,352	4,823	5,138	5,048	5,290	5,916	4,419	3,324	4,252	3,469	3,558
France.....	47,161	48,246	50,354	51,574	54,152	52,089	50,784	50,847	51,853	51,407	50,523
Germany.....	49,164	50,672	52,725	54,928	56,626	60,133	74,725	77,203	83,743	85,329	86,759
Greece.....	2,553	2,595	2,672	2,744	2,841	3,058	3,218	3,366	3,420	3,451	3,604
Hungary.....	1,015	1,092	1,248	1,457	1,531	1,570	1,752	1,821	1,976	2,622	2,024
Ireland.....	1,091	1,066	1,118	1,327	1,246	1,503	1,786	1,952	2,103	1,854	2,851
Italy.....	59,944	63,013	59,813	63,213	63,355	67,589	67,854	64,490	67,825	68,975	65,551
Netherlands.....	15,544	15,130	16,086	17,107	17,147	15,903	16,569	16,789	18,120	17,081	18,937
Poland.....	124	129	132	139	137	121	134	111	236	819	2,333
Portugal.....	2,379	2,391	2,981	3,182	3,964	4,195	4,468	3,885	4,074	3,405	3,839
Romania.....	542	440	549	519	509	588	587	820	824	837	849
Slovakia.....	511	512	551	559	576	570	492	417	395	420	736
Spain.....	24,687	26,420	28,399	30,721	33,308	36,274	35,593	33,535	30,656	28,878	29,160
Sweden.....	6,852	8,063	8,279	8,817	8,932	9,255	7,957	5,609	7,365	6,910	7,170
United Kingdom.....	48,784	54,157	58,815	58,512	55,352	57,458	54,899	54,974	59,978	62,581	60,587
Asia.....	173,795	202,069	238,995	274,354	309,623	332,309	347,830	352,684	381,680	400,025	416,024
China.....	21,261	24,694	30,988	35,552	41,442	42,433	41,359	44,735	48,240	55,564	60,576
India.....	4,038	4,742	5,704	6,654	7,659	9,204	9,617	11,911	11,635	14,238	15,269
Indonesia.....	1,638	1,800	1,903	1,766	2,207	2,622	2,985	3,298	3,482	3,978	4,510
Japan.....	126,738	148,912	173,351	196,469	217,750	233,807	246,539	239,788	257,404	258,132	260,773
Malaysia.....	1,022	1,092	1,132	1,343	1,394	1,525	1,584	1,806	2,204	2,323	2,533
Philippines.....	851	958	1,244	1,443	1,765	2,019	1,909	1,924	1,967	2,065	2,251
Singapore.....	2,793	2,687	3,120	3,194	3,651	4,334	4,654	5,271	6,967	7,830	7,778
South Korea.....	6,950	7,987	9,895	13,080	14,985	15,864	18,725	21,835	25,179	27,471	32,221
Taiwan.....	6,754	7,417	9,399	12,043	15,186	15,871	15,585	17,225	18,565	21,488	22,259
Thailand.....	1,750	1,779	2,261	2,810	3,585	4,628	4,873	4,891	6,036	6,936	7,855
All others.....	137,617	132,286	156,210	168,093	184,655	161,827	167,779	232,141	264,014	220,179	198,705
Argentina.....	3,926	4,291	4,536	4,334	3,600	3,959	4,408	5,101	6,080	7,317	7,299
Australia.....	11,439	12,363	16,846	18,813	18,395	19,549	19,164	19,330	19,609	20,379	21,228
Brazil.....	32,991	25,184	40,203	45,863	59,207	37,076	38,753	92,588	113,759	60,893	35,778
Canada.....	24,528	27,314	29,269	29,268	28,803	29,886	30,143	31,328	32,354	35,562	36,971
Chile.....	953	1,012	1,112	1,225	1,426	1,461	1,753	1,986	2,138	2,353	2,693
Costa Rica.....	371	345	362	382	403	424	489	502	522	556	567
Egypt.....	1,186	1,179	1,171	1,212	1,191	1,167	1,052	3,230	4,993	6,476	7,458
Iran.....	373	337	306	316	318	365	394	510	508	242	447
Israel.....	2,813	2,463	2,935	3,137	3,257	3,469	3,668	3,932	3,043	3,354	6,616

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Mexico .....	7,837	7,928	8,081	7,881	8,081	8,358	8,561	9,021	9,709	10,708	11,497
Morocco.....	208	205	238	285	281	323	357	369	355	353	391
Norway .....	3,816	4,372	4,760	4,678	4,307	4,097	4,080	4,704	4,743	4,955	4,754
Russia.....	1,993	2,084	2,199	2,412	2,593	2,625	2,786	4,454	5,302	4,870	3,206
Saudi Arabia.....	5,544	4,773	4,066	4,019	4,043	4,482	4,794	4,763	4,683	4,739	4,748
South Africa .....	4,636	4,840	5,018	5,096	5,186	5,182	5,260	5,259	5,269	5,348	5,564
Switzerland.....	17,980	15,930	16,089	18,779	23,022	19,562	20,611	21,945	24,914	24,141	23,616
Tunisia .....	67	73	82	70	65	78	89	95	104	113	123
Turkey.....	3,376	3,544	3,632	3,717	3,829	3,838	3,901	3,824	3,781	3,862	3,873
All others.....	13,579	14,049	15,304	16,606	16,650	15,926	17,516	19,201	22,147	23,959	21,875
<b>Business services</b>											
All regions/countries/economies .....	1,444,141	1,534,228	1,564,013	1,690,554	1,800,538	1,866,218	1,915,517	2,011,562	2,067,396	2,139,255	2,234,914
United States.....	687,466	749,919	744,015	802,631	854,493	895,985	868,611	896,279	912,929	944,467	969,863
EU .....	366,484	394,226	416,165	457,252	488,584	516,907	556,157	573,275	582,833	604,082	636,716
Austria .....	4,489	4,943	5,151	5,674	6,342	6,978	7,768	8,184	8,326	8,691	9,604
Belgium .....	11,415	11,896	12,081	13,054	13,782	14,668	15,291	16,123	16,598	17,479	18,458
Bulgaria .....	909	910	924	1,043	1,024	1,116	935	498	490	607	461
Czech Republic .....	670	663	579	562	705	2,238	2,332	2,153	2,575	2,658	3,687
Denmark.....	5,527	5,441	6,046	6,702	7,205	7,845	7,933	7,514	7,871	8,326	8,275
Finland.....	3,229	3,431	3,804	4,131	4,453	4,433	3,992	3,716	3,620	3,982	4,377
France.....	82,201	89,428	94,068	101,203	108,272	114,348	116,018	119,717	117,148	120,454	123,517
Germany .....	94,073	97,069	99,625	105,493	110,461	117,570	147,266	155,382	163,357	163,705	176,023
Greece.....	2,522	2,540	2,588	2,655	2,761	2,916	3,090	3,233	3,315	3,351	3,514
Hungary .....	1,168	1,263	1,426	1,685	1,783	1,813	2,049	2,570	2,804	2,924	2,986
Ireland.....	2,750	2,989	2,936	3,149	3,064	3,717	3,744	3,815	3,809	4,107	3,869
Italy.....	54,321	57,466	61,539	66,000	69,669	71,932	72,544	72,943	74,298	74,499	79,209
Netherlands.....	13,750	16,069	16,774	17,746	19,640	21,647	22,978	23,487	24,092	25,625	28,199
Poland.....	4,935	5,181	5,273	5,524	5,497	4,844	6,258	10,709	9,855	12,087	10,359
Portugal .....	2,142	2,193	2,396	2,607	3,185	3,262	4,020	4,702	4,734	4,316	4,702
Romania.....	788	642	806	770	755	875	635	1,482	1,330	2,000	1,344
Slovakia .....	761	768	822	838	866	851	730	625	618	710	835
Spain .....	12,925	14,533	15,361	16,134	16,994	17,782	18,708	19,659	20,514	21,120	22,407
Sweden.....	9,455	9,534	10,314	10,960	11,779	12,166	12,804	12,910	12,174	13,469	14,411
United Kingdom.....	58,454	67,268	73,652	91,322	100,345	105,903	107,062	103,851	105,305	113,970	120,479
Asia.....	221,031	220,666	218,805	235,126	250,505	261,457	287,024	322,552	338,760	350,258	372,628
China .....	9,976	10,279	11,225	12,501	9,469	10,585	12,388	14,716	17,401	21,303	20,248
India.....	5,306	5,597	5,820	6,600	7,174	7,472	8,167	8,435	11,158	11,643	11,566
Indonesia .....	2,023	2,230	2,337	2,152	2,405	2,746	3,053	3,414	3,581	4,041	4,622
Japan.....	189,083	186,956	182,185	194,595	210,100	216,394	236,265	266,115	273,757	277,314	296,162
Malaysia .....	1,486	1,763	1,707	1,831	1,968	2,164	2,334	2,845	3,594	3,725	4,090
Philippines .....	1,440	1,522	1,611	1,735	1,868	2,017	2,009	1,995	1,988	2,097	2,250
Singapore.....	2,782	2,694	2,871	3,248	3,571	4,077	4,615	4,987	5,311	6,048	6,697



**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
South Korea .....	5,972	6,612	7,872	9,118	10,096	11,676	13,585	15,281	16,662	18,259	20,308
Taiwan .....	2,204	2,249	2,367	2,437	2,833	3,115	3,306	3,696	4,211	4,698	5,249
Thailand .....	760	763	810	909	1,021	1,211	1,301	1,067	1,097	1,131	1,434
All others .....	169,160	169,417	185,029	195,544	206,956	191,869	203,725	219,455	232,874	240,448	255,707
Argentina .....	13,432	14,641	15,299	14,669	12,118	13,283	14,887	17,319	20,709	22,025	21,847
Australia .....	19,994	20,897	22,970	25,158	26,518	25,988	25,105	27,508	28,218	29,716	30,060
Brazil .....	24,013	19,771	28,716	31,174	41,067	25,588	27,792	36,654	36,223	37,939	44,288
Canada .....	20,864	22,999	25,551	27,776	28,595	29,165	28,508	27,236	28,767	30,291	32,236
Chile .....	1,122	1,212	1,310	1,451	1,646	1,733	2,032	2,270	2,431	2,638	2,946
Costa Rica .....	292	276	290	309	329	347	401	421	440	468	481
Egypt .....	41	41	38	35	36	36	33	109	175	223	258
Iran .....	2,603	2,395	2,173	2,241	2,245	2,588	2,806	3,655	3,378	3,622	3,952
Israel .....	4,145	3,651	4,334	4,624	4,854	5,170	5,516	5,949	4,633	5,082	9,973
Mexico .....	18,574	19,287	19,404	18,940	16,717	17,421	18,836	21,412	23,438	25,605	25,275
Morocco .....	302	330	359	388	396	458	525	581	579	566	632
Norway .....	5,297	5,691	5,647	5,821	5,476	4,985	5,087	5,239	5,586	5,906	6,301
Russia .....	12,414	12,891	13,393	14,692	15,875	16,065	19,582	14,049	17,881	14,823	13,965
Saudi Arabia .....	8,534	7,362	6,189	6,097	6,102	6,743	7,221	7,205	7,124	7,181	7,198
South Africa .....	6,987	7,310	7,574	7,732	7,929	7,972	8,090	8,129	8,193	8,204	8,521
Switzerland .....	8,963	7,941	7,980	9,382	11,541	9,786	10,290	11,041	12,629	13,295	13,224
Tunisia .....	102	113	125	106	97	117	133	141	155	168	184
Turkey .....	4,189	4,445	4,619	4,665	4,710	4,994	5,061	5,291	5,579	5,508	5,885
All others .....	17,291	18,164	19,057	20,284	20,707	19,429	21,821	25,245	26,737	27,192	28,480
<b>Non-market-oriented knowledge-intensive services</b>											
All regions/countries/economies .....	1,818,337	1,850,755	1,925,874	1,945,466	2,000,027	2,044,256	2,111,796	2,157,292	2,218,270	2,266,825	2,324,059
United States .....	765,187	768,706	814,152	814,956	841,396	862,486	889,763	914,172	922,585	930,017	945,731
EU .....	579,048	592,024	610,600	624,706	634,427	645,208	674,913	692,703	728,928	747,213	762,420
Austria .....	14,804	14,918	15,081	15,065	15,178	15,533	15,855	16,120	16,540	16,776	17,133
Belgium .....	21,456	21,762	22,242	22,512	23,528	23,815	24,150	23,807	24,665	24,929	25,374
Bulgaria .....	1,847	1,894	2,013	2,152	1,964	1,163	1,670	1,916	2,313	2,002	753
Czech Republic .....	8,416	8,829	9,426	9,332	10,504	7,510	7,442	6,977	6,808	7,624	3,701
Denmark .....	16,524	16,483	16,717	17,509	17,491	17,008	17,368	17,377	18,023	18,533	18,972
Finland .....	11,574	11,877	12,316	12,527	12,828	13,108	13,119	12,926	12,114	11,979	12,232
France .....	105,802	107,555	107,475	107,724	110,468	114,192	116,860	121,321	125,810	126,832	129,098
Germany .....	96,279	98,314	100,979	102,506	105,033	110,419	136,834	146,105	150,354	156,088	161,455
Greece .....	7,893	7,976	8,089	8,165	8,611	8,651	8,692	9,039	9,451	9,622	10,096
Hungary .....	2,839	2,985	3,082	3,091	3,338	3,192	2,928	3,372	3,728	3,622	3,480
Ireland .....	3,192	3,137	3,113	3,162	3,318	4,321	4,466	4,640	4,993	5,111	5,398
Italy .....	87,118	90,380	90,346	92,385	91,430	90,590	90,906	92,197	92,767	92,642	93,941
Netherlands .....	29,855	30,232	31,656	31,760	32,148	32,868	33,638	34,368	34,975	35,103	35,410
Poland .....	10,324	11,023	11,294	10,921	10,759	13,064	12,458	12,657	13,984	13,498	13,526
Portugal .....	7,049	7,589	7,986	8,308	8,850	9,208	10,048	10,629	10,480	11,366	10,673

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Romania.....	393	357	425	417	544	645	721	1,118	1,025	1,402	1,519
Slovakia.....	501	526	567	591	671	663	564	911	925	1,031	1,124
Spain.....	29,914	31,045	32,974	34,410	36,993	38,937	40,835	44,633	45,429	46,867	48,827
Sweden.....	15,072	15,291	15,559	15,845	16,429	16,481	16,539	16,186	28,562	28,829	29,399
United Kingdom.....	108,195	109,852	119,260	126,325	124,342	123,839	119,817	116,403	125,984	133,360	140,307
Asia.....	166,840	173,939	180,652	187,811	201,666	208,690	216,889	231,174	240,330	257,207	271,762
China.....	22,784	23,795	25,651	26,904	34,396	34,791	36,805	39,728	43,264	50,056	53,371
India.....	12,093	12,802	13,273	14,422	14,956	15,710	16,065	16,717	14,963	15,614	16,678
Indonesia.....	3,399	3,515	3,660	3,354	3,542	3,903	4,023	4,342	4,669	4,695	5,228
Japan.....	106,450	110,323	112,687	115,483	118,707	119,862	122,198	124,502	127,540	132,597	140,056
Malaysia.....	1,680	1,270	1,335	1,398	1,426	1,477	1,460	1,582	1,713	1,890	2,181
Philippines.....	1,674	1,628	1,678	1,752	1,867	1,845	1,884	1,985	2,075	2,123	2,217
Singapore.....	750	919	1,093	1,159	1,310	3,350	3,592	3,829	4,143	4,512	4,781
South Korea.....	13,536	14,862	15,982	17,718	19,934	21,702	23,795	25,608	27,637	30,618	33,511
Taiwan.....	1,922	2,206	2,829	3,249	3,804	4,365	5,355	5,891	6,496	6,899	7,772
Thailand.....	2,552	2,618	2,465	2,372	1,724	1,687	1,712	6,990	7,829	8,203	5,966
All others.....	307,262	316,085	320,471	317,993	322,537	327,871	330,230	319,243	326,426	332,387	344,147
Argentina.....	12,702	14,123	13,862	12,536	10,399	14,327	18,082	20,339	17,105	18,813	18,834
Australia.....	25,357	26,208	27,586	27,832	28,804	29,939	30,266	31,417	32,691	33,271	34,372
Brazil.....	43,412	44,609	41,087	42,496	42,231	40,968	44,593	29,582	30,690	34,240	39,570
Canada.....	62,679	63,804	65,119	66,089	66,735	68,331	70,754	72,559	72,773	72,697	72,613
Chile.....	8,297	8,471	8,544	8,519	8,935	8,626	8,692	8,841	8,880	9,217	9,554
Costa Rica.....	333	337	441	445	497	551	1,012	1,061	1,235	1,371	1,421
Egypt.....	9,005	9,197	11,062	11,933	11,482	7,816	2,102	4,197	6,133	7,357	8,388
Iran.....	1,700	1,489	1,356	1,348	1,258	1,455	1,516	729	613	1,660	1,775
Israel.....	3,589	4,432	5,721	5,859	5,917	6,172	5,870	6,340	9,406	9,830	11,634
Mexico.....	42,992	40,894	40,335	40,240	41,062	41,986	42,288	42,789	42,909	43,271	43,123
Morocco.....	2,568	2,597	2,671	2,636	2,637	2,603	2,693	2,759	2,782	2,829	2,843
Norway.....	12,428	12,821	13,462	13,624	13,752	14,171	14,630	15,157	15,483	15,856	16,012
Russia.....	17,230	17,746	18,261	19,404	20,404	20,925	13,947	11,684	13,223	13,387	11,907
Saudi Arabia.....	12,223	13,286	12,140	8,104	12,855	10,867	12,599	13,490	14,254	9,144	8,975
South Africa.....	7,257	7,299	7,402	7,229	6,510	6,482	6,490	6,499	6,646	6,939	7,422
Switzerland.....	12,717	14,224	14,664	13,784	12,482	16,156	15,599	14,820	13,595	14,031	14,724
Tunisia.....	796	831	902	947	925	942	952	1,044	1,061	1,094	1,126
Turkey.....	3,593	3,775	4,284	4,038	3,989	4,742	5,447	6,104	6,726	5,360	5,414
All others.....	28,383	29,942	31,572	30,930	31,664	30,813	32,697	29,834	30,218	32,021	34,440
Education											
All regions/countries/economies.....	827,285	841,897	873,164	885,009	906,598	907,489	941,113	969,751	1,004,163	1,032,682	1,063,316
United States.....	339,175	339,175	357,272	356,677	364,418	365,609	381,686	393,595	404,909	413,841	425,154
EU.....	278,391	285,307	291,534	297,407	300,677	304,161	318,737	326,285	338,006	344,388	349,100
Austria.....	8,407	8,480	8,559	8,476	8,425	8,503	8,539	8,575	8,678	8,685	8,709
Belgium.....	11,922	11,975	11,730	11,619	12,089	12,213	12,298	12,392	12,698	12,739	12,847

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Bulgaria .....	1,158	1,188	1,267	1,363	1,251	744	1,065	1,240	1,345	1,092	478
Czech Republic .....	4,258	4,486	4,812	4,770	5,409	3,899	3,898	3,165	3,588	3,811	1,443
Denmark .....	5,681	5,760	5,811	5,984	5,911	5,727	5,923	5,934	6,373	6,685	6,467
Finland .....	4,311	4,408	4,561	4,620	4,681	4,723	4,713	4,673	4,545	4,449	4,527
France .....	52,864	52,348	51,269	49,888	50,121	50,974	51,830	54,078	54,546	54,397	57,415
Germany .....	40,843	42,320	43,935	45,677	47,480	50,673	63,444	66,363	67,716	68,709	69,665
Greece .....	3,788	3,829	3,904	3,957	4,188	4,216	4,236	4,413	4,629	4,724	4,944
Hungary .....	1,380	1,451	1,513	1,550	1,696	1,631	1,497	1,727	1,896	1,868	1,804
Ireland .....	1,451	1,446	1,450	1,506	1,602	2,116	2,162	2,330	2,489	2,557	2,593
Italy .....	50,330	53,232	52,294	53,679	53,058	52,672	52,367	52,685	52,468	51,565	51,774
Netherlands .....	10,820	10,926	11,866	11,989	12,015	12,172	12,444	12,743	12,941	13,059	12,976
Poland .....	4,559	4,857	4,997	4,822	4,777	5,851	5,712	5,800	6,391	6,600	6,477
Portugal .....	3,675	4,038	4,203	4,374	4,882	4,980	5,668	5,944	5,772	6,332	6,015
Romania .....	236	214	256	252	330	393	429	700	641	878	957
Slovakia .....	274	288	312	325	370	369	314	508	517	523	492
Spain .....	13,794	14,315	15,037	15,655	16,515	17,331	18,057	19,628	20,257	20,871	21,628
Sweden .....	5,253	5,364	5,467	5,563	5,759	5,787	5,810	5,695	10,077	10,044	10,692
United Kingdom .....	53,385	54,381	58,289	61,336	60,117	59,187	58,332	57,692	60,440	64,798	67,195
Asia .....	61,084	64,484	68,570	73,294	83,011	77,934	83,723	96,331	103,457	113,810	122,234
China .....	11,432	12,254	12,883	13,474	17,604	17,810	18,493	19,860	22,567	26,424	28,701
India .....	4,857	5,220	5,473	6,096	6,417	6,847	7,077	7,452	6,731	7,043	7,536
Indonesia .....	1,466	1,529	1,590	1,465	1,553	1,711	1,764	1,906	2,048	2,065	2,304
Japan .....	28,982	30,220	32,400	34,873	38,709	30,801	33,986	40,684	43,620	47,382	51,467
Malaysia .....	675	518	550	591	612	644	643	705	770	852	985
Philippines .....	1,148	1,133	1,111	1,166	1,222	1,201	1,207	1,264	1,312	1,345	1,401
Singapore .....	324	398	473	502	570	1,458	1,573	1,687	1,824	1,981	2,104
South Korea .....	10,161	11,038	11,741	12,663	13,949	14,962	16,176	17,341	18,515	20,274	21,979
Taiwan .....	916	1,019	1,253	1,406	1,602	1,741	2,028	2,262	2,490	2,744	3,055
Thailand .....	1,123	1,157	1,095	1,058	772	759	775	3,169	3,581	3,699	2,701
All others .....	148,636	152,932	155,788	157,632	158,492	159,784	156,968	153,540	157,792	160,644	166,828
Argentina .....	7,060	7,850	7,736	7,001	5,804	8,012	10,125	11,364	9,588	10,569	10,621
Australia .....	12,072	12,592	13,171	13,093	13,346	14,010	13,761	14,635	15,348	15,285	15,534
Brazil .....	17,435	18,189	16,941	17,963	16,796	17,856	19,646	13,186	13,805	15,444	17,881
Canada .....	30,014	30,374	30,202	30,109	29,984	30,180	31,248	31,834	31,850	31,691	31,826
Chile .....	4,058	4,158	4,196	4,180	4,380	4,229	4,243	4,322	4,334	4,489	4,661
Costa Rica .....	144	145	190	192	214	241	448	473	556	618	642
Egypt .....	8,793	8,982	10,803	11,665	11,231	7,650	2,058	4,111	6,010	7,210	8,221
Iran .....	279	247	227	226	210	245	257	124	128	511	581
Israel .....	2,041	2,520	3,256	3,347	3,390	3,551	3,391	3,681	5,499	5,758	6,824
Mexico .....	25,190	24,084	23,852	26,120	26,385	26,874	26,866	27,249	27,293	27,587	27,708
Morocco .....	1,031	1,059	1,101	1,114	1,131	1,134	1,187	1,230	1,252	1,276	1,285
Norway .....	4,865	5,068	5,292	5,279	5,370	5,433	5,475	5,627	5,603	5,715	5,692

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Russia.....	9,674	9,989	10,317	10,981	11,580	11,917	7,912	6,678	7,426	7,534	6,701
Saudi Arabia.....	5,253	5,757	5,262	3,539	5,637	4,793	5,559	5,957	6,352	4,086	4,018
South Africa.....	3,150	3,184	3,249	3,183	2,877	2,882	2,887	2,897	2,973	3,113	3,336
Switzerland.....	1,490	1,704	1,787	1,743	1,615	2,141	2,102	2,034	1,892	1,714	1,777
Tunisia.....	348	365	396	415	407	417	423	465	475	490	506
Turkey.....	1,607	1,686	1,913	1,809	1,788	2,122	2,436	2,733	3,023	2,416	2,433
All others.....	14,132	14,978	15,897	15,671	16,347	16,097	16,943	14,941	14,386	15,139	16,583
<b>Health</b>											
All regions/countries/economies.....	991,052	1,008,858	1,052,710	1,060,457	1,093,429	1,136,767	1,170,683	1,187,540	1,214,107	1,234,142	1,260,743
United States.....	426,012	429,532	456,879	458,279	476,979	496,878	508,077	520,577	517,677	516,177	520,577
EU.....	300,658	306,717	319,066	327,298	333,750	341,046	356,176	366,418	390,923	402,826	413,319
Austria.....	6,397	6,438	6,522	6,589	6,753	7,030	7,317	7,545	7,862	8,091	8,425
Belgium.....	9,534	9,786	10,512	10,893	11,439	11,602	11,852	11,415	11,967	12,189	12,527
Bulgaria.....	689	707	746	789	713	420	605	676	968	910	275
Czech Republic.....	4,159	4,344	4,614	4,563	5,094	3,611	3,544	3,813	3,220	3,813	2,258
Denmark.....	10,843	10,723	10,906	11,525	11,579	11,281	11,445	11,443	11,649	11,848	12,505
Finland.....	7,263	7,469	7,755	7,906	8,147	8,385	8,407	8,253	7,569	7,530	7,705
France.....	52,938	55,207	56,206	57,836	60,347	63,218	65,030	67,243	71,263	72,435	71,683
Germany.....	55,435	55,994	57,044	56,829	57,553	59,746	73,390	79,743	82,638	87,378	91,790
Greece.....	4,105	4,147	4,185	4,208	4,423	4,435	4,456	4,625	4,822	4,897	5,152
Hungary.....	1,458	1,534	1,569	1,540	1,642	1,561	1,431	1,645	1,833	1,754	1,676
Ireland.....	1,741	1,691	1,663	1,656	1,716	2,204	2,304	2,310	2,504	2,554	2,804
Italy.....	36,788	37,147	38,052	38,706	38,372	37,919	38,539	39,512	40,299	41,077	42,167
Netherlands.....	19,035	19,306	19,791	19,771	20,134	20,696	21,194	21,625	22,035	22,044	22,435
Poland.....	5,765	6,166	6,297	6,099	5,982	7,213	6,746	6,857	7,593	6,898	7,049
Portugal.....	3,374	3,551	3,783	3,934	3,968	4,228	4,380	4,685	4,708	5,034	4,658
Romania.....	157	142	168	165	214	252	292	418	384	524	562
Slovakia.....	227	238	255	266	301	295	250	404	408	508	631
Spain.....	16,120	16,729	17,937	18,755	20,479	21,606	22,779	25,004	25,172	25,996	27,199
Sweden.....	9,818	9,927	10,092	10,282	10,670	10,694	10,730	10,491	18,486	18,785	18,708
United Kingdom.....	54,810	55,471	60,971	64,989	64,225	64,652	61,484	58,710	65,544	68,562	73,112
Asia.....	105,757	109,455	112,082	114,518	118,655	130,756	133,167	134,842	136,873	143,397	149,527
China.....	11,352	11,542	12,768	13,430	16,792	16,980	18,313	19,868	20,698	23,632	24,669
India.....	7,236	7,582	7,800	8,326	8,539	8,863	8,987	9,265	8,232	8,571	9,142
Indonesia.....	1,933	1,986	2,070	1,889	1,989	2,192	2,260	2,436	2,621	2,630	2,924
Japan.....	77,468	80,104	80,287	80,610	79,998	89,061	88,212	83,817	83,920	85,215	88,590
Malaysia.....	1,006	752	785	807	814	833	817	877	942	1,037	1,195
Philippines.....	526	495	567	586	645	644	677	721	763	779	816
Singapore.....	426	521	619	657	740	1,892	2,020	2,142	2,320	2,531	2,678
South Korea.....	3,375	3,824	4,241	5,055	5,984	6,740	7,618	8,267	9,122	10,344	11,533
Taiwan.....	1,006	1,187	1,576	1,843	2,202	2,625	3,327	3,628	4,006	4,155	4,717
Thailand.....	1,429	1,461	1,370	1,314	952	927	937	3,822	4,248	4,503	3,264

Appendix table 6-4

(Page 11 of 11)

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
All others.....	158,626	163,154	164,683	160,361	164,044	168,087	173,263	165,703	168,634	171,743	177,320
Argentina.....	5,642	6,273	6,126	5,536	4,595	6,315	7,956	8,975	7,517	8,243	8,214
Australia.....	13,285	13,615	14,415	14,739	15,458	15,928	16,505	16,782	17,344	17,986	18,838
Brazil.....	25,977	26,419	24,146	24,533	25,435	23,112	24,947	16,395	16,885	18,796	21,689
Canada.....	32,665	33,430	34,917	35,980	36,751	38,151	39,506	40,725	40,922	41,007	40,787
Chile.....	4,238	4,313	4,348	4,338	4,555	4,397	4,449	4,519	4,546	4,728	4,894
Costa Rica.....	189	192	251	253	283	310	564	588	680	753	779
Egypt.....	211	216	259	268	251	166	44	86	123	147	167
Iran.....	1,421	1,242	1,129	1,121	1,047	1,210	1,259	605	485	1,149	1,193
Israel.....	1,548	1,912	2,466	2,512	2,527	2,621	2,478	2,659	3,908	4,072	4,810
Mexico.....	17,802	16,810	16,482	14,120	14,677	15,112	15,422	15,540	15,616	15,684	15,415
Morocco.....	1,537	1,538	1,570	1,522	1,505	1,468	1,507	1,529	1,531	1,553	1,558
Norway.....	7,563	7,753	8,170	8,345	8,382	8,738	9,155	9,530	9,880	10,141	10,319
Russia.....	7,557	7,757	7,944	8,422	8,825	9,008	6,035	5,005	5,798	5,853	5,206
Saudi Arabia.....	6,971	7,530	6,879	4,565	7,218	6,074	7,041	7,533	7,902	5,058	4,957
South Africa.....	4,107	4,116	4,153	4,046	3,633	3,599	3,602	3,602	3,673	3,826	4,087
Switzerland.....	11,227	12,519	12,877	12,041	10,867	14,015	13,498	12,786	11,703	12,318	12,948
Tunisia.....	448	466	506	532	518	525	529	579	587	603	620
Turkey.....	1,987	2,089	2,370	2,229	2,201	2,621	3,011	3,371	3,704	2,944	2,981
All others.....	14,250	14,964	15,675	15,259	15,317	14,716	15,754	14,893	15,831	16,882	17,857

EU = European Union

NOTES: Knowledge-intensive services classified by Organisation for Economic Co-operation and Development and include business, financial, communications, education, and health services. Market-oriented knowledge-intensive services exclude education and health services. Non-market-oriented knowledge-intensive services include education and health. Value-added revenue excludes purchases of domestic and imported supplies and inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

Science and Engineering Indicators 2008

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>All knowledge-intensive services</b>										
All regions/countries/economies .....	6,940,902	7,252,390	7,554,559	7,858,553	8,266,030	8,556,983	8,747,624	9,038,823	9,390,869	9,773,236
United States .....	2,823,741	2,930,295	3,054,759	3,210,672	3,354,725	3,419,955	3,476,556	3,596,674	3,752,046	3,907,680
EU .....	1,953,368	2,017,490	2,090,577	2,170,926	2,252,215	2,331,892	2,403,544	2,449,421	2,487,369	2,540,813
Austria .....	42,639	42,023	43,166	43,994	44,656	45,289	45,448	45,977	47,043	48,761
Belgium .....	62,148	63,894	65,030	68,470	69,718	71,771	72,922	74,835	77,850	78,391
Bulgaria .....	2,688	2,092	2,514	2,747	2,738	3,008	3,349	3,515	3,582	3,655
Czech Republic .....	10,132	9,694	10,400	11,096	11,954	12,317	12,544	12,968	12,957	13,075
Denmark .....	36,653	38,429	40,074	41,114	42,048	42,889	43,915	44,736	46,401	48,147
Finland .....	23,177	24,268	25,785	26,811	27,563	28,718	29,213	29,636	31,732	32,330
France .....	329,413	339,352	351,525	368,650	384,998	400,071	409,854	417,149	425,312	432,453
Germany .....	473,189	485,677	499,192	520,242	526,039	541,833	561,988	561,559	560,119	563,706
Greece .....	18,869	20,590	21,169	21,901	22,425	23,304	24,475	26,528	28,664	30,500
Hungary .....	10,098	10,031	10,372	10,492	10,197	10,756	11,307	11,617	11,925	11,645
Ireland .....	15,003	16,474	16,901	19,291	22,048	23,946	25,566	25,025	27,657	29,527
Italy .....	260,069	262,398	264,580	271,913	286,076	295,107	301,610	307,017	309,318	315,592
Netherlands .....	91,533	96,365	100,973	106,503	110,438	111,924	115,214	119,049	123,914	124,885
Poland .....	27,342	28,305	28,850	28,129	28,971	29,250	28,863	31,051	31,085	30,684
Portugal .....	21,839	22,768	24,216	25,861	26,848	28,025	28,533	29,372	30,614	30,877
Romania .....	4,795	4,572	5,074	4,972	5,038	5,619	6,137	6,084	6,469	6,622
Slovakia .....	3,004	3,845	3,837	3,838	3,692	3,759	4,069	4,206	4,457	4,530
Spain .....	111,858	117,043	121,680	123,010	126,535	134,421	137,475	141,162	147,292	152,840
Sweden .....	56,529	57,647	59,697	63,404	66,986	69,112	69,729	71,151	74,795	76,673
United Kingdom .....	352,391	372,025	395,541	408,485	433,247	450,774	471,333	486,785	486,182	505,920
Asia .....	1,226,902	1,321,377	1,382,534	1,427,661	1,575,727	1,695,109	1,739,725	1,841,571	1,944,358	2,024,060
China .....	164,775	184,781	193,994	218,169	252,871	282,538	309,875	363,252	405,487	449,410
India .....	51,094	53,994	60,469	71,524	76,882	83,104	87,648	95,786	105,283	113,843
Indonesia .....	17,646	18,371	15,153	14,532	19,708	20,866	21,932	24,143	26,639	28,706
Japan .....	787,978	839,799	890,850	895,789	994,641	1,063,743	1,052,472	1,080,769	1,117,883	1,128,539
Malaysia .....	11,808	13,525	13,367	13,886	14,687	16,402	17,846	18,982	20,361	22,536
Philippines .....	8,500	9,567	10,359	10,788	11,099	11,580	13,000	14,297	16,207	17,911
Singapore .....	25,816	29,568	29,230	30,316	32,193	33,396	33,098	33,781	35,522	36,670
South Korea .....	97,980	103,748	100,072	101,275	99,239	107,054	123,274	127,079	129,207	136,185
Taiwan .....	43,365	50,773	54,291	57,486	60,511	62,239	65,317	67,528	70,573	72,102
Thailand .....	17,939	17,251	14,749	13,896	13,895	14,186	15,261	15,953	17,196	18,158
All others .....	936,892	983,228	1,026,688	1,049,295	1,083,363	1,110,027	1,127,800	1,151,157	1,207,095	1,300,683
Argentina .....	56,691	62,323	67,600	67,909	68,991	66,439	53,862	52,492	54,072	61,118
Australia .....	97,541	102,212	109,719	115,915	119,287	122,635	126,476	132,349	136,218	140,814
Brazil .....	141,879	145,995	145,428	138,198	135,058	137,417	142,800	137,357	132,127	158,755
Canada .....	156,934	161,570	169,444	175,673	185,112	191,325	197,472	206,837	217,993	225,883
Chile .....	16,389	17,139	17,908	18,585	19,274	19,813	20,509	20,885	21,976	22,976
Costa Rica .....	3,047	3,232	3,477	3,548	3,913	4,159	4,408	4,772	4,965	5,188

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Egypt .....	22,550	21,976	22,525	23,252	24,591	26,084	25,121	24,587	29,887	31,520
Iran .....	6,742	7,605	9,849	9,652	9,898	11,239	12,201	13,721	18,049	17,959
Israel .....	31,751	33,830	36,684	38,462	41,297	41,642	40,987	41,120	44,115	45,780
Mexico .....	84,493	86,544	91,741	98,129	103,123	107,015	108,607	107,249	110,083	115,980
Morocco .....	4,709	4,785	4,947	5,132	5,340	5,460	5,633	5,896	5,542	6,851
Norway .....	30,353	32,019	33,107	34,983	35,576	36,871	37,358	38,649	40,175	41,685
Russia .....	36,598	39,078	37,102	37,590	40,187	42,961	47,146	48,984	53,488	56,566
Saudi Arabia .....	24,162	25,213	25,427	26,575	27,728	28,927	30,372	31,342	32,808	35,274
South Africa .....	27,804	28,854	28,893	29,664	29,762	31,017	29,768	31,582	35,619	41,065
Switzerland .....	61,682	64,424	68,520	68,569	74,033	72,986	77,039	78,611	82,203	83,915
Tunisia .....	2,203	2,348	2,451	2,610	2,790	2,807	2,941	3,250	3,544	4,257
Turkey .....	28,334	30,518	34,133	34,925	35,152	31,447	34,254	38,731	38,426	43,201
All others .....	103,031	113,562	117,735	119,923	122,250	129,783	130,846	132,743	145,805	161,895
<b>All market-oriented knowledge-intensive services</b>										
<b>All regions/countries/economies</b>	<b>4,578,428</b>	<b>4,825,304</b>	<b>5,062,603</b>	<b>5,318,184</b>	<b>5,606,136</b>	<b>5,826,917</b>	<b>5,975,359</b>	<b>6,193,125</b>	<b>6,495,046</b>	<b>6,773,932</b>
United States .....	1,872,224	1,971,242	2,079,220	2,218,801	2,336,950	2,383,776	2,404,373	2,482,220	2,605,684	2,728,392
EU .....	1,178,078	1,227,116	1,285,221	1,354,812	1,424,477	1,487,497	1,539,274	1,580,124	1,626,791	1,672,545
Austria .....	25,178	24,857	25,632	26,339	27,029	27,600	28,154	28,820	29,916	31,385
Belgium .....	36,608	38,260	39,821	41,955	42,734	43,874	44,681	46,031	48,505	49,311
Bulgaria .....	2,279	1,691	1,909	2,105	1,991	2,239	2,502	2,638	2,727	2,798
Czech Republic .....	6,278	6,110	7,227	7,646	8,144	8,897	8,767	8,964	9,102	9,577
Denmark .....	17,063	18,475	19,373	20,272	20,722	21,524	22,254	22,793	23,977	25,309
Finland .....	10,542	11,286	12,521	13,400	14,286	14,856	14,921	15,227	16,821	17,149
France .....	199,828	206,908	216,410	231,359	248,051	257,875	266,946	272,488	279,338	286,448
Germany .....	304,727	314,885	325,515	343,152	347,012	359,491	370,694	370,846	369,227	374,304
Greece .....	9,184	10,019	10,735	11,769	12,353	13,334	13,266	14,363	15,687	16,670
Hungary .....	6,589	6,296	6,573	6,662	6,418	6,869	7,382	7,502	7,853	7,755
Ireland .....	9,255	10,496	10,995	12,260	14,267	15,662	16,533	16,254	18,529	20,075
Italy .....	163,831	164,876	168,586	175,378	188,869	196,313	200,482	204,833	206,023	210,051
Netherlands .....	55,581	59,609	63,167	67,972	71,399	72,636	73,416	75,223	79,087	80,439
Poland .....	14,406	14,709	15,196	15,582	16,398	17,160	16,972	18,789	19,491	18,978
Portugal .....	10,913	11,797	12,799	14,167	14,845	15,713	16,130	16,756	17,734	18,019
Romania .....	3,332	3,369	3,514	3,510	3,491	4,156	4,500	4,157	5,099	4,848
Slovakia .....	1,902	2,515	2,459	2,403	2,313	2,351	2,577	2,640	2,921	3,004
Spain .....	62,932	66,939	70,028	69,870	72,902	79,900	80,894	82,859	87,346	91,260
Sweden .....	26,807	28,174	29,390	32,077	35,146	36,524	36,326	37,144	39,634	41,238
United Kingdom .....	210,842	225,845	243,371	256,936	276,105	290,523	311,878	331,796	347,773	363,925
Asia .....	940,527	1,006,723	1,045,457	1,072,792	1,143,541	1,231,943	1,283,959	1,363,333	1,444,238	1,506,100
China .....	105,762	120,934	127,948	142,918	171,954	196,053	218,835	259,245	294,045	331,180
India .....	32,925	34,629	39,030	45,981	49,718	53,519	56,561	63,246	70,436	77,005
Indonesia .....	12,341	13,632	10,791	9,817	13,565	14,594	15,729	17,121	18,975	20,995
Japan .....	644,222	677,061	709,190	711,684	742,104	790,964	796,938	819,662	848,246	855,379



**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Malaysia .....	9,380	11,031	11,006	11,499	12,261	13,712	15,444	16,576	17,900	18,695
Philippines .....	6,184	7,119	7,698	7,936	8,015	8,292	9,411	10,358	11,726	13,249
Singapore.....	20,493	23,674	23,075	23,850	25,156	25,825	26,192	26,732	28,225	29,322
South Korea .....	63,185	67,081	65,100	65,941	65,395	72,037	84,828	87,584	88,263	92,278
Taiwan .....	34,224	40,464	42,803	45,721	48,018	49,256	51,687	53,674	56,350	57,360
Thailand.....	11,811	11,100	8,815	7,445	7,356	7,690	8,335	9,135	10,071	10,637
All others.....	587,599	620,223	652,706	671,780	701,167	723,701	747,753	767,448	818,333	866,896
Argentina .....	36,538	40,134	44,320	44,589	44,992	43,403	36,469	35,234	36,907	41,371
Australia.....	61,890	65,849	72,250	77,456	79,810	81,364	85,195	89,092	91,541	94,652
Brazil .....	100,652	104,683	105,662	98,593	95,335	99,381	106,127	101,943	104,106	108,854
Canada .....	85,940	92,690	98,942	104,573	113,050	119,138	123,618	130,803	139,524	145,515
Chile .....	9,447	10,136	10,908	11,108	11,522	11,979	12,497	12,844	13,573	14,316
Costa Rica.....	1,566	1,683	1,779	1,802	2,010	2,153	2,349	2,616	2,854	3,038
Egypt .....	12,994	12,707	13,637	14,779	16,343	17,359	16,198	15,883	19,778	21,505
Iran .....	4,999	5,627	6,152	6,643	7,010	7,881	9,498	10,862	11,562	11,723
Israel.....	19,522	20,715	23,478	24,975	27,345	27,477	27,414	27,825	30,193	31,547
Mexico .....	41,156	42,151	45,812	50,613	55,694	59,280	60,769	60,476	63,833	68,107
Morocco.....	1,814	1,838	1,975	2,115	2,343	2,413	2,538	2,704	2,865	2,946
Norway .....	13,807	15,014	15,743	17,211	17,580	18,391	18,361	19,332	20,496	21,427
Russia.....	24,020	25,547	24,328	26,896	28,627	30,178	32,350	33,784	37,372	39,657
Saudi Arabia.....	16,335	16,764	16,533	17,426	18,174	19,054	20,120	20,789	21,899	23,689
South Africa.....	20,024	21,089	20,877	21,628	21,717	23,162	24,456	25,723	28,135	29,838
Switzerland.....	46,608	49,399	53,378	53,804	59,183	57,713	61,415	63,148	66,607	68,331
Tunisia .....	939	1,023	1,091	1,205	1,315	1,424	1,495	1,668	1,838	2,069
Turkey.....	22,182	23,481	24,787	24,578	26,516	25,002	25,992	27,885	30,600	33,670
All others.....	67,165	69,692	71,054	71,786	72,600	76,948	80,891	84,838	94,649	104,640
<b>Communication services</b>										
All regions/countries/economies .....	586,681	619,256	674,299	754,555	823,081	892,818	936,915	970,462	1,047,579	1,112,409
United States.....	247,215	246,554	271,783	309,129	334,688	353,637	360,908	364,103	402,882	430,093
EU .....	133,164	142,896	155,031	177,238	190,239	209,238	227,134	231,491	240,014	247,498
Austria .....	4,827	4,375	4,111	4,027	3,421	3,968	4,053	4,243	4,397	4,768
Belgium .....	5,413	4,944	5,230	5,423	5,285	5,363	5,756	6,105	6,446	6,592
Bulgaria .....	198	229	284	430	499	647	814	883	954	983
Czech Republic .....	1,444	1,696	1,680	2,054	2,631	2,929	3,188	3,368	3,274	3,322
Denmark.....	2,998	3,033	2,957	3,181	2,996	3,137	3,290	3,548	3,748	4,213
Finland.....	1,965	2,226	2,628	3,011	3,431	3,742	3,950	4,017	4,331	3,990
France.....	17,711	18,777	20,733	24,078	25,627	28,636	33,851	34,103	36,233	37,353
Germany .....	29,350	31,279	33,070	40,748	40,339	48,166	56,809	56,941	58,337	58,889
Greece .....	1,582	2,019	2,139	2,819	3,244	3,400	3,385	3,441	4,087	4,322
Hungary .....	1,199	1,393	1,576	1,617	1,518	1,618	1,690	1,720	1,719	1,800
Ireland.....	1,778	1,921	1,909	2,087	2,447	2,555	2,503	2,388	2,509	2,636
Italy.....	16,643	16,980	18,279	21,184	22,792	24,593	24,661	25,079	26,301	28,609



**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Netherlands.....	4,807	5,521	6,514	7,130	8,720	9,019	10,075	10,432	10,807	10,464
Poland.....	1,778	2,007	2,239	2,600	2,872	3,234	3,413	3,637	3,765	3,822
Portugal.....	2,300	2,379	2,434	2,680	2,715	2,963	3,065	3,098	3,229	3,295
Romania.....	1,003	1,076	1,195	1,187	1,184	1,266	1,282	1,278	1,359	767
Slovakia.....	566	778	722	545	534	559	522	455	468	464
Spain.....	12,135	13,657	14,152	13,551	13,242	14,479	15,049	15,535	16,048	16,817
Sweden.....	4,248	4,558	4,874	5,080	5,559	5,555	5,879	6,070	6,198	6,642
United Kingdom.....	21,220	24,049	28,303	33,806	41,185	43,409	43,901	45,152	45,804	47,750
Asia.....	95,146	111,770	121,913	135,875	158,201	184,566	197,841	214,250	234,327	251,349
China.....	15,764	19,710	21,640	25,320	34,730	41,757	48,188	58,445	68,793	80,372
India.....	3,669	3,994	4,786	6,077	7,071	9,062	10,725	13,382	17,043	19,819
Indonesia.....	3,143	3,634	3,546	3,500	4,034	4,452	4,986	5,725	6,741	7,969
Japan.....	52,079	61,679	68,063	74,103	81,690	92,676	93,626	94,750	96,850	96,865
Malaysia.....	1,638	1,963	2,091	2,032	2,469	2,848	2,942	3,229	3,512	3,677
Philippines.....	938	1,098	1,351	1,525	1,759	2,178	2,722	3,099	3,633	4,118
Singapore.....	4,123	4,461	4,785	5,193	5,582	5,749	6,111	6,081	6,627	5,982
South Korea.....	8,092	9,101	8,742	9,699	10,810	14,915	17,012	17,446	18,470	19,406
Taiwan.....	3,572	3,911	4,897	6,283	7,754	8,477	8,936	9,422	9,784	10,127
Thailand.....	2,127	2,219	2,012	2,142	2,302	2,453	2,592	2,673	2,874	3,014
All others.....	111,155	118,037	125,573	132,314	139,954	145,376	151,032	160,618	170,357	183,469
Argentina.....	5,340	6,458	7,781	8,017	7,793	7,759	5,784	6,048	7,237	8,834
Australia.....	8,178	9,074	9,992	10,958	11,152	11,080	11,850	12,997	12,908	13,016
Brazil.....	10,486	11,391	12,598	12,682	14,659	14,669	15,040	17,241	16,884	18,385
Canada.....	14,344	14,414	14,843	16,900	18,197	19,417	20,798	21,303	21,942	23,283
Chile.....	931	1,064	1,311	1,516	1,458	1,583	1,773	1,767	1,861	2,197
Costa Rica.....	495	551	585	572	637	667	778	902	1,010	1,112
Egypt.....	4,086	4,012	4,029	4,208	4,524	4,761	5,173	5,259	5,349	6,052
Iran.....	279	377	388	340	661	715	773	893	998	1,103
Israel.....	3,617	3,835	4,086	4,173	4,195	4,172	4,152	4,418	4,850	5,147
Mexico.....	5,566	6,064	6,815	7,828	8,797	9,895	10,377	11,318	12,456	13,514
Morocco.....	917	936	1,022	1,103	1,222	1,244	1,300	1,341	1,408	1,447
Norway.....	2,159	2,518	2,722	3,058	2,574	2,854	3,335	3,433	3,472	3,405
Russia.....	9,580	9,376	9,090	10,155	10,988	11,564	12,211	13,325	14,965	14,583
Saudi Arabia.....	3,619	3,720	3,778	3,887	4,054	4,389	4,697	4,913	5,309	5,835
South Africa.....	4,953	5,313	5,543	5,793	6,083	6,314	6,763	7,171	7,524	7,933
Switzerland.....	7,810	7,601	7,965	7,496	7,661	7,847	8,453	8,658	8,821	9,329
Tunisia.....	572	634	686	748	805	913	959	1,099	1,237	1,442
Turkey.....	12,118	13,009	13,704	13,547	14,733	13,959	14,660	15,943	17,366	19,432
All others.....	16,105	17,691	18,638	19,331	19,761	21,574	22,153	22,588	24,761	27,418
Financial services										
All regions/countries/economies.....	1,609,634	1,680,202	1,725,274	1,773,752	1,857,967	1,936,936	2,016,644	2,104,658	2,190,458	2,279,419
United States.....	593,687	627,187	651,587	686,489	740,489	773,793	787,694	815,496	833,793	856,295

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EU .....	374,244	376,227	379,517	378,372	375,765	377,016	400,839	415,004	420,004	434,013
Austria .....	10,261	9,625	9,777	9,505	9,576	8,459	8,265	8,146	8,634	9,236
Belgium .....	11,905	12,424	12,568	13,331	12,623	12,119	13,272	12,967	13,338	13,557
Bulgaria .....	783	371	473	540	498	539	583	586	614	632
Czech Republic .....	1,285	1,178	1,991	1,761	1,319	1,667	1,475	1,473	1,591	1,621
Denmark .....	6,035	6,309	6,967	6,810	6,958	7,078	7,919	8,475	8,621	8,976
Finland .....	3,722	3,769	4,157	4,039	4,120	3,804	3,472	3,255	3,424	3,431
France .....	52,188	53,547	54,601	55,707	60,942	60,287	61,268	60,044	59,854	61,050
Germany .....	89,854	91,189	86,182	89,690	75,448	70,553	75,024	71,483	59,615	60,536
Greece .....	4,019	4,157	4,555	5,028	5,717	6,297	5,837	6,876	7,372	7,830
Hungary .....	2,062	1,889	1,748	1,713	1,440	1,579	1,907	2,174	2,423	2,390
Ireland .....	3,137	3,416	3,140	3,318	4,006	4,645	5,027	4,893	5,506	5,953
Italy .....	64,767	59,132	58,617	57,297	60,622	61,408	59,167	59,243	60,275	61,197
Netherlands .....	19,720	20,459	20,486	22,018	21,578	22,224	21,449	23,533	24,788	25,233
Poland .....	2,069	2,058	2,385	2,891	3,291	3,432	2,248	2,666	2,959	909
Portugal .....	3,770	4,274	4,877	5,458	6,001	6,523	6,848	7,599	8,159	8,261
Romania .....	728	564	517	520	483	504	527	435	480	525
Slovakia .....	606	684	695	725	673	661	909	1,027	1,054	970
Spain .....	27,240	28,297	29,325	27,549	27,596	30,429	30,617	31,753	33,623	35,108
Sweden .....	7,313	7,367	7,054	7,229	8,295	8,221	8,837	8,931	9,769	10,054
United Kingdom .....	62,781	65,520	69,405	63,243	64,576	66,587	86,188	99,445	107,905	116,546
Asia .....	437,922	464,509	469,304	481,826	505,251	541,269	565,466	606,042	644,748	681,537
China .....	67,422	74,711	79,284	89,511	105,294	117,882	127,265	151,172	172,743	192,471
India .....	16,822	17,526	20,323	21,713	23,523	24,024	24,575	26,751	28,095	29,231
Indonesia .....	4,384	4,704	3,018	2,526	3,805	4,126	4,307	4,552	4,830	5,041
Japan .....	269,395	279,311	280,597	281,866	288,681	306,765	309,728	319,406	332,034	342,825
Malaysia .....	2,953	3,433	3,389	3,687	3,910	4,467	5,161	5,557	6,041	6,267
Philippines .....	2,722	3,214	3,380	3,407	3,373	3,348	3,254	3,191	3,288	3,755
Singapore .....	8,448	10,603	9,672	9,805	9,989	10,637	10,269	10,947	11,697	12,768
South Korea .....	32,810	33,694	33,581	33,872	31,177	34,125	42,612	44,002	42,999	45,498
Taiwan .....	24,737	30,023	30,898	31,967	32,266	32,559	34,475	35,899	37,773	37,991
Thailand .....	8,229	7,291	5,163	3,474	3,233	3,335	3,819	4,565	5,250	5,689
All others .....	203,781	212,279	224,866	227,064	236,462	244,859	262,644	268,116	291,914	307,574
Argentina .....	8,267	9,312	11,032	11,203	11,524	10,652	8,395	6,813	6,294	7,354
Australia .....	21,697	22,374	24,321	26,127	26,012	26,202	28,672	29,583	31,835	31,689
Brazil .....	37,146	36,439	36,698	32,592	29,166	35,266	40,797	37,140	38,112	39,637
Canada .....	38,136	42,038	43,711	44,168	47,516	49,823	51,011	53,900	58,453	60,924
Chile .....	3,454	3,717	3,932	3,842	4,018	4,181	4,295	4,407	4,772	5,118
Costa Rica .....	580	623	658	664	725	743	783	886	958	998
Egypt .....	8,609	8,409	9,351	10,257	11,553	12,384	10,807	10,384	12,754	13,671
Iran .....	482	539	786	922	1,121	1,222	1,637	2,376	3,786	3,871
Israel .....	6,361	6,700	7,719	8,286	9,244	9,303	9,328	9,395	10,203	10,662

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Mexico .....	9,946	9,119	10,608	11,408	12,108	12,709	16,661	16,567	17,624	18,566
Morocco.....	342	342	365	394	448	481	511	567	611	625
Norway .....	4,900	4,916	4,657	5,098	5,262	5,493	5,075	5,589	6,083	6,384
Russia.....	2,717	2,917	2,647	2,789	3,240	3,660	5,148	5,581	6,877	8,014
Saudi Arabia.....	5,041	5,132	5,071	5,408	5,638	5,956	6,284	6,438	6,746	7,250
South Africa .....	5,938	6,166	5,990	6,290	6,242	6,727	7,084	7,701	8,926	9,429
Switzerland.....	25,101	27,974	30,992	31,605	36,546	33,935	37,276	40,040	42,660	43,441
Tunisia .....	147	155	162	182	204	205	216	229	242	251
Turkey.....	3,898	4,003	4,319	4,527	4,705	4,377	4,176	4,241	4,628	4,903
All others.....	21,018	21,407	21,847	21,303	21,191	21,540	24,488	26,279	30,351	34,786
<b>Business services</b>										
All regions/countries/economies .....	2,382,113	2,525,846	2,663,030	2,789,877	2,925,088	2,997,163	3,021,800	3,118,006	3,257,008	3,382,104
United States.....	1,031,322	1,097,501	1,155,851	1,223,182	1,261,773	1,256,347	1,255,772	1,302,622	1,369,010	1,442,004
EU .....	670,669	707,993	750,673	799,202	858,473	901,243	911,301	933,629	966,774	991,033
Austria .....	10,090	10,857	11,744	12,807	14,032	15,173	15,835	16,432	16,885	17,381
Belgium .....	19,290	20,892	22,023	23,202	24,826	26,392	25,653	26,959	28,721	29,162
Bulgaria .....	1,298	1,090	1,152	1,134	994	1,052	1,105	1,169	1,159	1,182
Czech Republic .....	3,550	3,236	3,556	3,831	4,194	4,302	4,105	4,122	4,237	4,635
Denmark.....	8,031	9,134	9,450	10,281	10,768	11,309	11,044	10,770	11,609	12,120
Finland.....	4,854	5,291	5,736	6,349	6,735	7,310	7,500	7,954	9,066	9,728
France.....	129,929	134,584	141,077	151,574	161,482	168,953	171,827	178,341	183,251	188,045
Germany .....	185,523	192,417	206,263	212,714	231,225	240,772	238,860	242,422	251,275	254,880
Greece .....	3,584	3,843	4,042	3,923	3,392	3,637	4,044	4,047	4,228	4,518
Hungary .....	3,328	3,015	3,249	3,332	3,460	3,672	3,786	3,608	3,712	3,565
Ireland.....	4,340	5,159	5,947	6,854	7,814	8,461	9,003	8,974	10,514	11,486
Italy.....	82,421	88,764	91,689	96,897	105,455	110,312	116,654	120,511	119,447	120,245
Netherlands.....	31,055	33,630	36,167	38,824	41,101	41,392	41,892	41,258	43,492	44,742
Poland.....	10,558	10,644	10,572	10,091	10,235	10,494	11,312	12,486	12,766	14,247
Portugal .....	4,843	5,144	5,489	6,029	6,129	6,228	6,217	6,058	6,346	6,464
Romania.....	1,601	1,730	1,802	1,803	1,824	2,386	2,691	2,444	3,261	3,556
Slovakia .....	731	1,054	1,042	1,132	1,106	1,131	1,146	1,159	1,399	1,570
Spain .....	23,557	24,986	26,550	28,769	32,065	34,993	35,228	35,571	37,675	39,336
Sweden.....	15,245	16,248	17,461	19,768	21,292	22,748	21,610	22,143	23,667	24,543
United Kingdom.....	126,842	136,276	145,663	159,886	170,344	180,527	181,790	187,199	194,065	199,629
Asia.....	407,460	430,444	454,240	455,091	480,090	506,108	520,652	543,040	565,162	573,215
China .....	22,577	26,513	27,024	28,087	31,930	36,414	43,382	49,629	52,508	58,336
India.....	12,434	13,109	13,921	18,191	19,124	20,433	21,261	23,113	25,298	27,956
Indonesia .....	4,814	5,294	4,227	3,791	5,725	6,016	6,436	6,843	7,404	7,985
Japan.....	322,747	336,071	360,530	355,716	371,734	391,524	393,584	405,506	419,362	415,689
Malaysia .....	4,789	5,635	5,526	5,780	5,882	6,398	7,341	7,790	8,347	8,751
Philippines .....	2,524	2,807	2,967	3,003	2,883	2,766	3,435	4,068	4,806	5,376
Singapore.....	7,923	8,610	8,618	8,852	9,586	9,439	9,811	9,704	9,901	10,573

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
South Korea .....	22,282	24,286	22,777	22,369	23,408	22,997	25,203	26,136	26,795	27,373
Taiwan .....	5,915	6,530	7,009	7,471	7,998	8,220	8,276	8,354	8,794	9,242
Thailand .....	1,456	1,590	1,641	1,830	1,820	1,902	1,924	1,897	1,947	1,934
All others .....	272,662	289,908	302,267	312,402	324,752	333,465	334,076	338,715	356,062	375,852
Argentina .....	22,931	24,364	25,507	25,369	25,675	24,992	22,290	22,372	23,377	25,183
Australia .....	32,015	34,401	37,938	40,371	42,645	44,082	44,673	46,513	46,798	49,948
Brazil .....	53,020	56,853	56,367	53,319	51,510	49,445	50,290	47,562	49,111	50,831
Canada .....	33,460	36,238	40,388	43,505	47,337	49,898	51,809	55,600	59,129	61,308
Chile .....	5,061	5,356	5,665	5,750	6,046	6,215	6,429	6,670	6,940	7,000
Costa Rica .....	491	509	536	566	649	743	788	828	887	928
Egypt .....	299	285	256	313	265	215	218	240	1,675	1,783
Iran .....	4,238	4,712	4,978	5,381	5,228	5,944	7,088	7,593	6,778	6,749
Israel .....	9,544	10,180	11,672	12,516	13,907	14,002	13,934	14,012	15,141	15,737
Mexico .....	25,643	26,968	28,389	31,377	34,788	36,677	33,731	32,591	33,753	36,027
Morocco .....	555	561	588	618	673	688	727	795	845	873
Norway .....	6,748	7,581	8,364	9,055	9,745	10,043	9,951	10,310	10,941	11,638
Russia .....	11,723	13,254	12,590	13,952	14,399	14,954	14,990	14,879	15,530	17,060
Saudi Arabia .....	7,675	7,912	7,684	8,131	8,482	8,709	9,139	9,438	9,843	10,604
South Africa .....	9,134	9,610	9,344	9,544	9,392	10,120	10,609	10,850	11,686	12,476
Switzerland .....	13,697	13,825	14,421	14,704	14,977	15,932	15,685	14,449	15,127	15,561
Tunisia .....	220	235	244	275	307	306	320	340	359	376
Turkey .....	6,166	6,469	6,764	6,504	7,079	6,666	7,156	7,700	8,606	9,334
All others .....	30,042	30,594	30,570	31,152	31,647	33,833	34,250	35,971	39,538	42,435
<b>All Non-market-oriented knowledge-intensive services</b>										
All regions/countries/economies .....	2,362,474	2,427,086	2,491,956	2,540,369	2,659,894	2,730,067	2,772,265	2,845,698	2,895,823	2,999,304
United States .....	951,517	959,053	975,540	991,871	1,017,775	1,036,179	1,072,182	1,114,454	1,146,362	1,179,288
EU .....	775,289	790,374	805,356	816,114	827,738	844,395	864,270	869,297	860,578	868,269
Austria .....	17,461	17,166	17,534	17,655	17,627	17,689	17,294	17,156	17,127	17,376
Belgium .....	25,540	25,634	25,209	26,515	26,984	27,897	28,242	28,803	29,346	29,080
Bulgaria .....	408	401	606	643	747	769	847	877	854	857
Czech Republic .....	3,853	3,584	3,173	3,451	3,809	3,419	3,776	4,004	3,856	3,498
Denmark .....	19,590	19,953	20,701	20,843	21,326	21,365	21,661	21,943	22,423	22,838
Finland .....	12,635	12,982	13,265	13,412	13,278	13,862	14,292	14,409	14,911	15,181
France .....	129,584	132,444	135,115	137,291	136,946	142,195	142,908	144,661	145,974	146,005
Germany .....	168,462	170,792	173,678	177,090	179,026	182,342	191,295	190,713	190,892	189,402
Greece .....	9,684	10,572	10,434	10,131	10,072	9,970	11,209	12,165	12,977	13,829
Hungary .....	3,509	3,735	3,799	3,831	3,778	3,887	3,924	4,114	4,072	3,891
Ireland .....	5,748	5,978	5,906	7,031	7,781	8,285	9,033	8,770	9,127	9,452
Italy .....	96,238	97,522	95,994	96,534	97,207	98,795	101,128	102,184	103,295	105,541
Netherlands .....	35,952	36,756	37,806	38,532	39,039	39,288	41,799	43,825	44,828	44,447
Poland .....	12,936	13,596	13,654	12,547	12,573	12,090	11,891	12,262	11,594	11,706
Portugal .....	10,927	10,971	11,417	11,694	12,003	12,312	12,402	12,616	12,880	12,857

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Romania.....	1,463	1,203	1,560	1,462	1,548	1,463	1,637	1,928	1,369	1,774
Slovakia.....	1,101	1,329	1,378	1,436	1,379	1,408	1,492	1,566	1,536	1,526
Spain.....	48,926	50,104	51,653	53,140	53,632	54,521	56,581	58,303	59,946	61,580
Sweden.....	29,722	29,473	30,307	31,328	31,841	32,588	33,402	34,008	35,161	35,434
United Kingdom.....	141,549	146,179	152,170	151,549	157,142	160,251	159,455	154,988	138,409	141,995
Asia.....	286,374	314,654	337,078	354,869	432,185	463,166	455,766	478,239	500,120	517,960
China.....	59,013	63,847	66,046	75,252	80,917	86,485	91,040	104,007	111,442	118,230
India.....	18,168	19,365	21,439	25,543	27,164	29,586	31,088	32,541	34,848	36,838
Indonesia.....	5,306	4,739	4,362	4,715	6,143	6,272	6,204	7,022	7,664	7,711
Japan.....	143,757	162,738	181,659	184,105	252,537	272,779	255,534	261,108	269,637	273,160
Malaysia.....	2,428	2,494	2,361	2,386	2,426	2,690	2,402	2,405	2,461	3,840
Philippines.....	2,316	2,448	2,662	2,852	3,085	3,288	3,589	3,940	4,480	4,662
Singapore.....	5,323	5,895	6,155	6,465	7,037	7,571	6,907	7,049	7,297	7,347
South Korea.....	34,795	36,667	34,972	35,334	33,844	35,017	38,446	39,496	40,944	43,908
Taiwan.....	9,141	10,309	11,488	11,765	12,493	12,982	13,630	13,854	14,223	14,742
Thailand.....	6,128	6,150	5,934	6,450	6,539	6,496	6,926	6,818	7,124	7,521
All others.....	349,293	363,005	373,983	377,516	382,196	386,327	380,047	383,709	388,763	433,787
Argentina.....	20,153	22,188	23,280	23,319	23,999	23,036	17,393	17,259	17,165	19,748
Australia.....	35,651	36,363	37,469	38,459	39,476	41,272	41,281	43,257	44,678	46,162
Brazil.....	41,227	41,312	39,766	39,606	39,723	38,036	36,673	35,414	28,021	49,901
Canada.....	70,994	68,880	70,502	71,100	72,062	72,187	73,853	76,034	78,469	80,368
Chile.....	6,943	7,003	7,000	7,477	7,752	7,834	8,012	8,040	8,403	8,660
Costa Rica.....	1,481	1,549	1,698	1,746	1,903	2,006	2,058	2,157	2,111	2,150
Egypt.....	9,556	9,270	8,888	8,474	8,248	8,724	8,923	8,704	10,109	10,014
Iran.....	1,743	1,978	3,697	3,009	2,888	3,357	2,702	2,860	6,487	6,237
Israel.....	12,229	13,116	13,206	13,488	13,952	14,165	13,573	13,295	13,922	14,233
Mexico.....	43,338	44,392	45,928	47,516	47,429	47,735	47,838	46,773	46,250	47,873
Morocco.....	2,895	2,947	2,972	3,017	2,997	3,046	3,095	3,192	2,678	3,905
Norway.....	16,546	17,005	17,365	17,772	17,996	18,479	18,997	19,317	19,679	20,258
Russia.....	12,578	13,531	12,774	10,694	11,560	12,783	14,797	15,199	16,115	16,908
Saudi Arabia.....	7,827	8,448	8,894	9,149	9,554	9,873	10,252	10,553	10,910	11,585
South Africa.....	7,779	7,766	8,016	8,036	8,045	7,855	5,312	5,859	7,484	11,227
Switzerland.....	15,074	15,025	15,142	14,764	14,850	15,273	15,625	15,464	15,596	15,584
Tunisia.....	1,263	1,325	1,360	1,405	1,475	1,383	1,446	1,582	1,706	2,188
Turkey.....	6,151	7,037	9,346	10,347	8,636	6,445	8,262	10,846	7,826	9,531
All others.....	35,865	43,870	46,681	48,137	49,650	52,835	49,954	47,905	51,155	57,255
Education										
All regions/countries/economies.....	1,068,467	1,095,328	1,125,187	1,148,252	1,170,336	1,182,690	1,197,510	1,229,397	1,247,510	1,284,696
United States.....	426,941	435,277	450,163	459,095	471,600	471,004	483,509	500,181	512,090	521,618
EU.....	349,750	354,855	361,332	364,712	366,998	372,652	376,860	379,508	370,981	373,072
Austria.....	8,801	9,176	9,184	9,490	9,404	9,434	9,525	9,530	9,510	9,648
Belgium.....	13,147	13,181	13,143	13,225	13,243	13,745	13,863	14,118	14,268	14,139

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bulgaria .....	238	233	355	363	469	473	474	479	485	487
Czech Republic .....	1,675	1,627	1,526	1,751	1,898	1,685	1,843	1,930	1,889	1,721
Denmark .....	6,671	6,713	7,030	7,057	7,290	7,302	7,446	7,581	7,699	7,749
Finland .....	4,680	4,845	5,001	5,124	5,069	5,200	5,378	5,397	5,549	5,617
France .....	56,368	57,805	59,554	60,967	60,331	62,306	60,738	60,690	61,001	60,905
Germany .....	71,254	71,746	71,790	72,024	71,949	72,183	72,616	72,303	71,001	69,649
Greece .....	4,788	5,083	4,931	4,847	4,721	4,774	5,303	5,915	6,345	6,780
Hungary .....	1,792	1,891	1,941	1,960	1,920	2,015	2,025	2,109	2,116	1,969
Ireland .....	2,668	2,747	2,616	2,934	3,057	3,182	3,395	3,291	3,451	3,534
Italy .....	52,024	51,696	50,756	50,687	50,046	50,604	52,989	54,092	53,798	54,911
Netherlands .....	13,104	13,547	13,975	14,110	14,158	13,906	14,233	14,659	14,891	14,768
Poland .....	6,409	6,472	6,821	6,595	6,692	6,530	6,499	7,312	6,807	6,896
Portugal .....	6,189	6,338	6,486	6,598	6,610	6,705	6,750	6,744	6,875	6,867
Romania .....	865	738	826	835	922	872	976	1,093	791	1,025
Slovakia .....	446	488	575	572	636	626	702	763	785	786
Spain .....	21,616	22,262	22,871	23,234	24,933	25,497	26,155	26,768	27,479	28,241
Sweden .....	10,584	10,604	11,281	11,294	11,238	11,400	11,718	12,174	12,623	12,732
United Kingdom .....	66,430	67,663	70,671	71,047	72,413	74,212	74,232	72,561	63,619	64,649
Asia .....	121,006	125,050	127,390	136,969	143,862	149,584	154,684	167,321	178,496	184,692
China .....	32,254	35,519	37,844	44,440	48,483	51,431	54,339	63,431	68,570	72,750
India .....	8,152	8,656	9,542	11,288	11,902	12,929	13,487	14,051	15,019	15,875
Indonesia .....	2,321	2,066	1,914	2,073	2,692	2,753	2,728	3,093	3,367	3,377
Japan .....	44,190	42,995	42,144	42,942	43,860	43,998	42,685	44,395	47,701	46,333
Malaysia .....	1,089	1,115	1,058	1,055	1,063	1,169	1,031	1,028	1,050	1,621
Philippines .....	1,462	1,559	1,698	1,819	1,941	2,058	2,219	2,414	2,726	2,781
Singapore .....	2,338	2,579	2,697	2,827	3,083	3,308	3,028	3,089	3,204	3,227
South Korea .....	22,803	23,647	23,125	22,812	22,724	23,655	26,488	26,981	27,729	29,285
Taiwan .....	3,648	4,183	4,672	4,875	5,251	5,527	5,723	5,848	5,992	6,195
Thailand .....	2,749	2,733	2,695	2,839	2,865	2,755	2,956	2,992	3,137	3,247
All others .....	170,771	180,146	186,302	187,475	187,876	189,451	182,457	182,386	185,943	205,314
Argentina .....	11,298	12,357	12,987	13,116	13,569	12,881	9,943	9,901	9,915	11,673
Australia .....	15,843	16,263	16,829	17,043	17,312	17,849	17,338	18,096	18,555	18,797
Brazil .....	18,497	18,465	17,699	17,503	17,404	16,529	15,739	15,135	11,952	21,064
Canada .....	31,462	30,519	31,493	31,845	31,501	31,286	32,055	32,760	33,885	34,754
Chile .....	3,381	3,312	3,320	3,652	3,816	3,871	3,967	4,067	4,243	4,375
Costa Rica .....	664	692	756	776	834	872	883	922	900	907
Egypt .....	9,363	9,049	8,633	8,174	7,935	8,381	8,548	8,327	9,586	9,478
Iran .....	584	746	2,253	1,623	1,150	1,456	1,058	1,138	2,975	2,832
Israel .....	7,282	7,817	7,854	7,983	8,128	8,243	7,859	7,480	7,889	8,068
Mexico .....	28,380	28,892	29,591	30,601	30,373	30,586	30,607	29,963	29,453	30,286
Morocco .....	1,299	1,317	1,323	1,333	1,313	1,324	1,328	1,364	1,142	1,649
Norway .....	5,810	5,917	6,165	6,316	6,399	6,458	6,438	6,630	6,778	6,935

Appendix table 6-5

(Page 10 of 11)

**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Russia.....	7,043	7,559	7,118	5,999	6,374	7,048	6,720	6,768	7,245	7,434
Saudi Arabia.....	3,512	3,777	3,959	4,044	4,186	4,340	4,493	4,628	4,792	5,075
South Africa.....	3,471	3,452	3,548	3,552	3,525	3,437	2,308	2,539	3,246	4,859
Switzerland.....	1,721	1,698	1,684	1,621	1,564	1,548	1,509	1,399	1,406	1,382
Tunisia.....	563	589	601	621	646	607	630	685	738	944
Turkey.....	2,760	3,146	4,160	4,573	3,784	2,839	3,546	4,636	3,338	4,023
All others.....	17,836	24,580	26,328	27,104	28,060	29,896	27,487	25,947	27,904	30,777
<b>Health</b>										
All regions/countries/economies.....	1,294,006	1,331,758	1,366,768	1,392,117	1,489,559	1,547,376	1,574,755	1,616,301	1,648,313	1,714,608
United States.....	524,576	523,776	525,376	532,776	546,175	565,175	588,674	614,272	634,272	657,670
EU.....	425,540	435,519	444,023	451,401	460,740	471,743	487,409	489,788	489,597	495,197
Austria.....	8,660	7,990	8,349	8,165	8,224	8,255	7,769	7,626	7,617	7,728
Belgium.....	12,393	12,453	12,066	13,290	13,741	14,152	14,379	14,686	15,078	14,941
Bulgaria.....	170	169	251	280	278	296	374	399	369	370
Czech Republic.....	2,178	1,957	1,647	1,700	1,911	1,735	1,934	2,075	1,966	1,776
Denmark.....	12,919	13,241	13,671	13,786	14,036	14,062	14,215	14,362	14,724	15,089
Finland.....	7,955	8,137	8,264	8,288	8,209	8,662	8,914	9,012	9,362	9,564
France.....	73,217	74,638	75,560	76,324	76,616	79,889	82,170	83,971	84,973	85,100
Germany.....	97,208	99,046	101,888	105,066	107,077	110,158	118,679	118,410	119,892	119,752
Greece.....	4,896	5,488	5,503	5,284	5,351	5,196	5,906	6,251	6,632	7,049
Hungary.....	1,717	1,844	1,857	1,871	1,858	1,872	1,899	2,005	1,956	1,921
Ireland.....	3,080	3,231	3,290	4,097	4,724	5,102	5,639	5,479	5,677	5,919
Italy.....	44,213	45,826	45,239	45,848	47,161	48,191	48,139	48,092	49,497	50,630
Netherlands.....	22,848	23,208	23,831	24,422	24,881	25,383	27,566	29,166	29,937	29,679
Poland.....	6,527	7,124	6,832	5,952	5,881	5,560	5,391	4,950	4,787	4,810
Portugal.....	4,738	4,633	4,930	5,096	5,393	5,608	5,652	5,872	6,005	5,990
Romania.....	598	465	734	627	625	591	660	835	578	749
Slovakia.....	655	841	804	864	743	782	790	803	751	740
Spain.....	27,310	27,842	28,782	29,906	28,700	29,023	30,426	31,535	32,467	33,339
Sweden.....	19,138	18,870	19,027	20,034	20,603	21,188	21,684	21,833	22,538	22,703
United Kingdom.....	75,119	78,516	81,499	80,503	84,729	86,039	85,223	82,428	74,790	77,346
Asia.....	165,368	189,603	209,687	217,899	288,323	313,582	301,082	310,917	321,625	333,268
China.....	26,759	28,328	28,201	30,812	32,435	35,054	36,701	40,576	42,872	45,480
India.....	10,017	10,710	11,897	14,255	15,262	16,656	17,600	18,489	19,829	20,963
Indonesia.....	2,984	2,674	2,448	2,642	3,452	3,519	3,476	3,929	4,297	4,333
Japan.....	99,567	119,743	139,515	141,162	208,677	228,781	212,849	216,713	221,936	226,827
Malaysia.....	1,339	1,379	1,303	1,332	1,363	1,521	1,371	1,377	1,411	2,219
Philippines.....	853	889	963	1,033	1,144	1,230	1,370	1,526	1,754	1,881
Singapore.....	2,985	3,316	3,458	3,639	3,954	4,263	3,879	3,961	4,093	4,121
South Korea.....	11,993	13,021	11,847	12,522	11,121	11,362	11,958	12,514	13,214	14,623
Taiwan.....	5,493	6,126	6,816	6,890	7,243	7,455	7,907	8,006	8,231	8,546
Thailand.....	3,379	3,418	3,239	3,612	3,674	3,741	3,970	3,826	3,988	4,274



**Value-added revenue of knowledge-intensive services for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All others.....	178,522	182,859	187,681	190,041	194,320	196,876	197,590	201,323	202,820	228,473
Argentina.....	8,855	9,831	10,293	10,204	10,429	10,155	7,450	7,358	7,249	8,075
Australia.....	19,808	20,101	20,640	21,417	22,164	23,423	23,943	25,161	26,123	27,365
Brazil.....	22,729	22,847	22,067	22,103	22,319	21,507	20,934	20,279	16,070	28,837
Canada.....	39,532	38,361	39,009	39,255	40,561	40,901	41,799	43,274	44,584	45,613
Chile.....	3,561	3,691	3,679	3,825	3,936	3,963	4,045	3,973	4,160	4,285
Costa Rica.....	816	857	942	970	1,069	1,134	1,175	1,235	1,210	1,242
Egypt.....	193	220	254	300	313	343	374	377	523	536
Iran.....	1,159	1,232	1,444	1,386	1,738	1,902	1,644	1,722	3,512	3,405
Israel.....	4,947	5,298	5,352	5,505	5,824	5,922	5,714	5,815	6,033	6,166
Mexico.....	14,958	15,501	16,337	16,915	17,055	17,149	17,232	16,810	16,797	17,587
Morocco.....	1,596	1,630	1,649	1,684	1,684	1,723	1,766	1,828	1,535	2,257
Norway.....	10,736	11,087	11,200	11,456	11,597	12,022	12,558	12,687	12,901	13,323
Russia.....	5,535	5,972	5,656	4,695	5,186	5,735	8,077	8,431	8,870	9,474
Saudi Arabia.....	4,315	4,672	4,935	5,105	5,368	5,534	5,759	5,925	6,118	6,510
South Africa.....	4,308	4,314	4,468	4,485	4,520	4,418	3,005	3,320	4,238	6,368
Switzerland.....	13,353	13,327	13,458	13,143	13,286	13,726	14,115	14,065	14,190	14,201
Tunisia.....	700	736	758	784	829	775	816	897	968	1,244
Turkey.....	3,391	3,892	5,186	5,775	4,852	3,606	4,716	6,211	4,488	5,508
All others.....	18,030	19,290	20,353	21,033	21,590	22,940	22,467	21,959	23,251	26,478

EU = European Union

NOTES: Knowledge-intensive services classified by Organisation for Economic Co-operation and Development and include business, financial, communications, education, and health services. Market-oriented knowledge-intensive services exclude education and health services. Non-market-oriented knowledge-intensive services include education and health. Value-added revenue excludes purchases of domestic and imported materials and inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).



**Value-added revenue of selected service industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Real estate</b>											
All regions/countries/economies .....	1,951,520	1,985,870	2,065,241	2,146,273	2,212,843	2,214,576	2,287,897	2,399,177	2,462,577	2,557,882	2,626,058
United States.....	746,395	748,111	781,413	809,313	832,314	843,714	854,114	886,015	900,115	925,515	947,516
EU.....	530,683	539,639	551,123	566,527	580,425	596,210	638,461	656,436	660,613	685,676	705,287
Austria .....	11,238	11,027	11,048	11,377	11,854	12,075	12,188	12,663	12,823	13,544	13,698
Belgium .....	13,580	14,179	14,416	15,615	16,428	17,432	18,061	18,945	19,433	20,304	21,517
Bulgaria .....	687	681	699	778	754	818	688	366	362	448	342
Czech Republic .....	615	592	517	494	611	1,936	1,967	1,757	2,100	2,141	2,795
Denmark.....	12,021	11,768	11,980	12,115	12,349	13,873	13,820	13,612	13,797	13,657	13,816
Finland.....	7,335	7,559	7,716	7,974	8,095	7,929	8,546	9,054	9,111	9,341	9,493
France.....	96,464	98,160	101,505	104,921	108,933	110,153	112,548	117,091	118,246	120,492	122,268
Germany.....	105,841	109,282	113,318	116,893	120,658	127,764	158,832	163,188	164,360	173,790	190,204
Greece.....	10,426	10,564	10,879	11,182	11,589	12,199	12,973	13,759	14,055	14,230	14,956
Hungary.....	1,681	1,809	2,047	2,394	2,490	2,516	2,846	2,679	2,603	2,625	2,741
Ireland.....	2,088	2,206	2,221	2,319	2,223	2,684	2,709	2,818	2,830	3,053	2,884
Italy.....	76,401	79,672	83,469	87,363	90,464	92,626	90,794	91,519	89,706	94,607	93,026
Netherlands.....	17,610	18,661	19,069	19,364	20,173	20,893	21,532	22,077	22,302	23,510	24,023
Poland.....	3,692	3,842	3,917	4,111	4,067	3,570	4,595	7,886	7,221	8,864	7,617
Portugal.....	2,171	2,226	2,425	2,630	3,203	3,292	4,064	4,781	4,775	4,347	4,747
Romania.....	585	477	600	568	554	640	466	1,098	984	1,481	999
Slovakia.....	1,195	1,192	1,272	1,289	1,313	1,284	1,105	941	935	954	1,364
Spain.....	30,053	32,258	31,900	32,637	32,879	32,781	33,523	35,230	35,980	36,438	37,192
Sweden.....	16,621	16,118	16,435	16,529	16,639	16,579	18,671	20,722	20,857	21,578	21,633
United Kingdom.....	120,379	117,367	115,688	115,975	115,148	115,167	118,532	116,252	118,135	120,273	119,972
Asia.....	482,227	508,025	530,425	561,809	571,289	551,684	559,149	610,613	646,917	686,993	701,464
China.....	10,603	11,857	12,945	13,722	13,726	13,520	14,954	18,841	20,392	23,930	23,864
India.....	7,376	7,884	8,466	9,395	9,759	10,093	10,267	11,197	10,864	11,665	11,925
Indonesia.....	2,216	2,433	2,533	2,327	2,740	3,270	3,743	3,837	3,668	3,844	4,063
Japan.....	433,750	455,238	473,372	500,005	506,406	482,091	483,695	526,849	557,566	588,745	597,915
Malaysia.....	1,115	1,289	1,282	1,338	1,418	1,552	1,679	2,090	2,655	2,756	3,037
Philippines.....	1,090	1,173	1,377	1,519	1,731	1,851	1,805	1,826	1,857	1,902	1,991
Singapore.....	2,575	2,747	3,023	3,212	3,452	3,690	3,942	4,079	4,272	4,639	5,020
South Korea.....	16,111	17,182	17,973	19,295	20,148	22,031	24,034	25,612	27,636	29,529	31,394
Taiwan.....	6,532	7,356	8,586	10,106	10,925	12,602	14,000	15,458	17,140	19,064	21,220
Thailand.....	859	866	869	891	983	984	1,030	823	867	919	1,034
All others.....	192,214	190,094	202,281	208,623	228,816	222,967	236,173	246,113	254,931	259,698	271,791
<b>Restaurants and hotels</b>											
All regions/countries/economies .....	487,054	493,508	512,564	516,572	529,188	541,782	553,900	589,366	578,345	594,787	616,483
United States.....	164,254	165,080	172,181	178,408	181,872	186,074	179,490	186,434	195,799	201,935	212,306
EU.....	158,279	159,459	163,851	169,022	175,011	179,139	185,272	185,028	182,390	187,703	190,084
Austria.....	5,144	5,328	5,422	5,530	5,861	5,993	6,210	6,425	6,397	6,223	6,499
Belgium.....	2,417	2,420	2,502	2,625	2,745	2,885	2,911	3,041	2,987	3,063	3,147

**Value-added revenue of selected service industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Bulgaria .....	26	23	34	36	38	36	51	68	90	124	151
Czech Republic .....	141	145	129	140	134	178	214	203	441	751	1,913
Denmark .....	1,783	1,737	1,735	1,785	1,904	1,937	1,864	1,854	2,134	2,393	2,530
Finland .....	1,080	1,131	1,196	1,269	1,326	1,388	1,283	1,127	1,027	1,061	1,213
France .....	33,684	32,280	30,384	30,428	31,796	32,874	33,312	32,449	31,123	31,229	29,446
Germany .....	18,723	18,244	18,920	19,239	19,556	20,665	25,877	25,903	25,050	24,374	22,990
Greece .....	5,479	5,308	5,245	5,512	5,695	5,763	5,912	5,897	5,624	5,644	5,728
Hungary .....	333	358	388	370	400	520	883	1,005	836	812	777
Ireland .....	1,031	980	994	954	964	1,252	1,326	1,379	1,472	1,585	1,602
Italy .....	25,252	25,147	26,070	27,286	27,718	28,289	27,864	28,787	28,776	29,803	31,111
Netherlands .....	3,923	3,956	4,095	4,097	4,458	4,708	4,947	5,147	5,446	5,487	5,432
Poland .....	276	301	306	306	313	371	204	802	842	1,008	1,094
Portugal .....	1,374	1,358	1,429	1,513	1,673	1,893	2,206	2,143	2,126	2,100	2,172
Romania .....	327	296	328	328	330	343	671	767	564	408	669
Slovakia .....	32	37	36	44	47	55	67	80	180	193	296
Spain .....	27,833	29,044	31,319	32,602	34,139	34,469	35,239	35,647	34,802	36,647	37,775
Sweden .....	2,575	2,813	2,990	2,983	3,092	2,712	2,632	2,682	2,324	2,347	2,408
United Kingdom .....	26,844	28,552	30,330	31,977	32,823	32,807	31,600	29,623	30,149	32,450	33,131
Asia .....	63,387	70,143	76,753	83,288	84,998	89,662	93,233	94,541	96,702	99,786	105,804
China .....	7,632	7,639	8,799	10,102	10,056	8,838	9,748	11,250	11,768	11,130	11,534
India .....	1,620	1,710	1,779	1,977	2,063	2,185	2,113	2,311	2,501	2,691	3,191
Indonesia .....	2,183	2,363	2,539	2,448	2,706	2,997	3,346	3,607	3,739	4,154	4,486
Japan .....	40,075	45,294	48,958	52,270	53,511	57,216	58,027	58,426	58,540	59,788	61,448
Malaysia .....	546	545	551	600	659	777	877	981	1,083	1,286	1,460
Philippines .....	776	781	836	893	936	937	921	958	1,020	1,096	1,158
Singapore .....	840	889	978	1,135	1,275	1,322	1,336	1,461	1,549	1,626	1,709
South Korea .....	2,883	3,478	3,816	4,510	5,357	6,054	6,770	7,415	7,973	9,015	10,070
Taiwan .....	1,537	1,757	2,013	2,155	2,494	2,830	3,144	3,347	3,729	4,039	4,362
Thailand .....	5,295	5,689	6,484	7,199	5,941	6,505	6,952	4,783	4,800	4,960	6,384
All others .....	101,134	98,825	99,778	85,853	87,309	86,907	95,906	123,363	103,454	105,363	108,289
Retail and wholesale											
All regions/countries/economies .....	2,140,428	2,261,968	2,324,619	2,477,842	2,569,627	2,637,731	2,750,570	2,878,373	2,933,769	3,047,063	3,112,267
United States .....	621,930	674,750	659,469	708,603	736,494	735,051	745,405	802,044	830,226	884,611	902,173
EU .....	563,225	588,470	612,897	640,092	660,469	686,123	721,655	724,406	736,158	754,581	770,626
Austria .....	14,397	15,172	15,674	16,336	17,276	18,487	19,482	19,820	19,346	19,841	20,344
Belgium .....	22,726	23,104	23,234	23,409	22,502	23,098	24,459	24,498	24,254	24,221	24,289
Bulgaria .....	383	349	505	531	565	546	755	816	802	873	854
Czech Republic .....	2,889	3,030	2,679	2,925	2,816	3,742	3,707	3,773	3,762	3,860	4,479
Denmark .....	12,280	13,074	13,094	12,646	11,343	11,272	12,331	12,276	12,481	12,749	13,379
Finland .....	8,874	9,250	9,964	10,539	11,515	11,180	9,723	8,228	7,692	8,055	8,482
France .....	75,400	79,855	82,993	87,758	91,986	97,176	97,884	96,111	97,662	100,524	104,489
Germany .....	98,564	103,200	106,643	112,144	116,926	124,177	155,838	164,335	170,351	170,571	174,005

**Value-added revenue of selected service industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Greece .....	11,352	11,464	11,355	11,999	12,469	12,649	12,927	12,956	12,392	12,375	12,648
Hungary .....	2,685	2,907	3,130	3,005	3,307	4,283	5,128	4,274	4,184	3,989	4,118
Ireland.....	3,329	3,382	3,463	3,414	4,188	5,552	5,439	4,572	5,256	4,819	5,207
Italy.....	97,111	99,398	103,770	107,588	109,171	111,687	113,411	113,611	111,889	115,189	119,133
Netherlands.....	24,927	27,203	27,908	28,130	29,757	31,155	32,302	32,401	31,912	32,619	33,904
Poland.....	18,714	20,510	20,797	20,840	21,410	25,497	26,461	19,929	21,080	24,387	23,143
Portugal .....	9,485	9,684	10,354	11,084	11,163	11,610	11,694	11,980	11,945	12,322	11,489
Romania.....	1,759	1,502	1,694	1,686	1,689	1,866	2,384	3,332	2,454	2,390	2,811
Slovakia.....	337	391	379	461	491	582	705	839	1,895	2,066	1,745
Spain .....	42,011	42,440	44,614	46,541	48,102	48,736	48,980	49,752	49,370	50,274	50,663
Sweden.....	15,206	16,581	16,815	17,715	18,335	17,848	17,086	17,047	16,487	17,965	18,949
United Kingdom.....	100,795	105,973	113,833	121,342	125,459	124,979	120,959	123,857	130,944	135,492	136,495
Asia.....	622,923	653,349	702,582	761,148	796,217	837,893	882,638	909,543	937,024	965,158	988,175
China .....	45,687	51,486	59,631	68,457	64,433	62,512	66,924	74,373	79,296	87,099	91,810
India.....	20,523	22,252	23,540	25,850	27,179	28,783	29,448	30,347	32,173	34,445	38,041
Indonesia .....	10,108	10,918	11,690	11,478	12,761	14,111	15,792	17,042	17,743	18,936	20,437
Japan.....	496,870	514,212	546,904	587,897	620,624	653,164	685,047	700,457	712,901	722,362	723,749
Malaysia .....	3,613	3,651	3,674	4,034	4,484	5,334	6,098	6,853	7,592	8,442	9,383
Philippines .....	4,635	4,897	5,046	5,325	5,775	6,080	6,132	6,212	6,400	6,663	7,030
Singapore.....	3,410	3,432	3,796	4,430	4,765	5,382	5,968	6,140	7,391	8,403	9,264
South Korea .....	17,589	20,358	23,569	25,891	26,117	28,377	29,656	30,334	31,673	33,123	34,880
Taiwan .....	12,159	13,435	14,992	16,622	18,463	21,098	23,543	25,875	28,964	31,503	34,330
Thailand.....	8,327	8,708	9,740	11,163	11,617	13,052	14,031	11,910	12,891	14,183	19,250
All others.....	332,349	345,400	349,671	367,998	376,446	378,664	400,873	442,381	430,361	442,713	451,293
Transportation and storage											
All regions/countries/economies .....	751,673	781,967	817,217	868,062	899,732	935,787	969,292	1,011,478	1,034,136	1,082,436	1,115,664
United States.....	158,744	162,195	168,012	174,913	179,513	187,914	196,214	207,415	217,116	234,717	242,718
EU .....	227,784	235,152	245,548	258,816	269,178	278,918	287,755	295,559	290,661	303,625	311,649
Austria .....	7,501	7,884	8,215	8,572	8,838	9,360	10,547	11,664	11,511	11,914	10,011
Belgium .....	8,686	8,026	8,098	8,945	9,404	10,046	10,299	10,325	10,207	10,576	10,641
Bulgaria .....	308	276	423	445	462	453	615	625	635	640	544
Czech Republic .....	1,190	1,254	1,154	1,203	1,128	1,215	1,460	2,186	3,363	3,071	3,975
Denmark.....	5,465	5,963	6,735	6,933	7,113	7,403	7,015	7,777	6,833	7,430	8,098
Finland.....	4,790	5,093	5,319	5,593	5,938	6,358	6,110	6,086	6,104	6,239	6,529
France.....	30,364	30,821	31,861	34,343	36,441	36,886	37,226	39,084	38,034	39,780	39,419
Germany .....	30,864	31,866	32,860	34,177	35,358	37,455	46,581	46,547	45,487	47,304	51,312
Greece .....	2,256	2,244	2,244	2,419	2,554	2,606	2,622	2,765	2,911	2,963	3,156
Hungary .....	2,142	2,304	2,443	2,421	2,540	2,361	2,427	2,217	2,017	2,024	2,232
Ireland.....	1,195	1,206	1,364	1,504	1,407	1,718	1,901	1,940	1,906	2,054	2,084
Italy.....	36,508	39,211	39,177	42,179	44,116	45,583	46,298	46,781	47,574	49,866	48,262
Netherlands.....	10,723	11,179	11,865	12,168	12,688	13,268	13,663	14,245	14,236	14,580	15,069
Poland.....	3,863	4,166	4,467	4,482	4,496	5,411	4,436	3,796	3,398	4,005	6,639

**Value-added revenue of selected service industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Portugal .....	2,718	2,721	2,810	3,019	3,059	3,147	3,421	3,294	3,245	3,384	3,461
Romania.....	1,358	1,219	1,395	1,358	1,494	1,302	1,074	1,865	2,046	2,509	2,121
Slovakia.....	1,648	1,694	1,347	1,387	1,440	1,378	1,500	1,424	1,349	1,691	1,497
Spain .....	23,751	23,130	24,615	25,352	26,142	26,697	27,011	28,367	27,886	30,069	31,012
Sweden.....	7,944	8,981	9,568	10,345	10,487	11,208	11,293	11,878	10,465	10,485	11,347
United Kingdom.....	44,512	45,914	49,589	51,972	54,071	55,064	52,254	52,692	51,454	53,041	54,239
Asia.....	210,545	229,230	241,869	263,738	279,237	288,310	303,502	323,604	334,600	346,667	360,467
China .....	19,934	22,593	25,353	28,277	29,058	31,773	34,412	38,057	41,522	44,582	47,047
India.....	10,489	11,358	12,051	13,594	13,974	14,683	14,892	16,164	16,678	17,916	19,465
Indonesia .....	3,161	3,289	3,482	3,286	3,637	3,965	4,302	4,652	4,760	4,893	5,119
Japan.....	155,387	168,266	175,008	190,062	201,233	204,012	213,873	226,824	232,355	236,896	243,403
Malaysia .....	1,255	1,257	1,343	1,480	1,601	1,698	1,952	2,072	2,327	2,755	3,084
Philippines .....	1,599	1,647	1,746	1,861	1,947	1,953	1,919	1,952	1,903	1,986	2,132
Singapore.....	1,452	1,596	1,729	1,925	2,119	2,304	2,486	2,654	2,942	3,225	3,548
South Korea .....	9,935	11,081	12,191	13,270	14,736	16,113	17,176	18,065	17,977	19,071	20,246
Taiwan .....	4,868	5,625	6,185	6,768	7,205	7,631	8,069	8,627	9,125	9,856	10,152
Thailand.....	2,463	2,519	2,780	3,215	3,727	4,179	4,421	4,538	5,010	5,486	6,271
All others.....	154,601	155,390	161,788	170,595	171,804	180,646	181,820	184,900	191,760	197,427	200,830

EU = European Union

NOTES: Value-added revenue excludes purchases of domestic and imported materials and inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

**Value-added revenue of selected service industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Real estate</b>										
All regions/countries/economies .....	2,682,268	2,744,875	2,778,542	2,833,424	2,910,909	3,008,984	3,068,023	3,135,176	3,269,845	3,365,483
United States .....	964,816	994,517	1,010,117	1,051,417	1,082,118	1,125,719	1,129,319	1,152,019	1,225,720	1,273,921
EU .....	726,414	735,942	748,271	746,462	767,609	788,719	814,349	826,915	853,884	866,599
Austria .....	13,445	13,460	13,581	13,877	14,135	14,574	14,710	14,486	14,634	14,621
Belgium .....	21,522	22,248	21,742	21,429	21,689	21,711	21,177	22,091	22,924	23,051
Bulgaria .....	962	806	847	836	730	773	812	857	853	870
Czech Republic .....	2,653	2,712	2,678	2,663	3,156	3,538	3,583	3,898	4,124	4,451
Denmark .....	14,147	14,113	14,255	14,489	15,032	15,025	14,833	14,677	15,535	16,027
Finland .....	9,705	10,017	10,123	10,824	10,990	11,262	11,929	12,559	13,526	13,750
France .....	125,481	128,462	130,815	133,750	142,543	147,884	148,662	153,064	157,709	161,838
Germany .....	203,917	206,371	211,042	204,759	211,014	219,653	234,602	237,113	243,885	245,344
Greece .....	15,395	15,754	15,783	14,834	12,691	13,380	14,177	14,700	15,301	16,401
Hungary .....	2,753	2,905	3,124	3,234	3,566	3,665	3,783	3,592	3,676	3,540
Ireland .....	3,232	3,829	4,380	5,058	5,738	6,127	6,418	6,363	7,192	7,620
Italy .....	96,110	96,317	96,113	93,411	93,196	95,210	98,764	99,810	98,747	98,148
Netherlands .....	24,917	25,726	26,366	26,816	27,380	26,374	27,824	28,381	29,349	29,293
Poland .....	7,821	7,872	7,776	7,433	7,516	7,689	8,302	9,157	9,388	10,473
Portugal .....	4,799	5,142	5,463	5,828	6,130	6,266	6,198	5,749	5,961	5,964
Romania .....	1,188	1,281	1,325	1,331	1,339	1,729	1,922	1,751	2,335	2,556
Slovakia .....	1,215	1,322	1,394	1,593	1,550	1,597	1,572	1,595	1,928	2,170
Spain .....	37,824	38,321	39,033	39,824	42,177	43,493	43,525	43,676	46,336	48,049
Sweden .....	21,400	22,225	22,115	22,630	23,252	23,172	23,601	24,056	25,248	25,366
United Kingdom .....	117,929	117,058	120,316	121,843	123,785	125,597	127,954	129,341	135,236	137,067
Asia .....	706,608	720,546	718,939	725,274	746,189	770,645	790,083	808,688	826,509	843,278
China .....	25,193	28,081	30,429	31,282	34,394	37,566	40,874	47,327	51,225	55,170
India .....	11,991	12,399	12,651	13,070	14,043	15,121	15,701	16,982	18,587	20,482
Indonesia .....	3,997	4,254	3,269	2,832	4,204	4,531	4,876	5,255	5,667	6,052
Japan .....	595,605	601,543	595,357	601,455	615,435	635,231	649,523	657,785	667,666	676,690
Malaysia .....	3,554	4,171	4,064	4,266	4,319	4,637	5,195	5,442	5,709	5,805
Philippines .....	2,204	2,391	2,458	2,359	2,117	1,877	2,195	2,065	1,964	2,083
Singapore .....	5,613	5,902	6,195	6,478	7,039	7,222	7,463	7,662	7,809	8,169
South Korea .....	33,286	35,756	37,463	36,459	36,780	36,472	36,347	37,280	37,850	38,468
Taiwan .....	24,058	24,880	25,829	25,778	26,522	26,621	26,548	27,516	28,616	28,964
Thailand .....	1,108	1,167	1,223	1,293	1,337	1,368	1,360	1,374	1,416	1,395
All others .....	284,429	293,871	301,216	310,271	314,994	323,902	334,272	347,554	363,732	381,686
<b>Restaurants and hotels</b>										
All regions/countries/economies .....	631,961	657,341	683,603	705,432	733,216	746,522	758,573	769,057	783,633	806,729
United States .....	221,363	230,025	243,288	252,604	261,443	262,050	268,596	272,279	270,072	279,311
EU .....	190,487	200,298	207,414	213,681	217,497	219,278	218,350	220,511	227,678	232,323
Austria .....	6,387	6,497	6,564	6,929	7,137	7,514	7,797	7,967	8,055	8,167
Belgium .....	3,007	2,932	3,320	3,468	3,551	3,444	3,469	3,172	3,157	3,241

**Value-added revenue of selected service industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bulgaria .....	177	242	240	257	235	279	302	330	326	339
Czech Republic .....	1,905	1,935	1,405	1,279	1,101	1,211	1,245	1,301	1,559	1,433
Denmark .....	2,364	2,530	2,412	2,620	2,387	2,421	2,379	2,432	2,509	2,571
Finland .....	1,172	1,148	1,449	1,447	1,484	1,584	1,559	1,603	1,651	1,565
France .....	29,199	30,138	31,005	31,896	33,371	34,179	33,067	33,017	31,918	32,310
Germany .....	21,593	22,448	22,565	22,700	21,494	21,583	19,366	18,428	18,135	18,032
Greece .....	6,128	7,213	7,467	7,006	7,537	7,945	8,557	9,068	9,422	9,882
Hungary .....	761	823	850	853	723	727	687	616	600	604
Ireland .....	1,717	1,924	2,148	2,295	2,486	2,703	2,684	2,460	2,706	2,866
Italy .....	31,548	32,492	33,464	33,359	35,100	35,767	35,785	35,836	35,262	35,721
Netherlands .....	5,471	5,871	6,237	6,362	6,658	6,639	6,563	6,315	6,371	6,334
Poland .....	1,229	1,289	1,465	1,720	1,838	1,899	1,846	1,854	1,856	1,906
Portugal .....	2,102	2,323	2,593	2,723	2,746	2,754	2,830	2,769	2,818	2,896
Romania .....	911	794	908	833	826	690	723	764	3,373	3,620
Slovakia .....	252	294	271	248	308	288	273	216	212	209
Spain .....	37,102	38,558	40,047	42,166	42,722	42,479	43,504	44,308	46,923	48,913
Sweden .....	2,487	2,714	2,971	3,174	3,330	3,367	3,280	3,256	3,294	3,366
United Kingdom .....	34,973	38,133	40,032	42,344	42,463	41,806	42,432	44,799	47,531	48,347
Asia .....	112,161	114,932	117,169	123,371	132,091	140,133	145,419	146,590	150,064	154,483
China .....	12,303	13,714	16,314	17,626	20,187	21,472	22,745	24,050	25,123	26,345
India .....	3,427	3,083	3,500	3,907	4,262	4,687	4,830	5,453	6,046	6,386
Indonesia .....	5,074	5,336	4,596	4,683	4,924	5,201	5,738	6,012	6,437	6,810
Japan .....	64,158	64,506	65,680	67,242	70,490	75,208	77,445	77,524	78,004	79,315
Malaysia .....	1,632	1,859	1,758	1,848	2,077	2,207	2,239	2,198	2,156	2,230
Philippines .....	1,236	1,301	1,603	1,659	1,615	1,626	1,725	1,736	1,857	1,905
Singapore .....	1,816	1,932	1,793	1,890	2,043	2,032	1,996	1,799	2,022	2,097
South Korea .....	10,972	11,403	10,089	12,007	13,141	13,956	14,698	14,129	13,810	14,291
Taiwan .....	4,954	5,420	5,834	6,165	6,615	6,748	6,737	6,731	6,780	7,160
Thailand .....	6,590	6,378	6,003	6,344	6,737	6,995	7,266	6,958	7,828	7,943
All others .....	107,949	112,086	115,732	115,777	122,184	125,062	126,208	129,678	135,819	140,613
Retail and wholesale										
All regions/countries/economies .....	3,230,603	3,381,734	3,468,966	3,550,597	3,671,119	3,798,524	3,861,479	3,982,346	4,128,298	4,294,923
United States .....	982,976	1,076,691	1,163,840	1,228,319	1,254,118	1,341,721	1,363,340	1,405,116	1,431,512	1,479,643
EU .....	780,634	798,670	824,746	844,543	874,608	896,640	911,098	922,435	950,738	968,057
Austria .....	20,939	21,533	21,861	22,488	23,016	23,518	23,922	23,985	24,539	24,890
Belgium .....	24,121	24,481	23,947	24,008	24,167	24,693	26,128	26,353	27,385	27,647
Bulgaria .....	854	593	630	780	815	861	908	943	1,004	1,016
Czech Republic .....	4,472	5,336	5,990	6,383	6,772	7,292	6,735	6,965	7,204	7,903
Denmark .....	14,761	14,534	15,301	15,768	16,926	16,774	16,962	17,232	17,448	17,714
Finland .....	8,873	9,455	9,881	10,340	10,531	11,027	11,309	11,897	12,835	13,127
France .....	101,186	106,090	111,333	115,291	120,416	122,692	122,964	123,865	126,698	128,691
Germany .....	174,737	172,742	175,763	178,195	183,004	186,540	187,435	188,519	196,504	201,646

**Value-added revenue of selected service industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Greece .....	13,558	14,045	14,315	14,295	12,907	14,983	15,279	16,906	17,810	19,920
Hungary .....	4,014	4,216	4,473	4,427	4,327	4,642	5,053	5,391	5,382	5,319
Ireland.....	6,377	6,930	6,407	6,983	7,715	8,479	9,287	9,191	9,732	10,721
Italy.....	118,998	120,991	123,934	123,683	130,735	134,075	132,754	131,853	130,898	130,294
Netherlands.....	35,322	38,005	40,553	43,389	45,306	44,218	45,159	45,517	46,083	46,079
Poland.....	24,270	26,205	27,064	28,017	29,115	30,481	31,924	32,035	32,854	33,758
Portugal .....	11,869	12,429	12,873	13,194	13,671	14,083	14,246	13,992	14,540	14,819
Romania.....	3,145	3,074	3,488	3,346	3,260	3,003	3,031	3,159	3,677	2,048
Slovakia.....	1,826	2,224	2,561	2,379	2,614	2,824	2,520	2,642	2,643	2,735
Spain .....	51,834	53,584	55,516	58,077	59,515	61,475	61,511	62,040	64,738	67,968
Sweden.....	19,467	19,559	20,827	22,167	22,712	23,016	23,616	24,579	24,623	25,612
United Kingdom.....	140,012	142,643	148,028	151,333	157,083	161,963	170,355	175,373	184,141	186,151
Asia.....	1,001,978	1,011,809	976,837	970,938	1,003,025	1,015,794	1,029,926	1,064,114	1,111,088	1,178,507
China .....	98,943	106,841	111,118	120,066	134,489	144,372	157,286	176,998	189,716	205,248
India.....	43,408	46,004	49,362	54,462	56,985	59,314	64,947	70,486	76,550	84,497
Indonesia .....	20,940	22,675	18,813	17,731	21,148	21,886	22,785	24,066	25,385	27,676
Japan.....	717,067	711,649	678,128	648,926	650,018	649,488	640,159	644,020	662,304	695,175
Malaysia .....	10,065	10,570	10,270	10,554	10,515	10,775	11,078	11,311	12,136	12,856
Philippines .....	7,484	7,822	9,542	10,003	10,514	11,155	10,438	12,530	13,371	13,911
Singapore.....	10,234	10,854	9,565	10,257	11,903	11,601	12,574	13,953	16,139	18,247
South Korea .....	35,614	34,861	28,680	33,375	37,716	38,675	40,168	38,206	37,608	38,601
Taiwan .....	38,628	41,523	45,008	48,695	52,262	51,392	53,034	54,394	58,892	62,977
Thailand.....	19,594	19,010	16,352	16,868	17,476	17,137	17,456	18,149	18,988	19,319
All others.....	465,016	494,564	503,544	506,797	539,368	544,370	557,114	590,681	634,960	668,716
Transportation and storage										
All regions/countries/economies .....	1,149,023	1,185,607	1,201,146	1,220,738	1,248,210	1,253,476	1,261,255	1,278,307	1,340,398	1,385,025
United States.....	255,119	266,619	275,820	287,421	301,622	293,621	300,222	306,222	322,324	335,224
EU .....	314,262	324,398	333,532	342,611	347,353	350,966	356,652	360,765	369,223	377,874
Austria .....	9,951	10,239	9,777	9,337	8,769	8,277	8,504	8,604	8,692	8,836
Belgium .....	9,529	8,945	9,012	9,008	8,910	9,183	9,866	10,375	10,771	10,913
Bulgaria .....	598	653	678	706	780	888	955	983	999	1,020
Czech Republic .....	4,027	3,752	3,592	3,189	2,364	2,584	2,821	2,991	2,917	2,951
Denmark.....	8,188	8,174	7,328	8,154	8,204	8,179	8,278	8,887	9,319	9,839
Finland.....	6,810	7,112	7,493	7,645	7,701	7,768	7,844	7,988	8,320	8,296
France.....	40,838	44,143	46,833	48,610	50,065	49,540	50,564	50,754	51,677	51,798
Germany .....	52,279	54,011	55,392	60,653	62,208	62,645	62,145	62,289	62,370	65,876
Greece .....	2,940	2,902	2,927	4,286	5,703	5,649	6,141	6,709	7,932	8,263
Hungary .....	2,182	2,352	2,432	2,445	1,946	2,056	2,141	2,161	2,137	2,220
Ireland.....	2,317	2,518	2,481	2,641	2,900	2,986	2,968	2,837	2,882	2,838
Italy.....	49,203	49,548	50,975	49,187	50,747	52,525	52,555	52,440	52,883	54,115
Netherlands.....	15,128	16,025	16,787	16,410	16,234	16,558	16,335	16,005	16,461	15,725
Poland.....	6,829	6,824	6,714	6,963	7,014	7,261	7,766	8,230	8,462	8,492

**Value-added revenue of selected service industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Portugal .....	3,158	3,123	3,438	3,530	3,636	3,675	3,800	3,808	3,935	3,984
Romania.....	2,225	2,142	2,040	1,924	1,955	2,124	2,163	2,350	2,501	1,407
Slovakia .....	1,573	1,507	1,433	1,690	1,437	1,569	1,480	1,558	1,606	1,596
Spain .....	30,293	31,206	31,929	31,830	29,399	29,727	31,052	32,146	33,276	34,476
Sweden.....	11,797	12,492	12,403	12,672	12,181	11,516	11,639	11,500	11,448	11,500
United Kingdom.....	54,396	56,733	59,868	61,730	65,200	66,256	67,634	68,148	70,635	73,727
Asia.....	372,301	375,789	367,090	367,016	368,547	373,517	367,299	364,628	388,555	399,024
China .....	50,979	53,587	57,506	63,347	65,615	68,854	72,644	69,698	81,182	87,045
India.....	21,056	22,037	22,903	25,310	25,843	27,741	28,871	30,589	33,737	35,776
Indonesia .....	4,997	5,154	3,841	3,358	3,699	3,858	3,933	4,209	4,386	4,409
Japan.....	247,241	245,525	235,047	224,089	220,910	217,687	202,443	199,773	205,102	206,979
Malaysia .....	3,204	3,367	3,227	3,511	3,390	3,530	3,697	3,766	4,075	4,219
Philippines .....	2,268	2,398	2,539	2,731	2,743	2,867	3,204	3,351	3,637	3,563
Singapore.....	3,828	4,165	4,427	4,764	5,118	5,280	5,610	5,564	6,005	4,589
South Korea .....	20,937	20,870	18,975	19,670	21,147	23,231	25,551	26,433	27,786	29,080
Taiwan .....	10,871	11,426	12,022	13,223	12,549	12,420	12,784	12,418	13,131	13,318
Thailand.....	6,919	7,259	6,605	7,013	7,531	8,050	8,562	8,827	9,514	10,045
All others.....	207,342	218,801	224,703	223,691	230,689	235,371	237,082	246,691	260,296	272,902

EU = European Union

NOTES: Revenue on value-added basis, which excludes purchases of domestic and imported inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).



**Value-added revenue of all high-technology manufacturing industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
All regions/countries/economies .....	450,729	472,923	499,716	526,139	556,920	572,670	593,568	558,580	558,376	575,766	597,828
United States .....	149,692	153,750	161,171	158,407	163,786	167,811	171,786	158,323	155,805	153,849	159,170
EU .....	114,602	119,448	121,718	129,370	137,593	141,921	143,968	137,441	134,598	140,856	147,969
Austria .....	1,821	1,950	2,092	2,190	2,280	2,478	2,480	2,640	2,633	2,622	2,770
Belgium.....	3,730	3,443	3,804	4,096	4,073	4,156	3,876	3,870	3,687	3,682	4,123
Bulgaria.....	255	234	267	386	397	290	285	180	126	132	140
Czech Republic.....	269	260	290	286	277	232	280	315	295	430	539
Denmark.....	1,278	1,463	1,408	1,530	1,545	1,616	1,629	1,802	1,700	1,971	2,049
Finland.....	1,163	1,195	1,385	1,408	1,558	1,686	1,406	1,598	1,775	2,087	2,360
France.....	15,258	15,066	14,151	14,656	15,924	16,356	16,638	16,817	16,126	18,158	22,343
Germany.....	31,985	32,117	32,489	34,161	35,832	37,395	42,318	39,240	35,632	35,883	34,699
Greece.....	330	371	407	372	344	369	391	413	318	311	317
Hungary.....	2,128	2,144	2,205	2,290	2,186	1,887	1,463	1,428	1,712	2,542	3,083
Ireland.....	1,030	1,249	1,590	1,869	2,275	2,580	2,590	2,403	2,292	2,914	5,089
Italy.....	16,314	18,149	18,793	19,689	21,380	21,713	21,276	20,216	20,033	19,367	19,304
Netherlands.....	3,698	4,175	4,082	3,910	3,691	4,190	4,254	4,401	4,768	5,103	4,789
Poland.....	1,666	1,841	1,884	2,140	2,357	1,731	1,007	954	1,066	1,267	1,337
Portugal.....	486	447	451	356	537	549	661	671	677	745	873
Romania.....	479	495	386	380	351	301	207	165	183	187	344
Slovakia.....	191	189	189	187	186	179	129	138	153	182	222
Spain.....	7,352	7,543	7,857	8,531	8,670	8,655	8,098	6,727	7,119	6,503	6,398
Sweden.....	2,897	3,106	3,187	3,298	3,358	3,527	4,626	5,096	5,236	5,595	6,084
United Kingdom.....	22,274	24,015	24,801	27,635	30,371	32,032	30,355	28,365	29,069	31,174	31,108
Asia.....	132,640	142,379	158,905	180,752	195,709	203,294	218,592	205,182	206,567	220,948	232,879
China.....	6,896	6,917	8,404	9,771	10,460	10,563	13,276	14,289	18,253	19,345	18,856
India.....	533	584	825	933	1,160	1,212	1,473	1,598	1,634	1,986	2,025
Indonesia.....	146	160	203	161	188	465	585	794	657	1,043	1,127
Japan.....	113,904	121,387	132,768	150,931	163,204	165,681	174,782	158,043	152,505	160,477	165,980
Malaysia.....	657	769	814	838	1,105	1,534	2,408	2,700	3,172	3,854	4,755
Philippines.....	334	311	309	372	491	695	733	749	875	853	1,201
Singapore.....	3,444	3,397	4,064	4,710	4,983	6,290	6,140	6,485	7,362	8,741	9,602
South Korea.....	2,595	3,648	4,948	6,218	6,484	7,797	8,384	8,808	10,091	12,433	16,621
Taiwan.....	3,925	5,105	6,398	6,534	7,301	8,227	9,098	10,062	11,135	11,223	11,647
Thailand.....	207	101	171	283	334	829	1,714	1,654	882	994	1,066
All others.....	53,795	57,346	57,921	57,610	59,833	59,644	59,223	57,635	61,405	60,113	57,810
Argentina.....	3,692	4,457	3,462	2,865	2,411	2,273	2,438	2,974	1,850	1,971	1,807
Australia.....	1,454	1,405	1,372	1,392	1,510	1,512	1,547	1,660	1,655	1,745	1,879
Brazil.....	17,789	21,195	21,112	19,831	20,310	17,419	16,402	17,337	19,439	19,325	17,145
Canada.....	6,331	6,253	7,635	7,872	8,856	8,875	8,096	8,648	8,384	8,888	9,797
Chile.....	173	164	180	205	251	242	294	353	398	399	429
Costa Rica.....	69	97	93	106	106	95	98	107	123	143	127
Egypt.....	250	210	232	277	257	552	347	305	302	353	434

**Value-added revenue of all high-technology manufacturing industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Iran .....	181	211	163	164	220	264	200	232	174	284	282
Israel .....	3,692	3,594	2,514	2,401	2,016	2,359	2,491	1,635	2,464	2,361	2,700
Mexico .....	4,419	4,088	4,443	4,769	5,296	6,005	6,867	6,523	7,068	7,141	6,203
Morocco .....	40	92	40	65	64	73	60	124	123	146	144
Norway .....	549	619	669	721	859	825	782	832	881	967	1,096
Russia .....	4,976	4,901	5,312	5,803	6,508	6,710	6,559	3,738	5,413	2,851	2,641
Saudi Arabia .....	27	33	30	35	39	39	46	53	53	51	50
South Africa .....	1,009	895	1,207	1,301	1,235	1,120	1,092	1,171	908	1,243	1,302
Switzerland .....	5,195	5,487	5,291	5,722	5,794	6,664	6,596	7,054	7,127	7,140	7,106
Tunisia .....	22	15	15	15	41	50	50	48	47	52	46
Turkey .....	1,262	962	1,204	1,276	1,423	1,772	2,387	1,791	2,078	1,619	1,615
All others .....	2,666	2,669	2,946	2,788	2,635	2,796	2,872	3,052	2,917	3,433	3,008

EU = European Union

NOTES: High-technology manufacturing industries classified by Organisation for Economic Co-operation and Development and include aerospace, communications equipment, office machinery and computers, pharmaceuticals, and scientific instruments. Value-added revenue excludes purchases of domestic and imported materials and inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

**Value-added revenue of all high-technology manufacturing industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All regions/countries/economies .....	631,832	687,085	713,152	787,035	883,487	854,163	872,196	969,698	1,104,604	1,201,393
United States .....	174,737	193,714	229,111	255,662	298,483	299,533	300,731	336,136	375,338	414,209
EU .....	147,576	158,216	163,736	175,127	186,905	187,902	188,624	196,907	210,145	221,115
Austria .....	2,645	2,724	2,925	3,296	3,864	3,502	3,571	3,399	3,765	4,108
Belgium.....	3,984	4,336	4,062	4,378	4,740	4,659	4,693	5,510	5,904	6,102
Bulgaria.....	129	114	88	73	89	89	195	212	191	241
Czech Republic.....	609	647	830	1,097	842	1,091	1,284	1,323	1,853	2,074
Denmark .....	2,181	2,454	2,696	2,996	3,383	3,587	3,767	3,712	3,505	3,827
Finland .....	2,605	3,095	4,396	5,084	6,587	6,113	7,714	8,678	9,675	10,553
France.....	19,859	25,224	26,436	28,940	32,936	34,028	34,546	35,025	36,551	38,371
Germany .....	35,667	35,916	38,184	39,882	42,977	42,315	44,797	47,552	52,140	58,200
Greece .....	345	417	488	475	580	607	585	567	557	538
Hungary .....	3,749	5,324	1,298	1,242	1,405	1,577	1,697	3,086	4,359	5,460
Ireland.....	4,736	5,471	6,392	7,780	8,295	9,138	10,559	10,667	11,872	12,238
Italy.....	19,497	19,038	19,327	19,833	19,927	20,575	19,504	18,264	18,609	17,685
Netherlands.....	4,131	4,220	4,277	4,520	5,098	4,731	4,073	4,236	4,242	4,180
Poland.....	1,567	1,676	1,754	2,024	1,975	2,000	2,298	2,512	2,895	3,121
Portugal.....	872	862	838	835	849	868	801	988	1,043	1,200
Romania.....	372	343	255	230	215	220	229	291	319	301
Slovakia .....	244	240	237	219	204	243	258	298	378	521
Spain.....	6,359	6,389	6,472	6,275	6,292	5,673	5,106	5,135	5,123	5,150
Sweden.....	6,750	6,959	8,001	8,049	7,568	6,657	6,620	6,973	7,525	7,707
United Kingdom.....	31,277	32,766	34,781	37,899	39,079	40,229	36,326	38,481	39,638	39,539
Asia .....	254,354	274,376	260,577	292,001	326,564	299,046	319,104	374,721	453,167	494,490
China .....	23,264	27,021	29,674	38,549	46,542	55,987	71,828	107,892	157,271	192,990
India.....	2,302	2,418	2,781	3,322	2,838	3,314	3,989	4,264	4,797	5,186
Indonesia .....	1,757	2,425	1,365	2,121	2,701	2,749	3,883	3,799	4,473	4,683
Japan.....	177,533	187,706	176,005	182,919	193,979	163,709	156,170	173,233	195,307	194,395
Malaysia.....	5,756	6,949	6,248	6,800	8,617	6,951	7,834	8,651	10,478	11,948
Philippines.....	1,104	2,219	1,767	2,049	2,882	3,119	3,312	3,199	3,916	4,193
Singapore.....	10,471	11,105	7,985	10,085	12,876	10,333	11,589	11,915	12,975	14,805
South Korea.....	17,489	18,592	16,696	24,379	32,654	31,358	35,680	36,609	40,769	43,562
Taiwan .....	13,388	14,752	17,080	20,725	22,185	20,288	23,452	23,605	21,433	20,671
Thailand .....	1,290	1,189	976	1,052	1,290	1,239	1,366	1,553	1,748	2,055
All others.....	55,165	60,779	59,728	64,245	71,535	67,681	63,737	61,934	65,954	71,578
Argentina .....	1,918	2,650	2,272	2,073	1,956	2,070	1,314	1,568	1,827	2,153
Australia.....	2,086	2,127	2,156	2,127	2,039	2,283	2,479	2,576	2,536	2,602
Brazil.....	13,185	13,391	11,994	10,928	12,831	13,905	13,343	10,985	11,608	13,411
Canada.....	9,629	10,830	10,673	14,093	15,476	11,365	10,517	10,845	10,929	11,378
Chile.....	385	423	427	406	414	405	420	376	402	457
Costa Rica.....	105	64	62	62	67	70	68	70	77	89
Egypt.....	519	607	508	610	645	797	791	820	808	864

**Value-added revenue of all high-technology manufacturing industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Iran .....	305	318	320	276	272	325	238	319	339	423
Israel .....	2,959	3,503	3,814	4,095	5,748	5,063	4,464	4,417	4,791	4,980
Mexico .....	7,347	9,157	11,019	12,106	13,002	12,984	12,046	11,009	11,530	12,197
Morocco .....	151	148	155	117	142	161	169	183	174	173
Norway .....	1,143	1,009	1,232	1,362	1,264	1,164	1,310	1,209	1,259	1,316
Russia .....	2,677	2,417	1,814	1,879	1,607	2,335	2,498	2,953	3,493	3,714
Saudi Arabia .....	50	49	45	47	55	56	56	59	67	79
South Africa .....	1,121	1,321	889	873	903	868	903	850	956	1,051
Switzerland .....	6,924	7,572	7,042	7,787	9,661	8,926	7,614	7,765	8,481	9,313
Tunisia .....	72	75	78	82	80	78	83	77	81	85
Turkey .....	1,598	2,175	2,303	2,547	2,530	1,986	2,528	2,777	3,209	3,500
All others .....	2,993	2,942	2,925	2,774	2,844	2,839	2,897	3,076	3,387	3,793

EU = European Union

NOTES: High-technology manufacturing industries classified by Organisation for Economic Co-operation and Development and include aerospace, communications equipment, office machinery and computers, pharmaceuticals, and scientific instruments. Value-added revenue excludes purchases of domestic and imported inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

*Science and Engineering Indicators 2008*

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Aerospace</b>											
All regions/countries/economies .....	103,612	109,376	109,829	105,687	111,461	114,170	115,866	98,023	93,653	79,967	76,977
United States.....	74,649	79,190	79,631	74,462	75,490	76,305	79,957	63,775	59,380	47,270	43,769
EU.....	19,823	20,860	20,202	21,332	25,468	26,975	25,349	22,274	20,069	20,172	20,831
Austria .....	13	16	16	41	28	20	11	45	45	22	15
Belgium .....	567	594	599	708	576	626	408	502	350	333	338
Bulgaria .....	47	42	50	75	79	57	56	38	33	32	35
Czech Republic .....	101	97	101	99	92	76	47	24	15	45	44
Denmark.....	1	1	3	7	6	7	6	7	0	11	8
Finland.....	81	61	95	84	115	95	102	99	119	126	125
France.....	5,293	4,558	3,666	3,839	4,643	4,814	4,418	4,752	3,763	5,488	7,506
Germany.....	5,614	5,528	5,870	6,100	6,736	6,997	7,208	6,375	6,002	4,895	4,453
Greece.....	91	113	133	140	124	119	114	135	108	108	135
Hungary.....	1	1	1	1	0	0	0	0	1	1	0
Ireland.....	35	43	51	46	49	63	67	87	71	65	76
Italy.....	1,529	1,900	1,675	1,848	2,362	2,398	2,276	1,768	1,508	1,103	1,240
Netherlands.....	134	160	226	230	248	240	240	244	189	171	133
Poland.....	392	396	405	429	476	311	154	134	122	223	153
Portugal.....	1	1	2	2	3	4	3	3	4	70	34
Romania.....	3	3	2	2	2	1	1	1	1	1	1
Slovakia.....	0	0	0	0	0	0	0	0	0	0	0
Spain.....	884	950	832	851	795	754	715	681	595	487	541
Sweden.....	744	771	846	821	698	850	988	1,077	853	576	654
United Kingdom.....	4,292	5,626	5,632	6,011	8,436	9,544	8,534	6,300	6,290	6,414	5,340
Asia.....	2,174	2,087	2,391	2,495	2,284	2,419	2,813	3,356	4,033	3,988	4,188
China.....	328	349	309	400	398	487	573	805	1,192	1,196	1,175
India.....	23	24	30	60	33	30	50	65	61	62	77
Indonesia.....	27	30	36	18	18	13	21	36	29	8	30
Japan.....	1,299	1,179	1,502	1,452	1,419	1,393	1,534	1,807	2,085	2,076	2,259
Malaysia.....	3	2	2	2	3	5	4	4	3	3	5
Philippines.....	5	3	3	5	2	5	5	3	5	4	3
Singapore.....	383	389	391	371	239	275	253	343	396	416	418
South Korea.....	23	26	20	71	42	98	179	116	160	112	87
Taiwan.....	75	84	99	112	114	102	113	104	88	102	123
Thailand.....	7	1	2	4	16	10	82	73	14	9	10
All others.....	6,965	7,239	7,605	7,398	8,218	8,471	7,747	8,618	10,172	8,538	8,188
<b>Pharmaceuticals</b>											
All regions/countries/economies .....	89,306	95,446	105,008	107,008	112,377	116,940	122,260	124,988	126,799	134,445	135,449
United States.....	27,508	28,883	33,313	31,321	32,578	35,563	37,193	38,430	38,482	42,312	40,430
EU.....	24,120	25,267	26,134	28,034	29,104	30,661	33,091	34,164	34,263	35,729	38,545
Austria.....	235	321	347	440	409	460	505	519	567	586	707
Belgium.....	1,160	1,109	1,521	1,623	1,740	1,635	1,677	1,798	1,842	1,779	2,068

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1985-95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Bulgaria .....	45	48	48	62	57	43	38	40	22	31	29
Czech Republic .....	93	86	90	88	93	72	32	50	49	66	73
Denmark .....	517	588	560	659	654	753	780	817	756	864	929
Finland .....	357	284	327	381	421	429	441	406	319	363	337
France.....	3,948	4,157	4,081	4,341	4,647	4,710	5,010	4,834	4,999	5,099	6,287
Germany .....	6,598	6,006	6,238	6,610	6,746	7,309	8,550	8,748	8,111	8,654	8,933
Greece .....	40	47	50	55	57	81	58	56	52	58	54
Hungary .....	720	746	690	654	570	468	391	343	363	275	278
Ireland.....	66	100	118	165	239	222	278	358	391	514	775
Italy.....	3,278	3,899	4,006	4,280	4,422	4,871	4,953	5,324	5,096	5,109	5,248
Netherlands.....	1,196	1,167	1,038	835	773	826	935	1,003	1,351	1,381	1,497
Poland.....	338	460	466	580	539	491	319	324	336	384	444
Portugal .....	159	196	196	162	284	243	323	328	315	308	337
Romania.....	302	319	244	240	209	181	119	106	111	101	189
Slovakia .....	113	112	111	109	108	103	70	83	101	132	142
Spain .....	1,505	1,551	1,555	1,694	1,779	1,870	1,927	1,962	1,941	1,960	2,172
Sweden.....	701	789	800	856	794	883	1,412	1,789	1,948	2,013	1,845
United Kingdom.....	2,752	3,282	3,648	4,198	4,562	5,011	5,274	5,275	5,592	6,051	6,202
Asia.....	18,886	21,104	25,151	28,358	31,006	30,555	32,366	32,388	34,524	36,994	37,911
China .....	955	1,010	1,357	1,766	1,711	1,658	2,438	2,754	3,684	3,822	3,092
India.....	321	352	390	422	494	563	662	791	928	1,042	1,129
Indonesia .....	79	92	132	108	105	197	308	217	262	391	265
Japan.....	16,022	17,898	21,071	23,306	25,662	24,584	25,061	24,675	25,212	27,048	28,832
Malaysia .....	28	27	30	34	32	39	47	53	62	66	70
Philippines .....	202	159	159	193	286	329	357	429	474	419	569
Singapore.....	389	477	604	750	690	965	1,153	1,023	1,156	1,266	599
South Korea .....	749	939	1,211	1,513	1,653	1,899	2,004	2,071	2,386	2,506	2,895
Taiwan .....	108	134	175	230	262	262	269	327	354	375	357
Thailand .....	33	16	22	36	111	59	69	48	6	60	103
All others.....	18,792	20,193	20,410	19,296	19,690	20,162	19,610	20,006	19,530	19,410	18,563
Office and computing machinery											
All regions/countries/economies .....	39,684	44,631	49,571	56,518	60,122	58,949	60,736	54,032	52,474	59,816	65,692
United States.....	1,625	1,855	2,536	3,152	3,587	3,784	3,732	4,050	4,747	5,869	8,393
EU .....	10,824	11,368	11,752	12,766	13,201	12,955	13,011	10,095	9,875	10,659	13,538
Austria .....	47	54	62	62	62	58	62	73	46	40	35
Belgium .....	35	31	31	34	42	46	45	34	37	42	46
Bulgaria .....	5	5	5	6	6	6	7	5	4	4	4
Czech Republic .....	9	9	9	9	9	7	21	46	47	96	127
Denmark.....	55	66	54	63	64	62	53	71	69	72	67
Finland.....	72	120	133	111	58	121	56	89	66	53	59
France.....	499	507	563	663	761	768	814	760	735	805	1,123
Germany .....	3,318	3,436	3,464	3,642	3,594	3,745	4,380	2,795	2,735	2,658	2,641

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Greece .....	40	36	22	26	25	29	44	42	20	4	2
Hungary .....	8	8	8	8	8	6	8	6	22	15	11
Ireland.....	711	865	1,097	1,268	1,504	1,738	1,667	1,321	1,138	1,655	3,346
Italy.....	966	998	1,001	1,011	1,041	862	934	1,118	809	755	1,167
Netherlands.....	291	443	364	320	318	337	274	313	269	325	342
Poland.....	57	59	61	66	77	53	29	26	22	33	46
Portugal.....	111	47	64	13	13	25	29	26	26	30	50
Romania.....	8	8	7	7	7	8	4	3	4	3	5
Slovakia.....	6	6	7	6	7	6	5	5	4	4	9
Spain.....	2,987	2,905	2,810	3,172	3,296	2,983	2,433	1,273	1,530	1,051	937
Sweden.....	509	588	591	568	523	277	426	317	244	255	245
United Kingdom.....	1,089	1,178	1,400	1,709	1,787	1,818	1,720	1,773	2,049	2,758	3,276
Asia.....	25,301	29,162	32,785	37,936	40,496	39,355	41,007	36,759	33,964	39,225	39,822
China.....	184	174	229	295	321	408	514	551	664	799	1,385
India.....	11	8	7	11	63	61	92	110	56	128	107
Indonesia.....	0	0	0	0	1	1	1	2	3	3	3
Japan.....	22,867	26,618	29,705	34,159	35,767	33,487	34,496	29,680	26,436	30,283	29,259
Malaysia.....	56	48	50	13	22	151	510	558	758	864	884
Philippines.....	1	1	4	2	6	4	5	7	20	34	57
Singapore.....	1,525	1,374	1,544	1,994	2,659	3,233	3,071	3,259	3,208	3,704	4,074
South Korea.....	83	170	323	458	560	685	647	628	791	1,061	1,539
Taiwan.....	572	768	921	1,003	1,095	1,296	1,597	1,848	1,882	2,346	2,514
Thailand.....	0	0	0	1	1	30	74	116	147	4	1
All others.....	1,935	2,246	2,498	2,664	2,838	2,854	2,985	3,128	3,888	4,063	3,938
Radio, television, and communications equipment											
All regions/countries/economies.....	130,297	136,532	144,730	159,064	170,000	180,055	191,184	182,074	187,553	204,626	218,659
United States.....	16,705	16,351	13,847	14,968	16,473	17,104	16,811	18,422	20,353	24,642	29,844
EU.....	30,282	32,041	33,372	35,555	37,147	37,472	38,468	37,390	38,542	42,062	41,318
Austria.....	1,250	1,276	1,367	1,347	1,461	1,601	1,553	1,662	1,603	1,603	1,628
Belgium.....	1,476	1,301	1,313	1,385	1,420	1,491	1,381	1,195	1,142	1,182	1,257
Bulgaria.....	145	128	153	229	240	173	167	87	58	56	62
Czech Republic.....	21	20	22	22	21	18	91	101	69	79	145
Denmark.....	256	322	322	318	337	340	328	393	352	394	432
Finland.....	318	354	446	434	505	574	402	600	849	1,114	1,374
France.....	1,818	1,957	2,014	2,074	2,230	2,325	2,619	2,650	2,891	2,991	3,544
Germany.....	5,653	5,985	5,971	6,205	6,492	6,658	8,507	7,784	6,896	7,844	6,557
Greece.....	98	120	83	82	96	93	123	129	98	102	78
Hungary.....	1,100	1,085	1,186	1,280	1,240	1,080	824	935	1,187	2,090	2,639
Ireland.....	85	93	142	195	255	279	289	286	301	291	445
Italy.....	7,000	7,588	8,119	8,410	9,314	9,255	9,295	8,648	9,541	9,185	7,795
Netherlands.....	1,691	1,952	2,003	2,054	1,911	2,228	2,249	2,327	2,512	2,762	2,401
Poland.....	462	481	490	553	667	460	261	226	316	366	359

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Portugal .....	144	138	131	121	160	194	211	205	223	220	271
Romania.....	12	13	12	13	16	18	20	8	15	37	75
Slovakia.....	28	27	28	28	28	27	21	19	17	16	25
Spain .....	1,268	1,371	1,716	1,962	1,823	1,780	1,707	1,423	1,855	1,818	1,646
Sweden.....	629	638	624	739	772	766	1,040	1,143	1,271	1,762	2,075
United Kingdom.....	6,827	7,192	7,232	8,102	8,160	8,112	7,379	7,568	7,345	8,152	8,511
Asia.....	69,261	73,017	82,269	93,105	100,303	109,487	119,153	111,897	113,658	121,947	131,474
China .....	4,525	4,513	5,614	6,221	6,924	6,885	8,474	8,717	10,228	11,248	11,285
India.....	101	104	173	195	276	327	405	427	391	555	461
Indonesia .....	26	30	26	23	50	226	233	518	348	599	769
Japan.....	59,035	61,172	67,144	76,369	82,021	88,030	94,058	84,860	83,146	87,187	90,944
Malaysia .....	416	548	588	632	851	1,151	1,672	1,919	2,190	2,742	3,597
Philippines .....	122	139	135	168	192	349	356	300	362	374	543
Singapore.....	970	980	1,286	1,367	1,232	1,622	1,434	1,597	2,289	3,021	4,086
South Korea .....	1,111	1,677	2,357	3,125	3,203	4,104	4,549	4,966	5,670	7,505	10,767
Taiwan .....	2,910	3,813	4,841	4,798	5,426	6,151	6,671	7,290	8,352	7,891	8,166
Thailand.....	44	42	105	207	127	644	1,301	1,305	683	825	857
All others.....	14,049	15,122	15,242	15,436	16,077	15,992	16,752	14,365	15,000	15,975	16,023
Medical, precision, and optical instruments											
All regions/countries/economies .....	87,829	86,938	90,578	97,861	102,960	102,556	103,523	99,463	97,897	96,912	101,052
United States.....	29,206	27,471	31,845	34,504	35,658	35,056	34,093	33,646	32,843	33,756	36,734
EU .....	29,553	29,912	30,258	31,684	32,672	33,858	34,048	33,518	31,850	32,234	33,736
Austria .....	277	283	300	300	319	339	349	341	373	371	384
Belgium .....	492	408	340	347	294	357	365	340	316	346	415
Bulgaria .....	12	11	11	13	14	12	16	10	9	8	9
Czech Republic .....	45	48	69	68	61	60	89	94	115	145	150
Denmark.....	449	486	469	484	483	455	462	514	523	630	613
Finland.....	335	377	384	397	460	467	405	405	422	430	465
France.....	3,700	3,887	3,826	3,739	3,643	3,739	3,776	3,821	3,738	3,776	3,882
Germany .....	10,801	11,161	10,947	11,603	12,265	12,686	13,673	13,538	11,887	11,831	12,116
Greece .....	62	54	119	70	43	47	53	51	39	39	48
Hungary .....	300	304	321	347	368	332	239	143	140	161	155
Ireland.....	133	147	183	195	228	277	290	351	391	389	447
Italy.....	3,541	3,765	3,993	4,140	4,241	4,328	3,819	3,358	3,079	3,215	3,854
Netherlands.....	385	454	450	471	442	560	556	515	446	464	415
Poland.....	416	445	463	512	598	415	244	243	270	261	334
Portugal .....	71	65	59	58	77	82	95	108	109	118	180
Romania.....	154	152	120	117	118	94	63	47	53	45	75
Slovakia.....	43	43	44	44	44	42	32	30	30	31	46
Spain .....	708	765	945	851	976	1,268	1,317	1,389	1,197	1,187	1,103
Sweden.....	315	319	327	314	571	751	758	769	920	989	1,265
United Kingdom.....	7,314	6,738	6,889	7,614	7,426	7,545	7,447	7,450	7,793	7,798	7,780



Appendix table 6-10

(Page 5 of 5)

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Asia.....	17,018	17,009	16,309	18,857	21,620	21,478	23,251	20,781	20,388	18,793	19,484
China.....	902	871	894	1,088	1,106	1,125	1,277	1,463	2,485	2,281	1,919
India.....	77	95	225	246	293	232	264	205	198	200	251
Indonesia.....	12	9	9	11	14	27	22	20	14	43	60
Japan.....	14,681	14,518	13,346	15,645	18,336	18,187	19,633	17,022	15,626	13,882	14,685
Malaysia.....	155	145	144	157	196	188	176	166	158	178	199
Philippines.....	3	9	8	4	5	8	10	10	15	22	29
Singapore.....	177	178	240	228	162	195	228	262	314	334	425
South Korea.....	629	836	1,038	1,051	1,026	1,011	1,005	1,028	1,085	1,249	1,332
Taiwan.....	260	307	363	392	404	417	449	493	460	510	488
Thailand.....	122	42	42	36	79	87	188	113	32	96	95
All others.....	12,052	12,546	12,165	12,816	13,010	12,165	12,130	11,519	12,815	12,128	11,099

EU = European Union

NOTES: High-technology manufacturing industries classified by Organisation for Economic Co-operation and Development and include aerospace, communications equipment, office machinery and computers, pharmaceuticals, and scientific instruments. Value-added revenue excludes purchases of domestic and imported materials and inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

Science and Engineering Indicators 2008

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Aerospace</b>										
All regions/countries/economies .....	77,735	83,089	93,934	94,889	88,906	95,720	88,039	87,753	86,992	91,773
United States.....	48,659	48,474	57,139	54,973	48,926	52,313	45,706	45,218	42,416	45,316
EU .....	17,378	21,633	23,577	24,897	23,986	26,033	24,369	24,363	24,514	24,610
Austria .....	21	32	16	20	17	18	32	35	37	41
Belgium .....	280	389	448	476	454	477	397	368	417	461
Bulgaria .....	34	23	18	10	9	3	12	13	16	23
Czech Republic .....	35	26	47	71	81	90	109	115	116	114
Denmark.....	7	13	5	8	11	12	11	9	9	14
Finland.....	152	162	167	131	110	102	109	104	104	110
France.....	4,360	7,283	6,575	6,637	5,564	6,009	5,005	4,488	3,934	3,810
Germany.....	4,317	4,181	4,757	5,527	4,885	5,776	6,585	7,259	7,229	7,576
Greece.....	180	225	194	193	190	205	226	216	204	201
Hungary.....	0	0	16	23	18	14	15	20	18	12
Ireland.....	97	131	180	177	203	210	162	152	159	157
Italy.....	1,280	1,577	2,403	2,056	2,338	2,583	2,275	2,104	2,112	1,782
Netherlands.....	210	382	418	414	432	404	412	432	448	426
Poland.....	145	131	124	111	182	243	162	141	160	163
Portugal.....	12	27	32	13	18	9	9	9	9	9
Romania.....	1	1	1	1	1	1	2	3	2	2
Slovakia.....	0	0	0	0	0	0	0	0	0	0
Spain.....	527	584	681	694	749	689	704	741	791	828
Sweden.....	579	433	744	658	639	753	668	428	374	203
United Kingdom.....	5,140	6,032	6,752	7,676	8,085	8,433	7,474	7,725	8,374	8,679
Asia.....	5,114	5,791	6,959	8,019	8,211	8,735	9,582	11,059	12,810	14,327
China.....	1,896	2,406	3,129	3,758	4,011	3,169	3,650	4,657	5,380	5,884
India.....	62	86	93	98	65	57	64	70	71	78
Indonesia.....	51	25	6	6	15	12	15	11	26	70
Japan.....	2,430	2,549	3,056	3,280	2,991	3,971	4,266	4,795	5,686	6,347
Malaysia.....	4	5	1	6	8	10	18	21	20	22
Philippines.....	3	4	2	2	3	3	4	4	4	5
Singapore.....	404	426	374	453	474	562	643	599	610	673
South Korea.....	96	117	183	312	400	515	410	336	454	495
Taiwan.....	154	162	95	66	183	349	440	482	453	602
Thailand.....	14	12	20	38	60	87	73	84	105	151
All others.....	6,584	7,190	6,259	7,001	7,783	8,639	8,382	7,114	7,252	7,520
<b>Pharmaceuticals</b>										
All regions/countries/economies .....	140,356	144,152	144,311	159,885	169,062	182,917	196,332	213,583	224,147	233,753
United States.....	43,437	44,484	45,529	50,678	55,026	60,826	66,920	75,120	78,251	75,294
EU .....	38,821	39,416	40,543	44,545	47,149	52,745	55,871	59,823	63,941	68,996
Austria.....	669	679	739	769	873	729	903	913	937	1,102
Belgium.....	1,968	1,997	1,893	2,165	2,376	2,546	2,912	3,750	4,066	4,305

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Bulgaria .....	25	23	16	13	13	12	20	24	26	31
Czech Republic .....	89	74	80	66	68	68	58	61	68	81
Denmark .....	910	1,069	1,218	1,388	1,659	1,838	2,081	2,010	1,846	2,207
Finland .....	297	324	326	266	246	238	204	209	177	228
France .....	5,981	6,539	6,628	7,091	8,392	9,235	9,343	10,309	10,921	12,293
Germany .....	9,474	8,306	8,045	8,489	8,278	9,245	10,229	10,725	11,925	13,749
Greece .....	56	70	82	90	127	169	186	196	213	225
Hungary .....	267	278	402	327	462	476	530	636	672	771
Ireland .....	885	1,294	1,910	2,428	2,147	2,949	4,490	4,212	5,270	5,214
Italy .....	5,760	5,825	6,081	6,557	6,702	6,789	6,305	6,542	6,957	6,923
Netherlands .....	1,079	1,219	1,069	1,248	1,434	1,438	1,223	1,325	1,294	1,348
Poland .....	472	498	460	467	468	417	559	619	654	654
Portugal .....	336	310	314	304	306	274	238	255	253	265
Romania .....	169	127	93	89	102	94	102	124	166	179
Slovakia .....	138	108	106	141	117	134	140	160	209	249
Spain .....	2,109	2,280	2,190	2,412	2,402	2,528	2,692	2,831	2,753	2,813
Sweden .....	1,969	2,039	2,192	2,498	2,769	3,193	3,644	4,292	4,575	4,724
United Kingdom .....	6,169	6,357	6,697	7,737	8,209	10,373	10,012	10,629	10,960	11,636
Asia .....	39,971	41,246	39,268	45,982	47,787	49,638	53,471	58,044	60,682	66,484
China .....	4,211	4,602	4,829	6,152	7,746	8,660	9,619	12,941	13,861	19,037
India .....	1,303	1,488	1,592	2,011	1,727	2,187	2,991	3,140	3,504	3,975
Indonesia .....	400	378	259	304	366	386	723	493	523	561
Japan .....	29,130	29,412	27,414	31,405	31,044	31,144	31,495	32,634	32,929	30,734
Malaysia .....	66	75	68	79	82	74	81	94	158	265
Philippines .....	502	901	660	766	916	898	780	718	822	928
Singapore .....	641	510	845	940	1,206	1,226	1,947	1,921	2,280	2,747
South Korea .....	3,177	3,234	2,943	3,598	3,899	4,300	5,059	5,271	5,776	7,279
Taiwan .....	407	458	489	513	541	492	496	518	477	524
Thailand .....	133	186	170	214	259	272	280	314	354	433
All others .....	18,128	19,006	18,973	18,680	19,100	19,707	20,069	20,597	21,272	22,978
Office and computing machinery										
All regions/countries/economies .....	72,699	81,269	88,207	95,403	104,883	101,441	105,791	119,404	142,275	163,520
United States .....	11,077	15,360	21,807	24,570	29,937	27,981	30,967	31,401	33,213	39,028
EU .....	12,876	13,559	14,992	15,328	15,173	13,793	13,157	13,885	14,068	13,708
Austria .....	38	51	52	119	119	125	140	141	132	91
Belgium .....	56	61	61	56	72	56	40	32	29	40
Bulgaria .....	6	7	6	5	5	3	7	4	5	4
Czech Republic .....	108	70	39	82	94	214	323	260	433	643
Denmark .....	101	69	49	70	111	139	111	150	189	222
Finland .....	65	73	54	29	4	24	14	16	15	19
France .....	1,154	1,576	1,818	2,117	2,453	2,576	2,442	2,359	2,452	1,296
Germany .....	2,748	3,265	3,662	3,730	3,711	2,934	3,126	3,071	3,349	4,379

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Greece .....	1	4	2	2	5	5	9	1	2	1
Hungary .....	81	229	318	279	211	196	184	214	221	251
Ireland.....	2,549	2,226	2,118	2,201	2,103	1,553	1,533	1,695	1,672	1,607
Italy.....	855	714	775	620	669	624	427	317	350	184
Netherlands.....	326	301	398	363	409	416	323	326	335	308
Poland.....	83	78	96	145	182	93	90	150	165	139
Portugal .....	77	134	100	131	131	145	120	129	116	98
Romania.....	6	7	5	4	4	5	5	6	6	6
Slovakia.....	7	4	5	8	10	14	13	20	26	36
Spain .....	1,101	865	1,008	875	605	355	194	125	97	101
Sweden.....	258	262	261	247	232	89	152	161	204	170
United Kingdom.....	3,255	3,562	4,165	4,247	4,041	4,228	3,902	4,709	4,270	4,113
Asia.....	44,759	47,246	45,755	49,524	52,534	52,385	55,746	68,953	89,571	104,924
China .....	2,834	4,056	6,354	10,171	12,705	18,916	25,116	38,794	59,354	75,220
India.....	79	112	94	114	92	78	73	81	85	51
Indonesia .....	1	3	3	2	3	4	8	8	13	9
Japan.....	31,112	30,975	29,143	27,491	25,267	20,519	16,613	16,139	16,458	15,288
Malaysia .....	1,170	1,539	1,322	726	664	510	345	290	270	319
Philippines .....	50	101	79	82	121	165	133	158	187	119
Singapore.....	4,586	4,930	2,851	3,155	4,018	3,202	3,729	3,686	4,014	4,800
South Korea .....	1,796	1,851	1,753	2,801	4,111	4,026	4,384	4,564	4,356	4,185
Taiwan .....	3,130	3,679	4,155	4,980	5,552	4,965	5,346	5,232	4,832	4,931
Thailand.....	1	1	1	1	1	1	1	1	2	2
All others.....	3,987	5,104	5,652	5,981	7,240	7,283	5,921	5,164	5,424	5,859
Radio, television, and communications equipment										
All regions/countries/economies .....	237,791	271,312	275,222	322,351	396,337	349,010	354,313	410,566	491,956	544,023
United States.....	34,458	47,005	62,711	82,955	120,234	114,289	110,418	133,102	159,515	187,083
EU .....	43,632	47,638	47,164	51,770	57,643	51,342	49,638	51,916	58,916	63,702
Austria .....	1,525	1,516	1,629	1,795	2,224	1,963	1,779	1,622	1,906	2,094
Belgium .....	1,320	1,522	1,286	1,329	1,482	1,232	971	981	966	880
Bulgaria .....	52	46	38	37	54	63	144	160	130	168
Czech Republic .....	188	274	481	653	407	461	549	645	966	928
Denmark.....	491	522	523	636	551	539	589	565	391	367
Finland.....	1,571	1,954	3,227	4,039	5,565	5,046	6,728	7,775	8,817	9,649
France.....	4,200	5,055	6,299	7,375	9,873	9,158	9,493	9,645	11,083	12,198
Germany .....	6,505	7,644	8,552	8,743	10,957	8,988	9,475	10,325	12,356	14,769
Greece .....	57	65	165	142	207	157	107	74	79	48
Hungary .....	3,232	4,632	399	438	524	684	764	1,971	3,167	4,142
Ireland.....	655	1,090	1,294	1,924	2,346	2,365	2,318	2,192	2,268	2,437
Italy.....	7,613	6,842	6,046	6,520	5,716	6,065	5,286	4,926	4,902	4,554
Netherlands.....	2,128	1,939	1,996	2,081	2,362	2,027	1,710	1,768	1,789	1,705
Poland.....	426	463	512	625	501	533	859	907	1,133	1,269

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Portugal .....	302	265	248	231	229	263	255	408	474	637
Romania.....	101	120	95	78	44	41	35	41	42	26
Slovakia.....	27	43	40	15	19	35	45	48	65	102
Spain .....	1,559	1,449	1,347	1,065	1,254	899	647	534	520	469
Sweden.....	2,753	3,038	3,481	3,334	2,570	1,831	536	540	689	873
United Kingdom.....	8,928	9,159	9,507	10,709	10,756	8,992	7,349	6,789	7,174	6,387
Asia.....	143,736	158,531	147,546	166,988	195,058	165,785	178,723	210,536	257,197	274,950
China .....	12,005	13,785	13,094	16,000	19,199	21,959	29,826	45,483	69,701	83,011
India.....	592	546	668	696	597	577	456	531	678	583
Indonesia .....	1,242	1,930	1,037	1,709	2,179	2,263	3,060	3,230	3,856	3,974
Japan.....	99,302	108,296	100,607	105,237	118,581	92,884	90,039	104,279	121,435	123,346
Malaysia .....	4,317	5,097	4,633	5,778	7,528	5,989	7,056	7,884	9,601	10,833
Philippines .....	522	1,164	989	1,157	1,779	1,982	2,328	2,242	2,807	3,024
Singapore.....	4,388	4,737	3,425	4,870	6,444	4,616	4,466	4,832	5,225	5,698
South Korea .....	11,108	12,125	10,569	16,321	22,710	20,999	24,306	24,817	28,471	29,978
Taiwan .....	9,230	9,976	11,831	14,530	15,198	13,771	16,314	16,265	14,371	13,346
Thailand.....	1,029	874	693	690	844	745	872	974	1,052	1,157
All others.....	15,965	18,138	17,801	20,637	23,401	17,595	15,534	15,013	16,327	18,288
Medical, precision, and optical instruments										
All regions/countries/economies .....	103,251	107,262	111,478	114,507	124,299	125,075	127,721	138,392	159,235	168,324
United States.....	37,106	38,391	41,926	42,486	44,360	44,124	46,720	51,295	61,944	67,488
EU .....	34,868	35,969	37,459	38,586	42,955	43,989	45,589	46,921	48,705	50,099
Austria .....	393	446	489	592	631	668	718	687	753	781
Belgium .....	360	366	373	352	355	347	373	379	426	416
Bulgaria .....	12	14	10	8	8	7	11	12	15	14
Czech Republic .....	190	202	183	225	192	258	245	242	270	308
Denmark.....	671	783	900	894	1,050	1,060	976	977	1,071	1,017
Finland.....	520	582	623	620	662	703	658	575	561	546
France.....	4,164	4,771	5,117	5,719	6,654	7,050	8,263	8,225	8,162	8,775
Germany .....	12,623	12,521	13,168	13,393	15,147	15,372	15,382	16,172	17,280	17,727
Greece.....	51	54	46	48	51	71	57	80	60	64
Hungary .....	168	184	164	176	190	207	203	245	280	284
Ireland.....	551	729	891	1,051	1,496	2,061	2,055	2,415	2,503	2,822
Italy.....	3,987	4,079	4,022	4,080	4,502	4,514	5,210	4,375	4,288	4,243
Netherlands.....	388	378	395	413	461	446	405	384	376	392
Poland.....	440	507	561	675	642	714	628	696	784	898
Portugal .....	146	127	144	156	165	177	180	187	191	192
Romania.....	94	88	59	58	63	79	85	117	103	88
Slovakia.....	72	86	86	55	57	60	60	70	78	134
Spain .....	1,063	1,211	1,247	1,229	1,283	1,202	870	903	961	938
Sweden.....	1,191	1,187	1,323	1,312	1,358	790	1,620	1,551	1,683	1,737
United Kingdom.....	7,785	7,657	7,660	7,530	7,987	8,203	7,590	8,628	8,860	8,723

**Value-added revenue of high-technology manufacturing industries for selected regions/countries/economies: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Asia.....	20,775	21,562	21,049	21,489	22,974	22,503	21,581	26,129	32,908	33,804
China .....	2,317	2,171	2,269	2,468	2,881	3,283	3,618	6,018	8,975	9,839
India.....	265	186	334	402	357	416	405	442	459	498
Indonesia .....	63	88	61	101	138	84	78	56	57	69
Japan.....	15,559	16,475	15,785	15,506	16,096	15,191	13,758	15,386	18,800	18,680
Malaysia .....	199	233	224	212	334	368	334	362	428	510
Philippines .....	27	49	37	41	63	71	68	77	96	116
Singapore.....	452	503	491	668	734	727	804	877	845	887
South Korea .....	1,311	1,265	1,248	1,346	1,535	1,518	1,522	1,621	1,712	1,624
Taiwan .....	468	477	511	636	710	711	856	1,109	1,300	1,268
Thailand.....	113	116	92	109	126	134	140	180	236	312
All others.....	10,501	11,340	11,043	11,946	14,011	14,458	13,831	14,047	15,679	16,934

EU = European Union

NOTES: High-technology manufacturing industries classified by Organisation for Economic Co-operation and Development and include aerospace, communications equipment, office machinery and computers, pharmaceuticals, and scientific instruments. Value-added revenue excludes purchases of domestic and imported materials and inputs. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

*Science and Engineering Indicators 2008*

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Medium-high technology manufacturing industries</b>											
<b>Value-added revenue</b>											
All regions/countries/economies .....	1,123,494	1,133,009	1,164,902	1,256,616	1,312,255	1,321,862	1,300,956	1,306,500	1,283,338	1,347,078	1,376,766
United States.....	317,801	307,924	319,720	349,480	351,382	338,953	313,382	325,220	340,381	372,409	377,715
EU.....	368,805	387,189	390,244	404,040	425,735	430,648	418,920	417,091	381,129	405,320	411,978
Austria .....	4,604	4,870	4,686	5,045	4,972	5,385	5,597	5,502	5,394	5,853	5,846
Belgium .....	11,274	11,118	11,689	12,761	12,393	12,945	12,244	11,544	11,377	11,549	12,519
Czech Republic .....	3,582	3,295	3,418	3,325	3,068	2,508	1,971	3,799	2,701	3,390	3,793
Denmark.....	4,292	4,417	4,159	4,662	4,663	4,640	4,479	4,704	4,246	4,757	5,106
Finland.....	4,067	4,075	4,517	4,838	4,995	5,042	4,043	3,900	3,881	4,331	4,615
France .....	31,482	32,251	32,193	34,136	36,076	37,090	37,003	38,480	36,005	39,628	42,912
Germany.....	148,715	152,530	152,438	155,319	168,084	177,820	182,509	180,761	156,317	163,598	156,159
Greece .....	985	1,048	990	966	1,038	1,185	927	973	974	967	1,074
Hungary.....	3,635	3,638	3,773	3,684	3,579	2,960	2,333	2,274	2,960	3,323	3,456
Ireland .....	1,186	1,228	1,307	1,449	1,730	1,834	1,957	2,191	2,288	2,669	3,294
Italy.....	43,399	47,922	48,563	50,402	51,348	49,534	47,839	46,435	43,982	47,171	50,781
Netherlands .....	10,692	11,618	12,353	12,473	12,970	12,990	12,229	12,007	11,901	13,425	14,136
Poland.....	6,721	7,256	7,393	8,232	9,096	6,560	3,892	4,102	4,497	4,764	5,242
Portugal .....	1,328	1,528	1,638	1,718	2,055	2,076	1,946	2,201	1,969	1,999	2,476
Slovakia .....	1,578	1,582	1,606	1,587	1,589	1,540	1,146	938	671	691	884
Spain .....	15,323	19,343	20,180	19,333	19,945	19,743	20,378	20,229	18,176	19,262	21,037
Sweden.....	9,716	10,002	10,451	10,677	11,069	11,589	11,588	11,881	11,750	13,209	14,195
United Kingdom.....	66,225	69,466	68,890	73,434	77,066	75,206	66,840	65,170	62,040	64,732	64,450
Asia.....	270,332	267,962	284,867	324,954	354,579	379,458	397,118	393,533	391,905	397,258	414,883
China .....	22,585	22,205	23,734	26,488	28,144	27,541	32,782	42,001	56,896	54,146	42,159
India .....	3,377	3,484	3,934	4,204	4,570	5,688	5,604	6,695	7,382	8,071	10,771
Indonesia .....	2,245	2,389	2,733	2,661	3,444	4,651	5,359	6,476	6,411	6,696	6,700
Japan.....	216,761	213,055	223,887	254,494	277,619	294,242	297,826	279,849	264,101	263,747	287,000
Malaysia .....	1,484	1,289	1,403	1,700	2,143	2,489	3,235	3,487	3,627	4,512	5,670
Philippines .....	414	584	525	774	923	1,295	1,337	1,339	1,449	1,285	1,527
Singapore .....	4,590	3,671	3,215	3,887	2,771	3,304	3,522	3,452	3,171	3,542	3,914
South Korea .....	9,201	10,539	12,501	16,261	17,456	19,743	20,916	21,958	23,827	28,781	33,196
Taiwan .....	8,295	10,013	12,078	13,125	13,524	15,259	16,757	18,971	18,070	18,637	17,261
Thailand.....	1,378	734	857	1,358	3,986	5,245	9,779	9,305	6,970	7,840	6,685
<b>Exports</b>											
All regions/countries/economies .....	768,268	863,190	953,148	1,037,443	1,049,935	1,175,204	1,204,059	1,296,813	1,301,374	1,443,071	1,612,143
United States.....	113,808	114,751	122,954	139,717	136,364	151,438	160,932	167,902	176,434	193,836	208,656
EU.....	184,541	192,429	197,116	203,266	200,431	214,364	213,257	225,625	250,388	274,391	297,193
Austria .....	11,143	11,972	12,376	11,778	14,123	17,250	17,848	18,715	16,472	18,100	19,011
Belgium .....	27,294	32,043	37,226	40,988	42,389	48,816	48,833	50,590	52,712	62,417	64,163
Czech Republic .....	6,170	7,393	8,428	3,778	3,965	4,261	5,366	6,058	5,211	5,721	7,991
Denmark.....	6,330	6,988	7,469	8,304	8,158	8,995	9,127	9,702	9,081	9,688	10,676

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Finland.....	3,567	4,248	5,027	4,956	5,440	6,292	5,886	6,375	6,332	7,653	8,242
France .....	48,248	53,979	60,198	67,122	70,463	81,855	84,729	90,862	88,418	98,222	102,051
Germany .....	148,354	166,554	181,887	192,635	199,755	216,777	212,783	223,345	200,323	222,464	242,784
Greece .....	325	358	361	349	498	542	547	689	738	775	1,060
Hungary .....	2,118	2,380	2,598	2,868	2,615	2,685	3,450	3,723	3,656	4,219	4,716
Ireland .....	3,509	3,384	3,715	4,434	4,791	5,150	5,656	6,429	6,422	7,196	8,681
Italy.....	41,557	48,042	53,744	59,678	63,617	68,093	69,459	72,620	78,544	85,455	101,214
Netherlands .....	21,679	27,740	31,854	31,533	31,668	35,903	35,912	36,697	37,405	38,797	43,898
Poland.....	2,781	2,580	2,643	3,262	3,128	3,546	3,053	3,494	3,320	3,969	5,224
Portugal .....	1,380	1,608	2,028	2,353	2,813	3,511	3,372	3,786	3,561	4,104	5,798
Slovakia .....	1,426	1,711	2,011	922	1,000	1,072	1,602	1,768	1,359	2,112	2,387
Spain .....	10,303	11,630	13,659	15,904	16,966	21,046	23,175	27,610	28,950	33,811	39,314
Sweden.....	16,081	18,185	20,140	20,863	19,643	21,184	20,162	20,524	22,522	25,686	24,369
United Kingdom.....	45,137	53,261	60,899	71,969	65,944	76,906	76,855	80,663	76,172	80,922	91,525
Asia.....	155,340	180,131	199,225	218,858	220,024	253,200	275,007	306,220	315,733	346,156	400,175
China .....	7,112	8,277	11,807	21,293	20,276	26,548	33,733	37,696	42,779	48,253	57,610
India .....	632	778	1,008	1,118	1,102	1,577	1,817	2,377	2,531	3,265	4,116
Indonesia .....	337	558	528	710	898	1,119	1,662	1,955	2,211	2,617	3,662
Japan.....	129,424	145,772	152,906	154,746	157,733	177,248	184,466	201,537	196,058	205,806	226,247
Malaysia .....	747	1,184	1,484	1,966	2,493	3,024	4,014	5,095	5,847	7,195	9,183
Philippines .....	319	540	1,052	682	1,046	1,051	1,165	1,282	1,429	1,843	1,977
Singapore .....	5,747	7,506	9,238	12,242	12,378	13,843	14,894	16,108	16,651	20,572	26,284
South Korea .....	3,348	5,341	8,311	9,543	7,644	8,389	9,659	12,404	14,890	19,294	27,791
Taiwan .....	6,767	8,873	11,726	14,710	14,664	18,163	20,543	23,802	27,852	30,389	34,431
Thailand.....	907	1,303	1,165	1,849	1,791	2,239	3,053	3,963	5,486	6,922	8,875
Medium-low technology manufacturing industries											
Value-added revenue											
All regions/countries/economies.....	878,975	920,961	953,661	1,015,335	1,042,095	1,038,299	1,050,359	1,081,298	1,090,570	1,130,619	1,152,209
United States.....	217,780	215,308	226,917	239,052	239,396	227,086	220,540	231,904	248,542	267,885	268,251
EU .....	297,188	315,633	315,017	331,545	340,172	341,982	334,046	336,229	325,041	333,858	340,350
Austria .....	5,720	6,112	5,984	6,380	6,115	6,449	6,142	6,126	6,069	6,783	7,894
Belgium .....	7,490	8,017	7,658	9,179	9,502	9,362	9,188	9,062	8,755	9,053	10,092
Czech Republic .....	5,477	6,495	6,646	6,616	6,116	5,071	3,025	3,127	3,492	4,081	4,263
Denmark.....	3,679	4,274	4,112	3,994	4,240	4,268	4,021	4,326	4,208	4,605	4,761
Finland.....	3,909	3,980	4,262	4,177	4,599	4,410	3,980	3,802	3,977	4,483	4,542
France .....	53,519	50,570	47,384	48,476	49,428	51,118	50,697	52,740	49,270	50,753	53,011
Germany.....	74,415	73,609	73,176	77,165	81,645	85,392	87,709	87,241	83,349	87,217	84,549
Greece .....	2,344	2,679	2,707	3,020	2,970	2,956	2,981	2,954	2,761	2,878	2,965
Hungary .....	1,551	1,534	1,600	1,619	1,507	1,463	1,051	1,367	1,441	1,553	1,645
Ireland .....	619	645	667	722	795	997	924	1,001	975	1,027	1,120
Italy.....	44,964	51,158	52,671	53,947	53,140	55,400	58,355	58,328	56,515	56,299	56,500
Netherlands .....	11,187	11,640	11,985	12,586	12,499	13,191	13,602	13,426	13,429	14,525	13,857



**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Poland.....	11,291	12,191	12,174	13,665	14,582	9,737	5,400	6,229	6,297	6,121	6,464
Portugal.....	1,355	1,842	2,067	2,270	2,149	2,428	2,447	2,542	2,520	2,305	2,606
Slovakia.....	1,031	1,093	1,098	1,102	1,093	1,036	790	831	778	815	1,102
Spain.....	23,692	29,577	30,441	30,234	32,322	32,215	30,876	31,236	28,237	25,379	26,948
Sweden.....	6,326	7,575	6,991	6,882	6,703	7,267	6,855	6,343	6,512	7,269	8,335
United Kingdom.....	38,620	42,641	43,395	49,511	50,768	49,222	46,004	45,549	46,455	48,711	49,696
Asia.....	205,470	221,932	241,696	266,055	280,910	286,256	315,805	327,277	336,096	344,077	352,225
China.....	23,155	26,459	28,157	28,713	27,317	25,688	29,683	33,810	50,642	47,170	45,286
India.....	3,281	3,192	4,130	4,711	4,843	5,393	5,282	6,278	6,896	7,551	8,653
Indonesia.....	1,333	1,256	1,612	1,262	1,618	2,025	2,123	3,263	3,966	3,850	4,293
Japan.....	155,166	165,657	179,540	196,884	205,286	210,552	218,629	221,793	218,755	226,042	230,012
Malaysia.....	881	1,133	1,049	1,243	1,688	1,679	2,188	2,501	3,060	4,385	5,695
Philippines.....	577	724	719	921	921	1,302	1,461	1,623	1,650	1,671	2,252
Singapore.....	2,370	2,288	2,387	2,718	3,268	3,985	4,063	4,177	4,703	5,144	5,244
South Korea.....	7,040	8,718	10,146	12,397	13,157	13,678	17,317	18,725	20,442	20,673	23,065
Taiwan.....	9,076	11,180	12,435	13,550	14,810	14,693	16,258	17,429	17,940	18,649	18,727
Thailand.....	2,591	1,327	1,519	3,656	8,001	7,261	18,801	17,679	8,042	8,943	8,997
Exports											
All regions/countries/economies.....	346,423	383,742	413,830	425,415	441,777	482,435	506,102	552,655	571,635	596,506	649,682
United States.....	25,842	25,782	27,997	31,718	32,680	39,063	44,933	45,354	45,472	46,383	49,849
EU.....	68,403	68,585	70,111	68,891	67,689	71,596	72,688	76,438	85,952	89,588	91,809
Austria.....	6,026	9,006	10,575	6,928	7,284	8,455	8,456	8,839	8,421	9,004	9,243
Belgium.....	16,730	19,768	21,462	23,325	24,134	26,163	26,572	26,828	26,007	28,212	29,511
Czech Republic.....	2,562	3,292	3,668	2,340	2,538	2,718	3,260	3,950	3,866	4,295	5,406
Denmark.....	3,115	3,412	3,926	4,485	4,207	4,838	4,875	5,552	5,202	5,637	5,644
Finland.....	3,333	3,555	3,892	4,030	3,580	4,057	4,772	5,268	5,161	5,379	5,881
France.....	20,980	23,045	23,764	25,741	26,709	30,446	31,333	33,647	32,752	34,857	37,376
Germany.....	39,325	45,582	49,036	49,032	50,665	56,272	57,118	60,544	55,939	59,038	62,636
Greece.....	1,553	1,556	1,712	1,459	2,023	2,017	2,286	2,321	2,410	3,277	2,687
Hungary.....	1,037	1,668	2,017	1,458	1,482	1,596	1,930	1,964	1,875	2,184	2,289
Ireland.....	1,110	1,158	1,267	1,426	1,472	1,646	1,646	1,858	1,504	1,660	1,723
Italy.....	19,249	22,241	23,995	25,759	26,785	30,581	31,617	33,784	37,430	37,357	40,911
Netherlands.....	18,627	22,546	23,791	24,192	23,701	25,697	27,004	26,893	28,705	26,782	28,508
Poland.....	1,969	2,274	2,496	2,232	2,444	2,965	3,939	4,015	4,478	5,371	5,947
Portugal.....	1,022	1,277	1,183	1,302	1,795	2,150	2,102	2,509	2,506	3,090	3,240
Slovakia.....	1,366	3,817	5,305	1,249	1,487	1,288	1,492	1,828	1,650	2,829	3,233
Spain.....	8,916	8,864	9,214	10,561	10,580	11,844	12,663	13,817	15,327	14,922	15,979
Sweden.....	7,793	8,661	9,233	9,273	9,287	9,756	9,945	10,383	11,166	12,053	11,872
United Kingdom.....	17,805	19,780	21,880	24,282	23,454	27,693	29,206	29,196	30,586	30,519	31,371
Asia.....	72,544	73,237	78,228	83,175	87,693	95,769	107,749	121,433	131,608	142,008	158,424
China.....	39,658	37,377	34,920	35,031	35,505	38,183	42,106	45,816	49,333	51,770	54,089
India.....	5,421	6,056	8,098	10,366	11,046	13,088	16,079	20,310	21,112	25,242	33,687

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Indonesia .....	10,319	8,389	8,850	9,924	9,432	10,464	13,520	15,592	16,395	16,930	19,521
Japan.....	5,826	7,115	9,320	8,546	8,359	8,972	9,859	11,000	11,904	12,556	13,635
Malaysia .....	921	1,098	1,610	1,992	2,960	2,825	2,331	2,780	2,906	2,952	3,821
Philippines .....	1,044	1,415	2,133	1,803	1,392	1,402	1,440	2,104	2,477	2,757	3,278
Singapore .....	1,273	1,487	1,752	1,725	2,170	2,597	3,187	3,752	3,647	4,380	5,289
South Korea .....	537	649	747	951	1,311	1,466	1,799	2,066	3,094	3,266	4,301
Taiwan .....	436	503	687	701	710	774	804	762	935	859	1,024
Thailand.....	7,108	9,148	10,112	12,137	14,808	15,997	16,624	17,250	19,804	21,296	19,779
<b>Low-technology manufacturing industries</b>											
<b>Value-added revenue</b>											
All regions/countries/economies .....	1,411,220	1,460,147	1,512,776	1,559,395	1,588,834	1,612,660	1,639,594	1,669,168	1,683,061	1,704,940	1,698,628
United States.....	406,537	403,057	423,226	439,302	446,236	447,647	442,586	459,531	464,515	494,133	509,505
EU .....	405,184	423,843	430,982	441,161	450,932	458,402	463,321	468,275	459,183	461,484	456,308
Austria .....	7,796	7,851	7,997	8,348	8,693	9,263	9,699	9,761	9,305	9,532	10,002
Belgium .....	11,755	12,283	12,423	12,447	13,137	13,377	12,916	12,952	12,279	12,332	12,467
Czech Republic .....	5,891	5,916	5,987	5,743	5,416	4,600	4,470	5,323	3,730	4,617	5,033
Denmark.....	6,315	6,876	6,774	6,770	6,587	6,754	7,069	7,329	7,168	7,666	7,841
Finland.....	7,176	7,360	7,777	8,319	8,257	7,908	6,818	7,211	8,148	8,701	8,801
France .....	63,525	63,711	62,088	63,609	65,475	67,107	68,380	66,959	65,770	66,199	67,085
Germany .....	81,895	83,278	83,914	85,167	88,722	94,930	102,023	101,415	99,585	98,004	93,291
Greece .....	7,200	7,071	6,862	7,106	7,071	6,766	6,668	6,515	6,353	6,227	6,198
Hungary .....	3,055	2,977	3,072	3,080	2,894	2,713	2,173	2,247	2,290	2,531	2,465
Ireland .....	2,333	2,618	2,947	3,283	3,616	4,016	3,831	4,247	4,293	4,446	4,719
Italy.....	67,319	71,605	72,799	74,836	74,590	74,198	76,354	77,518	75,850	76,602	73,809
Netherlands .....	14,535	17,175	17,324	17,352	17,755	18,706	19,221	19,450	20,187	20,898	20,491
Poland.....	12,015	12,553	12,644	12,906	13,541	9,617	7,721	8,689	8,940	7,695	9,010
Portugal .....	5,033	6,071	6,402	6,553	7,073	7,953	9,115	9,911	9,665	9,455	9,612
Slovakia.....	1,356	1,345	1,353	1,337	1,336	1,295	983	1,037	889	1,089	1,518
Spain .....	34,168	37,584	38,051	38,328	38,846	39,265	38,754	38,083	35,458	33,835	32,381
Sweden.....	8,951	9,339	9,971	9,822	9,772	10,444	10,336	10,494	10,598	11,617	13,075
United Kingdom.....	64,865	68,230	72,596	76,156	78,150	79,488	76,792	79,134	78,674	80,040	78,510
Asia.....	343,812	371,171	394,318	408,565	417,703	432,872	458,470	456,252	477,523	469,676	453,189
China .....	29,240	32,188	34,682	37,702	38,283	37,961	42,602	47,925	71,652	68,010	56,567
India .....	5,235	5,706	5,281	5,892	6,641	7,150	7,316	6,969	8,748	9,428	9,451
Indonesia .....	1,921	2,327	2,624	3,197	3,857	4,808	4,952	7,090	8,091	9,276	9,520
Japan.....	267,123	288,599	304,696	312,856	311,801	321,751	330,434	324,320	321,080	317,918	312,823
Malaysia .....	1,830	2,143	2,334	2,582	3,009	3,333	3,398	3,582	4,189	4,643	5,386
Philippines .....	2,372	2,873	2,869	3,719	4,242	5,442	4,845	4,848	5,139	4,903	5,653
Singapore .....	1,688	1,546	1,897	1,916	1,811	2,196	2,033	2,094	2,228	2,428	2,346
South Korea .....	13,017	16,023	18,516	19,608	19,708	20,081	21,496	21,801	21,084	23,062	22,776
Taiwan .....	14,015	16,044	17,086	16,129	15,696	15,819	16,031	17,258	17,802	16,063	14,344
Thailand.....	7,371	3,722	4,333	4,965	12,655	14,330	25,364	20,365	17,511	13,947	14,323

Appendix table 6-12

(Page 5 of 5)

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Exports</b>											
All regions/countries/economies.....	504,611	592,924	666,646	727,212	767,136	826,163	867,566	939,887	936,170	1,001,339	1,104,106
United States.....	53,342	64,848	76,677	90,570	95,442	89,183	94,748	101,928	108,891	112,310	114,436
EU.....	99,054	103,019	109,562	116,572	121,979	127,475	123,862	129,753	132,539	146,390	161,847
Austria.....	7,730	8,930	9,165	9,509	9,916	11,580	11,756	12,347	10,783	11,381	13,930
Belgium.....	20,864	25,085	28,493	29,487	32,781	35,633	37,310	38,503	36,493	39,758	41,932
Czech Republic.....	2,641	3,086	3,325	2,253	2,384	2,730	3,362	3,986	3,554	4,081	5,446
Denmark.....	10,872	12,119	12,998	13,779	13,471	14,851	15,610	16,310	15,754	16,928	18,104
Finland.....	8,207	9,164	10,511	10,874	10,689	11,616	11,328	11,869	10,958	12,751	12,772
France.....	29,331	33,021	36,639	40,403	43,433	48,958	49,324	52,929	52,101	55,460	66,831
Germany.....	43,711	50,991	54,602	62,167	66,128	73,014	75,074	77,729	63,985	72,705	71,139
Greece.....	2,599	3,637	4,069	3,303	4,060	4,265	4,400	5,518	4,764	4,425	5,077
Hungary.....	1,811	1,934	2,062	2,183	2,313	2,757	3,939	4,167	3,402	3,949	4,371
Ireland.....	5,320	5,327	6,591	7,090	7,452	7,370	7,926	9,618	9,151	9,841	11,883
Italy.....	40,371	45,479	48,211	49,744	51,471	58,195	58,601	61,175	64,985	68,749	78,066
Netherlands.....	20,226	25,188	27,859	30,548	30,176	34,326	35,717	39,188	40,371	38,725	42,401
Poland.....	2,118	2,675	2,807	3,055	3,135	3,351	3,911	3,805	4,822	6,231	7,715
Portugal.....	5,407	6,340	7,388	8,115	8,536	9,880	10,066	10,676	9,590	10,459	11,320
Slovakia.....	859	1,033	1,116	747	843	951	1,330	1,576	1,198	1,797	2,108
Spain.....	8,699	8,997	9,931	10,375	10,057	11,661	12,200	13,974	14,845	16,607	18,866
Sweden.....	10,258	11,830	13,340	14,479	14,061	14,747	14,476	14,651	13,843	14,205	16,399
United Kingdom.....	24,441	29,238	34,844	38,172	36,877	43,575	42,623	45,007	42,117	46,201	51,366
Asia.....	110,833	133,568	157,998	173,075	184,721	205,004	227,633	252,209	256,668	270,538	299,893
China.....	32,050	40,301	50,167	58,870	66,727	74,047	84,023	97,168	100,051	109,062	118,303
India.....	5,444	6,015	7,329	7,647	8,190	8,806	9,367	10,664	12,510	14,258	17,706
Indonesia.....	4,630	6,210	8,046	9,302	10,152	12,011	14,640	18,486	20,427	20,409	22,144
Japan.....	22,161	23,381	23,043	23,146	23,689	27,230	27,997	30,129	28,757	27,110	28,564
Malaysia.....	2,816	3,434	4,083	4,591	5,443	6,353	7,298	8,748	9,345	10,671	13,177
Philippines.....	2,350	2,914	3,466	3,919	4,612	5,364	5,679	5,768	5,879	5,925	6,852
Singapore.....	5,783	6,971	8,436	9,772	9,160	9,966	10,522	10,985	10,699	11,079	14,720
South Korea.....	10,701	13,965	17,558	18,974	18,541	19,383	21,396	22,011	21,491	22,843	25,690
Taiwan.....	20,195	25,420	29,482	28,467	27,920	28,493	30,736	31,063	30,143	30,563	31,258
Thailand.....	4,703	4,957	6,387	8,387	10,285	13,351	15,975	17,188	17,366	18,619	21,481

EU = European Union

NOTES: Manufacturing industries classified by Organisation for Economic Co-operation and Development based on average R&D intensity of manufacturing industry. Value-added revenue excludes purchases of domestic and imported materials and inputs. EU excludes Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, Romania, and Slovenia. EU exports exclude intra-EU exports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Medium-high technology manufacturing industries</b>										
<b>Value-added revenue</b>										
All regions/countries/economies.....	1,391,162	1,433,505	1,428,221	1,425,623	1,470,410	1,422,203	1,501,561	1,530,524	1,627,695	1,681,655
United States.....	366,447	372,847	381,613	371,584	378,328	347,210	380,487	369,157	380,782	384,826
EU.....	415,250	432,769	446,460	438,736	441,709	443,344	453,523	452,422	466,769	473,466
Austria.....	6,218	6,842	7,717	8,657	9,199	9,191	9,091	9,349	10,102	10,543
Belgium.....	12,721	13,070	13,557	12,871	12,723	12,401	13,032	12,532	13,574	13,332
Czech Republic.....	4,795	4,338	4,510	4,497	4,334	4,518	4,638	4,780	5,293	6,065
Denmark.....	4,952	5,521	5,842	5,339	5,533	5,758	5,790	5,641	5,903	6,057
Finland.....	4,672	4,794	5,133	4,977	5,379	5,671	5,065	4,968	5,136	5,586
France.....	43,713	47,111	51,078	53,849	57,218	56,955	57,616	56,402	56,310	55,357
Germany.....	154,802	161,376	167,046	161,459	162,829	167,228	170,533	172,795	180,902	186,559
Greece.....	1,123	1,097	1,200	1,226	1,297	1,177	1,096	1,128	1,137	1,146
Hungary.....	3,606	3,463	3,171	3,232	3,066	3,492	4,619	3,940	4,184	4,500
Ireland.....	3,809	5,537	8,061	8,774	9,457	12,640	15,950	16,380	13,796	13,883
Italy.....	51,828	54,129	53,985	52,612	52,949	50,864	51,982	49,258	49,777	48,699
Netherlands.....	13,585	14,174	14,394	14,295	14,139	14,024	14,193	13,578	13,913	13,938
Poland.....	5,837	5,509	5,689	5,530	5,904	5,518	5,406	6,244	7,505	8,229
Portugal.....	2,895	2,950	2,896	2,978	2,724	2,843	2,846	2,915	2,860	2,582
Slovakia.....	912	990	1,126	1,078	1,106	1,217	1,225	1,439	1,642	2,134
Spain.....	21,362	24,003	25,608	25,129	24,485	23,729	24,120	24,254	24,925	24,237
Sweden.....	14,378	14,880	14,427	14,789	15,415	13,343	14,161	15,188	15,727	16,112
United Kingdom.....	64,041	62,985	61,019	57,446	53,951	52,776	52,159	51,631	54,083	54,506
Asia.....	438,393	446,228	421,220	434,560	457,547	440,413	481,666	522,138	582,736	616,871
China.....	48,993	48,648	47,518	48,203	56,990	63,727	78,339	102,630	116,172	131,942
India.....	10,165	9,733	13,514	14,800	12,985	13,276	14,386	15,766	18,949	21,620
Indonesia.....	8,690	8,434	4,696	4,740	6,582	7,168	7,601	10,443	16,102	15,964
Japan.....	297,611	305,456	297,526	302,665	308,212	286,241	304,514	311,368	338,266	348,290
Malaysia.....	5,809	6,093	3,713	4,594	5,358	5,836	6,331	6,837	7,383	7,446
Philippines.....	1,417	2,557	1,938	2,401	3,061	3,332	3,264	3,204	3,793	4,447
Singapore.....	4,222	4,429	3,062	3,082	3,744	3,308	4,231	4,652	4,892	5,549
South Korea.....	35,096	34,135	24,830	29,300	35,845	33,895	37,446	39,316	44,920	48,175
Taiwan.....	18,663	19,585	19,484	18,453	16,763	15,030	16,129	15,775	17,204	17,374
Thailand.....	7,727	7,158	4,938	6,323	8,008	8,599	9,425	12,146	15,056	16,063
<b>Exports</b>										
All regions/countries/economies.....	1,673,072	1,757,029	1,773,256	1,830,178	1,961,873	1,958,691	2,055,608	2,367,791	2,667,343	2,833,380
United States.....	218,827	247,117	249,560	252,121	282,171	264,641	258,115	262,016	294,206	315,089
EU.....	289,393	301,425	283,653	283,912	315,595	330,660	340,236	378,935	416,827	442,867
Austria.....	22,059	21,577	22,489	22,667	23,157	26,406	27,971	32,220	35,418	38,128
Belgium.....	64,486	67,891	71,476	74,543	73,942	80,817	84,132	94,154	102,334	104,191
Czech Republic.....	8,284	9,967	12,413	12,338	14,190	15,715	16,537	19,993	22,989	25,483
Denmark.....	10,478	11,340	11,247	11,498	11,727	12,767	13,545	14,873	15,391	16,049

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Finland.....	8,736	9,382	10,079	10,096	11,294	12,100	12,227	13,074	14,297	15,508
France .....	104,207	105,389	112,147	116,100	121,864	126,817	133,452	148,017	157,595	161,284
Germany .....	253,596	259,833	263,158	266,892	280,368	299,454	308,043	349,926	388,984	402,676
Greece .....	1,106	1,176	1,228	1,296	1,329	1,351	1,465	1,806	1,883	2,058
Hungary .....	4,559	7,413	9,124	10,773	11,399	11,789	11,450	12,958	13,969	15,311
Ireland .....	10,339	12,988	16,626	18,780	20,041	21,071	23,833	29,520	30,870	32,920
Italy.....	102,991	99,931	96,904	95,696	96,829	95,891	94,690	104,108	110,686	111,850
Netherlands .....	44,651	50,192	47,834	46,701	47,635	44,843	47,073	53,832	58,979	62,147
Poland.....	5,764	6,482	7,178	7,595	10,400	10,815	12,469	16,649	19,201	21,827
Portugal .....	6,600	7,163	7,447	7,658	8,024	7,642	8,119	9,244	9,754	10,015
Slovakia .....	2,647	3,405	4,511	4,650	5,298	5,345	6,072	9,392	10,477	10,452
Spain .....	42,600	44,334	47,246	50,089	51,889	52,998	53,756	63,523	67,154	67,961
Sweden.....	25,297	25,923	28,903	27,796	29,106	30,687	32,041	37,462	39,920	40,705
United Kingdom.....	98,486	101,764	101,342	99,078	98,140	101,631	102,946	115,872	124,993	126,687
Asia.....	406,833	422,675	401,921	430,784	492,173	464,285	522,967	668,080	804,913	892,866
China .....	59,531	64,139	62,886	71,543	88,942	92,944	113,419	154,170	196,338	237,729
India .....	4,703	4,719	4,625	5,354	6,814	7,260	8,883	11,778	13,613	16,024
Indonesia .....	4,256	4,408	6,115	5,176	6,499	6,174	6,629	7,838	8,846	10,626
Japan.....	225,565	235,244	219,476	227,634	247,247	215,904	235,681	291,359	350,232	371,460
Malaysia .....	9,777	9,662	10,353	10,751	12,246	11,977	12,781	15,855	18,695	22,418
Philippines .....	2,429	2,900	3,048	2,899	3,681	3,806	4,223	4,903	5,902	6,211
Singapore .....	26,141	24,454	18,966	20,768	23,555	22,081	22,965	29,315	34,281	38,191
South Korea .....	31,126	33,706	34,371	39,581	47,939	50,165	58,161	78,657	91,953	98,811
Taiwan .....	34,719	33,779	31,768	34,244	39,748	38,692	43,498	52,422	60,590	65,122
Thailand.....	8,587	9,665	10,313	12,835	15,501	15,283	16,729	21,783	24,463	26,274
Medium-low technology manufacturing industries										
Value-added revenue										
All regions/countries/economies.....	1,189,744	1,231,994	1,251,352	1,264,783	1,296,859	1,271,965	1,290,231	1,333,072	1,423,361	1,458,828
United States.....	282,381	300,498	309,905	313,385	316,827	289,840	297,790	293,959	325,796	321,230
EU .....	339,901	346,230	368,482	357,682	356,904	358,197	353,544	356,360	367,133	367,644
Austria .....	7,882	8,571	8,781	9,065	9,856	9,847	9,868	10,289	11,055	11,554
Belgium .....	10,160	10,621	11,080	10,503	10,736	10,410	10,708	10,967	11,201	10,578
Czech Republic .....	4,647	4,265	4,061	4,215	3,780	3,719	3,674	4,115	4,427	4,847
Denmark.....	4,601	4,948	5,192	4,940	4,901	4,861	4,827	4,801	4,936	5,021
Finland.....	4,545	4,822	5,473	4,929	5,298	5,566	5,421	5,469	5,866	5,868
France .....	53,755	53,558	55,379	56,446	56,720	58,834	56,705	57,173	55,721	55,783
Germany.....	84,809	85,458	92,557	90,376	89,800	90,689	90,367	90,217	94,699	95,091
Greece .....	2,927	2,861	3,393	3,275	3,660	3,764	3,844	3,914	3,954	4,055
Hungary .....	1,528	1,770	2,260	2,251	2,296	2,373	2,681	3,101	3,446	3,624
Ireland .....	1,169	1,339	1,653	1,628	1,685	1,842	1,686	1,673	1,703	1,652
Italy.....	55,862	55,571	59,297	55,181	53,276	54,193	51,860	52,281	52,813	52,706
Netherlands .....	13,089	12,364	14,384	12,828	12,539	12,894	12,635	12,964	13,362	13,323

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Poland.....	6,487	6,886	7,536	7,411	8,088	7,560	7,953	9,116	10,727	11,357
Portugal.....	3,023	3,276	3,561	3,472	3,309	3,319	3,480	3,305	3,321	3,569
Slovakia.....	1,138	1,209	1,398	1,157	1,272	1,480	1,491	1,703	1,997	2,099
Spain.....	26,386	28,120	29,597	28,423	28,749	27,938	28,870	28,747	29,429	29,450
Sweden.....	8,352	8,976	9,411	8,972	9,223	9,479	9,136	9,355	9,338	9,310
United Kingdom.....	49,541	51,616	53,467	52,610	51,715	49,429	48,337	47,169	49,139	47,756
Asia.....	368,377	378,420	355,948	374,521	395,372	393,710	411,869	447,355	481,432	514,145
China.....	51,642	53,694	51,183	56,732	62,596	69,998	84,507	107,694	129,781	155,216
India.....	8,929	8,713	11,923	12,941	10,796	10,857	14,429	15,619	16,799	19,097
Indonesia.....	5,354	3,614	2,359	2,879	4,073	4,135	3,800	3,822	4,233	4,475
Japan.....	232,158	232,849	214,263	218,657	228,121	217,241	212,598	218,568	219,397	219,897
Malaysia.....	6,228	7,052	5,821	5,753	7,597	7,405	8,286	9,166	9,943	10,486
Philippines.....	1,799	3,167	2,539	2,612	4,098	4,548	4,084	4,445	4,933	5,313
Singapore.....	5,111	5,041	3,665	4,194	3,977	3,587	3,751	3,675	3,779	4,385
South Korea.....	25,314	29,340	29,180	34,004	37,601	38,520	40,736	43,749	47,627	49,939
Taiwan.....	19,991	21,637	23,484	24,104	23,027	23,161	24,953	24,269	26,433	26,080
Thailand.....	11,851	13,313	11,530	12,645	13,487	14,259	14,724	16,346	18,507	19,256
Exports										
All regions/countries/economies.....	662,375	697,367	720,493	730,402	733,079	747,932	779,179	883,805	975,035	1,020,280
United States.....	53,512	59,413	60,643	60,879	66,745	64,111	62,380	62,763	64,078	66,979
EU.....	92,388	95,966	95,136	89,900	94,593	94,970	97,097	107,133	118,405	126,400
Austria.....	9,851	9,323	11,037	9,921	9,682	10,286	10,493	12,601	13,709	14,126
Belgium.....	28,772	28,911	31,534	31,838	31,480	31,811	31,952	34,924	38,568	38,540
Czech Republic.....	5,176	5,224	6,239	6,171	6,519	7,124	7,677	9,082	11,158	12,474
Denmark.....	5,678	5,588	5,658	6,071	5,519	5,474	5,995	6,444	6,527	6,857
Finland.....	6,240	6,162	6,792	6,692	6,974	6,823	7,718	9,116	9,555	9,743
France.....	37,951	37,339	40,422	39,035	40,262	40,142	40,476	44,882	46,751	46,362
Germany.....	62,175	63,557	70,155	70,679	68,709	73,994	76,567	84,395	96,584	99,049
Greece.....	2,846	2,720	2,919	2,957	2,897	2,763	2,719	2,717	2,894	3,040
Hungary.....	2,230	2,304	2,737	2,720	2,636	2,862	2,932	3,321	3,785	4,105
Ireland.....	1,714	1,776	1,807	1,678	1,644	1,624	1,730	1,701	1,711	1,690
Italy.....	41,317	40,704	42,740	39,832	40,390	40,667	40,859	44,536	47,014	46,404
Netherlands.....	27,433	28,463	28,048	29,325	27,619	28,162	27,676	29,509	31,412	32,605
Poland.....	6,197	5,612	7,037	6,874	7,582	8,546	9,716	11,372	13,306	14,796
Portugal.....	2,735	2,945	3,045	3,158	3,155	3,155	3,535	4,285	4,569	4,470
Slovakia.....	2,264	3,117	3,289	3,058	3,274	3,633	3,904	4,753	5,240	5,599
Spain.....	17,367	18,646	18,959	19,412	19,579	19,406	19,904	23,398	24,973	24,803
Sweden.....	12,250	12,526	12,841	12,609	12,762	13,064	13,719	15,292	16,769	16,776
United Kingdom.....	32,639	34,373	32,702	30,630	30,557	30,801	30,882	34,362	35,882	36,238
Asia.....	160,554	173,273	183,567	183,089	191,484	186,441	209,667	247,671	284,249	309,470
China.....	51,149	53,414	52,212	52,302	53,747	47,775	51,407	58,300	62,619	63,847
India.....	34,644	40,208	39,931	40,089	46,242	47,484	56,481	72,984	91,683	109,226

**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Indonesia .....	22,080	26,215	37,100	33,002	33,032	35,799	36,309	39,836	46,273	49,545
Japan.....	14,238	15,506	15,999	17,435	19,141	17,942	19,974	23,389	25,208	24,545
Malaysia .....	3,944	4,389	4,574	5,168	5,397	4,933	5,479	6,391	6,834	7,354
Philippines .....	3,298	3,685	3,194	3,717	4,867	5,662	9,777	12,316	13,646	15,251
Singapore .....	5,583	5,837	5,798	6,174	6,098	6,917	7,076	7,884	8,977	9,818
South Korea .....	4,189	4,850	4,672	5,419	6,166	6,115	6,409	7,848	8,585	9,073
Taiwan .....	1,272	1,386	1,052	1,405	1,402	1,417	1,476	1,825	1,945	2,276
Thailand.....	20,156	17,784	19,035	18,379	15,391	12,396	15,280	16,899	18,477	18,534
Low-technology manufacturing industries										
Value-added revenue										
All regions/countries/economies .....	1,721,216	1,748,883	1,746,362	1,799,157	1,830,966	1,783,205	1,776,242	1,808,679	1,885,702	1,953,425
United States.....	511,372	521,178	525,366	548,995	549,314	523,450	516,418	532,747	559,444	592,391
EU .....	457,876	470,630	482,719	492,798	490,424	485,558	486,937	484,412	488,906	488,716
Austria .....	10,096	10,567	11,037	11,673	12,434	12,618	12,468	12,725	13,368	13,500
Belgium .....	12,180	12,433	12,530	13,099	12,432	12,246	12,990	13,096	13,471	13,438
Czech Republic .....	4,836	5,474	4,771	5,124	4,499	4,161	4,317	4,340	4,398	4,532
Denmark.....	7,905	8,553	8,480	8,642	8,632	8,228	8,493	8,892	8,859	8,810
Finland.....	8,143	8,839	9,787	9,765	10,501	10,233	10,001	9,534	9,695	9,104
France .....	66,761	68,193	69,668	69,106	69,063	69,387	69,288	69,223	69,113	71,095
Germany .....	93,581	92,767	94,637	96,066	94,407	89,373	88,788	86,657	88,546	89,787
Greece .....	6,148	6,091	6,545	6,487	6,613	6,530	6,385	6,548	6,521	6,385
Hungary .....	2,423	2,627	2,711	2,988	2,953	3,242	3,384	3,332	3,488	3,499
Ireland .....	5,158	6,118	7,218	8,169	8,101	9,043	10,176	10,365	11,471	12,033
Italy.....	74,599	76,499	77,934	77,703	76,974	78,742	77,923	77,904	77,961	75,324
Netherlands .....	20,392	20,999	21,730	22,990	22,988	23,088	24,133	24,201	24,281	24,538
Poland.....	9,870	10,574	11,245	12,851	12,656	11,922	11,866	12,927	14,281	14,650
Portugal .....	10,151	10,232	10,514	10,767	10,289	10,590	10,849	10,567	10,417	10,013
Slovakia.....	1,519	1,405	1,617	2,030	1,637	1,879	1,679	1,686	1,459	1,781
Spain .....	31,439	33,508	35,105	36,221	35,565	34,193	34,984	34,270	34,319	34,249
Sweden.....	13,130	13,458	13,906	14,396	15,127	14,933	14,818	15,422	15,497	15,464
United Kingdom.....	79,547	82,294	83,283	84,721	85,553	85,150	84,396	82,722	81,761	80,516
Asia.....	474,327	477,206	452,870	469,146	491,237	470,809	477,377	496,240	533,281	559,139
China .....	72,369	73,944	66,971	69,781	77,453	84,108	97,081	115,008	148,332	175,342
India .....	10,603	10,323	11,447	12,437	12,341	11,891	12,251	12,873	13,425	14,419
Indonesia .....	11,647	10,942	10,427	11,188	13,156	12,274	13,367	12,914	12,303	12,280
Japan.....	313,592	311,817	299,129	303,642	309,733	283,031	273,473	274,178	273,742	270,621
Malaysia .....	5,483	5,476	4,849	5,559	6,341	6,291	6,509	6,925	7,362	7,760
Philippines .....	4,988	8,713	7,004	7,329	9,558	10,443	10,726	9,990	11,204	12,227
Singapore .....	2,311	2,325	1,672	2,075	1,977	1,737	1,646	1,786	1,644	1,895
South Korea .....	22,898	22,157	20,084	24,788	27,644	27,151	28,404	27,084	27,830	27,349
Taiwan .....	15,209	15,458	15,348	14,995	14,928	14,568	14,058	13,340	13,114	12,637
Thailand.....	15,227	16,051	15,939	17,352	18,106	19,316	19,861	22,141	24,323	24,608



**Value-added revenue and exports of non-high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Exports</b>										
All regions/countries/economies.....	1,141,736	1,189,175	1,189,311	1,230,864	1,263,889	1,287,530	1,332,494	1,490,715	1,635,393	1,716,027
United States.....	121,385	129,428	130,143	130,619	141,167	138,109	129,106	129,847	134,534	144,516
EU.....	165,288	174,837	170,612	172,974	186,587	182,347	189,311	189,339	201,682	213,895
Austria.....	12,975	14,440	16,519	17,161	15,664	15,542	17,025	22,984	25,244	26,353
Belgium.....	42,771	46,070	49,891	53,292	53,257	52,979	54,290	58,549	64,982	67,480
Czech Republic.....	4,978	5,045	6,043	5,792	6,226	6,774	7,058	8,092	9,226	10,166
Denmark.....	17,707	18,645	18,960	19,073	18,377	19,149	21,713	22,844	23,749	24,901
Finland.....	11,990	13,116	14,126	13,923	13,782	13,227	14,450	16,108	17,052	17,341
France.....	60,195	65,614	67,683	69,085	70,547	63,529	66,063	72,277	75,681	75,903
Germany.....	73,345	72,451	87,373	91,140	78,494	90,280	93,764	109,588	126,747	130,020
Greece.....	5,284	4,889	4,659	4,919	4,477	4,339	4,372	5,091	5,121	5,417
Hungary.....	4,997	4,765	5,384	5,779	5,409	6,016	6,125	6,032	6,699	7,386
Ireland.....	11,371	10,439	10,975	11,525	11,266	11,542	11,952	14,131	14,764	15,081
Italy.....	81,015	77,627	76,474	74,357	76,250	78,386	78,197	84,111	88,563	88,390
Netherlands.....	41,227	46,076	40,465	44,050	41,872	41,017	41,649	48,114	52,442	55,228
Poland.....	8,515	9,563	9,619	9,919	10,083	10,966	11,287	14,008	16,060	18,125
Portugal.....	11,119	11,369	11,475	11,407	11,130	11,443	11,855	12,936	13,605	13,993
Slovakia.....	1,868	2,158	2,259	2,260	2,540	2,875	3,197	3,997	4,512	4,777
Spain.....	21,297	24,247	24,907	26,171	26,932	29,530	31,285	33,944	36,666	37,228
Sweden.....	17,174	17,798	19,066	18,314	17,820	19,529	21,505	24,782	28,027	27,317
United Kingdom.....	53,620	55,019	52,767	52,705	52,916	52,436	54,535	59,142	59,977	60,730
Asia.....	314,339	323,459	299,679	321,430	348,408	352,907	380,454	442,916	503,187	544,774
China.....	124,187	134,411	126,113	127,772	143,819	150,121	170,294	210,812	245,957	275,999
India.....	18,723	18,747	19,095	22,692	24,409	25,340	29,205	32,796	36,610	40,012
Indonesia.....	24,117	22,968	18,259	21,777	22,522	22,265	23,501	24,266	25,515	28,735
Japan.....	31,618	34,927	35,235	40,031	42,366	41,208	42,739	47,971	54,666	55,994
Malaysia.....	14,098	13,557	12,259	13,734	15,018	15,363	16,639	18,413	20,781	23,509
Philippines.....	6,157	6,068	5,435	4,572	5,163	5,777	5,459	6,044	6,441	6,760
Singapore.....	15,884	15,492	12,290	12,053	13,075	13,837	13,462	15,325	17,810	18,925
South Korea.....	29,131	29,921	25,271	31,514	31,428	29,058	28,746	32,406	36,348	36,285
Taiwan.....	30,933	28,313	27,347	27,738	29,209	27,834	28,089	29,553	31,917	30,550
Thailand.....	19,490	19,056	18,375	19,549	21,399	22,104	22,319	25,330	27,141	28,005

EU = European Union

NOTES: Manufacturing industries classified by Organisation for Economic Co-operation and Development based on average R&D intensity of manufacturing industry. Value-added revenue excludes purchases of domestic and imported materials and inputs. EU excludes Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, Romania, and Slovenia. EU exports exclude intra-EU exports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).



**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Exports</b>											
All regions/countries/economies .....	225,951	262,842	299,514	349,234	367,207	424,736	471,015	512,773	534,627	618,858	746,653
United States.....	52,334	58,556	64,610	79,287	78,946	90,474	98,696	104,682	107,352	121,071	136,953
EU.....	42,610	46,993	49,717	56,176	57,961	60,588	68,202	73,764	83,661	91,442	108,131
Austria .....	2,295	2,664	2,924	2,487	3,284	4,185	4,305	4,205	3,262	4,280	3,855
Belgium .....	3,302	4,453	5,296	5,323	5,564	6,523	7,183	7,988	9,271	10,211	11,172
Bulgaria .....	97	122	133	159	178	137	138	88	66	81	79
Czech Republic .....	527	687	838	337	368	402	484	625	599	744	818
Denmark.....	2,070	2,473	2,926	3,237	3,367	3,922	3,874	4,273	3,860	4,616	5,028
Finland.....	576	759	947	912	1,064	1,328	1,368	1,687	2,106	2,936	3,777
France.....	11,730	12,191	15,127	18,338	19,945	22,761	27,794	29,810	30,924	33,254	40,035
Germany.....	25,896	27,657	31,401	36,316	39,516	41,832	46,110	47,656	44,291	49,293	53,104
Greece.....	74	82	83	119	137	143	161	139	217	213	287
Hungary.....	945	1,226	1,245	1,280	900	1,009	1,529	828	833	1,218	1,060
Ireland.....	2,909	2,658	3,237	3,681	4,261	4,463	4,881	5,571	6,061	6,729	10,761
Italy.....	7,135	7,888	8,847	10,461	11,009	12,825	12,936	14,736	15,480	16,247	18,834
Netherlands.....	6,399	8,483	9,503	8,872	9,662	11,875	12,426	14,086	16,958	17,319	21,333
Poland.....	333	359	384	433	441	470	470	402	479	586	726
Portugal.....	447	440	498	490	579	752	735	871	774	969	1,390
Romania.....	38	85	62	57	152	79	39	44	67	106	100
Slovakia.....	172	225	275	83	102	110	170	178	199	355	359
Spain.....	1,120	1,327	1,622	2,437	2,552	3,040	3,544	4,032	5,074	5,734	5,678
Sweden.....	3,221	3,553	3,879	4,672	4,946	5,615	6,077	6,681	8,079	9,342	11,451
United Kingdom.....	17,853	22,336	23,298	30,431	30,162	34,201	36,457	36,802	38,335	41,847	50,967
Asia.....	70,107	85,528	100,859	117,748	124,188	147,724	167,947	189,629	202,411	247,423	315,286
China.....	5,811	7,018	9,818	14,973	16,329	22,107	25,202	30,374	33,275	41,467	53,375
India.....	154	205	291	345	278	563	619	705	759	937	1,327
Indonesia.....	150	211	180	179	205	274	520	1,068	1,544	2,348	2,729
Japan.....	47,487	53,370	55,564	61,163	62,684	71,546	79,524	84,108	83,373	91,052	105,410
Malaysia.....	2,416	3,481	4,346	5,459	6,236	8,647	11,208	13,696	16,387	22,965	29,499
Philippines.....	413	595	1,453	878	2,002	1,714	2,233	2,798	3,401	4,204	5,804
Singapore.....	5,395	7,076	10,070	13,424	16,378	19,791	21,387	24,962	28,595	39,874	56,795
South Korea.....	4,098	6,082	8,294	9,746	8,348	9,149	10,775	12,379	13,265	17,120	24,842
Taiwan.....	4,055	7,345	10,039	10,345	9,998	11,154	12,707	14,735	16,593	20,525	26,902
Thailand.....	126	147	804	1,236	1,731	2,780	3,772	4,804	5,220	6,930	8,604
All others.....	16,371	19,091	21,520	22,077	25,883	30,863	33,694	37,761	37,927	44,281	53,602
Argentina.....	97	119	108	115	142	173	206	216	241	262	389
Australia.....	471	659	832	614	833	1,133	1,394	1,611	1,728	2,188	2,715
Brazil.....	590	1,028	1,399	1,310	1,614	1,230	1,162	1,089	955	879	965
Canada.....	5,084	6,263	6,821	6,642	6,478	8,495	9,789	9,988	9,553	11,720	14,456

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Chile .....	3	13	13	8	10	18	30	38	42	40	41
Costa Rica.....	39	47	31	56	58	59	83	96	101	81	88
Egypt .....	10	20	21	16	10	18	38	47	49	46	53
Iran .....	6	10	9	6	5	5	31	44	48	39	37
Israel.....	890	977	1,090	1,272	1,002	1,574	1,899	1,928	2,315	3,014	3,563
Mexico .....	1,065	127	296	586	4,172	4,436	4,895	6,191	6,805	9,674	12,778
Morocco.....	10	22	20	18	58	146	165	150	102	107	41
Norway .....	403	657	806	907	919	1,142	1,149	1,491	1,510	1,668	1,903
Russia.....	590	696	853	596	1,007	718	606	1,151	968	609	556
Saudi Arabia.....	48	143	137	28	51	225	452	692	133	5	806
South Africa .....	134	168	48	53	77	74	95	193	217	302	378
Switzerland.....	6,302	7,450	8,174	8,876	8,534	10,193	10,408	11,454	11,591	11,788	12,964
Tunisia .....	11	29	41	61	76	80	78	79	116	116	107
Turkey.....	83	73	132	181	164	272	338	267	293	309	308
All others.....	533	588	690	731	674	872	876	1,036	1,159	1,434	1,452
<b>Imports</b>											
All regions/countries/economies .....	220,751	257,179	294,738	342,344	359,596	414,838	460,500	501,656	523,622	607,995	733,056
United States.....	46,195	54,057	58,063	59,880	62,377	68,045	74,819	84,428	90,516	108,829	132,056
EU .....	43,546	51,890	60,852	71,593	78,301	90,386	98,007	99,281	95,536	104,688	123,332
Austria .....	2,329	2,856	3,489	4,124	4,320	4,986	5,503	5,916	5,685	6,338	7,026
Belgium .....	3,834	4,877	5,759	6,053	6,912	8,199	8,818	9,407	9,753	10,257	11,628
Bulgaria .....	238	289	296	286	304	279	229	269	254	272	305
Czech Republic .....	891	1,029	1,155	905	1,133	1,182	1,300	1,682	1,584	1,900	2,386
Denmark.....	1,977	2,461	2,680	3,156	2,833	3,281	3,985	3,831	3,547	4,225	5,035
Finland.....	2,315	2,518	2,803	2,712	3,006	3,007	2,766	2,430	2,399	3,215	4,350
France.....	13,683	14,931	18,041	24,099	26,775	29,500	34,577	33,870	32,501	33,984	37,076
Germany .....	17,911	22,538	26,398	28,792	31,369	39,889	44,381	45,977	44,137	48,827	56,421
Greece .....	784	833	841	1,067	1,234	1,488	1,930	2,055	2,480	2,325	3,039
Hungary .....	454	512	584	668	753	818	1,217	1,276	1,481	1,891	1,598
Ireland.....	1,681	1,845	2,184	2,817	2,932	3,097	3,561	3,890	4,307	5,074	7,295
Italy.....	8,613	10,377	12,782	14,981	15,532	19,063	19,741	20,504	17,251	18,982	20,985
Netherlands.....	7,795	10,161	11,689	12,497	13,118	15,862	16,810	17,957	18,464	20,571	25,827
Poland.....	579	679	758	877	1,049	1,051	2,095	1,901	2,276	2,281	2,832
Portugal .....	676	927	1,283	1,637	1,845	2,210	2,361	2,946	2,266	2,914	3,300
Romania.....	170	213	180	175	401	462	337	376	556	671	788
Slovakia .....	354	424	483	301	371	377	417	556	457	689	821
Spain.....	2,784	3,959	5,284	6,948	8,677	10,243	11,032	10,827	9,027	9,953	11,203
Sweden.....	4,265	4,713	5,312	5,960	6,162	6,651	6,385	5,937	5,991	6,658	9,165
United Kingdom.....	16,151	17,175	19,785	24,600	26,480	29,287	28,330	30,209	31,687	35,686	41,847

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Asia.....	42,072	46,974	59,001	75,155	79,847	97,012	110,842	129,604	148,263	182,770	237,449
China.....	12,600	12,160	15,133	20,639	19,133	24,185	29,090	37,862	41,890	48,741	59,783
India.....	1,445	1,985	2,298	2,203	2,707	2,470	1,488	1,662	2,523	2,499	3,181
Indonesia.....	1,167	978	1,042	921	1,008	1,899	2,056	2,938	2,930	2,278	2,354
Japan.....	9,261	11,130	13,315	16,374	17,572	20,728	22,135	23,519	25,932	32,648	44,670
Malaysia.....	3,155	3,529	4,390	4,992	6,247	7,783	9,631	10,479	13,407	20,089	27,224
Philippines.....	686	747	1,164	1,167	2,006	2,061	1,994	2,508	3,470	4,097	5,509
Singapore.....	5,314	5,886	7,618	9,766	10,982	13,817	16,281	18,452	23,089	30,134	38,461
South Korea.....	4,125	4,916	6,226	8,549	8,731	9,753	11,133	11,520	12,962	16,018	21,024
Taiwan.....	3,140	4,068	5,772	7,350	8,164	9,365	11,394	13,877	15,284	16,884	22,260
Thailand.....	1,180	1,575	2,044	3,194	3,297	4,950	5,641	6,787	6,777	9,382	12,985
All others.....	45,000	52,830	55,887	64,656	62,167	68,851	79,064	85,807	88,740	99,683	110,624
Argentina.....	584	789	1,002	773	595	710	1,336	2,420	2,667	3,274	2,824
Australia.....	4,645	5,566	4,689	5,787	6,615	7,341	6,994	7,531	6,729	8,424	9,867
Brazil.....	1,540	2,392	2,657	2,808	3,283	3,760	4,368	3,783	4,309	5,225	7,710
Canada.....	9,720	10,913	12,204	15,512	13,496	15,489	16,995	18,943	19,584	22,177	26,542
Chile.....	235	321	364	496	711	890	1,006	1,276	1,026	1,240	1,702
Costa Rica.....	90	124	139	148	171	187	242	278	353	482	373
Egypt.....	1,074	1,712	1,605	3,055	1,139	1,396	1,378	1,859	1,594	1,523	1,164
Iran.....	787	695	786	663	625	1,192	1,570	1,872	1,214	1,101	1,066
Israel.....	1,056	1,159	1,768	1,874	1,259	1,863	2,109	2,624	3,027	3,384	3,689
Mexico.....	2,437	2,318	2,494	4,087	4,967	5,868	7,495	8,844	9,244	11,995	10,090
Morocco.....	222	342	279	315	438	627	544	618	593	794	721
Norway.....	1,633	2,194	2,165	2,177	2,088	2,508	2,843	2,817	3,050	3,200	3,562
Russia.....	3,776	4,016	4,364	3,534	4,474	4,308	3,899	3,255	3,166	4,825	5,176
Saudi Arabia.....	3,719	4,158	3,998	4,122	4,523	2,524	5,390	4,780	4,784	3,380	3,397
South Africa.....	1,414	1,423	1,642	1,803	1,573	1,696	2,481	2,390	2,541	2,972	3,719
Switzerland.....	4,586	5,975	6,947	7,897	7,413	8,430	9,627	9,814	10,139	10,767	12,988
Tunisia.....	181	225	259	275	317	474	482	637	605	611	578
Turkey.....	1,349	1,359	1,507	1,829	1,648	2,249	2,587	2,769	3,935	3,203	3,314
All others.....	5,953	7,147	7,018	7,502	6,832	7,340	7,716	9,297	10,179	11,104	12,141
Revenue											
All regions/countries/economies.....	1,038,357	1,106,429	1,183,340	1,283,838	1,359,397	1,396,212	1,452,797	1,402,263	1,407,738	1,479,740	1,593,329
United States.....	262,476	281,798	290,486	307,155	322,976	332,938	337,488	331,351	330,886	331,966	358,048
EU.....	312,348	325,287	335,660	348,263	368,406	375,815	383,821	378,405	371,600	389,104	417,241
Austria.....	4,342	4,610	4,833	5,121	5,326	5,671	5,823	5,930	6,097	6,332	6,544
Belgium.....	8,383	8,163	8,634	9,209	9,075	9,264	8,984	9,136	8,512	8,697	9,601
Bulgaria.....	891	934	1,095	1,254	1,560	1,017	836	507	366	479	467
Czech Republic.....	1,369	1,295	1,468	1,453	1,395	1,188	1,118	1,211	1,200	1,756	2,251
Denmark.....	2,828	3,119	2,974	3,175	3,389	3,356	3,353	3,668	3,746	4,122	4,360
Finland.....	2,165	2,342	2,687	2,752	3,045	3,282	3,005	3,513	4,265	5,359	6,645

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
France.....	72,487	78,455	79,790	79,720	82,421	83,838	85,175	83,535	81,727	82,517	84,950
Germany.....	66,210	67,562	68,615	72,485	76,015	78,977	91,488	87,121	80,322	83,519	84,541
Greece.....	704	762	835	744	683	722	837	855	732	721	770
Hungary.....	9,110	9,191	9,607	9,755	9,431	8,000	5,610	4,677	4,732	7,048	8,829
Ireland.....	4,496	4,987	6,129	7,296	8,461	8,922	8,650	9,439	9,818	11,404	16,661
Italy.....	45,605	45,811	46,825	48,437	51,630	52,760	51,999	51,717	49,721	48,223	53,087
Netherlands.....	12,124	13,003	12,952	12,814	13,281	13,989	14,165	14,382	14,006	14,705	14,778
Poland.....	3,334	3,632	3,801	4,177	4,145	3,432	2,652	2,350	2,709	3,250	3,500
Portugal.....	1,873	1,709	1,744	1,509	1,955	2,076	2,054	2,125	2,048	2,368	2,870
Romania.....	1,900	1,957	1,405	1,340	1,264	1,073	753	531	580	590	757
Slovakia.....	581	576	578	574	574	552	403	414	449	466	559
Spain.....	16,684	17,074	18,501	19,103	19,057	18,438	17,575	15,902	16,284	16,471	17,835
Sweden.....	6,631	6,485	6,671	6,794	7,586	8,886	10,592	11,630	12,487	14,533	17,664
United Kingdom.....	50,633	53,620	56,514	60,548	68,115	70,374	68,747	69,759	71,798	76,544	80,573
Asia.....	351,747	380,885	435,191	503,783	537,564	556,213	599,469	567,990	579,262	630,397	681,917
China.....	23,341	25,567	32,215	38,305	40,154	40,763	47,755	51,757	60,796	70,477	69,848
India.....	2,078	2,412	3,389	3,913	4,874	5,593	5,870	6,889	6,725	7,825	8,945
Indonesia.....	501	520	606	564	730	1,413	1,558	2,119	2,302	3,064	4,277
Japan.....	289,161	306,709	338,534	391,622	415,193	419,693	444,140	398,544	386,667	406,641	427,305
Malaysia.....	1,895	2,552	3,239	3,704	4,808	6,989	10,849	12,764	15,417	20,639	27,397
Philippines.....	1,045	1,035	1,082	1,252	1,460	1,595	1,605	1,698	2,050	2,155	2,838
Singapore.....	8,193	7,739	10,161	12,269	14,808	19,112	18,179	19,334	22,334	28,465	33,356
South Korea.....	9,325	13,410	19,357	23,759	24,249	27,853	31,336	33,326	36,350	42,878	54,372
Taiwan.....	15,827	20,755	26,289	27,928	30,276	31,225	35,242	38,577	42,841	45,149	50,243
Thailand.....	381	185	318	469	1,012	1,978	2,935	2,982	3,779	3,105	3,337
All others.....	111,786	118,459	122,004	124,637	130,451	131,246	132,019	124,517	125,991	128,272	136,123
Argentina.....	5,385	7,220	7,140	5,556	4,140	5,128	5,495	6,723	5,178	5,605	5,097
Australia.....	4,337	4,373	4,551	5,074	5,305	5,633	5,939	6,181	6,076	6,528	6,817
Brazil.....	28,766	34,196	33,783	31,969	32,694	25,382	23,901	24,140	25,944	28,409	28,168
Canada.....	12,505	13,478	15,731	17,453	18,931	19,266	18,109	18,776	18,424	20,488	23,766
Chile.....	271	327	361	410	499	458	513	619	677	673	707
Costa Rica.....	175	237	233	258	250	223	201	227	284	322	295
Egypt.....	912	852	871	1,054	1,249	1,270	1,210	1,140	856	1,063	1,272
Iran.....	300	328	345	344	484	498	447	429	344	667	645
Israel.....	7,244	6,847	4,653	4,386	5,324	4,722	4,963	5,148	5,569	5,822	6,824
Mexico.....	14,121	12,777	13,492	14,473	16,274	18,963	21,732	18,773	19,403	20,648	21,221
Morocco.....	293	300	335	434	366	477	486	497	378	400	376
Norway.....	1,349	1,505	1,708	1,864	2,089	2,116	1,982	2,090	2,199	2,556	2,761
Russia.....	10,919	10,750	11,658	12,730	14,214	14,652	14,410	7,833	8,471	4,413	6,146
Saudi Arabia.....	114	139	128	148	163	166	195	221	223	214	209
South Africa.....	2,762	2,514	3,642	3,968	3,753	3,447	3,237	3,139	2,986	3,347	3,566

Appendix table 6-14

(Page 5 of 5)

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Industry and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Switzerland .....	12,901	13,616	13,209	14,421	14,724	17,993	17,334	17,688	17,547	16,723	17,529
Tunisia .....	104	75	73	77	174	214	223	222	208	218	214
Turkey .....	3,112	2,462	2,956	3,035	3,372	3,781	4,664	3,453	3,705	2,883	3,262
All others.....	6,216	6,463	7,134	6,983	6,445	6,855	6,980	7,217	7,519	7,290	7,247

EU = European Union

NOTES: High-technology manufacturing industries classified by Organisation for Economic Co-operation and Development and include aerospace, communications equipment, office machinery and computers, pharmaceuticals, and scientific instruments. Gross revenue represents total value of all domestic or international industry shipments. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. EU exports and imports exclude intra-EU exports and imports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

Science and Engineering Indicators 2008

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Exports</b>										
All regions/countries/economies .....	821,327	956,377	1,012,983	1,159,068	1,406,431	1,379,630	1,458,624	1,714,619	2,042,787	2,261,359
United States .....	154,029	183,811	202,033	219,466	249,695	230,431	207,237	215,286	240,454	262,091
EU .....	112,439	136,583	146,389	161,975	198,702	200,007	188,929	204,872	232,417	257,417
Austria .....	5,067	5,121	5,503	5,601	6,687	7,618	8,589	9,005	10,192	11,809
Belgium .....	12,928	14,554	16,594	19,107	21,435	25,423	31,759	35,967	42,083	45,923
Bulgaria .....	185	233	172	133	153	167	205	263	316	336
Czech Republic .....	946	1,171	1,746	1,728	2,026	3,575	5,170	6,444	7,427	8,249
Denmark .....	5,365	6,307	6,715	8,007	8,583	9,268	10,084	9,734	10,480	11,334
Finland .....	4,396	5,732	7,775	9,149	12,651	11,162	12,060	13,203	13,950	15,067
France .....	39,060	47,125	53,664	59,010	69,581	68,963	68,350	72,657	79,615	83,726
Germany .....	56,588	66,490	75,901	85,207	97,409	108,345	107,381	120,709	147,275	156,955
Greece .....	270	324	410	571	773	756	714	1,033	1,115	1,187
Hungary .....	1,069	3,687	5,182	7,116	8,737	8,346	9,258	11,635	12,799	13,707
Ireland .....	12,471	16,373	20,409	27,647	32,881	38,710	38,267	36,936	44,870	49,947
Italy .....	19,612	20,039	21,537	22,707	25,873	26,373	25,992	25,957	28,859	29,782
Netherlands .....	23,411	35,266	34,562	42,240	50,245	44,317	42,265	55,455	65,369	72,721
Poland .....	948	1,270	1,449	1,433	1,736	2,056	2,445	3,038	3,391	3,776
Portugal .....	1,352	1,456	1,593	1,947	2,321	2,635	2,593	3,467	3,748	4,065
Romania .....	90	77	107	209	642	633	673	738	736	657
Slovakia .....	315	476	518	546	558	712	756	1,134	1,309	1,368
Spain .....	6,629	7,179	8,269	9,704	10,127	10,972	12,245	13,959	15,816	16,337
Sweden .....	13,522	15,850	18,047	19,095	21,142	17,504	18,694	20,750	23,621	24,785
United Kingdom .....	57,505	62,467	66,623	68,728	79,933	92,158	88,932	85,904	83,927	85,664
Asia .....	344,615	391,270	379,073	454,139	586,369	552,286	652,231	849,249	1,064,011	1,210,141
China .....	57,436	67,091	73,292	87,994	121,537	138,616	189,836	290,749	369,862	440,104
India .....	1,554	1,556	1,448	1,774	2,058	2,587	3,152	4,045	4,585	5,442
Indonesia .....	3,600	3,758	3,941	3,485	5,705	4,206	5,083	6,074	5,227	5,847
Japan .....	107,539	120,742	113,050	125,846	149,899	121,571	125,743	155,712	192,185	204,742
Malaysia .....	33,664	36,105	32,672	39,822	52,291	49,184	51,875	59,832	72,303	88,419
Philippines .....	11,523	16,272	15,353	17,808	21,855	21,964	24,583	27,937	32,327	34,717
Singapore .....	62,252	65,212	54,158	62,483	76,829	69,840	73,271	84,488	108,970	124,490
South Korea .....	26,305	32,241	33,484	49,205	66,326	58,479	74,948	98,445	120,619	126,138
Taiwan .....	31,385	37,725	41,237	53,373	72,498	69,527	83,622	98,018	128,448	146,504
Thailand .....	9,357	10,567	10,437	12,350	17,373	16,312	20,117	23,949	29,485	33,738
All others .....	60,953	70,099	85,101	95,577	116,874	117,222	112,725	122,095	141,423	151,730
Argentina .....	412	483	526	559	538	620	619	676	805	922
Australia .....	3,028	3,227	3,346	3,703	3,875	4,225	4,332	4,608	4,583	4,687
Brazil .....	1,184	1,945	2,793	4,151	6,052	6,269	5,519	5,528	6,099	5,797
Canada .....	16,524	18,341	21,580	23,332	31,606	25,576	22,069	23,873	25,700	28,172

Appendix table 6-15

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Chile .....	46	59	86	95	105	116	126	129	146	156
Costa Rica.....	87	374	1,008	537	640	797	971	1,163	1,453	1,694
Egypt .....	62	70	81	65	61	64	84	77	92	122
Iran .....	27	8	11	25	22	29	36	47	55	61
Israel.....	4,135	5,142	5,852	6,765	9,659	9,081	7,676	8,090	9,791	11,139
Mexico .....	15,296	18,515	24,545	29,352	36,933	39,615	38,863	41,286	49,522	51,600
Morocco.....	20	22	601	675	524	465	689	703	698	688
Norway .....	1,914	2,228	2,726	2,479	2,182	2,835	3,027	2,802	2,750	2,415
Russia.....	1,613	1,376	1,937	1,425	1,170	1,929	1,697	1,755	4,206	4,133
Saudi Arabia.....	774	801	119	52	62	454	405	680	735	795
South Africa .....	414	608	722	792	852	852	783	863	912	1,044
Switzerland.....	13,483	14,561	16,162	18,142	18,666	20,264	20,929	24,080	27,305	31,434
Tunisia .....	93	120	176	99	101	170	235	242	222	216
Turkey.....	419	702	1,021	1,271	1,643	1,644	2,265	2,894	3,200	3,392
All others.....	1,421	1,516	1,808	2,061	2,182	2,217	2,402	2,600	3,148	3,262
<b>Imports</b>										
All regions/countries/economies .....	812,513	950,149	1,022,303	1,181,100	1,431,821	1,412,803	1,508,215	1,771,612	2,123,829	2,355,785
United States.....	143,067	168,566	191,597	228,753	281,757	257,369	275,254	312,990	367,696	396,744
EU .....	134,240	158,488	186,292	216,353	249,021	243,186	240,850	289,611	353,101	382,365
Austria .....	7,364	8,635	9,956	11,168	11,339	11,591	12,306	13,569	15,769	16,759
Belgium .....	13,225	15,259	18,481	21,794	24,148	29,007	35,147	40,421	49,179	53,256
Bulgaria .....	302	300	412	600	575	886	854	1,182	1,449	1,724
Czech Republic .....	2,928	3,078	3,650	3,929	5,181	6,234	7,087	9,040	10,477	12,078
Denmark .....	5,393	6,653	7,243	7,762	8,103	8,626	11,140	10,992	12,596	13,655
Finland.....	5,606	5,800	6,541	7,416	9,152	8,509	8,237	9,750	11,031	11,596
France.....	39,830	45,894	55,466	61,946	68,887	69,175	67,764	74,601	86,393	89,963
Germany .....	59,510	65,622	75,333	85,865	97,382	105,635	107,984	125,458	141,615	151,723
Greece .....	2,829	3,543	4,423	4,767	4,837	5,043	4,834	6,463	8,015	7,299
Hungary .....	2,033	3,201	4,307	5,346	7,661	7,872	9,059	11,511	13,844	14,894
Ireland.....	7,801	10,813	13,427	16,540	21,454	24,605	25,392	20,925	24,153	27,641
Italy .....	22,500	25,081	28,780	32,810	36,582	36,428	38,367	44,431	49,010	50,672
Netherlands.....	28,928	38,674	41,876	50,059	54,894	57,643	57,491	73,921	86,538	92,159
Poland.....	3,649	4,851	5,665	6,196	7,389	7,844	7,899	8,807	10,504	12,237
Portugal .....	3,402	4,251	4,860	6,083	6,169	6,547	6,829	7,836	9,019	9,201
Romania.....	854	986	1,364	1,275	1,928	2,044	2,158	2,809	3,542	4,432
Slovakia .....	903	1,198	1,374	1,254	1,406	1,760	2,035	2,635	3,022	3,525
Spain .....	14,002	14,700	17,393	22,358	24,599	24,627	26,674	32,559	37,525	40,100
Sweden.....	10,232	11,325	13,440	13,582	15,436	13,363	13,890	14,960	16,480	17,435
United Kingdom.....	47,962	57,978	64,962	74,107	88,891	87,538	83,872	83,911	101,909	104,042

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Asia.....	266,444	306,542	283,089	339,287	446,986	437,301	504,374	643,921	803,372	928,838
China.....	64,012	76,440	79,788	90,682	124,971	143,557	182,812	262,776	336,373	402,259
India.....	3,644	3,740	4,212	4,411	5,350	6,370	8,371	12,440	15,636	20,139
Indonesia.....	3,721	4,126	1,858	1,407	2,198	2,568	2,938	3,282	4,084	4,472
Japan.....	50,951	54,243	52,591	64,240	83,119	80,012	81,865	96,773	114,491	124,887
Malaysia.....	29,085	32,926	28,075	32,931	42,706	39,258	46,148	53,418	62,485	69,965
Philippines.....	9,493	14,429	14,270	16,802	19,569	17,742	20,718	24,081	26,117	27,583
Singapore.....	42,403	46,123	39,243	45,688	57,347	52,333	55,082	63,335	78,754	89,692
South Korea.....	24,674	27,493	19,714	30,659	42,853	36,492	41,320	50,789	63,443	73,288
Taiwan.....	24,111	31,620	30,913	38,232	49,734	39,636	44,268	52,131	70,338	79,405
Thailand.....	14,349	15,402	12,422	14,234	19,139	19,332	20,853	24,896	31,650	37,149
All others.....	123,749	147,198	168,663	178,203	207,065	203,156	199,568	218,922	260,688	295,812
Argentina.....	3,192	4,160	4,818	4,963	5,227	3,774	1,135	2,177	3,566	4,230
Australia.....	10,970	11,413	12,076	14,235	16,531	14,681	17,752	21,184	24,970	27,948
Brazil.....	9,539	11,944	12,221	12,273	14,375	14,402	11,132	10,856	13,676	16,198
Canada.....	28,578	33,537	36,679	42,106	49,773	45,869	42,927	45,201	52,270	60,318
Chile.....	1,937	2,257	2,726	2,271	2,747	2,377	2,195	2,330	2,673	3,386
Costa Rica.....	361	512	1,431	1,276	1,554	2,196	2,516	2,871	3,132	3,375
Egypt.....	1,380	2,164	2,078	2,111	2,392	2,678	2,176	1,718	2,081	2,296
Iran.....	1,036	1,515	1,723	1,253	1,461	2,196	2,329	2,927	3,446	4,035
Israel.....	3,895	4,243	5,675	7,219	7,744	7,148	6,343	6,317	7,971	8,864
Mexico.....	12,394	17,131	18,878	23,687	32,449	34,258	36,594	36,722	43,458	46,848
Morocco.....	655	796	1,126	1,394	1,988	1,309	1,759	2,243	2,441	2,986
Norway.....	3,951	4,471	5,507	5,201	6,021	5,989	6,372	6,671	7,516	8,175
Russia.....	5,267	6,142	6,125	4,236	5,126	6,956	7,477	10,586	12,885	15,106
Saudi Arabia.....	5,228	8,102	10,382	7,387	5,854	6,217	5,733	6,356	6,276	7,155
South Africa.....	3,801	4,189	5,825	5,183	5,921	5,709	5,298	6,627	8,054	9,222
Switzerland.....	14,338	13,958	17,108	19,602	20,493	22,100	22,153	24,489	28,437	31,486
Tunisia.....	549	600	802	944	979	979	1,040	1,091	1,381	1,597
Turkey.....	4,068	5,146	6,523	7,517	10,063	6,275	7,294	8,634	11,620	14,095
All others.....	12,609	14,919	16,960	15,343	16,368	18,043	17,346	19,920	24,834	28,492
Revenue										
All regions/countries/economies.....	1,730,980	1,933,233	2,021,050	2,235,632	2,532,230	2,507,420	2,530,667	2,804,620	3,210,253	3,508,943
United States.....	405,798	481,782	578,317	648,872	738,506	756,259	735,138	786,750	844,249	932,864
EU.....	433,378	471,644	484,816	516,080	576,808	582,029	561,892	581,323	622,770	650,268
Austria.....	6,519	6,830	7,616	8,477	9,799	9,401	9,333	9,011	9,964	10,816
Belgium.....	9,194	10,124	10,893	11,763	14,057	14,267	13,654	15,956	16,852	16,926
Bulgaria.....	575	559	432	344	377	391	497	542	534	661
Czech Republic.....	2,281	2,582	3,732	4,325	3,847	5,165	6,134	6,397	9,138	10,175
Denmark.....	5,020	5,329	5,850	6,585	7,613	8,103	8,236	8,007	7,334	7,807
Finland.....	7,434	8,742	12,226	14,957	19,947	19,309	21,109	20,654	23,615	25,435



**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
France.....	83,109	94,972	101,419	108,009	119,055	120,731	113,533	115,058	120,081	119,764
Germany.....	86,103	88,193	94,750	99,907	116,161	118,977	116,882	123,089	134,845	151,406
Greece.....	797	936	1,199	1,198	1,495	1,524	1,444	1,448	1,444	1,362
Hungary.....	13,618	24,551	5,222	6,539	8,302	9,420	11,360	20,315	29,538	36,900
Ireland.....	17,844	20,699	24,279	26,670	31,696	33,987	34,768	36,649	37,532	37,878
Italy.....	55,235	54,740	54,157	53,073	53,950	50,819	49,410	45,637	46,175	42,738
Netherlands.....	14,666	15,952	16,528	17,329	19,269	18,824	18,148	17,484	17,588	17,519
Poland.....	4,046	4,295	4,650	4,906	5,313	5,600	5,897	6,538	7,561	7,936
Portugal.....	2,898	2,983	3,203	3,298	3,630	3,752	3,623	4,545	4,879	5,684
Romania.....	844	807	585	564	510	520	540	686	757	716
Slovakia.....	621	677	699	655	709	820	992	1,093	1,232	1,533
Spain.....	17,571	17,984	18,956	18,788	20,076	18,451	17,059	17,101	16,877	16,823
Sweden.....	19,994	21,404	23,934	26,332	29,262	29,356	29,182	29,360	32,590	35,068
United Kingdom.....	85,009	89,284	94,486	102,361	111,742	112,612	100,092	101,752	104,234	103,121
Asia.....	750,540	820,880	788,056	886,097	1,006,496	967,851	1,038,368	1,244,485	1,542,236	1,707,305
China.....	88,968	101,615	114,891	145,629	171,937	206,828	272,443	413,420	612,865	747,234
India.....	9,397	10,052	9,664	11,813	10,962	11,923	13,735	14,837	16,605	17,577
Indonesia.....	6,627	7,509	4,417	5,676	6,839	7,436	8,666	9,615	9,809	10,253
Japan.....	461,921	497,147	458,818	465,171	495,189	446,988	411,834	450,694	505,078	502,369
Malaysia.....	27,035	29,584	26,156	33,224	44,601	37,089	40,837	44,363	52,631	59,825
Philippines.....	2,429	4,990	4,048	4,692	6,808	7,498	8,185	7,949	9,800	10,394
Singapore.....	35,415	38,651	37,569	46,594	54,217	44,507	46,700	51,004	55,413	63,569
South Korea.....	62,040	67,059	62,438	88,241	118,960	117,803	133,027	138,508	153,425	163,144
Taiwan.....	52,652	60,541	66,940	81,693	92,877	84,099	98,722	109,127	121,031	126,245
Thailand.....	4,056	3,732	3,115	3,365	4,106	3,681	4,220	4,969	5,578	6,694
All others.....	141,263	158,928	169,861	184,584	210,419	201,282	195,269	192,063	200,998	218,506
Argentina.....	5,551	5,654	5,614	5,049	4,954	4,691	2,995	3,582	4,178	4,930
Australia.....	7,441	8,009	8,315	8,492	8,549	9,231	10,103	10,778	10,510	10,871
Brazil.....	28,635	30,126	28,489	28,822	32,904	36,617	37,959	33,807	34,009	39,519
Canada.....	24,004	27,330	28,983	35,900	45,201	35,806	32,670	34,570	34,745	36,310
Chile.....	647	729	801	731	757	730	758	672	715	817
Costa Rica.....	267	162	162	166	181	169	154	158	174	201
Egypt.....	1,426	1,564	1,357	1,616	1,710	2,096	1,516	1,582	1,570	1,684
Iran.....	710	764	737	649	662	745	566	787	838	1,049
Israel.....	7,460	8,116	8,360	7,936	10,795	10,533	9,166	9,110	9,691	10,031
Mexico.....	25,281	33,798	44,816	51,186	55,108	52,262	48,960	46,020	48,092	51,447
Morocco.....	365	390	414	317	329	323	337	362	352	347
Norway.....	2,918	2,963	3,420	3,474	3,629	3,491	3,643	3,413	3,591	3,768
Russia.....	5,003	5,017	3,749	4,540	5,199	6,736	10,544	9,813	11,235	11,983
Saudi Arabia.....	209	210	194	191	197	210	195	221	228	226
South Africa.....	3,773	3,620	3,058	2,754	2,477	2,394	2,470	2,327	2,619	2,886

**Exports, imports, and gross revenue of high-technology manufacturing industries, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Switzerland .....	16,975	18,366	19,245	20,564	25,564	23,629	20,201	20,558	22,486	24,589
Tunisia .....	306	314	340	354	360	357	345	339	368	392
Turkey .....	3,308	4,865	5,102	5,371	5,499	4,331	5,388	5,844	6,703	7,358
All others.....	6,985	6,931	6,705	6,474	6,345	6,930	7,297	8,119	8,892	10,097

EU = European Union

NOTES: High-technology manufacturing industries classified by Organisation for Economic Co-operation and Development and include aerospace, communications equipment, office machinery and computers, pharmaceuticals, and scientific instruments. Gross revenue represents total value of all domestic or international industry shipments. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. EU exports and imports exclude intra-EU exports and imports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

*Science and Engineering Indicators 2008*

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Exports</b>											
All regions/countries/economies .....	81,793	96,479	111,283	127,132	134,451	157,462	174,353	191,852	210,989	266,088	339,800
United States .....	12,853	14,455	16,398	21,141	21,793	24,774	26,095	28,578	33,808	43,817	56,258
EU .....	8,437	8,854	9,327	9,747	9,976	11,298	12,946	14,236	18,247	23,426	30,214
Austria .....	925	1,148	1,324	785	1,445	1,956	1,979	1,716	783	1,911	1,055
Belgium .....	989	1,593	1,807	1,709	1,604	1,925	1,968	1,929	2,750	3,105	3,277
Bulgaria .....	12	26	16	35	31	19	6	5	5	5	7
Czech Republic .....	195	232	282	70	80	89	100	101	95	132	234
Denmark .....	376	476	560	586	623	697	694	708	738	891	1,129
Finland .....	265	388	461	451	493	659	638	807	1,107	1,717	2,493
France .....	2,444	2,578	3,252	3,634	3,701	4,787	5,366	5,502	6,087	7,168	9,599
Germany .....	5,754	6,578	7,388	8,218	8,319	9,080	9,925	10,004	9,746	12,745	14,599
Greece .....	13	14	13	15	19	23	29	40	72	57	62
Hungary .....	118	141	126	143	79	139	303	239	274	402	456
Ireland .....	385	297	328	409	514	462	639	637	804	1,305	2,242
Italy .....	1,674	1,889	2,117	2,430	2,463	2,832	2,952	3,129	3,698	4,076	5,049
Netherlands .....	1,803	2,292	2,502	2,028	2,120	2,698	2,612	2,997	3,319	3,596	4,628
Poland .....	63	73	74	81	74	64	43	64	103	171	307
Portugal .....	262	235	271	267	322	436	446	548	494	646	959
Romania .....	13	17	14	23	33	16	5	6	11	16	14
Slovakia .....	67	79	97	19	27	30	34	37	47	77	79
Spain .....	125	179	184	286	317	536	750	1,022	1,354	1,565	1,897
Sweden .....	1,273	1,242	1,258	1,644	1,700	1,876	1,958	2,068	2,786	3,867	5,454
United Kingdom .....	2,928	3,388	3,868	4,942	5,409	6,738	7,393	8,190	10,278	12,765	17,339
Asia .....	45,016	55,316	64,471	73,876	75,973	89,315	101,541	112,764	121,727	151,996	194,695
China .....	2,338	2,840	4,487	7,335	8,381	11,545	12,897	15,365	17,708	23,183	29,550
India .....	10	19	18	22	21	31	39	53	69	93	214
Indonesia .....	78	62	60	65	76	134	301	747	1,144	1,836	2,129
Japan .....	30,615	33,559	33,200	35,930	36,461	41,083	45,861	47,539	46,961	51,828	60,215
Malaysia .....	2,224	3,258	4,075	5,074	5,623	7,604	9,411	11,421	13,882	18,775	24,902
Philippines .....	389	567	1,288	838	1,739	1,507	1,926	2,298	2,785	3,522	4,924
Singapore .....	3,282	4,728	6,831	9,167	10,028	12,064	13,176	14,826	16,574	23,746	33,158
South Korea .....	3,264	4,903	6,923	8,007	6,749	7,419	8,906	10,206	10,648	14,059	20,307
Taiwan .....	2,811	5,371	6,971	6,631	5,792	6,023	6,452	7,184	8,564	10,409	13,729
Thailand .....	6	10	617	808	1,103	1,903	2,572	3,124	3,390	4,545	5,568
All others .....	4,240	3,841	4,473	4,341	7,312	8,313	8,874	10,763	10,903	14,057	17,968
Argentina .....	3	8	6	4	2	5	6	6	8	39	82
Australia .....	45	57	70	71	117	189	197	174	194	265	469
Brazil .....	228	341	434	394	282	273	289	261	237	204	187
Canada .....	1,884	1,848	1,958	1,809	1,981	2,357	2,806	3,445	3,430	4,143	5,143

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Chile .....	0	0	0	0	1	1	1	1	3	3	4
Costa Rica.....	0	0	0	1	1	0	0	2	2	1	2
Egypt .....	0	1	5	2	0	0	0	0	0	0	0
Iran .....	1	1	1	2	1	1	5	8	11	8	9
Israel.....	236	239	314	416	357	552	618	843	1,048	1,409	1,787
Mexico .....	711	7	19	65	2,811	3,008	3,205	4,091	4,306	6,118	7,915
Morocco.....	3	6	7	5	41	108	132	112	53	51	2
Norway .....	108	184	223	250	247	269	315	385	387	478	679
Russia.....	366	432	554	327	584	376	109	177	36	60	96
Saudi Arabia.....	11	21	38	8	9	48	94	151	11	2	127
South Africa .....	86	9	7	7	9	10	18	43	63	59	101
Switzerland.....	492	589	750	721	700	774	738	765	804	853	963
Tunisia .....	3	7	10	11	15	20	27	22	41	51	49
Turkey.....	34	19	38	89	96	194	243	185	158	175	203
All others.....	30	69	38	158	61	129	72	90	111	138	149
<b>Imports</b>											
All regions/countries/economies .....	78,997	92,731	107,880	122,246	129,964	151,216	167,570	184,432	203,353	257,783	330,286
United States.....	23,782	27,312	28,133	26,607	30,114	31,583	33,911	38,483	41,588	51,656	64,918
EU .....	12,178	14,910	18,523	21,953	22,978	27,814	30,189	29,191	29,847	33,695	40,594
Austria .....	653	835	1,038	1,402	1,352	1,690	1,847	1,817	1,730	2,026	2,054
Belgium .....	933	1,378	1,474	1,545	1,618	2,062	2,154	2,249	2,569	2,891	3,148
Bulgaria .....	63	72	66	70	75	65	40	68	62	92	91
Czech Republic .....	278	332	371	229	305	347	319	425	368	480	657
Denmark.....	609	749	804	725	757	863	874	959	1,005	1,305	1,638
Finland.....	822	818	926	823	970	883	837	765	851	1,256	1,946
France.....	2,633	3,490	4,267	5,430	5,257	6,724	7,084	6,667	7,117	8,139	10,047
Germany .....	5,308	6,589	8,077	8,642	9,185	12,877	14,141	13,795	14,598	17,407	21,040
Greece .....	226	296	243	327	360	401	449	523	776	692	723
Hungary .....	119	145	162	186	226	260	410	402	406	608	554
Ireland.....	352	341	391	606	769	772	825	979	1,399	1,752	2,544
Italy.....	2,336	2,882	3,796	4,644	4,825	6,016	6,438	6,051	5,127	6,344	7,055
Netherlands.....	2,100	2,718	3,161	3,271	3,172	3,903	4,254	4,397	4,811	5,049	6,515
Poland.....	73	114	148	201	246	411	933	568	630	685	858
Portugal .....	223	353	457	557	591	782	954	1,082	787	883	1,271
Romania.....	40	48	52	37	111	113	142	177	186	200	271
Slovakia .....	106	124	138	74	91	106	100	137	103	167	205
Spain .....	649	1,133	1,553	2,003	2,436	2,795	3,066	3,078	2,492	2,954	3,510
Sweden.....	1,851	1,703	1,936	1,829	1,941	1,920	1,873	1,769	1,765	2,375	3,529
United Kingdom.....	4,346	5,027	6,221	7,484	8,141	8,635	8,410	9,062	10,130	12,423	15,481

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Asia.....	18,012	20,535	28,048	37,318	39,200	47,782	55,673	65,324	77,855	104,150	140,963
China.....	5,831	5,016	7,041	11,025	9,767	12,409	15,194	19,466	22,647	28,857	36,061
India.....	419	581	820	727	683	489	341	369	418	618	1,063
Indonesia.....	529	288	357	323	310	506	794	1,124	1,109	886	1,158
Japan.....	1,677	2,173	2,909	3,944	4,956	5,768	6,268	6,511	8,496	12,253	19,080
Malaysia.....	2,332	2,756	3,548	4,002	4,641	5,410	6,835	7,222	9,418	14,903	20,892
Philippines.....	406	460	695	676	1,230	1,279	1,419	1,687	2,117	3,036	3,941
Singapore.....	2,746	3,461	4,672	6,059	6,621	8,739	10,305	11,792	14,615	20,128	26,499
South Korea.....	1,968	2,535	3,448	4,290	4,166	4,917	5,140	5,699	6,405	7,884	10,825
Taiwan.....	1,636	2,564	3,821	4,796	5,149	5,959	6,731	8,422	9,076	10,381	14,323
Thailand.....	469	700	738	1,475	1,677	2,306	2,647	3,031	3,554	5,204	7,122
All others.....	13,484	15,738	16,419	18,239	18,223	20,229	22,836	25,655	27,000	34,248	41,270
Argentina.....	202	318	466	295	176	208	549	1,093	1,186	1,339	1,121
Australia.....	1,042	1,127	1,109	1,220	1,422	1,432	1,333	1,591	1,747	2,291	3,298
Brazil.....	492	941	907	945	978	1,085	997	952	1,333	2,127	3,354
Canada.....	2,887	3,669	4,065	4,673	4,953	5,494	6,299	7,276	7,680	9,153	11,648
Chile.....	52	106	125	193	304	300	429	440	444	507	687
Costa Rica.....	14	27	33	35	37	41	55	60	89	99	84
Egypt.....	549	619	471	482	265	358	401	349	317	274	324
Iran.....	275	162	196	169	107	209	544	821	326	260	430
Israel.....	320	380	377	464	332	520	552	633	812	1,052	1,385
Mexico.....	1,263	1,281	1,109	2,341	2,571	3,124	3,558	4,072	4,327	6,468	6,078
Morocco.....	81	77	79	90	177	189	230	198	184	255	306
Norway.....	487	649	615	540	475	526	566	668	735	921	1,091
Russia.....	1,348	1,488	1,702	1,158	1,480	1,312	1,150	1,124	1,039	1,681	2,098
Saudi Arabia.....	1,164	765	643	647	692	685	938	747	791	651	967
South Africa.....	402	404	422	434	354	386	423	507	583	974	1,343
Switzerland.....	865	1,156	1,446	1,595	1,462	1,623	1,708	1,604	1,543	1,972	2,227
Tunisia.....	47	61	45	49	57	84	105	141	139	135	144
Turkey.....	606	653	626	573	528	688	825	723	905	864	946
All others.....	1,389	1,854	1,983	2,336	1,853	1,969	2,173	2,658	2,819	3,225	3,739
Revenue											
All regions/countries/economies.....	349,914	373,810	394,306	435,027	457,988	482,164	512,254	489,372	509,766	558,984	623,148
United States.....	40,866	44,546	33,552	34,440	37,286	40,121	40,977	45,600	51,831	58,833	68,332
EU.....	90,886	95,137	98,305	102,676	107,022	107,862	109,340	105,251	109,212	121,232	130,757
Austria.....	2,907	2,979	3,100	3,215	3,445	3,682	3,713	3,750	3,879	4,056	4,042
Belgium.....	3,852	3,690	3,671	3,793	3,850	3,810	3,646	3,280	3,055	3,254	3,466
Bulgaria.....	296	313	385	447	593	388	331	185	128	157	145
Czech Republic.....	288	271	292	296	289	245	353	330	264	327	609
Denmark.....	667	807	785	759	843	834	797	942	956	1,029	1,069
Finland.....	712	831	989	980	1,132	1,226	1,067	1,461	2,249	3,182	4,313

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
France.....	16,340	18,599	19,159	17,772	17,520	18,808	19,535	19,034	19,733	19,954	21,118
Germany.....	12,542	13,291	13,292	13,862	14,498	14,875	19,299	17,654	16,987	19,386	18,998
Greece.....	221	255	163	157	186	187	264	264	289	268	233
Hungary.....	6,965	6,980	7,444	7,580	7,363	6,200	4,197	3,621	3,561	5,907	7,754
Ireland.....	289	342	454	596	753	841	836	1,019	1,122	1,312	1,960
Italy.....	17,245	17,140	17,792	19,929	21,444	21,094	21,274	20,049	20,637	20,131	20,622
Netherlands.....	6,254	6,715	6,705	6,584	6,629	7,184	6,835	6,820	6,650	7,075	6,838
Poland.....	1,142	1,220	1,274	1,438	1,488	1,157	840	732	922	1,141	1,103
Portugal.....	781	609	617	647	833	893	841	890	855	990	1,407
Romania.....	42	46	39	39	40	44	62	25	44	108	175
Slovakia.....	140	139	141	141	143	139	107	99	88	86	112
Spain.....	2,383	2,768	3,658	4,272	4,272	4,021	3,781	3,273	4,417	4,607	5,158
Sweden.....	1,507	1,434	1,379	1,498	1,774	2,155	2,870	3,507	4,232	6,491	8,561
United Kingdom.....	16,313	16,706	16,967	18,672	19,928	20,079	18,692	18,315	19,145	21,773	23,074
Asia.....	183,920	198,520	226,145	260,172	273,737	293,756	319,047	302,137	312,295	338,833	379,047
China.....	15,799	17,530	22,868	26,403	27,728	28,010	31,530	32,521	35,197	41,568	41,686
India.....	383	479	777	910	1,254	1,619	1,658	1,921	1,731	1,966	2,488
Indonesia.....	102	115	113	113	157	744	668	1,293	1,393	1,997	3,147
Japan.....	146,711	152,533	164,521	190,231	198,733	209,753	224,251	200,085	197,101	206,909	225,799
Malaysia.....	1,326	2,012	2,636	3,106	4,117	5,545	8,034	8,863	10,487	13,689	18,680
Philippines.....	468	540	596	691	758	887	896	938	1,086	1,209	1,645
Singapore.....	3,077	2,977	4,184	4,718	4,564	6,192	5,308	5,937	8,056	10,815	13,834
South Korea.....	4,684	7,359	11,029	13,837	14,204	17,117	19,843	21,551	23,282	28,131	36,545
Taiwan.....	11,281	14,905	19,246	19,897	21,750	22,336	24,596	26,613	30,714	29,879	32,420
Thailand.....	89	69	176	266	471	1,553	2,263	2,413	3,248	2,668	2,804
All others.....	34,242	35,608	36,304	37,738	39,944	40,426	42,890	36,385	36,427	40,087	45,011
Argentina.....	828	1,023	1,054	800	601	561	701	999	1,067	960	729
Australia.....	1,490	1,598	1,655	1,815	1,789	1,668	1,593	1,687	1,560	1,896	2,031
Brazil.....	9,403	11,672	11,225	10,685	11,084	8,971	8,463	6,743	7,480	10,835	12,577
Canada.....	4,443	4,620	5,560	6,318	6,964	6,711	6,883	7,614	7,583	8,612	10,042
Chile.....	12	20	27	38	44	16	23	26	25	32	43
Costa Rica.....	28	44	45	56	50	52	11	20	33	35	30
Egypt.....	200	147	194	178	201	115	114	133	91	94	129
Iran.....	119	134	121	125	132	132	147	181	128	131	122
Israel.....	2,127	1,957	1,391	1,333	1,443	1,314	1,287	1,282	1,297	1,321	1,505
Mexico.....	8,856	7,846	7,951	8,677	9,614	11,775	14,128	10,582	9,512	9,849	10,122
Morocco.....	46	54	51	52	59	65	66	58	66	64	68
Norway.....	400	449	523	613	697	675	603	617	605	688	767
Russia.....	1,963	1,931	2,093	2,296	2,605	2,706	2,959	979	1,706	807	1,576
Saudi Arabia.....	0	0	0	0	0	0	0	0	0	0	0
South Africa.....	797	673	910	960	933	891	784	694	740	821	952

Appendix table 6-16

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Switzerland .....	1,843	1,897	1,908	2,170	2,151	2,772	2,787	2,538	2,391	2,451	2,683
Tunisia .....	44	36	37	43	86	114	119	120	107	105	100
Turkey .....	649	384	216	184	242	656	992	997	879	616	700
All others.....	994	1,124	1,343	1,395	1,248	1,231	1,230	1,116	1,157	769	834

EU = European Union

NOTES: Gross revenue represents total value of all domestic or international industry shipments. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. EU exports and imports exclude intra-EU exports and imports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

*Science and Engineering Indicators 2008*

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Exports</b>										
All regions/countries/economies .....	369,259	424,586	396,562	466,251	626,503	565,246	611,128	730,403	881,445	974,076
United States .....	59,703	70,056	62,016	74,589	95,804	79,312	73,372	78,585	87,290	91,761
EU .....	36,115	45,164	44,586	50,356	71,693	65,063	57,524	61,959	69,812	77,488
Austria .....	2,214	1,652	1,843	1,875	2,527	2,675	2,820	2,612	2,983	3,223
Belgium .....	3,928	4,484	5,062	5,379	6,884	7,878	5,953	6,349	6,907	7,072
Bulgaria .....	15	22	11	16	22	26	48	72	83	90
Czech Republic .....	244	287	471	382	846	1,589	1,735	2,040	2,298	2,417
Denmark .....	1,226	1,730	1,962	2,181	2,465	2,534	3,607	2,881	3,040	3,033
Finland .....	3,111	4,082	5,824	7,129	10,825	9,023	9,835	10,671	11,205	12,040
France .....	10,701	13,860	15,788	16,708	23,119	19,107	17,530	17,182	18,720	19,866
Germany .....	16,430	19,725	19,204	22,961	30,145	32,118	31,728	34,406	41,376	43,579
Greece .....	69	105	147	180	345	257	240	230	240	252
Hungary .....	365	1,359	1,925	2,402	3,461	4,221	5,141	6,795	7,491	7,756
Ireland .....	2,524	3,097	3,043	5,605	7,435	8,603	9,877	4,412	4,993	5,426
Italy .....	5,193	5,790	5,619	6,026	7,570	7,761	6,368	6,274	6,958	6,986
Netherlands .....	6,063	12,353	7,524	9,377	13,643	7,973	5,484	13,754	15,854	17,132
Poland .....	431	734	945	999	1,205	1,490	1,825	2,203	2,389	2,609
Portugal .....	878	909	986	1,328	1,531	1,551	1,463	1,878	1,935	2,068
Romania .....	15	7	27	43	401	411	545	534	521	437
Slovakia .....	74	174	212	192	253	370	390	510	569	600
Spain .....	2,029	2,522	2,821	3,261	3,515	3,701	3,704	4,356	4,765	4,800
Sweden .....	7,227	9,270	10,358	11,428	13,539	8,494	8,967	9,129	9,830	10,510
United Kingdom .....	19,392	18,918	19,894	21,304	28,440	31,124	31,285	22,410	22,832	23,271
Asia .....	205,731	227,335	200,484	239,235	324,217	293,994	351,426	462,549	581,068	657,312
China .....	31,089	35,658	35,292	42,083	61,004	66,900	91,370	132,567	166,999	200,053
India .....	231	195	151	178	223	249	359	493	601	729
Indonesia .....	2,801	2,891	3,305	2,801	4,714	3,096	3,915	4,802	3,704	4,137
Japan .....	58,788	63,661	53,882	60,329	76,402	60,163	63,988	83,246	103,958	110,557
Malaysia .....	27,222	27,850	23,896	28,483	36,528	33,488	35,545	41,699	50,011	61,623
Philippines .....	9,361	13,180	11,966	14,105	17,002	15,911	18,146	20,713	23,864	25,655
Singapore .....	34,135	33,681	23,854	27,791	40,188	34,236	36,890	44,916	59,700	68,770
South Korea .....	21,130	24,894	24,095	33,355	42,945	38,400	49,040	65,972	83,942	84,794
Taiwan .....	15,235	18,622	17,458	22,602	34,526	32,274	40,480	54,463	71,195	81,958
Thailand .....	5,740	6,703	6,584	7,506	10,686	9,278	11,693	13,680	17,094	19,037
All others .....	21,698	26,115	30,397	33,651	48,312	41,035	37,784	40,571	48,101	51,836
Argentina .....	55	73	57	51	47	44	71	56	59	61
Australia .....	501	698	546	518	759	713	535	681	677	649
Brazil .....	297	590	612	848	1,855	2,063	2,111	2,207	1,766	2,148
Canada .....	6,573	7,571	7,754	9,113	14,843	8,430	6,897	6,855	7,874	8,936



Appendix table 6-17

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Chile .....	3	5	4	9	8	12	14	11	14	13
Costa Rica.....	5	192	651	95	66	78	81	161	140	108
Egypt .....	0	0	1	1	2	3	5	6	5	6
Iran .....	3	0	1	8	9	10	7	12	11	9
Israel.....	2,043	2,630	2,929	3,341	5,898	5,063	3,815	3,754	4,422	4,834
Mexico .....	9,199	10,508	13,465	15,196	20,092	19,679	18,865	20,474	26,231	28,072
Morocco.....	0	1	504	570	456	387	573	548	563	554
Norway .....	631	799	946	808	713	894	715	832	803	708
Russia.....	542	803	353	440	274	313	348	480	495	474
Saudi Arabia.....	148	137	32	12	16	24	28	76	72	68
South Africa .....	121	150	212	233	265	310	320	376	398	430
Switzerland.....	1,075	1,252	1,198	1,282	1,643	1,523	1,244	1,326	1,614	1,766
Tunisia .....	48	70	108	48	49	64	65	75	78	72
Turkey.....	261	423	801	764	997	1,087	1,710	2,194	2,389	2,469
All others.....	195	213	221	314	320	336	379	448	490	460
<b>Imports</b>										
All regions/countries/economies .....	359,577	414,780	391,812	464,166	624,817	563,151	611,145	728,975	883,001	978,374
United States.....	66,325	73,831	73,797	87,623	119,698	99,482	104,795	118,522	145,853	165,941
EU .....	41,659	47,591	48,570	55,724	75,963	67,744	69,120	89,087	103,714	109,294
Austria .....	2,201	2,938	3,271	3,742	4,042	3,800	4,078	4,664	5,261	5,226
Belgium .....	3,860	4,579	5,252	6,300	7,844	8,071	7,423	7,744	9,063	9,775
Bulgaria .....	82	86	122	187	182	331	325	441	511	569
Czech Republic .....	962	993	1,006	1,216	2,198	2,454	2,172	2,965	3,428	3,663
Denmark.....	1,791	2,620	2,588	2,706	3,200	3,233	4,795	3,893	4,164	4,368
Finland.....	2,097	2,666	2,633	3,119	5,311	4,374	4,016	4,832	5,449	5,566
France.....	11,052	13,601	15,219	17,100	22,458	19,382	18,436	20,061	22,564	23,131
Germany .....	21,319	22,404	23,348	25,942	35,204	33,642	33,377	41,170	47,065	50,172
Greece .....	859	1,172	1,373	1,612	1,760	1,755	1,628	2,105	2,220	2,007
Hungary .....	865	1,385	1,869	2,346	3,847	3,927	4,789	6,402	7,686	8,229
Ireland.....	2,481	3,148	3,478	4,573	7,109	9,125	9,955	4,972	5,644	5,710
Italy.....	7,200	8,446	9,378	10,025	12,403	11,504	10,926	13,553	15,121	15,313
Netherlands.....	7,476	11,598	9,625	12,012	14,426	15,264	15,353	20,511	23,202	23,813
Poland.....	1,254	1,695	2,075	2,389	2,926	2,857	2,923	3,243	3,829	4,359
Portugal .....	1,297	1,844	1,867	2,113	2,497	2,655	2,920	3,326	3,731	3,652
Romania.....	346	428	573	477	920	713	797	966	1,173	1,368
Slovakia .....	267	415	436	345	461	612	743	973	1,111	1,279
Spain .....	4,792	4,650	5,736	7,634	9,043	8,169	9,960	11,487	12,985	13,607
Sweden.....	4,082	5,097	5,329	5,244	7,069	5,105	5,402	6,021	6,539	6,640
United Kingdom.....	18,270	20,324	20,065	23,670	31,881	28,388	30,163	26,046	28,776	28,174

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Asia.....	155,905	177,977	147,865	182,441	249,627	229,054	271,402	351,396	439,781	498,914
China.....	37,513	45,698	41,805	50,249	72,309	76,466	101,476	145,481	186,832	219,073
India.....	1,113	1,198	1,065	1,233	1,543	1,904	3,288	5,672	7,014	8,664
Indonesia.....	1,852	1,929	594	519	780	1,080	1,171	1,269	1,906	1,941
Japan.....	21,904	22,017	18,974	23,265	32,819	31,282	31,375	37,677	46,669	49,479
Malaysia.....	22,649	24,113	19,454	23,628	31,905	27,152	31,053	35,503	40,363	43,861
Philippines.....	6,760	9,992	9,901	12,122	13,751	11,402	13,526	16,059	17,069	18,073
Singapore.....	27,728	28,444	21,536	25,093	34,189	27,683	29,972	36,492	46,414	52,912
South Korea.....	13,413	16,144	11,626	18,628	24,858	20,469	24,209	30,906	37,578	41,494
Taiwan.....	15,269	19,889	16,799	20,360	26,875	21,290	24,455	29,974	39,630	44,463
Thailand.....	7,704	8,552	6,111	7,345	10,599	10,327	10,879	12,364	16,307	18,952
All others.....	44,795	52,881	54,907	61,349	80,710	69,256	64,769	73,683	87,844	96,899
Argentina.....	1,170	1,677	1,671	1,699	2,288	1,280	176	544	1,315	1,533
Australia.....	3,515	3,233	2,876	3,840	5,025	4,016	4,329	5,927	6,994	7,683
Brazil.....	4,177	5,134	4,481	4,663	5,916	5,259	3,597	4,005	5,061	5,949
Canada.....	11,942	13,052	13,196	15,646	19,895	14,616	12,945	14,404	17,523	20,092
Chile.....	724	903	1,054	939	1,037	898	903	924	1,056	1,187
Costa Rica.....	107	202	885	656	859	1,311	1,471	1,800	1,867	1,851
Egypt.....	403	472	718	744	693	654	532	531	565	635
Iran.....	385	606	720	382	475	785	736	1,082	1,230	1,387
Israel.....	1,536	1,558	1,649	2,056	3,113	2,353	2,106	2,104	2,676	2,889
Mexico.....	7,382	10,230	10,503	13,932	20,330	19,442	17,926	17,724	20,308	21,763
Morocco.....	300	359	521	686	1,235	743	1,017	1,250	1,484	1,745
Norway.....	1,112	1,200	1,407	1,362	1,659	1,486	1,604	1,751	1,984	2,081
Russia.....	2,072	2,230	1,481	1,007	1,402	2,009	2,697	3,891	4,536	4,974
Saudi Arabia.....	818	941	1,022	1,123	1,075	1,168	1,716	1,663	1,599	1,745
South Africa.....	1,438	1,651	2,321	1,823	2,068	1,821	1,843	2,084	2,532	2,794
Switzerland.....	2,254	2,419	2,644	3,116	4,135	3,690	3,202	3,687	4,099	4,085
Tunisia.....	154	180	193	150	189	235	293	402	456	532
Turkey.....	1,322	1,855	2,216	3,016	4,438	2,043	2,384	3,233	4,508	5,128
All others.....	3,985	4,980	5,352	4,510	4,878	5,447	5,291	6,676	8,053	8,846
Revenue										
All regions/countries/economies.....	697,046	794,159	808,722	937,132	1,148,366	1,088,979	1,097,731	1,273,651	1,533,230	1,694,425
United States.....	84,148	114,518	153,168	204,150	293,459	297,131	281,273	321,095	367,667	420,396
EU.....	142,237	158,653	151,399	164,540	198,316	186,650	173,459	182,920	211,402	230,258
Austria.....	3,958	4,156	4,501	4,891	5,646	5,112	4,655	4,270	5,024	5,518
Belgium.....	3,494	3,791	4,372	4,289	5,741	5,228	4,177	4,246	4,201	3,880
Bulgaria.....	166	115	91	83	111	139	224	245	198	255
Czech Republic.....	709	1,068	2,189	2,618	1,996	2,325	2,819	3,327	5,020	4,811
Denmark.....	1,337	1,344	1,465	1,686	1,773	1,774	1,930	1,863	1,328	1,230
Finland.....	4,966	5,916	9,270	11,945	17,325	16,609	18,478	18,249	21,278	23,083

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
France.....	21,348	23,160	25,681	27,026	33,084	30,337	27,556	28,045	31,505	34,012
Germany .....	19,317	20,677	22,579	24,844	33,065	33,208	30,214	33,125	39,456	46,864
Greece .....	163	189	457	404	596	441	294	242	259	160
Hungary .....	12,154	22,175	2,231	2,975	4,019	5,262	6,966	15,585	24,469	31,372
Ireland.....	2,194	2,776	3,318	4,045	5,614	5,718	5,201	4,917	5,020	5,377
Italy .....	21,724	21,141	19,827	19,110	19,125	17,058	15,045	14,401	14,345	13,376
Netherlands.....	6,874	7,158	7,365	7,808	8,880	8,262	6,861	7,008	7,121	6,807
Poland.....	1,371	1,530	1,878	2,014	2,267	2,362	2,613	2,721	3,391	3,833
Portugal .....	1,454	1,412	1,579	1,615	1,926	2,210	2,122	3,020	3,415	4,250
Romania.....	238	286	230	195	107	99	84	98	101	63
Slovakia .....	124	159	171	154	187	297	400	433	538	682
Spain .....	5,002	4,959	5,071	4,226	5,064	4,146	3,350	2,941	2,891	2,632
Sweden.....	10,900	11,830	13,745	16,051	18,383	17,743	16,682	16,580	19,092	21,798
United Kingdom.....	24,742	24,811	25,379	28,559	33,406	28,319	23,786	21,604	22,750	20,255
Asia.....	419,578	460,101	435,656	490,783	566,944	529,453	574,801	699,732	881,123	962,695
China .....	48,595	54,624	54,282	65,505	75,908	89,070	125,530	194,778	303,179	363,470
India.....	2,894	3,080	3,056	3,764	3,563	3,380	3,234	3,595	4,247	3,896
Indonesia .....	5,102	6,166	3,403	4,751	5,662	6,107	6,984	8,262	8,354	8,611
Japan.....	249,855	271,259	252,862	256,472	281,567	251,371	232,300	267,564	309,653	314,010
Malaysia .....	19,147	21,440	19,444	25,595	35,631	28,969	33,650	37,529	45,612	51,421
Philippines .....	1,466	3,244	2,756	3,224	4,956	5,524	6,488	6,248	7,822	8,427
Singapore.....	14,810	15,745	15,425	21,001	24,538	18,762	19,089	21,390	23,013	25,077
South Korea .....	41,839	45,230	40,913	57,360	77,188	74,823	85,304	91,599	105,058	112,601
Taiwan .....	32,479	36,373	41,087	50,615	54,886	48,922	59,173	65,206	70,304	70,663
Thailand .....	3,390	2,941	2,428	2,496	3,046	2,526	3,048	3,561	3,880	4,520
All others.....	51,083	60,887	68,499	77,659	89,647	75,745	68,198	69,904	73,039	81,075
Argentina .....	927	991	1,002	825	855	614	430	507	640	785
Australia.....	2,230	2,254	2,232	2,296	2,307	2,428	2,585	2,824	2,807	2,890
Brazil .....	16,692	16,782	13,784	12,021	14,276	16,049	15,014	14,224	14,825	17,945
Canada .....	9,534	11,077	12,336	17,773	22,285	11,683	9,530	11,263	11,620	12,417
Chile .....	52	47	39	22	21	16	14	14	16	27
Costa Rica.....	32	42	50	31	25	26	25	27	32	38
Egypt .....	201	188	185	188	200	181	209	242	269	306
Iran .....	142	186	206	185	211	244	206	280	307	396
Israel.....	1,892	2,261	2,394	2,685	5,373	4,747	3,589	3,614	3,573	3,540
Mexico .....	11,690	17,654	26,994	32,345	33,370	29,981	26,893	25,751	26,818	29,366
Morocco.....	67	80	81	10	9	9	8	10	11	10
Norway .....	856	986	1,119	1,219	1,293	1,109	1,068	937	981	979
Russia.....	1,109	1,039	765	1,002	1,425	1,815	1,673	2,605	2,811	3,056
Saudi Arabia.....	0	0	0	0	0	0	0	0	0	0
South Africa .....	991	1,033	951	891	807	663	686	661	707	792

**Exports, imports, and gross revenue of radio, television, and communications equipment, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Switzerland .....	2,698	2,725	2,657	2,664	3,540	2,813	2,151	2,274	2,447	2,721
Tunisia .....	139	140	157	163	174	171	148	147	166	184
Turkey .....	971	2,495	2,605	2,456	2,631	2,016	2,798	3,155	3,473	3,821
All others.....	861	906	941	881	844	1,183	1,170	1,368	1,537	1,803

EU = European Union

NOTES: Gross revenue represents total value of all domestic or international industry shipments. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. EU exports and imports exclude intra-EU exports and imports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

*Science and Engineering Indicators 2008*

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Exports</b>											
All regions/countries/economies .....	26,509	30,514	37,828	44,796	48,663	55,814	61,850	70,257	80,242	101,477	135,292
United States.....	7,773	8,294	10,179	12,426	12,127	13,350	14,445	15,737	17,179	21,227	26,949
EU.....	4,739	4,696	4,840	5,096	5,213	5,244	5,916	6,353	8,462	10,786	13,487
Austria.....	115	128	104	113	172	235	287	303	227	235	293
Belgium.....	270	363	513	424	440	497	529	516	572	783	1,062
Bulgaria.....	38	42	49	53	47	33	7	6	6	5	3
Czech Republic.....	59	71	91	20	24	26	32	41	49	68	103
Denmark.....	80	100	118	121	119	174	234	235	262	438	406
Finland.....	60	63	91	78	99	124	141	242	313	434	443
France.....	1,139	1,369	1,698	1,719	1,834	1,949	2,249	2,462	2,504	3,086	4,099
Germany.....	2,510	2,749	2,874	2,891	3,115	3,333	3,491	3,387	3,562	4,322	5,354
Greece.....	0	1	1	2	3	3	5	5	9	9	10
Hungary.....	8	14	10	33	11	8	16	13	13	19	46
Ireland.....	1,335	1,256	1,535	1,529	1,854	1,836	1,715	1,909	2,409	3,093	4,974
Italy.....	1,145	1,179	1,222	1,510	1,709	1,737	1,791	1,749	2,250	2,489	2,992
Netherlands.....	874	1,073	1,181	1,486	1,807	2,145	2,380	2,590	3,733	4,479	5,876
Poland.....	12	11	14	12	5	4	5	5	6	14	17
Portugal.....	52	39	37	39	46	38	40	26	20	19	22
Romania.....	1	4	6	4	7	2	0	1	1	2	3
Slovakia.....	9	11	14	2	2	2	4	5	3	13	9
Spain.....	290	270	294	302	348	350	471	478	505	564	686
Sweden.....	422	441	458	487	476	478	467	427	380	383	412
United Kingdom.....	2,269	2,376	3,085	3,791	4,113	4,545	4,772	4,896	5,909	7,232	9,647
Asia.....	6,848	9,382	12,610	15,725	18,030	22,497	25,905	31,999	36,745	47,473	64,992
China.....	415	429	651	973	1,203	1,662	2,127	2,931	3,442	4,794	7,846
India.....	6	12	14	10	20	19	12	30	55	86	146
Indonesia.....	7	11	12	8	4	3	20	70	73	96	171
Japan.....	4,750	6,254	7,610	8,997	8,899	10,409	11,668	13,624	14,744	16,904	19,487
Malaysia.....	15	9	18	35	137	348	631	827	1,144	1,995	2,899
Philippines.....	0	4	72	15	113	94	117	210	219	244	483
Singapore.....	765	1,121	1,677	2,341	4,002	5,293	5,647	7,234	9,012	12,570	18,695
South Korea.....	255	427	659	945	792	866	944	1,084	1,434	1,785	2,928
Taiwan.....	599	1,074	1,811	2,153	2,511	3,302	4,104	5,098	5,628	7,548	10,413
Thailand.....	36	42	87	248	349	501	636	892	995	1,452	1,925
All others.....	1,196	1,277	1,645	2,028	2,274	2,446	2,862	3,224	3,585	5,091	6,892
Argentina.....	54	53	39	47	60	57	62	52	40	42	36
Australia.....	42	76	117	58	118	159	229	260	311	493	613
Brazil.....	105	118	90	125	123	75	126	128	101	88	133
Canada.....	565	602	809	1,018	967	1,117	1,358	1,489	1,612	2,316	3,137

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Chile .....	0	0	0	0	0	0	0	2	2	2	3
Costa Rica.....	0	0	0	0	0	0	0	0	0	0	0
Egypt .....	0	1	1	1	0	0	0	0	0	0	1
Iran .....	0	1	0	1	1	1	1	3	3	2	6
Israel.....	49	76	94	115	106	138	129	167	256	233	207
Mexico .....	113	17	128	233	472	433	467	590	703	1,260	1,878
Morocco.....	0	0	0	0	0	0	0	0	0	0	0
Norway .....	77	123	132	175	144	157	168	167	166	237	252
Russia.....	25	31	37	14	35	18	7	9	2	4	6
Saudi Arabia.....	1	4	7	1	2	15	15	23	2	0	51
South Africa .....	8	6	5	8	6	10	10	19	22	24	36
Switzerland.....	149	158	171	208	214	233	250	271	310	333	464
Tunisia .....	0	0	0	0	1	1	1	2	2	2	3
Turkey.....	0	1	1	1	3	9	8	7	4	5	4
All others.....	7	10	12	23	22	23	33	36	48	50	61
<b>Imports</b>											
All regions/countries/economies .....	26,206	30,417	37,920	44,795	47,681	54,400	60,624	69,333	80,086	101,625	136,389
United States.....	5,372	6,846	8,705	10,251	10,768	12,029	13,589	16,815	20,344	26,557	34,511
EU .....	8,170	9,840	12,238	15,000	15,462	17,686	19,566	22,279	23,143	27,396	36,226
Austria .....	268	328	331	425	481	562	661	668	711	910	1,024
Belgium .....	563	684	869	767	978	1,083	1,106	1,151	1,046	1,361	1,773
Bulgaria .....	13	18	19	16	17	16	16	25	24	30	31
Czech Republic .....	127	142	165	112	159	181	185	220	300	311	429
Denmark.....	283	360	411	434	428	509	573	642	709	887	1,204
Finland.....	624	660	697	513	641	437	406	350	351	535	839
France.....	1,868	2,265	2,669	3,103	3,150	3,358	3,410	3,818	4,303	5,403	6,739
Germany .....	2,536	3,054	3,769	4,171	4,906	6,052	7,018	7,506	7,745	9,312	12,056
Greece .....	35	44	59	70	86	103	143	144	164	164	233
Hungary .....	31	35	58	74	80	104	143	154	200	214	210
Ireland.....	543	595	699	702	773	821	807	1,008	1,266	1,493	2,856
Italy.....	1,174	1,346	1,754	2,028	1,908	2,147	2,315	2,440	2,328	2,588	3,317
Netherlands.....	1,414	1,656	2,041	2,883	3,027	3,579	3,627	4,043	4,823	5,611	8,077
Poland.....	30	42	47	56	57	72	208	163	249	269	402
Portugal .....	67	86	117	144	179	227	282	298	266	292	414
Romania.....	9	11	8	16	31	25	28	32	47	55	81
Slovakia .....	38	43	52	26	38	43	44	54	49	88	125
Spain .....	580	663	777	984	1,053	1,204	1,413	1,421	1,356	1,537	1,814
Sweden.....	564	601	680	836	839	857	878	876	944	1,234	1,750
United Kingdom.....	2,678	2,885	3,736	4,580	5,056	5,378	5,541	6,078	7,040	8,052	10,324

Appendix table 6-18

(Page 3 of 5)

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Asia.....	2,710	3,173	4,349	5,962	6,504	8,043	9,532	11,578	14,049	19,808	30,070
China.....	775	625	903	1,106	1,066	1,275	1,662	2,500	2,825	3,891	5,950
India.....	53	106	117	121	142	129	96	96	114	195	337
Indonesia.....	45	46	41	55	54	73	72	94	72	96	131
Japan.....	798	936	1,158	1,548	1,955	2,261	2,600	2,801	3,453	4,741	8,614
Malaysia.....	87	79	88	98	185	333	523	654	897	1,737	2,511
Philippines.....	29	40	70	65	98	101	96	164	164	201	340
Singapore.....	419	556	933	1,413	1,228	1,749	2,041	2,492	3,367	4,573	6,049
South Korea.....	246	395	421	615	671	777	848	752	899	1,303	1,898
Taiwan.....	181	287	411	579	651	777	894	1,082	1,185	1,436	1,970
Thailand.....	76	104	207	362	455	567	698	945	1,074	1,635	2,272
All others.....	4,679	4,877	5,909	6,642	6,523	7,569	8,700	9,847	11,774	14,916	18,113
Argentina.....	85	61	72	70	71	89	193	230	326	469	467
Australia.....	672	702	783	887	1,065	1,074	1,087	1,233	1,416	1,882	2,327
Brazil.....	169	162	193	218	229	237	269	412	508	765	1,127
Canada.....	1,520	1,565	2,020	2,268	2,072	2,671	3,142	3,602	4,158	4,930	5,965
Chile.....	33	37	43	60	66	66	90	122	140	173	255
Costa Rica.....	7	11	13	13	19	22	20	29	37	37	46
Egypt.....	24	37	42	63	36	56	66	69	60	65	93
Iran.....	14	9	18	6	15	29	53	76	52	45	33
Israel.....	166	147	142	135	128	184	235	244	303	393	493
Mexico.....	290	207	303	429	420	528	701	784	1,063	1,598	1,498
Morocco.....	12	14	15	22	22	24	26	30	41	41	46
Norway.....	248	307	326	302	307	351	372	407	470	573	765
Russia.....	191	206	227	220	265	290	243	237	322	481	648
Saudi Arabia.....	110	89	87	84	67	78	138	146	155	132	141
South Africa.....	224	227	239	245	196	181	213	279	366	476	602
Switzerland.....	476	617	794	909	930	1,041	1,040	1,053	1,218	1,563	1,879
Tunisia.....	6	7	9	14	20	21	23	26	30	33	38
Turkey.....	44	68	88	106	100	138	164	173	247	174	274
All others.....	389	405	495	589	499	489	623	695	861	1,085	1,417
Revenue											
All regions/countries/economies.....	126,457	140,226	162,401	183,854	195,830	192,507	202,466	191,040	192,005	220,602	245,472
United States.....	5,205	5,504	6,824	8,693	9,446	10,696	11,168	13,568	16,781	20,541	30,475
EU.....	37,364	38,301	40,514	40,090	41,330	41,047	41,274	39,137	37,566	41,445	50,564
Austria.....	122	147	170	170	170	155	166	196	123	111	92
Belgium.....	50	48	47	51	63	65	65	52	55	64	69
Bulgaria.....	35	35	42	47	59	37	19	12	9	10	11
Czech Republic.....	129	123	128	126	118	89	81	149	180	398	535
Denmark.....	113	135	111	129	138	133	111	146	149	164	185
Finland.....	146	204	229	211	193	225	221	338	373	385	397

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1985-95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
France.....	4,480	4,820	5,357	5,678	5,976	6,211	6,071	5,460	5,017	5,368	6,692
Germany .....	7,452	7,719	7,797	8,222	8,100	8,434	10,039	7,870	6,975	7,143	7,762
Greece .....	99	86	50	57	53	65	103	92	22	6	3
Hungary .....	36	35	37	39	40	35	35	26	98	69	58
Ireland.....	3,551	3,959	4,885	5,764	6,572	6,887	6,498	6,912	7,050	8,156	12,092
Italy .....	7,220	7,419	7,523	4,925	5,114	4,436	4,077	4,585	4,380	5,042	5,486
Netherlands.....	1,463	1,452	1,204	1,122	1,150	1,193	1,227	1,155	1,069	1,269	1,529
Poland.....	82	87	92	99	100	78	54	49	76	75	140
Portugal .....	263	218	210	41	40	73	96	64	73	105	162
Romania.....	24	25	20	19	19	19	13	10	11	10	13
Slovakia .....	29	29	29	29	30	29	22	23	19	19	22
Spain .....	7,848	7,533	7,590	7,441	6,781	6,031	5,080	3,976	3,552	2,833	2,968
Sweden.....	977	976	989	970	1,023	1,009	1,159	937	647	617	596
United Kingdom.....	3,246	3,253	4,002	4,951	5,590	5,845	6,136	7,087	7,689	9,600	11,754
Asia.....	79,933	91,947	109,984	129,542	139,057	134,671	143,654	131,864	129,450	148,847	153,656
China .....	586	606	847	1,052	1,239	1,528	2,002	2,134	2,512	3,044	5,404
India.....	26	21	20	30	249	261	364	387	257	514	489
Indonesia .....	1	1	2	2	2	4	2	6	27	6	24
Japan.....	71,884	82,847	98,205	115,179	120,810	112,794	118,305	103,344	98,022	107,920	102,507
Malaysia .....	100	93	112	48	81	694	2,056	3,149	4,163	6,056	7,686
Philippines .....	7	8	14	14	41	7	11	19	108	131	175
Singapore.....	3,805	3,388	4,307	5,711	8,608	10,766	10,489	10,997	11,608	14,758	16,931
South Korea .....	474	881	1,500	1,862	2,060	2,144	2,263	2,354	2,950	3,934	5,695
Taiwan .....	3,050	4,100	4,976	5,642	5,962	6,427	8,071	9,301	9,644	12,470	14,742
Thailand.....	1	1	0	2	5	47	93	173	158	13	3
All others.....	3,955	4,474	5,079	5,529	5,997	6,093	6,370	6,471	8,209	9,770	10,777
Argentina .....	250	268	271	246	193	238	269	303	277	227	189
Australia.....	67	60	65	78	84	135	156	266	277	377	383
Brazil .....	1,056	1,500	1,792	1,776	1,984	1,482	1,482	1,801	2,238	2,362	1,962
Canada .....	133	150	234	368	422	452	557	650	913	1,461	1,894
Chile .....	0	0	0	0	0	0	0	0	0	0	0
Costa Rica.....	0	0	0	0	0	0	0	0	0	0	0
Egypt .....	2	0	0	9	3	1	4	0	4	4	1
Iran .....	5	4	3	3	2	3	3	7	6	8	7
Israel.....	129	138	113	107	114	97	92	126	169	208	342
Mexico .....	486	473	664	831	948	1,109	1,325	1,081	2,286	3,083	3,702
Morocco.....	32	21	18	19	20	27	28	25	25	34	32
Norway .....	234	267	278	275	265	226	147	149	131	137	150
Russia.....	537	526	569	620	776	815	763	599	456	442	439
Saudi Arabia.....	18	21	21	22	24	25	28	32	33	31	31
South Africa .....	11	16	13	14	12	12	10	9	9	9	10



Appendix table 6-18

(Page 5 of 5)

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1985–95**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Switzerland .....	872	895	906	1,029	1,015	1,308	1,317	1,210	1,141	1,173	1,364
Tunisia .....	5	4	2	2	3	4	6	6	6	7	7
Turkey .....	33	26	14	20	25	48	64	100	88	73	92
All others.....	85	102	116	110	105	112	118	105	149	135	171

EU = European Union

NOTES: Gross revenue represents total value of all domestic or international industry shipments. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. EU exports and imports exclude intra-EU exports and imports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

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**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Exports</b>										
All regions/countries/economies .....	163,446	208,262	244,924	302,488	372,459	369,950	390,707	463,676	559,008	637,811
United States .....	32,118	40,175	41,570	46,051	57,595	51,445	44,015	46,788	51,334	59,418
EU .....	16,597	21,843	27,672	35,630	45,834	45,836	42,059	42,632	48,263	56,404
Austria .....	286	387	528	705	960	1,174	1,541	1,561	1,983	2,473
Belgium .....	1,484	1,783	2,284	3,043	4,040	4,471	4,489	5,417	6,751	7,777
Bulgaria .....	13	16	10	9	13	14	23	36	37	36
Czech Republic .....	121	145	278	277	547	1,179	2,564	3,267	3,709	4,204
Denmark .....	470	651	695	853	978	947	1,226	1,378	1,479	1,513
Finland .....	462	642	783	800	457	401	359	386	432	475
France .....	4,963	6,282	7,979	8,712	10,111	9,131	7,850	7,353	8,489	9,267
Germany .....	6,052	7,565	10,269	12,478	16,142	17,014	17,357	20,378	26,387	28,369
Greece .....	16	25	33	66	80	79	69	69	83	93
Hungary .....	118	1,633	2,604	4,039	4,515	3,206	2,826	3,116	3,613	4,117
Ireland .....	5,675	8,093	11,647	15,101	18,543	21,696	18,076	19,124	22,775	25,973
Italy .....	2,790	2,599	2,902	3,248	3,272	3,145	2,737	2,737	3,058	3,077
Netherlands .....	7,781	11,671	16,206	20,696	23,344	23,460	22,338	25,957	31,320	35,639
Poland .....	42	30	58	74	94	92	110	120	145	178
Portugal .....	32	68	68	86	78	292	384	636	814	965
Romania .....	2	2	7	104	141	93	24	71	96	73
Slovakia .....	7	23	76	146	121	103	114	321	381	392
Spain .....	822	898	1,249	1,600	1,921	1,829	1,372	1,811	1,982	1,937
Sweden .....	519	566	614	673	725	954	1,133	1,285	1,450	1,419
United Kingdom .....	10,884	13,840	16,318	19,786	21,806	21,342	19,118	18,098	14,094	14,680
Asia .....	80,587	100,676	114,751	146,225	186,124	185,459	223,382	284,307	355,854	412,301
China .....	10,219	14,115	20,048	26,992	38,337	49,063	73,930	124,918	162,887	193,865
India .....	187	213	100	134	255	387	254	386	476	536
Indonesia .....	263	357	254	269	615	712	757	793	966	1,078
Japan .....	21,346	27,204	30,120	33,633	37,174	30,767	31,679	34,622	40,866	44,442
Malaysia .....	4,464	6,217	6,136	9,409	13,745	13,375	13,856	15,228	18,773	22,930
Philippines .....	1,567	2,450	2,835	3,228	4,303	5,278	5,712	6,192	7,292	7,784
Singapore .....	23,176	26,279	25,960	29,666	31,489	29,971	30,266	32,387	40,391	44,616
South Korea .....	3,512	4,801	5,532	11,410	20,483	16,840	22,876	27,344	30,227	34,049
Taiwan .....	13,391	16,313	20,994	27,749	34,440	33,476	37,284	34,757	44,036	51,168
Thailand .....	2,461	2,729	2,772	3,734	5,285	5,589	6,770	7,681	9,939	11,834
All others .....	8,204	10,492	13,993	17,717	20,853	22,425	19,601	19,460	22,742	23,436
Argentina .....	22	13	14	17	16	17	35	18	17	19
Australia .....	691	697	741	781	723	790	808	883	914	953
Brazil .....	196	207	263	454	470	375	250	314	402	445
Canada .....	2,958	3,310	4,025	4,001	4,823	4,223	2,982	3,135	3,789	3,986

Appendix table 6-19

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Chile .....	3	4	5	6	9	12	16	15	20	20
Costa Rica.....	1	1	158	225	262	330	451	387	601	753
Egypt .....	0	0	1	1	1	1	1	1	1	1
Iran .....	11	0	1	0	0	1	1	0	0	0
Israel.....	349	440	611	869	985	850	780	848	1,085	1,207
Mexico .....	2,843	4,434	6,488	9,092	11,305	13,757	12,710	12,126	13,971	14,012
Morocco.....	0	0	2	1	2	1	6	23	17	18
Norway .....	296	379	521	600	482	431	422	419	399	370
Russia.....	64	48	27	47	30	40	99	70	69	65
Saudi Arabia.....	58	57	14	2	4	7	7	43	38	35
South Africa .....	62	85	106	185	127	133	137	138	147	173
Switzerland.....	546	638	831	1,202	1,362	1,170	661	700	866	961
Tunisia .....	3	2	1	1	2	2	7	11	16	16
Turkey.....	9	17	28	49	50	47	38	46	60	68
All others.....	92	157	156	183	199	239	189	282	329	334
<b>Imports</b>										
All regions/countries/economies .....	165,749	212,684	258,557	325,083	397,131	395,655	425,510	505,030	619,103	704,855
United States.....	40,145	51,678	64,434	80,522	92,165	82,841	91,688	105,666	125,050	130,211
EU .....	43,534	55,472	69,698	83,681	96,841	96,891	97,479	119,421	155,328	173,940
Austria .....	1,141	1,376	1,701	2,275	2,540	2,754	2,663	3,388	4,139	4,376
Belgium .....	2,320	2,803	3,654	4,576	5,580	6,002	5,677	7,222	8,836	10,541
Bulgaria .....	37	37	68	116	124	159	154	250	313	384
Czech Republic .....	506	528	785	864	1,186	1,753	2,467	3,213	3,677	4,423
Denmark.....	1,356	1,698	1,802	2,243	2,388	2,316	2,651	3,195	3,723	4,314
Finland.....	929	1,209	1,533	1,858	1,670	1,870	1,842	2,289	2,635	2,845
France.....	7,814	9,787	12,173	13,705	15,953	15,749	14,529	16,698	20,507	22,633
Germany .....	13,593	17,070	21,536	26,865	29,279	31,248	31,822	36,832	41,887	46,184
Greece .....	274	344	505	800	834	763	802	1,045	1,255	1,278
Hungary .....	276	838	1,243	1,784	2,464	2,385	2,461	2,426	3,070	3,558
Ireland.....	3,263	5,234	7,030	7,981	10,059	10,470	10,006	10,082	11,578	13,569
Italy.....	4,082	4,615	5,844	7,312	8,290	8,050	8,418	9,290	10,526	10,913
Netherlands.....	10,463	14,761	19,898	24,242	26,213	27,657	26,598	34,043	40,821	45,337
Poland.....	576	759	1,130	1,404	1,727	1,864	1,802	2,044	2,467	3,091
Portugal .....	509	621	792	1,144	1,105	1,345	1,292	1,473	1,682	1,786
Romania.....	99	128	211	236	297	337	428	634	884	1,291
Slovakia .....	79	153	235	270	324	376	435	581	703	889
Spain .....	2,158	2,689	3,344	4,104	4,613	5,255	5,048	6,953	7,927	8,836
Sweden.....	1,964	2,364	3,376	3,073	3,337	3,305	3,373	3,827	4,320	4,793
United Kingdom.....	11,943	15,852	20,271	24,906	30,604	28,582	25,376	27,199	39,474	41,240

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Asia.....	40,538	50,546	54,808	76,978	110,084	114,182	137,178	173,261	216,406	262,918
China.....	7,570	10,778	14,276	18,534	28,438	36,779	48,846	72,104	90,482	112,704
India.....	448	644	753	1,103	1,751	1,761	1,967	2,630	3,700	5,301
Indonesia.....	190	276	168	233	638	668	806	845	953	1,068
Japan.....	11,169	12,286	12,366	18,601	26,971	25,375	26,580	31,888	37,405	42,862
Malaysia.....	3,419	4,702	5,059	6,299	7,579	8,380	11,190	14,077	17,481	21,349
Philippines.....	1,266	2,059	2,697	3,374	4,252	4,783	5,847	6,139	6,816	7,304
Singapore.....	8,114	10,008	10,491	13,348	16,092	15,030	16,706	17,617	22,076	25,388
South Korea.....	2,455	2,714	1,699	4,309	7,879	6,298	7,192	7,892	11,316	15,097
Taiwan.....	2,799	3,738	4,299	7,213	10,813	9,045	10,845	11,295	14,884	18,454
Thailand.....	3,108	3,342	3,001	3,965	5,672	6,064	7,197	8,774	11,293	13,392
All others.....	21,682	27,594	32,185	37,825	46,296	46,389	48,800	53,418	67,224	79,444
Argentina.....	636	845	1,108	1,168	1,297	983	232	587	936	1,223
Australia.....	2,602	3,165	3,511	4,289	4,951	4,401	4,942	6,152	8,149	9,994
Brazil.....	1,581	2,082	2,267	1,961	2,740	2,718	2,106	2,056	2,532	3,577
Canada.....	7,044	8,630	9,703	11,222	13,401	12,274	12,239	13,133	15,587	18,850
Chile.....	335	453	449	510	618	586	585	598	763	984
Costa Rica.....	62	92	234	283	312	373	495	404	586	751
Egypt.....	109	138	184	195	267	283	260	238	316	379
Iran.....	29	74	97	127	145	287	353	415	538	642
Israel.....	610	777	956	1,338	1,883	1,642	1,425	1,481	1,778	2,061
Mexico.....	2,184	3,230	3,632	4,656	6,269	8,042	11,351	11,048	14,144	15,304
Morocco.....	67	87	117	181	227	208	216	246	289	338
Norway.....	908	1,188	1,410	1,585	1,705	1,798	1,935	2,157	2,451	2,834
Russia.....	428	588	534	646	959	1,402	1,568	2,262	3,030	3,811
Saudi Arabia.....	142	199	274	351	404	520	513	639	702	849
South Africa.....	672	720	1,016	1,246	1,382	1,339	1,253	1,663	2,064	2,447
Switzerland.....	2,093	2,363	3,187	4,083	4,800	5,023	4,542	4,521	5,677	5,858
Tunisia.....	54	78	94	150	157	186	158	170	223	247
Turkey.....	373	601	739	991	1,519	837	1,071	1,460	2,136	2,689
All others.....	1,751	2,283	2,673	2,845	3,260	3,486	3,558	4,188	5,321	6,605
Revenue										
All regions/countries/economies.....	278,136	322,577	339,723	388,751	447,334	435,521	436,884	488,056	572,168	649,627
United States.....	41,945	58,726	75,052	91,908	107,881	101,091	96,699	100,041	101,235	117,762
EU.....	52,003	57,187	64,371	67,747	75,319	74,965	66,473	66,156	66,006	65,427
Austria.....	100	115	137	289	459	698	650	656	616	429
Belgium.....	87	95	96	101	174	147	105	84	77	105
Bulgaria.....	16	22	21	18	21	14	26	15	17	16
Czech Republic.....	407	271	180	327	462	1,051	1,580	1,303	2,169	3,191
Denmark.....	227	144	111	172	268	343	272	370	466	547
Finland.....	426	518	559	721	174	100	77	72	69	81

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
France.....	5,866	7,222	7,413	7,756	8,221	8,535	7,090	6,859	6,969	3,612
Germany .....	8,253	9,600	11,522	12,241	15,257	14,331	12,895	12,407	13,541	17,618
Greece .....	2	8	3	4	10	10	18	2	4	1
Hungary .....	416	1,217	1,768	2,401	2,829	2,652	2,826	2,956	3,150	3,431
Ireland.....	12,544	13,656	15,533	15,901	17,902	16,892	16,358	17,849	16,712	15,996
Italy .....	5,513	4,524	4,728	3,545	3,716	3,549	2,407	1,740	1,927	1,019
Netherlands.....	1,470	1,369	1,621	1,498	1,622	1,593	1,218	1,208	1,247	1,148
Poland.....	263	286	327	408	429	425	486	792	880	754
Portugal .....	194	309	304	379	323	278	242	239	220	195
Romania.....	17	19	13	10	11	13	13	15	15	15
Slovakia .....	20	16	19	26	31	38	53	65	76	87
Spain .....	3,148	2,884	3,173	3,002	2,728	1,914	1,111	725	564	587
Sweden.....	606	609	613	575	551	458	356	373	471	392
United Kingdom.....	12,428	14,301	16,229	18,372	20,130	21,924	18,688	18,428	16,817	16,202
Asia.....	172,460	192,214	183,902	210,396	240,102	235,891	251,641	301,059	382,061	441,718
China .....	10,876	14,998	24,162	38,063	46,640	68,613	91,521	142,334	214,748	269,949
India.....	472	628	483	583	489	432	446	496	517	317
Indonesia .....	32	15	13	9	13	18	40	53	67	45
Japan.....	111,792	119,805	104,035	102,074	103,543	85,233	71,938	67,055	69,013	64,554
Malaysia .....	6,908	7,159	5,792	6,591	7,451	6,543	5,701	5,201	4,965	5,764
Philippines .....	156	311	244	254	373	508	410	489	576	368
Singapore.....	18,004	20,112	18,310	20,248	24,423	20,053	20,280	21,699	23,725	28,569
South Korea .....	7,096	8,174	8,066	14,942	23,630	23,646	26,729	25,779	25,017	24,247
Taiwan .....	17,118	21,003	22,793	27,626	33,535	30,841	34,570	37,945	43,424	47,891
Thailand.....	4	6	5	4	6	6	6	7	10	14
All others.....	11,727	14,450	16,397	18,700	24,031	23,574	22,071	20,800	22,865	24,720
Argentina .....	193	220	221	155	177	139	99	162	190	218
Australia.....	372	597	687	687	740	782	953	1,086	1,063	1,201
Brazil .....	1,146	1,644	1,811	2,706	4,858	5,212	4,404	4,228	5,132	6,153
Canada .....	1,819	2,146	3,002	3,345	4,597	3,867	4,125	4,416	4,830	5,177
Chile .....	0	0	0	0	0	0	0	0	0	0
Costa Rica.....	0	1	1	1	1	1	1	2	2	3
Egypt .....	3	4	4	5	5	5	4	4	4	5
Iran .....	10	14	17	17	16	18	18	27	31	43
Israel.....	406	445	454	434	476	647	601	536	477	454
Mexico .....	5,399	6,939	7,591	7,978	9,670	9,610	8,939	7,363	7,842	8,029
Morocco.....	36	45	38	50	57	42	41	46	49	45
Norway .....	164	162	168	218	159	194	212	219	269	306
Russia.....	446	318	308	388	488	680	828	984	981	1,047
Saudi Arabia.....	31	36	40	45	49	57	57	64	66	65
South Africa .....	13	16	17	16	15	16	16	26	33	35

**Exports, imports, and gross revenue of office machinery, accounting, and computing machinery, by selected region/country/economy: 1996–2005**

(Millions of 2000 U.S. constant dollars)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Switzerland .....	1,376	1,437	1,590	1,783	2,115	1,897	1,281	1,045	1,078	937
Tunisia .....	8	8	8	9	11	12	16	21	23	26
Turkey .....	114	217	229	537	291	96	155	176	317	396
All others.....	191	201	210	328	306	297	321	395	477	578

EU = European Union

NOTES: Gross revenue represents total value of all domestic or international industry shipments. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia. EU exports and imports exclude intra-EU exports and imports. China includes Hong Kong. Constant dollar data for foreign countries calculated by deflating industry data valued in each country's nominal domestic currency with a sector-specific price index constructed for that country and then converted to U.S. dollars based on average annual exchange rates.

SOURCE: Global Insight, Inc., World Industry Service database, special tabulations (15 April 2007).

*Science and Engineering Indicators 2008*

Appendix table 6-20

**U.S. trade in advanced-technology products, by technology: 2000–06**

(Millions of U.S. dollars)

Category	2000	2001	2002	2003	2004	2005	2006
<b>Exports</b>							
All technologies .....	223,415	200,107	178,627	179,787	201,454	215,606	252,569
Biotechnologies .....	1,729	1,615	2,131	2,863	3,743	4,592	5,163
Life sciences .....	11,951	12,840	11,859	13,002	14,516	16,494	18,756
Optoelectronics .....	4,113	3,403	2,431	2,467	3,506	4,637	5,064
Information and communications.....	76,132	65,180	51,998	51,500	57,403	61,885	66,842
Electronics .....	56,884	45,358	42,763	46,597	48,564	47,544	53,415
Flexible manufacturing .....	14,295	9,451	8,563	8,320	13,044	11,854	14,665
Advanced materials.....	2,651	2,310	1,089	1,037	1,137	1,155	1,401
Aerospace .....	52,748	56,917	53,255	49,433	54,377	62,738	81,217
Weapons .....	1,529	1,523	1,558	1,452	1,852	1,552	2,013
Nuclear technology.....	1,266	1,430	1,671	1,489	1,503	1,032	1,635
Computer software.....	118	80	1,311	1,628	1,808	2,123	2,399
<b>Imports</b>							
All technologies .....	195,660	195,265	196,100	207,196	238,478	259,969	290,848
Biotechnologies .....	1,136	1,294	1,872	2,184	1,967	4,219	4,873
Life sciences .....	16,211	20,113	25,950	30,937	32,799	30,390	33,737
Optoelectronics .....	5,823	5,608	5,437	5,255	7,795	12,174	19,575
Information and communications.....	91,039	94,435	99,985	109,133	131,549	146,083	160,016
Electronics .....	41,652	30,883	26,650	25,135	27,454	26,594	28,009
Flexible manufacturing .....	8,685	7,473	6,562	6,263	7,587	8,897	10,290
Advanced materials.....	2,707	2,436	1,485	1,511	1,794	1,804	2,171
Aerospace .....	25,733	30,511	25,213	22,773	23,833	25,531	27,584
Weapons .....	413	383	407	461	540	648	749
Nuclear technology.....	1,436	1,406	1,759	2,589	2,170	2,523	3,024
Computer software.....	826	724	781	955	990	1,105	821
<b>Balance</b>							
All technologies .....	27,755	4,842	-17,473	-27,410	-37,024	-44,363	-38,279
Biotechnologies .....	593	321	259	679	1,776	374	291
Life sciences .....	-4,260	-7,273	-14,092	-17,935	-18,283	-13,896	-14,981
Optoelectronics .....	-1,710	-2,205	-3,006	-2,788	-4,289	-7,537	-14,511
Information and communications.....	-14,907	-29,255	-47,987	-57,634	-74,147	-84,198	-93,173
Electronics .....	15,233	14,476	16,113	21,462	21,110	20,949	25,406
Flexible manufacturing .....	5,610	1,978	2,000	2,057	5,457	2,957	4,375
Advanced materials.....	-56	-126	-396	-474	-657	-649	-770
Aerospace .....	27,014	26,406	28,042	26,660	30,545	37,206	53,632
Weapons .....	1,116	1,140	1,151	990	1,313	903	1,264
Nuclear technology.....	-170	25	-88	-1,100	-667	-1,490	-1,389
Computer software.....	-708	-644	530	673	818	1,018	1,577

NOTE: Detail may not add to total because of rounding.

SOURCE: Census Bureau, Foreign Trade Division, special tabulations (2007).

Appendix table 6-21

(Page 1 of 3)

**U.S. trade in advanced-technology products, by region/country/economy: 2000–06**

(Millions of U.S. dollars)

Country/economy	2000	2001	2002	2003	2004	2005	2006
<b>Exports</b>							
Total .....	223,415	200,107	178,627	179,787	201,454	215,606	252,569
NAFTA partners .....	40,674	35,342	30,005	31,633	36,948	39,597	42,265
Canada .....	25,602	21,418	17,420	18,028	20,439	23,035	23,603
Mexico .....	15,072	13,924	12,585	13,605	16,509	16,562	18,662
Asia, selected .....	85,885	75,390	72,185	74,122	81,035	84,226	101,103
China .....	11,226	13,017	13,053	13,432	15,772	18,815	24,167
India .....	1,056	1,151	1,255	1,328	1,505	2,054	3,251
Indonesia .....	256	216	198	208	221	271	260
Japan .....	22,117	18,525	16,849	16,945	18,164	17,777	19,539
Malaysia .....	7,226	6,051	7,235	7,806	7,555	7,054	8,521
Philippines .....	5,537	4,935	4,966	5,852	4,836	4,416	4,906
Singapore .....	8,863	9,693	8,139	8,431	10,158	9,336	12,154
South Korea .....	13,486	9,928	9,599	9,570	10,341	11,403	14,108
Taiwan .....	12,645	9,033	9,172	8,226	9,952	10,005	10,330
Thailand .....	3,473	2,841	1,719	2,324	2,531	3,095	3,867
Europe, selected .....	67,618	61,206	50,615	50,395	57,046	58,822	65,338
Austria .....	624	564	709	424	532	628	705
Belgium .....	2,122	1,945	1,659	1,655	1,860	2,316	2,492
Czech Republic .....	355	322	334	269	337	435	471
Denmark .....	516	556	524	492	912	563	616
Federal Republic of Germany .....	12,408	12,377	9,342	9,307	9,340	10,679	12,966
Finland .....	725	602	595	422	478	558	546
France .....	9,222	8,677	8,509	6,672	9,166	9,243	10,050
Greece .....	593	606	549	457	1,066	303	536
Hungary .....	146	245	236	461	644	382	397
Ireland .....	3,901	3,578	2,823	3,286	3,735	4,200	4,025
Italy .....	3,136	2,744	3,131	3,147	2,903	2,572	2,721
Netherlands .....	9,547	7,805	7,262	8,413	9,152	9,651	10,103
Norway .....	588	551	457	408	380	516	617
Poland .....	264	215	180	189	225	333	818
Portugal .....	350	584	229	195	367	545	836
Slovakia .....	46	24	22	29	26	47	353
Slovenia .....	34	26	40	36	33	50	47
Spain .....	2,253	1,472	1,069	1,465	1,606	1,723	1,526
Sweden .....	2,285	1,399	1,213	1,206	1,048	1,064	1,456
Switzerland .....	1,810	1,437	1,142	1,028	1,163	1,374	1,377
United Kingdom .....	16,693	15,477	10,590	10,834	12,073	11,640	12,680
Latin America, selected .....	9,629	9,031	6,717	6,273	7,877	9,704	13,198
Argentina .....	1,395	1,015	224	442	606	866	958
Brazil .....	5,793	5,703	3,948	3,281	4,352	5,147	7,000
Chile .....	927	858	600	585	616	1,065	1,776
Costa Rica .....	438	485	1,075	1,287	1,124	1,209	1,488
Peru .....	318	279	289	302	324	359	520
Venezuela .....	758	691	581	376	855	1,058	1,456
Other, selected .....	9,431	7,976	8,984	7,519	7,580	7,992	10,401
Australia .....	3,743	3,043	4,711	4,046	3,345	3,437	4,227
Israel .....	2,738	2,604	2,026	1,852	2,774	2,685	2,949
Russia .....	445	390	430	368	411	448	532
South Africa .....	909	931	570	642	536	635	700
Turkey .....	1,596	1,008	1,247	611	514	787	1,993
All other countries .....	10,178	11,162	10,121	9,845	10,968	15,265	20,264
<b>Imports</b>							
Total .....	195,660	195,265	196,100	207,196	238,478	259,969	290,848
NAFTA partners .....	33,225	33,725	30,041	31,677	35,988	39,797	45,836
Canada .....	20,294	17,302	13,769	13,723	13,844	15,806	14,949
Mexico .....	12,932	16,423	16,272	17,955	22,144	23,991	30,887
Asia, selected .....	111,620	104,411	107,779	115,546	140,344	154,717	174,579
China .....	12,331	14,421	21,287	30,374	46,821	60,288	73,494



Appendix table 6-21

(Page 2 of 3)

**U.S. trade in advanced-technology products, by region/country/economy: 2000–06**

(Millions of U.S. dollars)

Country/economy	2000	2001	2002	2003	2004	2005	2006
India.....	143	200	199	253	319	456	693
Indonesia.....	1,145	1,399	1,265	1,076	1,123	1,104	917
Japan.....	34,816	27,880	23,744	22,386	23,877	24,591	25,839
Malaysia.....	12,777	14,052	15,150	16,384	18,204	22,659	25,105
Philippines.....	7,344	5,908	5,843	4,917	3,809	3,695	3,747
Singapore.....	11,046	10,081	10,043	10,408	10,805	9,259	9,804
South Korea.....	13,706	13,756	13,827	14,413	17,978	13,978	13,700
Taiwan.....	14,774	13,816	13,379	12,045	12,810	12,275	14,071
Thailand.....	3,538	2,899	3,042	3,290	4,598	6,414	7,210
Europe, selected.....	43,200	48,595	49,945	51,283	53,207	56,402	61,496
Austria.....	314	290	443	403	499	582	656
Belgium.....	974	1,368	1,296	987	1,520	1,099	1,981
Czech Republic.....	97	164	221	288	340	404	423
Denmark.....	456	494	494	602	756	878	890
Federal Republic of Germany.....	8,805	9,537	8,075	8,008	9,595	11,035	11,404
Finland.....	273	463	640	608	414	505	369
France.....	9,444	10,434	9,618	9,206	8,837	8,487	9,835
Greece.....	12	8	17	20	17	35	29
Hungary.....	1,241	886	1,085	1,288	1,248	1,393	1,178
Ireland.....	6,630	8,924	13,233	14,574	13,433	14,047	14,225
Italy.....	1,580	1,674	1,900	1,735	1,972	2,201	2,163
Netherlands.....	1,643	1,515	1,763	2,043	2,191	2,236	2,830
Norway.....	257	333	314	280	372	345	444
Poland.....	49	38	41	46	74	94	312
Portugal.....	34	254	312	428	543	669	803
Slovakia.....	3	4	7	9	9	13	13
Slovenia.....	5	5	15	22	25	16	21
Spain.....	231	256	368	752	701	552	594
Sweden.....	1,226	1,127	1,510	1,344	1,465	1,890	1,267
Switzerland.....	1,400	1,566	1,421	1,795	1,786	2,649	2,662
United Kingdom.....	8,527	9,256	7,173	6,847	7,412	7,271	9,399
Latin America, selected.....	2,344	3,674	3,908	3,908	3,942	3,750	2,941
Argentina.....	11	14	18	10	17	14	16
Brazil.....	1,930	2,927	2,961	2,686	2,809	2,599	1,730
Chile.....	2	3	4	3	6	4	8
Costa Rica.....	396	726	919	1,207	1,105	1,128	1,176
Peru.....	1	2	2	1	2	1	1
Venezuela.....	5	2	3	2	3	4	10
Other, selected.....	4,106	3,798	3,424	3,556	3,755	3,946	4,583
Australia.....	390	428	382	374	416	533	610
Israel.....	2,544	2,229	2,100	2,014	2,281	2,302	2,815
Russia.....	1,045	1,012	832	1,053	921	945	973
South Africa.....	28	23	28	32	30	31	26
Turkey.....	99	107	83	83	107	136	160
All other countries.....	1,165	1,063	1,004	1,226	1,243	1,358	1,413
Balance							
Total.....	27,755	4,842	-17,473	-27,409	-37,024	-44,363	-38,279
NAFTA partners.....	7,449	1,617	-36	-44	960	-200	-3,571
Canada.....	5,308	4,116	3,651	4,305	6,595	7,229	8,654
Mexico.....	2,140	-2,499	-3,687	-4,350	-5,635	-7,429	-12,225
Asia, selected.....	-25,735	-29,021	-35,594	-41,424	-59,309	-70,491	-73,476
China.....	-1,105	-1,404	-8,234	-16,942	-31,049	-41,473	-49,327
India.....	913	951	1,056	1,075	1,186	1,598	2,558
Indonesia.....	-889	-1,183	-1,067	-868	-902	-833	-657
Japan.....	-12,699	-9,355	-6,895	-5,441	-5,713	-6,814	-6,300
Malaysia.....	-5,551	-8,001	-7,915	-8,578	-10,649	-15,605	-16,584
Philippines.....	-1,807	-973	-877	935	1,027	721	1,159
Singapore.....	-2,183	-388	-1,904	-1,977	-647	77	2,350
South Korea.....	-220	-3,828	-4,228	-4,843	-7,637	-2,575	408

Appendix table 6-21

(Page 3 of 3)

**U.S. trade in advanced-technology products, by region/country/economy: 2000–06**

(Millions of U.S. dollars)

Country/economy	2000	2001	2002	2003	2004	2005	2006
Taiwan .....	-2,129	-4,783	-4,207	-3,819	-2,858	-2,270	-3,741
Thailand .....	-65	-58	-1,323	-966	-2,067	-3,319	-3,343
Europe, selected .....	24,418	12,611	670	-888	3,839	2,420	3,842
Austria .....	310	274	266	21	33	46	49
Belgium .....	1,148	577	363	668	340	1,217	511
Czech Republic .....	258	158	113	-19	-3	31	48
Denmark .....	60	62	30	-110	156	-315	-274
Federal Republic of Germany .....	3,603	2,840	1,267	1,299	-255	-356	1,562
Finland .....	452	139	-45	-186	64	53	177
France .....	-222	-1,757	-1,109	-2,534	329	756	215
Greece .....	581	598	532	437	1,049	268	507
Hungary .....	-1,095	-641	-849	-827	-604	-1,011	-781
Ireland .....	-2,729	-5,346	-10,410	-11,288	-9,698	-9,847	-10,200
Italy .....	1,556	1,070	1,231	1,412	931	371	558
Netherlands .....	7,904	6,290	5,499	6,370	6,961	7,415	7,273
Norway .....	331	218	143	128	8	171	173
Poland .....	215	177	139	143	151	239	506
Portugal .....	316	330	-83	-233	-176	-124	33
Slovakia .....	43	20	15	20	17	34	340
Slovenia .....	29	21	25	14	8	34	26
Spain .....	2,022	1,216	701	713	905	1,171	932
Sweden .....	1,059	272	-297	-138	-417	-826	189
Switzerland .....	410	-129	-279	-767	-623	-1,275	-1,285
United Kingdom .....	8,166	6,221	3,417	3,987	4,661	4,369	3,281
Latin America, selected .....	7,285	5,357	2,809	2,365	3,935	5,954	10,257
Argentina .....	1,384	1,001	206	432	589	852	942
Brazil .....	3,863	2,776	987	595	1,543	2,548	5,270
Chile .....	925	855	596	582	610	1,061	1,768
Costa Rica .....	42	-241	156	80	19	81	312
Peru .....	317	277	287	301	322	358	519
Venezuela .....	753	689	578	374	852	1,054	1,446
Other, selected .....	5,325	4,178	5,560	3,963	3,825	4,046	5,818
Australia .....	3,353	2,615	4,329	3,672	2,929	2,904	3,617
Israel .....	194	375	-74	-162	493	383	134
Russia .....	-600	-622	-402	-685	-510	-497	-441
South Africa .....	881	908	542	610	506	604	674
Turkey .....	1,497	901	1,164	528	407	651	1,833
All other countries .....	9,013	10,099	9,117	8,619	9,725	13,907	18,851

NAFTA = North American Free Trade Agreement

NOTE: Detail may not add to total because of rounding.

SOURCE: Census Bureau, Foreign Trade Division, special tabulations (March 2007).

Appendix table 6-22

**U.S. receipts and payments of royalties and fees associated with affiliated and unaffiliated foreign companies: 1986–2005**

(Millions of U.S. dollars)

Year	Receipts			Payments			Balance		
	All	Affiliated	Unaffiliated	All	Affiliated	Unaffiliated	All	Affiliated	Unaffiliated
1986.....	8,113	6,174	1,939	1,401	917	484	6,712	5,257	1,455
1987.....	9,914	7,629	2,285	1,844	1,296	547	8,070	6,333	1,738
1988.....	11,802	9,156	2,646	2,585	1,410	1,175	9,217	7,746	1,471
1989.....	13,064	10,207	2,857	2,602	1,778	824	10,462	8,429	2,033
1990.....	16,634	13,251	3,384	3,135	2,206	929	13,499	11,045	2,455
1991.....	18,107	14,395	3,712	4,076	2,996	1,080	14,031	11,399	2,632
1992.....	19,715	15,718	3,997	5,074	3,381	1,694	14,641	12,337	2,303
1993.....	20,323	15,707	4,616	4,765	3,364	1,401	15,558	12,343	3,215
1994.....	26,712	20,275	6,437	5,852	3,934	1,919	20,860	16,341	4,518
1995.....	30,289	22,859	7,430	6,919	5,257	1,663	23,370	17,602	5,767
1996.....	32,470	24,556	7,914	7,837	5,406	2,431	24,633	19,150	5,483
1997.....	33,639	24,876	8,763	9,614	7,202	2,412	24,025	17,674	6,351
1998.....	35,626	26,313	9,314	11,235	8,547	2,688	24,391	17,766	6,626
1999.....	39,670	29,275	10,395	13,107	10,374	2,733	26,563	18,901	7,662
2000.....	43,233	30,479	12,754	16,468	12,536	3,932	26,765	17,943	8,822
2001.....	40,696	29,164	11,532	16,538	13,241	3,297	24,158	15,923	8,235
2002.....	44,219	32,658	11,561	19,235	15,084	4,151	24,984	17,574	7,410
2003.....	48,277	35,924	12,303	20,049	16,407	3,642	28,228	19,517	8,661
2004.....	52,512	39,074	13,438	23,211	17,946	5,265	29,301	21,128	8,173
2005.....	57,410	42,106	15,304	24,501	20,360	4,141	32,909	21,746	11,163

NOTES: Affiliate is business enterprise located in one country directly or indirectly owned or controlled by entity in another country. Controlling interest must be  $\geq 10\%$  of its voting stock or equivalent. Detail may not add to total because of rounding.

SOURCE: Bureau of Economic Analysis, U.S. International Services: Cross-Border Trade 1986–2005, and Sales Through Affiliates, 1986–2004, table 4, <http://www.bea.gov/international/intl.serv.htm>, accessed 28 June 2007.

Appendix table 6-23

**U.S. receipts and payments of royalties and fees associated with manufacturing know-how and computer software of unaffiliated companies: 1998–2005**

(Millions of dollars)

Year	Receipts				Payments				Balance			
	Total	Manufacturing know-how	Computer software	Other	Total	Manufacturing know-how	Computer software	Other	Total	Manufacturing know-how	Computer software	Other
1998.....	9,314	3,499	3,195	2,620	2,688	1,319	498	871	6,626	2,180	2,697	1,749
1999.....	10,395	3,900	3,702	2,793	2,733	1,568	517	648	7,662	2,332	3,185	2,145
2000.....	12,754	4,662	4,787	3,305	3,932	1,692	540	1,700	8,822	2,970	4,247	1,605
2001.....	11,532	4,174	4,532	2,826	3,297	1,720	452	1,125	8,235	2,454	4,080	1,701
2002.....	11,561	4,039	4,408	3,114	4,151	2,050	487	1,614	7,410	1,989	3,921	1,500
2003.....	12,303	4,617	4,105	3,581	3,642	2,358	676	608	8,661	2,259	3,429	2,973
2004.....	13,438	5,660	4,561	3,217	5,265	2,778	690	1,797	8,173	2,882	3,871	1,420
2005.....	15,304	6,633	5,470	3,201	4,141	2,747	667	727	11,163	3,886	4,803	2,474

NOTES: Affiliate is business enterprise located in one country directly or indirectly owned or controlled by entity in another country. Controlling interest must be  $\geq 10\%$  of its voting stock or equivalent. Detail may not add to total because of rounding.

SOURCE: Bureau of Economic Analysis, *Survey of Current Business* 84(10):25–76 (2006).

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**U.S. receipts and payments of royalties and license fees generated from exchange and use of manufacturing know-how with unaffiliated foreign companies,  
by selected region/country/economy: 1995–2005**

(Millions of U.S. dollars)

Region/country/economy	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Receipts</b>											
All countries/economies.....	3,513	3,566	3,544	3,499	3,900	4,662	4,174	4,039	4,617	5,660	6,633
Asia.....	2,425	2,258	2,263	2,059	2,155	2,852	2,429	2,358	2,703	3,614	4,628
China.....	53	62	73	70	44	55	57	51	123	198	198
India.....	27	37	29	20	17	23	20	13	24	34	16
Japan.....	1,548	1,429	1,508	1,172	1,161	1,611	1,567	1,273	1,351	1,950	2,581
South Korea.....	607	478	389	483	650	895	506	613	756	1,002	1,246
Taiwan.....	80	130	144	192	187	196	190	336	340	327	405
All others.....	110	122	120	122	96	72	89	72	109	103	182
EU.....	756	937	885	1,071	1,283	1,313	1,297	1,232	1,269	1,374	1,340
France.....	84	123	92	142	226	153	198	193	155	151	155
Germany.....	171	219	184	243	297	373	332	389	470	467	383
Italy.....	66	66	77	53	117	106	79	101	87	71	86
Netherlands.....	36	80	71	59	45	54	31	26	38	30	36
Sweden.....	106	137	115	148	100	85	52	40	19	57	80
United Kingdom.....	115	129	147	154	216	156	192	236	265	289	224
All others.....	178	183	199	272	282	386	413	247	235	309	376
All other countries.....	332	371	396	369	462	497	448	449	645	672	665
<b>Payments</b>											
All countries/economies.....	948	1,319	1,417	1,319	1,568	1,692	1,720	2,050	2,358	2,778	2,747
Asia.....	330	392	521	473	NA	491	434	435	425	510	429
China.....	NA	NA	NA	NA	15	8	2	6	NA	29	23
India.....	0	D	D	0	1	0	2	2	1	0	2
Japan.....	307	308	360	374	550	460	411	419	385	461	385
South Korea.....	D	D	D	D	22	19	D	5	D	15	8
Taiwan.....	0	2	4	0	7	2	1	1	1	3	D
All others.....	NA	NA	NA	NA	NA	2	NA	2	D	NA	NA
EU.....	461	649	558	555	578	694	816	1,131	1,354	1,442	1,673
France.....	121	192	D	D	D	133	D	273	302	D	524
Germany.....	110	148	149	124	148	210	D	224	214	230	218
Italy.....	9	49	35	18	6	12	10	8	15	11	4
Netherlands.....	27	24	30	33	37	33	28	27	128	154	142
Sweden.....	3	49	61	55	57	69	70	108	D	D	D
United Kingdom.....	126	135	118	146	147	162	172	204	210	240	287
All others.....	65	52	NA	NA	D	75	NA	287	NA	NA	NA
All other countries.....	157	278	338	291	NA	507	470	484	579	826	645
<b>Balance</b>											
All countries/economies.....	2,565	2,247	2,127	2,180	2,332	2,970	2,454	1,989	2,259	2,882	3,886
Asia.....	2,095	1,866	1,742	1,586	NA	2,361	1,995	1,923	2,278	3,104	4,199
China.....	26	NA	NA	NA	29	47	55	45	NA	169	175
India.....	27	NA	NA	20	16	23	18	11	23	34	14

**U.S. receipts and payments of royalties and license fees generated from exchange and use of manufacturing know-how with unaffiliated foreign companies,  
by selected region/country/economy: 1995–2005**

(Millions of U.S. dollars)

Region/country/economy	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Japan.....	1,241	1,121	1,148	798	611	1,151	1,156	854	966	1,489	2,196
South Korea .....	NA	NA	NA	NA	628	876	NA	608	NA	987	1,238
Taiwan .....	80	128	140	192	180	194	189	335	339	324	NA
All others.....	NA	NA	NA	NA	NA	70	NA	70	NA	NA	NA
EU .....	295	288	327	516	705	619	481	101	-85	-68	-333
France.....	-37	NA	NA	NA	NA	20	NA	-80	-147	NA	-369
Germany .....	61	71	35	119	149	163	NA	165	256	237	165
Italy .....	57	17	42	35	111	94	69	93	72	60	82
Netherlands.....	9	56	41	26	8	21	3	-1	-90	-124	-106
Sweden.....	103	88	54	93	43	16	-18	-68	NA	NA	NA
United Kingdom.....	-11	-6	29	8	69	-6	20	32	55	49	-63
All others.....	113	NA	NA	NA	NA	311	NA	-40	NA	NA	NA
All other countries .....	175	93	58	78	NA	-10	-22	-35	66	-154	20

NA = not available; D = suppressed to avoid disclosure of confidential information

EU = European Union

NOTES: Industrial processes (or manufacturing know-how) include patents and other proprietary inventions and technology. Affiliate is business enterprise located in one country directly or indirectly owned or controlled by entity in another country. Controlling interest must equal  $\geq 10\%$  of its voting stock or equivalent. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and other unspecified countries. China includes Hong Kong. EU includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and United Kingdom; beginning in 1995, it also includes Austria, Finland, and Sweden; and beginning in 2004, it also includes Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

SOURCE: Bureau of Economic Analysis, *Survey of Current Business* 84(10):25–76 (2006).

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Appendix table 6-25

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**U.S. receipts and payments of royalties and license fees generated from exchange and use of computer software with unaffiliated foreign companies, by selected region/country/economy: 1998–2005**

(Millions of U.S. dollars)

Region/country/economy	1998	1999	2000	2001	2002	2003	2004	2005
<b>Receipts</b>								
All countries/economies.....	3,195	3,702	4,787	4,532	4,408	4,105	4,561	5,470
Asia.....	1,183	D	1,822	1,936	2,054	1,896	NA	2,797
China.....	65	71	128	137	164	NA	NA	NA
India.....	17	D	22	31	25	27	31	55
Japan.....	724	D	1,126	1,262	1,402	1,302	1,540	1,703
South Korea.....	D	185	D	237	240	186	206	269
Taiwan.....	215	229	D	177	169	230	D	D
All others.....	NA	NA	NA	NA	54	NA	NA	NA
EU.....	1,348	1,587	2,004	1,721	1,571	1,396	1,402	1,658
France.....	153	163	263	238	219	180	85	112
Germany.....	444	503	603	565	526	526	633	728
Italy.....	116	112	130	103	106	100	108	96
Netherlands.....	64	69	110	83	89	70	70	77
Sweden.....	D	53	56	58	39	27	27	31
United Kingdom.....	319	446	553	494	411	325	313	393
All others.....	NA	241	289	180	181	168	166	221
All other countries.....	664	NA	961	875	783	NA	NA	1,015
<b>Payments</b>								
All countries/economies.....	498	517	540	452	487	676	690	667
Asia.....	NA	D	29	NA	9	NA	15	NA
China.....	NA	NA	NA	NA	3	NA	NA	NA
India.....	0	0	0	0	3	D	7	4
Japan.....	26	18	16	D	2	3	2	3
South Korea.....	0	D	1	0	0	0	0	0
Taiwan.....	1	D	1	D	1	D	D	0
All others.....	NA	NA	NA	NA	0	NA	NA	NA
EU.....	446	454	479	416	444	594	620	575
France.....	D	D	D	D	D	D	D	D
Germany.....	76	41	59	13	19	D	16	18
Italy.....	3	4	D	0	0	0	0	1
Netherlands.....	D	D	3	1	1	D	D	D
Sweden.....	D	3	3	2	2	9	D	3
United Kingdom.....	38	58	D	44	26	148	82	67
All others.....	NA	NA	NA	NA	NA	NA	NA	NA
All other countries.....	NA	NA	32	NA	34	NA	55	NA
<b>Balance</b>								
All countries/economies.....	2,697	3,185	4,247	4,080	3,921	3,429	3,871	4,803
Asia.....	NA	NA	1,793	NA	2,045	NA	NA	NA
China.....	NA	NA	NA	NA	161	NA	NA	NA
India.....	17	NA	22	31	22	NA	24	51
Japan.....	698	NA	1,110	NA	1,400	1,299	1,538	1,700
South Korea.....	NA	NA	NA	237	240	186	206	269
Taiwan.....	214	NA	NA	NA	168	NA	NA	NA
All others.....	NA	NA	NA	NA	54	NA	NA	NA

Appendix table 6-25

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**U.S. receipts and payments of royalties and license fees generated from exchange and use of computer software with unaffiliated foreign companies, by selected region/country/economy: 1998–2005**

(Millions of U.S. dollars)

Region/country/economy	1998	1999	2000	2001	2002	2003	2004	2005
EU .....	902	1,133	1,525	1,305	1,127	802	782	1,083
France.....	NA	NA	NA	NA	NA	NA	NA	NA
Germany .....	368	462	544	552	507	NA	617	710
Italy.....	113	108	NA	103	106	100	108	95
Netherlands.....	NA	NA	107	82	88	NA	NA	NA
Sweden.....	NA	50	53	56	37	18	NA	28
United Kingdom.....	281	388	NA	450	385	177	231	326
All others.....	NA	NA	NA	NA	NA	NA	NA	NA
All other countries .....	NA	NA	929	NA	749	NA	NA	NA

D = suppressed to avoid disclosure of confidential information; NA = not available

EU = European Union

NOTES: Computer software includes rights to distribute and use general-use software. Affiliate is business enterprise located in one country directly or indirectly owned or controlled by entity in another country. Controlling interest must equal  $\geq 10\%$  of its voting stock or equivalent. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and other unspecified countries. China includes Hong Kong. EU includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and United Kingdom; beginning in 1995, it also includes Austria, Finland, and Sweden; and beginning in 2004, it also includes Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

SOURCE: Bureau of Economic Analysis, *Survey of Current Business* 84(10):25–76 (2006).*Science and Engineering Indicators 2008*



Appendix table 6-26

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**Leading indicators of technological competitiveness for developing countries/economies: Selected years, 1993–2007**

(U.S. = 100)

Country/economy	National orientation	Socioeconomic infrastructure	Technological infrastructure	Productive capacity	Overall
<b>1993</b>					
Larger economies					
Brazil.....	90.9	65.6	47.5	53.6	62.9
China .....	89.0	55.2	44.2	36.9	54.5
Hungary .....	95.4	64.2	47.4	40.9	60.0
India.....	74.9	55.2	37.7	43.0	51.4
Indonesia .....	89.3	58.9	28.9	27.7	48.9
Mexico .....	68.4	56.8	28.8	30.2	44.7
Russia.....	46.5	46.9	66.7	35.5	49.0
Smaller economies					
Argentina .....	64.3	75.2	29.1	35.8	50.1
Malaysia.....	116.0	75.8	39.1	52.9	68.4
Philippines.....	61.7	68.5	28.7	38.8	48.5
South Africa.....	106.3	82.9	26.3	47.9	63.4
Thailand .....	96.5	60.7	30.6	37.2	53.9
<b>1996</b>					
Larger economies					
Brazil.....	76.8	62.4	39.4	45.0	54.7
China .....	86.4	52.6	41.4	36.6	52.8
India.....	76.0	54.1	41.5	54.9	55.6
Indonesia .....	72.6	41.3	18.8	21.9	36.9
Mexico .....	72.6	53.5	31.9	35.5	47.1
Russia.....	64.7	59.5	58.7	47.6	57.3
Smaller economies					
Argentina .....	54.9	58.0	28.9	34.6	43.3
Hungary .....	88.6	56.0	38.4	44.5	55.3
Malaysia.....	107.2	73.6	33.6	48.2	63.4
Philippines.....	99.5	74.5	37.6	51.7	63.9
Poland.....	91.8	63.6	37.0	43.7	57.3
South Africa.....	65.1	60.0	42.5	33.5	49.4
Thailand.....	84.1	57.3	29.7	37.0	50.3
Venezuela.....	59.6	56.0	29.5	28.0	42.3
<b>1999</b>					
Larger economies					
Brazil.....	78.4	56.4	42.0	44.9	54.5
China .....	83.5	60.5	48.3	46.5	58.8
India.....	87.4	57.4	50.2	59.4	62.7
Indonesia .....	70.3	48.5	19.0	26.3	39.7
Mexico .....	53.3	46.5	22.7	28.1	36.8
Russia.....	62.3	60.2	52.5	40.4	53.6
Smaller economies					
Argentina .....	52.7	61.2	28.7	35.2	43.8
Hungary .....	95.0	70.6	45.3	48.9	63.6
Malaysia.....	88.8	66.9	32.3	50.1	58.1
Philippines.....	81.4	63.9	22.8	41.7	50.9
Poland.....	81.5	65.5	41.3	47.6	57.9
South Africa.....	64.0	61.6	42.1	32.5	49.5

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**Leading indicators of technological competitiveness for developing countries/economies: Selected years, 1993–2007**

(U.S. = 100)

Country/economy	National orientation	Socioeconomic infrastructure	Technological infrastructure	Productive capacity	Overall
Thailand .....	64.7	53.4	21.3	34.8	42.4
Venezuela.....	51.3	59.4	19.4	28.4	38.8
<b>2003</b>					
Larger economies					
Brazil.....	65.8	58.4	38.2	43.2	51.0
China .....	78.9	63.7	59.5	59.9	65.2
India.....	78.3	57.1	39.8	57.8	57.5
Indonesia .....	56.5	45.3	22.3	33.4	38.8
Mexico .....	69.1	56.7	30.9	42.8	49.2
Russia.....	60.8	69.9	55.2	56.2	60.4
Smaller economies					
Argentina .....	56.2	60.6	33.5	39.2	47.0
Hungary .....	83.5	78.6	43.1	50.9	63.4
Malaysia.....	91.5	75.2	31.1	47.3	60.3
Philippines.....	74.3	63.7	25.8	54.3	53.6
Poland.....	79.8	79.1	39.5	51.4	61.8
South Africa.....	67.3	56.9	38.7	36.8	49.5
Thailand.....	59.8	62.8	25.7	37.4	45.9
Venezuela.....	46.6	53.2	21.0	24.5	36.0
<b>2005</b>					
Larger economies					
Brazil.....	75.2	60.9	40.1	55.5	57.3
China .....	93.8	71.8	70.4	81.7	79.0
India.....	77.7	62.7	47.0	67.6	63.2
Indonesia .....	55.8	48.5	26.2	46.4	43.7
Mexico .....	69.5	57.9	33.1	51.6	52.3
Russia.....	53.0	70.3	47.7	50.8	55.3
Smaller economies					
Argentina .....	60.1	63.4	32.7	48.0	50.5
Hungary .....	77.9	78.7	44.0	57.9	63.9
Malaysia.....	95.1	83.7	34.2	58.1	66.5
Philippines.....	67.1	62.8	33.9	58.9	55.1
Poland.....	78.0	77.9	37.1	61.5	62.8
South Africa.....	63.8	62.8	39.7	46.5	52.7
Thailand.....	74.1	63.2	27.2	47.9	52.2
Venezuela.....	46.1	56.8	29.5	43.4	43.6
<b>2007</b>					
Larger economies					
Brazil.....	70.6	57.2	38.3	49.7	53.1
China .....	80.2	69.7	62.9	91.2	75.8
India.....	82.9	62.7	46.5	67.6	64.1
Indonesia .....	70.4	55.1	32.2	49.8	50.9
Mexico .....	75.6	57.7	36.1	57.2	55.7
Russia.....	73.9	74.5	50.1	53.5	62.3
Smaller economies					
Argentina .....	59.4	69.4	34.8	47.8	52.2
Hungary .....	73.2	76.2	38.7	56.2	60.2
Malaysia.....	97.4	77.3	33.5	62.4	66.0
Philippines.....	70.1	62.5	26.4	50.4	51.3

Appendix table 6-26

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**Leading indicators of technological competitiveness for developing countries/economies: Selected years, 1993–2007**

(U.S. = 100)

Country/economy	National orientation	Socioeconomic infrastructure	Technological infrastructure	Productive capacity	Overall
Poland.....	83.4	81.1	37.1	56.0	63.1
South Africa.....	70.8	61.7	39.5	43.2	52.9
Thailand.....	81.6	69.6	27.1	46.5	54.7
Venezuela.....	42.9	46.2	23.5	34.5	36.3

NOTES: Developing countries classified as low or middle income by World Bank. Larger economies have 2004 gross domestic product (GDP)  $\geq$ \$750 billion expressed in 1990 purchasing power parities (PPPs). Smaller economies have 2004 GDP  $\leq$ \$750 billion expressed in 1990 PPPs. High-technology indicators previously based on most recent full year of statistical data, but now based on year of data generation and year in which panel of experts rated countries. For score and indicator calculations, raw data transformed into scales of 0–100 for each indicator component and then averaged to generate comparable indicators with a 0–100 range. For survey items, 100 represents highest response category for each question; for statistical data, 100 typically represents value attained by country with largest value among 33 countries included in study. In indicator formulations cited below, each term carries equal weight.

National orientation (NO) provides evidence that a nation is taking directed action to achieve technological competitiveness. These actions could take place in business, government, or cultural sector or any combination of the three.

Indicator formulation:  $NO = [Q1 + (Q2 + Q3)/2 + Q4 + F1V2002]/4$ .

Data used: Published data from PRS Group, Political and Economic Forecast table, Political Risk Letter for 2002 rating each country's investment risk (F1V2002); and survey data assessing each country's national strategy to promote high-technology development (Q1), social influences favoring technological change (Q2 and Q3), and entrepreneurial spirit (Q4).

Socioeconomic infrastructure (SE) assesses social and economic institutions that support and maintain physical, human, organizational, and economic resources essential to functioning of a modern, technology-based industrial nation.

Indicator formulation:  $SE = (Q5 + Q10 + HMHS2000)/3$ .

Data used: Published data on percentage of students enrolled in secondary (net percentage) and tertiary (gross percentage) education (HMHS2000) from Harbison-Myers Skills Index for 2000, Gross and Net Enrollment Ratio at Secondary Level by Country and by Gender for school years 1998/1999 and 1999/2000, Institute for Statistics, United Nations Educational, Scientific, and Cultural Organization (UNESCO), October 2002 and Gross Enrollment Ratio at Tertiary Level by Country and Gender for academic years 1998/1999 and 1999/2000, Institute for Statistics, UNESCO, October 2002; and survey data assessing each country's efforts to attract foreign investment (Q10) and mobility of capital (Q5).

Technological infrastructure (TI) assesses the institutions and resources that contribute to a nation's capacity to develop, produce, and market new technology.

Indicator formulation:  $TI = [(Q7 + Q8)/2 + Q9 + Q11 + EDP2002 + S\&E2000]/5$ .

Data used: Published data from Science and Technology, Personnel Engaged in R&D by Category of Personnel (new available data for 1996–2000), Institute for Statistics, UNESCO, November 2002, on number of scientists and engineers involved in research in 2000 (S&E 2000), national purchases of electronic data-processing equipment (EDP2002) from Reed Electronics Research, Yearbook of World Electronics Data 2002/2003, Reed Business Information Ltd. (2002); and survey data assessing linkages of R&D to industry (Q9), output of indigenous academic S&E (Q7 and Q8), and ability to make effective use of technological knowledge (Q11).

Productive capacity (PC) assesses physical and human resources devoted to manufacturing products and efficiency employing those resources.

Indicator formulation:  $PC = (Q6 + Q12 + Q13 + A262002)/4$ .

Data used: Published data on electronics production (A262002) from Reed Electronics Research, Yearbook of World Electronics Data 2002/2003, Reed Business Information Ltd. (2002); and survey data assessing the supply and quality of skilled labor (Q6), capability of indigenous management (Q13), and existence of indigenous suppliers of components for technology-intensive products (Q12).

Composite indicator is sum of  $NO + SE + TI + PC$ .

SOURCE: Georgia Institute of Technology, Technology Policy and Assessment Center, High Tech Indicators: Technology-Based Competitiveness of 33 Nations. 2007 Final Report to National Science Foundation, Division of Science Resources Statistics (2007).

Appendix table 6-27

## All and industry U.S. S&amp;E articles, by field: 1988–2005

Field	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All articles.....	169,131	177,958	182,469	185,035	189,880	188,434	191,457	194,255	192,790	189,477	189,813	190,390	188,125	193,066	187,400	202,475	192,913	214,557
Agricultural sciences .....	4,070	4,044	4,311	4,455	3,887	3,860	3,909	3,648	3,346	3,605	3,464	2,804	3,640	3,203	3,924	3,903	3,526	3,561
Astronomy.....	1,754	1,783	1,900	1,912	2,088	2,025	2,421	2,483	2,651	2,557	1,932	2,829	2,566	2,697	2,996	2,719	2,874	2,853
Biological sciences.....	44,890	48,232	49,792	50,531	51,874	51,770	52,711	54,076	53,301	51,718	52,076	51,443	50,997	52,696	50,108	52,981	51,502	55,502
Chemistry.....	13,186	13,398	13,990	14,681	14,647	15,089	14,577	14,915	15,219	14,375	14,414	14,491	14,560	14,342	14,043	15,763	15,110	17,138
Computer sciences.....	1,402	1,691	1,615	1,676	1,748	1,900	2,033	1,914	1,923	1,929	1,952	2,008	2,075	2,083	1,999	2,254	2,173	2,390
Engineering.....	11,001	11,007	12,118	11,798	13,457	12,103	12,691	12,636	11,702	11,760	11,815	12,312	11,637	12,560	12,475	13,467	12,671	14,455
Geosciences.....	7,637	8,180	8,412	8,567	8,533	9,271	9,114	9,821	9,904	9,214	9,820	9,873	9,779	10,065	9,204	11,486	10,436	11,112
Mathematics.....	3,880	3,990	3,304	3,382	3,538	3,453	3,346	3,190	3,272	3,051	3,483	3,561	3,758	3,657	3,556	3,760	3,562	3,922
Medical sciences.....	44,968	47,497	48,102	48,180	50,229	49,991	51,038	51,943	51,404	52,146	52,402	52,550	51,886	53,437	51,384	56,128	53,541	60,130
Other life sciences.....	1,853	1,911	1,975	1,972	1,962	2,202	2,218	2,338	2,811	3,009	3,009	2,876	2,942	3,146	2,958	2,964	2,699	3,670
Physics.....	18,023	19,067	19,196	20,515	20,158	19,602	20,427	19,709	18,906	18,048	17,966	18,074	16,897	17,385	17,301	18,657	17,653	20,551
Psychology.....	7,171	7,088	7,587	7,194	7,626	6,986	7,184	7,830	8,258	8,130	7,736	7,806	7,499	7,809	7,691	7,892	7,410	8,482
Social sciences.....	9,296	10,069	10,167	10,172	10,134	10,182	9,788	9,751	10,094	9,935	9,745	9,763	9,888	9,985	9,763	10,501	9,754	10,790
Industry articles.....	14,271	14,580	15,538	16,170	16,155	15,614	16,022	15,671	14,822	13,988	13,894	14,030	13,644	13,839	13,287	14,184	12,988	13,489
Agricultural sciences .....	222	237	309	302	263	227	319	289	228	240	234	199	251	261	260	231	220	219
Astronomy.....	50	53	43	60	43	49	63	64	48	51	54	57	57	53	68	55	38	46
Biological sciences.....	2,770	2,975	3,370	3,616	3,668	3,785	3,984	4,228	3,893	3,656	3,626	3,600	3,583	3,518	3,279	3,498	3,145	3,306
Chemistry.....	2,288	2,213	2,305	2,444	2,352	2,506	2,486	2,423	2,341	2,012	1,842	1,948	1,806	1,749	1,828	2,123	2,100	1,940
Computer sciences.....	344	403	362	358	361	428	427	399	390	433	445	448	481	461	442	409	342	365
Engineering.....	2,818	2,627	2,920	2,942	2,944	2,699	2,833	2,664	2,405	2,342	2,355	2,404	2,307	2,280	2,222	2,378	1,909	2,080
Geosciences.....	522	642	591	701	701	654	724	681	610	636	610	638	552	657	556	570	556	556
Mathematics.....	161	132	132	108	140	129	113	104	100	89	126	126	121	125	114	106	88	88
Medical sciences.....	1,364	1,585	1,640	1,708	1,831	1,887	2,026	2,078	2,077	2,130	2,220	2,282	2,314	2,428	2,433	2,607	2,601	2,820
Other life sciences.....	77	91	73	82	91	99	98	112	105	151	150	156	141	148	154	145	136	188
Physics.....	3,221	3,255	3,358	3,457	3,319	2,745	2,568	2,237	2,184	1,815	1,884	1,806	1,678	1,810	1,648	1,771	1,581	1,565
Psychology.....	150	117	129	134	174	166	176	170	190	166	145	168	163	177	143	132	130	168
Social sciences.....	284	251	305	258	268	241	206	221	252	269	204	201	190	170	139	158	142	149

NOTE: Article counts based on fractional counts and an expanding journal set.

SOURCES: Thomson ISI, Science Citation Index and Social Sciences Citation Index, <http://www.isinet.com/products/citation/>; iPLQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Science and Engineering Indicators 2008

Appendix table 6-28

**All and industry U.S. S&E basic research articles, by field: 1988–2005**

Field	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All articles.....	56,242	59,771	61,064	61,929	64,384	64,680	65,345	67,723	66,610	64,551	65,060	65,338	65,417	66,202	64,560	69,438	66,252	72,020
Agricultural sciences .....	0	0	0	0	0	0	0	0	0	0	0	0	7	4	7	3	1	6
Astronomy.....	1,754	1,783	1,900	1,912	2,088	2,025	2,421	2,483	2,616	2,498	1,868	2,782	2,516	2,634	2,927	2,672	2,811	2,808
Biological sciences.....	27,503	29,422	30,170	30,445	31,849	31,820	32,249	33,417	32,665	31,892	32,319	31,585	31,723	32,635	31,213	32,854	32,035	33,714
Chemistry.....	6,553	6,611	7,100	7,374	7,561	7,977	7,490	7,854	7,986	7,212	7,532	7,681	7,845	7,648	7,756	8,333	7,915	8,872
Computer sciences.....	6	12	5	7	32	38	42	44	30	29	26	36	55	66	45	35	39	28
Engineering.....	199	283	257	237	301	376	550	536	441	458	544	439	504	492	534	712	714	746
Geosciences.....	2,780	2,981	3,306	3,266	3,115	3,513	3,380	3,817	3,828	3,433	3,744	3,689	3,549	3,654	3,187	4,720	3,888	4,072
Mathematics.....	1,912	1,990	1,434	1,501	1,626	1,531	1,472	1,417	1,511	1,536	1,625	1,736	1,861	1,904	1,867	1,862	1,777	1,803
Medical sciences.....	4,176	4,790	5,008	5,373	5,878	5,644	5,916	6,271	6,343	6,717	6,391	6,611	6,668	6,438	6,231	6,936	6,767	7,211
Other life sciences.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physics.....	9,711	10,404	10,243	10,456	10,412	10,447	10,686	10,595	9,933	9,654	9,891	9,665	9,652	9,568	9,775	10,113	9,272	11,523
Psychology.....	1,507	1,406	1,467	1,245	1,407	1,140	960	1,154	1,092	1,023	985	977	902	1,005	886	1,030	913	1,082
Social sciences.....	141	91	175	111	115	169	179	136	162	99	134	138	133	156	132	168	120	154
Industry articles.....	3,458	3,452	3,754	3,824	3,931	4,052	4,057	4,151	3,653	3,367	3,305	3,358	3,228	3,191	3,059	3,296	2,886	2,910
Agricultural sciences .....	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Astronomy.....	50	53	43	60	43	49	63	64	46	49	52	53	53	49	65	53	36	45
Biological sciences.....	1,463	1,480	1,749	1,838	1,870	1,939	1,972	2,117	1,786	1,734	1,641	1,703	1,610	1,609	1,459	1,523	1,246	1,278
Chemistry.....	665	666	716	704	769	921	967	979	885	780	800	892	777	756	846	937	952	900
Computer sciences.....	1	3		1	5	3	7	8	4	6	6	11	20	16	10	11	9	7
Engineering.....	27	18	17	22	23	41	67	58	64	54	96	51	65	69	57	93	66	78
Geosciences.....	116	115	139	127	142	139	117	146	138	130	142	134	115	132	105	150	115	111
Mathematics.....	27	24	25	25	30	19	22	19	19	19	18	22	26	36	26	19	20	16
Medical sciences.....	94	128	106	169	193	198	211	217	226	211	203	168	184	163	143	180	148	151
Other life sciences.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physics.....	998	954	934	862	835	721	618	535	472	367	335	311	366	346	341	316	282	312
Psychology.....	12	8	12	12	17	14	8	6	10	13	11	11	10	10	4	7	10	10
Social sciences.....	4	3	13	5	5	8	5	2	2	3	2	3	1	4	3	7	3	2

NOTE: Article counts based on fractional counts and an expanding journal set.

SOURCES: Thomson ISI, Science Citation Index and Social Sciences Citation Index, <http://www.isinet.com/products/citation/>; iPLQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Science and Engineering Indicators 2008

Appendix table 6-29

**S&E articles with industry authors, by institutional author type: 1988–2005**

Year	All articles	Single company/ single author	Single company/ multiple authors	Multiple companies	Multiple sectors	International
1988.....	19,213	3,601	5,778	1,217	6,970	1,647
1989.....	19,973	3,472	5,909	1,299	7,422	1,871
1990.....	21,583	3,643	6,181	1,367	8,163	2,229
1991.....	22,748	3,710	6,228	1,546	8,625	2,639
1992.....	23,337	3,505	5,928	1,658	9,303	2,943
1993.....	22,959	3,282	5,617	1,587	9,280	3,193
1994.....	24,010	3,351	5,458	1,677	9,971	3,553
1995.....	24,142	2,992	5,190	1,716	10,361	3,883
1996.....	23,516	2,694	4,759	1,572	10,288	4,203
1997.....	22,797	2,398	4,383	1,385	10,369	4,262
1998.....	23,049	2,452	4,073	1,442	10,520	4,562
1999.....	23,578	2,384	4,072	1,356	10,829	4,937
2000.....	23,315	2,275	3,873	1,393	10,532	5,242
2001.....	24,157	2,230	3,813	1,382	11,126	5,606
2002.....	23,323	1,931	3,696	1,337	10,824	5,535
2003.....	25,145	1,925	4,121	1,507	11,426	6,166
2004.....	23,256	1,614	3,682	1,519	10,665	5,776
2005.....	25,148	1,581	3,615	1,446	11,888	6,618

NOTES: Article counts based on whole counts and an expanding journal set. Articles classified by year they entered database rather than year of publication.

SOURCES: Thomson Scientific, Science Citation Index and Social Sciences Citation Index, <http://www.scientific.thomson.com/products/categories/citation/>; iPLQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 6-30

**Industry coauthored S&E articles, by sector of coauthorship: 1988–2005**

Year	Coauthored articles	Academic institutions	Industries	Federal government	Private nonprofits	FFRDCs	State/local governments
1988.....	9,834	6,057	1,956	1,314	861	474	174
1989.....	10,592	6,458	2,010	1,434	1,008	495	190
1990.....	11,759	7,198	2,261	1,544	1,142	623	216
1991.....	12,810	7,809	2,629	1,679	1,151	568	222
1992.....	13,904	8,413	2,810	1,870	1,392	665	274
1993.....	14,060	8,503	2,839	2,001	1,480	624	235
1994.....	15,201	9,201	3,076	2,184	1,645	739	300
1995.....	15,960	9,735	3,305	2,185	1,748	792	292
1996.....	16,063	9,842	3,205	2,204	1,868	696	324
1997.....	16,016	9,973	3,094	2,123	1,890	759	287
1998.....	16,524	10,302	3,234	2,214	2,010	772	313
1999.....	17,122	10,646	3,310	2,234	2,180	780	330
2000.....	17,167	10,628	3,359	2,245	2,326	716	343
2001.....	18,114	11,448	3,461	2,398	2,410	799	376
2002.....	17,696	11,085	3,514	2,189	2,252	733	399
2003.....	19,099	11,989	3,771	2,401	2,565	871	377
2004.....	17,960	11,232	3,791	2,356	2,486	805	369
2005.....	19,952	12,742	4,026	2,639	2,979	811	461

FFRDC = federal funded research and development center

NOTES: Article counts based on whole counts and an expanding journal set. Articles classified by year they entered database rather than year of publication. Coauthored articles include all articles for which there are authors from more than one company. Detail does not sum to total because an article can have coauthors from multiple sectors.

SOURCES: Thomson Scientific, Science Citation Index and Social Sciences Citation Index, <http://www.scientific.thomson.com/products/categories/citation/>; iPLQ, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

## USPTO patent applications for selected regions/countries/economies: 1985–95

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
All regions/countries/economies	117,006	122,433	127,917	139,825	152,750	164,558	164,306	173,075	174,743	189,857	212,377
United States	63,874	65,487	68,315	75,192	82,370	90,643	87,955	92,425	99,955	107,233	123,958
EU	24,348	25,995	26,316	27,099	28,081	28,584	27,444	28,839	26,517	28,885	30,947
Austria	498	557	504	485	511	560	516	566	526	599	619
Belgium	450	523	518	545	572	592	614	692	685	862	1,001
Bulgaria	40	41	32	42	30	31	11	7	3	4	6
Czech Republic	68	63	50	72	71	39	32	41	27	28	36
Denmark	282	302	316	337	284	370	358	378	376	445	618
Finland	399	350	430	417	513	595	592	576	568	707	745
France	3,605	3,884	3,837	4,301	4,268	4,771	4,723	4,828	4,320	4,528	5,001
Germany	10,532	10,725	10,830	11,018	11,437	11,292	10,874	11,652	10,500	11,324	11,853
Greece	15	21	21	29	33	27	20	28	19	27	29
Hungary	208	209	174	172	174	138	103	76	69	76	70
Ireland	75	83	91	103	99	130	116	103	104	149	131
Italy	1,628	1,799	1,822	1,943	1,964	2,093	2,123	2,288	1,906	1,998	2,128
Luxembourg	29	40	31	39	35	32	36	39	35	39	20
Netherlands	1,221	1,269	1,334	1,512	1,570	1,588	1,397	1,547	1,472	1,455	1,570
Poland	13	19	23	26	24	13	21	16	27	20	19
Portugal	9	13	15	7	9	6	3	11	9	14	10
Romania	4	2	3		2	1	1	2	5	4	7
Slovenia	NA	NA	NA	NA	NA	NA	NA	8	19	11	13
Spain	207	225	228	231	302	289	258	313	269	315	357
Sweden	1,239	1,229	1,155	1,028	1,114	1,057	1,086	1,072	1,157	1,405	1,500
United Kingdom	3,825	4,641	4,898	4,788	5,066	4,959	4,557	4,587	4,414	4,856	5,202
All others	1	0	4	4	3	1	3	9	7	19	12
Asia	22,475	24,274	26,169	30,194	34,245	37,246	40,838	43,251	39,813	44,273	47,355
China	80	178	165	208	220	197	258	279	290	319	307
India	25	36	26	41	50	58	51	64	54	70	91
Japan	21,431	22,895	24,516	28,357	31,791	34,113	36,846	38,633	34,816	37,768	39,872
Malaysia	8	4	6	6	14	11	22	16	20	37	30
Philippines	15	10	11	14	13	9	10	10	9	7	12
Singapore	19	17	17	17	37	36	63	89	104	134	144
South Korea	129	162	235	295	607	775	1,321	1,471	1,624	2,354	2,820
Taiwan	760	959	1,182	1,246	1,507	2,035	2,252	2,667	2,874	3,560	4,054
Thailand	5	7	8	4	3	8	4	11	15	19	21
All others	3	6	3	6	3	4	11	11	7	5	4
All others	6,309	6,677	7,117	7,340	8,054	8,085	8,069	8,560	8,458	9,466	10,117
Argentina	39	56	42	32	32	56	59	59	56	75	65
Australia	739	809	842	750	800	811	783	863	781	921	1,007
Brazil	78	68	62	71	111	88	124	112	105	156	115
Canada	2,270	2,438	2,791	3,046	3,425	3,511	3,641	3,761	3,910	4,255	4,745
Chile	7	16	2	4	11	13	12	12	11	11	10
Iceland	1	5	6	2	3	3	10	16	3	6	6



Appendix table 6-31

**USPTO patent applications for selected regions/countries/economies: 1985–95**

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Israel .....	377	427	503	490	624	608	633	780	803	1,040	1,072
Mexico .....	81	69	70	74	77	76	106	105	82	105	99
New Zealand .....	121	135	132	110	121	105	91	107	85	130	137
Norway.....	160	177	185	159	141	164	169	212	190	203	243
Russian Federation.....	NA	NA	NA	NA	NA	NA	NA	183	153	206	221
South Africa.....	227	204	239	192	215	185	186	207	246	238	187
Switzerland .....	1,894	1,929	1,857	1,993	2,019	1,931	1,902	1,922	1,759	1,852	1,917
Turkey .....	11	4	5	7	3	6	3	2	3	5	6
All others.....	304	340	381	410	472	528	350	219	271	263	287

NA = not available

EU = European Union; USPTO = U.S. Patent and Trademark Office

NOTES: Patent applications assigned to region/country/economy based on residence of first-named inventor. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries having <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCES: USPTO, Number of Utility Patent Applications Filed in the United States by Country of Origin, Calendar Years 1965 to Present (1), [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl\\_yr.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl_yr.htm) (September 2006); and National Science Foundation, Division of Science Resources Statistics, special tabulations.

## USPTO patent applications for selected regions/countries/economies: 1996–2005

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All regions/countries/economies	195,187	215,257	243,062	270,187	295,926	326,508	334,445	342,441	356,943	390,733
United States	106,892	120,445	135,483	149,825	164,795	177,511	184,245	188,941	189,536	207,867
EU	29,424	31,768	36,161	42,723	45,503	50,224	50,377	47,479	49,905	51,420
Austria	543	552	710	823	881	961	1,115	933	1,022	1,044
Belgium	930	894	1,059	1,204	1,245	1,286	1,293	1,395	1,309	1,460
Bulgaria	5	4	3	11	18	13	8	10	105	58
Czech Republic	30	40	53	46	52	77	58	61	69	81
Denmark	496	634	748	863	859	1,113	1,065	1,002	923	997
Finland	836	891	970	1,376	1,530	1,840	1,811	1,935	2,096	2,032
France	4,486	4,759	5,249	6,216	6,623	6,852	6,825	6,603	6,813	6,972
Germany	11,550	12,333	13,885	16,978	17,715	19,900	20,418	18,890	19,824	20,664
Greece	23	30	45	50	44	49	58	50	62	68
Hungary	59	40	73	120	107	103	128	118	144	131
Ireland	114	138	228	252	362	366	440	368	403	516
Italy	2,062	2,119	2,313	2,577	2,704	2,967	2,980	3,011	2,997	2,993
Luxembourg	31	32	36	59	57	61	69	60	72	51
Netherlands	1,559	1,726	1,816	2,058	2,289	2,712	2,602	2,257	3,052	3,188
Poland	22	19	19	31	33	39	46	59	101	102
Portugal	16	12	17	28	17	28	27	20	30	33
Romania	5	12	11	8	12	14	8	11	16	18
Slovenia	19	24	29	21	27	20	36	38	50	43
Spain	359	370	409	464	549	601	564	606	696	701
Sweden	1,481	1,980	2,359	2,570	2,825	2,827	2,410	2,314	2,270	2,243
United Kingdom	4,791	5,147	6,110	6,948	7,523	8,362	8,391	7,700	7,792	7,962
All others	7	12	19	20	31	33	25	38	59	63
Asia	49,249	52,953	59,184	63,805	69,891	81,966	82,747	88,592	98,660	111,620
China	364	324	455	660	942	1,252	1,569	1,763	2,470	2,943
India	115	137	180	271	438	643	919	1,164	1,303	1,463
Japan	39,510	41,767	45,260	47,821	52,891	61,238	58,739	60,350	64,812	71,994
Malaysia	30	61	41	76	104	116	142	237	326	323
Philippines	9	15	13	20	32	51	58	42	82	65
Singapore	176	213	336	460	632	786	807	771	879	919
South Korea	4,248	4,920	5,452	5,033	5,705	6,719	7,937	10,411	13,646	17,217
Taiwan	4,766	5,492	7,412	9,411	9,046	11,086	12,488	13,786	15,057	16,617
Thailand	20	21	26	41	92	70	61	60	69	68
All others	11	3	9	12	9	5	27	8	16	11
All others	9,622	10,091	12,234	13,834	15,737	16,807	17,076	17,429	18,842	19,826
Argentina	78	77	119	96	137	137	95	125	103	94
Australia	1,057	1,006	1,420	1,462	1,800	1,995	2,160	2,310	3,000	2,919
Brazil	145	134	165	186	220	219	243	259	287	295
Canada	4,443	4,694	5,689	6,149	6,809	7,221	7,375	7,750	8,202	8,638
Chile	23	17	17	16	24	23	38	33	51	55
Iceland	13	8	25	31	30	51	41	56	51	53

**USPTO patent applications for selected regions/countries/economies: 1996–2005**

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Israel .....	1,042	1,198	1,442	2,009	2,509	2,710	2,645	2,539	2,693	3,157
Mexico .....	97	110	141	147	190	196	157	185	179	180
New Zealand .....	174	174	187	240	279	318	375	387	346	352
Norway.....	227	303	337	415	447	475	531	449	525	541
Russian Federation.....	254	249	273	388	382	433	377	341	334	366
South Africa.....	189	174	211	179	209	231	241	224	246	197
Switzerland .....	1,609	1,637	1,875	2,144	2,233	2,337	2,338	2,275	2,316	2,447
Turkey .....	7	10	16	29	28	28	36	28	48	46
All others.....	264	300	317	343	440	433	424	468	461	486

EU = European Union; USPTO = U.S. Patent and Trademark Office

NOTES: Patent applications assigned to region/country/economy based on residence of first-named inventor. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries having <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCES: USPTO, Number of Utility Patent Applications Filed in the United States by Country of Origin, Calendar Years 1965 to Present (1), [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl\\_yr.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl_yr.htm) (September 2006); and National Science Foundation, Division of Science Resources Statistics, special tabulations.

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**Share of USPTO and EPO patent applications for selected regions/countries/economies: 1996–2005**

(Percent distribution)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>USPTO patent applications</b>										
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
United States.....	54.76	55.95	55.74	55.45	55.69	54.37	55.09	55.17	53.10	53.20
EU.....	15.07	14.76	14.88	15.81	15.38	15.38	15.06	13.86	13.98	13.16
Austria .....	0.28	0.26	0.29	0.30	0.30	0.29	0.33	0.27	0.29	0.27
Belgium .....	0.48	0.42	0.44	0.45	0.42	0.39	0.39	0.41	0.37	0.37
Bulgaria .....	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.01
Czech Republic .....	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Denmark.....	0.25	0.29	0.31	0.32	0.29	0.34	0.32	0.29	0.26	0.26
Finland.....	0.43	0.41	0.40	0.51	0.52	0.56	0.54	0.57	0.59	0.52
France.....	2.30	2.21	2.16	2.30	2.24	2.10	2.04	1.93	1.91	1.78
Germany.....	5.92	5.73	5.71	6.28	5.99	6.09	6.11	5.52	5.55	5.29
Greece.....	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02
Hungary.....	0.03	0.02	0.03	0.04	0.04	0.03	0.04	0.03	0.04	0.03
Ireland.....	0.06	0.06	0.09	0.09	0.12	0.11	0.13	0.11	0.11	0.13
Italy.....	1.06	0.98	0.95	0.95	0.91	0.91	0.89	0.88	0.84	0.77
Luxembourg.....	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Netherlands.....	0.80	0.80	0.75	0.76	0.77	0.83	0.78	0.66	0.86	0.82
Poland.....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.03
Portugal.....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Romania.....	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slovenia.....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Spain.....	0.18	0.17	0.17	0.17	0.19	0.18	0.17	0.18	0.19	0.18
Sweden.....	0.76	0.92	0.97	0.95	0.95	0.87	0.72	0.68	0.64	0.57
United Kingdom.....	2.45	2.39	2.51	2.57	2.54	2.56	2.51	2.25	2.18	2.04
All others.....	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
Asia.....	25.23	24.60	24.35	23.62	23.62	25.10	24.74	25.87	27.64	28.57
China.....	0.19	0.15	0.19	0.24	0.32	0.38	0.47	0.51	0.69	0.75
India.....	0.06	0.06	0.07	0.10	0.15	0.20	0.27	0.34	0.37	0.37
Japan.....	20.24	19.40	18.62	17.70	17.87	18.76	17.56	17.62	18.16	18.43
Malaysia.....	0.02	0.03	0.02	0.03	0.04	0.04	0.04	0.07	0.09	0.08
Philippines.....	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.02
Singapore.....	0.09	0.10	0.14	0.17	0.21	0.24	0.24	0.23	0.25	0.24
South Korea.....	2.18	2.29	2.24	1.86	1.93	2.06	2.37	3.04	3.82	4.41
Taiwan.....	2.44	2.55	3.05	3.48	3.06	3.40	3.73	4.03	4.22	4.25
Thailand.....	0.01	0.01	0.01	0.02	0.03	0.02	0.02	0.02	0.02	0.02
All others.....	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
All others.....	4.93	4.69	5.03	5.12	5.32	5.15	5.11	5.09	5.28	5.07
<b>EPO patent applications</b>										
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	NA
United States.....	30.55	28.76	28.50	28.50	27.78	26.52	26.49	27.28	26.45	NA
EU.....	44.42	45.89	46.50	46.44	46.09	45.53	46.23	44.75	44.09	NA

Appendix table 6-33

(Page 2 of 2)

**Share of USPTO and EPO patent applications for selected regions/countries/economies: 1996–2005**

(Percent distribution)

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria .....	0.96	0.96	1.11	1.01	1.00	1.05	1.10	1.11	1.15	NA
Belgium .....	1.12	1.22	1.34	1.24	1.22	1.11	1.10	1.11	1.13	NA
Bulgaria .....	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.02	0.01	NA
Czech Republic .....	0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.08	0.10	NA
Denmark .....	0.71	0.78	0.73	0.83	0.79	0.80	0.82	0.83	0.81	NA
Finland .....	1.02	1.07	1.16	1.22	1.29	1.29	1.24	1.06	1.03	NA
France.....	7.28	7.16	7.12	6.95	6.72	6.44	6.63	6.64	6.72	NA
Germany .....	18.52	19.63	19.95	20.22	19.95	19.60	19.73	19.07	18.82	NA
Greece .....	0.04	0.05	0.06	0.06	0.04	0.05	0.07	0.07	0.06	NA
Hungary .....	0.08	0.07	0.08	0.07	0.11	0.10	0.11	0.09	0.11	NA
Ireland.....	0.14	0.15	0.15	0.19	0.23	0.18	0.21	0.18	0.18	NA
Italy.....	3.69	3.67	3.64	3.50	3.52	3.53	3.70	3.81	3.60	NA
Luxembourg.....	0.05	0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.09	NA
Netherlands.....	2.54	2.73	2.72	2.71	2.84	3.02	3.52	3.07	2.95	NA
Poland.....	0.02	0.03	0.04	0.03	0.03	0.04	0.05	0.07	0.11	NA
Portugal .....	0.02	0.03	0.02	0.04	0.03	0.04	0.03	0.04	0.05	NA
Romania.....	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	NA
Slovenia .....	0.03	0.03	0.02	0.04	0.03	0.05	0.05	0.08	0.07	NA
Spain .....	0.53	0.60	0.68	0.70	0.69	0.74	0.83	0.80	0.77	NA
Sweden.....	2.17	2.29	2.27	2.14	2.10	2.03	1.93	1.83	1.70	NA
United Kingdom.....	5.44	5.30	5.22	5.31	5.32	5.28	4.91	4.68	4.56	NA
All others.....	0.03	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.06	NA
Asia.....	18.90	19.01	18.16	18.23	19.02	20.80	20.18	20.90	22.16	NA
China .....	0.14	0.13	0.15	0.17	0.25	0.33	0.39	0.60	0.68	NA
India.....	0.06	0.08	0.10	0.12	0.14	0.18	0.35	0.37	0.30	NA
Japan.....	17.80	17.88	16.87	16.55	17.22	18.64	17.34	17.28	17.85	NA
Malaysia .....	0.01	0.01	0.01	0.01	0.02	0.03	0.03	0.04	0.04	NA
Philippines .....	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	NA
Singapore.....	0.07	0.10	0.11	0.13	0.13	0.13	0.17	0.16	0.17	NA
South Korea .....	0.62	0.62	0.73	0.99	1.01	1.18	1.48	1.98	2.63	NA
Taiwan .....	0.18	0.18	0.18	0.23	0.22	0.28	0.40	0.45	0.46	NA
Thailand.....	0.01	0.00	0.01	0.01	0.02	0.02	0.01	0.01	0.01	NA
All others.....	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	NA
All others.....	6.13	6.34	6.83	6.84	7.12	7.15	7.09	7.07	7.31	NA

NA = not available

EPO = European Patent Office; EU = European Union; USPTO = U.S. Patent and Trademark Office

NOTES: USPTO patent applications assigned to region/country/economy based on residence of first-named inventor. EPO patent applications on fractional-count basis. For patent applications with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries having <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCES: USPTO, Number of Utility Patent Applications Filed in the United States by Country of Origin, Calendar Years 1965 to Present (1), [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl\\_yr.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl_yr.htm) (September 2006); National Science Foundation, Division of Science Resources Statistics, special tabulations; and Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC).

Appendix table 6-34

**Share of USPTO patents granted to U.S. states: Selected years, 1980–97**

(Percent distribution)

Rank/state	1980	1985	1987	1989	1991	1993	1995	1997
All states (number).....	37,353	39,556	43,520	50,185	51,177	53,231	55,739	61,708
All states .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1 California .....	13.53	13.43	14.59	15.07	15.08	15.34	16.62	18.29
2 Texas .....	4.85	5.97	6.25	6.41	6.21	6.37	6.97	6.71
3 New York .....	8.98	8.41	8.13	8.18	8.73	8.81	8.40	7.80
4 Michigan .....	5.68	5.22	5.08	5.22	5.48	5.40	4.99	4.60
5 Massachusetts .....	4.11	4.03	4.12	3.95	3.98	4.15	3.88	4.17
6 New Jersey .....	7.93	7.55	6.51	6.13	5.92	5.47	4.94	5.16
7 Illinois .....	7.29	6.48	5.98	5.67	5.44	5.35	5.16	4.87
8 Pennsylvania .....	6.73	5.92	6.63	5.59	5.29	5.03	4.74	4.37
9 Ohio .....	5.77	5.84	5.47	5.17	4.99	4.75	4.34	4.40
10 Minnesota .....	2.14	2.62	2.63	2.67	2.63	2.91	2.97	2.97
11 Florida .....	2.81	2.85	3.14	3.39	3.30	3.34	3.59	3.50
12 Washington .....	1.35	1.49	1.60	1.84	1.86	1.68	1.85	2.19
13 Colorado .....	1.27	1.35	1.47	1.57	1.49	1.71	1.97	1.98
14 North Carolina .....	1.27	1.35	1.51	1.58	1.72	1.71	1.86	2.05
15 Wisconsin .....	1.99	2.06	2.15	2.32	2.13	2.14	2.17	2.11
16 Connecticut .....	2.88	3.32	3.21	3.12	2.74	2.90	2.77	2.27
17 Idaho .....	0.21	0.16	0.20	0.32	0.40	0.63	0.55	0.92
18 Arizona .....	1.17	1.38	1.54	1.48	1.62	1.59	1.79	1.70
19 Oregon .....	0.80	0.93	1.13	1.22	1.08	1.11	1.26	1.29
20 Maryland .....	1.93	1.73	1.62	1.61	1.66	1.87	1.77	1.90
21 Indiana .....	2.29	2.28	2.21	1.95	2.00	1.82	1.99	1.97
22 Georgia .....	0.88	1.00	1.13	1.29	1.25	1.32	1.52	1.57
23 Virginia .....	1.37	1.52	1.31	1.44	1.62	1.64	1.47	1.33
24 Missouri .....	1.61	1.21	1.25	1.28	1.41	1.19	1.20	1.18
25 Tennessee .....	0.99	0.90	0.80	1.03	1.01	1.04	1.06	1.04
26 Utah .....	0.54	0.61	0.63	0.66	0.72	0.79	0.91	0.99
27 Iowa .....	0.83	0.85	0.82	0.79	0.73	0.69	0.76	0.64
28 New Hampshire .....	0.43	0.51	0.53	0.57	0.62	0.68	0.73	0.74
29 South Carolina .....	0.59	0.78	0.66	0.82	0.80	0.79	0.79	0.70
30 Oklahoma .....	1.62	1.81	1.42	1.19	1.11	1.12	0.85	0.67
31 Kentucky .....	0.71	0.81	0.59	0.49	0.63	0.52	0.49	0.47
32 Vermont .....	0.14	0.21	0.20	0.24	0.20	0.24	0.27	0.45
33 Louisiana .....	0.76	1.00	0.94	0.89	0.92	0.81	0.66	0.61
34 Kansas .....	0.66	0.52	0.47	0.52	0.48	0.45	0.44	0.42
35 Alabama .....	0.50	0.65	0.61	0.59	0.62	0.51	0.51	0.49
36 Delaware .....	0.75	0.71	0.79	0.88	1.01	0.95	0.77	0.58
37 Nevada .....	0.24	0.15	0.19	0.24	0.32	0.26	0.30	0.29
38 New Mexico .....	0.29	0.40	0.40	0.35	0.45	0.44	0.46	0.42
39 Rhode Island .....	0.32	0.30	0.24	0.31	0.38	0.41	0.37	0.40
40 Nebraska .....	0.24	0.27	0.28	0.25	0.28	0.32	0.24	0.27
41 Arkansas .....	0.19	0.16	0.17	0.21	0.23	0.22	0.19	0.20
42 Mississippi .....	0.16	0.16	0.18	0.20	0.19	0.19	0.19	0.25
43 Maine .....	0.16	0.19	0.19	0.22	0.18	0.22	0.20	0.15
44 West Virginia .....	0.36	0.28	0.30	0.31	0.32	0.32	0.24	0.24
45 Montana .....	0.14	0.18	0.19	0.17	0.16	0.17	0.22	0.14
46 South Dakota .....	0.06	0.09	0.09	0.07	0.05	0.06	0.06	0.07
47 Hawaii .....	0.09	0.09	0.09	0.13	0.12	0.15	0.12	0.12
48 North Dakota .....	0.07	0.08	0.10	0.11	0.12	0.11	0.10	0.07
49 District of Columbia .....	0.13	0.11	0.10	0.10	0.12	0.10	0.10	0.08
50 Wyoming .....	0.09	0.06	0.10	0.06	0.08	0.07	0.09	0.08
51 Alaska .....	0.06	0.06	0.04	0.07	0.08	0.09	0.07	0.07
52 Puerto Rico .....	0.03	0.03	0.03	0.05	0.03	0.03	0.04	0.02
53 Other .....	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01

USPTO = U.S. Patent and Trademark Office

NOTES: Patents assigned to state based on residence of first-named inventor. States ranked by 2005 share of U.S. patents issued to United States. Other includes U.S. territories.

SOURCES: USPTO, Historic Patents by Country, State, and Year 1963–2005; and Historic Patents by Country, State, and Year, Utility Patents, [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst\\_uth.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_uth.htm), accessed 15 December 2006.

Appendix table 6-35

**Share of USPTO patents granted to U.S. states: 1999–2005**

(Percent distribution)

Rank/state	1999	2000	2001	2002	2003	2004	2005
All states (number).....	83,905	85,068	87,600	86,971	87,893	84,271	74,637
All states .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1 California .....	19.99	20.56	21.23	21.65	22.40	23.13	24.10
2 Texas .....	7.21	7.43	7.27	6.93	6.86	7.04	7.05
3 New York .....	7.28	7.15	7.24	7.31	7.09	6.94	6.30
4 Michigan .....	4.39	4.38	4.39	4.44	4.39	4.46	4.51
5 Massachusetts .....	4.20	4.06	4.19	4.15	4.45	4.36	4.17
6 New Jersey .....	4.75	4.57	4.42	4.32	4.01	3.51	3.43
7 Illinois .....	4.45	4.50	4.15	3.99	3.75	3.75	3.69
8 Pennsylvania .....	4.47	4.28	4.03	3.84	3.62	3.42	3.08
9 Ohio .....	4.00	3.76	3.74	3.83	3.62	3.43	3.11
10 Minnesota .....	3.16	3.19	3.01	3.16	3.36	3.27	3.26
11 Florida .....	3.10	3.06	3.02	2.76	2.92	2.91	3.07
12 Washington .....	2.18	2.14	2.25	2.41	2.60	2.64	3.07
13 Colorado .....	2.16	2.17	2.20	2.23	2.35	2.49	2.48
14 North Carolina .....	2.07	2.17	2.22	2.09	2.13	2.13	2.16
15 Wisconsin .....	1.99	1.98	2.10	2.14	2.03	1.97	1.99
16 Connecticut .....	2.14	2.15	2.11	2.08	1.90	1.87	2.04
17 Idaho .....	1.46	1.85	1.94	2.10	2.05	2.12	2.05
18 Arizona .....	1.79	1.87	1.76	1.83	1.80	1.92	1.95
19 Oregon .....	1.31	1.40	1.44	1.67	1.89	2.05	2.17
20 Maryland .....	1.80	1.60	1.69	1.68	1.65	1.56	1.60
21 Indiana .....	1.72	1.68	1.55	1.61	1.58	1.52	1.48
22 Georgia .....	1.57	1.54	1.56	1.49	1.52	1.57	1.63
23 Virginia .....	1.24	1.34	1.27	1.33	1.26	1.28	1.27
24 Missouri .....	1.11	0.97	0.96	0.96	0.94	0.91	0.84
25 Tennessee .....	1.02	0.92	0.93	0.96	0.91	0.81	0.78
26 Utah .....	0.81	0.83	0.82	0.78	0.73	0.81	0.74
27 Iowa .....	0.89	0.69	0.86	0.72	0.76	0.78	0.75
28 New Hampshire .....	0.78	0.74	0.68	0.70	0.77	0.74	0.67
29 South Carolina .....	0.67	0.62	0.64	0.69	0.65	0.62	0.62
30 Oklahoma .....	0.59	0.64	0.66	0.54	0.59	0.53	0.54
31 Kentucky .....	0.54	0.54	0.55	0.52	0.50	0.48	0.46
32 Vermont .....	0.41	0.44	0.52	0.56	0.49	0.47	0.49
33 Louisiana .....	0.58	0.61	0.59	0.51	0.44	0.41	0.36
34 Kansas .....	0.52	0.46	0.36	0.48	0.49	0.53	0.51
35 Alabama .....	0.48	0.40	0.43	0.46	0.45	0.44	0.43
36 Delaware .....	0.50	0.46	0.43	0.41	0.39	0.41	0.43
37 Nevada .....	0.35	0.37	0.36	0.35	0.44	0.49	0.51
38 New Mexico .....	0.40	0.38	0.43	0.43	0.44	0.44	0.36
39 Rhode Island .....	0.31	0.38	0.33	0.30	0.30	0.37	0.35
40 Nebraska .....	0.23	0.27	0.25	0.24	0.21	0.23	0.24
41 Arkansas .....	0.22	0.25	0.21	0.21	0.17	0.16	0.17
42 Mississippi .....	0.22	0.22	0.19	0.18	0.18	0.16	0.15
43 Maine .....	0.14	0.15	0.17	0.18	0.17	0.16	0.20
44 West Virginia .....	0.18	0.17	0.17	0.17	0.16	0.12	0.12
45 Montana .....	0.15	0.13	0.17	0.16	0.14	0.14	0.14
46 South Dakota .....	0.08	0.10	0.09	0.09	0.09	0.10	0.09
47 Hawaii .....	0.10	0.09	0.11	0.08	0.09	0.09	0.07
48 North Dakota .....	0.08	0.10	0.11	0.08	0.06	0.06	0.10
49 District of Columbia .....	0.07	0.07	0.08	0.07	0.06	0.09	0.07
50 Wyoming .....	0.06	0.06	0.06	0.06	0.08	0.06	0.07
51 Alaska .....	0.06	0.05	0.06	0.05	0.04	0.05	0.05
52 Puerto Rico .....	0.03	0.03	0.01	0.02	0.03	0.02	0.03
53 Other .....	0.01	0.00	0.01	0.00	0.00	0.00	0.01

USPTO = U.S. Patent and Trademark Office

NOTES: Patents assigned to state based on residence of first-named inventor. States ranked by 2005 share of U.S. patents issued to United States. Other includes U.S. territories.

SOURCES: USPTO, Historic Patents by Country, State, and Year 1963–2005; and Historic Patents by Country, State, and Year, Utility Patents, [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst\\_uth.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_uth.htm), accessed 15 December 2006.

Appendix table 6-36

**USPTO patents per capita of U.S. states: 2005**

Rank/state	Number	Rank/state	Number
1 Idaho .....	1,069.7	27 Nevada .....	158.8
2 Vermont.....	589.7	28 Kansas .....	138.3
3 California.....	497.6	29 New Mexico.....	137.6
4 Massachusetts .....	484.0	30 Georgia.....	132.9
5 Minnesota.....	474.2	31 Florida .....	128.9
6 Oregon .....	444.6	32 Virginia .....	125.1
7 Connecticut .....	434.2	33 North Dakota .....	116.6
8 Colorado .....	397.6	34 Maine .....	114.5
9 New Hampshire .....	381.1	35 Oklahoma .....	113.7
10 Delaware .....	377.8	36 Missouri.....	108.3
11 Washington.....	364.1	37 South Carolina .....	108.3
12 Michigan.....	333.3	38 Montana .....	108.1
13 New Jersey.....	293.8	39 Wyoming .....	104.2
14 Wisconsin.....	269.4	40 Nebraska.....	103.5
15 Rhode Island.....	245.0	41 Tennessee .....	98.1
16 Arizona .....	244.8	42 District of Columbia .....	94.5
17 New York .....	243.5	43 South Dakota.....	85.2
18 Texas.....	229.4	44 Kentucky .....	82.9
19 Utah.....	222.5	45 Alabama .....	69.9
20 Illinois.....	215.6	46 Louisiana .....	60.1
21 Maryland .....	213.1	47 Alaska .....	52.8
22 Ohio.....	202.2	48 West Virginia.....	50.2
23 Iowa .....	188.8	49 Arkansas .....	45.4
24 North Carolina.....	185.6	50 Hawaii .....	39.3
25 Pennsylvania.....	185.2	51 Mississippi.....	39.2
26 Indiana .....	176.8	52 Puerto Rico .....	6.6

USPTO = U.S. Patent and Trademark Office

NOTES: Patents assigned to state based on residence of first-named inventor. States ranked by number of 2005 patents per million inhabitants in 2005.

SOURCES: USPTO, Historic Patents By Country, State, and Year 1963–2005, [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl\\_yr.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl_yr.htm), accessed December 2005; and Census Bureau, Annual Estimates of the Population for the United States, Regions, and States and for Puerto Rico: April 1, 2000 to July 1, 2006 (NST-EST2006-01), <http://www.census.gov/popest/states/NST-ann-est.html>, accessed 15 December 2006.



Appendix table 6-37

**Share of USPTO patent applications for selected countries/economies: 1995, 2000, and 2005**

(Percent)

Rank	1995		2000		2005	
	Country/economy	Share	Country/economy	Share	Country/economy	Share
1	U.S.	58.37	U.S.	55.69	U.S.	53.20
2	Japan	18.77	Japan	17.87	Japan	18.43
3	Germany	5.58	Germany	5.99	Germany	5.29
4	UK	2.45	Taiwan	3.06	South Korea	4.41
5	France	2.35	UK	2.54	Taiwan	4.25
6	Canada	2.23	Canada	2.30	Canada	2.21
7	Taiwan	1.91	France	2.24	UK	2.04
8	South Korea	1.33	South Korea	1.93	France	1.78
9	Italy	1.00	Sweden	0.95	Netherlands	0.82
10	Switzerland	0.90	Italy	0.91	Israel	0.81
11	Netherlands	0.74	Israel	0.85	Italy	0.77
12	Sweden	0.71	Netherlands	0.77	China	0.75
13	Israel	0.50	Switzerland	0.75	Australia	0.75
14	Australia	0.47	Australia	0.61	Switzerland	0.63
15	Belgium	0.47	Finland	0.52	Sweden	0.57
16	Finland	0.35	Belgium	0.42	Finland	0.52
17	Austria	0.29	China	0.32	India	0.37
18	Denmark	0.29	Austria	0.30	Belgium	0.37
19	Spain	0.17	Denmark	0.29	Austria	0.27
20	China	0.14	Singapore	0.21	Denmark	0.26
21	Norway	0.11	Spain	0.19	Singapore	0.24
22	Russian Federation	0.10	Norway	0.15	Spain	0.18
23	South Africa	0.09	India	0.15	Norway	0.14
24	Singapore	0.07	Russian Federation	0.13	Ireland	0.13
25	New Zealand	0.06	Ireland	0.12	Russian Federation	0.09
26	Ireland	0.06	New Zealand	0.09	New Zealand	0.09
27	Brazil	0.05	Brazil	0.07	Malaysia	0.08
28	Mexico	0.05	South Africa	0.07	Brazil	0.08
29	India	0.04	Mexico	0.06	South Africa	0.05
30	Hungary	0.03	Argentina	0.05	Mexico	0.05

UK = United Kingdom; USPTO = U.S. Patent and Trademark Office

NOTES: Patent applications and grants assigned to country/economy based on residence of first-named inventor. China includes Hong Kong.

SOURCES: USPTO, Number of Utility Patent Applications Filed in the United States by Country of Origin, Calendar Years 1965 to Present (1), [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl\\_yr.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl_yr.htm), accessed December 2006; Historic Patents by Country, State, and Year, Utility Patents, [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst\\_utlh.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_utlh.htm), accessed 15 December 2006; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

Appendix table 6-38

**Share of USPTO patent grants for selected countries/economies: 1995, 2000, and 2005**

(Percent)

Rank	1995		2000		2005	
	Country/economy	Share	Country/economy	Share	Country/economy	Share
1	U.S.	54.96	U.S.	54.01	U.S.	51.90
2	Japan	21.46	Japan	19.87	Japan	21.10
3	Germany	6.51	Germany	6.50	Germany	6.27
4	France	2.78	Taiwan	2.96	Taiwan	3.56
5	UK	2.45	France	2.42	South Korea	3.03
6	Canada	2.07	UK	2.33	UK	2.19
7	Taiwan	1.60	Canada	2.17	Canada	2.01
8	South Korea	1.14	South Korea	2.10	France	1.99
9	Italy	1.06	Italy	1.09	Italy	0.90
10	Switzerland	1.04	Sweden	1.00	Sweden	0.78
11	Sweden	0.79	Switzerland	0.84	Switzerland	0.69
12	Netherlands	0.79	Netherlands	0.79	Netherlands	0.69
13	Australia	0.45	Israel	0.50	Israel	0.64
14	Belgium	0.39	Australia	0.45	Australia	0.63
15	Israel	0.38	Belgium	0.44	Finland	0.50
16	Finland	0.35	Finland	0.39	China	0.48
17	Austria	0.33	Austria	0.32	Belgium	0.36
18	Denmark	0.20	Denmark	0.28	Austria	0.32
19	China	0.15	China	0.19	India	0.27
20	Spain	0.15	Spain	0.17	Denmark	0.25
21	Norway	0.13	Norway	0.16	Singapore	0.24
22	South Africa	0.12	Singapore	0.14	Spain	0.19
23	Russia	0.10	Russia	0.12	Norway	0.15
24	Brazil	0.06	India	0.08	Ireland	0.11
25	Singapore	0.05	Ireland	0.08	Russia	0.10

UK = United Kingdom; USPTO = U.S. Patent and Trademark Office

NOTES: Patent applications and grants assigned to country/economy based on residence of first-named inventor. China includes Hong Kong.

SOURCES: USPTO, Number of Utility Patent Applications Filed in the United States by Country of Origin, Calendar Years 1965 to Present (1), [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl\\_yr.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/appl_yr.htm), accessed December 2006; Historic Patents by Country, State, and Year, Utility Patents, [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst\\_utilh.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_utilh.htm), accessed 15 December 2006; and National Science Foundation, Division of Science Resources Statistics, special tabulations.

## USPTO patents granted for selected regions/countries/economies: 1985–95

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
	Number										
All regions/countries/economies .....	71,661	70,860	82,952	77,924	95,537	90,365	96,511	97,444	98,342	101,676	101,419
United States.....	39,556	38,126	43,520	40,497	50,185	47,391	51,177	52,253	53,231	56,066	55,739
EU .....	15,452	15,596	18,112	16,645	19,435	17,820	18,039	17,105	16,312	16,002	16,193
Austria .....	318	357	345	337	402	393	359	371	312	289	337
Belgium.....	240	243	295	302	359	313	324	325	350	352	397
Bulgaria.....	21	21	32	23	16	27	10	5	5	4	1
Czech Republic.....	54	35	46	33	34	39	27	17	13	20	16
Denmark.....	187	182	204	151	221	158	210	193	197	207	199
Finland.....	200	210	275	232	230	304	331	361	293	312	358
France.....	2,400	2,369	2,874	2,661	3,140	2,866	3,030	3,029	2,909	2,779	2,821
Germany.....	6,718	6,856	7,884	7,352	8,352	7,614	7,680	7,309	6,893	6,731	6,600
Greece.....	7	11	4	8	10	8	13	9	7	16	7
Hungary.....	108	131	127	94	129	93	85	88	61	46	50
Ireland.....	30	26	36	37	59	49	53	50	46	48	47
Italy.....	919	995	1,183	1,076	1,297	1,259	1,209	1,271	1,285	1,215	1,078
Luxembourg.....	37	31	22	29	29	17	27	26	28	22	24
Netherlands.....	766	722	922	806	1,061	960	992	855	800	852	799
Poland.....	11	14	13	8	14	17	8	5	8	8	8
Portugal.....	4	2	5	5	11	7	8	1	2	6	3
Romania.....	3	2	5	1	0	1	1	0	2	1	3
Slovenia.....	0	0	0	0	0	0	0	0	3	6	4
Spain.....	78	97	115	126	131	130	153	133	158	141	148
Sweden.....	857	883	948	777	837	768	716	626	636	706	806
United Kingdom.....	2,494	2,407	2,777	2,585	3,100	2,794	2,803	2,430	2,302	2,236	2,481
All others.....	0	2	0	2	3	3	0	1	2	5	6
Asia.....	13,016	13,535	17,072	16,830	21,067	20,628	22,494	23,642	24,468	24,978	24,806
China.....	26	40	57	88	100	99	100	101	113	105	148
India.....	10	18	12	14	14	23	22	24	30	27	37
Japan.....	12,746	13,209	16,557	16,158	20,168	19,525	21,025	21,925	22,293	22,384	21,764
Malaysia.....	3	4	2	2	2	3	12	5	13	10	7
Philippines.....	5	1	5	4	7	4	5	7	4	1	4
Singapore.....	9	3	11	6	18	12	15	32	38	51	53
South Korea.....	41	46	84	97	159	225	405	538	779	943	1,161
Taiwan.....	174	208	343	457	591	732	906	1,001	1,189	1,443	1,620
Thailand.....	1	3	1	2	4	2	2	1	5	5	8
All others.....	1	3	0	2	4	3	2	8	4	9	4
All others.....	3,637	3,603	4,248	3,952	4,850	4,526	4,801	4,444	4,331	4,630	4,681
Share of USPTO applications	Percent distribution										
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
United States.....	55.20	53.80	52.46	51.97	52.53	52.44	53.03	53.62	54.13	55.14	54.96
EU .....	21.56	22.01	21.83	21.36	20.34	19.72	18.69	17.55	16.59	15.74	15.97

## USPTO patents granted for selected regions/countries/economies: 1985–95

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Austria .....	0.44	0.50	0.42	0.43	0.42	0.43	0.37	0.38	0.32	0.28	0.33
Belgium .....	0.33	0.34	0.36	0.39	0.38	0.35	0.34	0.33	0.36	0.35	0.39
Bulgaria .....	0.03	0.03	0.04	0.03	0.02	0.03	0.01	0.01	0.01	0.00	0.00
Czech Republic .....	0.08	0.05	0.06	0.04	0.04	0.04	0.03	0.02	0.01	0.02	0.02
Denmark .....	0.26	0.26	0.25	0.19	0.23	0.17	0.22	0.20	0.20	0.20	0.20
Finland .....	0.28	0.30	0.33	0.30	0.24	0.34	0.34	0.37	0.30	0.31	0.35
France .....	3.35	3.34	3.46	3.41	3.29	3.17	3.14	3.11	2.96	2.73	2.78
Germany .....	9.37	9.68	9.50	9.43	8.74	8.43	7.96	7.50	7.01	6.62	6.51
Greece .....	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
Hungary .....	0.15	0.18	0.15	0.12	0.14	0.10	0.09	0.09	0.06	0.05	0.05
Ireland .....	0.04	0.04	0.04	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05
Italy .....	1.28	1.40	1.43	1.38	1.36	1.39	1.25	1.30	1.31	1.19	1.06
Luxembourg .....	0.05	0.04	0.03	0.04	0.03	0.02	0.03	0.03	0.03	0.02	0.02
Netherlands .....	1.07	1.02	1.11	1.03	1.11	1.06	1.03	0.88	0.81	0.84	0.79
Poland .....	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01
Portugal .....	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00
Romania .....	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slovenia .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Spain .....	0.11	0.14	0.14	0.16	0.14	0.14	0.16	0.14	0.16	0.14	0.15
Sweden .....	1.20	1.25	1.14	1.00	0.88	0.85	0.74	0.64	0.65	0.69	0.79
United Kingdom .....	3.48	3.40	3.35	3.32	3.24	3.09	2.90	2.49	2.34	2.20	2.45
All others .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Asia .....	18.16	19.10	20.58	21.60	22.05	22.83	23.31	24.26	24.88	24.57	24.46
China .....	0.04	0.06	0.07	0.11	0.10	0.11	0.10	0.10	0.11	0.10	0.15
India .....	0.01	0.03	0.01	0.02	0.01	0.03	0.02	0.02	0.03	0.03	0.04
Japan .....	17.79	18.64	19.96	20.74	21.11	21.61	21.79	22.50	22.67	22.02	21.46
Malaysia .....	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
Philippines .....	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00
Singapore .....	0.01	0.00	0.01	0.01	0.02	0.01	0.02	0.03	0.04	0.05	0.05
South Korea .....	0.06	0.06	0.10	0.12	0.17	0.25	0.42	0.55	0.79	0.93	1.14
Taiwan .....	0.24	0.29	0.41	0.59	0.62	0.81	0.94	1.03	1.21	1.42	1.60
Thailand .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
All others .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00
All others .....	5.08	5.08	5.12	5.07	5.08	5.01	4.97	4.56	4.40	4.55	4.62

EU = European Union; USPTO = U.S. Patent and Trademark Office

NOTES: USPTO patents are utility patents, which are patents of inventions. Design, plant, and reissue patents not included. Patents granted assigned to region/country/economy based on residence of first-named inventor. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: USPTO, Historic Patents by Country, State, and Year, Utility Patents, [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst\\_utlh.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_utlh.htm), accessed 15 December 2006.

## USPTO patents granted for selected regions/countries/economies: 1996–2005

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	Number									
All regions/countries/economies .....	109,645	111,984	147,518	153,485	157,494	166,036	167,331	169,023	164,291	143,806
United States .....	61,104	61,708	80,289	83,905	85,068	87,600	86,971	87,893	84,271	74,637
EU .....	16,807	17,606	22,820	23,611	25,082	27,192	27,088	26,841	24,906	21,124
Austria .....	362	376	387	479	505	589	530	592	540	462
Belgium .....	488	515	693	648	694	718	722	622	612	519
Bulgaria .....	1	5	1	2	1	3	3	9	3	3
Czech Republic .....	13	23	22	29	32	23	31	41	31	25
Denmark .....	241	333	392	487	436	479	426	529	414	358
Finland .....	444	452	595	649	618	732	809	865	918	720
France .....	2,788	2,958	3,674	3,820	3,819	4,041	4,035	3,868	3,380	2,866
Germany .....	6,818	7,008	9,095	9,337	10,235	11,260	11,280	11,444	10,779	9,011
Greece .....	18	12	16	23	18	26	20	22	15	15
Hungary .....	43	25	50	39	36	60	48	72	48	46
Ireland .....	77	71	71	90	121	141	127	163	186	156
Italy .....	1,200	1,239	1,584	1,492	1,714	1,709	1,751	1,722	1,584	1,296
Luxembourg .....	18	22	20	22	40	33	37	35	44	41
Netherlands .....	797	808	1,226	1,247	1,241	1,332	1,391	1,325	1,273	993
Poland .....	15	11	15	19	13	16	11	17	16	23
Portugal .....	3	8	11	5	11	12	11	12	17	10
Romania .....	4	1	3	4	4	10	3	7	9	7
Slovenia .....	10	7	18	10	16	21	16	18	21	12
Spain .....	157	177	248	222	270	269	303	309	264	273
Sweden .....	854	867	1,225	1,401	1,577	1,741	1,675	1,521	1,290	1,123
United Kingdom .....	2,454	2,680	3,467	3,576	3,669	3,967	3,843	3,631	3,450	3,148
All others .....	2	8	7	10	12	10	16	17	12	17
Asia .....	26,728	27,442	37,683	38,926	39,988	43,118	45,376	46,205	47,364	41,358
China .....	134	143	232	245	298	432	522	573	715	685
India .....	35	47	85	112	131	178	249	342	363	384
Japan .....	23,053	23,179	30,840	31,104	31,295	33,224	34,858	35,515	35,348	30,341
Malaysia .....	12	17	23	30	42	39	55	50	80	88
Philippines .....	4	4	8	11	2	12	14	22	21	18
Singapore .....	88	94	120	144	218	296	410	427	449	346
South Korea .....	1,493	1,891	3,259	3,562	3,314	3,538	3,786	3,944	4,428	4,352
Taiwan .....	1,897	2,057	3,100	3,693	4,667	5,371	5,431	5,298	5,938	5,118
Thailand .....	11	5	13	20	15	24	44	25	18	16
All others .....	1	5	3	5	6	4	7	9	4	10
All others .....	5,006	5,228	6,726	7,043	7,356	8,126	7,896	8,084	7,750	6,687
Share of USPTO applications	Percent distribution									
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
United States .....	55.73	55.10	54.43	54.67	54.01	52.76	51.98	52.00	51.29	51.90
EU .....	15.33	15.72	15.47	15.38	15.93	16.38	16.19	15.88	15.16	14.69

## USPTO patents granted for selected regions/countries/economies: 1996–2005

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria .....	0.33	0.34	0.26	0.31	0.32	0.35	0.32	0.35	0.33	0.32
Belgium .....	0.45	0.46	0.47	0.42	0.44	0.43	0.43	0.37	0.37	0.36
Bulgaria .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Czech Republic .....	0.01	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02
Denmark .....	0.22	0.30	0.27	0.32	0.28	0.29	0.25	0.31	0.25	0.25
Finland .....	0.40	0.40	0.40	0.42	0.39	0.44	0.48	0.51	0.56	0.50
France.....	2.54	2.64	2.49	2.49	2.42	2.43	2.41	2.29	2.06	1.99
Germany .....	6.22	6.26	6.17	6.08	6.50	6.78	6.74	6.77	6.56	6.27
Greece .....	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Hungary .....	0.04	0.02	0.03	0.03	0.02	0.04	0.03	0.04	0.03	0.03
Ireland.....	0.07	0.06	0.05	0.06	0.08	0.08	0.08	0.10	0.11	0.11
Italy.....	1.09	1.11	1.07	0.97	1.09	1.03	1.05	1.02	0.96	0.90
Luxembourg.....	0.02	0.02	0.01	0.01	0.03	0.02	0.02	0.02	0.03	0.03
Netherlands.....	0.73	0.72	0.83	0.81	0.79	0.80	0.83	0.78	0.77	0.69
Poland.....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
Portugal .....	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Romania.....	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
Slovenia.....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Spain .....	0.14	0.16	0.17	0.14	0.17	0.16	0.18	0.18	0.16	0.19
Sweden.....	0.78	0.77	0.83	0.91	1.00	1.05	1.00	0.90	0.79	0.78
United Kingdom.....	2.24	2.39	2.35	2.33	2.33	2.39	2.30	2.15	2.10	2.19
All others.....	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Asia.....	24.38	24.51	25.54	25.36	25.39	25.97	27.12	27.34	28.83	28.76
China .....	0.12	0.13	0.16	0.16	0.19	0.26	0.31	0.34	0.44	0.48
India.....	0.03	0.04	0.06	0.07	0.08	0.11	0.15	0.20	0.22	0.27
Japan.....	21.03	20.70	20.91	20.27	19.87	20.01	20.83	21.01	21.52	21.10
Malaysia .....	0.01	0.02	0.02	0.02	0.03	0.02	0.03	0.03	0.05	0.06
Philippines .....	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01
Singapore.....	0.08	0.08	0.08	0.09	0.14	0.18	0.25	0.25	0.27	0.24
South Korea .....	1.36	1.69	2.21	2.32	2.10	2.13	2.26	2.33	2.70	3.03
Taiwan .....	1.73	1.84	2.10	2.41	2.96	3.23	3.25	3.13	3.61	3.56
Thailand.....	0.01	0.00	0.01	0.01	0.01	0.01	0.03	0.01	0.01	0.01
All others.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
All others.....	4.57	4.67	4.56	4.59	4.67	4.89	4.72	4.78	4.72	4.65

EU = European Union; USPTO = U.S. Patent and Trademark Office

NOTES: USPTO patents are utility patents, which are patents of inventions. Design, plant, and reissue patents not included. Patents granted assigned to region/country/economy based on residence of first-named inventor. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: USPTO, Historic Patents by Country, State, and Year, Utility Patents, [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst\\_utilh.htm](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_utilh.htm), accessed 15 December 2006.

## EPO patent applications for selected regions/countries/economies: 1985–95

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
All regions/countries/economies	39,376	43,084	45,815	52,184	57,721	63,901	59,254	60,582	60,026	61,918	65,129
United States	10,757	11,695	12,110	13,463	15,018	17,143	16,876	17,604	17,720	18,383	19,518
EU	19,326	21,630	22,837	25,539	27,726	29,430	25,846	27,147	27,046	27,964	29,792
Austria	511	588	533	603	649	671	643	655	615	647	688
Belgium	414	394	461	499	534	627	492	638	729	765	820
Bulgaria	23	18	11	23	14	11	3	2	8	5	6
Czech Republic	13	9	17	49	64	39	24	27	30	21	24
Denmark	216	228	228	240	306	324	336	362	392	432	478
Finland	168	174	215	275	319	402	424	419	519	596	689
France	3,242	3,727	3,823	4,350	4,773	5,102	4,851	4,973	4,673	4,779	4,977
Germany	8,287	9,348	9,851	11,210	12,133	12,756	10,531	11,253	11,366	11,690	12,544
Greece	10	6	18	15	21	25	24	30	27	23	27
Hungary	118	109	103	109	91	91	66	59	50	47	46
Ireland	37	41	48	58	50	67	61	65	75	70	89
Italy	1,211	1,455	1,655	1,968	2,043	2,404	2,133	2,434	2,250	2,300	2,372
Luxembourg	20	28	26	16	30	25	33	32	21	33	25
Netherlands	1,095	1,164	1,276	1,463	1,577	1,699	1,466	1,464	1,472	1,484	1,523
Poland	17	19	30	26	23	18	16	19	13	18	20
Portugal	6	4	9	11	9	5	8	13	11	18	15
Romania	2	1	0	0	0	2	3	4	3	4	8
Slovenia	0	0	0	1	2	5	3	3	16	24	18
Spain	88	121	162	183	206	252	280	292	300	380	386
Sweden	919	958	866	908	887	962	906	958	1,037	1,127	1,347
United Kingdom	2,930	3,236	3,506	3,533	3,996	3,943	3,539	3,437	3,421	3,490	3,681
Asia	6,448	6,762	7,769	9,777	11,463	13,510	13,207	12,229	11,461	11,733	11,749
China	15	67	49	46	69	45	58	61	68	77	67
India	14	18	12	13	27	25	20	23	24	22	26
Japan	6,358	6,606	7,622	9,610	11,233	13,220	12,868	11,800	10,961	11,138	11,121
Malaysia	5	3	4	5	4	7	4	6	9	5	9
Philippines	1	1	4	1	1	2	1	3	0	5	1
Singapore	9	4	6	6	8	24	7	34	45	40	36
South Korea	18	17	13	20	34	64	126	170	220	327	386
Taiwan	24	43	56	74	86	118	120	124	126	114	94
Thailand	3	2	1	2	0	1	1	5	2	4	7
All others	1	1	3	1	1	3	1	2	6	3	2
All others	2,846	2,997	3,099	3,406	3,514	3,818	3,325	3,602	3,798	3,839	4,070
Argentina	427	463	388	367	341	364	358	409	386	428	457
Australia	383	403	452	552	553	637	516	585	578	650	735
Brazil	3	3	3	1	3	5	7	10	5	7	11
Canada	3	2	11	7	11	14	14	14	9	15	12
Chile	34	44	39	31	42	40	20	50	66	53	72
Iceland	122	121	120	114	152	174	133	183	195	161	192
Israel	1,459	1,452	1,497	1,668	1,732	1,874	1,651	1,665	1,757	1,673	1,719

**EPO patent applications for selected regions/countries/economies: 1985–95**

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Mexico .....	4	2	2	1	3	5	4	3	1	4	3
New Zealand .....	5	6	8	7	7	12	18	14	17	16	15
Norway.....	19	31	8	21	19	20	42	30	47	52	42
Russian Federation.....	5	1	1	4	NA	4	6	3	0	1	3
South Africa.....	108	104	152	148	173	229	208	246	276	304	367
Switzerland .....	21	97	113	200	177	87	70	91	133	130	132
Turkey .....	76	70	96	71	84	92	58	64	118	103	66
All others.....	179	197	208	215	216	263	220	235	211	241	243

NA = not available

EPO = European Patent Office; EU = European Union

NOTES: Patent applications assigned to year based on application date to EPO. Patent applications on fractional-count basis. For patent applications with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

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## EPO patent applications for selected regions/countries/economies: 1996–2004

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004
All regions/countries/economies	71,111	79,956	90,144	97,404	107,714	112,973	110,583	113,003	113,911
United States	21,722	22,992	25,694	27,760	29,918	29,959	29,298	30,826	30,126
EU	31,588	36,693	41,915	45,234	49,642	51,437	51,125	50,571	50,223
Austria	679	767	997	981	1,078	1,187	1,220	1,252	1,309
Belgium	795	978	1,210	1,212	1,314	1,258	1,215	1,260	1,291
Bulgaria	5	5	9	8	10	5	19	21	15
Czech Republic	21	34	54	57	69	65	70	94	109
Denmark	503	622	662	812	853	908	907	934	927
Finland	722	852	1,049	1,192	1,390	1,452	1,369	1,195	1,177
France	5,173	5,727	6,418	6,765	7,238	7,270	7,332	7,500	7,657
Germany	13,173	15,694	17,982	19,697	21,491	22,144	21,823	21,550	21,437
Greece	30	38	58	60	48	62	74	82	72
Hungary	59	58	73	69	114	112	122	102	123
Ireland	98	120	136	180	247	206	231	209	209
Italy	2,621	2,932	3,279	3,412	3,792	3,991	4,097	4,303	4,106
Luxembourg	38	48	53	72	63	77	80	79	98
Netherlands	1,804	2,180	2,453	2,644	3,054	3,415	3,892	3,464	3,355
Poland	12	28	35	24	37	49	56	82	123
Portugal	15	20	21	38	31	45	31	46	53
Romania	7	2	8	6	7	8	12	10	13
Slovenia	23	22	18	37	37	51	52	85	75
Spain	378	483	609	683	743	837	915	903	879
Sweden	1,541	1,829	2,050	2,086	2,257	2,292	2,137	2,063	1,935
United Kingdom	3,871	4,237	4,709	5,171	5,727	5,960	5,428	5,285	5,194
All others	19	20	30	28	41	44	43	52	67
Asia	13,442	15,199	16,375	17,753	20,489	23,504	22,319	23,616	25,238
China	102	103	135	166	269	368	435	673	777
India	42	66	88	118	155	203	382	418	343
Japan	12,660	14,292	15,207	16,121	18,543	21,063	19,175	19,526	20,330
Malaysia	441	495	658	967	1,086	1,330	1,640	2,243	3,000
Philippines	7	12	11	11	23	34	36	42	46
Singapore	3	2	5	7	4	13	4	4	7
South Korea	53	80	95	122	140	147	188	180	195
Taiwan	125	143	161	222	238	320	440	514	527
Thailand	5	3	9	9	20	18	14	12	8
All others	2	3	6	9	11	7	6	5	5
Other	4,359	5,071	6,160	6,658	7,666	8,073	7,842	7,989	8,324
Argentina	503	458	611	675	996	943	940	938	982
Australia	817	941	1,226	1,368	1,587	1,620	1,606	1,761	1,877
Brazil	9	14	19	22	34	34	22	38	29
Canada	25	26	40	32	39	35	44	55	51
Chile	67	79	114	101	147	159	141	175	188
Iceland	241	276	312	330	366	394	366	354	324

**EPO patent applications for selected regions/countries/economies: 1996–2004**

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004
Israel .....	1,774	2,143	2,367	2,396	2,582	2,734	2,647	2,656	2,740
Mexico .....	5	18	15	32	25	46	56	72	71
New Zealand .....	19	34	30	42	46	44	31	40	44
Norway.....	60	56	78	81	129	112	142	146	154
Russian Federation.....	7	9	11	4	4	11	12	17	14
South Africa.....	367	473	657	757	814	987	899	841	946
Switzerland .....	156	166	175	223	213	223	221	189	184
Turkey .....	79	89	138	156	131	146	124	121	129
All others.....	230	289	366	437	552	586	589	583	591

EPO = European Patent Office; EU = European Union

NOTES: Patent applications assigned to year based on application date to EPO. Patent applications on fractional-count basis. For patent applications with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

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## EPO patents granted for selected regions/countries/economies: 1996–2006

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Number										
All regions/countries/economies .....	40,084	39,658	36,733	35,367	27,526	34,710	47,380	59,988	58,727	53,255	59,025
United States .....	9,833	9,726	9,079	8,848	7,074	8,218	11,200	14,299	13,605	12,466	13,355
EU .....	18,244	18,492	17,618	17,030	12,996	17,597	24,584	30,813	30,186	27,072	29,471
Austria .....	436	434	460	375	264	438	583	762	789	686	761
Belgium .....	401	449	463	429	321	441	560	700	699	607	667
Bulgaria .....	4	2	2	0	3	3	3	6	2	7	5
Czech Republic .....	18	15	18	9	7	15	20	29	38	41	34
Denmark .....	220	291	228	235	199	253	402	521	504	455	485
Finland .....	307	330	315	360	272	349	474	653	803	669	740
France .....	3,284	3,343	3,082	2,968	2,170	2,849	3,951	4,958	4,426	3,781	4,289
Germany .....	8,218	7,876	7,682	7,554	5,585	8,294	11,385	13,653	13,763	12,802	13,802
Greece .....	9	11	10	14	8	18	15	27	31	18	30
Hungary .....	31	27	22	26	22	30	56	73	56	43	54
Ireland .....	42	44	50	40	33	45	69	108	95	88	87
Italy .....	1,381	1,533	1,333	1,269	1,025	1,302	1,840	2,471	2,447	2,073	2,395
Luxembourg .....	14	22	32	9	17	34	36	47	48	38	53
Netherlands .....	977	1,004	938	876	749	875	1,206	1,561	1,485	1,353	1,554
Poland .....	4	12	13	13	10	11	15	21	20	21	26
Portugal .....	5	6	11	8	5	7	8	30	19	14	17
Romania .....	1	4	1	2	1	2	4	3	1	8	1
Slovenia .....	6	14	12	9	6	14	18	26	32	33	31
Spain .....	151	158	156	158	155	203	234	408	457	424	435
Sweden .....	652	686	655	646	556	729	1,076	1,499	1,423	1,217	1,282
United Kingdom .....	2,079	2,225	2,130	2,020	1,582	1,677	2,615	3,238	3,031	2,672	2,696
All others .....	6	7	7	8	6	7	14	21	17	22	25
Asia .....	9,804	9,217	7,966	7,430	5,740	6,868	8,674	10,909	11,264	10,355	12,449
China .....	33	37	25	23	29	23	52	74	90	103	138
India .....	11	15	10	13	12	16	29	65	94	98	122
Japan .....	9,626	8,984	7,732	7,145	5,497	6,596	8,264	10,266	10,450	9,490	11,229
Malaysia .....	1	6	4	3	2	3	2	8	5	9	14
Philippines .....	0	0	2	2	0	2	2	3	1	2	1
Singapore .....	19	19	22	26	15	31	28	61	52	46	59
South Korea .....	73	113	127	170	163	165	247	355	450	478	725
Taiwan .....	40	41	42	47	22	28	49	70	115	125	151
Thailand .....	2	2	2	1	0	5	2	7	7	6	10
All others .....	3	2	0	2	2	0	1	4	3	2	3
All others .....	2,203	2,223	2,070	2,059	1,716	2,027	2,922	3,966	3,673	3,361	3,750
Share of EPO patents granted	Percent distribution										
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
United States .....	24.53	24.52	24.72	25.02	25.70	23.68	23.64	23.84	23.17	23.41	22.63
EU .....	45.51	46.63	47.96	48.15	47.21	50.70	51.89	51.37	51.40	50.83	49.93

## EPO patents granted for selected regions/countries/economies: 1996–2006

Region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Austria .....	1.09	1.09	1.25	1.06	0.96	1.26	1.23	1.27	1.34	1.29	1.29
Belgium .....	1.00	1.13	1.26	1.21	1.17	1.27	1.18	1.17	1.19	1.14	1.13
Bulgaria .....	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.01
Czech Republic .....	0.05	0.04	0.05	0.03	0.03	0.04	0.04	0.05	0.07	0.08	0.06
Denmark .....	0.55	0.73	0.62	0.66	0.72	0.73	0.85	0.87	0.86	0.86	0.82
Finland .....	0.77	0.83	0.86	1.02	0.99	1.01	1.00	1.09	1.37	1.26	1.25
France.....	8.19	8.43	8.39	8.39	7.88	8.21	8.34	8.27	7.54	7.10	7.27
Germany .....	20.50	19.86	20.91	21.36	20.29	23.89	24.03	22.76	23.44	24.04	23.38
Greece .....	0.02	0.03	0.03	0.04	0.03	0.05	0.03	0.04	0.05	0.03	0.05
Hungary .....	0.08	0.07	0.06	0.07	0.08	0.09	0.12	0.12	0.10	0.08	0.09
Ireland.....	0.10	0.11	0.14	0.11	0.12	0.13	0.15	0.18	0.16	0.17	0.15
Italy.....	3.45	3.86	3.63	3.59	3.72	3.75	3.88	4.12	4.17	3.89	4.06
Luxembourg.....	0.04	0.06	0.09	0.03	0.06	0.10	0.08	0.08	0.08	0.07	0.09
Netherlands.....	2.44	2.53	2.55	2.48	2.72	2.52	2.54	2.60	2.53	2.54	2.63
Poland.....	0.01	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.04	0.04
Portugal .....	0.01	0.02	0.03	0.02	0.02	0.02	0.02	0.05	0.03	0.03	0.03
Romania.....	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00
Slovenia.....	0.01	0.03	0.03	0.03	0.02	0.04	0.04	0.04	0.05	0.06	0.05
Spain .....	0.38	0.40	0.42	0.45	0.56	0.58	0.49	0.68	0.78	0.80	0.74
Sweden.....	1.63	1.73	1.78	1.83	2.02	2.10	2.27	2.50	2.42	2.28	2.17
United Kingdom.....	5.19	5.61	5.80	5.71	5.75	4.83	5.52	5.40	5.16	5.02	4.57
All others.....	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.03	0.04	0.04
Asia.....	24.46	23.24	21.69	21.01	20.85	19.79	18.31	18.19	19.18	19.45	21.09
China .....	0.08	0.09	0.07	0.07	0.11	0.07	0.11	0.12	0.15	0.19	0.23
India.....	0.03	0.04	0.03	0.04	0.04	0.05	0.06	0.11	0.16	0.18	0.21
Japan.....	24.01	22.65	21.05	20.20	19.97	19.00	17.44	17.11	17.79	17.82	19.02
Malaysia .....	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.02
Philippines .....	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Singapore.....	0.05	0.05	0.06	0.07	0.05	0.09	0.06	0.10	0.09	0.09	0.10
South Korea .....	0.18	0.29	0.34	0.48	0.59	0.48	0.52	0.59	0.77	0.90	1.23
Taiwan .....	0.10	0.10	0.11	0.13	0.08	0.08	0.10	0.12	0.20	0.23	0.26
Thailand.....	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.02
All others.....	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.01
All others.....	5.50	5.61	5.64	5.82	6.24	5.84	6.17	6.61	6.25	6.31	6.35

EPO = European Patent Office; EU = European Union

NOTES: Patent applications assigned to year based on application date to EPO. Patent applications on fractional-count basis. For patent applications with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

## EPO patents granted for selected regions/countries/economies: 1985–95

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
	Number										
All regions/countries/economies .....	15,129	18,490	17,154	19,760	22,581	24,774	26,664	30,433	36,698	42,025	41,635
United States .....	3,313	4,453	3,912	4,323	5,086	5,596	5,850	6,822	8,302	9,439	10,016
EU .....	8,729	10,197	9,487	11,021	12,343	13,293	14,193	16,008	18,671	20,475	19,289
Austria .....	175	241	219	273	291	384	358	403	486	585	480
Belgium .....	141	188	152	189	224	244	277	312	325	365	359
Bulgaria .....	6	5	10	10	16	15	3	4	1	NA	1
Czech Republic .....	0	5	5	1	6	4	4	8	11	19	17
Denmark .....	67	88	84	90	109	102	112	162	227	299	203
Finland .....	41	61	55	65	81	125	122	122	165	241	297
France .....	1,918	2,057	2,005	2,332	2,344	2,529	2,632	3,051	3,440	3,566	3,590
Germany .....	4,005	4,604	4,202	5,073	5,736	6,054	6,582	7,391	8,784	9,654	8,878
Greece .....	3	1	5	4	NA	6	5	2	6	13	7
Hungary .....	43	66	55	68	59	62	32	49	43	48	47
Ireland .....	8	10	14	7	12	21	27	28	28	31	39
Italy .....	345	430	435	526	688	775	931	1,112	1,317	1,445	1,354
Luxembourg .....	16	23	18	32	18	14	15	23	17	10	23
Netherlands .....	503	613	550	602	755	815	829	884	1,015	1,125	1,098
Poland .....	7	6	14	8	12	4	9	10	8	15	7
Portugal .....	2	NA	3	1	2	3	3	4	4	3	3
Romania .....	4	4	1	0	1	0	0	0	0	1	0
Slovenia .....	0	0	0	0	0	0	0	0	3	4	1
Spain .....	21	43	35	30	55	61	63	68	96	123	140
Sweden .....	342	443	447	435	515	547	527	575	639	665	648
United Kingdom .....	1,083	1,309	1,178	1,276	1,419	1,529	1,662	1,799	2,056	2,261	2,095
All others .....	0	0	0	0	0	1	1	0	0	2	2
Asia .....	2,010	2,638	2,585	3,065	3,717	4,306	4,907	5,717	7,668	9,777	10,073
China .....	0	6	2	8	13	12	9	19	33	34	32
India .....	9	5	3	5	5	5	5	5	12	6	11
Japan .....	1,989	2,615	2,574	3,036	3,682	4,262	4,870	5,658	7,577	9,666	9,926
Malaysia .....	0	0	1	1	2	0	1	0	1	4	4
Philippines .....	0	0	0	0	0	0	1	1	0	0	0
Singapore .....	2	3	0	3	2	4	3	4	5	6	9
South Korea .....	1	3	1	3	3	6	3	11	11	27	42
Taiwan .....	9	6	5	8	11	17	17	19	30	35	46
Thailand .....	0	0	NA	1	0	0	0	1	0	0	3
All others .....	0	0	1	1	0	0	1	0	0	2	3
All others .....	1,078	1,202	1,170	1,351	1,436	1,579	1,713	1,885	2,056	2,334	2,257
	Percent distribution										
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
United States .....	21.90	24.08	22.80	21.88	22.52	22.59	21.94	22.42	22.62	22.46	24.06
EU .....	57.70	55.15	55.31	55.77	54.66	53.66	53.23	52.60	50.88	48.72	46.33

## EPO patents granted for selected regions/countries/economies: 1985–95

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Austria .....	1.16	1.30	1.27	1.38	1.29	1.55	1.34	1.33	1.32	1.39	1.15
Belgium .....	0.93	1.02	0.89	0.96	0.99	0.99	1.04	1.03	0.89	0.87	0.86
Bulgaria .....	0.04	0.03	0.06	0.05	0.07	0.06	0.01	0.01	0.00	NA	0.00
Czech Republic .....	0.00	0.03	0.03	0.01	0.03	0.01	0.02	0.03	0.03	0.04	0.04
Denmark .....	0.44	0.48	0.49	0.46	0.48	0.41	0.42	0.53	0.62	0.71	0.49
Finland .....	0.27	0.33	0.32	0.33	0.36	0.50	0.46	0.40	0.45	0.57	0.71
France.....	12.68	11.13	11.69	11.80	10.38	10.21	9.87	10.03	9.38	8.48	8.62
Germany .....	26.47	24.90	24.50	25.67	25.40	24.44	24.68	24.29	23.94	22.97	21.32
Greece .....	0.02	0.01	0.03	0.02	NA	0.02	0.02	0.01	0.02	0.03	0.02
Hungary .....	0.28	0.35	0.32	0.34	0.26	0.25	0.12	0.16	0.12	0.12	0.11
Ireland.....	0.05	0.05	0.08	0.03	0.05	0.08	0.10	0.09	0.08	0.07	0.09
Italy.....	2.28	2.32	2.54	2.66	3.05	3.13	3.49	3.65	3.59	3.44	3.25
Luxembourg.....	0.10	0.12	0.11	0.16	0.08	0.05	0.06	0.08	0.05	0.02	0.06
Netherlands.....	3.32	3.32	3.20	3.05	3.34	3.29	3.11	2.91	2.77	2.68	2.64
Poland.....	0.05	0.03	0.08	0.04	0.05	0.02	0.03	0.03	0.02	0.04	0.02
Portugal .....	0.01	NA	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Romania.....	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slovenia.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Spain .....	0.14	0.23	0.21	0.15	0.24	0.25	0.23	0.22	0.26	0.29	0.34
Sweden.....	2.26	2.39	2.61	2.20	2.28	2.21	1.98	1.89	1.74	1.58	1.56
United Kingdom.....	7.16	7.08	6.87	6.46	6.28	6.17	6.23	5.91	5.60	5.38	5.03
All others.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asia.....	13.29	14.27	15.07	15.51	16.46	17.38	18.40	18.79	20.90	23.26	24.19
China .....	0.00	0.03	0.01	0.04	0.06	0.05	0.03	0.06	0.09	0.08	0.08
India.....	0.06	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.01	0.03
Japan.....	13.15	14.14	15.00	15.37	16.30	17.20	18.26	18.59	20.65	23.00	23.84
Malaysia .....	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Philippines .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Singapore.....	0.01	0.02	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.02
South Korea .....	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.04	0.03	0.06	0.10
Taiwan .....	0.06	0.03	0.03	0.04	0.05	0.07	0.06	0.06	0.08	0.08	0.11
Thailand.....	0.00	0.00	NA	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
All others.....	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
All others.....	7.12	6.50	6.82	6.84	6.36	6.37	6.43	6.19	5.60	5.55	5.42

NA = not available

EPO = European Patent Office; EU = European Union

NOTES: Patent applications assigned to year based on application date to EPO. Patent applications on fractional-count basis. For patent applications with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

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## ICT patents granted by USPTO and EPO for selected regions/countries/economies: 1985–95

Agency and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>USPTO</b>											
All regions/countries/economies .....	14,653	15,607	19,611	18,285	23,288	21,061	23,472	24,229	25,830	28,686	30,397
United States.....	7,604	7,945	9,503	8,616	10,962	9,962	11,139	11,678	12,395	14,101	15,048
EU .....	2,524	2,646	3,364	3,123	3,725	3,142	3,273	2,845	2,932	3,151	3,375
Austria .....	31	41	40	46	46	37	52	50	50	45	41
Belgium .....	41	33	28	34	42	29	44	40	62	52	57
Bulgaria .....	5	6	2	2	4	5	2	1	0	0	0
Czech Republic .....	5	1	2	3	2	5	2	1	2	4	1
Denmark.....	18	25	22	19	31	25	21	22	23	27	21
Finland.....	18	30	48	35	25	34	52	53	61	93	103
France.....	514	515	641	588	725	616	677	625	665	654	708
Germany.....	972	930	1,209	1,196	1,375	1,130	1,182	978	997	1,068	1,109
Greece .....	1	1	1	1	1	1	2	2	2	3	2
Hungary.....	12	23	14	9	6	9	6	3	2	2	5
Ireland.....	7	5	10	12	13	13	14	14	13	12	23
Italy.....	111	132	192	162	178	181	148	169	170	164	156
Luxembourg.....	3	4	1	2	0	1	4	4	1	0	2
Netherlands.....	222	239	343	267	347	310	309	226	226	284	304
Poland.....	3	5	2	2	3	5	2	1	1	2	1
Portugal .....	0	0	0	0	1	0	1	1	0	0	1
Romania.....	0	0	0	0	0	0	0	0	0	1	2
Slovenia.....	0	0	0	0	0	0	0	0	1	0	1
Spain .....	3	4	6	8	9	6	9	10	23	18	15
Sweden.....	111	105	126	113	137	90	76	93	107	138	157
United Kingdom.....	448	549	678	624	782	647	672	551	525	585	668
All others.....	0	0	0	0	0	0	0	0	0	1	1
Asia.....	3,996	4,493	6,115	5,933	7,843	7,270	8,240	9,001	9,786	10,586	11,105
China .....	4	5	11	14	16	21	16	21	26	18	33
India.....	1	1	1	2	0	3	3	6	1	4	9
Japan.....	3,970	4,464	6,055	5,858	7,701	7,071	7,894	8,545	9,115	9,713	9,978
Malaysia .....	0	0	0	0	0	0	5	1	8	4	3
Philippines .....	0	0	0	0	0	0	0	0	0	0	1
Singapore.....	1	0	2	0	4	5	3	12	22	26	24
South Korea .....	5	5	15	23	57	88	214	293	440	598	696
Taiwan .....	15	18	31	36	63	81	103	123	174	221	362
Thailand.....	0	0	0	1	1	0	2	0	0	0	1
All others.....	1	0	0	0	0	0	0	1	0	1	0
All others.....	530	523	628	613	758	687	820	704	716	849	869
<b>EPO</b>											
All regions/countries/economies .....	3,069	3,599	3,787	4,213	4,986	5,632	6,273	6,947	8,643	10,524	11,169
United States.....	787	984	964	1,117	1,365	1,533	1,672	1,884	2,339	2,583	2,904
EU .....	1,553	1,638	1,793	1,979	2,151	2,447	2,660	2,829	3,328	3,931	3,784
Austria .....	6	20	18	34	32	25	36	38	39	70	48

## ICT patents granted by USPTO and EPO for selected regions/countries/economies: 1985–95

Agency and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Belgium .....	23	28	17	19	14	31	30	34	34	58	54
Bulgaria .....	0	2	0	1	1	3	0	0	0	0	0
Czech Republic .....	0	2	1	0	1	0	0	0	0	1	1
Denmark .....	6	16	16	8	9	12	15	19	29	44	24
Finland .....	4	8	5	9	12	12	11	8	19	32	68
France .....	437	392	484	481	493	595	588	707	754	826	888
Germany .....	667	662	724	870	912	998	1,138	1,196	1,372	1,688	1,493
Greece .....	1	0	0	1	0	1	2	0	1	2	0
Hungary .....	6	14	15	11	7	7	1	2	4	1	4
Ireland .....	1	1	3	0	3	4	3	5	6	2	8
Italy .....	44	44	53	58	84	83	102	128	171	181	218
Luxembourg .....	2	0	0	1	1	1	2	2	1	1	2
Netherlands .....	124	168	165	155	222	268	245	238	289	345	337
Poland .....	0	1	0	1	4	2	1	2	1	2	0
Portugal .....	0	0	0	0	0	0	0	1	0	2	1
Romania .....	0	1	0	0	0	0	0	0	0	0	0
Slovenia .....	0	0	0	0	0	0	0	0	0	0	0
Spain .....	0	0	2	0	2	3	6	2	6	7	21
Sweden .....	53	74	49	56	57	68	79	64	80	118	108
United Kingdom .....	178	206	242	277	297	335	402	384	521	552	509
All others .....	0	0	0	0	0	0	0	0	0	0	0
Asia .....	569	852	866	980	1,259	1,431	1,709	1,969	2,685	3,634	4,109
China .....	0	1	1	0	1	1	2	3	4	2	5
India .....	0	0	0	0	0	0	0	0	1	0	1
Japan .....	567	849	864	979	1,258	1,426	1,704	1,962	2,674	3,620	4,076
Malaysia .....	0	0	0	0	0	0	1	0	0	0	1
Philippines .....	0	0	0	0	0	0	0	0	0	0	0
Singapore .....	0	0	0	0	0	3	1	1	2	0	2
South Korea .....	0	2	0	0	0	0	0	2	2	5	17
Taiwan .....	2	1	1	0	0	1	1	1	3	5	6
Thailand .....	0	0	0	0	0	0	0	0	0	0	0
All others .....	0	0	0	0	0	0	0	0	0	0	0
All others .....	160	124	163	137	211	221	232	265	291	377	373

EPO = European Patent Office; EU = European Union; ICT = information and communications technologies; USPTO = U.S. Patent and Trademark Office

NOTES: USPTO and EPO patents on fractional-count basis. For patents with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.



## ICT patents granted by USPTO and EPO for selected regions/countries/economies: 1996–2006

Agency and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>USPTO</b>											
All regions/countries/economies .....	34,603	34,335	50,396	51,258	55,069	59,757	63,152	67,562	71,319	65,614	77,982
United States.....	17,302	17,362	25,714	26,419	28,506	30,797	32,067	34,357	36,003	33,165	39,281
EU .....	3,737	3,537	5,095	5,117	5,829	6,501	7,128	7,663	7,841	7,277	8,415
Austria .....	36	45	61	67	88	86	82	142	141	123	151
Belgium .....	89	82	139	124	129	144	130	153	175	146	176
Bulgaria .....	0	0	0	1	0	0	2	0	1	2	4
Czech Republic .....	0	3	2	5	4	5	15	13	9	13	12
Denmark.....	31	25	29	68	60	54	82	110	121	105	141
Finland.....	134	130	217	261	277	310	384	450	512	415	553
France.....	749	692	905	885	928	981	1,072	1,092	1,127	1,054	1,241
Germany .....	1,150	1,088	1,598	1,566	1,922	2,209	2,452	2,849	2,874	2,756	3,030
Greece .....	5	2	4	4	4	5	3	6	3	5	8
Hungary .....	4	3	9	8	4	9	8	23	9	14	19
Ireland.....	26	31	27	29	36	65	55	77	96	69	98
Italy.....	207	235	330	284	328	407	401	411	370	340	394
Luxembourg.....	0	0	0	1	2	3	4	3	3	4	0
Netherlands.....	314	268	438	397	388	407	490	498	501	386	517
Poland.....	5	2	3	3	5	2	4	5	8	10	11
Portugal .....	1	3	1	2	3	4	2	0	2	4	5
Romania.....	1	1	0	0	0	2	1	2	4	4	7
Slovenia.....	3	2	1	0	3	5	6	0	1	2	4
Spain .....	19	19	35	30	57	54	64	77	64	77	78
Sweden.....	238	212	315	399	524	544	580	498	425	426	467
United Kingdom.....	725	696	979	983	1,063	1,204	1,287	1,249	1,392	1,316	1,486
All others.....	0	1	3	2	3	2	4	5	3	8	14
Asia.....	12,518	12,387	18,029	18,146	18,998	20,402	21,774	23,019	24,770	22,635	26,988
China .....	33	27	50	46	62	79	100	132	197	254	372
India.....	11	10	15	16	23	37	50	95	117	168	219
Japan.....	11,062	10,578	14,888	14,540	14,791	15,584	16,847	17,890	18,776	16,724	19,568
Malaysia .....	0	6	3	9	16	18	27	23	39	59	74
Philippines .....	1	0	2	5	4	4	6	15	19	15	14
Singapore.....	39	63	80	92	146	216	317	313	332	248	263
South Korea .....	888	1,077	1,954	2,110	2,133	2,295	2,360	2,462	2,806	2,854	3,722
Taiwan .....	480	623	1,033	1,325	1,818	2,165	2,050	2,080	2,477	2,309	2,747
Thailand.....	4	1	3	2	5	3	17	10	5	3	7
All others.....	0	1	1	2	1	1	1	1	2	0	2
All others.....	1,046	1,049	1,558	1,576	1,736	2,057	2,184	2,524	2,704	2,537	3,297
<b>EPO</b>											
All regions/countries/economies .....	11,265	11,133	10,278	9,803	7,527	9,594	12,796	15,149	14,237	14,507	17,256
United States.....	3,070	3,055	2,876	2,788	2,306	2,746	3,603	4,297	3,784	3,692	4,397
EU .....	3,474	3,562	3,551	3,348	2,497	3,562	5,031	6,047	5,883	6,245	6,923
Austria .....	50	50	52	50	36	60	89	104	99	108	114

## ICT patents granted by USPTO and EPO for selected regions/countries/economies: 1996–2006

Agency and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium .....	57	80	88	74	56	85	83	88	121	133	140
Bulgaria .....	0	0	0	0	0	1	0	1	0	1	1
Czech Republic .....	0	2	2	1	0	2	1	6	3	5	3
Denmark .....	27	34	24	24	20	38	61	73	73	87	86
Finland .....	71	100	85	104	85	123	160	244	339	355	372
France .....	766	732	739	627	474	632	830	1,052	919	881	1,047
Germany .....	1,340	1,298	1,313	1,253	880	1,487	2,175	2,410	2,448	2,612	2,841
Greece .....	0	1	0	2	2	0	2	4	2	3	1
Hungary .....	1	2	3	4	4	4	3	5	6	7	11
Ireland .....	9	10	13	14	10	11	14	19	18	27	23
Italy .....	182	226	208	211	147	216	247	345	291	298	327
Luxembourg .....	2	3	3	1	1	0	3	3	9	6	3
Netherlands .....	314	351	310	269	244	270	323	436	413	489	645
Poland .....	0	4	0	3	0	1	3	1	3	5	4
Portugal .....	0	1	1	2	0	0	1	1	0	1	1
Romania .....	0	2	0	0	1	1	0	0	0	0	0
Slovenia .....	4	4	3	1	0	2	3	4	5	6	3
Spain .....	18	15	11	18	10	28	29	39	47	76	70
Sweden .....	97	118	107	106	96	138	237	295	321	377	425
United Kingdom .....	536	532	589	583	430	462	764	913	762	764	795
All others .....	0	0	1	2	0	1	3	3	2	2	10
Asia .....	4,344	4,126	3,484	3,288	2,434	2,906	3,600	4,071	3,869	3,873	5,033
China .....	4	2	3	4	5	3	5	10	16	25	44
India .....	2	0	2	2	1	0	1	8	9	10	16
Japan .....	4,291	4,062	3,400	3,170	2,342	2,812	3,465	3,867	3,582	3,545	4,515
Malaysia .....	0	2	1	1	0	1	1	0	1	3	4
Philippines .....	0	0	0	0	0	0	0	0	0	0	0
Singapore .....	9	8	12	9	3	16	16	32	29	23	33
South Korea .....	32	47	61	88	77	68	98	134	199	238	380
Taiwan .....	6	5	6	13	6	6	15	19	32	29	40
Thailand .....	0	0	1	0	0	0	0	0	1	0	1
All others .....	0	0	0	1	0	0	0	0	0	0	0
All others .....	378	391	367	379	291	381	562	734	702	697	903

EPO = European Patent Office; EU = European Union; ICT = information and communications technologies; USPTO = U.S. Patent and Trademark Office

NOTES: USPTO and EPO patents on fractional-count basis. For patents with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

Appendix table 6-47

**Activity index of ICT patents granted by USPTO and EPO for selected regions/countries/economies: Selected years, 1993–2006**

Agency and region/country/economy	1993	1995	1997	1999	2001	2003	2005	2006
<b>USPTO</b>								
United States.....	0.89	0.90	0.92	0.95	0.98	0.98	0.98	0.98
EU.....	0.68	0.69	0.65	0.64	0.66	0.71	0.75	0.76
Austria.....	0.60	0.40	0.39	0.41	0.41	0.60	0.60	0.60
Belgium.....	0.66	0.47	0.52	0.56	0.54	0.60	0.61	0.62
Czech Republic.....	0.50	0.11	0.39	0.53	0.58	0.70	0.83	0.73
Denmark.....	0.44	0.36	0.25	0.42	0.31	0.51	0.62	0.70
Finland.....	0.79	0.96	0.93	1.20	1.16	1.30	1.25	1.31
France.....	0.87	0.84	0.76	0.69	0.67	0.70	0.80	0.79
Germany.....	0.55	0.56	0.51	0.50	0.54	0.62	0.67	0.67
Greece.....	1.32	0.59	0.56	0.51	0.46	0.69	0.71	0.76
Hungary.....	0.12	0.30	0.31	0.55	0.42	0.76	0.63	0.79
Ireland.....	0.94	1.44	1.36	0.89	1.29	1.17	0.96	1.19
Italy.....	0.50	0.48	0.61	0.56	0.65	0.60	0.57	0.59
Netherlands.....	1.07	1.25	1.06	0.94	0.85	0.94	0.84	0.86
Poland.....	0.48	0.16	0.33	0.30	0.24	0.47	0.80	0.61
Spain.....	0.54	0.32	0.33	0.38	0.54	0.59	0.62	0.54
Sweden.....	0.64	0.65	0.80	0.85	0.87	0.83	0.82	0.85
United Kingdom.....	0.86	0.89	0.84	0.82	0.84	0.86	0.91	0.92
Asia.....	1.52	1.49	1.47	1.39	1.31	1.24	1.20	1.17
China.....	0.80	0.67	0.58	0.51	0.48	0.54	0.75	0.78
India.....	0.08	0.72	0.63	0.41	0.56	0.67	0.92	0.95
Japan.....	1.56	1.53	1.49	1.40	1.30	1.26	1.21	1.18
Malaysia.....	2.07	1.37	1.10	0.88	1.44	1.14	1.38	1.34
Singapore.....	2.15	1.48	2.10	1.85	1.95	1.79	1.58	1.45
South Korea.....	2.14	1.99	1.85	1.77	1.80	1.56	1.43	1.41
Taiwan.....	0.56	0.75	0.98	1.07	1.11	0.98	0.99	0.97
<b>EPO</b>								
United States.....	1.20	1.08	1.12	1.14	1.21	1.19	1.09	1.13
EU.....	0.76	0.73	0.69	0.71	0.73	0.78	0.85	0.80
Austria.....	0.34	0.37	0.41	0.48	0.50	0.54	0.58	0.51
Belgium.....	0.45	0.56	0.64	0.62	0.69	0.50	0.80	0.72
Czech Republic.....	NA	0.22	0.49	0.26	0.39	0.75	0.46	0.32
Denmark.....	0.55	0.43	0.41	0.37	0.55	0.55	0.70	0.61
Finland.....	0.50	0.85	1.07	1.05	1.27	1.48	1.95	1.72
France.....	0.93	0.92	0.78	0.76	0.80	0.84	0.86	0.84
Germany.....	0.66	0.63	0.59	0.60	0.65	0.70	0.75	0.70
Greece.....	0.73	NA	0.33	0.52	0.07	0.63	0.54	0.09
Hungary.....	0.43	0.32	0.27	0.59	0.50	0.29	0.62	0.72
Ireland.....	0.85	0.80	0.77	1.25	0.88	0.71	1.13	0.90
Italy.....	0.55	0.60	0.53	0.60	0.60	0.55	0.53	0.47
Netherlands.....	1.21	1.15	1.24	1.11	1.11	1.11	1.33	1.42
Poland.....	0.55	NA	1.15	0.96	0.41	0.23	0.92	0.53
Spain.....	0.27	0.57	0.33	0.41	0.49	0.38	0.66	0.55
Sweden.....	0.53	0.62	0.61	0.59	0.68	0.78	1.14	1.13
United Kingdom.....	1.08	0.91	0.85	1.04	1.00	1.12	1.05	1.01
Asia.....	1.49	1.52	1.59	1.60	1.53	1.48	1.37	1.38
China.....	0.54	0.63	0.19	0.57	0.44	0.54	0.88	1.08
India.....	0.17	0.28	0.02	0.47	NA	0.46	0.37	0.46
Japan.....	1.50	1.53	1.61	1.60	1.54	1.49	1.37	1.38
Singapore.....	1.67	0.86	1.44	1.29	1.90	2.06	1.85	1.94
South Korea.....	0.81	1.51	1.50	1.87	1.48	1.49	1.83	1.79
Taiwan.....	0.43	0.49	0.45	1.03	0.81	1.10	0.85	0.92

NA = not available

EPO = European Patent Office; EU = European Union; ICT = information and communications technologies; USPTO = U.S. Patent and Trademark Office

NOTES: ICT activity index is region/country/economy's world share of ICT patents relative to its world share of all patents. Activity index of <1 or >1 indicates region/country/economy patents less or more intensively in ICT relative to other technology areas. USPTO and EPO patents on fractional-count basis. For patents with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

## Biotechnology patents granted by USPTO and EPO for selected regions/countries/economies: 1985–95

Agency and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>USPTO</b>											
All regions/countries/economies .....	619	684	954	968	1,222	1,199	1,313	1,646	1,969	1,874	2,138
United States.....	359	388	584	591	760	684	802	994	1,218	1,137	1,351
EU.....	101	121	187	172	218	225	224	277	316	318	347
Austria .....	0	2	3	2	3	4	2	7	11	11	8
Belgium .....	2	4	6	7	7	6	7	6	10	11	16
Bulgaria .....	0	0	0	0	0	0	0	0	0	0	0
Czech Republic .....	0	0	2	0	2	1	0	1	0	1	1
Denmark.....	7	9	5	1	9	8	6	8	12	18	18
Finland.....	3	4	8	5	2	7	5	10	7	6	11
France.....	12	13	23	24	31	36	40	40	47	51	48
Germany.....	38	42	69	62	79	64	76	98	102	94	116
Greece .....	0	0	0	0	0	0	0	0	1	1	0
Hungary.....	5	6	7	4	2	1	2	3	2	3	3
Ireland.....	0	1	1	0	1	0	2	2	2	1	1
Italy.....	3	7	10	3	7	15	10	19	20	23	17
Luxembourg.....	0	0	0	0	1	0	0	0	0	0	0
Netherlands.....	5	5	10	8	10	17	19	21	26	25	17
Poland.....	0	0	0	0	0	0	1	0	0	0	0
Portugal .....	0	0	0	0	0	0	0	0	0	0	0
Romania.....	0	0	0	0	0	0	0	0	0	1	0
Slovenia.....	0	0	0	0	0	0	0	0	0	0	0
Spain .....	0	1	1	2	2	4	3	3	3	3	5
Sweden.....	7	5	14	9	15	10	7	15	16	15	21
United Kingdom.....	18	24	30	44	49	53	46	45	57	57	68
All others.....	0	0	0	0	0	0	0	0	0	0	0
Asia.....	127	143	134	150	175	226	199	289	313	306	305
China .....	0	0	0	0	2	2	1	0	0	2	4
India.....	0	1	0	2	0	2	0	0	3	0	5
Japan.....	126	141	134	148	172	220	193	284	299	293	280
Malaysia .....	0	0	0	0	0	0	0	0	0	0	0
Philippines .....	0	0	0	0	0	0	0	0	0	0	1
Singapore.....	0	0	0	0	0	0	0	0	0	1	0
South Korea .....	1	0	0	1	0	1	3	2	8	4	11
Taiwan .....	0	0	0	0	1	2	1	3	3	6	4
Thailand.....	0	0	0	0	0	0	0	0	0	0	0
All others.....	0	0	0	0	0	0	0	0	0	0	0
All others.....	33	32	49	56	69	64	89	86	122	113	135
<b>EPO</b>											
All regions/countries/economies .....	325	349	289	300	465	533	700	994	1,176	1,312	1,313
United States.....	100	103	90	79	145	157	226	406	390	499	525
EU.....	133	151	115	142	192	215	246	313	457	450	436
Austria .....	3	0	2	3	10	7	4	6	13	12	14

## Biotechnology patents granted by USPTO and EPO for selected regions/countries/economies: 1985–95

Agency and region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Belgium .....	3	2	5	3	9	9	9	10	18	11	14
Bulgaria .....	0	0	0	1	0	0	0	0	0	0	1
Czech Republic .....	0	1	1	0	0	0	1	0	0	0	0
Denmark .....	1	3	2	3	7	3	4	7	38	27	19
Finland .....	2	3	1	1	0	1	4	8	5	7	5
France .....	18	31	24	30	33	42	31	48	75	75	75
Germany .....	61	62	49	55	64	81	101	118	148	153	154
Greece .....	0	0	0	0	0	0	0	0	1	0	0
Hungary .....	1	5	0	2	0	0	1	0	3	3	4
Ireland .....	0	1	0	0	0	1	0	0	1	0	2
Italy .....	3	3	3	7	7	6	10	17	25	29	25
Luxembourg .....	0	0	0	0	0	0	1	0	0	0	0
Netherlands .....	9	5	5	3	15	15	11	16	19	31	33
Poland .....	0	0	0	0	0	0	0	0	0	0	0
Portugal .....	0	0	0	0	0	0	0	0	0	0	0
Romania .....	0	0	0	0	0	0	0	0	0	0	0
Slovenia .....	0	0	0	0	0	0	0	0	0	0	0
Spain .....	0	0	1	0	1	2	3	3	3	4	4
Sweden .....	12	11	4	7	8	11	13	17	16	21	14
United Kingdom .....	19	24	20	27	39	37	54	62	94	78	72
All others .....	0	0	0	0	0	0	0	0	0	0	0
Asia .....	74	80	64	72	105	134	186	220	272	299	255
China .....	0	0	0	0	0	0	0	0	1	1	0
India .....	0	0	0	0	2	1	1	3	0	1	1
Japan .....	74	80	64	72	103	133	184	215	270	296	249
Malaysia .....	0	0	0	0	0	0	0	0	0	0	0
Philippines .....	0	0	0	0	0	0	0	1	0	0	0
Singapore .....	0	0	0	0	0	0	0	0	0	0	1
South Korea .....	0	0	0	0	0	0	1	1	2	2	4
Taiwan .....	0	0	0	0	0	0	0	0	0	0	1
Thailand .....	0	0	0	0	0	0	0	0	0	0	0
All others .....	0	0	0	0	0	0	0	0	0	0	0
All others .....	18	15	21	7	23	27	42	54	57	64	97

EPO = European Patent Office; EU = European Union; USPTO = U.S. Patent and Trademark Office

NOTES: Patent applications assigned to year based on application date to EPO. Patent applications on fractional-count basis. For patent applications with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

## Biotechnology patents granted by USPTO and EPO for selected regions/countries/economies: 1996–2006

Agency and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>USPTO</b>											
All regions/countries/economies .....	3,101	4,255	6,315	6,290	5,630	6,270	5,703	5,290	4,764	4,232	5,194
United States.....	2,050	2,943	4,253	4,189	3,788	4,092	3,780	3,438	3,098	2,725	3,269
EU .....	495	695	1,046	1,110	1,008	1,154	997	985	866	753	856
Austria .....	14	22	34	27	24	28	23	21	21	23	15
Belgium .....	26	29	58	68	55	57	50	51	53	35	43
Bulgaria .....	0	1	0	0	2	1	0	0	0	0	0
Czech Republic .....	2	1	1	4	4	3	2	0	1	1	1
Denmark.....	25	57	86	89	89	97	71	84	42	49	56
Finland.....	15	16	26	37	15	26	20	14	14	14	16
France.....	86	132	182	185	175	188	156	188	131	142	147
Germany.....	133	154	233	249	226	293	262	276	257	201	241
Greece .....	3	0	1	1	2	2	2	2	1	0	1
Hungary.....	3	3	5	3	2	4	6	5	6	6	4
Ireland.....	3	3	2	4	4	6	5	4	7	5	8
Italy.....	24	29	46	52	32	33	37	33	24	33	36
Luxembourg.....	0	0	0	0	1	0	0	0	0	0	0
Netherlands.....	28	66	85	84	94	81	67	64	64	59	55
Poland.....	2	1	2	3	0	1	1	0	3	1	3
Portugal .....	0	0	0	0	1	1	1	0	1	0	1
Romania.....	0	0	0	0	0	1	0	0	0	0	0
Slovenia.....	0	1	3	2	0	1	1	1	1	1	1
Spain .....	8	5	9	14	10	13	14	11	11	13	13
Sweden.....	22	29	52	52	49	63	55	59	53	39	44
United Kingdom.....	103	146	220	234	220	254	222	172	175	129	169
All others.....	1	0	2	2	2	2	3	0	1	2	3
Asia.....	349	380	608	554	443	557	515	498	468	469	677
China .....	0	1	10	5	8	11	17	18	21	27	35
India.....	3	7	10	8	9	19	28	36	31	24	32
Japan.....	324	347	537	471	384	437	396	367	351	344	458
Malaysia .....	1	1	0	1	0	0	0	2	1	0	2
Philippines .....	0	0	0	1	1	0	0	0	0	0	0
Singapore.....	2	0	7	6	5	7	1	7	7	8	12
South Korea .....	14	14	26	44	21	50	39	48	35	38	79
Taiwan .....	5	9	17	17	13	34	33	20	21	27	56
Thailand.....	0	0	0	2	2	0	0	0	1	1	3
All others.....	0	0	0	0	0	0	0	0	0	0	0
All others.....	207	237	409	436	391	467	411	369	333	284	393
<b>EPO</b>											
All regions/countries/economies .....	1,178	1,043	941	934	854	1,037	1,394	1,751	1,942	2,064	2,695
United States.....	509	412	375	399	361	417	564	720	710	771	1,043
EU .....	387	411	350	334	319	397	527	681	801	841	1,022
Austria .....	13	9	10	10	9	19	12	17	19	23	19

## Biotechnology patents granted by USPTO and EPO for selected regions/countries/economies: 1996–2006

Agency and region/country/economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium .....	13	10	10	11	15	19	19	28	45	47	40
Bulgaria .....	0	0	1	0	0	2	0	0	0	1	0
Czech Republic .....	0	0	0	1	1	0	0	0	1	3	0
Denmark .....	10	16	18	16	14	19	23	30	43	40	60
Finland .....	18	8	9	8	6	12	16	10	16	16	19
France .....	63	65	59	47	40	44	76	103	124	122	188
Germany .....	133	117	103	88	102	138	195	208	261	284	342
Greece .....	0	1	0	0	1	1	0	2	1	1	2
Hungary .....	1	3	1	2	1	1	1	4	3	2	2
Ireland .....	3	3	5	4	1	2	5	4	4	5	10
Italy .....	18	25	19	18	21	13	18	25	30	33	45
Luxembourg .....	0	0	0	0	0	0	1	0	0	0	0
Netherlands .....	27	17	25	31	23	31	40	49	63	48	65
Poland .....	0	1	1	0	0	0	1	1	0	1	1
Portugal .....	0	0	0	1	0	0	0	2	0	1	1
Romania .....	0	0	0	0	0	1	0	0	0	0	0
Slovenia .....	0	1	1	1	0	1	0	1	2	2	0
Spain .....	0	10	6	4	3	5	3	8	16	15	15
Sweden .....	16	13	10	13	13	14	31	32	30	33	40
United Kingdom .....	73	111	75	75	68	76	87	159	142	162	174
All others .....	0	0	0	2	0	1	0	0	1	2	1
Asia .....	217	150	145	122	118	143	189	229	266	274	404
China .....	0	0	0	0	0	1	2	1	3	4	6
India .....	1	1	1	2	1	2	1	4	4	11	14
Japan .....	215	146	141	117	113	131	173	212	244	230	354
Malaysia .....	0	0	0	0	0	0	0	0	1	0	1
Philippines .....	0	0	1	0	0	1	0	0	0	0	0
Singapore .....	0	1	1	1	0	1	0	0	3	4	2
South Korea .....	1	1	1	2	4	9	10	10	11	26	29
Taiwan .....	0	0	1	0	1	0	3	3	3	4	5
Thailand .....	0	0	0	0	0	0	0	0	0	0	0
All others .....	0	0	0	0	0	0	0	0	0	0	0
All others .....	65	71	71	80	56	80	114	121	165	177	226

EPO = European Patent Office; EU = European Union; USPTO = U.S. Patent and Trademark Office

NOTES: Patent applications assigned to year based on application date to EPO. Patent applications on fractional-count basis. For patent applications with multiple inventors from different countries, each country receives fractional credit based on proportion of its participating inventors. Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong. Countries that have <0.01% world share of U.S. patent applications in 2005 grouped in All others.

SOURCE: Organisation for Economic Co-operation and Development, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

## Triadic patent families for selected regions/countries/economies: 1985–94

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
	Number									
All regions/countries/economies .....	22,881	24,540	28,157	30,693	33,205	32,769	29,973	30,036	30,685	32,202
United States.....	7,812	8,157	9,063	10,073	10,908	11,171	10,237	10,610	10,520	11,095
EU .....	8,449	9,026	9,875	10,327	10,636	9,994	9,187	9,493	9,859	10,838
Austria .....	161	157	181	210	200	171	174	147	173	209
Belgium.....	164	174	190	190	247	224	240	295	329	348
Bulgaria.....	7	4	7	4	2	0	1	1	3	1
Czech Republic.....	7	8	7	12	11	7	9	7	7	5
Denmark.....	81	94	102	113	115	127	106	135	160	176
Finland.....	55	91	107	112	130	150	162	225	243	340
France.....	1,487	1,548	1,751	1,825	1,932	1,919	1,784	1,651	1,697	1,874
Germany.....	3,610	3,842	4,261	4,457	4,444	4,115	3,681	3,874	4,001	4,361
Greece.....	2	2	3	3	3	4	5	6	3	4
Hungary.....	45	31	39	22	45	30	22	19	23	20
Ireland.....	17	18	22	19	24	27	27	23	19	28
Italy.....	510	551	589	633	658	646	663	579	629	622
Luxembourg.....	15	17	3	7	5	17	9	9	14	7
Netherlands.....	553	616	711	695	708	591	569	614	594	649
Poland.....	3	3	5	5	3	5	9	5	12	4
Portugal.....	2	2	2	2	0	1	3	4	4	2
Romania.....	0	0	0	0	0	0	1	0	2	2
Slovenia.....	0	0	0	0	0	1	2	6	6	3
Spain.....	34	37	48	48	68	73	70	65	73	85
Sweden.....	426	428	390	371	448	432	391	517	500	631
United Kingdom.....	1,272	1,401	1,457	1,599	1,592	1,454	1,254	1,306	1,363	1,465
All others.....	0	1	0	0	1	0	3	5	3	2
Asia.....	5,319	5,984	7,607	8,732	10,041	10,057	9,067	8,394	8,747	8,567
China.....	39	16	23	17	20	23	27	27	33	32
India.....	5	5	4	11	7	12	9	5	8	6
Japan.....	5,264	5,953	7,561	8,664	9,962	9,940	8,894	8,196	8,495	8,263
Malaysia.....	0	0	1	2	3	2	4	5	3	1
Philippines.....	0	0	0	0	1	0	1	1	1	1
Singapore.....	2	2	3	3	10	4	20	18	17	22
South Korea.....	6	4	8	20	33	65	93	121	167	213
Taiwan.....	4	3	6	13	5	10	17	22	22	27
Thailand.....	0	0	1	2	1	1	2	0	1	2
All others.....	0	0	0	0	0	1	0	0	2	0
All others.....	1,301	1,373	1,613	1,561	1,620	1,548	1,482	1,538	1,559	1,701
	Percent distribution									
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
United States.....	34.14	33.24	32.19	32.82	32.85	34.09	34.16	35.32	34.28	34.46
EU.....	36.93	36.78	35.07	33.65	32.03	30.50	30.65	31.61	32.13	33.66



## Triadic patent families for selected regions/countries/economies: 1985–94

Region/country/economy	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Austria .....	0.70	0.64	0.64	0.68	0.60	0.52	0.58	0.49	0.56	0.65
Belgium .....	0.72	0.71	0.67	0.62	0.74	0.68	0.80	0.98	1.07	1.08
Bulgaria .....	0.03	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.01	0.00
Czech Republic .....	0.03	0.03	0.02	0.04	0.03	0.02	0.03	0.02	0.02	0.01
Denmark .....	0.35	0.38	0.36	0.37	0.35	0.39	0.35	0.45	0.52	0.55
Finland .....	0.24	0.37	0.38	0.37	0.39	0.46	0.54	0.75	0.79	1.06
France.....	6.50	6.31	6.22	5.95	5.82	5.86	5.95	5.50	5.53	5.82
Germany .....	15.78	15.66	15.13	14.52	13.38	12.56	12.28	12.90	13.04	13.54
Greece .....	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01
Hungary .....	0.20	0.13	0.14	0.07	0.14	0.09	0.07	0.06	0.08	0.06
Ireland.....	0.08	0.07	0.08	0.06	0.07	0.08	0.09	0.08	0.06	0.09
Italy.....	2.23	2.25	2.09	2.06	1.98	1.97	2.21	1.93	2.05	1.93
Luxembourg.....	0.07	0.07	0.01	0.02	0.02	0.05	0.03	0.03	0.05	0.02
Netherlands.....	2.42	2.51	2.53	2.26	2.13	1.80	1.90	2.04	1.94	2.01
Poland.....	0.01	0.01	0.02	0.02	0.01	0.02	0.03	0.02	0.04	0.01
Portugal .....	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Romania.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Slovenia.....	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.01
Spain .....	0.15	0.15	0.17	0.16	0.21	0.22	0.24	0.22	0.24	0.26
Sweden.....	1.86	1.74	1.38	1.21	1.35	1.32	1.30	1.72	1.63	1.96
United Kingdom.....	5.56	5.71	5.18	5.21	4.80	4.44	4.18	4.35	4.44	4.55
All others.....	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.01
Asia.....	23.25	24.38	27.02	28.45	30.24	30.69	30.25	27.95	28.51	26.60
China .....	0.17	0.07	0.08	0.05	0.06	0.07	0.09	0.09	0.11	0.10
India.....	0.02	0.02	0.02	0.04	0.02	0.04	0.03	0.02	0.03	0.02
Japan.....	23.01	24.26	26.85	28.23	30.00	30.33	29.67	27.29	27.68	25.66
Malaysia .....	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.00
Philippines .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Singapore.....	0.01	0.01	0.01	0.01	0.03	0.01	0.07	0.06	0.05	0.07
South Korea .....	0.02	0.02	0.03	0.06	0.10	0.20	0.31	0.40	0.54	0.66
Taiwan .....	0.02	0.01	0.02	0.04	0.02	0.03	0.06	0.07	0.07	0.08
Thailand.....	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.01
All others.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
All others.....	5.68	5.59	5.73	5.09	4.88	4.72	4.94	5.12	5.08	5.28

EU = European Union

NOTES: Patent families assigned to region/country/economy based on residence of inventor. Year of patent is first date of filing patent application. Patents on fractional-count basis. For patents with inventors from multiple countries, each country receives fractional credit based on proportion of its participating inventors. Number of patents estimated between 1998 and 2003 by Organisation for Economic Co-operation and Development (OECD). Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong.

SOURCE: OECD, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

## Triadic patent families for selected regions/countries/economies: 1995–2003

Region/country/economy	1995	1996	1997	1998	1999	2000	2001	2002	2003
	Number								
All regions/countries/economies .....	35,406	38,690	40,909	42,704	46,674	50,265	50,821	51,862	53,585
United States.....	12,100	12,921	14,008	14,945	16,300	17,440	18,097	18,907	19,701
EU .....	11,565	12,810	13,221	13,831	14,975	16,048	16,168	15,984	16,103
Austria .....	220	213	251	264	272	290	296	260	288
Belgium.....	372	352	415	418	422	431	450	447	471
Bulgaria.....	3	1	3	0	0	0	0	0	0
Czech Republic.....	3	10	10	14	12	11	13	12	14
Denmark .....	189	220	209	220	232	243	229	216	211
Finland .....	312	353	441	457	495	539	581	607	635
France.....	1,907	2,121	2,167	2,266	2,295	2,365	2,360	2,344	2,379
Germany .....	4,823	5,464	5,562	5,905	6,387	7,142	7,274	7,242	7,248
Greece .....	1	13	10	8	11	6	5	7	10
Hungary .....	25	25	32	14	35	34	23	21	22
Ireland.....	30	29	34	32	56	57	62	63	62
Italy.....	610	688	724	726	775	801	824	814	816
Luxembourg.....	13	15	16	18	19	18	22	19	18
Netherlands.....	727	787	810	803	875	913	916	951	1,017
Poland.....	5	10	9	4	8	10	8	11	11
Portugal.....	3	3	7	4	5	8	8	5	8
Romania.....	2	2	2	2	2	1	3	2	2
Slovenia .....	7	5	4	0	0	0	0	0	0
Spain.....	88	87	107	113	114	122	122	115	119
Sweden.....	701	795	848	911	961	949	881	818	794
United Kingdom.....	1,520	1,608	1,552	1,643	1,990	2,095	2,082	2,022	1,973
All others.....	4	6	8	8	9	13	6	5	6
Asia .....	9,923	10,961	11,435	11,641	12,857	14,065	13,812	14,193	14,912
China .....	42	38	51	63	92	123	161	183	225
India.....	11	15	23	27	32	56	74	86	99
Japan.....	9,487	10,490	10,891	10,952	12,059	13,086	12,751	12,996	13,557
Malaysia.....	4	5	3	0	0	0	0	0	0
Philippines.....	0	0	1	0	0	0	0	0	0
Singapore.....	26	34	29	45	68	79	85	81	84
South Korea.....	327	325	386	463	526	644	650	750	839
Taiwan .....	25	50	49	92	80	77	92	98	108
Thailand.....	2	3	4	0	0	0	0	0	0
All others.....	0	1	2	0	0	0	0	0	0
All others.....	1,817	1,998	2,244	2,286	2,541	2,711	2,744	2,778	2,869
	Percent distribution								
All regions/countries/economies .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
United States.....	34.18	33.40	34.24	35.00	34.92	34.70	35.61	36.46	36.77
EU .....	32.67	33.11	32.32	32.39	32.09	31.93	31.81	30.82	30.05

## Triadic patent families for selected regions/countries/economies: 1995–2003

Region/country/economy	1995	1996	1997	1998	1999	2000	2001	2002	2003
Austria .....	0.62	0.55	0.61	0.62	0.58	0.58	0.58	0.50	0.54
Belgium .....	1.05	0.91	1.01	0.98	0.90	0.86	0.89	0.86	0.88
Bulgaria .....	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Czech Republic .....	0.01	0.03	0.03	0.03	0.02	0.02	0.03	0.02	0.03
Denmark .....	0.53	0.57	0.51	0.51	0.50	0.48	0.45	0.42	0.39
Finland .....	0.88	0.91	1.08	1.07	1.06	1.07	1.14	1.17	1.19
France .....	5.39	5.48	5.30	5.31	4.92	4.70	4.64	4.52	4.44
Germany .....	13.62	14.12	13.60	13.83	13.68	14.21	14.31	13.96	13.53
Greece .....	0.00	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.02
Hungary .....	0.07	0.06	0.08	0.03	0.07	0.07	0.04	0.04	0.04
Ireland .....	0.09	0.07	0.08	0.07	0.12	0.11	0.12	0.12	0.11
Italy .....	1.72	1.78	1.77	1.70	1.66	1.59	1.62	1.57	1.52
Luxembourg .....	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03
Netherlands .....	2.05	2.03	1.98	1.88	1.87	1.82	1.80	1.83	1.90
Poland .....	0.01	0.03	0.02	0.01	0.02	0.02	0.02	0.02	0.02
Portugal .....	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.01
Romania .....	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00
Slovenia .....	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Spain .....	0.25	0.23	0.26	0.26	0.24	0.24	0.24	0.22	0.22
Sweden .....	1.98	2.06	2.07	2.13	2.06	1.89	1.73	1.58	1.48
United Kingdom .....	4.29	4.16	3.79	3.85	4.26	4.17	4.10	3.90	3.68
All others .....	0.01	0.02	0.02	0.02	0.02	0.03	0.01	0.01	0.01
Asia .....	28.03	28.33	27.95	27.26	27.55	27.98	27.18	27.37	27.83
China .....	0.12	0.10	0.12	0.15	0.20	0.24	0.32	0.35	0.42
India .....	0.03	0.04	0.06	0.06	0.07	0.11	0.15	0.17	0.19
Japan .....	26.80	27.11	26.62	25.65	25.84	26.03	25.09	25.06	25.30
Malaysia .....	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Philippines .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Singapore .....	0.07	0.09	0.07	0.11	0.14	0.16	0.17	0.16	0.16
South Korea .....	0.92	0.84	0.94	1.08	1.13	1.28	1.28	1.45	1.57
Taiwan .....	0.07	0.13	0.12	0.22	0.17	0.15	0.18	0.19	0.20
Thailand .....	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
All others .....	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
All others .....	5.13	5.16	5.49	5.35	5.44	5.39	5.40	5.36	5.35

EU = European Union

NOTES: Patent families assigned to region/country/economy based on residence of inventor. Year of patent is first date of filing patent application. Patents on fractional-count basis. For patents with inventors from multiple countries, each country receives fractional credit based on proportion of its participating inventors. Number of patents estimated between 1998 and 2003 by Organisation for Economic Co-operation and Development (OECD). Asia includes China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. China includes Hong Kong.

SOURCE: OECD, Patent database, [http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS\\_IPC](http://stats.oecd.org/wbos/default.aspx?DatasetCode=PATS_IPC), accessed 15 February 2007.

Appendix table 6-52

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**Firms and employment in U.S. high-technology small businesses, by industry: 2004**

Industry	Firms		Employment	
	Number	Share all firms (%)	Employees (thousands)	Share total employment (%)
All industries.....	481,512	100.0	5,045.3	100.0
Services .....	413,644	85.9	3,374.4	66.9
Architectural, engineering, and related services.....	96,213	20.0	859.0	17.0
Computer systems design and related services .....	94,177	19.6	589.7	11.7
Data processing, hosting, and related services .....	7,488	1.6	112.8	2.2
Electronic and precision equipment repair and maintenance.....	12,067	2.5	79.3	1.6
Facilities support services .....	1,547	0.3	41.6	0.8
Internet publishing and broadcasting.....	1,810	0.4	16.4	0.3
Internet service providers and web search portals .....	4,764	1.0	36.3	0.7
Management of companies and enterprises .....	19,827	4.1	342.6	6.8
Management, scientific, and technical consulting services .....	120,645	25.1	548.2	10.9
Other pipeline transportation .....	39	0.0	0.8	0.0
Other telecommunications.....	401	0.1	4.5	0.1
Pipeline transportation of crude oil .....	31	0.0	0.6	0.0
Pipeline transportation of natural gas .....	98	0.0	1.8	0.0
Professional and commercial equipment and supplies merchant wholesalers .....	27,481	5.7	318.3	6.3
Satellite telecommunications.....	462	0.1	7.1	0.1
Scientific research and development services .....	11,952	2.5	186.3	3.7
Securities and commodity exchanges.....	93	0.0	1.8	0.0
Software publishers.....	6,392	1.3	121.8	2.4
Telecommunications resellers.....	2,411	0.5	24.8	0.5
Wired telecommunications carriers.....	2,689	0.6	53.8	1.1
Wireless telecommunications carriers (except satellite) .....	3,057	0.6	26.8	0.5
Manufacturing .....	59,717	12.4	1,553.3	30.8
Aerospace product and parts manufacturing.....	1,154	0.2	34.8	0.7
Audio and video equipment manufacturing .....	504	0.1	11.4	0.2
Basic chemical manufacturing.....	1,041	0.2	35.6	0.7
Boiler, tank, and shipping container manufacturing .....	1,209	0.3	39.5	0.8
Commercial and service industry machinery manufacturing .....	2,074	0.4	50.6	1.0
Communications equipment manufacturing.....	1,596	0.3	52.8	1.1
Computer and peripheral equipment manufacturing .....	1,326	0.3	28.8	0.6
Electrical equipment manufacturing .....	1,976	0.4	50.6	1.0
Engine, turbine, and power transmission equipment manufacturing.....	677	0.1	21.5	0.4
Industrial machinery manufacturing .....	3,693	0.8	87.3	1.7
Manufacturing and reproducing magnetic and optical media .....	816	0.2	15.1	0.3
Metalworking machinery manufacturing.....	8,085	1.7	143.3	2.8
Motor vehicle body and trailer manufacturing .....	1,870	0.4	60.3	1.2
Motor vehicle manufacturing .....	270	0.1	6.2	0.1
Motor vehicle parts manufacturing .....	4,205	0.9	160.7	3.2
Navigational, measuring, electromedical, and control instruments manufacturing .....	4,291	0.9	103.7	2.1
Other chemical product and preparation manufacturing .....	2,061	0.4	45.1	0.9
Other electrical equipment and component manufacturing .....	1,805	0.4	58.1	1.2
Other fabricated metal product manufacturing.....	5,656	1.2	126.9	2.5
Other general purpose machinery manufacturing .....	5,459	1.1	130.1	2.6
Other transportation equipment manufacturing.....	796	0.2	16.0	0.3
Paint, coating, and adhesive manufacturing .....	1,458	0.3	31.7	0.6
Pesticide, fertilizer, and other agricultural chemical manufacturing .....	617	0.1	11.8	0.2
Petroleum and coal products manufacturing .....	1,005	0.2	23.9	0.5
Pharmaceutical and medicine manufacturing .....	1,291	0.3	48.0	1.0
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing.....	607	0.1	23.1	0.5
Semiconductor and other electronic component manufacturing.....	4,175	0.9	136.3	2.7

Appendix table 6-52

**Firms and employment in U.S. high-technology small businesses, by industry: 2004**

Industry	Firms		Employment	
	Number	Share all firms (%)	Employees (thousands)	Share total employment (%)
Other .....	8,151	1.7	117.6	2.3
Electric power generation, transmission and distribution .....	1,501	0.3	73.1	1.4
Oil and gas extraction .....	6,195	1.3	42.1	0.8
Timber tract operations .....	455	0.1	2.4	0.1

NOTES: Small businesses are firms with <500 employees. Firms include those reporting no employees on their payroll. Firm is an entity that is either in a single location with no subsidiaries or branches or is topmost parent of a group of subsidiaries or branches. High-technology industries defined by Bureau of Labor Statistics on basis of employment intensity of technology-oriented occupations. Other consists of agriculture, mining, and utilities.

SOURCES: Census Bureau, Statistics of U.S. Businesses, <http://www.census.gov/csd/susb/susb.htm>; and Hecker DE. 2006. High-technology employment: A NAICS-based update. *Monthly Labor Review* 128(7):57–72, <http://www.bls.gov/opub/mlr/2005/07/art6full.pdf>, accessed 19 September 2007.

Appendix table 6-53

**U.S. high-technology small business formation, by technology areas: 1991–2004**

Technology area	1991–93	1994–96	1997–99	2000–02	2003–04
All formations .....	3,122	4,176	3,862	2,197	1,136
Factory automation.....	241	187	125	141	175
Biotechnology.....	151	138	148	133	69
Chemicals .....	68	48	23	23	12
Computer hardware.....	305	301	201	159	112
Defense.....	20	14	10	6	14
Energy.....	106	85	65	65	70
Environmental .....	121	101	51	32	14
Manufacturing equipment.....	171	177	115	82	109
Advanced materials.....	134	86	58	32	76
Medical .....	195	162	136	85	54
Pharmaceuticals.....	66	79	90	67	26
Photonics .....	85	63	58	44	41
Computer software.....	608	789	980	569	117
Subassemblies and components.....	222	177	111	102	105
Testing and measurement .....	93	67	46	51	30
Telecom/Internet.....	486	1,674	1,619	590	71
Transportation .....	50	28	26	16	41

NOTES: Small businesses are firms with <500 employees. Firms are partnerships or private or publicly owned companies that are not units of other companies or partnerships. Technology areas defined by Corporate Technology Information Services, Inc. (Corptech).

SOURCE: Corptech, <http://www.corptech.com/index.php>, special tabulations (15 June 2007).

*Science and Engineering Indicators 2008*

Appendix table 6-54

**Investment, number of businesses, investors, and employment for angel investment: 2001–06**

Year	Investment (\$billions)	Businesses receiving investment (number)	Angel investors (number)	Total employment (number)	Employment/business	Average investment/business (\$)
2001.....	30.0	NA	NA	NA	NA	NA
2002.....	15.7	36,000	200,000	NA	NA	436,111
2003.....	18.1	42,000	220,000	NA	NA	430,952
2004.....	22.5	48,000	225,000	141,200	2.9	468,750
2005.....	23.1	49,500	227,000	198,000	4.0	466,667
2006.....	25.6	51,000	234,000	201,400	3.9	501,961

NA = not available

NOTE: Business includes anything from an entrepreneur with an idea to a legally established operating company.

SOURCE: Center for Venture Research, University of New Hampshire, <http://wsbe2.unh.edu/center-venture-research>.

*Science and Engineering Indicators 2008*

Appendix table 6-55

## U.S. venture capital investment, by industry and Internet-related: 1990–2006

Industry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Investment (\$millions)																	
All industries.....	2,766	2,241	3,581	3,702	4,133	8,128	11,279	14,903	21,089	54,206	104,983	40,696	21,829	19,684	22,138	22,778	25,922
Biotechnology.....	306	286	575	476	589	833	1,203	1,438	1,595	2,098	4,311	3,412	3,161	3,693	4,273	3,863	4,656
Business/financial .....	136	97	147	187	172	377	699	819	1,534	5,073	9,246	2,580	870	1,041	980	1,270	1,085
Communications.....	304	254	428	756	714	1,356	1,929	2,578	4,368	12,649	28,438	11,213	5,107	3,559	3,534	3,964	3,675
Computer hardware.....	273	213	218	199	287	520	838	1,051	1,457	5,041	10,330	3,047	1,510	1,121	1,206	1,413	1,443
Computer software.....	517	469	618	465	655	1,174	2,379	3,417	4,529	10,511	24,377	10,342	5,231	4,469	5,253	4,809	5,023
Healthcare related .....	423	320	692	609	637	1,120	1,345	1,887	2,113	3,021	3,898	2,529	2,224	1,823	2,092	2,604	3,067
Industrial/energy.....	201	210	316	291	286	639	519	793	1,486	1,873	2,725	1,280	744	828	761	912	1,866
Retailing and media.....	358	238	378	571	578	1,761	1,864	2,036	3,135	12,303	17,286	3,533	1,140	1,124	1,463	1,675	2,375
Semiconductor and electronics.....	248	154	209	148	215	348	503	884	872	1,637	4,372	2,760	1,842	2,026	2,576	2,268	2,732
Internet-related (all industries).....	NA	NA	NA	NA	720	1,832	3,892	5,918	11,444	41,715	79,379	25,593	10,723	8,574	8,830	8,574	9,875
Percent distribution																	
All industries.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Biotechnology.....	11.1	12.8	16.1	12.9	14.3	10.2	10.7	9.6	7.6	3.9	4.1	8.4	14.5	18.8	19.3	17.0	18.0
Business/financial .....	4.9	4.3	4.1	5.1	4.2	4.6	6.2	5.5	7.3	9.4	8.8	6.3	4.0	5.3	4.4	5.6	4.2
Communications.....	11.0	11.3	12.0	20.4	17.3	16.7	17.1	17.3	20.7	23.3	27.1	27.6	23.4	18.1	16.0	17.4	14.2
Computer hardware.....	9.9	9.5	6.1	5.4	6.9	6.4	7.4	7.1	6.9	9.3	9.8	7.5	6.9	5.7	5.4	6.2	5.6
Computer software.....	18.7	20.9	17.3	12.6	15.8	14.4	21.1	22.9	21.5	19.4	23.2	25.4	24.0	22.7	23.7	21.1	19.4
Healthcare related .....	15.3	14.3	19.3	16.5	15.4	13.8	11.9	12.7	10.0	5.6	3.7	6.2	10.2	9.3	9.4	11.4	11.8
Industrial/energy.....	7.3	9.4	8.8	7.9	6.9	7.9	4.6	5.3	7.1	3.5	2.6	3.1	3.4	4.2	3.4	4.0	7.2
Retailing and media.....	12.9	10.6	10.6	15.4	14.0	21.7	16.5	13.7	14.9	22.7	16.5	8.7	5.2	5.7	6.6	7.4	9.2
Semiconductor and electronics.....	9.0	6.9	5.8	4.0	5.2	4.3	4.5	5.9	4.1	3.0	4.2	6.8	8.4	10.3	11.6	10.0	10.5
Internet-related (all industries).....	NA	NA	NA	NA	17.4	22.5	34.5	39.7	54.3	77.0	75.6	62.9	49.1	43.6	39.9	37.6	38.1

NA = not available

SOURCE: Thomson Financial, National Venture Capital Association Yearbook 2007 (2007).

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Appendix table 6-56

**U.S. venture capital investment, by number of businesses and financing stage: 1990–2006**

Stage	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Number																
Businesses .....	1,045	910	1,025	916	962	1,545	2,078	2,536	2,973	4,410	6,340	3,787	2,619	2,416	2,574	2,646	2,910
	Investment (\$millions)																
All stages.....	2,765	2,241	3,581	3,699	4,133	8,127	11,279	14,903	21,099	54,206	104,983	40,697	21,830	19,685	22,138	22,779	25,923
Seed/startup.....	392	237	551	638	781	1,297	1,287	1,316	1,769	3,254	3,119	722	297	338	412	795	1,146
Early.....	706	561	582	644	853	1,770	2,849	3,580	5,549	11,910	25,672	8,708	3,904	3,546	4,032	3,689	3,951
Expansion.....	1,316	1,085	1,849	1,909	1,564	3,794	5,461	7,728	10,554	30,182	59,867	23,088	12,383	10,047	9,261	8,678	11,479
Later .....	351	358	599	508	935	1,266	1,682	2,279	3,227	8,860	16,325	8,179	5,246	5,754	8,433	9,617	9,347
	Percent distribution																
All stages.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Seed/startup.....	14.2	10.6	15.4	17.2	18.9	16.0	11.4	8.8	8.4	6.0	3.0	1.8	1.4	1.7	1.9	3.5	4.4
Early.....	25.5	25.0	16.3	17.4	20.6	21.8	25.3	24.0	26.3	22.0	24.5	21.4	17.9	18.0	18.2	16.2	15.2
Expansion.....	47.6	48.4	51.6	51.6	37.8	46.7	48.4	51.9	50.0	55.7	57.0	56.7	56.7	51.0	41.8	38.1	44.3
Later .....	12.7	16.0	16.7	13.7	22.6	15.6	14.9	15.3	15.3	16.3	15.6	20.1	24.0	29.2	38.1	42.2	36.1

NOTES: Business includes anything from an entrepreneur with an idea to a legally established operating company. Seed/startup includes proof of concept (seed), research, product development, or initial marketing. Early includes financing for activities such as initial expansion, commercial manufacturing, and marketing. Expansion includes major expansion of activities, or to prepare a company expecting to go public within 6–12 months. Later includes acquisition financing and management and leveraged buyout.

SOURCE: Thomson Financial, National Venture Capital Association Yearbook 2007, National Venture Capital Association (2007).

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Appendix table 6-57

**U.S. venture capital investment, by top states: 1996–2006**

State	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	1996–2006
	Investment (\$millions)											
All states .....	11,279	14,903	21,088	54,206	104,983	40,696	21,830	19,685	22,138	22,779	25,992	359,579
California.....	4,561	6,062	7,984	23,159	43,197	16,686	9,491	8,563	10,291	10,707	12,468	153,169
Massachusetts .....	1,079	1,382	1,987	4,857	10,359	4,813	2,520	2,720	2,944	2,505	2,842	38,008
Texas.....	533	860	1,166	3,127	6,106	2,945	1,296	1,226	1,144	1,121	1,387	20,911
New York.....	406	851	1,345	3,534	6,872	2,104	819	670	741	1,079	1,276	19,697
Colorado.....	301	397	801	1,891	4,194	1,249	561	645	438	666	639	11,782
New Jersey .....	402	425	399	958	3,312	1,511	882	857	997	907	796	11,446
Washington .....	409	420	748	1,979	2,823	1,145	576	454	836	814	1,024	11,228
Pennsylvania .....	305	491	556	1,626	2,894	960	458	581	538	474	763	9,646
Virginia.....	453	340	765	1,219	3,311	953	437	388	276	450	390	8,982
Florida.....	412	549	575	1,801	2,620	895	403	309	314	369	305	8,552
Georgia.....	274	359	409	1,157	2,321	932	567	301	528	247	362	7,457
Illinois.....	363	356	389	1,310	2,434	953	305	374	222	295	405	7,406
Maryland.....	137	185	327	645	1,843	997	599	367	575	504	676	6,855
North Carolina .....	185	265	343	774	1,830	590	551	353	326	425	477	6,119
Connecticut .....	160	263	373	947	1,499	536	177	234	195	185	247	4,816
Minnesota .....	173	278	360	641	1,042	479	402	222	350	221	324	4,492
Arizona.....	95	158	210	379	608	197	195	63	70	159	271	2,405
All others.....	1,031	1,262	2,351	4,202	7,718	2,751	1,591	1,358	1,353	1,651	1,340	26,608
	Percent distribution											
All states .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
California.....	40.4	40.7	37.9	42.7	41.1	41.0	43.5	43.5	46.5	47.0	48.0	42.6
Massachusetts .....	9.6	9.3	9.4	9.0	9.9	11.8	11.5	13.8	13.3	11.0	10.9	10.6
Texas.....	4.7	5.8	5.5	5.8	5.8	7.2	5.9	6.2	5.2	4.9	5.3	5.8
New York.....	3.6	5.7	6.4	6.5	6.5	5.2	3.8	3.4	3.3	4.7	4.9	5.5
Colorado.....	2.7	2.7	3.8	3.5	4.0	3.1	2.6	3.3	2.0	2.9	2.5	3.3
New Jersey .....	3.6	2.9	1.9	1.8	3.2	3.7	4.0	4.4	4.5	4.0	3.1	3.2
Washington .....	3.6	2.8	3.5	3.7	2.7	2.8	2.6	2.3	3.8	3.6	3.9	3.1
Pennsylvania .....	2.7	3.3	2.6	3.0	2.8	2.4	2.1	3.0	2.4	2.1	2.9	2.7
Virginia.....	4.0	2.3	3.6	2.2	3.2	2.3	2.0	2.0	1.2	2.0	1.5	2.5
Florida.....	3.7	3.7	2.7	3.3	2.5	2.2	1.8	1.6	1.4	1.6	1.2	2.4
Georgia.....	2.4	2.4	1.9	2.1	2.2	2.3	2.6	1.5	2.4	1.1	1.4	2.1
Illinois.....	3.2	2.4	1.8	2.4	2.3	2.3	1.4	1.9	1.0	1.3	1.6	2.1
Maryland.....	1.2	1.2	1.6	1.2	1.8	2.4	2.7	1.9	2.6	2.2	2.6	1.9
North Carolina .....	1.6	1.8	1.6	1.4	1.7	1.4	2.5	1.8	1.5	1.9	1.8	1.7
Connecticut .....	1.4	1.8	1.8	1.7	1.4	1.3	0.8	1.2	0.9	0.8	1.0	1.3
Minnesota .....	1.5	1.9	1.7	1.2	1.0	1.2	1.8	1.1	1.6	1.0	1.2	1.2
Arizona.....	0.8	1.1	1.0	0.7	0.6	0.5	0.9	0.3	0.3	0.7	1.0	0.7
All others.....	9.1	8.5	11.1	7.8	7.4	6.8	7.3	6.9	6.1	7.2	5.2	7.4

NOTE: States ranked by 1996–2006 investment.

SOURCE: Thomson Financial, National Venture Capital Association Yearbook 2007, National Venture Capital Association (2007).



Appendix table 7-1

**Primary source of information about current news events, by respondent characteristic: 2006**

(Percent)

Characteristic	Newspaper	Magazine	Internet	Book/other print	Television	Radio	Government agency	Family	Friend/colleague	Other	Don't know
All adults (n = 1,864).....	23	1	14	—	49	6	—	2	2	1	—
Sex											
Male (n = 804).....	23	1	17	1	46	8	—	1	2	1	—
Female (n = 1,060).....	24	1	12	—	52	5	—	2	2	—	1
Formal education											
<High school (n = 227).....	20	1	2	0	68	3	0	5	—	—	2
High school graduate (n = 1,115).....	23	1	12	—	52	6	0	2	3	1	—
Baccalaureate (n = 346).....	22	1	25	1	37	9	1	2	—	—	0
Graduate/professional degree (n = 176).....	34	2	22	1	32	6	0	—	1	1	0
Science/mathematics education <sup>a</sup>											
Low (n = 1,042).....	25	1	8	1	55	5	0	3	2	1	1
Middle (n = 359).....	19	1	21	—	46	9	1	1	2	1	0
High (n = 408).....	26	1	24	1	35	10	—	1	2	1	0
Family income (quartile)											
Top (n = 311).....	27	1	15	0	44	9	1	1	1	1	0
Second (n = 420).....	21	1	18	1	45	8	0	4	2	—	0
Third (n = 419).....	24	2	10	—	53	5	1	2	2	1	—
Bottom (n = 462).....	21	1	12	1	56	5	0	1	2	1	—
Age (years)											
18–24 (n = 157).....	13	0	24	0	49	4	0	1	7	2	0
25–34 (n = 341).....	13	1	28	1	39	10	1	2	4	—	—
35–44 (n = 382).....	21	2	14	—	50	7	0	3	2	1	1
45–54 (n = 386).....	28	2	9	1	51	6	—	1	1	—	—
55–64 (n = 272).....	24	0	8	0	59	6	0	3	—	1	1
65+ (n = 321).....	42	1	3	—	50	3	0	1	—	—	1
Minor children at home											
Yes (n = 588).....	22	1	11	—	50	8	1	2	3	1	1
No (n = 1,276).....	24	1	15	1	49	6	0	2	2	1	—

— = ≤0.5% responded

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

NOTES: Responses to: *We are interested in how people get information about events in the news. Where do you get **most** of your information about current news events?* Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-2

**Primary source of information about science and technology, by respondent characteristic: 2006**

(Percent)

Characteristic	Newspaper	Magazine	Internet	Book/other print	Television	Radio	Government agency	Family	Friend/colleague	Other	Don't know
All adults (n = 1,864) .....	11	10	23	7	39	2	—	2	2	2	1
Sex											
Male (n = 804) .....	9	11	26	8	39	2	—	1	1	2	1
Female (n = 1,060).....	12	10	22	6	40	2	—	2	2	2	1
Formal education											
<High school (n = 227) .....	10	4	5	9	63	2	0	2	1	1	3
High school graduate (n = 1,115) .....	11	10	21	7	42	2	—	2	2	2	1
Baccalaureate (n = 346).....	10	12	39	5	25	4	1	3	2	1	—
Graduate/professional degree (n = 176) .....	15	19	29	10	22	2	0	1	0	1	1
Science/mathematics education <sup>a</sup>											
Low (n = 1,042) .....	11	10	14	7	49	1	—	2	2	2	2
Middle (n = 359) .....	12	10	33	7	29	3	—	2	—	3	0
High (n = 408).....	9	13	38	9	23	4	—	1	2	2	0
Family income (quartile)											
Top (n = 311) .....	15	17	26	5	26	4	—	4	1	2	—
Second (n = 420) .....	10	8	28	8	39	2	—	2	2	1	—
Third (n = 419).....	10	12	20	8	45	1	0	1	1	1	—
Bottom (n = 462).....	9	6	20	7	48	1	—	1	3	4	1
Age (years)											
18–24 (n = 157).....	4	4	36	11	28	2	0	4	4	7	0
25–34 (n = 341).....	5	7	36	5	37	4	—	—	3	1	1
35–44 (n = 382).....	11	13	25	5	37	2	—	2	1	1	1
45–54 (n = 386).....	12	9	21	7	42	2	—	2	1	2	1
55–64 (n = 272).....	13	16	15	8	43	—	1	1	1	1	1
65+ (n = 321) .....	20	12	7	9	46	—	0	2	—	1	3
Minor children at home											
Yes (n = 588).....	11	11	22	6	38	3	1	2	2	2	2
No (n = 1,276).....	11	10	24	8	40	2	—	2	1	2	1

— = ≤0.5% responded

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.NOTES: Responses to: *We are interested in how people get information about science and technology. Where do you get **most** of your information about science and technology?* Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

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Appendix table 7-3

**Primary source of information about specific scientific issues, by respondent characteristic: 2006**

(Percent)

Characteristic	Newspaper	Magazine	Internet	Book/other print	Television	Radio	Government agency	Family	Friend/colleague	Other	Don't know
All adults (n = 1,864) .....	6	6	53	9	19	1	—	1	1	2	2
Sex											
Male (n = 804) .....	6	7	53	7	20	1	—	1	1	2	2
Female (n = 1,060).....	7	5	53	10	18	1	—	2	1	1	2
Formal education											
<High school (n = 227) .....	4	—	29	14	37	2	0	4	1	2	6
High school graduate (n = 1,115) .....	7	6	52	9	21	1	—	1	1	2	2
Baccalaureate (n = 346).....	5	8	65	6	10	2	0	2	1	—	1
Graduate/professional degree (n = 176) .....	10	11	64	9	3	0	0	0	1	2	0
Science/mathematics education <sup>a</sup>											
Low (n = 1,042) .....	7	5	44	10	26	1	—	1	1	2	3
Middle (n = 359) .....	6	7	60	8	12	2	—	2	1	1	1
High (n = 408).....	4	8	70	7	6	1	—	—	1	2	0
Family income (quartile)											
Top (n = 311) .....	7	8	61	8	11	2	0	1	1	2	0
Second (n = 420) .....	6	6	62	5	16	1	0	1	1	1	1
Third (n = 419).....	4	5	51	15	19	—	—	2	1	1	0
Bottom (n = 462).....	9	5	34	11	32	2	—	1	2	3	2
Age (years)											
18–24 (n = 157).....	2	2	72	7	8	0	—	4	2	2	1
25–34 (n = 341).....	3	5	65	5	16	3	—	—	1	1	2
35–44 (n = 382).....	7	8	55	5	19	1	—	1	0	2	2
45–54 (n = 386).....	7	5	56	8	20	1	0	1	1	1	1
55–64 (n = 272).....	6	7	45	14	22	—	—	2	1	2	2
65+ (n = 321) .....	13	8	23	16	28	2	0	2	1	3	5
Minor children at home											
Yes (n = 588).....	5	7	58	5	17	1	—	2	1	2	2
No (n = 1,276).....	7	5	50	11	20	1	0	1	1	2	2

— = ≤0.5% responded

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

NOTES: Responses to: *If you wanted to learn about scientific issues such as global warming or biotechnology, where would you get information?* Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-4

(Page 1 of 2)

**Correct answers to scientific terms and concept questions, by three factual knowledge-of-science scales and respondent characteristic: 1995–2006**

(Percent)

Characteristic	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
<b>Knowledge scale 1</b>						
All adults .....	56	56	57	60	NA <sup>a</sup>	59
Sex						
Male.....	61	62	62	65	NA <sup>a</sup>	65
Female.....	51	50	53	55	NA <sup>a</sup>	55
Formal education						
<High school.....	41	41	42	43	NA <sup>a</sup>	40
High school graduate .....	55	56	57	58	NA <sup>a</sup>	57
Baccalaureate .....	63	70	73	76	NA <sup>a</sup>	70
Graduate/professional .....	73	76	78	78	NA <sup>a</sup>	78
Science/mathematics education <sup>b</sup>						
Low.....	47	47	48	50	NA <sup>a</sup>	51
Middle.....	62	59	64	65	NA <sup>a</sup>	64
High .....	76	77	77	79	NA <sup>a</sup>	77
Family income (quartile)						
Top .....	NA	NA	NA	NA	NA <sup>a</sup>	67
Second .....	NA	NA	NA	NA	NA <sup>a</sup>	64
Third .....	NA	NA	NA	NA	NA <sup>a</sup>	59
Bottom .....	NA	NA	NA	NA	NA <sup>a</sup>	52
Age (years)						
18–24 .....	60	59	62	61	NA <sup>a</sup>	63
25–34 .....	61	59	60	64	NA <sup>a</sup>	59
35–44 .....	59	61	61	63	NA <sup>a</sup>	62
45–54 .....	57	57	59	64	NA <sup>a</sup>	62
55–64 .....	48	52	53	57	NA <sup>a</sup>	60
65+.....	45	43	44	48	NA <sup>a</sup>	49
Minor children at home						
Yes.....	59	57	57	61	NA <sup>a</sup>	59
No.....	54	55	57	59	NA <sup>a</sup>	60
<b>Knowledge scale 2</b>						
All adults .....	57	57	58	61	58	60
Sex						
Male.....	62	62	63	65	63	64
Female.....	52	52	54	56	54	56
Formal education						
<High school.....	42	42	44	44	40	41
High school graduate .....	56	56	58	59	55	58
Baccalaureate .....	64	71	73	76	68	70
Graduate/professional .....	73	77	78	79	75	77
Science/mathematics education <sup>b</sup>						
Low.....	48	48	49	51	48	52
Middle.....	62	59	64	66	63	64
High .....	76	78	77	79	74	77
Family income (quartile)						
Top .....	NA	NA	NA	NA	68	68
Second .....	NA	NA	NA	NA	61	64
Third .....	NA	NA	NA	NA	55	59
Bottom .....	NA	NA	NA	NA	49	53
Age (years)						
18–24 .....	60	58	62	62	63	62
25–34 .....	61	60	61	64	61	59
35–44 .....	59	62	62	64	62	62
45–54 .....	59	58	60	64	60	63
55–64 .....	50	54	55	58	57	61
65+.....	47	44	47	50	47	50
Minor children at home						
Yes.....	59	58	58	62	60	59
No.....	55	56	58	60	56	60

Appendix table 7-4

(Page 2 of 2)

**Correct answers to scientific terms and concept questions, by three factual knowledge-of-science scales and respondent characteristic: 1995–2006**

(Percent)

Characteristic	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
<b>Knowledge scale 3</b>						
All adults .....	53	53	56	58	56	NA <sup>c</sup>
<b>Sex</b>						
Male.....	58	59	60	63	61	NA <sup>c</sup>
Female.....	49	49	51	54	52	NA <sup>c</sup>
<b>Formal education</b>						
<High school.....	39	39	41	41	37	NA <sup>c</sup>
High school graduate .....	52	53	55	56	53	NA <sup>c</sup>
Baccalaureate.....	61	69	71	74	66	NA <sup>c</sup>
Graduate/professional .....	71	74	77	77	73	NA
<b>Science/mathematics education<sup>b</sup></b>						
Low.....	45	45	46	48	46	NA <sup>c</sup>
Middle.....	59	56	61	64	61	NA <sup>c</sup>
High.....	74	76	76	78	72	NA <sup>c</sup>
<b>Family income (quartile)</b>						
Top .....	NA	NA	NA	NA	66	NA <sup>c</sup>
Second .....	NA	NA	NA	NA	59	NA <sup>c</sup>
Third .....	NA	NA	NA	NA	52	NA <sup>c</sup>
Bottom.....	NA	NA	NA	NA	46	NA <sup>c</sup>
<b>Age (years)</b>						
18–24.....	57	56	59	60	62	NA <sup>c</sup>
25–34.....	58	57	59	62	60	NA <sup>c</sup>
35–44.....	56	58	59	61	60	NA <sup>c</sup>
45–54.....	56	55	57	62	57	NA <sup>c</sup>
55–64.....	46	50	52	55	54	NA <sup>c</sup>
65+.....	43	41	43	47	44	NA <sup>c</sup>
<b>Minor children at home</b>						
Yes.....	56	55	56	60	58	NA <sup>c</sup>
No.....	52	53	55	57	54	NA <sup>c</sup>

NA = not available

<sup>a</sup>Not all questions for knowledge scale 1 asked in 2004.

<sup>b</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

<sup>c</sup>Not all questions for knowledge scale 3 asked in 2006.

NOTES: Table includes all years for which data collected. Factual knowledge of science scales 1, 2, and 3 include responses to:

- *The center of the Earth is very hot.* (True)
- *All radioactivity is man-made.* (False)
- *It is the father's gene that decides whether the baby is a boy or a girl.* (True)
- *Lasers work by focusing sound waves.* (False)
- *Electrons are smaller than atoms.* (True)
- *Antibiotics kill viruses as well as bacteria.* (False)
- *The universe began with a huge explosion.* (True)
- *The continents on which we live have been moving their location for millions of years and will continue to move in the future.* (True)
- *Human beings, as we know them today, developed from earlier species of animals.* (True)
- *Does the Earth go around the Sun, or does the Sun go around the Earth?* (Earth around Sun)

Knowledge scale 1 also includes responses to: *How long does it take for the Earth to go around the sun?* (One year); asked only if respondent answered correctly that Earth goes around Sun.

Knowledge scale 3 also includes responses to a question on meaning of DNA. Knowledge scale 2 does not include either of these two questions.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1995–2001); University of Michigan, Survey of Consumer Attitudes (2004); and University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-5

**Correct answers to scientific literacy questions: 1985–2006**

(Percent)

Question	1985 (n = 2,003)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
<i>The center of the Earth is very hot. (True)</i> .....	NA	80	79	81	78	82	80	80	78	80
<i>All radioactivity is man-made. (False)</i> .....	NA	65	63	73	72	71	71	76	73	70
<i>Lasers work by focusing sound waves. (False)</i> .....	NA	36	37	37	40	39	43	45	42	45
<i>Electrons are smaller than atoms. (True)</i> .....	NA	43	41	46	44	43	46	48	45	53
<i>The universe began with a huge explosion. (True)</i> .....	NA	54	32	38	35	32	33	33	33 <sup>a</sup>	33
<i>The continents on which we live have been moving their location for millions of years and will continue to move in the future. (True)</i> .....	79	80	77	79	78	78	80	79	77	80
<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i> .....	NA	73	73	71	73	73	72	75	71	76
<i>How long does it take for the Earth to go around the Sun? (One year)</i> .....	NA	45	48	46	47	48	49	54	NA	55
<i>It is the father's gene that decides whether the baby is a boy or a girl. (True)</i> .....	NA	NA	NA	65	64	62	66	65	62	64
<i>Antibiotics kill viruses as well as bacteria. (False)</i> .....	NA	26	30	35	40	43	45	51	54	56
<i>Human beings, as we know them today, developed from earlier species of animals. (True)</i> .....	45	46	45	45	44	44	45	53	42 <sup>a</sup>	43

NA = not available, question not asked

<sup>a</sup>Question asked of 1,558 survey respondents.

NOTE: Table includes all years for which data collected.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); and University of Chicago, National Opinion Research Center, General Social Survey (2006).

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Appendix table 7-6  
**Correct answers to scientific literacy questions, by respondent characteristic: 2006**  
 (Percent)

Characteristic	<i>The center of the Earth is very hot.</i> (True)	<i>All radioactivity is man-made.</i> (False)	<i>Lasers work by focusing sound waves.</i> (False)	<i>Electrons are smaller than atoms.</i> (True)	<i>The universe began with a huge explosion.</i> (True)	<i>The continents on which we live have been moving their location for millions of years and will continue to move in the future.</i> (True)	<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i>	<i>How long does it take for the Earth to go around the Sun: one day, one month, or one year? (One year)</i>	<i>It is the father's gene that decides whether the baby is a boy or a girl.</i> (True)	<i>Antibiotics kill viruses as well as bacteria.</i> (False)	<i>Human beings, as we know them today, developed from earlier species of animals.</i> (True)
All adults (n = 1,864).....	80	70	45	53	33	80	76	55	64	56	43
Sex											
Male.....	85	77	62	61	40	85	82	66	55	50	47
Female.....	75	64	32	48	27	75	71	46	72	61	40
Formal education											
<High school (n = 227).....	64	42	21	36	22	68	51	33	53	24	26
High school graduate (n = 1,115).....	80	69	44	49	28	77	74	52	63	53	38
Baccalaureate (n = 346).....	81	77	54	69	44	89	86	67	69	73	57
Graduate/professional (n = 176).....	92	91	64	74	53	93	92	79	72	77	66
Science/mathematics education <sup>a</sup>											
Low (n = 1,042).....	76	62	37	42	26	74	68	43	59	45	36
Middle (n = 359).....	85	76	47	59	38	81	81	64	66	61	48
High (n = 408).....	87	85	65	80	46	94	93	81	77	80	59
Family income (quartile)											
Top (n = 311).....	85	79	54	58	41	88	80	61	68	69	55
Second (n = 420).....	83	77	48	59	35	82	83	60	66	63	46
Third (n = 419).....	82	72	46	53	28	81	75	57	66	50	40
Bottom (n = 462).....	72	61	37	45	30	76	65	44	57	44	38
Age (years)											
18–24 (n = 157).....	85	66	49	61	28	90	83	71	58	51	53
25–34 (n = 341).....	83	65	42	57	31	79	74	59	65	53	45
35–44 (n = 382).....	82	68	50	54	35	80	80	58	69	60	45
45–54 (n = 386).....	80	78	46	56	35	82	80	58	67	62	43
55–64 (n = 272).....	75	72	50	54	36	82	73	48	66	59	42
65+ (n = 321).....	71	67	32	37	30	68	63	37	55	48	33
Minor children at home											
Yes (n = 588).....	81	65	45	52	31	77	78	58	68	57	41
No (n = 1,276).....	79	72	45	54	34	81	74	53	63	56	44

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-7

**Correct answers to polar and nanotechnology questions, by respondent characteristic: 2006**

(Percent)

Characteristic	Polar					Nanotechnology <sup>a</sup>	
	<i>The North Pole is on a sheet of ice that floats on the Arctic Ocean.</i> (True)	<i>The sun never shines at the South Pole.</i> (False)	<i>Hunting is more likely than climate change to make polar bears become extinct.</i> (False)	<i>Have the polar ice caps gotten larger or smaller over the last 25 years?</i> (Smaller)	<i>Inuit (often called Eskimos) live north of the Arctic Circle.</i> (False)	<i>Nanotechnology involves manipulating extremely small units of matter, such as individual atoms, in order to produce better materials.</i> (True)	<i>The properties of nanoscale materials often differ fundamentally and unexpectedly from the properties of the same materials at larger scales.</i> (True)
All adults (n = 1,864).....	41	67	36	77	18	57	39
Sex							
Male (n = 804).....	52	75	40	86	18	64	45
Female (n = 1,060).....	33	61	32	71	18	48	33
Formal education							
<High school (n = 227).....	39	50	19	60	9	42	21
High school graduate (n = 1,115) ..	38	64	37	76	18	51	32
Baccalaureate (n = 346).....	47	78	38	84	20	67	48
Graduate/professional (n = 176).....	52	85	45	91	27	66	57
Science/mathematics education <sup>b</sup>							
Low (n = 1,042).....	36	61	33	70	14	48	25
Middle (n = 359).....	42	73	36	86	23	54	39
High (n = 408).....	54	80	43	90	24	70	54
Family income (quartile)							
Top (n = 311).....	47	78	40	89	23	56	40
Second (n = 420).....	43	68	43	81	18	66	40
Third (n = 419).....	41	67	34	79	15	57	39
Bottom (n = 462).....	41	59	29	68	18	52	41
Age (years)							
18–24 (n = 157).....	48	66	37	83	26	48	35
25–34 (n = 341).....	45	72	33	73	17	56	47
35–44 (n = 382).....	38	68	37	75	17	59	43
45–54 (n = 386).....	39	69	37	79	17	56	31
55–64 (n = 272).....	45	63	36	83	19	62	42
65+ (n = 321).....	35	60	34	75	14	61	38
Minor children at home							
Yes (n = 588).....	39	65	34	71	17	55	37
No (n = 1,276).....	43	68	37	80	18	58	41
Factual knowledge of science <sup>c</sup> (quartile)							
Top (n = 455).....	61	91	48	95	28	72	52
Second (n = 470).....	40	72	42	85	22	51	34
Third (n = 479).....	40	60	30	78	14	39	26
Bottom (n = 460).....	22	43	20	48	7	31	14

<sup>a</sup>Nanotechnology questions asked only of 822 survey respondents who reported they had heard of nanotechnology.<sup>b</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>c</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-8

**Correct answers to scientific literacy questions in Europe: 1992 and 2005**

(Mean percent)

Country	1992	2005
Belgium .....	47	60
Denmark.....	60	66
Germany.....	50	60
Greece.....	42	47
Spain.....	45	51
France .....	54	61
Ireland .....	45	55
Italy .....	50	56
Luxembourg .....	49	66
Netherlands.....	56	67
Portugal.....	40	45
United Kingdom.....	55	61

NOTES: Mean percent based on correct responses to four factual science questions: (1) *The oxygen we breathe comes from plants* (True); (2) *Electrons are smaller than atoms* (True); (3) *Antibiotics kill viruses as well as bacteria* (False); (4) *All radioactivity is man-made* (False). Data for 1992 derived by subtracting reported variation between averages for 1992 and 2005 from reported average for 2005; this may have resulted in small rounding errors for 1992.

SOURCE: European Commission, Research Directorate-General, Eurobarometer 224/Wave 63.1 (3 January–15 February 2005); Europeans, Science and Technology (2005).

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Appendix table 7-9

**Correct answers to scientific process questions: 1988–2006**

(Percent)

Question	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
Understanding of probability <sup>a</sup> .....	64	61	64	63	62	64	67	64	69
If the first three children are healthy, the fourth child will have illness. ....	84	78	80	77	78	78	78	NA	NA
If the first child has illness, the next three will not. ....	86	81	83	81	81	82	84	82	86
Each of the couple's children will have the same risk of illness. ....	72	70	71	72	71	74	75	73	75
If the couple has only three children, none will have illness. ....	87	81	83	79	79	81	84	NA	NA
Understanding of scientific study <sup>b</sup> .....	17	18	21	16	23	21	26	23	25
Understanding of experiment <sup>c</sup> .....	NA	NA	NA	26	36	34	38	46	42
Understanding of scientific inquiry <sup>d</sup> .....	NA	NA	NA	26	34	32	39	39	41

NA = not available, question not asked

<sup>a</sup>To be classified as understanding probability, survey respondent had to answer correctly: *A doctor tells a couple that their genetic makeup means that they've got one in four chances of having a child with an inherited illness. (1) Does this mean that if their first child has the illness, the next three will not?* and (2) *Does this mean that each of the couple's children will have the same risk of suffering from the illness?*

<sup>b</sup>To be classified as understanding scientific study, survey respondent had to answer: (1) *When you read news stories, you see certain sets of words and terms. We are interested in how many people recognize certain kinds of terms. First, some articles refer to the results of a scientific study. When you read or hear the term scientific study, do you have a clear understanding of what it means, a general sense of what it means, or little understanding of what it means?* and (2) (If "clear understanding" or "general sense" response) *In your own words, could you tell me what it means to study something scientifically?*

<sup>c</sup>To be classified as understanding experiment, survey respondent had to answer correctly: (1) *Two scientists want to know if a certain drug is effective against high blood pressure. The first scientist wants to give the drug to 1,000 people with high blood pressure and see how many of them experience lower blood pressure levels. The second scientist wants to give the drug to 500 people with high blood pressure and not give the drug to another 500 people with high blood pressure, and see how many in both groups experience lower blood pressure levels. Which is the better way to test this drug?* and (2) *Why is it better to test the drug this way?*

<sup>d</sup>To be classified as understanding scientific inquiry, survey respondent had to: (1) answer correctly the two probability questions stated in footnote b and (2) either provide "theory-testing" response to open-ended question about what it means to study something scientifically or correct response to open-ended question about experiment, i.e., explain why it is better to test a drug using a control group.

NOTE: Table includes all years for which data collected.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1988–2001); University of Michigan, Survey of Consumer Attitudes (2004); and University of Chicago, National Opinion Research Center, General Social Survey (2006).

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Appendix table 7-10

**Correct answers to scientific process questions, by respondent characteristic: 2006**

(Percent)

Characteristic	Probability	Scientific study	Experiment	Scientific inquiry
All adults (n = 1,864) .....	69	25	42	41
Sex				
Male (n = 804) .....	72	24	42	42
Female (n = 1,060).....	68	26	41	40
Formal education				
<High school (n = 227) .....	49	5	21	16
High school graduate (n = 1,115) .....	69	21	39	38
Baccalaureate (n = 346).....	75	39	53	54
Graduate/professional degree (n = 176) .....	82	51	59	63
Science/mathematics education <sup>a</sup>				
Low (n = 1,042) .....	63	13	33	30
Middle (n = 359) .....	76	33	47	48
High (n = 408) .....	83	50	60	65
Family income (quartile)				
Top (n = 311) .....	77	41	51	53
Second (n = 420) .....	75	28	46	45
Third (n = 419).....	74	18	41	40
Bottom (n = 462).....	63	17	36	33
Age (years)				
18–24 (n = 157).....	76	33	49	49
25–34 (n = 341).....	68	28	49	44
35–44 (n = 382).....	72	28	44	47
45–54 (n = 386).....	75	27	39	42
55–64 (n = 272).....	67	25	36	35
65+ (n = 321) .....	58	11	31	26
Minor children at home				
Yes (n = 588).....	69	24	44	44
No (n = 1,276).....	70	26	40	39
Factual knowledge of science <sup>b</sup> (quartile)				
Top (n = 455) .....	88	52	68	72
Second (n = 470) .....	71	27	41	41
Third (n = 479).....	69	15	34	32
Bottom (n = 460).....	47	5	22	16

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

<sup>b</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1."

NOTE: See footnotes to appendix table 7-9 for explanation of understanding of probability, scientific study, experiment, and scientific inquiry.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

**Public assessment of astrology, by respondent characteristic: 1979–2006**

(Percent)

Characteristic	1979 (n = 1,635)	1983 (n = 1,631)	1985 (n = 2,003)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
<b>All adults</b>												
Very scientific.....	8	10	8	6	6	7	7	7	7	9	6	5
Sort of scientific.....	34	35	31	31	29	29	28	29	29	31	26	26
Not at all scientific.....	50	51	57	60	60	62	60	59	59	56	66	65
Don't know.....	9	4	4	3	5	3	5	5	5	4	2	4
<b>Sex</b>												
<b>Male</b>												
Very scientific.....	7	9	7	5	5	6	7	7	7	9	5	5
Sort of scientific.....	30	29	29	25	23	25	24	27	25	27	21	23
Not at all scientific.....	54	58	60	67	67	66	65	63	63	60	72	68
Don't know.....	9	4	3	3	5	2	4	2	5	4	2	4
<b>Female</b>												
Very scientific.....	8	10	9	7	6	7	7	7	7	8	6	5
Sort of scientific.....	37	41	32	36	35	32	32	31	32	36	30	29
Not at all scientific.....	46	44	55	53	55	58	56	55	56	52	61	63
Don't know.....	9	5	4	3	5	3	6	7	5	4	3	4
<b>Formal education</b>												
<b>&lt;High school</b>												
Very scientific.....	11	13	14	11	7	12	11	11	13	14	10	10
Sort of scientific.....	34	37	38	35	31	34	30	37	34	35	38	41
Not at all scientific.....	39	40	43	50	49	49	46	42	41	45	50	42
Don't know.....	16	10	5	4	12	5	13	10	13	6	2	8
<b>High school graduate</b>												
Very scientific.....	7	10	8	6	6	6	8	7	7	9	7	5
Sort of scientific.....	37	38	29	32	32	31	28	30	30	35	29	29
Not at all scientific.....	50	50	60	59	61	61	61	60	60	52	62	62
Don't know.....	6	2	3	3	2	2	3	4	3	4	2	4
<b>Baccalaureate</b>												
Very scientific.....	1	3	4	2	4	3	6	2	2	4	2	2
Sort of scientific.....	23	26	25	24	19	19	34	21	20	25	17	16
Not at all scientific.....	67	69	68	72	75	76	60	75	76	69	80	78
Don't know.....	9	3	3	1	2	3	—	2	3	2	1	4
<b>Graduate/professional degree</b>												
Very scientific.....	5	5	1	—	1	3	2	4	2	3	—	—
Sort of scientific.....	15	23	23	19	17	14	22	15	19	13	16	12
Not at all scientific.....	76	69	74	78	80	82	74	78	77	83	83	84
Don't know.....	4	3	2	2	2	—	2	2	2	—	1	4

**Public assessment of astrology, by respondent characteristic: 1979–2006**

(Percent)

Characteristic	1979 (n = 1,635)	1983 (n = 1,631)	1985 (n = 2,003)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
<b>Age (years)</b>												
<b>18–24</b>												
Very scientific.....	9	13	10	10	5	14	9	11	7	17	10	5
Sort of scientific.....	40	43	39	36	37	37	33	38	40	39	36	34
Not at all scientific.....	47	42	51	54	56	49	53	50	50	42	52	56
Don't know.....	4	3	—	0	2	1	5	1	3	1	2	5
<b>25–34</b>												
Very scientific.....	7	7	6	6	6	4	9	6	5	10	6	8
Sort of scientific.....	36	39	32	32	32	33	30	32	30	33	33	28
Not at all scientific.....	52	51	60	60	61	62	59	59	61	54	60	60
Don't know.....	4	3	1	1	2	1	2	3	3	3	1	4
<b>35–44</b>												
Very scientific.....	6	11	8	6	5	7	4	4	7	7	4	5
Sort of scientific.....	37	32	29	31	26	27	32	26	32	32	24	28
Not at all scientific.....	53	54	61	60	68	64	61	66	59	58	69	65
Don't know.....	5	3	2	2	1	3	3	4	1	3	2	2
<b>45–54</b>												
Very scientific.....	8	7	5	4	7	6	4	4	5	5	4	3
Sort of scientific.....	28	40	32	26	25	27	26	28	23	27	18	24
Not at all scientific.....	54	50	59	66	64	63	67	65	67	66	74	70
Don't know.....	10	3	5	4	4	4	3	4	5	3	3	3
<b>55–64</b>												
Very scientific.....	10	8	11	5	5	3	8	7	10	6	6	3
Sort of scientific.....	32	33	24	33	25	18	20	17	27	27	25	24
Not at all scientific.....	44	56	56	56	59	77	66	69	58	62	66	68
Don't know.....	15	3	9	5	10	2	6	7	6	5	3	5
<b>65+</b>												
Very scientific.....	5	12	11	6	5	7	10	11	11	6	6	5
Sort of scientific.....	26	24	26	27	29	27	22	31	20	31	26	21
Not at all scientific.....	50	52	55	60	53	60	55	47	57	54	64	68
Don't know.....	19	12	8	6	13	6	12	11	13	9	3	7
<b>Factual knowledge of science<sup>a</sup> (quartile)</b>												
<b>Top</b>												
Very scientific.....	NA	NA	NA	NA	NA	2	4	3	2	7	2	2
Sort of scientific.....	NA	NA	NA	NA	NA	22	20	22	24	24	17	14
Not at all scientific.....	NA	NA	NA	NA	NA	74	75	75	72	68	81	83
Don't know.....	NA	NA	NA	NA	NA	2	1	—	1	2	—	1

**Public assessment of astrology, by respondent characteristic: 1979–2006**

(Percent)

Characteristic	1979 (n = 1,635)	1983 (n = 1,631)	1985 (n = 2,003)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
<b>Second</b>												
Very scientific.....	NA	NA	NA	NA	NA	7	6	6	6	9	4	5
Sort of scientific.....	NA	NA	NA	NA	NA	28	30	29	25	30	22	24
Not at all scientific.....	NA	NA	NA	NA	NA	63	63	62	67	58	73	67
Don't know.....	NA	NA	NA	NA	NA	2	1	2	2	2	1	4
<b>Third</b>												
Very scientific.....	NA	NA	NA	NA	NA	7	10	8	8	10	6	7
Sort of scientific.....	NA	NA	NA	NA	NA	33	29	31	34	36	31	34
Not at all scientific.....	NA	NA	NA	NA	NA	58	57	58	55	51	62	55
Don't know.....	NA	NA	NA	NA	NA	2	4	3	3	3	2	4
<b>Bottom</b>												
Very scientific.....	NA	NA	NA	NA	NA	9	8	9	11	11	10	5
Sort of scientific.....	NA	NA	NA	NA	NA	31	31	32	31	36	32	34
Not at all scientific.....	NA	NA	NA	NA	NA	55	50	46	45	44	51	54
Don't know.....	NA	NA	NA	NA	NA	5	12	12	13	10	7	8
<b>Understanding of scientific inquiry<sup>b</sup></b>												
<b>Understands inquiry</b>												
Very scientific.....	NA	NA	NA	NA	NA	NA	2	3	4	4	2	4
Sort of scientific.....	NA	NA	NA	NA	NA	NA	24	26	22	29	19	19
Not at all scientific.....	NA	NA	NA	NA	NA	NA	74	70	73	66	78	75
Don't know.....	NA	NA	NA	NA	NA	NA	1	1	2	1	1	2
<b>Doesn't understand inquiry</b>												
Very scientific.....	NA	NA	NA	NA	NA	NA	9	9	9	12	8	5
Sort of scientific.....	NA	NA	NA	NA	NA	NA	29	31	32	33	31	31
Not at all scientific.....	NA	NA	NA	NA	NA	NA	55	53	53	49	58	58
Don't know.....	NA	NA	NA	NA	NA	NA	6	7	7	6	3	5

— = ≤0.5% responded; NA = not available, question not asked

<sup>a</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”<sup>b</sup>See notes to appendix table 7-9 for explanation of scientific inquiry.NOTES: Responses to: *Would you say that astrology is very scientific, sort of scientific, or not at all scientific?* Table includes all years for which data collected. Detail may not add to total because of rounding.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); and University of Chicago, National Opinion Research Center, General Social Survey (2006).



Appendix table 7-12

**Public assessment of benefits and harms of scientific research, by respondent characteristic: 2006**

(Percent)

Characteristic	Benefits strongly outweigh harmful results	Benefits slightly outweigh harmful results	Benefits are about equal to harmful results	Harmful results slightly outweigh benefits	Harmful results strongly outweigh benefits	Don't know
All adults (n = 1,864) .....	48	22	17	4	2	6
Sex						
Male (n = 804) .....	51	21	15	4	3	5
Female (n = 1,060).....	46	23	19	4	1	7
Formal education						
<High school (n = 227) .....	27	20	28	8	3	13
High school graduate (n = 1,115) .....	45	24	17	5	2	6
Baccalaureate (n = 346).....	57	19	15	3	1	4
Graduate/professional degree (n = 176) .....	76	13	8	2	1	—
Science/mathematics education <sup>a</sup>						
Low (n = 1,042) .....	38	24	21	6	3	8
Middle (n = 359) .....	53	24	14	3	1	5
High (n = 408).....	70	15	11	2	1	2
Family income (quartile)						
Top (n = 311) .....	60	22	11	3	3	2
Second (n = 420) .....	53	23	16	3	1	5
Third (n = 419).....	46	25	20	5	1	3
Bottom (n = 462).....	41	22	19	6	3	8
Age (years)						
18–24 (n = 157).....	46	26	14	5	3	6
25–34 (n = 341).....	43	21	22	5	2	7
35–44 (n = 382).....	49	22	18	5	2	5
45–54 (n = 386).....	51	19	19	4	3	4
55–64 (n = 272).....	56	20	14	2	2	5
65+ (n = 321) .....	44	25	15	5	1	11
Minor children at home						
Yes (n = 588).....	47	22	19	4	3	6
No (n = 1,276).....	49	22	16	5	2	6
Factual knowledge of science <sup>b</sup> (quartile)						
Top (n = 455) .....	72	17	8	1	—	2
Second (n = 470) .....	51	22	17	5	2	3
Third (n = 479).....	41	25	18	6	3	7
Bottom (n = 460).....	28	23	27	5	3	14

— = ≤0.5% responded

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

<sup>b</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”

NOTES: Responses to: *People have frequently noted that scientific research has produced benefits and harmful results. Would you say that, on balance, the benefits of scientific research have outweighed the harmful results, or that the harmful results of scientific research have been greater than its benefits?* Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

## Attitudes toward science and technology, by country/region: most recent year

(Percent)

Statement	United States (2004 or 2006) <sup>a</sup>						Japan (2001)						South Korea (2006)						Russia (1996 or 2003) <sup>b</sup>			
	Total agree	Strongly agree	Agree	Disagree	Strongly disagree	Don't know	Total agree	Strongly agree	Agree	Disagree	Strongly disagree	Don't know	Total agree	Strongly agree	Agree	Disagree	Strongly disagree	Don't know	Total agree	Agree	Disagree	Don't know
Promise of science																						
<i>Science and technology are making our lives healthier, easier, and more comfortable.....</i>	90	27	63	7	2	1	73	6	67	13	1	13	94	36	58	3	0	3	53	53	13	34
<i>With the application of science and new technology, work will become more interesting. ....</i>	76	13	63	19	2	2	54	4	50	25	2	20	85	27	59	9	1	5	NA	NA	NA	NA
<i>Because of science and technology, there will be more opportunities for the next generation.....</i>	90	41	49	8	1	2	66	6	60	16	1	18	86	34	52	8	1	5	NA	NA	NA	NA
Reservations about science																						
<i>We depend too much on science and not enough on faith. ....</i>	55	17	39	32	10	2	NA	NA	NA	NA	NA	NA	51	9	43	34	6	9	19	19	26	55
<i>It is not important for me to know about science in my daily life.....</i>	14	2	13	55	30	1	25	2	23	57	11	8	28	4	24	45	21	6	31	31	56	13
<i>Science makes our way of life change too fast.....</i>	44	10	34	45	8	3	62	8	54	24	1	13	79	25	54	14	3	5	30	30	48	22
Statement	China (2001)					India (2004)				Malaysia (2004) <sup>c</sup>				EU-25 (2005)								
	Total agree	Agree	Basically agree	Don't agree	Don't know	Total agree	Agree	Disagree	Don't know	Total agree	Agree	Disagree	Not sure	Total agree	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know		
Promise of science																						
<i>Science and technology are making our lives healthier, easier, and more comfortable.....</i>	94	65	30	1	4	77	77	5	19	74	74	4	22	78	32	46	14	5	1	2		
<i>With the application of science and new technology, work will become more interesting. ....</i>	81	46	35	5	14	61	61	10	30	70	70	3	27	69	24	45	18	7	3	3		
<i>Because of science and technology, there will be more opportunities for the next generation.....</i>	78	45	32	6	16	54	54	12	35	NA	NA	NA	NA	77	35	42	12	6	2	2		
Reservations about science																						
<i>We depend too much on science and not enough on faith. ....</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	27	27	33	40	39	12	27	26	17	12	4		
<i>It is not important for me to know about science in my daily life.....</i>	17	6	12	74	9	NA	NA	NA	NA	2	2	76	22	37	14	23	16	26	19	1		
<i>Science makes our way of life change too fast.....</i>	73	37	35	16	11	75	75	7	18	66	66	6	28	59	21	38	18	15	5	2		

Appendix table 7-13

**Attitudes toward science and technology, by country/region: most recent year**

(Percent)

Statement	United States (2006)							Japan (2001)							South Korea (2006)						
	Total benefit	B>>H	B>H	B=H	H>B	H>>B	Don't know	Total benefit	B>>H	B>H	B=H	H>B	H>>B	Don't know	Total benefit	B>>H	B>H	B=H	H>B	H>>B	Don't know
Benefit (B) versus harm (H)																					
<i>Have the benefits of scientific research outweighed the harmful results?.....</i>																					
	70	48	22	17	4	2	6	40	13	27	28	15	6	11	71	33	39	22	2	0	4

  

Statement	Russia (1996 or 2003) <sup>a</sup>					China (2001)					Malaysia (2004)				EU-25 (2005)						
	Total benefit	B>H	B=H	H>B	Don't know	Total benefit	B>H	B=H	H>B	Unclear	Total benefit	B>H	H>B	Not sure	Total benefit	B>>H	B>H	B=H	H>B	H>>B	Don't know
Benefit (B) versus harm (H)																					
<i>Have the benefits of scientific research outweighed the harmful results?.....</i>																					
	59	59	30	5	6	76	76	7	0	17	69	69	6	25	52	16	36	29	10	3	5

NA = not available, question not asked or different response categories offered

EU = European Union; B>>H = benefits strongly outweigh harmful results; B>H = benefits slightly outweigh harmful results; B=H = benefits about equal harmful results; H>B = harmful results slightly outweigh benefits; H>>B = harmful results strongly outweigh benefits

<sup>a</sup>U.S. responses for following items from 2004 survey: "Science and technology are making our lives healthier . . ."; "With the application of science and new technology . . ."; "We depend too much on science . . ."; and "It is not important for me to know . . ." Responses to the other items are from 2006 survey.

<sup>b</sup>Russian responses for "Science and technology are making our lives healthier . . ." and "We depend too much on science . . ." are from 1996 survey. Responses for "Have the benefits . . ." and "Science makes our way of life change . . ." are from 2003 survey.

<sup>c</sup>Malaysian question corresponding to "It is not important for me to know about science in my daily life" stated in a positive form as "We need to have knowledge about science in order to manage our daily lives." The Malaysian responses of agree and disagree have been reversed to make them correspond to negative form of statement asked by other countries and included in this table.

NOTES: "Benefit versus harm" data for United States, Japan, Korea, Russia, and EU-25 are responses to questions or statements that included words "benefit" and "harm." Russian response category "more benefits" is aggregate of "undoubtedly more benefits" and "probably more benefits"; Russian category "more harms" is aggregate of "undoubtedly more harms" and "probably more harms." EU-25 survey provided statement, "The benefits of science are greater than any harmful effects it may have," and asked respondent to indicate one of following response categories: strongly agree, tend to agree, neither agree nor disagree, tend to disagree, strongly disagree, don't know. Chinese survey asked respondents to indicate whether S&T brings about more "advantages" or more "disadvantages," whether advantages and disadvantages of S&T are about equal, or whether respondent was "unclear" about it. Malaysian survey asked respondents to indicate whether they agreed with, disagreed with, or weren't sure about statement, "Scientific research has more positive effects than negative effects."

SOURCES: United States—University of Michigan, Survey of Consumer Attitudes (2004) and University of Chicago, National Opinion Research Center, General Social Survey (2006); Japan—Government of Japan, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology, The 2001 Survey of Public Attitudes Toward and Understanding of Science and Technology in Japan (2002); South Korea—Korea Science Foundation, Survey of Public Attitudes Toward and Understanding of Science and Technology (2006); Russia—Gokhberg L and Shuvalova O, Russian Public Opinion of the Knowledge Economy: Science, Innovation, Information Technology and Education as Drivers of Economic Growth and Quality of Life, British Council, Russia (2004); China—Chinese Ministry of Science and Technology, China Science and Technology Indicators 2002 (2002); India—National Council of Applied Economic Research, India Science Survey (2004); Malaysia—Malaysian Science and Technology Information Centre, Public Awareness of Science and Technology Malaysia 2004 (2005); and EU—European Commission, Research Directorate-General, Eurobarometer 224/Wave 63.1: Europeans, Science and Technology (2005).

Appendix table 7-14

**Public assessment of whether science is too concerned with theory and speculation for use in government decisions, by respondent characteristic: 2006**

(Percent)

Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
All adults (n = 1,864).....	6	29	48	10	8
Sex					
Male (n = 804).....	5	31	47	11	6
Female (n = 1,060).....	6	27	49	10	9
Formal education					
<High school (n = 227).....	9	37	40	3	12
High school graduate (n = 1,115).....	6	30	48	8	8
Baccalaureate (n = 346).....	3	25	50	15	7
Graduate/professional degree (n = 176).....	3	17	51	27	2
Science/mathematics education <sup>a</sup>					
Low (n = 1,042).....	7	33	45	6	9
Middle (n = 359).....	3	29	49	12	6
High (n = 408).....	4	18	56	20	2
Family income (quartile)					
Top (n = 311).....	3	25	53	15	3
Second (n = 420).....	5	28	52	9	6
Third (n = 419).....	7	32	49	7	5
Bottom (n = 462).....	6	32	41	12	8
Age (years)					
18–24 (n = 157).....	3	21	59	10	8
25–34 (n = 341).....	7	31	46	10	7
35–44 (n = 382).....	5	27	53	9	6
45–54 (n = 386).....	6	27	49	13	5
55–64 (n = 272).....	5	31	39	13	12
65+ (n = 321).....	6	34	43	7	11
Minor children at home					
Yes (n = 588).....	5	29	49	9	7
No (n = 1,276).....	6	28	47	11	8
Factual knowledge of science <sup>b</sup> (quartile)					
Top (n = 455).....	3	17	56	22	2
Second (n = 470).....	4	29	53	10	5
Third (n = 479).....	9	33	47	5	6
Bottom (n = 460).....	7	37	33	4	19

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”NOTES: Responses to: *Science is too concerned with theory and speculation to be of much use in making concrete government policy decisions that will affect the way we live.*  
Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-15

**Public assessment of whether science makes life change too fast, by respondent characteristic: 2006**

(Percent)

Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
All adults ( <i>n</i> = 1,864) .....	10	34	45	8	3
Sex					
Male ( <i>n</i> = 804) .....	10	36	43	9	2
Female ( <i>n</i> = 1,060) .....	10	33	46	8	3
Formal education					
<High school ( <i>n</i> = 227) .....	17	39	36	4	4
High school graduate ( <i>n</i> = 1,115) .....	11	35	44	7	3
Baccalaureate ( <i>n</i> = 346) .....	5	33	46	13	2
Graduate/professional degree ( <i>n</i> = 176) .....	4	25	57	13	1
Science/mathematics education <sup>a</sup>					
Low ( <i>n</i> = 1,042) .....	12	38	42	5	3
Middle ( <i>n</i> = 359) .....	7	30	49	12	2
High ( <i>n</i> = 408) .....	5	30	50	13	1
Family income (quartile)					
Top ( <i>n</i> = 311) .....	5	31	51	13	—
Second ( <i>n</i> = 420) .....	10	34	49	7	—
Third ( <i>n</i> = 419) .....	10	41	40	6	2
Bottom ( <i>n</i> = 462) .....	13	35	38	11	3
Age (years)					
18–24 ( <i>n</i> = 157) .....	7	26	46	18	3
25–34 ( <i>n</i> = 341) .....	9	38	42	8	2
35–44 ( <i>n</i> = 382) .....	12	36	44	6	2
45–54 ( <i>n</i> = 386) .....	11	30	47	10	1
55–64 ( <i>n</i> = 272) .....	7	33	54	4	2
65+ ( <i>n</i> = 321) .....	10	42	36	6	6
Minor children at home					
Yes ( <i>n</i> = 588) .....	11	36	45	6	2
No ( <i>n</i> = 1,276) .....	9	34	44	10	3
Factual knowledge of science <sup>b</sup> (quartile)					
Top ( <i>n</i> = 455) .....	4	26	53	17	—
Second ( <i>n</i> = 470) .....	11	31	48	8	2
Third ( <i>n</i> = 479) .....	12	40	40	6	2
Bottom ( <i>n</i> = 460) .....	13	41	36	2	7

— = &lt;0.5% responded

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”NOTES: Responses to: *Science makes our way of life change too fast*. Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-16

**Public opinion on whether federal government should fund basic research: 1985–2006**

(Percent)

Opinion	1985 (n = 2,003)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)
Strongly agree .....	9	16	18	14	17	22	21	19	29	32
Agree.....	70	65	63	63	61	57	61	62	53	55
Disagree.....	16	14	15	18	17	15	13	14	15	8
Strongly disagree.....	—	1	1	2	2	3	2	1	2	1
Don't know.....	5	4	4	3	3	3	3	4	1	3

— = ≤0.5% responded

NOTES: Responses to: *Even if it brings no immediate benefits, scientific research that advances the frontiers of knowledge is necessary and should be supported by the federal government.* Table includes all years for which data collected. Detail may not add to total because of rounding.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); and University of Chicago, National Opinion Research Center, General Social Survey (2006).

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Appendix table 7-17

**Public opinion on whether federal government should fund basic research, by respondent characteristic: 2006**

(Percent)

Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
All adults (n = 1,864) .....	32	55	8	1	3
Sex					
Male (n = 804) .....	36	53	7	1	2
Female (n = 1,060) .....	29	57	9	1	4
Formal education					
<High school (n = 227) .....	33	45	11	2	9
High school graduate (n = 1,115) .....	29	58	9	2	3
Baccalaureate (n = 346) .....	34	59	6	0	1
Graduate/professional degree (n = 176) .....	46	46	7	0	1
Science/mathematics education <sup>a</sup>					
Low (n = 1,042) .....	29	57	9	2	4
Middle (n = 359) .....	34	54	7	2	3
High (n = 408) .....	38	54	7	0	—
Family income (quartile)					
Top (n = 311) .....	36	55	8	1	—
Second (n = 420) .....	32	60	5	1	1
Third (n = 419) .....	31	56	10	1	2
Bottom (n = 462) .....	32	54	9	2	3
Age (years)					
18–24 (n = 157) .....	36	54	6	2	2
25–34 (n = 341) .....	28	61	6	1	5
35–44 (n = 382) .....	32	57	9	1	1
45–54 (n = 386) .....	37	52	8	1	1
55–64 (n = 272) .....	32	52	10	1	6
65+ (n = 321) .....	27	53	12	1	6
Minor children at home					
Yes (n = 588) .....	30	57	8	2	4
No (n = 1,276) .....	33	54	8	1	3
Factual knowledge of science <sup>b</sup> (quartile)					
Top (n = 455) .....	45	48	6	1	—
Second (n = 470) .....	32	57	7	1	2
Third (n = 479) .....	29	59	9	1	3
Bottom (n = 460) .....	20	57	12	2	9

— = &lt;0.5% responded

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1."NOTES: Responses to: *Even if it brings no immediate benefits, scientific research that advances the frontiers of knowledge is necessary and should be supported by the federal government.* Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-18

**Public assessment of federal government spending, by policy area: 1981–2006**

(Percent)

Policy area	1981 (n = 1,611)	1983 (n = 1,631)	1985 (n = 2,003)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 2,765)	2004 (n = 2,812)	2006 (n = 2,992)
Exploring space												
Too little.....	18	17	9	17	9	12	14	15	11	12	14	14
Too much .....	42	39	45	43	52	50	45	46	48	36	38	35
Reducing pollution												
Too little.....	52	54	69	76	76	72	65	65	63	60	63	67
Too much .....	14	11	6	4	5	7	8	7	6	8	7	7
Improving health care												
Too little.....	61	NA	68	67	75	79	68	71	70	73	77	72
Too much .....	6	NA	3	2	3	4	7	6	4	5	6	7
Supporting scientific research <sup>a</sup>												
Too little.....	31	NA	29	34	30	34	34	37	36	34	38	41
Too much .....	18	NA	18	15	16	19	14	14	14	13	12	11
Improving education												
Too little.....	62	71	73	76	77	81	76	75	76	75	75	73
Too much .....	6	5	3	4	4	4	6	6	5	5	5	5
Helping older people												
Too little.....	74	NA	73	76	75	73	66	71	73	NA	NA	NA
Too much .....	3	NA	3	2	2	3	5	4	3	NA	NA	NA
Spending for Social Security												
Too little.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	59	64	61
Too much .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	5	4
Improving national defense <sup>b</sup>												
Too little.....	34	19	11	11	15	15	23	31	29	33	33	26
Too much .....	26	47	50	52	40	40	32	25	25	20	26	38
Improving mass transportation												
Too little.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	34	34	38
Too much .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	10	9
Assistance to other countries												
Too little.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	8	9	10
Too much .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	66	64	62
Helping low-income people												
Too little.....	45	NA	54	55	57	56	43	49	53	NA	NA	NA
Too much .....	24	NA	13	12	15	17	23	19	15	NA	NA	NA
Assistance to the poor <sup>c</sup>												
Too little.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	66	69	68
Too much .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	8	6	8

NA = not available, question not asked

<sup>a</sup>Question asked of 1,358 survey respondents in 2002 and 1,401 respondents in 2004.<sup>b</sup>Question asked of 1,021 survey respondents in 1988.<sup>c</sup>Question asked of 1,407 survey respondents in 2002, 1,411 respondents in 2004, and 1,508 respondents in 2006.

NOTES: Responses to: *We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one, I'd like you to tell me if you think that the Government is spending too little money on it, about the right amount, or too much.* Two versions of this question with different response categories administered. Table combines data for following sets of categories: space exploration program/space exploration; improving and protecting environment/environment; improving and protecting nation's health/health; improving nation's education system/education; military, armaments, and defense/national defense; assistance to other countries/foreign aid. Table includes all years for which data collected. Detail does not add to total because "about right amount" and "don't know" responses not shown.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1981–2001); and University of Chicago, National Opinion Research Center, General Social Survey (2002–06).



Appendix table 7-19

(Page 1 of 2)

**Public assessment of federal government spending, by policy area and respondent characteristic: 2006**

(Percent)

Characteristic	Exploring space		Reducing pollution		Improving health care		Supporting scientific research		Improving education	
	Too little	Too much	Too little	Too much	Too little	Too much	Too little	Too much	Too little	Too much
All adults (n = 2,992).....	14	35	67	7	72	7	41	11	73	5
Sex										
Male (n = 1,296).....	19	33	65	9	67	9	42	10	69	8
Female (n = 1,696).....	10	37	69	5	76	6	40	12	77	4
Formal education										
<High school (n = 442).....	9	47	57	10	66	8	36	17	64	5
High school graduate (n = 1,755).....	13	36	67	6	75	6	39	12	75	5
Baccalaureate (n = 524).....	17	26	70	6	70	8	46	7	71	8
Graduate/professional degree (n = 271).....	19	25	79	5	69	7	51	4	79	5
Science/mathematics education <sup>b</sup>										
Low (n = 1,042).....	12	38	65	8	77	5	37	13	74	5
Middle (n = 359).....	16	29	76	4	75	6	49	7	79	5
High (n = 408).....	20	27	72	6	71	7	45	6	77	6
Family income (quartile)										
Top (n = 457).....	18	29	74	5	68	10	48	7	76	6
Second (n = 663).....	15	29	66	6	72	7	39	8	74	6
Third (n = 685).....	12	39	69	7	75	5	39	12	76	5
Bottom (n = 773).....	12	44	64	8	73	8	39	17	71	4
Age (years)										
18–24 (n = 254).....	15	28	71	6	69	5	40	11	78	3
25–34 (n = 559).....	11	31	71	4	73	5	34	12	79	3
35–44 (n = 616).....	11	36	66	7	71	10	38	14	74	5
45–54 (n = 582).....	16	38	70	6	80	5	42	10	77	4
55–64 (n = 451).....	20	34	68	7	74	7	51	7	70	8
65+ (n = 522).....	12	43	54	11	64	8	43	12	59	11
Minor children at home										
Yes (n = 981).....	12	36	66	6	72	6	39	14	77	4
No (n = 2,011).....	15	35	68	7	72	7	42	10	71	6
Factual knowledge of science <sup>c</sup> (quartile)										
Top (n = 455).....	26	20	72	6	71	7	54	3	76	6
Second (n = 470).....	14	31	70	4	73	6	39	9	77	4
Third (n = 479).....	9	41	73	6	80	6	39	12	75	6
Bottom (n = 460).....	8	44	59	10	74	5	32	18	72	5

Appendix table 7-19

(Page 2 of 2)

**Public assessment of federal government spending, by policy area and respondent characteristic: 2006**

(Percent)

Characteristic	Spending for Social Security		Improving national defense		Improving mass transportation		Assistance to other countries		Assistance to the poor <sup>a</sup>	
	Too little	Too much	Too little	Too much	Too little	Too much	Too little	Too much	Too little	Too much
All adults (n = 2,992) .....	61	5	26	39	39	8	11	62	68	8
Sex										
Male (n = 1,296) .....	56	6	26	41	41	10	10	64	65	9
Female (n = 1,696) .....	65	3	25	36	38	7	11	60	71	7
Formal education										
< High school (n = 442) .....	65	3	26	40	33	11	16	50	81	5
High school graduate (n = 1,755) .....	66	4	28	36	34	9	8	67	69	7
Baccalaureate (n = 524) .....	50	7	21	42	51	7	12	59	58	10
Graduate/professional degree (n = 271) .....	44	6	19	49	58	3	16	53	63	10
Science/mathematics education <sup>b</sup>										
Low (n = 1,042) .....	67	4	30	32	33	10	8	65	72	6
Middle (n = 359) .....	58	4	26	38	45	6	9	64	67	7
High (n = 408) .....	51	6	22	44	50	7	12	59	61	8
Family income (quartile)										
Top (n = 457) .....	51	7	26	38	50	7	11	61	62	10
Second (n = 663) .....	62	5	26	38	40	10	7	67	67	9
Third (n = 685) .....	65	4	27	38	39	9	11	63	73	7
Bottom (n = 773) .....	65	4	22	43	32	8	13	58	75	5
Age (years)										
18–24 (n = 254) .....	51	7	19	45	28	7	19	44	68	7
25–34 (n = 559) .....	62	7	23	44	36	8	13	53	69	7
35–44 (n = 616) .....	67	5	23	41	37	11	11	63	70	6
45–54 (n = 582) .....	67	4	24	38	42	6	9	70	73	5
55–64 (n = 451) .....	62	2	32	33	49	9	8	69	71	9
65+ (n = 522) .....	49	3	34	29	40	10	6	68	55	12
Minor children at home										
Yes (n = 981) .....	63	4	25	38	34	8	11	60	70	5
No (n = 2,011) .....	59	5	26	39	42	9	10	63	67	9
Factual knowledge of science <sup>c</sup> (quartile)										
Top (n = 455) .....	48	5	22	42	51	7	13	60	59	8
Second (n = 470) .....	62	5	27	39	37	8	9	62	70	7
Third (n = 479) .....	68	4	30	35	38	9	8	67	73	7
Bottom (n = 460) .....	68	3	30	28	32	9	7	67	73	4

<sup>a</sup>Question asked of 1,508 survey respondents.<sup>b</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses. Science/mathematics education asked of 1,864 survey respondents; information available for 1,809 respondents.<sup>c</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1." Questions used in scale asked of 1,864 survey respondents.

NOTES: Responses to: *We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one, I'd like you to tell me if you think that the Government is spending too little money on it, about the right amount, or too much.* Detail does not add to total because "about the right amount" and "do not know" responses not shown. See notes to appendix table 7-18 for explanation of policy area categories.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-20

**Public confidence in institutional leaders: 1973–2006**

(Percent)

Year (number)	Military	Scientific community	Medicine	U.S. Supreme Court	Banks and financial institutions	Education	Organized religion	Major companies	Executive branch of federal government	Organized labor	Congress	Press	Television	Mean <sup>a</sup>
1973 (n = 1,504)	32	37	54	31	NA	37	34	29	29	15	23	23	18	30
1974 (n = 1,484)	39	45	61	33	NA	49	44	31	14	19	17	25	23	33
1975 (n = 1,490)	35	37	51	30	31	31	24	19	13	10	13	24	18	25
1976 (n = 1,499)	40	42	54	34	39	37	30	21	13	11	13	28	18	29
1977 (n = 1,530)	36	41	53	36	42	40	40	27	27	15	19	25	18	31
1978 (n = 1,532)	30	36	46	28	32	28	30	21	12	11	13	20	14	24
1980 (n = 1,468)	28	41	53	24	32	30	35	27	12	15	9	22	15	26
1982 (n = 1,860)	29	35	45	30	26	35	33	21	17	13	13	18	15	25
1983 (n = 1,599)	30	42	52	27	23	28	28	24	13	8	10	13	12	24
1984 (n = 989)	36	44	50	33	30	28	30	30	19	8	13	17	13	27
1986 (n = 1,470)	31	39	47	30	21	28	25	25	21	9	16	19	15	25
1987 (n = 1,819)	34	41	51	35	27	36	30	28	17	12	16	19	12	28
1988 (n = 997)	35	39	52	35	27	30	21	25	16	11	16	19	14	26
1989 (n = 1,035)	33	41	47	35	18	30	22	25	20	9	17	17	14	26
1990 (n = 899)	33	38	45	34	17	27	23	26	24	11	16	14	14	25
1991 (n = 1,017)	61	40	48	37	12	30	25	20	27	11	18	16	15	29
1993 (n = 1,057)	41	37	40	30	14	22	22	21	11	8	6	11	12	22
1994 (n = 2,011)	37	39	42	31	18	25	25	26	11	11	8	10	10	23
1996 (n = 1,925)	39	40	45	28	24	23	25	24	10	11	7	11	10	23
1998 (n = 1,911)	36	40	45	31	26	27	27	26	13	11	10	9	10	24
2000 (n = 1,896)	40	41	44	32	29	27	28	28	13	13	13	10	10	25
2002 (n = 912)	56	37	37	36	22	26	19	17	27	12	14	10	9	25
2004 (n = 876)	58	42	38	32	29	29	23	18	22	13	15	9	10	26
2006 (n = 1,989)	47	41	40	33	30	28	24	18	16	12	12	10	9	24

NA = not available, question not asked

<sup>a</sup>Excludes banks and financial institutions.

NOTES: Data represent respondents expressing “great deal of confidence” when asked: *As far as the people running these institutions are concerned, would you say that you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?* Sample size not exact for all institutions. Table includes all years for which data collected.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (1973–2006).

Appendix table 7-21

**Preferred groups for influencing decisions about public issues, by respondent characteristic: 2006**

(Mean preferred influence score)

Characteristic	Global warming			Stem cell research			Federal income taxes			Genetically modified foods		
	Environmental scientists (n = 888)	Business leaders (n = 883)	Elected officials (n = 887)	Medical researchers (n = 880)	Religious leaders (n = 875)	Elected officials (n = 872)	Economists (n = 875)	Business leaders (n = 888)	Elected officials (n = 890)	Medical researchers (n = 887)	Business leaders (n = 883)	Elected officials (n = 884)
All adults .....	3.35	2.17	2.55	3.21	2.09	2.45	2.95	2.45	2.74	3.26	1.88	2.24
Sex												
Male .....	3.28	2.22	2.64	3.15	2.05	2.57	2.94	2.47	2.77	3.28	1.96	2.30
Female .....	3.42	2.13	2.48	3.26	2.12	2.35	2.95	2.43	2.71	3.25	1.81	2.20
Formal education												
<High school .....	3.24	2.15	2.46	3.36	2.13	2.27	2.81	2.61	2.79	3.08	2.32	2.48
High school graduate .....	3.37	2.13	2.47	3.17	2.12	2.39	2.87	2.44	2.70	3.24	1.87	2.17
Baccalaureate .....	3.27	2.31	2.79	3.16	2.08	2.65	3.13	2.41	2.87	3.36	1.71	2.39
Graduate/professional .....	3.57	2.18	2.71	3.38	1.78	2.60	3.13	2.41	2.67	3.41	1.74	2.11
Science/mathematics education <sup>a</sup>												
Low .....	3.32	2.15	2.46	3.24	2.19	2.32	2.84	2.50	2.70	3.19	1.97	2.25
Middle .....	3.39	2.12	2.63	3.24	1.99	2.53	3.07	2.45	2.77	3.40	1.84	2.19
High .....	3.41	2.26	2.69	3.13	1.93	2.62	3.10	2.32	2.76	3.31	1.68	2.25
Family income (quartile)												
Top .....	3.45	2.18	2.71	3.20	2.02	2.46	2.99	2.37	2.79	3.37	1.81	2.25
Second .....	3.30	2.14	2.51	3.12	2.11	2.50	2.97	2.35	2.67	3.31	1.87	2.23
Third .....	3.47	2.22	2.58	3.22	2.11	2.47	2.96	2.58	2.80	3.20	1.91	2.29
Bottom .....	3.28	2.06	2.40	3.34	2.15	2.35	2.79	2.53	2.74	3.18	1.93	2.23
Age (years)												
18–24 .....	3.43	2.02	2.55	3.28	1.91	2.53	3.08	2.37	3.22	3.58	1.81	2.50
25–34 .....	3.45	2.12	2.58	3.31	1.92	2.46	3.01	2.44	2.77	3.26	1.83	2.39
35–44 .....	3.38	2.26	2.65	3.15	2.10	2.63	2.84	2.39	2.68	3.14	1.84	2.23
45–54 .....	3.34	2.22	2.62	3.16	2.14	2.40	2.86	2.32	2.62	3.22	1.79	2.06
55–64 .....	3.32	2.16	2.44	3.17	2.10	2.32	3.06	2.66	2.65	3.35	1.98	2.20
65+ .....	3.17	2.22	2.42	3.21	2.31	2.31	2.94	2.64	2.70	3.21	2.09	2.21
Minor children at home												
Yes .....	3.37	2.17	2.60	3.19	2.18	2.57	2.87	2.45	2.77	3.29	1.87	2.30
No .....	3.35	2.17	2.53	3.22	2.04	2.39	2.98	2.45	2.72	3.25	1.88	2.21
Factual knowledge of science <sup>b</sup> (quartile)												
Top .....	3.34	2.14	2.66	3.15	1.87	2.61	3.05	2.35	2.74	3.34	1.72	2.23
Second .....	3.38	2.10	2.48	3.16	1.96	2.43	2.95	2.47	2.75	3.31	1.81	2.28
Third .....	3.42	2.28	2.59	3.28	2.20	2.42	2.95	2.46	2.77	3.22	1.93	2.16
Bottom .....	3.28	2.18	2.47	3.27	2.37	2.29	2.78	2.53	2.67	3.15	2.11	2.33

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1."

NOTES: Responses to: *How much influence should each of the following groups have in deciding: global warming policy; government funding for stem cell research; reducing federal income taxes; restricting sale of genetically modified foods?* See chapter endnote 23 for precise question wording. Mean preferred influence score based on 4-point scale, where 1 = none at all, 2 = a little influence, 3 = a fair amount, 4 = a great deal of influence. Questions on global warming and stem cell research asked of 928 survey respondents; questions on federal income taxes and genetically modified foods asked of 936 survey respondents. Number (n) of respondents varies by group within issue because mean preferred influence score excludes responses of "don't know."

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-22

**Perceived understanding of public issues by various groups, by respondent characteristic: 2006**

(Mean understanding score)

Characteristic	Global warming			Stem cell research			Federal income taxes			Genetically modified foods		
	Environmental scientists (n = 891)	Business leaders (n = 890)	Elected officials (n = 887)	Medical researchers (n = 872)	Religious leaders (n = 870)	Elected officials (n = 867)	Economists (n = 876)	Business leaders (n = 890)	Elected officials (n = 889)	Medical researchers (n = 888)	Business leaders (n = 883)	Elected officials (n = 884)
All adults .....	4.02	2.36	2.39	4.21	2.37	2.39	3.68	3.37	2.89	3.81	2.08	2.52
Sex												
Male .....	3.91	2.37	2.36	4.19	2.27	2.42	3.61	3.39	2.83	3.86	2.10	2.58
Female .....	4.10	2.36	2.42	4.23	2.46	2.37	3.73	3.35	2.93	3.77	2.07	2.48
Formal education												
<High school .....	3.83	2.27	2.42	4.29	2.28	2.60	2.96	2.99	2.86	3.46	2.45	2.62
High school graduate .....	3.96	2.33	2.38	4.15	2.39	2.33	3.61	3.33	2.90	3.79	2.08	2.50
Baccalaureate .....	4.15	2.58	2.58	4.27	2.47	2.56	4.05	3.53	2.88	4.00	1.95	2.61
Graduate/professional .....	4.33	2.21	2.00	4.38	2.14	2.19	4.09	3.68	2.83	3.97	1.93	2.38
Science/mathematics education <sup>a</sup>												
Low .....	3.94	2.39	2.44	4.19	2.38	2.38	3.44	3.25	2.86	3.68	2.15	2.55
Middle .....	4.11	2.37	2.49	4.12	2.34	2.36	3.84	3.47	2.96	3.95	2.11	2.53
High .....	4.18	2.31	2.21	4.36	2.35	2.39	4.10	3.57	2.86	4.02	1.87	2.44
Family income (quartile)												
Top .....	4.16	2.45	2.40	4.28	2.32	2.42	4.12	3.60	2.91	4.03	2.09	2.60
Second .....	4.17	2.28	2.32	4.14	2.45	2.40	3.65	3.35	2.87	3.82	2.08	2.50
Third .....	4.02	2.35	2.35	4.32	2.43	2.38	3.61	3.37	3.10	3.74	2.06	2.54
Bottom .....	3.80	2.33	2.42	4.21	2.28	2.34	3.34	3.20	2.73	3.56	2.12	2.51
Age (years)												
18–24 .....	4.12	2.16	2.48	4.32	2.20	2.51	4.00	3.55	3.28	4.27	1.90	2.85
25–34 .....	4.19	2.46	2.53	4.20	2.27	2.45	3.56	3.30	2.95	3.75	2.07	2.75
35–44 .....	4.09	2.41	2.42	4.19	2.41	2.49	3.65	3.39	2.91	3.82	2.08	2.52
45–54 .....	4.10	2.43	2.45	4.15	2.44	2.35	3.75	3.38	2.89	3.88	2.02	2.32
55–64 .....	3.76	2.21	2.15	4.24	2.21	2.16	3.70	3.40	2.47	3.73	2.10	2.33
65+ .....	3.76	2.41	2.28	4.19	2.66	2.36	3.50	3.27	2.86	3.55	2.31	2.46
Minor children at home												
Yes .....	4.12	2.39	2.45	4.21	2.46	2.42	3.67	3.45	3.11	4.00	2.13	2.61
No .....	3.97	2.35	2.37	4.21	2.33	2.37	3.68	3.33	2.77	3.71	2.05	2.47
Factual knowledge of science <sup>b</sup> (quartile)												
Top .....	4.11	2.37	2.31	4.46	2.31	2.39	4.13	3.52	2.82	4.07	1.91	2.46
Second .....	4.03	2.27	2.36	4.18	2.27	2.40	3.85	3.49	2.93	3.82	2.10	2.68
Third .....	4.15	2.44	2.46	4.15	2.48	2.47	3.50	3.32	2.90	3.78	1.99	2.29
Bottom .....	3.74	2.38	2.47	4.02	2.44	2.28	3.05	3.07	2.89	3.52	2.39	2.67

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

<sup>b</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1."

NOTES: Responses to: *How well do the following groups understand: causes of global warming; importance of stem cell research; effects of reducing federal income taxes; risks posed by genetically modified foods?* See chapter endnote 24 for precise question wording. Mean understanding score based on 5-point scale, where 5 = understands very well and 1 = understands not at all. Questions on global warming and stem cell research asked of 928 survey respondents; questions on federal income taxes and genetically modified foods asked of 936 survey respondents. Number (n) of respondents varies by group within issue because mean understanding score excludes responses of "don't know."

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

## Appendix table 7-23

**Perceived impartiality of various groups when making policy recommendations about public issues, by respondent characteristic: 2006**

(Mean impartiality score)

Characteristic	Global warming			Stem cell research			Federal income taxes			Genetically modified foods		
	Environmental scientists (n = 883)	Business leaders (n = 889)	Elected officials (n = 879)	Medical researchers (n = 883)	Religious leaders (n = 873)	Elected officials (n = 882)	Economists (n = 875)	Business leaders (n = 889)	Elected officials (n = 897)	Medical researchers (n = 888)	Business leaders (n = 883)	Elected officials (n = 884)
All adults .....	3.93	2.13	2.47	3.71	2.62	2.47	3.51	2.22	2.56	3.81	2.08	2.52
Sex												
Male .....	3.82	2.05	2.45	3.65	2.55	2.47	3.43	2.30	2.62	3.86	2.10	2.58
Female .....	4.01	2.19	2.49	3.76	2.68	2.47	3.56	2.16	2.50	3.77	2.07	2.48
Formal education												
<High school .....	3.94	2.46	2.78	3.80	2.69	2.56	3.05	2.35	2.73	3.46	2.45	2.62
High school graduate .....	3.86	2.12	2.42	3.67	2.71	2.42	3.36	2.17	2.53	3.79	2.08	2.50
Baccalaureate .....	4.03	2.09	2.58	3.79	2.60	2.66	3.97	2.29	2.72	4.00	1.95	2.61
Graduate/professional .....	4.12	1.83	2.19	3.66	1.97	2.33	3.89	2.23	2.22	3.97	1.93	2.38
Science/mathematics education <sup>a</sup>												
Low .....	3.91	2.27	2.55	3.76	2.76	2.41	3.22	2.20	2.57	3.68	2.15	2.55
Middle .....	3.90	1.95	2.42	3.79	2.61	2.53	3.72	2.39	2.60	3.95	2.11	2.53
High .....	4.07	1.99	2.41	3.57	2.30	2.56	3.98	2.15	2.45	4.02	1.87	2.44
Family income (quartile)												
Top .....	4.03	1.95	2.34	3.70	2.45	2.51	3.77	2.27	2.58	4.03	2.09	2.60
Second .....	3.90	2.18	2.42	3.63	2.47	2.41	3.46	2.16	2.59	3.82	2.08	2.50
Third .....	4.01	2.30	2.66	3.68	2.58	2.47	3.36	2.25	2.57	3.74	2.06	2.54
Bottom .....	3.88	2.13	2.51	3.84	2.85	2.53	3.45	2.32	2.52	3.56	2.12	2.51
Age (years)												
18–24 .....	4.06	2.15	2.86	3.73	2.76	2.62	3.94	2.05	3.05	4.27	1.90	2.85
25–34 .....	4.03	2.01	2.71	3.74	2.48	2.69	3.36	2.15	2.86	3.75	2.07	2.75
35–44 .....	4.00	2.08	2.38	3.79	2.70	2.60	3.51	2.18	2.43	3.82	2.08	2.52
45–54 .....	4.01	2.14	2.41	3.70	2.51	2.29	3.63	2.10	2.23	3.88	2.02	2.32
55–64 .....	3.66	2.01	2.05	3.54	2.43	2.11	3.46	2.42	2.42	3.73	2.10	2.33
65+ .....	3.74	2.43	2.54	3.74	2.91	2.57	3.24	2.51	2.55	3.55	2.31	2.46
Minor children at home												
Yes .....	4.02	1.97	2.36	3.77	2.73	2.45	3.56	2.27	2.66	4.00	2.13	2.61
No .....	3.88	2.20	2.53	3.68	2.56	2.49	3.48	2.20	2.50	3.71	2.05	2.47
Factual knowledge of science <sup>b</sup> (quartile)												
Top .....	3.95	1.83	2.33	3.58	2.21	2.36	3.94	2.18	2.47	4.07	1.91	2.46
Second .....	3.98	1.94	2.18	3.78	2.57	2.37	3.51	2.16	2.60	3.82	2.10	2.68
Third .....	4.01	2.42	2.78	3.81	2.78	2.61	3.37	2.27	2.61	3.78	1.99	2.29
Bottom .....	3.74	2.37	2.61	3.68	3.00	2.57	3.11	2.30	2.53	3.52	2.39	2.67

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1."

NOTES: Responses to: *When making policy recommendations about [public issue], to what extent do you think the following groups would support what is best for the country as a whole versus what serves their own narrow interests?* See chapter endnote 25 for full question wording. Mean impartiality score based on 5-point scale, where 5 = best for the country and 1 = own narrow interests. Questions on global warming and stem cell research asked of 928 survey respondents; questions on federal income taxes and genetically modified foods asked of 936 survey respondents. Number (n) of respondents varies by group within issue because mean impartiality score excludes responses of "don't know."

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-24

**Public perception of degree of scientific consensus on current issues, by respondent characteristic: 2006**

(Mean score)

Characteristic	Environmental scientists on existence and causes of global warming ( <i>n</i> = 850)	Medical researchers on importance of stem cells for research ( <i>n</i> = 851)	Economists on effects of reducing federal income taxes ( <i>n</i> = 811)	Medical researchers on risks and benefits of genetically modified foods ( <i>n</i> = 815)
All adults .....	3.38	3.64	2.83	3.12
Sex				
Male .....	3.33	3.71	2.85	3.21
Female .....	3.43	3.59	2.81	3.04
Formal education				
<High school .....	3.12	3.72	2.78	3.16
High school graduate .....	3.38	3.56	2.82	3.07
Baccalaureate .....	3.36	3.79	2.90	3.23
Graduate/professional .....	3.77	3.83	2.81	3.18
Science/mathematics education <sup>a</sup>				
Low .....	3.38	3.55	2.81	3.04
Middle .....	3.37	3.71	2.83	3.26
High .....	3.45	3.76	2.87	3.18
Family income (quartile)				
Top .....	3.52	3.67	2.77	3.10
Second .....	3.30	3.52	2.90	3.20
Third .....	3.48	3.74	2.98	3.25
Bottom .....	3.33	3.64	2.66	3.00
Age (years)				
18–24 .....	3.23	3.52	2.74	3.28
25–34 .....	3.58	3.77	2.96	3.19
35–44 .....	3.42	3.58	2.75	3.09
45–54 .....	3.44	3.63	2.83	3.00
55–64 .....	3.18	3.71	2.71	3.14
65+ .....	3.35	3.65	2.93	3.13
Minor children at home				
Yes .....	3.41	3.58	2.87	3.18
No .....	3.37	3.67	2.81	3.09
Factual knowledge of science <sup>b</sup> (quartile)				
Top .....	3.36	3.76	2.95	3.20
Second .....	3.41	3.61	2.83	3.16
Third .....	3.44	3.58	2.77	3.09
Bottom .....	3.32	3.62	2.74	3.01

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1."

NOTES: Responses to: *To what extent do [members of group] agree among themselves about [public issue]?* See chapter endnote 26 for full question wording. Mean consensus score based on 5-point scale, where 5 = near complete agreement and 1 = no agreement at all. Questions on global warming and stem cell research asked of 928 survey respondents; questions on federal income taxes and genetically modified foods asked of 936 survey respondents. Number (*n*) of respondents varies by group/issue because mean consensus score excludes responses of "don't know."

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-25

**Importance of process, credentials, and external validation to belief that something is scientific: 2006**

(Percent)

Attribute (n = 1,864)	Very important	Pretty important	Not too important	Not important at all	Don't know
<b>Process</b>					
Solid evidence .....	80	14	2	1	3
Different interpretations.....	73	20	2	1	4
Repeated experiment.....	67	26	3	1	4
<b>Credentials</b>					
Advanced degrees .....	62	28	5	1	3
University setting .....	33	47	13	4	4
Laboratory.....	41	31	20	5	4
<b>External validation</b>					
Common sense.....	39	34	15	8	3
Religious beliefs .....	10	16	31	39	5

NOTES: Responses to how important each of eight statements is to making something scientific. Process statements: (1) *The conclusions are based on solid evidence*; (2) *The researchers carefully examine different interpretations of the results, even ones they disagree with*; (3) *Other scientists repeat the experiment, and find similar results*. Credentials statements: (1) *The people who do it have advanced degrees in their field*; (2) *It is done by scientists employed in a university setting*; (3) *The research takes place in a laboratory*. External validation statements: (1) *The results of the research are consistent with common sense*; (2) *The results of the research are consistent with religious beliefs*.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

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Appendix table 7-26

**Importance of process, credentials, and external validation to belief that something is scientific, by respondent characteristic: 2006**

(Mean score)

Characteristic	Process			Credentials			External validation	
	Solid evidence (n = 1,807)	Different interpretations (n = 1,783)	Repeated experiment (n = 1,788)	Advanced degrees (n = 1,801)	University setting (n = 1,787)	Laboratory (n = 1,787)	Common sense (n = 1,794)	Religious beliefs (n = 1,775)
All adults .....	3.79	3.72	3.65	3.56	3.12	3.12	3.09	1.96
Sex								
Male .....	3.79	3.71	3.65	3.54	3.09	3.10	3.08	1.87
Female .....	3.79	3.74	3.66	3.58	3.14	3.14	3.10	2.03
Formal education								
<High school .....	3.69	3.51	3.52	3.64	3.24	3.51	3.31	2.31
High school graduate .....	3.77	3.70	3.63	3.57	3.13	3.16	3.19	2.08
Baccalaureate .....	3.84	3.81	3.73	3.52	3.02	2.91	2.90	1.63
Graduate/professional .....	3.90	3.89	3.76	3.54	3.09	2.87	2.56	1.48
Science/mathematics education <sup>a</sup>								
Low .....	3.73	3.66	3.62	3.59	3.16	3.29	3.27	2.14
Middle .....	3.81	3.73	3.60	3.57	3.11	3.03	3.01	1.87
High .....	3.90	3.88	3.79	3.50	3.04	2.82	2.70	1.60
Family income (quartile)								
Top .....	3.87	3.85	3.77	3.54	3.12	2.93	2.83	1.66
Second .....	3.78	3.71	3.64	3.52	3.07	3.13	3.11	1.86
Third .....	3.80	3.76	3.62	3.68	3.18	3.18	3.15	2.10
Bottom .....	3.69	3.57	3.53	3.52	3.12	3.20	3.12	2.11
Age (years)								
18–24 .....	3.80	3.74	3.64	3.61	3.05	2.76	2.88	1.94
25–34 .....	3.72	3.70	3.61	3.52	3.08	3.10	3.05	1.91
35–44 .....	3.78	3.74	3.65	3.55	3.11	3.09	3.01	1.94
45–54 .....	3.86	3.76	3.70	3.58	3.16	3.12	3.08	1.86
55–64 .....	3.81	3.78	3.68	3.54	3.00	3.24	3.14	1.95
65+ .....	3.74	3.61	3.63	3.60	3.28	3.38	3.37	2.24
Minor children at home								
Yes .....	3.77	3.72	3.65	3.57	3.14	3.12	3.10	2.01
No .....	3.79	3.72	3.65	3.56	3.10	3.12	3.08	1.93
Factual knowledge of science <sup>b</sup> (quartile)								
Top .....	3.86	3.85	3.73	3.54	3.05	2.84	2.77	1.50
Second .....	3.85	3.75	3.70	3.61	3.16	3.09	3.02	1.94
Third .....	3.79	3.74	3.68	3.57	3.13	3.23	3.29	2.08
Bottom .....	3.62	3.50	3.45	3.52	3.12	3.37	3.31	2.41

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

<sup>b</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”

NOTES: Responses to how important each of eight statements is to making something scientific. Mean importance score based on 4-point scale, where 4 = very important and 1 = not important at all. Questions asked of 1,864 survey respondents; number (n) of respondents varies by statement because mean importance score excludes responses of “don’t know.” Process statements: (1) *The conclusions are based on solid evidence*; (2) *The researchers carefully examine different interpretations of the results, even ones they disagree with*; (3) *Other scientists repeat the experiment, and find similar results*. Credentials statements: (1) *The people who do it have advanced degrees in their field*; (2) *It is done by scientists employed in a university setting*; (3) *The research takes place in a laboratory*. External validation statements: (1) *The results of the research are consistent with common sense*; (2) *The results of the research are consistent with religious beliefs*.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-27

**Perceptions of scientific nature of various fields, by respondent characteristic: 2006**

(Mean scientific score)

Characteristic	Medicine (n = 1,829)	Biology (n = 1,800)	Physics (n = 1,730)	Engineering (n = 1,785)	Economics (n = 1,769)	Sociology (n = 1,593)	Accounting (n = 1,785)	History (n = 1,799)
All adults .....	3.81	3.68	3.68	3.21	2.56	2.56	2.15	2.11
Sex								
Male .....	3.79	3.68	3.72	3.30	2.50	2.54	2.10	2.13
Female .....	3.82	3.69	3.65	3.13	2.61	2.58	2.19	2.09
Formal education								
<High school .....	3.80	3.57	3.36	2.98	2.71	2.74	2.16	2.32
High school graduate .....	3.82	3.65	3.64	3.16	2.48	2.53	2.11	2.18
Baccalaureate .....	3.77	3.76	3.84	3.37	2.65	2.56	2.21	1.85
Graduate/professional .....	3.79	3.84	3.92	3.45	2.70	2.60	2.29	1.92
Science/mathematics education <sup>a</sup>								
Low .....	3.81	3.61	3.56	3.08	2.51	2.54	2.06	2.20
Middle .....	3.82	3.74	3.76	3.22	2.54	2.62	2.17	2.06
High .....	3.79	3.83	3.89	3.46	2.67	2.54	2.31	1.93
Family income (quartile)								
Top .....	3.80	3.73	3.82	3.27	2.64	2.57	2.18	1.98
Second .....	3.84	3.68	3.71	3.27	2.45	2.52	2.04	2.07
Third .....	3.79	3.69	3.68	3.11	2.51	2.57	2.12	2.13
Bottom .....	3.77	3.60	3.53	3.17	2.67	2.68	2.19	2.31
Age (years)								
18–24 .....	3.81	3.68	3.72	3.14	2.58	2.67	1.96	2.08
25–34 .....	3.84	3.72	3.66	3.21	2.58	2.67	2.00	2.09
35–44 .....	3.83	3.72	3.69	3.27	2.56	2.54	2.20	2.10
45–54 .....	3.80	3.70	3.71	3.25	2.59	2.53	2.15	2.10
55–64 .....	3.78	3.68	3.66	3.16	2.41	2.50	2.25	2.05
65+ .....	3.78	3.58	3.63	3.16	2.63	2.46	2.33	2.24
Minor children at home								
Yes .....	3.83	3.71	3.68	3.22	2.53	2.58	2.12	2.09
No .....	3.80	3.67	3.68	3.20	2.57	2.55	2.17	2.12
Factual knowledge of science <sup>b</sup> (quartile)								
Top .....	3.80	3.84	3.90	3.43	2.62	2.60	2.18	1.98
Second .....	3.84	3.73	3.74	3.30	2.51	2.56	2.15	2.01
Third .....	3.80	3.60	3.61	3.07	2.58	2.58	2.13	2.19
Bottom .....	3.78	3.55	3.40	2.98	2.53	2.48	2.13	2.28

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”NOTES: Responses to: *How scientific is [field]: very scientific, pretty scientific, not too scientific, not scientific at all?* (where 4 is very scientific and 1 is not scientific at all). Question asked of 1,864 survey respondents; number (n) of respondents varies by field because mean scientific score excludes responses of “haven’t heard of [field]” or “don’t know.”

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-28  
**Familiarity with nanotechnology, by respondent characteristic: 2006**  
 (Percent)

Characteristic	How much respondents have heard about nanotechnology				
	A lot	Some	Just a little	Nothing at all	Don't know
All adults (n = 1,864) .....	5	15	25	54	2
Sex					
Male (n = 804) .....	8	24	23	44	1
Female (n = 1,060).....	2	8	26	62	2
Formal education					
<High school (n = 227) .....	2	4	15	78	1
High school graduate (n = 1,115) .....	3	14	23	58	2
Baccalaureate (n = 346).....	7	23	30	38	2
Graduate/professional degree (n = 176) .....	13	20	38	29	—
Science/mathematics education <sup>a</sup>					
Low (n = 1,042) .....	2	9	19	67	2
Middle (n = 359) .....	5	21	33	41	—
High (n = 408).....	12	25	32	31	—
Family income (quartile)					
Top (n = 311) .....	8	23	28	40	1
Second (n = 420) .....	4	18	28	48	2
Third (n = 419).....	4	10	25	59	1
Bottom (n = 462).....	5	12	22	61	1
Age (years)					
18–24 (n = 157).....	4	20	33	42	1
25–34 (n = 341).....	4	12	27	56	1
35–44 (n = 382).....	7	13	25	54	1
45–54 (n = 386).....	6	16	26	50	2
55–64 (n = 272).....	5	23	19	51	1
65+ (n = 321) .....	3	8	18	69	2
Minor children at home					
Yes (n = 588).....	5	16	24	54	1
No (n = 1,276).....	5	15	25	54	2
Factual knowledge of science <sup>b</sup> (quartile)					
Top (n = 455) .....	13	31	38	18	—
Second (n = 470) .....	4	16	27	51	2
Third (n = 479).....	1	8	23	66	2
Bottom (n = 460).....	1	3	10	83	2

— = ≤0.5% responded

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.

<sup>b</sup>See notes to appendix table 7-4 for explanation of “factual knowledge of science scale 1.”

NOTES: Responses to: *How much have you heard about nanotechnology? Have you heard a lot, some, just a little, or nothing at all?* Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

Appendix table 7-29

**Public assessment of benefits and harms of nanotechnology, by respondent characteristic: 2006**

(Percent)

Characteristic	Benefits will outweigh harmful results	Benefits will be about equal to harmful results	Harmful results will outweigh benefits	Don't know
All adults (n = 1,864) .....	40	19	9	32
Sex				
Male (n = 804) .....	49	18	8	24
Female (n = 1,060).....	33	20	9	39
Formal education				
<High school (n = 227) .....	14	28	15	43
High school graduate (n = 1,115) .....	38	19	10	34
Baccalaureate (n = 346).....	52	17	4	27
Graduate/professional degree (n = 176) .....	63	14	2	22
Science/mathematics education <sup>a</sup>				
Low (n = 1,042) .....	28	22	11	39
Middle (n = 359) .....	50	19	8	24
High (n = 408).....	62	13	3	22
Family income (quartile)				
Top (n = 311) .....	53	16	7	24
Second (n = 420) .....	42	22	7	29
Third (n = 419).....	37	20	9	34
Bottom (n = 462).....	37	18	13	32
Age (years)				
18–24 (n = 157).....	45	22	13	20
25–34 (n = 341).....	41	20	9	30
35–44 (n = 382).....	38	23	5	34
45–54 (n = 386).....	44	16	10	30
55–64 (n = 272).....	41	17	9	33
65+ (n = 321) .....	30	16	7	47
Minor children at home				
Yes (n = 588).....	39	19	10	32
No (n = 1,276).....	40	19	8	33
Factual knowledge of science <sup>b</sup> (quartile)				
Top (n = 455) .....	68	12	2	19
Second (n = 470) .....	45	20	7	27
Third (n = 479).....	30	22	12	36
Bottom (n = 460).....	14	23	14	50

<sup>a</sup>Low = ≤5 high school and college science/math courses; middle = 6–8 courses; high = ≥9 courses.<sup>b</sup>See notes to appendix table 7-4 for explanation of "factual knowledge of science scale 1."

NOTES: Responses to: *Nanotechnology works at the molecular level atom by atom to build new structures, materials, and machines. People have frequently noted that new technologies have produced both benefits and harmful results. Do you think the benefits of nanotechnology will outweigh the harmful results or the harmful results will outweigh the benefits?* Detail may not add to total because of rounding.

SOURCE: University of Chicago, National Opinion Research Center, General Social Survey (2006).

## Average mathematics NAEP scores and achievement-level results for grades 4 and 8 white students in public schools, by state: 2000 and 2005

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States.....	62	233	30	57	246	47	63	283	33	60	288	37
Alabama.....	58	227	20	57	235	30	66	275	23	59	276	22
Alaska.....	NA	NA	NA	56	244	44	NA	NA	NA	57	288	38
Arizona.....	55	230	24	45	243	43	58	281	28	50	288	38
Arkansas.....	69	225	18	71	242	42	71	268	18	71	281	28
California.....	37	228	24	31	245	46	37	277	26	33	284	34
Colorado.....	NA	NA	NA	64	247	49	NA	NA	NA	64	292	43
Connecticut.....	72	242	39	69	250	53	74	291	42	66	293	46
Delaware.....	NA	NA	NA	54	249	50	NA	NA	NA	56	291	40
District of Columbia.....	5	254	62	4	266	78	4	300	56	4	317	69
Florida.....	NA	NA	NA	48	247	49	NA	NA	NA	52	286	36
Georgia.....	52	230	27	48	243	43	57	279	27	51	284	34
Hawaii.....	18	227	25	17	241	42	17	274	22	15	277	25
Idaho.....	85	227	21	82	245	44	88	280	28	85	284	33
Illinois.....	56	235	30	54	245	44	61	285	35	61	289	39
Indiana.....	87	235	32	73	245	45	85	285	32	81	286	34
Iowa.....	91	233	27	85	242	40	NA	NA	NA	88	286	36
Kansas.....	79	237	34	74	249	52	84	287	36	77	289	39
Kentucky.....	86	223	19	84	234	29	87	272	22	86	276	24
Louisiana.....	53	230	22	48	241	38	52	275	18	53	281	25
Maine.....	96	230	23	97	241	39	97	281	31	96	281	30
Maryland.....	51	236	34	51	250	53	57	286	38	50	292	43
Massachusetts.....	77	239	36	75	252	57	79	284	34	76	297	49
Michigan.....	77	237	34	72	245	46	79	285	34	73	285	36
Minnesota.....	82	238	36	79	251	54	88	290	41	81	296	49
Mississippi.....	49	222	15	47	238	32	55	268	14	46	279	24
Missouri.....	80	233	27	76	240	37	83	277	25	77	284	32
Montana.....	87	231	26	85	243	41	90	288	39	86	290	39
Nebraska.....	81	230	27	75	244	44	87	285	33	83	289	40
Nevada.....	59	226	21	46	240	38	60	273	24	55	280	29
New Hampshire.....	NA	NA	NA	94	246	48	NA	NA	NA	94	286	35
New Jersey.....	NA	NA	NA	57	251	55	NA	NA	NA	57	295	47
New Mexico.....	37	227	22	30	238	34	38	274	23	34	279	26
New York.....	52	238	32	53	247	49	56	284	33	55	290	41
North Carolina.....	61	238	34	59	250	52	65	287	37	60	292	42
North Dakota.....	90	232	26	88	245	43	91	285	33	88	290	37
Ohio.....	80	235	29	72	248	51	85	285	34	80	289	38
Oklahoma.....	65	229	20	59	240	36	69	274	22	62	278	26
Oregon.....	81	227	24	71	243	42	82	284	34	76	287	38
Pennsylvania.....	NA	NA	NA	74	247	50	NA	NA	NA	78	287	36
Rhode Island.....	75	232	28	73	241	37	79	275	26	73	281	30

**Average mathematics NAEP scores and achievement-level results for grades 4 and 8 white students in public schools, by state: 2000 and 2005**

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
South Carolina.....	55	233	28	55	250	53	57	277	27	57	294	44
South Dakota.....	NA	NA	NA	84	245	45	NA	NA	NA	86	291	40
Tennessee.....	74	227	23	69	238	35	75	269	20	75	278	26
Texas.....	43	241	39	38	254	60	48	286	35	43	295	46
Utah.....	84	230	25	81	242	41	88	277	27	84	283	33
Vermont.....	98	232	29	96	244	44	96	281	31	96	288	39
Virginia.....	64	237	32	61	247	50	66	283	32	61	293	43
Washington.....	NA	NA	NA	69	246	48	NA	NA	NA	74	289	39
West Virginia.....	94	224	18	95	231	25	95	267	18	95	270	18
Wisconsin.....	NA	NA	NA	77	247	48	NA	NA	NA	79	291	42
Wyoming.....	89	231	27	85	245	45	90	278	25	87	284	32

NA = not available

NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

*Science and Engineering Indicators 2008*

## Average science NAEP scores and achievement-level results for grades 4 and 8 white students in public schools, by state: 2000 and 2005

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States.....	61	158	36	57	161	38	64	159	38	60	159	38
Alabama.....	59	156	33	58	156	31	67	155	31	59	152	29
Alaska.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arizona.....	56	155	33	47	155	30	60	156	33	49	156	33
Arkansas.....	71	155	30	70	157	32	73	152	29	71	155	30
California.....	37	149	25	30	156	33	35	147	25	32	154	32
Colorado.....	NA	NA	NA	65	163	41	NA	NA	NA	64	166	46
Connecticut.....	73	165	44	69	163	42	73	163	44	68	163	44
Delaware.....	NA	NA	NA	56	162	38	NA	NA	NA	58	162	40
District of Columbia.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida.....	NA	NA	NA	49	161	38	NA	NA	NA	50	155	32
Georgia.....	51	158	36	48	161	39	57	156	34	52	159	38
Hawaii.....	18	149	26	17	155	31	16	147	25	15	152	29
Idaho.....	85	156	32	83	159	33	88	161	41	86	161	40
Illinois.....	59	166	45	56	162	39	61	162	41	60	161	39
Indiana.....	85	158	35	74	158	33	86	158	37	80	156	34
Iowa.....	92	160	37	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kansas.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kentucky.....	88	154	31	85	160	39	88	152	30	87	155	33
Louisiana.....	50	157	31	48	159	35	55	152	29	53	153	31
Maine.....	97	162	38	96	160	37	97	158	35	96	158	35
Maryland.....	53	160	38	51	162	40	57	159	39	52	160	40
Massachusetts.....	79	168	48	75	167	45	80	164	44	75	168	48
Michigan.....	77	161	39	69	162	40	81	162	41	73	163	43
Minnesota.....	82	162	38	80	162	38	87	163	44	79	166	47
Mississippi.....	49	151	24	46	151	24	56	148	24	49	150	25
Missouri.....	79	163	40	77	164	42	83	159	38	77	161	39
Montana.....	87	162	39	85	163	41	89	166	46	87	165	45
Nebraska.....	82	155	30	NA	NA	NA	86	162	42	NA	NA	NA
Nevada.....	61	151	25	47	151	25	64	150	28	53	150	28
New Hampshire.....	NA	NA	NA	93	162	38	NA	NA	NA	96	163	41
New Jersey.....	NA	NA	NA	58	164	42	NA	NA	NA	57	165	45
New Mexico.....	36	156	33	31	160	37	37	158	37	34	157	36
New York.....	55	161	37	NA	NA	NA	57	162	42	NA	NA	NA
North Carolina.....	61	158	33	58	160	36	65	156	35	61	155	31
North Dakota.....	88	162	39	88	163	39	89	163	42	88	166	47
Ohio.....	80	161	37	74	164	43	87	163	43	79	162	41
Oklahoma.....	65	157	32	59	157	33	70	155	30	61	155	32
Oregon.....	82	153	30	70	157	32	83	158	37	77	159	37
Pennsylvania.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rhode Island.....	75	157	32	72	155	30	81	154	32	74	156	33

**Average science NAEP scores and achievement-level results for grades 4 and 8 white students in public schools, by state: 2000 and 2005**

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	White 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
South Carolina.....	54	156	33	54	162	39	59	153	29	56	159	35
South Dakota.....	NA	NA	NA	84	162	39	NA	NA	NA	85	165	45
Tennessee.....	73	154	31	69	158	34	77	153	30	74	153	31
Texas.....	43	161	38	38	165	44	46	159	37	43	160	38
Utah.....	85	159	34	82	160	37	88	158	36	84	158	37
Vermont.....	96	160	39	96	160	38	97	159	39	96	162	41
Virginia.....	63	164	42	61	170	53	66	159	37	61	165	45
Washington.....	NA	NA	NA	71	158	34	NA	NA	NA	75	160	39
West Virginia.....	94	150	25	94	152	24	96	147	24	94	148	24
Wisconsin.....	NA	NA	NA	78	164	42	NA	NA	NA	80	165	45
Wyoming.....	89	158	34	85	160	35	90	158	35	87	161	39

NA = not available

NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

*Science and Engineering Indicators 2008*



## Average mathematics NAEP scores and achievement-level results for grades 4 and 8 black students in public schools, by state: 2000 and 2005

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States .....	17	203	4	17	220	13	17	243	5	17	254	8
Alabama .....	39	203	4	38	211	7	33	240	3	37	240	3
Alaska .....	NA	NA	NA	4	226	20	NA	NA	NA	5	266	19
Arizona .....	4	207	6	5	217	13	4	244	7	5	261	15
Arkansas .....	28	194	2	22	214	10	26	227	2	23	243	4
California .....	10	194	3	7	215	12	9	235	4	8	248	7
Colorado .....	NA	NA	NA	5	222	18	NA	NA	NA	7	256	11
Connecticut .....	14	210	7	14	219	11	13	247	4	15	249	6
Delaware .....	NA	NA	NA	33	226	15	NA	NA	NA	33	264	13
District of Columbia .....	87	188	2	86	207	5	87	231	3	88	241	4
Florida .....	NA	NA	NA	23	224	16	NA	NA	NA	22	251	8
Georgia .....	41	204	5	39	221	12	39	244	4	37	255	8
Hawaii .....	2	211	6	3	221	16	2	S	S	2	S	S
Idaho .....	1	S	S	1	S	S	1	S	S	1	S	S
Illinois .....	22	202	4	19	212	9	20	252	8	21	249	6
Indiana .....	9	211	10	16	221	13	10	256	7	12	257	9
Iowa .....	3	216	11	5	224	15	NA	NA	NA	4	256	8
Kansas .....	8	208	4	9	228	24	7	245	10	8	256	12
Kentucky .....	12	196	2	12	217	9	11	250	6	10	255	9
Louisiana .....	44	205	4	49	219	9	44	239	2	44	252	5
Maine .....	1	S	S	1	S	S	1	S	S	2	S	S
Maryland .....	39	202	6	35	220	14	33	244	6	40	258	11
Massachusetts .....	7	213	7	9	228	18	7	258	9	8	263	15
Michigan .....	17	199	3	20	211	8	14	239	3	20	247	6
Minnesota .....	6	208	12	9	219	15	4	S	S	8	251	9
Mississippi .....	50	198	2	51	216	7	43	237	1	51	247	4
Missouri .....	17	202	4	17	215	9	15	238	3	19	247	4
Montana .....	*	S	S	1	S	S	*	S	S	*	S	S
Nebraska .....	6	193	5	8	211	7	4	247	6	5	243	2
Nevada .....	11	203	4	12	214	10	9	244	5	10	247	7
New Hampshire .....	NA	NA	NA	2	S	S	NA	NA	NA	1	S	S
New Jersey .....	NA	NA	NA	18	224	17	NA	NA	NA	20	260	11
New Mexico .....	2	S	S	2	213	6	2	S	S	2	257	13
New York .....	21	210	5	21	222	13	23	251	8	19	259	11
North Carolina .....	31	215	9	27	225	17	29	252	7	29	263	12
North Dakota .....	2	S	S	1	S	S	1	S	S	1	S	S
Ohio .....	17	206	2	21	221	16	13	251	7	15	255	7
Oklahoma .....	10	205	4	11	217	11	9	245	5	11	249	4
Oregon .....	3	196	6	3	222	12	2	S	S	3	258	9
Pennsylvania .....	NA	NA	NA	17	219	13	NA	NA	NA	15	250	7
Rhode Island .....	8	200	3	8	211	9	7	240	4	8	249	5

**Average mathematics NAEP scores and achievement-level results for grades 4 and 8 black students in public schools, by state: 2000 and 2005**

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
South Carolina.....	42	203	4	41	223	13	41	247	4	39	263	10
South Dakota.....	NA	NA	NA	2	S	S	NA	NA	NA	1	S	S
Tennessee.....	24	198	4	26	214	9	22	235	3	22	246	3
Texas.....	15	220	10	13	228	18	12	250	7	15	264	13
Utah.....	1	S	S	1	S	S	1	S	S	1	S	S
Vermont.....	*	S	S	1	S	S	1	S	S	2	S	S
Virginia.....	28	211	5	24	224	14	25	253	6	26	263	9
Washington.....	NA	NA	NA	6	231	26	NA	NA	NA	4	265	15
West Virginia.....	5	205	5	4	226	17	4	247	7	4	251	6
Wisconsin.....	NA	NA	NA	11	210	7	NA	NA	NA	11	246	5
Wyoming.....	1	S	S	1	S	S	1	S	S	1	S	S

NA = not available; S = data suppressed for reasons of confidentiality and/or reliability; \* = rounds to zero  
 NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average science NAEP scores and achievement-level results for grades 4 and 8 black students in public schools, by state: 2000 and 2005

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States.....	17	121	6	17	128	7	17	120	6	17	123	7
Alabama.....	40	123	5	38	121	4	30	116	5	37	114	3
Alaska.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arizona.....	5	124	7	5	127	4	5	127	9	5	125	7
Arkansas.....	25	117	4	23	119	4	24	112	3	24	113	3
California.....	11	117	5	8	122	6	9	111	5	8	120	6
Colorado.....	NA	NA	NA	6	139	11	NA	NA	NA	6	133	12
Connecticut.....	14	126	5	13	129	6	14	119	6	14	124	6
Delaware.....	NA	NA	NA	33	136	8	NA	NA	NA	32	134	10
District of Columbia.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida.....	NA	NA	NA	22	130	7	NA	NA	NA	24	118	6
Georgia.....	42	122	6	38	131	8	38	122	6	38	125	8
Hawaii.....	2	135	10	3	133	7	3	139	14	2	S	S
Idaho.....	1	S	S	1	S	S	1	S	S	1	S	S
Illinois.....	21	125	6	18	122	5	20	119	4	21	120	4
Indiana.....	10	126	8	16	126	5	9	126	6	13	119	4
Iowa.....	3	S	S	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kansas.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kentucky.....	10	129	6	11	138	13	10	125	7	10	130	7
Louisiana.....	48	120	5	48	126	6	41	110	3	44	120	5
Maine.....	1	S	S	2	S	S	1	S	S	1	S	S
Maryland.....	37	123	6	35	128	7	33	123	7	38	123	6
Massachusetts.....	6	140	12	9	136	10	8	131	11	9	133	10
Michigan.....	15	118	5	22	123	4	13	117	5	20	128	8
Minnesota.....	7	119	6	9	128	8	5	S	S	9	120	5
Mississippi.....	49	115	2	52	117	2	43	114	3	50	114	3
Missouri.....	17	130	9	17	135	9	14	120	5	19	124	6
Montana.....	*	S	S	1	S	S	*	S	S	1	S	S
Nebraska.....	6	123	4	NA	NA	NA	6	118	7	NA	NA	NA
Nevada.....	10	120	6	11	125	7	7	120	6	9	115	4
New Hampshire.....	NA	NA	NA	2	S	S	NA	NA	NA	1	S	S
New Jersey.....	NA	NA	NA	18	130	8	NA	NA	NA	21	131	11
New Mexico.....	2	S	S	3	136	9	2	S	S	3	129	14
New York.....	19	130	7	NA	NA	NA	23	124	7	NA	NA	NA
North Carolina.....	32	126	5	27	129	7	29	120	5	29	122	6
North Dakota.....	2	S	S	1	S	S	1	S	S	2	S	S
Ohio.....	17	129	6	20	130	7	11	127	8	16	124	7
Oklahoma.....	10	127	6	11	126	5	10	125	8	11	120	7
Oregon.....	3	122	6	4	136	10	2	S	S	3	127	10
Pennsylvania.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rhode Island.....	8	124	6	8	122	5	6	128	9	7	122	5

**Average science NAEP scores and achievement-level results for grades 4 and 8 black students in public schools, by state: 2000 and 2005**

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Black 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
South Carolina.....	44	120	4	41	131	8	39	120	5	40	127	6
South Dakota.....	NA	NA	NA	2	S	S	NA	NA	NA	2	S	S
Tennessee.....	24	118	4	27	131	8	21	117	5	23	119	7
Texas.....	15	132	9	13	133	8	13	119	5	16	125	8
Utah.....	1	S	S	2	S	S	1	S	S	1	S	S
Vermont.....	2	S	S	1	S	S	1	S	S	1	S	S
Virginia.....	29	137	10	25	140	12	25	130	9	26	133	10
Washington.....	NA	NA	NA	6	137	10	NA	NA	NA	5	137	15
West Virginia.....	5	128	7	5	135	9	4	121	6	4	128	11
Wisconsin.....	NA	NA	NA	11	126	5	NA	NA	NA	10	120	6
Wyoming.....	2	S	S	2	S	S	1	S	S	1	S	S

NA = not available; S = data suppressed for reasons of confidentiality and/or reliability; \* = rounds to zero  
 NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average mathematics NAEP scores and achievement-level results for grades 4 and 8 Hispanic students in public schools, by state: 2000 and 2005

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)
United States.....	16	207	7	20	225	19	14	252	8	17	261	13
Alabama.....	1	S	S	2	S	S	1	S	S	2	S	S
Alaska.....	NA	NA	NA	4	227	23	NA	NA	NA	4	272	21
Arizona.....	33	204	5	41	218	14	32	248	6	38	260	13
Arkansas.....	3	S	S	5	229	25	2	S	S	4	266	15
California.....	40	201	4	49	219	14	41	242	6	45	254	9
Colorado.....	NA	NA	NA	27	223	18	NA	NA	NA	25	260	10
Connecticut.....	11	210	6	13	223	15	10	249	7	14	254	10
Delaware.....	NA	NA	NA	9	229	18	NA	NA	NA	7	268	16
District of Columbia.....	8	190	6	8	215	11	7	236	5	7	252	9
Florida.....	NA	NA	NA	24	233	28	NA	NA	NA	22	265	16
Georgia.....	3	217	12	8	229	22	2	S	S	6	258	12
Hawaii.....	2	S	S	3	219	21	2	S	S	3	257	9
Idaho.....	11	207	6	13	226	17	8	250	7	12	261	11
Illinois.....	20	211	6	22	219	14	15	258	11	14	265	13
Indiana.....	3	S	S	6	230	21	3	S	S	4	261	14
Iowa.....	3	S	S	6	222	17	NA	NA	NA	5	264	9
Kansas.....	9	213	13	11	234	30	5	263	12	9	266	14
Kentucky.....	1	S	S	2	S	S	1	S	S	1	S	S
Louisiana.....	2	S	S	1	S	S	2	S	S	2	S	S
Maine.....	*	S	S	*	S	S	1	S	S	1	S	S
Maryland.....	5	216	11	8	232	26	4	263	20	4	262	19
Massachusetts.....	10	203	7	11	225	14	8	246	8	10	265	15
Michigan.....	3	S	S	4	S	S	3	S	S	4	265	16
Minnesota.....	2	S	S	6	223	15	4	S	S	4	263	10
Mississippi.....	1	S	S	1	S	S	1	S	S	1	S	S
Missouri.....	2	S	S	4	221	10	1	S	S	2	S	S
Montana.....	2	S	S	2	234	30	1	S	S	2	S	S
Nebraska.....	9	205	4	13	219	10	6	242	5	9	261	10
Nevada.....	21	207	7	33	219	13	21	249	8	29	256	10
New Hampshire.....	NA	NA	NA	2	226	17	NA	NA	NA	2	S	S
New Jersey.....	NA	NA	NA	15	230	25	NA	NA	NA	15	264	15
New Mexico.....	50	207	6	56	218	13	48	251	5	51	255	8
New York.....	21	207	6	19	226	17	14	251	10	18	262	14
North Carolina.....	3	220	12	8	234	26	2	S	S	6	265	16
North Dakota.....	1	S	S	1	S	S	1	S	S	1	S	S
Ohio.....	2	S	S	2	231	21	1	S	S	1	259	11
Oklahoma.....	7	211	5	9	226	16	5	260	13	7	257	11
Oregon.....	9	202	10	17	218	14	8	248	6	13	257	10
Pennsylvania.....	NA	NA	NA	7	220	16	NA	NA	NA	5	267	13

**Average mathematics NAEP scores and achievement-level results for grades 4 and 8 Hispanic students in public schools, by state: 2000 and 2005**

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)
Rhode Island.....	14	197	3	16	211	9	10	240	3	15	244	4
South Carolina.....	2	S	S	3	236	30	1	S	S	3	269	19
South Dakota.....	NA	NA	NA	2	S	S	NA	NA	NA	2	S	S
Tennessee.....	2	S	S	3	229	26	1	S	S	2	S	S
Texas.....	38	223	14	46	235	28	36	262	13	39	271	19
Utah.....	9	205	6	13	220	13	6	244	6	10	255	9
Vermont.....	*	S	S	1	S	S	1	S	S	1	S	S
Virginia.....	4	224	16	8	230	22	4	263	16	6	270	20
Washington.....	NA	NA	NA	15	224	17	NA	NA	NA	10	262	15
West Virginia.....	1	S	S	1	S	S	*	S	S	1	S	S
Wisconsin.....	NA	NA	NA	7	224	16	NA	NA	NA	6	265	16
Wyoming.....	7	214	9	9	234	31	5	257	8	7	265	11

S = data suppressed for reasons of confidentiality and/or reliability; NA = not available; \* = rounds to zero  
 NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average science NAEP scores and achievement-level results for grades 4 and 8 Hispanic students in public schools, by state: 2000 and 2005

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)
United States.....	16	121	7	20	132	10	14	125	9	17	127	10
Alabama.....	1	S	S	2	S	S	1	S	S	2	S	S
Alaska.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arizona.....	32	118	7	40	123	5	30	125	6	37	123	6
Arkansas.....	3	S	S	5	136	10	2	S	S	4	136	12
California.....	40	110	4	49	124	6	42	112	4	45	122	7
Colorado.....	NA	NA	NA	26	138	13	NA	NA	NA	25	134	12
Connecticut.....	11	130	7	13	130	9	10	122	8	15	123	7
Delaware.....	NA	NA	NA	9	142	14	NA	NA	NA	7	136	15
District of Columbia.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida.....	NA	NA	NA	24	144	17	NA	NA	NA	22	131	14
Georgia.....	3	136	13	8	136	14	3	127	10	6	127	15
Hawaii.....	2	S	S	3	137	13	2	S	S	3	131	11
Idaho.....	11	122	6	13	131	6	9	131	13	10	131	10
Illinois.....	17	124	8	22	130	9	13	126	7	15	130	9
Indiana.....	3	S	S	5	138	13	3	S	S	4	131	10
Iowa.....	2	S	S	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kansas.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kentucky.....	1	S	S	2	150	23	*	S	S	1	S	S
Louisiana.....	1	S	S	2	S	S	2	S	S	1	S	S
Maine.....	1	S	S	1	S	S	*	S	S	1	S	S
Maryland.....	4	134	12	7	139	13	4	125	12	5	132	14
Massachusetts.....	9	121	7	11	134	8	6	121	7	10	133	9
Michigan.....	3	130	9	5	137	11	3	S	S	4	132	11
Minnesota.....	3	S	S	5	135	9	3	S	S	4	133	14
Mississippi.....	1	S	S	1	S	S	1	S	S	1	S	S
Missouri.....	2	S	S	4	150	25	1	S	S	3	150	23
Montana.....	2	S	S	2	S	S	2	S	S	2	S	S
Nebraska.....	8	128	9	NA	NA	NA	6	134	14	NA	NA	NA
Nevada.....	22	126	7	33	127	8	20	120	8	31	122	6
New Hampshire.....	NA	NA	NA	3	142	12	NA	NA	NA	2	S	S
New Jersey.....	NA	NA	NA	15	137	10	NA	NA	NA	15	133	12
New Mexico.....	49	131	10	55	132	10	49	129	9	51	129	9
New York.....	20	129	6	NA	NA	NA	14	116	9	NA	NA	NA
North Carolina.....	3	135	10	8	136	12	2	S	S	6	132	13
North Dakota.....	1	S	S	1	S	S	1	S	S	1	S	S
Ohio.....	2	S	S	2	146	22	1	S	S	1	142	24
Oklahoma.....	7	135	14	9	137	11	4	129	7	8	132	16
Oregon.....	9	114	6	16	127	5	9	127	11	13	129	9
Pennsylvania.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Average science NAEP scores and achievement-level results for grades 4 and 8 Hispanic students in public schools, by state: 2000 and 2005**

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 4th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)	Hispanic 8th grade students (%)	Average scale score	Students ≥proficient (%)
Rhode Island.....	13	110	2	17	122	5	10	114	4	15	115	4
South Carolina.....	1	S	S	3	140	13	1	S	S	3	130	16
South Dakota.....	NA	NA	NA	2	S	S	NA	NA	NA	2	S	S
Tennessee.....	1	S	S	3	137	15	1	S	S	2	S	S
Texas.....	37	130	11	46	141	14	37	131	12	38	131	11
Utah.....	9	124	9	12	133	10	6	128	11	10	130	12
Vermont.....	1	S	S	1	S	S	*	S	S	1	S	S
Virginia.....	4	137	15	7	151	22	4	133	12	6	141	22
Washington.....	NA	NA	NA	13	132	7	NA	NA	NA	10	128	8
West Virginia.....	1	S	S	1	S	S	*	S	S	1	S	S
Wisconsin.....	NA	NA	NA	7	138	12	NA	NA	NA	6	133	13
Wyoming.....	6	140	13	10	142	14	5	145	18	7	145	21

S = data suppressed for reasons of confidentiality and/or reliability; NA = not available; \* = rounds to zero

NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average mathematics NAEP scores and achievement-level results for grades 4 and 8 Asian students in public schools, by state: 2000 and 2005

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Asian 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States.....	S	S	S	4	251	54	4	287	40	5	294	46
Alabama.....	1	S	S	1	S	S	*	S	S	1	S	S
Alaska.....	NA	NA	NA	8	238	36	NA	NA	NA	7	270	19
Arizona.....	3	S	S	3	241	43	2	S	S	2	S	S
Arkansas.....	1	S	S	1	S	S	1	S	S	1	S	S
California.....	10	221	19	10	249	51	12	283	34	12	293	45
Colorado.....	NA	NA	NA	3	242	42	NA	NA	NA	2	S	S
Connecticut.....	3	239	36	3	253	57	2	S	S	4	292	46
Delaware.....	NA	NA	NA	3	260	70	NA	NA	NA	3	306	59
District of Columbia.....	1	S	S	1	S	S	2	S	S	1	S	S
Florida.....	NA	NA	NA	2	259	66	NA	NA	NA	2	299	51
Georgia.....	2	S	S	3	255	57	2	S	S	3	301	52
Hawaii.....	67	214	12	66	229	25	67	260	15	68	264	17
Idaho.....	1	S	S	2	S	S	1	S	S	1	S	S
Illinois.....	2	S	S	4	258	66	3	S	S	4	300	50
Indiana.....	1	S	S	1	S	S	1	S	S	1	S	S
Iowa.....	2	S	S	2	S	S	NA	NA	NA	2	S	S
Kansas.....	1	S	S	3	262	71	2	S	S	2	S	S
Kentucky.....	1	S	S	1	S	S	1	S	S	1	S	S
Louisiana.....	1	S	S	1	S	S	1	S	S	1	S	S
Maine.....	2	S	S	1	S	S	1	S	S	1	S	S
Maryland.....	4	230	27	6	256	59	6	297	49	5	304	55
Massachusetts.....	4	237	36	5	258	64	4	292	44	5	314	68
Michigan.....	1	S	S	3	S	S	2	S	S	2	S	S
Minnesota.....	7	213	12	5	242	40	4	S	S	5	285	34
Mississippi.....	1	S	S	1	S	S	1	S	S	1	S	S
Missouri.....	1	S	S	2	S	S	1	S	S	1	S	S
Montana.....	1	S	S	1	S	S	1	S	S	1	S	S
Nebraska.....	1	S	S	2	S	S	1	S	S	1	S	S
Nevada.....	6	227	22	8	243	42	6	273	25	6	281	30
New Hampshire.....	NA	NA	NA	2	S	S	NA	NA	NA	2	S	S
New Jersey.....	NA	NA	NA	9	264	74	NA	NA	NA	7	309	63
New Mexico.....	1	S	S	1	S	S	2	S	S	1	S	S
New York.....	5	241	36	7	254	61	6	280	37	7	298	50
North Carolina.....	1	S	S	2	256	63	2	S	S	2	303	53
North Dakota.....	1	S	S	1	S	S	1	S	S	1	S	S
Ohio.....	1	S	S	1	S	S	1	S	S	2	S	S
Oklahoma.....	1	S	S	1	S	S	2	S	S	2	S	S
Oregon.....	4	236	35	5	248	54	4	285	38	4	299	50
Pennsylvania.....	NA	NA	NA	2	S	S	NA	NA	NA	2	297	49
Rhode Island.....	3	217	18	2	240	39	3	267	20	3	278	26

**Average mathematics NAEP scores and achievement-level results for grades 4 and 8 Asian students in public schools, by state: 2000 and 2005**

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Asian 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
South Carolina.....	1	S	S	1	S	S	1	S	S	1	S	S
South Dakota.....	NA	NA	NA	1	S	S	NA	NA	NA	1	S	S
Tennessee.....	1	S	S	1	S	S	1	S	S	1	S	S
Texas.....	3	248	47	3	264	72	3	292	44	3	308	61
Utah.....	3	219	18	3	235	33	3	262	20	3	273	26
Vermont.....	1	S	S	1	S	S	1	S	S	1	S	S
Virginia.....	4	247	46	5	256	64	4	293	44	6	300	53
Washington.....	NA	NA	NA	8	245	46	NA	NA	NA	8	294	45
West Virginia.....	*	S	S	1	S	S	1	S	S	*	S	S
Wisconsin.....	NA	NA	NA	3	236	29	NA	NA	NA	3	286	32
Wyoming.....	1	S	S	1	S	S	1	S	S	1	S	S

S = data suppressed for reasons of confidentiality and/or reliability; NA = not available; \* = rounds to zero  
 NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average science NAEP scores and achievement-level results for grades 4 and 8 Asian students in public schools, by state: 2000 and 2005

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Asian 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Asian 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States.....	S	S	S	4	156	34	4	152	34	4	155	34
Alabama.....	*	S	S	1	S	S	1	S	S	1	S	S
Alaska.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arizona.....	2	S	S	2	157	40	2	S	S	2	S	S
Arkansas.....	1	S	S	2	S	S	1	S	S	1	S	S
California.....	11	140	18	10	153	32	12	142	25	13	152	30
Colorado.....	NA	NA	NA	3	157	32	NA	NA	NA	3	158	37
Connecticut.....	2	S	S	4	166	44	2	S	S	4	163	42
Delaware.....	NA	NA	NA	3	167	48	NA	NA	NA	3	165	47
District of Columbia.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida.....	NA	NA	NA	2	162	35	NA	NA	NA	2	149	29
Georgia.....	3	154	35	3	162	46	2	S	S	2	163	50
Hawaii.....	67	132	13	66	140	16	67	126	11	68	133	12
Idaho.....	2	S	S	1	S	S	1	S	S	2	S	S
Illinois.....	3	S	S	3	168	49	5	159	35	3	164	46
Indiana.....	1	S	S	1	S	S	1	S	S	1	S	S
Iowa.....	1	S	S	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kansas.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kentucky.....	1	S	S	1	S	S	1	S	S	1	S	S
Louisiana.....	1	S	S	1	S	S	1	S	S	1	S	S
Maine.....	1	S	S	1	S	S	1	S	S	1	S	S
Maryland.....	6	154	31	6	161	41	5	165	46	5	165	46
Massachusetts.....	4	159	38	5	165	47	5	156	42	5	166	45
Michigan.....	2	S	S	3	161	35	1	S	S	2	S	S
Minnesota.....	5	130	8	5	148	26	4	S	S	6	137	15
Mississippi.....	1	S	S	1	S	S	1	S	S	1	S	S
Missouri.....	1	S	S	1	S	S	1	S	S	1	S	S
Montana.....	1	S	S	1	S	S	1	S	S	1	S	S
Nebraska.....	2	S	S	NA	NA	NA	1	S	S	NA	NA	NA
Nevada.....	5	145	20	7	146	19	6	145	23	6	150	28
New Hampshire.....	NA	NA	NA	2	S	S	NA	NA	NA	1	S	S
New Jersey.....	NA	NA	NA	9	165	44	NA	NA	NA	7	172	53
New Mexico.....	1	S	S	1	S	S	2	S	S	1	S	S
New York.....	5	152	29	NA	NA	NA	6	133	19	NA	NA	NA
North Carolina.....	1	S	S	2	156	32	2	S	S	2	157	40
North Dakota.....	1	S	S	1	S	S	1	S	S	1	S	S
Ohio.....	1	S	S	1	S	S	1	S	S	1	S	S
Oklahoma.....	1	S	S	1	S	S	2	S	S	2	S	S
Oregon.....	3	S	S	6	154	30	3	162	42	4	154	35
Pennsylvania.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rhode Island.....	4	132	16	2	141	18	3	134	18	3	141	20

**Average science NAEP scores and achievement-level results for grades 4 and 8 Asian students in public schools, by state: 2000 and 2005**

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Asian 4th grade students (%)	Average scale score	Students ≥proficient (%)	Asian 4th grade students (%)	Average scale score	Students ≥proficient (%)	Asian 8th grade students (%)	Average scale score	Students ≥proficient (%)	Asian 8th grade students (%)	Average scale score	Students ≥proficient (%)
South Carolina.....	1	S	S	1	S	S	1	S	S	1	S	S
South Dakota.....	NA	NA	NA	1	S	S	NA	NA	NA	1	S	S
Tennessee.....	1	S	S	1	S	S	1	S	S	1	S	S
Texas.....	3	156	32	3	165	45	3	156	40	3	161	41
Utah.....	3	141	18	3	147	21	3	S	S	3	139	19
Vermont.....	1	S	S	1	S	S	2	S	S	1	S	S
Virginia.....	3	166	52	5	169	50	5	165	46	5	161	38
Washington.....	NA	NA	NA	8	154	29	NA	NA	NA	7	149	26
West Virginia.....	*	S	S	1	S	S	*	S	S	1	S	S
Wisconsin.....	NA	NA	NA	3	148	25	NA	NA	NA	3	153	33
Wyoming.....	1	S	S	1	S	S	1	S	S	1	S	S

S = data suppressed for reasons of confidentiality and/or reliability; \* = rounds to zero; NA = not available  
 NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

Science and Engineering Indicators 2008

## Average mathematics NAEP scores and achievement-level results for grades 4 and 8 female students in public schools, by state: 2000 and 2005

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Female 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Female 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Female 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Female 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States .....	49	223	20	49	236	33	50	271	23	49	277	27
Alabama .....	49	219	13	49	225	20	49	263	15	51	264	15
Alaska .....	NA	NA	NA	50	235	32	NA	NA	NA	47	278	27
Arizona .....	47	219	15	48	227	24	49	266	18	48	274	25
Arkansas .....	49	216	13	47	235	32	49	259	13	49	273	22
California .....	49	213	13	49	229	26	49	260	16	49	268	20
Colorado .....	NA	NA	NA	48	238	36	NA	NA	NA	51	281	31
Connecticut .....	48	233	29	49	241	40	47	278	30	50	281	34
Delaware .....	NA	NA	NA	49	238	34	NA	NA	NA	50	279	27
District of Columbia .....	51	192	5	51	211	9	53	234	5	53	245	6
Florida .....	NA	NA	NA	50	238	35	NA	NA	NA	48	272	23
Georgia .....	51	218	16	49	233	29	50	265	18	49	272	23
Hawaii .....	51	217	14	49	231	28	48	265	16	46	266	18
Idaho .....	50	225	19	49	241	39	47	277	25	50	282	30
Illinois .....	48	222	17	49	232	30	48	278	28	49	276	27
Indiana .....	49	232	28	50	240	38	50	281	26	49	280	28
Iowa .....	48	230	24	47	238	34	NA	NA	NA	50	284	33
Kansas .....	49	231	26	48	245	45	49	283	32	49	283	33
Kentucky .....	50	219	15	49	230	24	49	269	18	49	273	21
Louisiana .....	49	217	13	48	229	21	53	257	10	49	268	16
Maine .....	49	227	20	49	239	36	49	281	29	51	280	29
Maryland .....	49	220	20	49	237	36	48	272	27	52	278	28
Massachusetts .....	50	232	29	51	247	48	48	278	29	51	292	43
Michigan .....	49	228	26	49	236	34	50	277	28	50	275	27
Minnesota .....	50	232	29	50	245	45	50	287	38	50	289	41
Mississippi .....	52	211	8	49	226	18	49	253	7	51	262	12
Missouri .....	50	228	22	49	233	28	48	270	19	48	275	24
Montana .....	48	226	21	50	239	34	48	287	36	48	287	36
Nebraska .....	51	225	23	50	236	33	47	277	27	50	283	33
Nevada .....	49	218	13	49	229	24	50	264	17	49	269	20
New Hampshire .....	NA	NA	NA	49	244	44	NA	NA	NA	50	285	33
New Jersey .....	NA	NA	NA	48	242	43	NA	NA	NA	49	282	33
New Mexico .....	50	211	10	49	223	17	50	260	12	50	262	13
New York .....	51	224	18	50	237	33	52	270	22	50	280	30
North Carolina .....	50	230	24	49	241	38	49	275	26	49	282	32
North Dakota .....	49	229	23	50	241	38	48	282	30	49	287	33
Ohio .....	50	228	21	49	241	40	49	280	29	50	282	32
Oklahoma .....	50	223	14	49	233	26	48	269	17	50	271	19
Oregon .....	49	222	20	49	238	37	48	278	28	48	281	32
Pennsylvania .....	NA	NA	NA	49	240	39	NA	NA	NA	48	279	29

**Average mathematics NAEP scores and achievement-level results for grades 4 and 8 female students in public schools, by state: 2000 and 2005**

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Female 4th grade students (%)	Average scale score	Students ≥proficient (%)	Female 4th grade students (%)	Average scale score	Students ≥proficient (%)	Female 8th grade students (%)	Average scale score	Students ≥proficient (%)	Female 8th grade students (%)	Average scale score	Students ≥proficient (%)
Rhode Island.....	49	223	19	49	233	29	48	270	22	49	273	23
South Carolina.....	48	219	15	50	238	35	50	265	17	50	281	29
South Dakota.....	NA	NA	NA	49	240	38	NA	NA	NA	49	287	37
Tennessee.....	49	219	16	50	231	25	50	260	14	51	271	20
Texas.....	51	230	23	50	240	37	49	275	25	50	279	28
Utah.....	48	227	21	49	237	34	51	272	23	48	278	27
Vermont.....	50	231	29	47	241	39	49	282	30	50	287	38
Virginia.....	50	227	22	49	239	37	50	274	22	50	283	32
Washington.....	NA	NA	NA	50	241	41	NA	NA	NA	49	285	35
West Virginia.....	49	223	15	48	229	22	48	268	17	49	270	18
Wisconsin.....	NA	NA	NA	49	239	39	NA	NA	NA	51	284	36
Wyoming.....	47	227	22	49	242	40	49	276	23	48	281	27

NA = not available

NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average science NAEP scores and achievement-level results for grades 4 and 8 female students in public schools, by state: 2000 and 2005

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Female 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Female 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Female 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Female 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States .....	50	143	23	49	147	24	50	145	25	50	145	25
Alabama .....	48	143	21	49	142	19	50	139	20	50	137	17
Alaska .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arizona .....	48	140	20	50	138	15	48	142	19	50	139	19
Arkansas .....	49	142	20	49	146	22	50	142	20	48	142	20
California .....	50	130	12	50	135	15	52	126	13	50	135	17
Colorado .....	NA	NA	NA	48	153	29	NA	NA	NA	49	152	31
Connecticut .....	49	153	30	49	153	30	50	149	30	49	151	32
Delaware .....	NA	NA	NA	48	151	24	NA	NA	NA	49	150	26
District of Columbia .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida .....	NA	NA	NA	49	149	23	NA	NA	NA	51	140	19
Georgia .....	48	139	19	50	147	23	50	140	19	48	142	23
Hawaii .....	49	135	13	50	142	18	49	131	13	48	135	13
Idaho .....	48	149	24	49	152	25	49	154	31	48	154	31
Illinois .....	48	150	29	50	147	25	50	145	25	50	146	24
Indiana .....	50	152	28	50	150	25	49	153	31	51	147	25
Iowa .....	50	156	32	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kansas .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kentucky .....	49	150	26	50	156	33	48	146	23	49	151	28
Louisiana .....	49	138	16	48	140	17	51	133	15	51	136	16
Maine .....	52	158	34	49	157	32	49	155	30	50	156	32
Maryland .....	49	143	22	50	149	26	50	144	24	50	144	24
Massachusetts .....	47	157	36	47	158	36	49	157	37	48	160	39
Michigan .....	50	150	27	50	149	26	49	154	33	50	154	32
Minnesota .....	47	154	31	49	155	30	48	157	37	48	155	36
Mississippi .....	51	132	11	50	132	10	50	132	12	49	130	12
Missouri .....	49	154	30	48	156	33	50	152	30	50	151	29
Montana .....	51	157	31	48	157	33	45	160	38	51	161	40
Nebraska .....	53	147	23	NA	NA	NA	47	154	31	NA	NA	NA
Nevada .....	49	141	17	50	138	15	49	139	19	49	138	18
New Hampshire .....	NA	NA	NA	50	159	33	NA	NA	NA	49	161	38
New Jersey .....	NA	NA	NA	50	153	30	NA	NA	NA	49	150	28
New Mexico .....	51	139	15	48	139	17	51	135	15	49	135	15
New York .....	51	146	22	NA	NA	NA	49	144	26	NA	NA	NA
North Carolina .....	48	144	20	48	146	21	50	142	22	52	143	20
North Dakota .....	51	156	30	47	157	30	48	157	34	49	161	40
Ohio .....	48	153	28	47	154	30	50	157	36	52	154	33
Oklahoma .....	50	148	23	48	148	22	49	146	22	49	144	21
Oregon .....	49	147	25	50	149	24	49	153	31	48	152	29
Pennsylvania .....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Average science NAEP scores and achievement-level results for grades 4 and 8 female students in public schools, by state: 2000 and 2005**

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Female 4th grade students (%)	Average scale score	Students ≥proficient (%)	Female 4th grade students (%)	Average scale score	Students ≥proficient (%)	Female 8th grade students (%)	Average scale score	Students ≥proficient (%)	Female 8th grade students (%)	Average scale score	Students ≥proficient (%)
Rhode Island.....	49	145	22	47	145	21	49	145	24	48	144	23
South Carolina.....	48	139	17	47	147	23	51	137	17	51	144	20
South Dakota.....	NA	NA	NA	49	155	30	NA	NA	NA	50	158	37
Tennessee.....	49	144	22	50	149	24	48	142	20	51	144	22
Texas.....	51	142	19	49	147	22	50	141	21	49	141	20
Utah.....	49	151	26	48	153	29	52	151	28	48	152	30
Vermont.....	47	158	36	50	157	34	49	156	35	50	161	39
Virginia.....	49	154	30	50	160	38	50	147	26	49	153	32
Washington.....	NA	NA	NA	49	151	25	NA	NA	NA	49	153	30
West Virginia.....	50	148	23	50	149	20	49	144	20	49	144	20
Wisconsin.....	NA	NA	NA	48	156	32	NA	NA	NA	50	156	35
Wyoming.....	50	152	26	50	154	27	49	154	31	48	157	33

NA = not available

NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average mathematics NAEP scores and achievement-level results for grades 4 and 8 male students in public schools, by state: 2000 and 2005

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States.....	51	225	25	51	238	37	50	273	26	51	278	30
Alabama.....	51	216	14	51	225	22	51	265	17	49	261	15
Alaska.....	NA	NA	NA	50	236	35	NA	NA	NA	53	280	30
Arizona.....	53	219	16	52	233	32	51	271	22	52	274	26
Arkansas.....	51	216	14	53	236	36	51	256	14	51	270	22
California.....	51	212	13	51	231	30	51	259	17	51	269	23
Colorado.....	NA	NA	NA	52	241	41	NA	NA	NA	49	281	33
Connecticut.....	52	235	33	51	244	45	53	283	36	50	281	35
Delaware.....	NA	NA	NA	51	241	38	NA	NA	NA	50	283	32
District of Columbia.....	49	191	6	49	212	11	47	235	6	47	246	7
Florida.....	NA	NA	NA	50	240	38	NA	NA	NA	52	276	28
Georgia.....	49	220	19	51	234	30	50	265	19	51	273	24
Hawaii.....	49	215	15	51	229	26	52	260	16	54	265	19
Idaho.....	50	224	20	51	242	42	53	277	27	50	280	30
Illinois.....	52	224	23	51	234	33	52	272	24	51	279	30
Indiana.....	51	234	31	50	240	38	50	282	33	51	283	32
Iowa.....	52	233	28	53	242	40	NA	NA	NA	50	283	34
Kansas.....	51	233	31	52	247	48	51	283	35	51	285	35
Kentucky.....	50	220	19	51	233	29	51	271	22	51	275	24
Louisiana.....	51	219	14	52	231	26	47	260	12	51	267	16
Maine.....	51	232	25	51	243	41	51	282	32	49	282	31
Maryland.....	51	223	23	51	240	40	52	272	27	48	278	31
Massachusetts.....	50	235	33	49	248	50	52	279	31	49	291	43
Michigan.....	51	230	30	51	240	41	50	278	29	50	279	31
Minnesota.....	50	236	36	50	247	50	50	287	39	50	291	45
Mississippi.....	48	210	10	51	227	20	51	255	10	49	263	15
Missouri.....	50	228	24	51	237	34	52	272	23	52	278	28
Montana.....	52	231	27	50	243	42	52	284	37	52	286	36
Nebraska.....	49	225	25	50	239	39	53	282	33	50	285	37
Nevada.....	51	221	18	51	231	28	50	266	20	51	270	23
New Hampshire.....	NA	NA	NA	51	247	50	NA	NA	NA	50	286	36
New Jersey.....	NA	NA	NA	52	246	47	NA	NA	NA	51	286	39
New Mexico.....	50	216	14	51	225	21	50	259	13	50	264	15
New York.....	49	227	23	50	240	39	48	273	27	50	280	31
North Carolina.....	50	230	26	51	242	41	51	277	28	51	281	32
North Dakota.....	51	231	27	50	244	43	52	282	31	51	287	36
Ohio.....	50	232	28	51	243	45	51	281	32	50	284	34
Oklahoma.....	50	225	17	51	235	31	52	271	20	50	272	22
Oregon.....	51	225	25	51	239	37	52	282	34	52	284	35
Pennsylvania.....	NA	NA	NA	51	241	44	NA	NA	NA	52	283	33
Rhode Island.....	51	225	25	51	234	32	52	268	21	51	272	24

**Average mathematics NAEP scores and achievement-level results for grades 4 and 8 male students in public schools, by state: 2000 and 2005**

State	4th grade mathematics (2000)			4th grade mathematics (2005)			8th grade mathematics (2000)			8th grade mathematics (2005)		
	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
South Carolina.....	52	221	20	50	238	37	50	264	17	50	282	31
South Dakota.....	NA	NA	NA	51	243	43	NA	NA	NA	51	287	36
Tennessee.....	51	221	20	50	233	30	50	263	19	49	270	21
Texas.....	49	233	28	50	244	43	51	272	23	50	283	33
Utah.....	52	227	24	51	240	39	49	275	26	52	280	32
Vermont.....	50	232	29	53	246	47	51	279	31	50	287	38
Virginia.....	50	232	26	51	242	42	50	276	28	50	285	35
Washington.....	NA	NA	NA	50	242	43	NA	NA	NA	51	285	37
West Virginia.....	51	224	19	52	232	28	52	265	17	51	268	18
Wisconsin.....	NA	NA	NA	51	242	42	NA	NA	NA	49	285	36
Wyoming.....	53	230	27	51	244	45	51	276	24	52	283	31

NA = not available

NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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## Average science NAEP scores and achievement-level results for grades 4 and 8 male students in public schools, by state: 2000 and 2005

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
United States.....	50	147	29	51	151	30	50	151	32	50	149	30
Alabama.....	52	143	22	51	143	22	50	146	26	50	138	21
Alaska.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arizona.....	52	139	23	50	140	20	52	147	27	50	141	21
Arkansas.....	51	147	26	51	148	26	50	143	24	52	146	27
California.....	50	128	14	50	138	19	48	131	16	50	138	19
Colorado.....	NA	NA	NA	52	157	35	NA	NA	NA	51	158	38
Connecticut.....	51	159	39	51	156	35	50	156	39	51	153	34
Delaware.....	NA	NA	NA	52	153	29	NA	NA	NA	51	154	32
District of Columbia.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida.....	NA	NA	NA	51	151	28	NA	NA	NA	49	142	24
Georgia.....	52	145	25	50	148	27	50	144	26	52	145	28
Hawaii.....	51	137	18	50	142	19	51	130	15	52	138	17
Idaho.....	52	156	34	51	157	34	51	161	44	52	161	42
Illinois.....	52	151	33	50	148	28	50	151	33	50	150	31
Indiana.....	50	156	36	50	153	29	51	156	36	49	154	33
Iowa.....	50	162	40	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kansas.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kentucky.....	51	154	31	50	159	38	52	153	33	51	154	33
Louisiana.....	51	141	20	52	145	24	49	136	20	49	141	23
Maine.....	48	164	42	51	162	40	51	160	39	50	159	37
Maryland.....	51	146	27	50	148	28	50	147	30	50	145	27
Massachusetts.....	53	164	46	53	162	40	51	159	40	52	162	42
Michigan.....	50	155	37	50	154	34	51	156	37	50	156	37
Minnesota.....	53	159	37	51	158	37	52	161	44	52	161	43
Mississippi.....	49	134	15	50	134	15	50	136	18	51	135	16
Missouri.....	51	159	38	52	160	39	50	155	37	50	157	37
Montana.....	49	163	42	52	162	40	55	167	48	49	162	43
Nebraska.....	47	152	30	NA	NA	NA	53	161	43	NA	NA	NA
Nevada.....	51	143	21	50	141	19	51	143	24	51	139	20
New Hampshire.....	NA	NA	NA	50	163	41	NA	NA	NA	51	163	43
New Jersey.....	NA	NA	NA	50	155	33	NA	NA	NA	51	157	38
New Mexico.....	49	141	19	52	142	19	49	143	24	51	141	21
New York.....	49	149	26	NA	NA	NA	51	146	30	NA	NA	NA
North Carolina.....	52	149	26	52	151	29	50	148	29	48	145	25
North Dakota.....	49	164	43	53	163	42	52	161	42	51	165	46
Ohio.....	52	157	34	53	159	39	50	162	43	48	157	38
Oklahoma.....	50	153	29	52	151	28	51	151	29	51	149	30
Oregon.....	51	150	29	50	152	29	51	155	36	52	155	36
Pennsylvania.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rhode Island.....	51	150	29	53	148	25	51	150	30	52	149	29

**Average science NAEP scores and achievement-level results for grades 4 and 8 male students in public schools, by state: 2000 and 2005**

State	4th grade science (2000)			4th grade science (2005)			8th grade science (2000)			8th grade science (2005)		
	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 4th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)	Male 8th grade students (%)	Average scale score	Students $\geq$ proficient (%)
South Carolina.....	52	141	23	53	150	27	49	143	23	49	146	25
South Dakota.....	NA	NA	NA	51	161	40	NA	NA	NA	50	164	45
Tennessee.....	51	146	27	50	152	29	52	149	28	49	146	28
Texas.....	49	148	26	51	152	28	50	145	26	51	145	26
Utah.....	51	157	35	52	158	36	48	158	39	52	155	36
Vermont.....	53	162	41	50	162	41	51	161	42	50	163	42
Virginia.....	51	156	34	50	162	42	50	155	33	51	157	37
Washington.....	NA	NA	NA	51	155	32	NA	NA	NA	51	155	36
West Virginia.....	50	150	25	50	153	27	51	149	27	51	150	27
Wisconsin.....	NA	NA	NA	52	159	38	NA	NA	NA	50	160	42
Wyoming.....	50	160	37	50	161	38	51	158	36	52	161	40

NA = not available

NAEP = National Assessment of Educational Progress

SOURCE: National Center for Education Statistics, NAEP (various years).

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