

Appendix table 4-1

Gross domestic product and implicit price deflators: 1953–2005

Year	Calendar year			Fiscal year		
	GDP (\$ billions)		GDP price deflator ^a	GDP (\$ billions)		GDP price deflator ^a
	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	9,831.4	1.023
2002.....	10,487.0	10,074.8	1.041	10,389.2	9,964.0	1.043
2003.....	11,004.0	10,381.3	1.060	10,840.7	10,214.4	1.061
2004.....	11,731.2	10,842.2	1.082	11,552.8	10,679.9	1.082
2005.....	12,391.9	11,232.7	1.103	12,227.4	11,076.1	1.104

GDP = gross domestic product

^a2000 = 1.

NOTE: Projected data for 2003–05.

SOURCES: FY GDP and deflators and all 2003–05 data: Office of Management and Budget, *Budget of the United States, Fiscal Year 2006* (2005); calendar years 1953–2002: U.S. Department of Commerce, Bureau of Economic Analysis (various years), <http://www.bea.gov>.

Appendix table 4-2

Purchasing power parity and purchasing power parity/market exchange rate ratios, by selected country: 1981–2004

(Foreign currency/U.S. dollar)

Year	PPP										Market exchange rate/PPP				
	Canada	China	France	Germany ^a	Italy	Japan	South Korea	Russian Federation	Taiwan	United Kingdom	China	Germany ^a	Japan	South Korea	Taiwan
1981.....	1.17	—	0.83	1.07	0.41	220.26	416.43	—	—	0.49	—	1.08	1.00	1.64	—
1982.....	1.20	—	0.87	1.06	0.46	212.05	420.44	—	—	0.49	—	1.17	1.17	1.74	—
1983.....	1.21	—	0.92	1.05	0.51	208.81	428.63	—	—	0.50	—	1.24	1.14	1.81	—
1984.....	1.21	—	0.95	1.03	0.54	207.68	436.30	—	—	0.50	—	1.41	1.14	1.85	—
1985.....	1.21	—	0.97	1.02	0.57	206.15	442.81	—	—	0.52	—	1.47	1.16	1.96	—
1986.....	1.22	—	0.99	1.03	0.61	205.02	455.40	—	—	0.52	—	1.07	0.82	1.94	—
1987.....	1.24	—	1.00	1.02	0.63	200.08	468.06	—	—	0.54	—	0.90	0.72	1.76	—
1988.....	1.25	—	0.99	1.00	0.65	194.92	486.74	—	—	0.55	—	0.89	0.66	1.50	—
1989.....	1.26	—	0.99	0.99	0.66	192.13	495.88	—	—	0.57	—	0.97	0.72	1.35	—
1990.....	1.25	1.25	0.98	0.98	0.69	189.43	528.53	—	19.06	0.59	3.83	0.84	0.76	1.34	1.41
1991.....	1.25	1.29	0.97	0.98	0.72	188.41	566.16	—	19.30	0.61	4.14	0.86	0.72	1.30	1.39
1992.....	1.23	1.35	0.97	1.01	0.73	187.17	595.64	0.02	19.19	0.62	4.08	0.79	0.68	1.31	1.31
1993.....	1.22	1.51	0.97	1.02	0.74	183.93	623.38	0.17	19.45	0.62	3.82	0.83	0.60	1.29	1.36
1994.....	1.21	1.77	0.96	1.03	0.75	180.30	657.28	0.68	19.45	0.62	4.86	0.81	0.57	1.22	1.36
1995.....	1.22	1.93	0.96	1.02	0.77	175.79	690.04	1.63	19.20	0.62	4.32	0.72	0.54	1.12	1.38
1996.....	1.21	2.01	0.95	1.01	0.79	171.19	711.81	2.32	19.57	0.63	4.13	0.76	0.64	1.13	1.40
1997.....	1.21	2.00	0.93	1.01	0.81	168.87	732.44	2.59	19.89	0.62	4.15	0.88	0.72	1.30	1.44
1998.....	1.19	1.91	0.93	1.01	0.80	166.86	766.56	2.97	20.52	0.63	4.32	0.89	0.78	1.83	1.63
1999.....	1.19	1.85	0.93	1.00	0.81	162.04	754.89	5.07	19.81	0.64	4.47	0.94	0.70	1.57	1.63
2000.....	1.21	1.83	0.93	0.99	0.82	155.48	744.23	6.93	19.14	0.64	4.52	1.09	0.69	1.52	1.63
2001.....	1.20	1.81	0.91	0.99	0.83	149.55	752.64	7.99	18.80	0.63	4.58	1.13	0.81	1.72	1.80
2002.....	1.19	1.79	0.91	0.98	0.85	145.54	762.14	9.09	18.40	0.63	4.63	1.08	0.86	1.64	1.88
2003.....	1.21	1.81	0.91	0.98	0.86	139.59	766.76	10.09	17.90	0.64	4.57	0.91	0.83	1.55	1.92
2004.....	1.20	—	0.91	0.97	0.86	134.82	768.93	—	—	0.64	—	—	—	—	—

— = data not used

PPP = purchasing power parity

^aData for 1981–90 for West Germany.SOURCES: Organisation for Economic Co-operation and Development, *Main Science and Technology Indicators* (2004); and CIA World Factbook (for Taiwan, 2003 exchange rate).

Science and Engineering Indicators 2006

U.S. R&D expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:		Industry				Industry FFRDCs	U&C ^a					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs ^b
	Total	Federal	Total	Federal ^c	Industry ^d	Federal ^e	Total	Federal	Nonfederal ^e	Industry	U&C	Nonprofit	Federal ^f	Total	Federal ^c	Industry	Nonprofit	Federal ^g
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.....	63,213	7,831	43,228	12,752	30,476	1,277	6,455	4,335	519	264	920	419	2,306	1,641	1,000	189	452	475
1981.....	72,269	8,605	50,425	14,997	35,428	1,385	7,085	4,670	581	314	1,058	463	2,484	1,747	1,038	206	504	538
1982.....	80,783	9,501	57,166	17,061	40,105	1,484	7,603	4,879	621	363	1,207	534	2,544	1,961	1,175	224	561	525
1983.....	89,971	10,830	63,683	19,095	44,588	1,585	8,251	5,210	658	432	1,357	595	2,840	2,182	1,313	244	626	600
1984.....	102,251	11,916	73,061	21,657	51,404	1,739	9,154	5,748	721	518	1,514	654	3,243	2,513	1,550	265	698	625
1985.....	114,685	13,093	82,376	25,333	57,043	1,863	10,308	6,388	834	630	1,743	713	3,616	2,767	1,700	289	778	663
1986.....	120,259	13,504	85,932	26,000	59,932	1,891	11,540	7,028	969	745	2,019	780	3,973	2,882	1,700	314	867	538
1987.....	126,344	13,588	90,160	28,757	61,403	1,995	12,807	7,768	1,065	831	2,262	882	4,287	3,005	1,696	342	967	501
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
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.....	165,724	16,531	115,435	20,844	94,591	1,965	20,489	12,303	1,557	1,391	3,708	1,530	5,289	5,267	2,843	567	1,857	749

U.S. R&D expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:		Industry				Industry FFRDCs		U&C ^a					U&C FFRDCs		Other nonprofit institutions				Nonprofit FFRDCs ^b
	Total	Federal	Total	Federal ^c	Industry ^d	Federal ^e	Total	Federal	Total	Federal	Nonfederal ^f	Industry	U&C	Nonprofit	Federal ^g	Total	Federal ^h	Industry	Nonprofit	Federal ⁱ
1994.....	169,198	16,355	117,392	20,261	97,131	2,202	21,598	12,991	1,622	1,456	3,937	1,594	5,294	5,599	2,911	617	2,071	758		
1995.....	183,616	16,904	129,830	21,178	108,652	2,273	22,608	13,586	1,750	1,547	4,109	1,616	5,367	5,827	2,847	671	2,308	808		
1996.....	197,336	16,585	142,371	21,356	121,015	2,297	23,708	14,077	1,860	1,671	4,434	1,666	5,395	6,209	2,906	730	2,574	772		
1997.....	212,140	16,819	155,409	21,798	133,611	2,130	24,873	14,522	1,921	1,807	4,837	1,786	5,463	6,626	3,014	809	2,804	821		
1998.....	227,651	17,362	168,409	22,086	146,323	2,078	26,166	15,164	1,971	1,949	5,161	1,921	5,559	7,234	3,281	888	3,065	843		
1999.....	244,970	17,851	182,180	20,586	161,594	1,949	28,160	16,252	2,098	2,082	5,617	2,111	5,652	8,185	3,761	984	3,441	993		
2000.....	267,207	17,917	200,007	17,163	182,844	1,955	30,683	17,710	2,247	2,175	6,227	2,326	5,742	9,437	4,447	1,118	3,872	1,465		
2001.....	277,326	20,426	202,017	16,899	185,118	2,020	33,712	19,767	2,397	2,188	6,820	2,540	6,225	10,734	5,289	1,132	4,313	2,192		
2002.....	275,797	21,499	193,868	16,401	177,467	2,263	37,185	22,370	2,560	2,158	7,350	2,746	7,102	11,561	5,731	1,084	4,746	2,319		
2003.....	291,864	23,326	204,004	20,699	183,305	2,486	40,173	24,580	2,717	2,142	7,820	2,913	7,275	12,031	5,807	1,121	5,103	2,570		
2004.....	312,068	24,742	219,226	23,535	195,691	2,584	42,431	26,115	2,890	2,135	8,205	3,087	7,500	12,750	6,072	1,199	5,478	2,834		

NA = not available

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

^aAdjustments 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 2004, \$1,207 million in passthrough funds estimated.

^bBeginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

^cExpenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–54.

^dIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^eBecause 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.

^fIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. inflation-adjusted R&D expenditures, by performing sector and source of funds: 1953–2004

(Millions of constant 2000 dollars)

Year	Performing sector:		Industry					Industry FFRDCs		U&C ^a				U&C FFRDCs		Other nonprofit institutions			Nonprofit FFRDCs ^b
	Total	Federal	Total	Federal ^c	Industry ^d	Federal ^e	Total	Federal	Nonfederal ^f	Industry	U&C	Nonprofit	Federal ^g	Total	Federal ^h	Industry	Nonprofit	Federal ⁱ	
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.....	116,969	14,490	79,989	23,596	56,393	2,363	11,944	8,021	959	488	1,701	775	4,267	3,037	1,850	351	836	879	
1981.....	122,243	14,555	85,294	25,367	59,927	2,343	11,984	7,898	983	531	1,789	783	4,202	2,955	1,755	349	852	909	
1982.....	128,789	15,147	91,137	27,200	63,938	2,366	12,120	7,778	990	579	1,923	851	4,055	3,126	1,873	358	895	837	
1983.....	137,978	16,608	97,663	29,284	68,379	2,431	12,654	7,990	1,009	663	2,080	912	4,356	3,347	2,013	374	960	920	
1984.....	151,135	17,612	107,990	32,011	75,979	2,570	13,530	8,495	1,066	765	2,238	966	4,794	3,715	2,291	392	1,032	924	
1985.....	164,506	18,781	118,162	36,338	81,824	2,672	14,785	9,163	1,196	904	2,500	1,023	5,187	3,969	2,439	414	1,116	950	
1986.....	168,786	18,954	120,607	36,491	84,115	2,654	16,197	9,863	1,360	1,046	2,833	1,095	5,576	4,044	2,386	441	1,218	754	
1987.....	172,611	18,565	123,176	39,288	83,889	2,726	17,497	10,613	1,454	1,135	3,090	1,204	5,857	4,105	2,317	467	1,321	685	
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	
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	

U.S. inflation-adjusted R&D expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:		Industry				Industry FFRDCs		U&C ^a				U&C FFRDCs		Other nonprofit institutions				Nonprofit FFRDCs ^b
	Total	Federal	Total	Federal ^c	Industry ^d	Federal ^e	Total	Federal	Nonfederal ^f	Industry	U&C	Nonprofit	Federal ^g	Total	Federal ^h	Industry	Nonprofit	Federal ⁱ	
1993.....	187,513	18,704	130,612	23,585	107,028	2,223	23,182	13,921	1,761	1,574	4,196	1,731	5,984	5,960	3,217	642	2,101	848	
1994.....	187,460	18,120	130,062	22,448	107,614	2,440	23,929	14,393	1,797	1,613	4,362	1,765	5,865	6,203	3,225	683	2,294	840	
1995.....	199,352	18,352	140,957	22,993	117,964	2,468	24,545	14,750	1,900	1,680	4,461	1,754	5,827	6,326	3,091	729	2,506	877	
1996.....	210,262	17,671	151,696	22,755	128,941	2,447	25,260	14,999	1,982	1,780	4,724	1,775	5,748	6,616	3,096	778	2,742	822	
1997.....	222,338	17,628	162,880	22,846	140,034	2,232	26,068	15,220	2,014	1,894	5,069	1,872	5,725	6,945	3,159	848	2,938	860	
1998.....	235,977	17,997	174,568	22,894	151,674	2,154	27,123	15,719	2,043	2,020	5,350	1,991	5,763	7,499	3,401	921	3,177	874	
1999.....	250,306	18,240	186,149	21,035	165,114	1,991	28,774	16,606	2,143	2,127	5,740	2,157	5,775	8,364	3,843	1,006	3,515	1,014	
2000.....	267,207	17,917	200,007	17,163	182,844	1,955	30,683	17,710	2,247	2,175	6,227	2,326	5,742	9,437	4,447	1,118	3,872	1,465	
2001.....	270,828	19,948	197,284	16,503	180,781	1,973	32,922	19,304	2,341	2,137	6,660	2,480	6,080	10,482	5,165	1,106	4,212	2,140	
2002.....	264,956	20,654	186,248	15,756	170,492	2,174	35,723	21,491	2,460	2,073	7,061	2,638	6,823	11,107	5,506	1,041	4,560	2,228	
2003.....	275,348	22,006	192,460	19,528	172,932	2,345	37,900	23,189	2,563	2,021	7,378	2,749	6,863	11,350	5,478	1,057	4,815	2,425	
2004.....	288,419	22,867	202,613	21,752	180,861	2,388	39,216	24,136	2,671	1,973	7,583	2,853	6,932	11,783	5,612	1,108	5,063	2,620	

NA = not available

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

^aAdjustments 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 2004, \$1,207 million in passthrough funds estimated.

^bBeginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

^cExpenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–54.

^dIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^eBecause 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.

^fIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. R&D expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Total	Total	Federal	Industry ^b	FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^{b,e}	Total	Industry ^f	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c	
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	1,131	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	11,646	2,559	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	663	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.....	63,213	29,975	7,831	12,752	1,277	4,335	2,306	1,000	475	30,929	30,476	264	190	920	871	452	419	519	
1981.....	72,269	33,715	8,605	14,997	1,385	4,670	2,484	1,038	538	35,948	35,428	314	206	1,058	967	504	463	581	
1982.....	80,783	37,168	9,501	17,061	1,484	4,879	2,544	1,175	525	40,692	40,105	363	224	1,207	1,095	562	534	621	
1983.....	89,971	41,472	10,830	19,095	1,585	5,210	2,840	1,313	600	45,264	44,588	432	244	1,357	1,221	626	595	658	
1984.....	102,251	46,477	11,916	21,657	1,739	5,748	3,243	1,550	625	52,187	51,404	518	266	1,514	1,351	698	654	721	
1985.....	114,685	52,655	13,093	25,333	1,863	6,388	3,616	1,700	663	57,962	57,043	630	289	1,743	1,491	778	713	834	
1986.....	120,259	54,633	13,504	26,000	1,891	7,028	3,973	1,700	538	60,991	59,932	745	314	2,019	1,648	868	780	969	
1987.....	126,344	58,593	13,588	28,757	1,995	7,768	4,287	1,696	501	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	92,301	90,580	1,242	479	3,457	2,852	1,494	1,358	1,483	
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.....	165,724	60,524	16,531	20,844	1,965	12,303	5,289	2,843	749	96,549	94,591	1,391	567	3,708	3,387	1,857	1,530	1,557	

U.S. R&D expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal								Industry				U&C	Nonprofit		Nonfederal ^a	
	Total	Total	Federal	Industry ^b	FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^e	Nonprofit FFRDCs ^{h,e}	Total	Industry ^f	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c	
1994.....	169,198	60,772	16,355	20,261	2,202	12,991	5,294	2,911	758	99,203	97,131	1,456	617	3,937	3,664	2,071	1,594	1,622	
1995.....	183,616	62,963	16,904	21,178	2,273	13,586	5,367	2,847	808	110,870	108,652	1,547	671	4,109	3,924	2,308	1,616	1,750	
1996.....	197,336	63,387	16,585	21,356	2,297	14,077	5,395	2,906	772	123,416	121,015	1,671	730	4,434	4,239	2,574	1,666	1,860	
1997.....	212,141	64,566	16,819	21,798	2,130	14,522	5,463	3,014	821	136,227	133,611	1,807	809	4,837	4,590	2,804	1,786	1,921	
1998.....	227,651	66,373	17,362	22,086	2,078	15,164	5,559	3,281	843	149,160	146,323	1,949	888	5,161	4,986	3,065	1,921	1,971	
1999.....	244,970	67,043	17,851	20,586	1,949	16,252	5,652	3,761	993	164,660	161,594	2,082	984	5,617	5,552	3,441	2,111	2,098	
2000.....	267,207	66,400	17,917	17,163	1,955	17,710	5,742	4,447	1,465	186,136	182,844	2,175	1,118	6,227	6,198	3,872	2,326	2,247	
2001.....	277,326	72,819	20,426	16,899	2,021	19,767	6,225	5,289	2,192	188,439	185,118	2,188	1,132	6,820	6,853	4,313	2,540	2,397	
2002.....	275,797	77,685	21,499	16,401	2,263	22,370	7,102	5,731	2,319	180,709	177,467	2,158	1,084	7,350	7,493	4,746	2,746	2,560	
2003.....	291,864	86,742	23,326	20,699	2,486	24,580	7,275	5,807	2,570	186,568	183,305	2,142	1,121	7,820	8,017	5,103	2,914	2,717	
2004.....	312,068	93,384	24,742	23,535	2,584	26,115	7,500	6,072	2,834	199,025	195,691	2,135	1,199	8,205	8,565	5,478	3,087	2,890	

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–63.

^cAdjustments 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 2004, \$1,207 million in passthrough funds estimated.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eBeginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

^fIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. inflation-adjusted R&D expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^{b,e}	Total	Industry ^f	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c
1953.....		28,282	15,251	5,563	7,838	NA	817	718	315	NA	12,313	12,058	112	143	200	301	2,153	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.....		116,969	55,466	14,490	23,596	2,363	8,021	4,267	1,850	879	57,231	56,393	488	351	1,701	1,611	836	775	959
1981.....		122,243	57,030	14,555	25,367	2,343	7,898	4,202	1,755	909	60,806	59,927	531	349	1,789	1,635	852	783	983
1982.....		128,789	59,256	15,147	27,200	2,366	7,778	4,055	1,873	837	64,874	63,938	579	358	1,923	1,746	895	851	990
1983.....		137,978	63,601	16,608	29,284	2,431	7,990	4,356	2,013	920	69,416	68,379	663	374	2,080	1,872	960	912	1,009
1984.....		151,135	68,697	17,612	32,011	2,570	8,495	4,794	2,291	924	77,137	75,979	765	392	2,238	1,997	1,032	966	1,066
1985.....		164,506	75,530	18,781	36,338	2,672	9,163	5,187	2,439	950	83,142	81,824	904	414	2,500	2,139	1,116	1,023	1,196
1986.....		168,786	76,678	18,954	36,491	2,654	9,863	5,576	2,386	754	85,602	84,115	1,046	441	2,833	2,312	1,218	1,095	1,360
1987.....		172,611	80,050	18,565	39,288	2,726	10,613	5,857	2,317	685	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
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.....		187,513	68,481	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	1,731	1,761

U.S. inflation-adjusted R&D expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^{b,e}	Total	Industry ^f	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c
1994.....		187,460	67,331	18,120	22,448	2,440	14,393	5,865	3,225	840	109,910	107,614	1,613	683	4,362	4,059	2,294	1,765	1,797
1995.....		199,352	68,359	18,352	22,993	2,468	14,750	5,827	3,091	877	120,372	117,964	1,680	729	4,461	4,261	2,506	1,754	1,900
1996.....		210,262	67,539	17,671	22,755	2,447	14,999	5,748	3,096	822	131,500	128,941	1,780	778	4,724	4,517	2,742	1,775	1,982
1997.....		222,338	67,670	17,628	22,846	2,232	15,220	5,725	3,159	860	142,776	140,034	1,894	848	5,069	4,810	2,938	1,872	2,014
1998.....		235,977	68,801	17,997	22,894	2,154	15,719	5,763	3,401	874	154,615	151,674	2,020	921	5,350	5,168	3,177	1,991	2,043
1999.....		250,306	68,504	18,240	21,035	1,991	16,606	5,775	3,843	1,014	168,247	165,114	2,127	1,006	5,740	5,673	3,515	2,157	2,143
2000.....		267,207	66,400	17,917	17,163	1,955	17,710	5,742	4,447	1,465	186,136	182,844	2,175	1,118	6,227	6,198	3,872	2,326	2,247
2001.....		270,828	71,112	19,948	16,503	1,973	19,304	6,080	5,165	2,140	184,023	180,781	2,137	1,106	6,660	6,692	4,212	2,480	2,341
2002.....		264,956	74,632	20,654	15,756	2,174	21,491	6,823	5,506	2,228	173,606	170,492	2,073	1,041	7,061	7,198	4,560	2,638	2,460
2003.....		275,348	81,834	22,006	19,528	2,345	23,189	6,863	5,478	2,425	176,010	172,932	2,021	1,057	7,378	7,563	4,815	2,749	2,563
2004.....		288,419	86,307	22,867	21,752	2,388	24,136	6,932	5,612	2,620	183,943	180,861	1,973	1,108	7,583	7,916	5,063	2,853	2,671

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–54 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–63.

^cAdjustments 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 2004, \$1,207 million in passthrough funds estimated.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eBeginning in 2001, data for nonprofit FFRDCs reported by FFRDCs. In prior years, data collected from federal agencies supporting them.

^fIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. basic research expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a					U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs	
	Funding sector:			Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry
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.....		8,790	1,212	1,205	170	1,035	120	4,315	3,061	307	156	544	248	1,167	771	461	95	215	NA
1981.....		9,830	1,343	1,477	164	1,313	137	4,737	3,331	338	183	615	269	1,284	853	505	105	243	NA
1982.....		10,824	1,522	1,776	253	1,523	128	5,091	3,475	368	215	716	317	1,366	941	551	115	275	NA
1983.....		12,059	1,733	2,106	346	1,760	117	5,518	3,689	396	260	816	358	1,536	1,050	613	127	311	NA
1984.....		13,484	1,877	2,472	340	2,132	136	6,145	4,087	436	313	915	395	1,709	1,147	656	139	351	NA
1985.....		14,857	1,947	2,731	358	2,373	131	7,024	4,606	514	389	1,075	440	1,793	1,231	681	153	397	NA
1986.....		17,247	2,026	3,930	434	3,496	117	7,943	5,122	606	466	1,262	488	1,915	1,317	700	168	449	NA
1987.....		18,498	2,047	4,181	598	3,583	142	8,644	5,527	659	514	1,399	545	2,086	1,399	707	185	507	NA
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 sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:	Federal	Industry			Industry FFRDCs	U&C ^a				U&C FFRDCs	Other nonprofit institutions			Nonprofit FFRDCs				
	Funding sector:		Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b	
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.....		28,741	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.....		29,648	2,547	6,514	436	6,078	503	14,398	9,138	991	889	2,406	974	2,934	2,678	1,137	356	1,186	75
1995.....		29,607	2,689	5,569	190	5,379	530	15,144	9,633	1,069	945	2,510	987	2,702	2,899	1,170	390	1,338	75
1996.....		32,796	2,680	7,498	650	6,848	708	16,039	10,091	1,149	1,032	2,739	1,028	2,606	3,187	1,248	428	1,510	79
1997.....		36,910	2,746	9,795	1,029	8,766	625	17,643	10,915	1,248	1,175	3,144	1,161	2,671	3,322	1,317	449	1,557	108
1998.....		35,268	3,003	5,853	1,002	4,851	568	19,315	11,886	1,331	1,316	3,485	1,297	2,660	3,656	1,461	493	1,702	213
1999.....		38,830	3,347	6,669	1,132	5,537	533	20,929	12,790	1,434	1,423	3,840	1,443	2,765	4,191	1,734	546	1,910	397
2000.....		42,567	3,765	7,053	938	6,115	534	22,856	13,904	1,550	1,500	4,296	1,605	2,874	4,870	2,099	621	2,150	616
2001.....		47,553	4,260	8,053	754	7,299	552	25,181	15,507	1,663	1,518	4,731	1,762	3,104	5,488	2,464	629	2,395	915
2002.....		51,033	4,511	7,547	888	6,659	619	27,853	17,616	1,769	1,492	5,078	1,898	3,714	5,812	2,575	602	2,635	979
2003.....		55,104	4,700	8,585	1,628	6,957	679	30,047	19,379	1,859	1,466	5,351	1,993	3,799	6,222	2,766	622	2,834	1,071
2004.....		58,356	4,887	9,278	1,851	7,427	706	31,735	20,589	1,974	1,458	5,605	2,109	3,917	6,651	2,944	666	3,042	1,181

NA = not available

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

^aAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^dBecause 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.

^eIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. inflation-adjusted basic research expenditures, by performing sector and source of funds: 1953–2004

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:			Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b
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.....		16,265	2,243	2,230	315	1,915	222	7,984	5,663	568	288	1,006	459	2,158	1,427	853	176	397	NA
1981.....		16,628	2,271	2,498	277	2,221	232	8,012	5,634	572	309	1,041	456	2,172	1,442	854	177	411	NA
1982.....		17,256	2,426	2,831	403	2,428	204	8,116	5,539	587	344	1,142	505	2,178	1,500	879	184	438	NA
1983.....		18,493	2,657	3,230	531	2,699	179	8,462	5,657	607	398	1,252	549	2,355	1,610	939	194	476	NA
1984.....		19,931	2,774	3,654	503	3,151	201	9,082	6,040	644	462	1,352	584	2,526	1,695	970	206	519	NA
1985.....		21,311	2,793	3,917	514	3,404	188	10,075	6,606	738	558	1,543	631	2,572	1,766	977	219	569	NA
1986.....		24,206	2,843	5,516	609	4,907	164	11,147	7,188	850	654	1,771	684	2,688	1,848	982	236	630	NA
1987.....		25,272	2,797	5,712	817	4,895	194	11,809	7,550	900	702	1,912	745	2,850	1,911	966	252	692	NA
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
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

U.S. inflation-adjusted basic research expenditures, by performing sector and source of funds: 1953–2004

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a					U&C FFRDCs	Other nonprofit institutions			Nonprofit FFRDCs		
	Funding sector:	Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b
1993.....		32,520	2,965	7,272	527	6,745	557	15,438	9,773	1,077	963	2,566	1,059	3,341	2,865	1,309	366	1,189	82
1994.....		32,848	2,822	7,217	483	6,734	557	15,951	10,124	1,098	985	2,666	1,079	3,251	2,967	1,259	394	1,314	83
1995.....		32,145	2,920	6,046	206	5,840	575	16,441	10,458	1,161	1,026	2,725	1,072	2,933	3,147	1,270	424	1,453	82
1996.....		34,944	2,855	7,989	693	7,297	754	17,089	10,751	1,224	1,100	2,918	1,096	2,776	3,396	1,330	457	1,609	84
1997.....		38,685	2,878	10,266	1,078	9,187	655	18,491	11,440	1,308	1,232	3,295	1,217	2,800	3,482	1,380	471	1,631	113
1998.....		36,557	3,112	6,067	1,039	5,028	589	20,022	12,321	1,380	1,364	3,612	1,344	2,757	3,790	1,514	511	1,764	221
1999.....		39,676	3,420	6,815	1,157	5,658	544	21,385	13,069	1,465	1,454	3,923	1,475	2,825	4,282	1,772	558	1,952	405
2000.....		42,567	3,765	7,053	938	6,115	534	22,856	13,904	1,550	1,500	4,296	1,605	2,874	4,870	2,099	621	2,150	616
2001.....		46,439	4,161	7,864	736	7,128	539	24,591	15,144	1,624	1,482	4,620	1,721	3,031	5,359	2,406	614	2,339	894
2002.....		49,027	4,333	7,250	853	6,397	594	26,758	16,924	1,700	1,433	4,879	1,823	3,568	5,583	2,474	578	2,532	941
2003.....		51,985	4,434	8,099	1,536	6,563	641	28,347	18,282	1,754	1,383	5,048	1,881	3,584	5,870	2,609	587	2,673	1,010
2004.....		53,934	4,517	8,575	1,711	6,864	653	29,330	19,029	1,825	1,348	5,180	1,949	3,620	6,147	2,721	615	2,811	1,092

NA = not available

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

^aAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^dBecause 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.

^eIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. basic research expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c	
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.....	8,790	6,191	1,212	170	120	3,061	1,167	461	NA	1,286	1,035	156	95	544	463	215	248	307	
1981.....	9,830	6,764	1,343	164	137	3,331	1,284	505	NA	1,600	1,313	183	105	615	512	243	269	338	
1982.....	10,824	7,295	1,522	253	128	3,475	1,366	551	NA	1,854	1,523	215	115	716	591	275	317	368	
1983.....	12,059	8,032	1,733	346	117	3,689	1,536	613	NA	2,146	1,760	260	127	816	668	311	358	396	
1984.....	13,484	8,804	1,877	340	136	4,087	1,709	656	NA	2,584	2,132	313	139	915	746	351	395	436	
1985.....	14,857	9,516	1,947	358	131	4,606	1,793	681	NA	2,915	2,373	389	153	1,075	837	397	440	514	
1986.....	17,247	10,313	2,026	434	117	5,122	1,915	700	NA	4,130	3,496	466	168	1,262	936	449	488	606	
1987.....	18,498	11,107	2,047	598	142	5,527	2,086	707	NA	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	
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	

U.S. basic research expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:																		
	Performing sector:	Total	Federal							Industry				U&C	Nonprofit			Nonfederal ^a	
	Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^e	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c	
1993.....	28,741	16,398	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.....	29,648	16,769	2,547	436	503	9,138	2,934	1,137	75	7,323	6,078	889	356	2,406	2,160	1,186	974	991	
1995.....	29,607	16,989	2,689	190	530	9,633	2,702	1,170	75	6,714	5,379	945	390	2,510	2,326	1,338	987	1,069	
1996.....	32,796	18,061	2,680	650	708	10,091	2,606	1,248	79	8,308	6,848	1,032	428	2,739	2,539	1,510	1,028	1,149	
1997.....	36,910	19,411	2,746	1,029	625	10,915	2,671	1,317	108	10,390	8,766	1,175	449	3,144	2,718	1,557	1,161	1,248	
1998.....	35,268	20,793	3,003	1,002	568	11,886	2,660	1,461	213	6,660	4,851	1,316	493	3,485	2,999	1,702	1,297	1,331	
1999.....	38,830	22,697	3,347	1,132	533	12,790	2,765	1,734	397	7,506	5,537	1,423	546	3,840	3,354	1,910	1,443	1,434	
2000.....	42,567	24,730	3,765	938	534	13,904	2,874	2,099	616	8,236	6,115	1,500	621	4,296	3,755	2,150	1,605	1,550	
2001.....	47,553	27,557	4,260	754	552	15,507	3,104	2,464	915	9,445	7,299	1,518	629	4,731	4,157	2,395	1,762	1,663	
2002.....	51,033	30,900	4,511	888	619	17,616	3,714	2,575	979	8,753	6,659	1,492	602	5,078	4,533	2,635	1,898	1,769	
2003.....	55,104	34,022	4,700	1,628	679	19,379	3,799	2,766	1,071	9,045	6,957	1,466	622	5,351	4,827	2,834	1,993	1,859	
2004.....	58,356	36,075	4,887	1,851	706	20,589	3,917	2,944	1,181	9,551	7,427	1,458	666	5,605	5,150	3,042	2,109	1,974	

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. inflation-adjusted basic research expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^e	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c
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.....		16,265	11,455	2,243	315	222	5,663	2,158	853	NA	2,380	1,915	288	176	1,006	856	397	459	568
1981.....		16,628	11,441	2,271	277	232	5,634	2,172	854	NA	2,707	2,221	309	177	1,041	867	411	456	572
1982.....		17,256	11,629	2,426	403	204	5,539	2,178	879	NA	2,955	2,428	344	184	1,142	943	438	505	587
1983.....		18,493	12,318	2,657	531	179	5,657	2,355	939	NA	3,292	2,699	398	194	1,252	1,025	476	549	607
1984.....		19,931	13,013	2,774	503	201	6,040	2,526	970	NA	3,819	3,151	462	206	1,352	1,103	519	584	644
1985.....		21,311	13,650	2,793	514	188	6,606	2,572	977	NA	4,181	3,404	558	219	1,543	1,200	569	631	738
1986.....		24,206	14,475	2,843	609	164	7,188	2,688	982	NA	5,796	4,907	654	236	1,771	1,314	630	684	850
1987.....		25,272	15,174	2,797	817	194	7,550	2,850	966	NA	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
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

U.S. inflation-adjusted basic research expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:																	
	Performing sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a	
	Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c
1993.....	32,520	18,554	2,965	527	557	9,773	3,341	1,309	82	8,074	6,745	963	366	2,566	2,248	1,189	1,059	1,077
1994.....	32,848	18,578	2,822	483	557	10,124	3,251	1,259	83	8,113	6,734	985	394	2,666	2,393	1,314	1,079	1,098
1995.....	32,145	18,445	2,920	206	575	10,458	2,933	1,270	82	7,290	5,840	1,026	424	2,725	2,525	1,453	1,072	1,161
1996.....	34,944	19,244	2,855	693	754	10,751	2,776	1,330	84	8,853	7,297	1,100	457	2,918	2,705	1,609	1,096	1,224
1997.....	38,685	20,344	2,878	1,078	655	11,440	2,800	1,380	113	10,890	9,187	1,232	471	3,295	2,849	1,631	1,217	1,308
1998.....	36,557	21,553	3,112	1,039	589	12,321	2,757	1,514	221	6,904	5,028	1,364	511	3,612	3,109	1,764	1,344	1,380
1999.....	39,676	23,191	3,420	1,157	544	13,069	2,825	1,772	405	7,670	5,658	1,454	558	3,923	3,427	1,952	1,475	1,465
2000.....	42,567	24,730	3,765	938	534	13,904	2,874	2,099	616	8,236	6,115	1,500	621	4,296	3,755	2,150	1,605	1,550
2001.....	46,439	26,912	4,161	736	539	15,144	3,031	2,406	894	9,224	7,128	1,482	614	4,620	4,059	2,339	1,721	1,624
2002.....	49,027	29,686	4,333	853	594	16,924	3,568	2,474	941	8,408	6,397	1,433	578	4,879	4,355	2,532	1,823	1,700
2003.....	51,985	32,097	4,434	1,536	641	18,282	3,584	2,609	1,010	8,533	6,563	1,383	587	5,048	4,554	2,673	1,881	1,754
2004.....	53,934	33,342	4,517	1,711	653	19,029	3,620	2,721	1,092	8,827	6,864	1,348	615	5,180	4,760	2,811	1,949	1,825

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to the industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. applied research expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:	Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b
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.....		13,745	2,546	8,175	1,625	6,550	275	1,622	912	174	88	308	140	421	706	489	60	158	NA
1981.....		16,391	2,731	10,401	2,042	8,359	298	1,781	953	199	108	363	159	422	758	521	64	173	NA
1982.....		18,280	2,802	11,956	2,593	9,363	367	1,915	1,007	207	121	402	178	433	808	550	69	189	NA
1983.....		20,373	2,991	13,513	3,227	10,286	414	2,116	1,122	215	141	443	194	473	866	585	74	207	NA
1984.....		22,505	2,961	15,218	3,677	11,541	547	2,332	1,226	234	168	491	212	548	899	594	79	226	NA
1985.....		25,410	3,135	17,625	4,717	12,908	630	2,527	1,296	262	198	547	224	579	913	581	85	247	NA
1986.....		27,259	3,204	19,131	4,049	15,082	629	2,780	1,393	298	229	620	240	554	961	600	91	270	NA
1987.....		27,915	3,366	19,190	4,037	15,153	623	3,219	1,643	333	260	707	276	532	986	593	98	295	NA
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
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

U.S. applied research expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:			Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b
1993.....		37,279	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.....		36,614	4,985	22,988	3,616	19,372	503	5,386	2,641	517	464	1,256	508	982	1,659	960	158	541	111
1995.....		40,931	4,952	26,919	3,164	23,755	535	5,654	2,775	558	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.....		46,553	4,997	32,430	2,648	29,782	213	5,522	2,551	552	518	1,388	512	1,337	1,926	1,011	205	711	128
1998.....		46,361	5,146	32,208	2,632	29,576	230	5,221	2,291	525	519	1,374	512	1,372	2,062	1,060	225	777	123
1999.....		52,083	5,530	36,638	2,817	33,821	274	5,839	2,749	544	540	1,458	548	1,251	2,421	1,300	249	872	130
2000.....		56,844	6,105	39,170	2,676	36,494	275	6,652	3,354	571	553	1,583	591	1,329	3,096	1,831	283	981	217
2001.....		64,605	7,052	44,012	3,603	40,409	935	7,260	3,757	602	550	1,713	638	1,485	3,530	2,150	287	1,093	332
2002.....		50,787	7,487	28,533	2,452	26,081	1,048	7,980	4,227	649	547	1,863	696	1,685	3,744	2,267	275	1,203	309
2003.....		62,084	7,939	38,076	5,182	32,894	1,200	8,686	4,648	704	555	2,025	754	1,721	4,095	2,518	284	1,293	367
2004.....		66,364	8,407	41,009	5,892	35,117	1,268	9,223	4,983	751	555	2,132	802	1,806	4,287	2,595	304	1,388	365

NA = not available

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

^aAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^dBecause 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.

^eIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. inflation-adjusted applied research expenditures, by performing sector and source of funds: 1953–2004

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:			Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry
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.....		25,434	4,711	15,127	3,007	12,120	509	3,002	1,688	321	163	570	260	779	1,307	904	110	292	NA
1981.....		27,726	4,620	17,593	3,454	14,139	504	3,012	1,611	337	182	613	269	714	1,282	882	108	292	NA
1982.....		29,142	4,466	19,061	4,134	14,927	585	3,052	1,605	331	193	641	283	690	1,288	877	109	301	NA
1983.....		31,243	4,587	20,723	4,949	15,774	635	3,245	1,721	330	217	680	298	726	1,327	897	113	317	NA
1984.....		33,264	4,376	22,493	5,435	17,059	809	3,446	1,812	346	248	726	313	811	1,329	878	117	334	NA
1985.....		36,449	4,497	25,282	6,766	18,516	904	3,625	1,860	375	284	785	321	831	1,310	834	122	355	NA
1986.....		38,258	4,497	26,851	5,683	21,168	883	3,901	1,955	418	321	871	337	777	1,349	842	128	379	NA
1987.....		38,137	4,598	26,217	5,515	20,702	851	4,398	2,244	455	355	966	377	726	1,347	810	133	403	NA
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
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.....		42,181	5,474	27,439	4,860	22,580	492	5,822	2,873	561	501	1,336	551	1,089	1,748	1,018	167	562	116

U.S. inflation-adjusted applied research expenditures, by performing sector and source of funds: 1953–2004

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:			Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b
1994.....		40,565	5,523	25,469	4,006	21,463	557	5,967	2,926	573	514	1,391	563	1,087	1,838	1,063	176	599	123
1995.....		44,439	5,377	29,226	3,435	25,791	581	6,139	3,013	606	536	1,423	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.....		48,791	5,237	33,989	2,775	31,214	223	5,787	2,673	579	543	1,455	537	1,402	2,019	1,059	215	745	135
1998.....		48,057	5,334	33,386	2,728	30,658	238	5,412	2,375	544	538	1,425	530	1,422	2,137	1,099	233	805	128
1999.....		53,218	5,650	37,436	2,878	34,558	280	5,967	2,809	556	552	1,490	560	1,278	2,474	1,328	255	891	132
2000.....		56,844	6,105	39,170	2,676	36,494	275	6,652	3,354	571	553	1,583	591	1,329	3,096	1,831	283	981	217
2001.....		63,091	6,887	42,981	3,519	39,462	913	7,089	3,669	588	537	1,673	623	1,450	3,447	2,100	280	1,067	324
2002.....		48,791	7,193	27,411	2,356	25,056	1,006	7,667	4,060	623	525	1,790	669	1,619	3,597	2,178	264	1,156	297
2003.....		58,570	7,490	35,921	4,889	31,033	1,132	8,194	4,385	664	523	1,911	712	1,624	3,863	2,375	268	1,220	346
2004.....		61,335	7,770	37,901	5,446	32,455	1,172	8,524	4,606	694	513	1,970	741	1,669	3,962	2,398	281	1,283	337

NA = not available

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

^aAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^dBecause 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.

^eIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. applied research expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	Non-profit ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c	
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.....		13,745	6,268	2,546	1,625	275	912	421	489	NA	6,698	6,550	88	60	308	298	158	140	174
1981.....		16,391	6,967	2,731	2,042	298	953	422	521	NA	8,531	8,359	108	64	363	332	173	159	199
1982.....		18,280	7,751	2,802	2,593	367	1,007	433	550	NA	9,553	9,363	121	69	402	367	189	178	207
1983.....		20,373	8,813	2,991	3,227	414	1,122	473	585	NA	10,501	10,286	141	74	443	401	207	194	215
1984.....		22,505	9,553	2,961	3,677	547	1,226	548	594	NA	11,788	11,541	168	79	491	438	226	212	234
1985.....		25,410	10,939	3,135	4,717	630	1,296	579	581	NA	13,191	12,908	198	85	547	471	247	224	262
1986.....		27,259	10,428	3,204	4,049	629	1,393	554	600	NA	15,402	15,082	229	91	620	510	270	240	298
1987.....		27,915	10,793	3,366	4,037	623	1,643	532	593	NA	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
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.....		37,279	14,072	4,838	4,295	435	2,539	962	900	103	20,547	19,956	443	148	1,181	984	497	487	496

U.S. applied research expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:	Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c
1994.....		36,614	13,797	4,985	3,616	503	2,641	982	960	111	19,995	19,372	464	158	1,256	1,049	541	508	517
1995.....		40,931	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	558
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.....		46,553	12,885	4,997	2,648	213	2,551	1,337	1,011	128	30,505	29,782	518	205	1,388	1,223	711	512	552
1998.....		46,361	12,853	5,146	2,632	230	2,291	1,372	1,060	123	30,320	29,576	519	225	1,374	1,288	777	512	525
1999.....		52,083	14,050	5,530	2,817	274	2,749	1,251	1,300	130	34,611	33,821	540	249	1,458	1,420	872	548	544
2000.....		56,844	15,787	6,105	2,676	275	3,354	1,329	1,831	217	37,330	36,494	553	283	1,583	1,573	981	591	571
2001.....		64,605	19,314	7,052	3,603	935	3,757	1,485	2,150	332	41,246	40,409	550	287	1,713	1,731	1,093	638	602
2002.....		50,787	19,474	7,487	2,452	1,048	4,227	1,685	2,267	309	26,902	26,081	547	275	1,863	1,899	1,203	696	649
2003.....		62,084	23,575	7,939	5,182	1,200	4,648	1,721	2,518	367	33,733	32,894	555	284	2,025	2,048	1,293	754	704
2004.....		66,364	25,315	8,407	5,892	1,268	4,983	1,806	2,595	365	35,975	35,117	555	304	2,132	2,190	1,388	802	751

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. inflation-adjusted applied research expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:	Federal										Industry				U&C	Nonprofit		Nonfederal ^a	
	Performing sector:	Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^e	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c	
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.....		25,434	11,598	4,711	3,007	509	1,688	779	904	NA	12,394	12,120	163	110	570	552	292	260	321	
1981.....		27,726	11,785	4,620	3,454	504	1,611	714	882	NA	14,430	14,139	182	108	613	561	292	269	337	
1982.....		29,142	12,357	4,466	4,134	585	1,605	690	877	NA	15,229	14,927	193	109	641	585	301	283	331	
1983.....		31,243	13,515	4,587	4,949	635	1,721	726	897	NA	16,104	15,774	217	113	680	615	317	298	330	
1984.....		33,264	14,121	4,376	5,435	809	1,812	811	878	NA	17,424	17,059	248	117	726	648	334	313	346	
1985.....		36,449	15,691	4,497	6,766	904	1,860	831	834	NA	18,921	18,516	284	122	785	676	355	321	375	
1986.....		38,258	14,636	4,497	5,683	883	1,955	777	842	NA	21,617	21,168	321	128	871	716	379	337	418	
1987.....		38,137	14,745	4,598	5,515	851	2,244	726	810	NA	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	
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.....		42,181	15,922	5,474	4,860	492	2,873	1,089	1,018	116	23,248	22,580	501	167	1,336	1,113	562	551	561	

U.S. inflation-adjusted applied research expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^e		
	Performing sector:		Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c
1994.....		40,565	15,286	5,523	4,006	557	2,926	1,087	1,063	123	22,153	21,463	514	176	1,391	1,162	599	563	573
1995.....		44,439	14,700	5,377	3,435	581	3,013	1,140	1,014	140	26,511	25,791	536	184	1,423	1,199	639	560	606
1996.....		45,992	14,868	5,191	3,878	246	3,047	1,353	1,022	130	27,784	27,032	558	193	1,481	1,239	682	557	622
1997.....		48,791	13,504	5,237	2,775	223	2,673	1,402	1,059	135	31,972	31,214	543	215	1,455	1,281	745	537	579
1998.....		48,057	13,323	5,334	2,728	238	2,375	1,422	1,099	128	31,429	30,658	538	233	1,425	1,335	805	530	544
1999.....		53,218	14,356	5,650	2,878	280	2,809	1,278	1,328	132	35,365	34,558	552	255	1,490	1,451	891	560	556
2000.....		56,844	15,787	6,105	2,676	275	3,354	1,329	1,831	217	37,330	36,494	553	283	1,583	1,573	981	591	571
2001.....		63,091	18,861	6,887	3,519	913	3,669	1,450	2,100	324	40,279	39,462	537	280	1,673	1,690	1,067	623	588
2002.....		48,791	18,709	7,193	2,356	1,006	4,060	1,619	2,178	297	25,845	25,056	525	264	1,790	1,824	1,156	669	623
2003.....		58,570	22,240	7,490	4,889	1,132	4,385	1,624	2,375	346	31,824	31,033	523	268	1,911	1,932	1,220	712	664
2004.....		61,335	23,397	7,770	5,446	1,172	4,606	1,669	2,398	337	33,249	32,455	513	281	1,970	2,024	1,283	741	694

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. development expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:		Industry				Industry FFRDCs		U&C ^a					U&C FFRDCs		Other nonprofit institutions				Nonprofit FFRDCs
	Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b		
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.....	40,678	4,072	33,848	10,957	22,891	882	518	362	38	19	68	31	719	639	525	35	79	NA		
1981.....	46,047	4,530	38,547	12,791	25,756	950	568	386	44	24	80	35	778	674	549	37	88	NA		
1982.....	51,679	5,178	43,434	14,215	29,219	989	597	397	46	27	88	39	745	737	599	40	98	NA		
1983.....	57,540	6,106	48,064	15,522	32,542	1,054	617	399	47	31	97	43	832	867	715	44	109	NA		
1984.....	66,261	7,078	55,371	17,640	37,731	1,056	677	435	51	37	108	47	986	1,093	925	47	120	NA		
1985.....	74,417	8,011	62,020	20,258	41,762	1,102	756	486	57	43	120	49	1,244	1,285	1,100	51	134	NA		
1986.....	75,754	8,275	62,871	21,517	41,354	1,145	818	513	65	50	136	53	1,504	1,141	938	55	149	NA		
1987.....	79,804	8,176	66,789	24,122	42,667	1,230	945	599	73	57	155	61	1,670	996	771	60	165	NA		
1988.....	84,566	8,864	70,353	23,719	46,634	1,414	1,098	698	83	66	180	71	1,762	655	407	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	780	507	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	920	619	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	1,054	722	82	251	533		
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	1,698	1,126	109	97	259	107	1,374	1,191	787	95	309	574		

U.S. development expenditures, by performing sector and source of funds: 1953–2004

(Millions of current dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a						U&C FFRDCs				Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:			Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b	
1994.....		102,936	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.....		128,677	9,077	113,184	18,121	95,063	1,292	1,708	1,056	121	114	305	112	1,454	1,378	687	155	536	585			
1998.....		146,023	9,214	130,348	18,452	111,896	1,280	1,630	987	115	114	302	112	1,527	1,516	760	170	586	507			
1999.....		154,055	8,974	138,873	16,637	122,236	1,142	1,391	713	120	119	320	120	1,636	1,572	726	188	658	467			
2000.....		167,792	8,047	153,784	13,549	140,235	1,146	1,176	452	125	121	347	130	1,539	1,468	513	214	741	632			
2001.....		165,168	9,114	149,952	12,542	137,410	534	1,271	502	132	121	376	140	1,637	1,716	675	217	825	945			
2002.....		173,977	9,501	157,788	13,061	144,727	597	1,351	527	142	120	409	153	1,703	2,005	890	207	908	1,031			
2003.....		174,677	10,686	157,343	13,889	143,454	607	1,440	553	154	122	445	166	1,754	1,714	523	214	976	1,133			
2004.....		187,349	11,447	168,939	15,792	153,147	610	1,474	543	165	122	468	176	1,778	1,812	534	229	1,048	1,288			

NA = not available

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

^aAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^dBecause 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.

^eIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. inflation-adjusted development expenditures, by performing sector and source of funds: 1953–2004

(Millions of constant 2000 dollars)

Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a						U&C FFRDCs	Other nonprofit institutions				Nonprofit FFRDCs
	Funding sector:			Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry
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.....		75,270	7,536	62,632	20,275	42,358	1,632	958	670	71	36	125	57	1,330	1,182	971	64	147	NA
1981.....		77,889	7,663	65,202	21,636	43,566	1,607	960	653	74	40	135	59	1,316	1,140	928	63	149	NA
1982.....		82,390	8,255	69,245	22,662	46,583	1,577	952	634	73	42	141	62	1,187	1,175	955	64	156	NA
1983.....		88,242	9,363	73,710	23,804	49,906	1,616	947	612	72	48	149	65	1,275	1,330	1,097	67	166	NA
1984.....		97,940	10,462	81,843	26,073	55,770	1,561	1,001	643	76	54	159	69	1,457	1,615	1,367	70	178	NA
1985.....		106,746	11,491	88,963	29,059	59,904	1,581	1,085	697	82	62	172	71	1,784	1,843	1,578	73	192	NA
1986.....		106,321	11,614	88,240	30,199	58,041	1,607	1,148	720	92	71	191	74	2,111	1,602	1,316	78	209	NA
1987.....		109,029	11,169	91,247	32,955	58,292	1,680	1,291	818	100	78	212	83	2,281	1,360	1,053	82	225	NA
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
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

U.S. inflation-adjusted development expenditures, by performing sector and source of funds: 1953–2004

(Millions of constant 2000 dollars)

Year	Performing sector:		Industry					U&C ^a						Other nonprofit institutions				Nonprofit
	Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Nonfederal ^d	Industry	U&C	Nonprofit	Federal ^e	Total	Federal ^b	Industry	Nonprofit	Federal ^b
1994.....	114,046	9,776	97,376	17,958	79,418	1,325	2,010	1,343	126	113	305	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	312	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.....	134,862	9,513	118,625	18,992	99,633	1,354	1,790	1,106	127	119	319	118	1,524	1,444	720	162	562	613
1998.....	151,363	9,551	135,115	19,127	115,988	1,327	1,690	1,023	119	118	313	116	1,583	1,572	788	176	608	526
1999.....	157,411	9,170	141,898	16,999	124,899	1,167	1,422	728	122	121	327	123	1,672	1,606	742	192	673	477
2000.....	167,792	8,047	153,784	13,549	140,235	1,146	1,176	452	125	121	347	130	1,539	1,468	513	214	741	632
2001.....	161,298	8,900	146,439	12,248	134,190	521	1,241	490	129	118	367	137	1,598	1,676	659	212	806	923
2002.....	167,138	9,128	151,586	12,548	139,038	573	1,298	507	137	115	393	147	1,636	1,926	855	199	872	990
2003.....	164,792	10,082	148,439	13,103	135,336	572	1,358	522	146	115	419	156	1,655	1,617	494	202	921	1,069
2004.....	173,151	10,580	156,137	14,595	141,542	564	1,362	502	152	113	433	163	1,643	1,674	494	212	969	1,191

NA = not available

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

^aAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

^dBecause 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.

^eIncludes all R&D expenditures of FFRDCs administered by academic institutions.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

U.S. development expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^e	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c
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.....		40,678	17,517	4,072	10,957	882	362	719	525	NA	22,945	22,891	19	35	68	110	79	31	38
1981.....		46,047	19,984	4,530	12,791	950	386	778	549	NA	25,817	25,756	24	37	80	123	88	35	44
1982.....		51,679	22,123	5,178	14,215	989	397	745	599	NA	29,286	29,219	27	40	88	137	98	39	46
1983.....		57,540	24,627	6,106	15,522	1,054	399	832	715	NA	32,617	32,542	31	44	97	151	109	43	47
1984.....		66,261	28,120	7,078	17,640	1,056	435	986	925	NA	37,815	37,731	37	47	108	167	120	47	51
1985.....		74,417	32,200	8,011	20,258	1,102	486	1,244	1,100	NA	41,857	41,762	43	51	120	183	134	49	57
1986.....		75,754	33,891	8,275	21,517	1,145	513	1,504	938	NA	41,460	41,354	50	55	136	201	149	53	65
1987.....		79,804	36,567	8,176	24,122	1,230	599	1,670	771	NA	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
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

U.S. development expenditures, by source of funds and performing sector: 1953–2004

(Millions of current dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c
1994.....		102,936	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.....		128,677	32,270	9,077	18,121	1,292	1,056	1,454	687	585	95,332	95,063	114	155	305	649	536	112	121
1998.....		146,023	32,728	9,214	18,452	1,280	987	1,527	760	507	112,179	111,896	114	170	302	699	586	112	115
1999.....		154,055	30,294	8,974	16,637	1,142	713	1,636	726	467	122,543	122,236	119	188	320	778	658	120	120
2000.....		167,792	25,878	8,047	13,549	1,146	452	1,539	513	632	140,570	140,235	121	214	347	871	741	130	125
2001.....		165,168	25,947	9,114	12,542	534	502	1,637	675	945	137,747	137,410	121	217	376	965	825	140	132
2002.....		173,977	27,310	9,501	13,061	597	527	1,703	890	1,031	145,054	144,727	120	207	409	1,061	908	153	142
2003.....		174,677	29,146	10,686	13,889	607	553	1,754	523	1,133	143,790	143,454	122	214	445	1,142	976	166	154
2004.....		187,349	31,993	11,447	15,792	610	543	1,778	534	1,288	153,498	153,147	122	229	468	1,224	1,048	176	165

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

Science and Engineering Indicators 2006.

U.S. inflation-adjusted development expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profit ^e	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c
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.....		75,270	32,413	7,536	20,275	1,632	670	1,330	971	NA	42,457	42,358	36	64	125	204	147	57	71
1981.....		77,889	33,803	7,663	21,636	1,607	653	1,316	928	NA	43,670	43,566	40	63	135	208	149	59	74
1982.....		82,390	35,270	8,255	22,662	1,577	634	1,187	955	NA	46,689	46,583	42	64	141	218	156	62	73
1983.....		88,242	37,768	9,363	23,804	1,616	612	1,275	1,097	NA	50,020	49,906	48	67	149	232	166	65	72
1984.....		97,940	41,564	10,462	26,073	1,561	643	1,457	1,367	NA	55,894	55,770	54	70	159	247	178	69	76
1985.....		106,746	46,189	11,491	29,059	1,581	697	1,784	1,578	NA	60,040	59,904	62	73	172	262	192	71	82
1986.....		106,321	47,567	11,614	30,199	1,607	720	2,111	1,316	NA	58,189	58,041	71	78	191	282	209	74	92
1987.....		109,029	49,957	11,169	32,955	1,680	818	2,281	1,053	NA	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
1992.....		115,541	36,481	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

U.S. inflation-adjusted development expenditures, by source of funds and performing sector: 1953–2004

(Millions of constant 2000 dollars)

Year	Funding sector:	Total	Federal							Industry				U&C	Nonprofit		Nonfederal ^a		
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	Non-profit ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Nonprofit	U&C ^c	Total	Nonprofit	U&C ^c	U&C ^c	
1994.....		114,046	33,466	9,776	17,958	1,325	1,343	1,527	903	634	79,644	79,418	113	114	305	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	312	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.....		134,862	33,822	9,513	18,992	1,354	1,106	1,524	720	613	99,914	99,633	119	162	319	680	562	118	127
1998.....		151,363	33,924	9,551	19,127	1,327	1,023	1,583	788	526	116,282	115,988	118	176	313	724	608	116	119
1999.....		157,411	30,954	9,170	16,999	1,167	728	1,672	742	477	125,212	124,899	121	192	327	795	673	123	122
2000.....		167,792	25,878	8,047	13,549	1,146	452	1,539	513	632	140,570	140,235	121	214	347	871	741	130	125
2001.....		161,298	25,339	8,900	12,248	521	490	1,598	659	923	134,520	134,190	118	212	367	943	806	137	129
2002.....		167,138	26,237	9,128	12,548	573	507	1,636	855	990	139,353	139,038	115	199	393	1,019	872	147	137
2003.....		164,792	27,496	10,082	13,103	572	522	1,655	494	1,069	135,653	135,336	115	202	419	1,077	921	156	146
2004.....		173,151	29,569	10,580	14,595	564	502	1,643	494	1,191	141,866	141,542	113	212	433	1,131	969	163	152

NA = not available

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

^aBecause 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.

^bExpenditures of industry FFRDCs for 1953–63 not separated from total federal support to industrial sector. Thus, value for federal support to industry includes support to FFRDCs for those years. Likewise for expenditures of nonprofit FFRDCs, included in federal support for nonprofit institutions in 1953–87.

^cAdjustments 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; hence, data not directly comparable with data for 1997 and earlier.

^dIncludes all R&D expenditures of FFRDCs administered by academic institutions.

^eIndustry sources of industry R&D expenditures include all nonfederal sources of industry R&D expenditures.

NOTES: All data refer to calendar years. For some performers, these levels are approximations based on FY data. For federal government expenditures starting in 1977, calendar-year approximation is 75% of amount reported in same FY plus 25% of amount reported in subsequent FY. Academic expenditures in all years and federal government expenditures before 1977 are each 50% because those FYs (for most academic institutions and federal government before 1977) began on July 1 instead of October 1. Technical notes explaining methodological issues of measurement will be provided in National Science Foundation (NSF), *National Patterns of R&D Resources, Methodology Report: 2003* (forthcoming). Data based on annual reports by performers except for nonprofit sector. Preliminary data for 2003 and 2004. 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, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series).

Total (federal plus company and other) funds for industrial R&D performance in United States, by industry and size of company: 1999–2003

(Millions of dollars)

Industry and size of company	NAICS code	Funds				
		1999 ^a	2000	2001 ^b	2002	2003
All industries.....	21–23, 31–33, 42, 44–81	184,129	201,962	202,017	193,868	204,004
Manufacturing industries.....	31–33	118,339	126,501	124,217	112,089	123,384
Food.....	311	1,132	D	1,819	D	D
Beverage and tobacco products.....	312	D	417	152	170	173
Textiles, apparel, and leather.....	313–16	334	D	D	D	D
Wood products.....	321	70	105	182	D	D
Paper, printing, and support activities.....	322, 323	D	D	D	D	D
Petroleum and coal products.....	324	615	D	D	D	D
Chemicals.....	325	20,246	20,918	17,892	20,641	23,001
Basic chemicals.....	3251	2,746	2,080	1,876	1,782	2,061
Resin, synthetic rubber, fibers, and filament.....	3252	D	2,852	D	2,426	2,406
Pharmaceuticals and medicines.....	3254	D	D	10,137	D	D
Other chemicals.....	Other 325	D	D	D	D	D
Plastics and rubber products.....	326	1,785	D	D	D	1,764
Nonmetallic mineral products.....	327	D	846	990	D	474
Primary metals.....	331	470	624	485	473	530
Fabricated metal products.....	332	1,655	1,672	1,599	1,355	1,374
Machinery.....	333	6,057	6,580	6,404	6,429	6,304
Computer and electronic products.....	334	37,350	47,520	50,591	38,881	39,001
Computers and peripheral equipment.....	3341	D	5,162	D	3,040	2,587
Communications equipment.....	3342	7,421	14,039	19,019	9,739	9,198
Semiconductor and other electronic components.....	3344	10,701	12,894	14,358	11,919	12,635
Navigational, measuring, electromedical, and control instruments.....	3345	14,337	15,116	12,947	13,729	14,014
Other computer and electronic products.....	Other 334	D	310	D	453	566
Electrical equipment, appliances, and components.....	335	D	D	4,980	2,039	2,073
Transportation equipment.....	336	33,965	30,085	25,965	26,145	34,273
Motor vehicles, trailers, and parts.....	3361–63	D	D	D	D	D
Aerospace products and parts.....	3364	14,425	10,319	7,868	9,654	15,731
Other transportation equipment.....	Other 336	D	D	D	D	D
Furniture and related products.....	337	248	284	301	258	D
Miscellaneous manufacturing.....	339	3,851	4,206	6,606	7,457	7,455
Medical equipment and supplies.....	3391	D	D	D	D	6,386
Other miscellaneous manufacturing.....	Other 339	D	D	D	D	1,069
Nonmanufacturing industries.....	21–23, 42, 44–81	65,790	75,461	77,799	81,779	80,620
Mining, extraction, and support activities.....	21	D	823	D	D	D
Utilities.....	22	142	D	133	D	D
Construction.....	23	691	D	320	164	333
Wholesale trade.....	42	NA	NA	NA	D	25,092
Professional and commercial equipment and supplies, including computers.....	4214	NA	NA	NA	D	D
Electrical goods.....	4216	NA	NA	NA	D	D
Drugs and druggists' sundries.....	4222	NA	NA	NA	D	D
Other wholesale trade.....	Other 42	NA	NA	NA	1,521	2,099
Retail trade.....	44, 45	NA	NA	NA	932	1,488

Total (federal plus company and other) funds for industrial R&D performance in United States, by industry and size of company: 1999–2003

(Millions of dollars)

Industry and size of company	NAICS code	Funds				
		1999 ^a	2000	2001 ^b	2002	2003
Transportation and warehousing.....	48, 49	460	D	1,848	D	272
Information.....	51	15,389	16,830	D	17,870	D
Publishing.....	511	11,302	13,004	13,760	13,541	D
Newspaper, periodical, book, and database.....	5111	371	365	649	614	665
Software.....	5112	10,931	12,639	13,111	12,927	D
Broadcasting and telecommunications.....	513	D	1,407 (S)	D	D	1,663
Telecommunications.....	5133	D	D	D	D	1,625
Other broadcasting and telecommunications.....	Other 513	NA	NA	NA	NA	38
Other information.....	Other 51	D	2,420	D	D	D
Finance, insurance, and real estate.....	52, 53	D	4,025	D	1,903	1,455
Professional, scientific, and technical services.....	54	18,994	22,577	27,704	30,358	28,721
Architectural, engineering, and related services.....	5413	3,580	3,381	3,386	4,159	5,159
Computer systems design and related services.....	5415	D	5,169	9,154	11,983	9,786
Scientific R&D services.....	5417	10,470	12,892	14,244	13,034	12,460
Other professional, scientific, and technical services.....	Other 54	D	1,135	920	1,182	1,316
Management of companies and enterprises.....	55	D	49	381	148	67
Health care services.....	621–23	642	536	1,149	D	717
Other nonmanufacturing.....	56, 61, 624, 71, 72, 81	D	731	1,259	D	1,679
Company size (employees)						
All companies.....		184,129	201,962	202,017	193,868	204,004
5–24.....	na	7,004	6,862	4,828	4,261	5,578
25–49.....	na	4,750	5,008	3,750	3,845	6,449
50–99.....	na	7,225	7,259	8,202	6,164	4,829
100–249.....	na	7,213	9,020	12,916	13,227	9,559
250–499.....	na	7,892	7,479	8,702	8,055	9,536
500–999.....	na	7,032	9,074	10,564	9,925	10,383
1,000–4,999.....	na	24,840	30,636	26,748	28,625	30,484
5,000–9,999.....	na	16,339	16,768	17,438	17,942	15,434
10,000–24,999.....	na	26,377	28,611	27,065	26,458	27,571
25,000 or more.....	na	75,457	81,244	81,804	75,365	84,180

D = data withheld to avoid disclosing operations of individual companies; S = imputation of >50%; NA = not available; na = not applicable

NAICS = North American Industry Classification System

^aSome statistics for 1999 were revised since originally published.^bBeginning with 2001, statistics for total and federally funded industrial R&D exclude data for federally funded research and development centers.

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 the company (e.g., R&D contracted out to other organizations) and R&D not performed within the 50 United States or District of Columbia (e.g., R&D performed outside the United States by foreign subsidiaries or other foreign organizations). For more technical information, see <http://www.nsf.gov/sbe/srs/sird/start.htm>.

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

Company and other nonfederal funds for industrial R&D performance in United States, by industry and size of company: 1999–2003

(Millions of dollars)

Industry and size of company	NAICS code	1999 ^a	2000	2001	2002	2003
All industries.....	21–23, 31–33, 42, 44–81	161,594	182,844	185,118	177,467	183,305
Manufacturing industries.....	31–33	101,283	113,173	112,733	101,344	108,079
Food.....	311	1,132	1,145	1,818	2,034	1,987
Beverage and tobacco products.....	312	D	417	152	170	173
Textiles, apparel, and leather.....	313–16	334	266	255	248	309
Wood products.....	321	70	105	181	132	138
Paper, printing, and support activities.....	322, 323	2,474	2,700	2,664	2,620	2,909
Petroleum and coal products.....	324	D	1,172	1,057	1,233	1,308
Chemicals.....	325	20,051	20,768	17,713	20,395	22,693
Basic chemicals.....	3251	2,648	2,050	1,835	1,710	1,991
Resin, synthetic rubber, fibers, and filament.....	3252	2,216	2,842	2,745	2,413	2,390
Pharmaceuticals and medicines.....	3254	12,236	12,793	10,137	14,186	15,949
Other chemicals.....	Other 325	2,951	3,084	2,996	2,087	2,364
Plastics and rubber products.....	326	1,785	1,675	2,245	1,508	1,729
Nonmetallic mineral products.....	327	595	845	978	420	470
Primary metals.....	331	457	598	479	461	518
Fabricated metal products.....	332	1,608	1,631	1,545	1,251	1,329
Machinery.....	333	5,658	6,539	6,337	6,366	6,224
Computer and electronic products.....	334	31,357	40,971	44,744	33,411	32,495
Computers and peripheral equipment.....	3341	4,126	5,162	3,165	3,015	2,561
Communications equipment.....	3342	7,215	13,606	18,721	9,524	8,932
Semiconductor and other electronic components.....	3344	10,624	12,787	14,210	11,871	12,607
Navigational, measuring, electromedical, and control instruments.....	3345	8,632	10,114	7,565	8,549	7,834
Other computer and electronic products.....	Other 334	760	307	1,083	452	560
Electrical equipment, appliances, and components.....	335	3,820	3,390	4,680	1,978	2,002
Transportation equipment.....	336	23,928	22,917	21,004	21,452	26,111
Motor vehicles, trailers, and parts.....	3361–63	17,987	18,306	16,089	15,199	16,874
Aerospace products and parts.....	3364	5,309	3,895	4,083	5,349	8,203
Other transportation equipment.....	Other 336	632	716	832 (S)	905	1,034
Furniture and related products.....	337	248	284	301	251	275
Miscellaneous manufacturing.....	339	3,825	4,195	6,581	7,414	7,408
Medical equipment and supplies.....	3391	3,251	3,741	5,903	6,179	6,370
Other miscellaneous manufacturing.....	Other 339	574	453	678	1,235	1,038
Nonmanufacturing industries.....	21–23, 42, 44–81	60,311	69,671	72,384	76,123	75,226
Mining, extraction, and support activities.....	21	2,352	822	846	715	750
Utilities.....	22	126	136	114	117	128
Construction.....	23	690	222	320	164	254
Wholesale trade.....	42	NA	NA	NA	24,037	24,970
Professional and commercial equipment and supplies, including computers.....	4214	NA	NA	NA	11,771	9,679
Electrical goods.....	4216	NA	NA	NA	3,935	3,701
Drugs and druggists' sundries.....	4222	NA	NA	NA	6,811	9,494
Other wholesale trade.....	Other 42	NA	NA	NA	1,520	2,097
Retail trade.....	44, 45	NA	NA	NA	932	1,462

Company and other nonfederal funds for industrial R&D performance in United States, by industry and size of company: 1999–2003

(Millions of dollars)

Industry and size of company	NAICS code	1999 ^a	2000	2001	2002	2003
Transportation and warehousing.....	48, 49	460	277	1,776	339	272
Information.....	51	14,892	16,290	17,259	17,764	19,811
Publishing.....	511	11,253	12,926	13,716	13,488	15,760
Newspaper, periodical, book, and database.....	5111	371	365	649	614	665
Software.....	5112	10,882	12,561	13,067	12,874	15,095
Broadcasting and telecommunications.....	513	1,393	1,025	1,270	1,637	1,663
Telecommunications.....	5133	D	D	1,101	1,608	1,625
Other broadcasting and telecommunications.....	Other 513	NA	NA	NA	NA	38
Other information.....	Other 51	2,246	2,339	2,273	2,639	2,388
Finance, insurance, and real estate.....	52, 53	1,570	4,024	2,424	1,903	1,455
Professional, scientific, and technical services.....	54	14,379	17,949	22,640	24,946	23,755
Architectural, engineering, and related services.....	5413	2,402	2,232	2,365	2,822	3,261
Computer systems design and related services.....	5415	3,989	4,943	8,656	10,394	8,638
Scientific R&D services.....	5417	7,413	9,715	10,893	10,735	10,574
Other professional, scientific, and technical services.....	Other 54	575	1,059	726	996	1,283
Management of companies and enterprises.....	55	72	49	381	148	67 (S)
Health care services.....	621–23	631	477	1,120	4,163	681
Other nonmanufacturing.....	56, 61, 624, 71, 72, 81	640	713	1,221	894	1,619
Company size (employees)						
All companies.....		161,594	182,844	185,118	177,467	183,305
5–24.....	na	6,393	5,940	4,175	3,471	4,824
25–49.....	na	4,382	4,786	3,548	3,586	5,540
50–99.....	na	6,623	6,745	7,654	5,701	4,271
100–249.....	na	6,540	8,351	12,012	12,622	8,924
250–499.....	na	7,407	6,819	8,143	7,370	8,869
500–999.....	na	6,441	8,580	9,936	9,394	9,624
1,000–4,999.....	na	23,944	29,860	26,140	27,640	29,396
5,000–9,999.....	na	14,145	15,143	15,787	16,369	14,333
10,000–24,999.....	na	25,980	27,934	26,161	25,232	25,576
25,000 or more.....	na	59,740	68,686	71,561	66,083	71,949

D = data withheld to avoid disclosing operations of individual companies; S = imputation of >50%; NA = not available; na = not applicable

NAICS = North American Industry Classification System

^aSome statistics for 1999 were revised since originally published.

NOTES: R&D is industrial R&D performed within company facilities funded from all sources except the federal government. Funds are predominantly the 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 the company (e.g., R&D contracted out to other organizations) and R&D not performed within the 50 United States or District of Columbia (e.g., R&D performed outside the United States by foreign subsidiaries or other foreign organizations). For more technical information, see <http://www.nsf.gov/sbe/srs/sird/start.htm>.

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

Federal funds for industrial R&D performance in United States, by industry and size of company: 1999–2003

(Millions of dollars)

Industry and size of company	NAICS code	1999 ^a	2000	2001 ^b	2002	2003
All industries.....	21–23, 31–33, 42, 44–81	22,535	19,118	16,899	16,401	20,699
Manufacturing industries.....	31–33	17,055	13,328	11,484	10,745	15,305
Food.....	311	0	D	0	D	D
Beverage and tobacco products.....	312	0	0	0	0	0
Textiles, apparel, and leather.....	313–16	0	D	D	D	D
Wood products.....	321	0	0	0	D	D
Paper, printing, and support activities.....	322, 323	D	D	D	D	D
Petroleum and coal products.....	324	D	D	D	D	D
Chemicals.....	325	194	150	180	246	307
Basic chemicals.....	3251	98	31	42	72	70
Resin, synthetic rubber, fibers, and filament.....	3252	D	11	D	13	16
Pharmaceuticals and medicines.....	3254	D	D	0	D	D
Other chemicals.....	Other 325	D	D	D	D	D
Plastics and rubber products.....	326	0	D	D	D	35
Nonmetallic mineral products.....	327	D	1	11	D	4
Primary metals.....	331	12	26 (S)	6	12	12
Fabricated metal products.....	332	46	41	54	104	45
Machinery.....	333	399 (S)	41	67	62	80
Computer and electronic products.....	334	5,993	5,544	5,848	5,470	6,506
Computers and peripheral equipment.....	3341	D	0	D	25	27 (S)
Communications equipment.....	3342	206	432	298	215	266
Semiconductor and other electronic components.....	3344	77	107	148	48	28
Navigational, measuring, electromedical, and control instruments.....	3345	5,705	5,002	5,382	5,180	6,180
Other computer and electronic products.....	Other 334	D	3	D	1	6
Electrical equipment, appliances, and components.....	335	D	D	301 (S)	61	71
Transportation equipment.....	336	10,037	7,168	4,961	4,692	8,162
Motor vehicles, trailers, and parts.....	3361–63	D	D	D	D	D
Aerospace products and parts.....	3364	9,117	6,424	3,785	4,306	7,528
Other transportation equipment.....	Other 336	D	D	D	D	D
Furniture and related products.....	337	0	0	0	7	D
Miscellaneous manufacturing.....	339	26	12	25	44	47
Medical equipment and supplies.....	3391	D	D	D	D	17
Other miscellaneous manufacturing.....	Other 339	D	D	D	D	31
Nonmanufacturing industries.....	21–23, 42, 44–81	5,479	5,790	5,415	5,656	5,394
Mining, extraction, and support activities.....	21	D	1	D	D	D
Utilities.....	22	17	D	19	D	D
Construction.....	23	2	D	1	*	79
Wholesale trade.....	42	NA	NA	NA	D	122
Professional and commercial equipment and supplies, including computers.....	4214	NA	NA	NA	D	D
Electrical goods.....	4216	NA	NA	NA	D	D
Drugs and druggists' sundries.....	4222	NA	NA	NA	D	D
Other wholesale trade.....	Other 42	NA	NA	NA	1	2
Retail trade.....	44, 45	NA	NA	NA	0	26

Federal funds for industrial R&D performance in United States, by industry and size of company: 1999–2003

(Millions of dollars)

Industry and size of company	NAICS code	1999 ^a	2000	2001 ^b	2002	2003
Transportation and warehousing.....	48, 49	0	D	72	D	*
Information.....	51	497	540 (S)	D	106	D
Publishing.....	511	49	78	44	53	D
Newspaper, periodical, book, and database.....	5111	0	0	0	0	*
Software.....	5112	49	78	44	53	D
Broadcasting and telecommunications.....	513	D	382 (S)	D	D	0
Telecommunications.....	5133	D	D	D	D	0
Other broadcasting and telecommunications.....	Other 513	NA	NA	NA	NA	0
Other information.....	Other 51	D	81	D	D	D
Finance, insurance, and real estate.....	52, 53	D	0	D	0	0
Professional, scientific, and technical services.....	54	4,615	4,628	5,065	5,412	4,966
Architectural, engineering, and related services.....	5413	1,177	1,149	1,021	1,337	1,898
Computer systems design and related services.....	5415	D	226	498	1,590	1,148
Scientific R&D services.....	5417	3,057	3,177	3,352	2,299	1,886
Other professional, scientific, and technical services.....	Other 54	D	77	194	186	34
Management of companies and enterprises.....	55	D	0	0	0	0
Health care services.....	621–23	10	59	29	D	36
Other nonmanufacturing.....	56, 61, 624, 71, 72, 81	D	18	38	D	60 (S)
Company size (employees)						
All companies.....		22,535	19,118	16,899	16,401	20,699
5–24.....	na	611	922	653	789	754
25–49.....	na	368	222	201	259	910
50–99.....	na	603	514	548	463	559
100–249.....	na	674	669	903	606	636
250–499.....	na	485	660	560	686	668
500–999.....	na	591	495	627	531	759
1,000–4,999.....	na	896	775	608	985	1,088
5,000–9,999.....	na	2,194	1,625	1,651	1,574	1,101
10,000–24,999.....	na	397	678	904	1,226	1,995
25,000 or more.....	na	15,717	12,559	10,243	9,282	12,231

* = data < \$500,000; D = data withheld to avoid disclosing operations of individual companies; S = imputation of >50%; NA = not available; na = not applicable

NAICS = North American Industry Classification System

^aSome statistics for 1999 were revised since originally published.^bBeginning with 2001, statistics for total and federally funded industrial R&D exclude data for federally funded research and development centers.NOTES: R&D is industrial R&D performed within company facilities funded by the federal government. Excluded are R&D not performed within the company (e.g., R&D contracted out to other organizations) and R&D not performed within the 50 United States or District of Columbia (e.g., R&D performed outside the United States by foreign subsidiaries or other foreign organizations). For more technical information, see <http://www.nsf.gov/sbe/srs/sird/start.htm>.

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

Company and other (nonfederal) R&D fund share of net sales in R&D-performing companies, by industry and company size: 1999–2003

(Percent)

Industry and size of company	NAICS code	1999 ^a	2000	2001	2002	2003
All industries.....	21–23, 31–33, 42, 44–81	2.8	3.4	3.8	3.6	3.2
Manufacturing industries.....	31–33	3.2	3.2	3.7	3.3	3.1
Food.....	311	0.4	0.4	0.5	0.6	0.6
Beverage and tobacco products.....	312	D	0.7	0.4	0.5	0.5
Textiles, apparel, and leather.....	313–16	0.7	0.8	0.8	0.8	1.0
Wood products.....	321	0.5	0.8	1.1	0.7	0.7
Paper, printing, and support activities.....	322, 323	1.4	1.6	2.1	1.3	1.1
Petroleum and coal products.....	324	D	0.3	0.3	0.4	0.3
Chemicals.....	325	5.1	5.9	4.8	5.9	5.6
Basic chemicals.....	3251	2.0	2.3	2.2	2.5	2.7
Resin, synthetic rubber, fibers, and filament.....	3252	4.2	5.6	4.5	3.9	3.6
Pharmaceuticals and medicines.....	3254	10.5	9.8	7.8	9.6	8.3
Other chemicals.....	Other 325	3.2	3.6	3.2	3.1	3.2
Plastics and rubber products.....	326	1.9	1.8	2.9	1.8	2.1
Nonmetallic mineral products.....	327	1.5	1.8	2.3	1.2	1.0
Primary metals.....	331	0.4	0.5	0.7	0.7	0.7
Fabricated metal products.....	332	1.4	1.4	1.6	1.4	1.5
Machinery.....	333	3.3	3.8	4.2	4.3	4.2
Computer and electronic products.....	334	8.8	8.0	11.0	8.0	9.3
Computers and peripheral equipment.....	3341	6.4	6.5	7.6	7.5	5.8
Communications equipment.....	3342	12.8	10.5	16.3	12.8	12.7
Semiconductor and other electronic components.....	3344	8.3	7.4	10.5	8.6	11.1
Navigational, measuring, electromedical, and control instruments.....	3345	9.1	8.0	7.3	5.4	7.2
Other computer and electronic products.....	Other 334	5.8	4.3	13.5	5.3	5.8
Electrical equipment, appliances, and components.....	335	2.3	2.1	2.9 (S)	2.7	2.2
Transportation equipment.....	336	2.9	3.1	3.4	2.8	2.7
Motor vehicles, trailers, and parts.....	3361–63	2.9	3.2	3.5	3.1	2.4
Aerospace products and parts.....	3364	3.2	2.8	3.0	2.3	3.5
Other transportation equipment.....	Other 336	1.6	1.8	2.5 (S)	2.9	2.7
Furniture and related products.....	337	0.7	0.8	0.9	0.8	0.8
Miscellaneous manufacturing.....	339	5.7	8.7	6.6	7.9	5.6
Medical equipment and supplies.....	3391	7.7	13.1	9.0	9.7	6.3
Other miscellaneous manufacturing.....	Other 339	2.3	2.3	2.0	4.1	3.2
Nonmanufacturing industries.....	21–23, 42, 44–81	3.4	3.8	4.0	4.1	3.3
Mining, extraction, and support activities.....	21	1.9	1.0	1.3	3.2	3.3
Utilities.....	22	0.1	0.1	0.0	0.1	0.1
Construction.....	23	3.1	1.9	1.4	0.6	1.2
Wholesale trade.....	42	NA	NA	NA	NA	3.6
Professional and commercial equipment and supplies, including computers.....	4214	NA	NA	NA	NA	8.0
Electrical goods.....	4216	NA	NA	NA	NA	6.6
Drugs and druggists' sundries.....	4222	NA	NA	NA	NA	11.6
Other wholesale trade.....	Other 42	NA	NA	NA	NA	0.5
Retail trade.....	44, 45	NA	NA	NA	NA	0.8

Company and other (nonfederal) R&D fund share of net sales in R&D-performing companies, by industry and company size: 1999–2003

(Percent)

Industry and size of company	NAICS code	1999 ^a	2000	2001	2002	2003
Transportation and warehousing.....	48, 49	0.5	0.3	2.4	0.5	0.4
Information.....	51	3.4	4.0	4.4	4.0	5.7
Publishing.....	511	13.4	16.3	15.0	16.4	17.9
Newspaper, periodical, book, and database.....	5111	2.0	2.0	2.7	2.8	2.8
Software.....	5112	16.7	20.4	19.3	21.4	23.4
Broadcasting and telecommunications.....	513	0.4	0.4	0.5	0.7 (S)	0.8
Telecommunications.....	5133	D	D	0.5	0.7 (S)	0.8
Other broadcasting and telecommunications.....	Other 513	NA	NA	NA	NA	4.3
Other information.....	Other 51	8.6	4.9	4.7	2.0	5.0
Finance, insurance, and real estate.....	52, 53	0.5	1.2	0.7	0.6	0.3
Professional, scientific, and technical services.....	54	11.6	14.9	13.7	11.2	10.2
Architectural, engineering, and related services.....	5413	6.8	7.1	5.2	5.3	7.8
Computer systems design and related services.....	5415	11.0	11.8	16.5	14.3	9.8
Scientific R&D services.....	5417	32.1	32.3	36.5	17.6	16.5 (S)
Other professional, scientific, and technical services.....	Other 54	1.9	6.1	1.9	2.8	3.3
Management of companies and enterprises.....	55	5.7	4.4	7.8	7.6	4.1 (S)
Health care services.....	621–23	6.4	2.8	4.1	15.1	2.2
Other nonmanufacturing.....	56, 61, 624, 71, 72, 81	0.9	1.0	1.4	1.9	4.9
Company size (employees)						
All companies.....		2.8	3.4	3.8	3.6	3.2
5–24.....	na	16.6	17.2	12.9	7.1	2.2
25–49.....	na	10.6	13.4	10.6	8.9	2.9
50–99.....	na	13.0	11.2	10.4	7.1	3.9
100–249.....	na	6.9	8.0	10.8	9.0	1.7
250–499.....	na	5.9	6.1	8.0	4.0	6.6
500–999.....	na	4.0	4.7	5.7	6.9	5.8
1,000–4,999.....	na	3.1	3.5	4.2	4.0	4.1
5,000–9,999.....	na	2.3	2.2	2.5	3.4	2.6
10,000–24,999.....	na	2.9	3.2	3.5	2.9	2.8
25,000 or more.....	na	2.8	3.0	3.1	2.9	3.2

D = data withheld to avoid disclosing operations of individual companies; S = imputation of >50%; NA = not available; na = not applicable

NAICS = North American Industry Classification System

^aSome statistics for 1999 were revised since originally published.

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

R&D expenditure, by state, performing sector, and source of funds: 2003

(Millions of current dollars)

State	Performing sector:		FFRDCs					Industry			U&C ^a					Other nonprofit institutions	
	Funding sector:	Rank	All R&D	Federal	Total	Federal	Nonfederal ^b	Total	Federal	Industry ^c	Total	Federal	Nonfederal	Industry	U&Cs	Nonprofit	Federal ^d
State total ^e	na		277,577	21,863	12,115	11,671	445	198,244	20,595	177,647	39,976	24,662	2,645	2,157	7,670	2,843	5,379
Alabama.....	27		2,543	937	0	0	0	999	461	539	558	410	7	15	105	21	49
Alaska.....	48		321	131	0	0	0	36	5	31	141	77	5	23	33	2.8	13
Arizona.....	22		3,578	291	44	44	0	2,605	574	2,031	618	342	40	40	172	25	19
Arkansas.....	43		509	53	0	0	0	270	7	263	183	82	55	10	27	9	3
California.....	1		59,664	2,834	3,404	3,297	107	47,142	4,497	42,644	5,363	3,184	283	251	1,080	564	920
Colorado.....	17		5,012	350	362	357	5	3,544	95	3,449	695	535	31	37	71	21	61
Connecticut.....	13		6,548	96	0	0	0	5,834	852	4,982	595	418	9	28	71	68	24
Delaware.....	35		1,414	9	0	0	0	1,298	12	1,285	105	73	4	3	20	5	2
District of Columbia.....	26		2,686	1,960	7	7	0	235	95	140	263	215	4	11	14	20	221
Florida.....	16		5,172	721	0	0	0	3,181	1,031	2,150	1,205	668	119	69	285	65	65
Georgia.....	20		3,923	614	0	0	0	2,108	57	2,051	1,176	638	85	74	322	56	25
Hawaii.....	45		438	87	0	0	0	133	53	80	185	149	12	7	17	0	33
Idaho.....	36		1,209	27	330	318	12	745	9	736	105	56	19	6	23	2	1.8
Illinois.....	8		11,045	223	804	769	35	8,319	190	8,129	1,614	964	94	49	400	108	86
Indiana.....	19		4,487	96	0	0	0	3,658	256	3,401	726	328	51	51	237	59	7
Iowa.....	34		1,451	87	25	25	0	833	7	826	499	284	51	36	115	13	7
Kansas.....	28		2,024	35	0	0	0	1,675	D	D	310	156	42	8	87	17	4
Kentucky.....	37		1,014	33	0	0	0	601	21	580	378	173	51	9	113	33	3
Louisiana.....	39		954	128	0	0	0	295	24	271	524	224	106	31	126	38	7
Maine.....	47		372	24	0	0	0	200	30	169	75	31	12	3	25	4	73
Maryland.....	9		10,162	3,538	296	296	0	3,998	1,745	2,253	2,031	1,504	63	99	257	108	299
Massachusetts.....	3		15,638	899	523	516	7	11,094	2,153	8,941	1,822	1,379	43	129	98	172	1,301
Michigan.....	2		16,884	243	0	0	0	15,241	213	15,028	1,388	793	94	69	347	86	11
Minnesota.....	15		5,842	141	0	0	0	5,003	236	4,767	517	298	60	25	73	62	181
Mississippi.....	32		1,519	163	0	0	0	1,021	D	D	324	208	37	10	63	7	11
Missouri.....	25		2,731	158	0	0	0	1,742	80	1,662	807	520	34	27	183	45	24
Montana.....	49		247	29	0	0	0	65	2	63	141	85	22	7	26	1	12
Nebraska.....	40		710	41	0	0	0	363	7	356	301	106	12	22	140	20	5
Nevada.....	41		579	37	0	0	0	383	31	352	155	104	8	6	33	4	5
New Hampshire.....	30		1,664	55	0	0	0	1,349	D	D	252	166	8	11	49	19	7
New Jersey.....	6		12,795	559	67	66	1	11,401	215	11,185	748	361	68	37	212	70	20
New Mexico.....	18		4,977	455	3,849	3,687	162	349	165	184	307	200	15	15	69	8	17
New York.....	5		13,031	572	453	437	16	8,556	598	7,958	3,090	2,015	161	133	524	258	359
North Carolina.....	14		6,343	413	0	0	0	4,424	108	4,315	1,395	838	117	184	207	48	112
North Dakota.....	46		382	30	0	0	0	216	2	214	134	66	4	7	51	6	2
Ohio.....	11		8,583	800	0	0	0	6,260	425	5,835	1,269	743	39	74	317	96	254
Oklahoma.....	38		968	68	0	0	0	577	33	545	295	127	41	17	94	16	28
Oregon.....	23		3,572	124	0	0	0	2,973	39	2,934	437	318	38	11	47	24	37
Pennsylvania.....	10		9,944	453	45	44	2	7,091	166	6,925	2,014	1,444	94	141	212	122	342
Rhode Island.....	29		1,757	301	0	0	0	1,203	D	D	187	134	7	3	37	7	66

R&D expenditure, by state, performing sector, and source of funds: 2003

(Millions of current dollars)

State	Performing sector:		All R&D	Federal	FFRDCs			Industry			U&C ^a					Other nonprofit institutions	
	Funding sector:	Rank			Total	Federal	Nonfederal ^b	Total	Federal	Industry ^c	Total	Federal	Nonfederal	Industry	U&Cs	Nonprofit	Federal ^d
South Carolina.....		31	1,616	79	94	94	0	976	36	940	435	226	22	23	152	12	31
South Dakota.....		50	149	20	0	0	0	75	2	73	50	28	10	0.7	5	6	4.2
Tennessee.....		24	2,998	140	691	664	26	1,507	206	1,302	600	383	55	22	105	36	61
Texas.....		4	14,785	830	18	17	1	11,057	638	10,419	2,766	1,552	339	174	417	284	115
Utah.....		33	1,506	116	0	0	0	996	135	861	385	264	23	9	57	32	8
Vermont.....		44	492	24	0	0	0	360	10	349	107	72	3	8	17	7	1
Virginia.....		12	7,582	2,166	381	373	8	4,152	1,846	2,306	776	483	77	57	116	44	107
Washington.....		7	11,469	412	679	615	64	9,222	103	9,119	870	642	20	52	129	27	286
West Virginia.....		42	538	125	43	43	0	219	21	198	121	74	3	2	39	3	30
Wisconsin.....		21	3,642	126	0	0	0	2,623	34	2,589	881	504	50	20	222	84	12
Wyoming.....		51	113	9	0	0	0	37	2	35	60	23	2	3	29	3	7
Other/unknown.....		na	5,762	0	0	0	0	5,762	104	5,658	0	0	0	0	0	0	0

na = not applicable; D = data withheld to avoid disclosing operations of individual companies

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

^aState-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 2.8% of total R&D expenditures reported by universities and colleges in FY 2003.

^bIncludes state and local governments (\$31.1 million), industry (\$140.9 million), FFRDC institutional funds (\$140.2 million), and other sources (\$133.4 million).

^cIncludes all nonfederal sources of industry R&D expenditures.

^dOther sources of support for nonprofit institutions unavailable by state. For 2003, total nonprofit performance is estimated at \$11.8 billion. Industry provided an estimated \$1.1 billion to nonprofit sector, and nonprofit institutions provided estimated \$5.1 billion.

*State totals differ from U.S. totals reported elsewhere because some R&D expenditures not allocated to 1 of 50 states or District of Columbia. In addition, nonfederal sources of nonprofit R&D expenditures not allocated by state.

NOTES: Industry R&D data by state refer to calendar years; other R&D data by state refer to fiscal years but may serve as approximations to calendar-year data. Other/unknown category reflects reported data not assigned to 1 of 50 states or District of Columbia. For industry, other/unknown totals include survey data not assigned to individual states plus amounts reported for individual states but suppressed here to protect confidentiality of surveyed companies.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development; Survey of Research and Development Expenditures at Universities and Colleges; Survey of Federal Funds for Research and Development; and U.S. Department of Commerce, Bureau of Economic Analysis, www.bea.gov/bea/newsrel/gspnewsrelease.htm.

Science and Engineering Indicators 2006

Appendix table 4-24

Total R&D and gross state product, by state: 2003

State rank	R&D (current \$ millions)	GSP (current \$ millions)	R&D/GSP (%)	Rank in R&D/GSP	U.S. R&D (%)	Cumulative percent
1 California.....	59,664	1,438,134	4.15	7	21.5	21.5
2 Michigan.....	16,884	359,440	4.70	4	6.1	27.6
3 Massachusetts.....	15,638	297,113	5.26	2	5.6	33.2
4 Texas.....	14,785	821,943	1.80	30	5.3	38.5
5 New York.....	13,031	838,035	1.55	32	4.7	43.2
6 New Jersey.....	12,795	394,040	3.25	11	4.6	47.8
7 Washington.....	11,469	245,143	4.68	5	4.1	52.0
8 Illinois.....	11,045	499,731	2.21	20	4.0	55.9
9 Maryland.....	10,162	213,073	4.77	3	3.7	59.6
10 Pennsylvania.....	9,944	443,709	2.24	19	3.6	63.2
11 Ohio.....	8,583	398,918	2.15	22	3.1	66.3
12 Virginia.....	7,582	304,116	2.49	17	2.7	69.0
13 Connecticut.....	6,548	174,085	3.76	9	2.4	71.4
14 North Carolina.....	6,343	315,456	2.01	25	2.3	73.7
15 Minnesota.....	5,842	210,184	2.78	15	2.1	75.8
16 Florida.....	5,172	553,709	0.93	44	1.9	77.6
17 Colorado.....	5,012	188,397	2.66	16	1.8	79.4
18 New Mexico.....	4,977	57,078	8.72	1	1.8	81.2
19 Indiana.....	4,487	213,342	2.10	24	1.6	82.8
20 Georgia.....	3,923	321,199	1.22	37	1.4	84.2
21 Wisconsin.....	3,642	198,096	1.84	29	1.3	85.6
22 Arizona.....	3,578	183,272	1.95	27	1.3	86.8
23 Oregon.....	3,572	119,973	2.98	13	1.3	88.1
24 Tennessee.....	2,998	203,071	1.48	33	1.1	89.2
25 Missouri.....	2,731	193,828	1.41	35	1.0	90.2
26 District of Columbia.....	2,686	70,668	3.80	8	1.0	91.2
27 Alabama.....	2,543	130,792	1.94	28	0.9	92.1
28 Kansas.....	2,024	93,263	2.17	21	0.7	92.8
29 Rhode Island.....	1,757	39,363	4.46	6	0.6	93.4
30 New Hampshire.....	1,664	48,202	3.45	10	0.6	94.0
31 South Carolina.....	1,616	127,963	1.26	36	0.6	94.6
32 Mississippi.....	1,519	71,872	2.11	23	0.6	95.2
33 Utah.....	1,506	76,674	1.96	26	0.5	95.7
34 Iowa.....	1,451	102,400	1.42	34	0.5	96.2
35 Delaware.....	1,414	50,486	2.80	14	0.5	96.7
36 Idaho.....	1,209	40,358	2.99	12	0.4	97.2
37 Kentucky.....	1,014	128,315	0.79	46	0.4	97.6
38 Oklahoma.....	968	101,168	0.96	42	0.4	97.9
39 Louisiana.....	954	144,321	0.66	48	0.3	98.2
40 Nebraska.....	710	65,399	1.09	39	0.3	98.5
41 Nevada.....	579	89,711	0.65	49	0.2	98.7
42 West Virginia.....	538	46,726	1.15	38	0.2	98.9
43 Arkansas.....	509	74,540	0.68	47	0.2	99.1
44 Vermont.....	492	20,544	2.39	18	0.2	99.3
45 Hawaii.....	438	46,671	0.94	43	0.2	99.4
46 North Dakota.....	382	21,597	1.77	31	0.1	99.6
47 Maine.....	372	40,829	0.91	45	0.1	99.7
48 Alaska.....	321	31,704	1.01	40	0.1	99.8
49 Montana.....	247	25,584	0.97	41	0.1	99.9
50 South Dakota.....	149	27,337	0.55	50	0.1	100.0
51 Wyoming.....	113	22,279	0.51	51	0.0	100.0

GSP = gross state product

NOTES: U.S. R&D total attributable to states is \$277,577. Other/unknown includes R&D performed in 50 states or District of Columbia, but specific location of performance not provided by survey respondents. Also includes R&D conducted by organizations in United States, but actual performance does not take place in particular state or District of Columbia (e.g., research conducted on marine vessels or in Puerto Rico). U.S. total attributable to states excludes other/unknown component. When state R&D taken as percentage of U.S. R&D, denominator is U.S. total attributable to states.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development; Survey of Research and Development Expenditures at Universities and Colleges; Survey of Federal Funds for Research and Development; and U.S. Department of Commerce, Bureau of Economic Analysis, www.bea.gov/bea/newsrel/gspnewsrelease.htm.

Appendix table 4-25
FFRDC R&D expenditures: FY 2003
 (Thousands of dollars)

FFRDC	Total	Federal	Sponsoring agency	Location
All FFRDCs.....	12,126,881	11,681,288		
University-administered FFRDCs.....	7,200,056	6,948,179		
Ames Laboratory.....	25,213	25,213	Department of Energy	Ames, IA
Argonne National Laboratory.....	500,828	466,340	Department of Energy	Argonne, IL
Ernest Orlando Lawrence Berkeley National Laboratory.....	441,500	381,264	Department of Energy	Berkeley, CA
Fermi National Accelerator Laboratory.....	303,340	303,041	Department of Energy	Batavia, IL
Jet Propulsion Laboratory.....	1,390,560	1,390,560	NASA	Pasadena, CA
Lawrence Livermore National Laboratory.....	1,286,215	1,258,505	Department of Energy	Livermore, CA
Lincoln Laboratory.....	522,851	516,112	DOD, Department of the Air Force	Lexington, MA
Los Alamos National Laboratory.....	2,106,145	1,990,573	Department of Energy	Los Alamos, NM
National Astronomy and Ionosphere Center.....	11,508	10,644	NSF	Arecibo, PR
National Center for Atmospheric Research.....	140,756	137,993	NSF	Boulder, CO
National Optical Astronomy Observatory.....	44,409	44,409	NSF	Tucson, AZ
National Radio Astronomy Observatory.....	42,842	42,644	NSF	Green Bank, WV
Princeton Plasma Physics Laboratory.....	66,764	66,345	Department of Energy	Princeton, NJ
Software Engineering Institute.....	45,412	43,470	DOD, Office of the Secretary of Defense	Pittsburgh, PA
Stanford Linear Accel Center.....	164,747	164,747	Department of Energy	Stanford, CA
Thomas Jefferson National Accelerator Facility.....	106,966	106,319	Department of Energy	Newport News, VA
Industry-administered FFRDCs.....	2,463,439	2,405,585		
Idaho National Engineering and Environmental Laboratory.....	330,154	318,363	Department of Energy	Idaho Falls, ID
National Cancer Institute at Frederick.....	296,000	296,000	NIH	Frederick, MD
Sandia National Laboratory.....	1,742,862	1,696,799	Department of Energy	Albuquerque, NM
Savannah River Technology.....	94,423	94,423	Department of Energy	Aiken, SC
Nonprofit-administered FFRDC.....	2,463,386	2,327,524		
Aerospace FFRDC.....	32,745	13,619	DOD, Department of the Air Force	El Segundo, CA
Arroyo Center.....	27,889	27,889	DOD, Department of the Army	Santa Monica, CA
Brookhaven National Laboratory.....	452,728	436,969	Department of Energy	Upton, NY
C3I FFRDC.....	32,696	32,696	DOD, Office of the Secretary of Defense	Bedford, MA/McLean, VA
Center for Advanced Aviation System Development.....	6,633	3,180	FAA	McLean, VA
Center for Naval Analyses.....	75,869	71,895	DOD, Department of the Navy	Alexandria, VA
Center for Nuclear Waste Regulatory Analyses.....	17,625	16,884	Nuclear Regulatory Commission	San Antonio, TX
Institute for Defense Analyses Communications and Computing.....	45,960	45,960	National Security Agency	Alexandria, VA
Institute for Defense Analysis Studies.....	110,200	110,200	DOD, Office of the Secretary of Defense	Alexandria, VA
Internal Revenue Service FFRDC.....	2,834	2,834	IRS	McLean, VA
National Defense Research Institute.....	26,908	26,908	DOD, Office of the Secretary of Defense	Santa Monica, CA
National Renewable Energy Laboratory.....	221,496	219,015	Department of Energy	Golden, CO
Oak Ridge National Laboratory.....	690,538	664,210	Department of Energy	Oak Ridge, TN
Pacific Northwest National Laboratory.....	679,000	615,000	Department of Energy	Richland, WA
Project Air Force.....	33,555	33,555	DOD, Department of the Air Force	Santa Monica, CA
Science and Technology Policy Institute.....	6,710	6,710	NSF	Washington, DC

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

NOTE: More information about the 36 FFRDCs can be found on NSF website, <http://www.nsf.gov/statistics/nsf05306/start.htm>.

SOURCE: NSF, Division of Science Resources Statistics, *Academic Research and Development Expenditures: Fiscal Year 2003* (forthcoming).

Appendix table 4-26

(Page 1 of 2)

Federal R&D budget authority, by budget function: FY 1980–2006

Year	Total	Total defense	Total nondefense	Health	Space research/ technology	Energy	General science	Natural resources/ environment	Transportation
Millions of current dollars									
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	40,665	21,450	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	40,061	28,337	10,055	6,744	3,153	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	1,889
1995.....	68,791	37,204	31,587	11,407	7,916	2,844	2,794	1,989	1,834
1996.....	69,049	37,801	31,248	11,867	7,844	2,521	2,846	1,802	1,795
1997.....	71,653	39,592	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	36,332	15,553	8,245	1,132	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	49,495	26,518	7,355	1,403	6,129	2,151	1,869
2004.....	121,867	69,593	52,274	28,251	7,612	1,344	6,466	2,168	1,864
2005.....	127,336	74,668	52,668	28,746	7,686	1,195	6,482	2,108	1,828
2006.....	127,621	74,760	52,862	28,984	8,089	1,211	6,423	1,990	1,640
Millions of constant FY 2000 dollars									
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	51,926	27,389	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	3,126	1,877	1,461
1992.....	79,174	46,372	32,802	11,639	7,807	3,650	3,078	1,954	1,763
1993.....	79,129	46,706	32,423	11,640	7,912	3,031	3,047	2,040	1,929
1994.....	75,727	41,852	33,875	12,183	8,217	3,184	3,005	2,285	2,093
1995.....	74,636	40,365	34,271	12,377	8,589	3,085	3,031	2,157	1,989
1996.....	73,540	40,260	33,280	12,639	8,354	2,685	3,031	1,919	1,911
1997.....	75,002	41,442	33,560	13,263	8,211	2,483	3,082	1,974	1,869
1998.....	76,047	41,165	34,882	14,033	8,474	980	4,507	1,917	1,895
1999.....	79,217	42,146	37,071	15,870	8,413	1,155	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.....	84,802	44,683	40,119	20,291	5,988	1,284	5,345	2,048	1,603
2002.....	93,629	50,846	42,783	22,595	6,014	1,273	5,518	2,071	1,763
2003.....	106,041	59,406	46,635	24,985	6,930	1,322	5,775	2,027	1,761
2004.....	112,659	64,334	48,325	26,116	7,037	1,242	5,977	2,004	1,723
2005.....	115,347	67,638	47,709	26,039	6,963	1,082	5,872	1,909	1,656
2006.....	113,366	66,409	46,957	25,746	7,186	1,075	5,705	1,768	1,457

Appendix table 4-26

(Page 2 of 2)

Federal R&D budget authority, by budget function: FY 1980–2006

	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
Millions of current dollars									
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	95	51	37	4
1993.....	1,152	348	382	250	220	57	49	36	0
1994.....	1,193	373	254	265	380	68	46	46	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.....	1,803	455	255	784	457	45	789	35	0
2006.....	1,575	420	255	786	389	41	1,034	27	0
Millions of constant FY 2000 dollars									
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	212	105	61	35	4
1992.....	1,337	423	429	284	222	110	59	43	5
1993.....	1,304	394	433	284	249	65	55	41	0
1994.....	1,323	413	282	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.....	1,620	402	246	702	419	53	86	29	3
2002.....	1,541	394	268	725	448	48	87	35	3
2003.....	1,609	405	253	770	436	45	282	36	0
2004.....	1,618	424	244	801	420	43	632	43	0
2005.....	1,634	412	231	710	414	41	715	32	0
2006.....	1,399	373	227	698	345	36	918	24	0

NOTES: Data for 1980–2004 are actual budget authority, data for 2005 are preliminary estimates, and data for 2006 are proposed based on FY 2006 budget. See appendix table 4-1 for FY gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars. Beginning in FY 1998, several Department of Energy programs were reclassified from energy to general science. In FY 2000, NASA reclassified the Space Station as an R&D plant; this explains part of drop in space research and technology in that year. FY 2003–06 reflect FY 2004 reclassification of Department of Homeland Security's (DHS) R&D portfolio; whereas DHS R&D funding previously classified as general science and basic and agriculture, it is now classified as administration of justice.

SOURCE: National Science Foundation, Division of Science Resources Statistics, *Federal R&D Funding by Budget Function: Fiscal Years 2004–06* (forthcoming).

Appendix table 4-27

Federal basic research budget authority, by budget function: FY 1996–2006

Budget function	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Millions of current dollars											
Total	14,442	14,961	15,523	17,433	19,470	21,376	23,848	25,323	26,529	26,840	26,536
Health.....	6,395	6,852	7,356	8,634	10,099	11,642	12,957	14,162	14,850	15,114	15,235
General science.....	2,662	2,753	4,121	4,464	4,722	5,187	5,561	5,907	6,198	6,203	6,146
Space research/technology.....	1,685	1,653	1,610	1,667	1,616	1,695	1,912	2,207	2,474	2,368	2,199
Energy.....	1,182	1,288	34	36	36	40	45	40	32	32	26
National defense.....	1,165	1,090	1,067	1,110	1,184	1,303	1,404	1,410	1,380	1,545	1,353
Agriculture.....	547	548	571	602	651	749	762	824	781	802	738
Transportation	456	420	411	358	542	17	17	23	20	37	42
Natural resources/environment.....	147	153	145	142	146	215	471	185	201	152	151
Education, training, employment/social services...	140	142	133	99	107	112	115	125	125	127	134
Commerce/housing credit.....	37	34	35	41	39	50	56	53	46	61	74
Veterans benefits/services.....	13	14	23	263	266	289	465	327	347	315	315
Administration of justice	12	13	16	18	20	27	30	42	58	67	105
International affairs.....	2	2	1	0	42	50	53	18	18	18	18
Community/regional development.....	0	0	0	0	0	0	0	1	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
Millions of constant FY 2000 dollars											
Total	15,381	15,660	16,046	17,788	19,470	20,895	22,872	23,860	24,524	24,313	23,572
Health.....	6,811	7,172	7,604	8,810	10,099	11,380	12,427	13,344	13,728	13,691	13,534
General science.....	2,835	2,882	4,260	4,555	4,722	5,070	5,334	5,566	5,729	5,619	5,460
Space research/technology.....	1,795	1,730	1,664	1,701	1,616	1,657	1,834	2,079	2,287	2,145	1,953
Energy.....	1,259	1,348	35	37	36	39	43	38	30	29	23
National defense.....	1,241	1,141	1,103	1,133	1,184	1,274	1,346	1,328	1,276	1,400	1,202
Agriculture.....	583	574	590	614	651	732	730	776	721	727	656
Transportation	486	440	425	365	542	17	16	22	18	34	37
Natural resources/environment.....	157	160	150	145	146	210	452	174	185	138	134
Education, training, employment/social services...	149	149	137	101	107	109	110	118	116	115	119
Commerce/housing credit.....	39	36	36	42	39	49	54	50	43	55	66
Veterans benefits/services.....	14	15	24	268	266	282	446	308	321	285	280
Administration of justice	13	14	17	18	20	26	29	40	53	61	93
International affairs.....	2	2	1	0	42	49	51	17	17	16	16
Community/regional development.....	0	0	0	0	0	0	0	1	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 1980–2004 are actual budget authority, data for 2005 are preliminary estimates, and data for 2006 are proposed based on FY 2006 budget. See appendix table 4-1 for FY gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars. Beginning in FY 1998, several Department of Energy programs were reclassified from energy to general science. In FY 2000, NASA reclassified the Space Station as an R&D plant; this explains part of drop in space research and technology in that year. FY 2003–06 reflect FY 2004 reclassification of Department of Homeland Security's (DHS) R&D portfolio; whereas DHS R&D funding previously classified as general science and basic and agriculture, it is now classified as administration of justice.

SOURCE: National Science Foundation, Division of Science Resources Statistics, *Federal R&D Funding by Budget Function: Fiscal Years 2004–06* (forthcoming).

Appendix table 4-28
Trends in R&D and federal outlays: Selected fiscal years, 1970–2006

Composition of federal outlays	1970	1980	1990	2000	2002	2004	2006 (estimate)
Billions of current dollars							
Federal outlays	195.6	590.9	1,253.1	1,789.1	2,011.0	2,292.2	2,567.6
Mandatory programs ^a	61.0	262.1	568.2	951.0	1,105.7	1,236.5	1,410.3
Net interest	14.4	52.5	184.3	222.9	170.9	160.2	211.1
Total discretionary	120.3	276.3	500.6	614.8	734.3	895.4	946.2
Defense	81.9	134.6	300.1	295.0	348.9	454.1	444.3
R&D	8.0	14.6	41.1	41.1	48.2	65.3	73.5
Nondefense	38.3	141.7	200.4	319.9	385.4	441.4	477.4
R&D	7.1	15.6	22.7	32.9	39.7	48.0	51.4
Total federal R&D outlays	15.2	30.2	63.8	73.9	87.9	113.4	124.9
Percent							
Federal outlays	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mandatory programs ^a	31.2	44.4	45.3	53.2	55.0	53.9	54.9
Net interest	7.4	8.9	14.7	12.5	8.5	7.0	8.2
Total discretionary	61.5	46.8	39.9	34.4	36.5	39.1	36.9
Defense	41.9	22.8	23.9	16.5	17.3	19.8	17.3
R&D	4.1	2.5	3.3	2.3	2.4	2.9	2.9
Nondefense	19.6	24.0	16.0	17.9	19.2	19.3	18.6
R&D	3.6	2.6	1.8	1.8	2.0	2.1	2.0
Total federal R&D outlays	7.7	5.1	5.1	4.1	4.4	4.9	4.9
Federal R&D outlays as proportion of corresponding discretionary outlays (%)							
Total federal R&D/total discretionary outlays	12.6	10.9	12.7	12.0	12.0	12.7	13.2
Defense	9.8	10.9	13.7	13.9	13.8	14.4	16.6
Nondefense	18.6	11.0	11.3	10.3	10.3	10.9	10.8

^aIncludes Social Security, Medicare, Medicaid, and other programs.

SOURCE: U.S. Office of Management and Budget, *Historical Tables, Budget of the United States Government: Fiscal Year 2006* (2005).

Science and Engineering Indicators 2006

Appendix table 4-29

Discrepancy between federal R&D support, as reported by performers and federal agencies: 1980–2003

(Billions of dollars)

Year	All performers			Industrial performers ^a		
	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.....	37.2	36.4	0.8	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.....	52.7	48.4	4.3	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	20.6	31.9	-11.3
2000.....	66.4	72.9	-6.5	17.2	27.7	-10.5
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.....	86.7	93.7	-7.0	20.7	33.9	-13.2

^aExcludes industry-administered federally funded research and development centers.

NOTES: Performer-reported data are expenditures; agency-reported data are obligations.

SOURCES: National Science Foundation, Division of Science Resources Statistics (NSF/SRS), National Patterns of R&D Resources (annual series); and NSF/SRS, *Federal Funds for Research and Development: Fiscal Years 2003, 2004, and 2005* (forthcoming).

Estimated federal obligations for R&D and R&D plant, by selected agency, performer, and character of work: FY 2005

(Millions of current dollars)

Agency	Total	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
Total R&D and R&D plant										
All agencies.....	110,194.2	25,289.2	44,833.8	1,723.0	24,296.1	5,497.3	6,031.8	1,692.2	420.2	410.5
Department of Agriculture.....	2,120.7	1,485.1	17.7	0.0	599.0	0.0	13.0	0.0	3.0	2.8
Department of Commerce.....	1,049.2	870.4	12.3	0.0	151.2	0.6	8.8	0.0	5.6	0.2
Department of Defense.....	51,750.2	12,299.8	36,446.8	141.2	1,575.5	318.3	295.4	549.7	6.6	116.8
Department of Energy.....	8,781.0	845.1	1,557.4	1,075.2	758.1	3,387.8	80.1	1,075.8	0.5	1.0
Department of Health and Human Services.....	29,123.5	5,908.8	1,655.5	484.5	16,161.4	91.7	4,418.7	26.7	160.3	216.0
Department of the Interior.....	551.6	489.1	13.2	0.0	38.6	0.0	0.9	0.0	8.8	0.9
Department of Transportation.....	756.2	228.2	257.7	2.5	49.9	8.0	28.9	0.2	179.5	1.3
Environmental Protection Agency.....	572.2	271.2	68.0	0.0	175.2	0.0	43.6	0.0	11.8	2.3
National Aeronautics and Space Administration.....	9,762.0	2,065.8	4,510.4	0.1	1,126.2	1,402.4	577.7	14.3	12.8	52.3
National Science Foundation.....	4,225.7	49.1	182.9	0.0	3,381.0	282.2	298.3	5.5	12.4	14.5
All other agencies.....	1,501.8	776.7	111.8	19.5	280.0	6.3	266.4	20.0	18.9	2.4
R&D										
All agencies.....	106,487.8	24,813.0	42,938.0	1,639.3	23,900.3	4,955.4	5,971.5	1,463.9	419.3	387.1
Department of Agriculture.....	1,969.3	1,333.7	17.7	0.0	599.0	0.0	13.0	0.0	3.0	2.8
Department of Commerce.....	979.3	800.5	12.3	0.0	151.2	0.6	8.8	0.0	5.6	0.2
Department of Defense.....	51,402.1	12,199.7	36,198.9	141.2	1,575.5	318.3	295.4	549.7	6.6	116.8
Department of Energy.....	7,957.8	844.0	1,521.9	991.5	751.1	2,918.2	78.0	851.6	0.5	1.0
Department of Health and Human Services.....	28,865.6	5,810.1	1,655.5	484.5	16,008.7	91.7	4,412.1	26.7	160.3	216.0
Department of the Interior.....	548.7	489.1	10.4	0.0	38.6	0.0	0.9	0.0	8.8	0.9
Department of Transportation.....	736.8	228.2	238.3	2.5	49.9	8.0	28.9	0.2	179.5	1.3
Environmental Protection Agency.....	572.2	271.2	68.0	0.0	175.2	0.0	43.6	0.0	11.8	2.3
National Aeronautics and Space Administration.....	8,114.0	2,028.5	2,966.0	0.1	1,096.2	1,397.4	569.8	14.3	12.8	28.9
National Science Foundation.....	3,844.2	35.3	137.2	0.0	3,174.9	214.9	254.6	1.4	11.5	14.5
All other agencies.....	1,497.8	772.7	111.8	19.5	280.0	6.3	266.4	20.0	18.9	2.4
Basic research										
All agencies.....	26,860.3	5,106.5	1,674.8	342.2	13,924.5	1,985.0	2,920.6	655.1	93.1	158.5
Department of Agriculture.....	917.9	646.9	0.3	0.0	262.6	0.0	5.7	0.0	1.0	1.4
Department of Commerce.....	109.7	102.9	1.7	0.0	4.6	0.0	0.4	0.0	0.0	0.0
Department of Defense.....	1,580.1	795.1	122.4	6.8	548.2	13.3	55.0	23.9	1.8	13.7
Department of Energy.....	2,678.1	41.9	144.0	63.8	575.1	1,219.2	23.2	609.9	0.0	1.0
Department of Health and Human Services.....	15,194.8	2,559.5	846.3	271.6	8,845.0	48.8	2,423.1	15.0	65.6	119.9
Department of the Interior.....	37.2	34.0	0.0	0.0	1.9	0.0	0.0	0.0	1.3	0.0
Department of Transportation.....	39.8	6.4	30.6	0.0	0.1	0.0	1.0	0.0	1.7	0.0
Environmental Protection Agency.....	66.2	31.4	7.9	0.0	20.3	0.0	5.0	0.0	1.4	0.3
National Aeronautics and Space Administration.....	2,297.0	574.2	447.5	0.0	610.0	488.9	152.1	5.1	8.8	10.2
National Science Foundation.....	3,623.4	35.2	68.1	0.0	3,034.4	214.9	246.1	1.2	11.5	12.0
All other agencies.....	316.1	279.0	6.0	0.0	22.3	0.0	9.0	0.0	0.0	0.0
Applied research										
All agencies.....	27,838.8	8,176.9	5,012.2	890.6	9,070.0	1,533.3	2,599.4	190.7	234.3	131.4
Department of Agriculture.....	882.3	530.6	17.4	0.0	324.4	0.0	6.8	0.0	2.0	1.1

Estimated federal obligations for R&D and R&D plant, by selected agency, performer, and character of work: FY 2005

(Millions of current dollars)

Agency	Total	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
Department of Commerce	808.1	643.5	6.7	0.0	143.7	0.6	8.4	0.0	5.1	0.2
Department of Defense	4,144.3	1,389.6	2,012.1	18.2	497.9	32.0	127.4	43.1	0.9	23.0
Department of Energy	3,115.6	558.8	268.9	637.5	128.0	1,384.4	27.0	111.0	0.0	0.0
Department of Health and Human Services	13,574.8	3,225.6	809.2	212.9	7,136.4	38.2	1,950.4	11.7	94.5	96.1
Department of the Interior	458.3	410.0	9.1	0.0	30.9	0.0	0.5	0.0	7.0	0.8
Department of Transportation	454.7	174.5	103.5	2.5	40.8	8.0	19.3	0.2	105.2	0.8
Environmental Protection Agency	365.1	173.0	43.4	0.0	111.8	0.0	27.9	0.0	7.5	1.4
National Aeronautics and Space Administration	2,919.8	730.0	1,584.6	0.1	326.9	63.7	204.6	4.5	2.7	3.0
National Science Foundation	220.8	0.1	69.1	0.0	140.5	0.0	8.5	0.2	0.0	2.5
All other agencies	895.0	341.2	88.2	19.4	188.7	6.3	218.6	20.0	9.4	2.5
Development										
All agencies	51,788.7	11,529.6	36,251.0	406.5	905.8	1,437.1	451.5	618.1	91.9	97.2
Department of Agriculture	169.1	156.2	0.0	0.0	12.0	0.0	0.5	0.0	0.0	0.3
Department of Commerce	61.5	54.1	3.9	0.0	2.9	0.0	0.0	0.0	0.5	0.0
Department of Defense	45,677.7	10,015.0	34,064.4	116.2	529.4	273.0	113.0	482.7	3.9	80.1
Department of Energy	2,164.1	243.3	1,109.0	290.2	48.0	314.6	27.8	130.7	0.5	0.0
Department of Health and Human Services	96.0	25.0	0.0	0.0	27.3	4.7	38.6	0.0	0.2	0.0
Department of the Interior	53.2	45.1	1.3	0.0	5.8	0.0	0.4	0.0	0.5	0.1
Department of Transportation	242.3	47.3	104.2	0.0	9.0	0.0	8.6	0.0	72.6	0.5
Environmental Protection Agency	140.9	66.8	16.7	0.0	43.1	0.0	10.7	0.0	2.9	0.6
National Aeronautics and Space Administration	2,897.2	724.3	933.9	0.0	159.3	844.8	213.1	4.7	1.3	15.7
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	286.7	152.5	17.6	0.1	69.0	0.0	38.8	0.0	9.5	-0.1
R&D plant										
All agencies	3,706.4	476.2	1,895.8	83.7	395.8	541.9	60.3	228.3	0.9	23.4
Department of Agriculture	151.4	151.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Commerce	69.9	69.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Defense	348.1	100.1	247.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Energy	823.2	1.1	35.5	83.7	7.0	469.6	2.1	224.2	0.0	0.0
Department of Health and Human Services	257.9	98.7	0.0	0.0	152.7	0.0	6.6	0.0	0.0	0.0
Department of the Interior	2.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Department of Transportation	19.4	0.0	19.4	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	1,648.0	37.3	1,544.4	0.0	30.0	5.0	7.9	0.0	0.0	23.4
National Science Foundation	381.5	13.8	45.7	0.0	206.1	67.3	43.7	4.1	0.9	0.0
All other agencies	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

SOURCE: National Science Foundation, Division of Science Resources Statistics, *Federal Funds for Research and Development: Fiscal Years 2003, 2004, and 2005* (forthcoming).

Appendix table 4-31

Estimated federal obligations for research, by agency and S&E field: FY 2005

(Thousands of current dollars)

Agency	Total	Environmental sciences	Life sciences	Mathematics and computer sciences	Physical sciences	Psychology	Social sciences	Engineering	Other sciences NEC
All agencies	54,699,080	3,915,912	29,790,614	2,841,402	5,373,401	1,158,067	1,081,408	9,147,058	1,391,218
Agency for International Development.....	245,076	4,269	167,040	0	0	0	73,064	0	703
Appalachian Regional Commission	703	0	0	0	0	0	703	0	0
Department of Agriculture.....	1,800,196	15,032	1,443,372	18,752	94,414	518	150,590	73,502	4,016
Department of Commerce.....	917,836	429,506	90,733	56,174	149,677	91	10,146	170,213	11,296
Department of Defense.....	5,724,380	312,231	694,712	833,607	467,438	87,832	45,689	3,028,853	254,018
Department of Education.....	202,374	0	19,242	0	0	5,174	164,215	13,743	0
Department of Energy.....	5,793,688	297,847	288,572	941,237	2,259,980	0	0	1,999,519	6,533
Department of Health and Human Services.....	28,769,611	488,376	25,497,894	72,351	521,639	990,341	318,211	284,460	596,339
Department of Housing and Urban Development.....	15,905	584	0	139	0	0	12,259	2,104	819
Department of Justice	34,800	0	0	600	0	500	29,700	0	4,000
Department of Labor.....	34,027	0	0	0	0	0	34,027	0	0
Department of State	2,205	0	0	0	0	0	2,205	0	0
Department of the Interior.....	495,463	313,178	165,129	6,185	0	0	3,151	7,518	302
Department of the Treasury	67,612	0	0	0	5,450	1,110	0	0	61,052
Department of Transportation	494,538	23,159	12,780	12,004	1,903	17,761	13,000	397,412	16,519
Department of Veterans Affairs	343,723	0	307,942	0	0	26,054	0	9,727	0
Environmental Protection Agency.....	431,300	172,023	148,401	13,221	16,465	0	2,576	62,773	15,841
Federal Communications Commission	3,360	0	0	80	810	0	1,257	1,213	0
Federal Trade Commission.....	1,603	0	0	0	0	0	1,603	0	0
Library of Congress	230	0	0	0	230	0	0	0	0
National Aeronautics and Space Administration	5,216,797	1,163,551	334,465	94,370	1,064,256	24,691	429	2,363,684	171,351
National Archives and Records Administration.....	120	0	0	0	120	0	0	0	0
National Science Foundation.....	3,844,158	691,339	578,470	792,682	740,652	3,995	132,738	656,962	247,320
Nuclear Regulatory Commission	75,375	0	0	0	0	0	0	75,375	0
Smithsonian Institution	114,000	4,817	41,862	0	50,367	0	15,845	0	1,109
Social Security Administration.....	70,000	0	0	0	0	0	70,000	0	0

NEC = not elsewhere classified

SOURCE: National Science Foundation, Division of Science Resources Statistics, *Federal Funds for Research and Development: Fiscal Years 2003, 2004, and 2005* (forthcoming).

Science and Engineering Indicators 2006

Federal obligations for total research, by detailed S&E field: FY 1984–2005

(Millions of 2000 dollars)

Field	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
All fields.....	22,217.9	23,177.9	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
Engineering.....	5,375.6	5,197.2	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
Aeronautical.....	1,276.2	1,060.2	1,088.9	1,108.8	1,063.6	1,260.1	1,141.4	1,205.9	1,012.4	1,350.8	1,355.1	1,354.4
Astronautical.....	588.6	610.1	739.8	854.6	763.3	865.0	715.1	775.0	729.7	559.3	553.1	592.9
Chemical.....	214.3	365.3	345.1	295.3	342.4	181.6	297.8	361.1	344.4	278.0	264.0	267.0
Civil.....	300.8	311.2	284.9	279.7	285.1	293.4	391.1	361.9	382.2	285.3	308.0	368.2
Electrical.....	934.5	900.5	946.8	1,075.9	969.8	1,076.6	788.0	866.1	878.6	998.1	822.1	820.6
Mechanical.....	282.6	383.6	332.0	319.5	319.4	328.7	330.3	398.1	390.3	528.7	419.0	447.5
Metallurgy and materials.....	506.0	631.0	624.8	495.3	605.8	665.3	682.7	843.3	841.8	787.7	943.6	884.6
Engineering, NEC.....	1,272.7	935.3	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
Environmental sciences.....	1,892.5	2,016.6	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
Atmospheric sciences.....	643.9	698.2	731.9	756.5	779.7	750.8	952.2	952.5	888.2	1,114.3	1,213.5	1,232.1
Geological sciences.....	532.5	616.3	623.2	604.4	585.8	693.1	813.9	864.7	851.6	903.5	928.7	920.4
Oceanography.....	539.2	572.5	603.3	584.8	610.7	628.1	640.3	473.0	531.2	529.2	550.6	441.9
Environmental sciences, NEC.....	177.0	129.6	121.9	122.5	155.3	192.2	270.2	260.8	284.5	406.7	452.7	502.7
Life sciences.....	8,359.7	9,140.6	9,075.7	10,044.9	10,246.7	10,847.5	10,871.1	11,417.8	11,471.9	12,197.1	12,505.8	12,814.5
Biological and agricultural.....	4,931.9	5,395.0	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
Agricultural sciences.....	759.4	875.3	847.7	775.7	783.6	854.3	851.2	807.3	795.8	807.2	805.9	727.3
Biological sciences (excluding environmental).....	3,801.8	4,145.7	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
Environmental biology.....	370.8	374.0	370.8	396.2	399.3	469.6	421.4	545.5	591.5	630.1	698.1	875.5
Medical sciences.....	3,133.9	3,402.7	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
Life sciences, NEC.....	293.8	342.9	340.6	435.4	278.7	322.5	331.3	669.0	424.8	349.1	353.9	473.4
Mathematics and computer sciences.....	653.1	825.9	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
Computer sciences.....	318.2	402.7	424.6	407.5	388.3	465.6	692.1	694.1	893.4	935.4	920.1	1,100.0
Mathematics.....	224.0	263.8	259.0	279.8	289.1	301.5	297.1	270.1	368.9	329.3	379.4	280.6
Mathematics and computer sciences, NEC.....	111.0	159.5	180.4	189.2	175.5	172.1	45.9	108.1	80.9	122.9	143.1	332.7
Physical sciences.....	4,403.9	4,376.0	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
Astronomy.....	567.1	595.8	657.3	714.5	624.5	692.0	735.3	749.6	855.5	777.1	828.5	829.5
Chemistry.....	899.5	934.4	930.0	930.8	932.7	999.3	937.8	983.0	1,037.4	954.7	969.1	936.9
Physics.....	2,723.9	2,608.9	2,535.4	2,536.2	2,620.3	2,797.5	2,776.2	2,920.2	2,984.4	2,987.4	2,707.6	2,659.5
Physical sciences, NEC.....	213.4	236.8	186.2	269.0	223.0	242.5	240.1	373.0	261.3	293.5	208.7	216.1
Psychology.....	395.6	469.9	468.9	505.6	517.1	538.5	552.3	572.4	345.1	623.5	607.8	675.5
Biological aspects.....	119.9	131.0	126.5	134.5	139.7	155.5	160.8	166.4	40.1	42.1	53.3	63.8
Social aspects.....	159.9	205.3	201.5	211.4	198.2	191.4	218.5	234.4	116.8	152.5	129.4	169.6
Psychological sciences, NEC.....	115.8	133.8	141.0	159.7	179.3	191.4	173.0	171.8	188.2	428.8	424.9	442.1
Social sciences.....	647.2	660.9	583.4	656.8	644.4	703.6	775.6	863.0	798.4	764.2	717.5	736.4
Anthropology.....	27.6	25.9	19.1	20.8	19.0	17.8	17.7	19.0	16.3	15.5	18.0	23.5
Economics.....	218.5	229.4	184.3	203.2	211.6	213.0	242.8	222.4	244.9	231.8	214.2	224.1
Political science.....	16.0	21.0	16.3	15.5	16.2	17.2	16.1	20.2	26.2	33.1	28.2	24.2
Sociology.....	104.1	95.5	94.1	101.3	108.5	143.1	143.1	218.3	93.4	86.8	75.5	51.9
Social sciences, NEC.....	281.1	289.2	269.6	316.1	289.2	335.6	355.9	383.2	417.6	396.9	381.7	412.6
Other sciences, NEC.....	490.2	490.8	538.1	599.7	698.4	819.3	817.1	1,072.0	935.6	1,282.3	1,173.0	978.4
All fields.....	30,097.8	30,737.7	31,963.9	34,209.9	38,470.6	43,706.8	46,041.8	48,122.0	50,336.7	49,549.0	4.2	3.9
Engineering.....	6,050.4	5,956.2	6,094.0	6,390.9	6,346.4	8,012.4	7,936.2	7,919.5	8,360.3	8,285.9	2.1	2.1

Appendix table 4-32
Federal obligations for total research, by detailed S&E field: FY 1984–2005
 (Millions of constant 2000 dollars)

Field	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average growth rate (%)	
									(preliminary)	(preliminary)	1984–2003	1984–2005
All fields.....	30,097.8	30,737.7	31,963.9	34,209.9	38,470.6	43,706.8	46,041.8	48,122.0	50,336.7	49,549.0	4.2	3.9
Engineering	6,050.4	5,956.2	6,094.0	6,390.9	6,346.4	8,012.4	7,936.2	7,919.5	8,360.3	8,285.9	2.1	2.1
Aeronautical	1,330.7	1,415.9	1,650.2	1,642.5	1,463.9	2,375.4	2,068.8	1,632.1	NA	NA	1.3	NA
Astronautical	560.9	624.2	652.4	633.2	515.0	735.8	729.7	661.9	NA	NA	0.6	NA
Chemical	229.1	246.0	196.5	207.3	196.5	194.5	193.3	309.0	NA	NA	1.9	NA
Civil	319.7	288.5	252.3	335.2	239.2	281.9	290.3	320.0	NA	NA	0.3	NA
Electrical	713.3	651.3	660.8	712.9	744.8	869.7	775.6	895.1	NA	NA	-0.2	NA
Mechanical.....	313.1	266.5	258.0	245.3	289.3	312.0	255.0	281.2	NA	NA	-0.0	NA
Metallurgy and materials.....	1,053.3	900.9	815.7	804.0	918.1	1,056.5	959.5	1,021.1	NA	NA	3.8	NA
Engineering, NEC.....	1,530.5	1,563.0	1,608.0	1,810.4	1,979.6	2,186.6	2,663.9	2,799.2	NA	NA	4.2	NA
Environmental sciences.....	3,216.1	3,188.0	3,165.1	3,158.3	3,328.8	3,178.5	3,278.4	3,524.8	3,658.3	3,547.2	3.3	3.0
Atmospheric sciences.....	1,156.3	1,218.7	1,214.0	1,200.4	1,104.3	1,088.5	1,115.9	1,186.6	NA	NA	3.3	NA
Geological sciences.....	835.3	724.1	623.6	673.6	639.2	658.6	647.3	683.1	NA	NA	1.3	NA
Oceanography	611.7	625.6	578.7	670.0	673.0	665.8	752.5	797.2	NA	NA	2.1	NA
Environmental sciences, NEC.....	612.8	619.5	748.8	614.3	912.2	765.7	762.7	857.7	NA	NA	8.7	NA
Life sciences	12,849.0	13,253.0	14,014.3	15,736.4	17,964.7	22,538.1	24,434.0	26,167.6	27,498.4	26,985.7	6.2	5.7
Biological and agricultural	7,061.1	6,849.8	7,312.1	8,211.5	12,375.0	13,798.5	15,656.9	19,228.3	NA	NA	7.4	NA
Agricultural sciences.....	656.1	671.3	788.5	866.7	895.0	985.0	1,004.7	985.6	NA	NA	1.4	NA
Biological sciences (excluding environmental)	5,655.3	5,568.8	5,898.8	6,609.4	10,740.0	12,101.2	13,905.1	17,566.4	NA	NA	8.4	NA
Environmental biology	749.8	609.7	624.9	735.3	740.0	712.4	747.0	676.4	NA	NA	3.2	NA
Medical sciences.....	5,296.9	5,791.3	6,198.3	6,939.6	4,463.8	6,436.9	6,164.3	5,804.4	NA	NA	3.3	NA
Life sciences, NEC.....	491.1	611.9	503.8	585.3	1,125.9	2,302.7	2,612.9	1,135.0	NA	NA	7.4	NA
Mathematics and computer sciences.....	1,673.8	1,749.9	1,898.7	2,020.9	2,205.6	2,551.8	2,523.0	2,518.1	2,593.8	2,573.9	7.4	6.7
Computer sciences.....	1,192.6	1,323.8	1,445.8	1,547.0	1,659.6	1,977.3	1,959.6	1,934.2	NA	NA	10.0	NA
Mathematics	271.1	315.7	345.4	352.3	432.9	387.5	385.5	426.7	NA	NA	3.5	NA
Mathematics and computer sciences, NEC	210.1	110.4	107.5	121.6	113.1	187.1	177.9	157.1	NA	NA	1.8	NA
Physical sciences	4,178.2	4,343.1	4,351.5	4,149.0	4,788.0	4,497.2	4,779.2	4,731.5	4,977.5	4,867.5	0.4	0.5
Astronomy.....	776.4	810.9	756.9	773.3	880.3	742.1	720.7	821.4	NA	NA	2.0	NA
Chemistry.....	938.4	885.3	846.6	831.5	1,225.6	1,001.8	1,133.3	1,072.2	NA	NA	0.9	NA
Physics.....	2,120.8	2,164.2	2,203.6	2,267.1	2,405.4	2,406.3	2,514.1	2,355.8	NA	NA	-0.8	NA
Physical sciences, NEC.....	342.5	482.5	544.4	276.9	276.7	346.9	411.1	482.1	NA	NA	4.4	NA
Psychology	559.1	570.9	610.9	645.5	1,626.7	725.2	868.8	1,041.5	1,063.9	1,049.1	5.2	4.8
Biological aspects.....	66.9	60.5	43.0	18.4	8.2	13.3	10.2	21.9	NA	NA	-8.6	NA
Social aspects	88.8	101.2	100.8	68.0	56.0	58.5	50.4	47.7	NA	NA	-6.2	NA
Psychological sciences, NEC.....	403.4	409.2	467.1	559.1	1,562.5	653.4	808.3	972.0	NA	NA	11.8	NA
Social sciences.....	697.2	728.8	833.3	872.3	1,050.4	985.9	942.8	966.5	986.6	979.6	2.1	2.0
Anthropology.....	19.5	22.0	18.8	18.7	15.9	15.2	15.7	13.7	NA	NA	-3.6	NA
Economics.....	206.8	214.8	238.3	221.0	249.5	228.8	218.0	221.0	NA	NA	0.1	NA
Political science.....	17.8	14.8	20.9	20.6	22.6	19.1	17.6	17.4	NA	NA	0.4	NA
Sociology	43.9	27.1	104.2	85.5	90.6	93.4	92.2	117.5	NA	NA	0.6	NA
Social sciences, NEC	409.2	450.3	451.1	526.5	671.8	629.5	599.1	597.0	NA	NA	4.1	NA
Other sciences, NEC	874.1	947.6	996.2	1,236.8	1,160.2	1,217.7	1,279.4	1,252.5	1,197.9	1,260.2	5.1	4.6

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 2003, 2004, and 2005* (forthcoming).

Appendix table 4-33

Federal research and experimentation tax credit claims and number of corporate tax returns claiming the credit, by NAICS industry: 1998–2001

Industry	NAICS code	Tax credit claims (current \$ millions)				Tax returns			
		1998	1999	2000	2001	1998	1999	2000	2001
All industries.....	11, 21–23, 31–33, 42, 44–81	5,208	5,281	7,079	6,356	9,849	10,019	10,495	10,388
Manufacturing	31–33	3,395	3,891	4,855	4,209	4,990	4,721	4,826	4,765
Food.....	311	27	28	37	34	105	99	122	132
Beverage and tobacco products.....	312	16	9	8	12	10	8	7	10
Textiles, apparel, and leather	313–16	7	9	8	8	41	41	36	31
Wood products	321	1	2	2	2	34	29	26	31
Paper, printing, and support activities	322, 323	48	35	35	60	127	101	110	78
Petroleum and coal products	324	20	10	NA	35	26	27	NA	30
Chemicals	325	861	961	1,070	999	711	580	564	650
Pharmaceuticals and medicines	3254	628	713	801	806	381	250	247	297
Plastics and rubber products	326	21	26	25	19	163	113	108	118
Nonmetallic mineral products	327	11	11	8	10	42	36	36	27
Primary metals	331	7	7	6	6	31	36	55	43
Fabricated metal products	332	24	25	23	24	368	310	271	260
Machinery	333	179	130	149	154	446	417	450	425
Computer and electronic products	334	1,145	1,566	2,210	1,677	1,623	1,626	1,617	1,604
Computers and peripheral equipment.....	3341	346	587	691	488	279	252	245	346
Communications equipment.....	3342	362	433	651	433	424	377	285	344
Semiconductor and other electronic components	3344	338	427	740	567	555	539	596	552
Navigational, measuring, electromedical, and control instruments	3345	68	82	72	139	291	304	331	209
Electrical equipment, appliances, and components	335	119	136	178	181	418	401	397	411
Transportation equipment.....	336	748	778	903	786	162	125	195	186
Motor vehicles, trailers, and parts.....	3361–63	613	664	762	639	80	72	84	83
Aerospace products and parts	3364	108	96	123	131	43	34	47	53
Furniture and related products.....	337	7	6	8	9	43	38	57	32
Miscellaneous manufacturing	339	154	154	162	193	639	734	751	699
Medical equipment and supplies	3391	131	133	138	155	382	488	433	431
Nonmanufacturing.....	11, 21–23, 42, 44–81	1,813	1,390	2,224	2,147	4,859	5,298	5,669	5,623
Agriculture, forestry, fishing, and hunting.....	11	12	11	4	3	55	36	39	35
Mining, extraction, and support activities	21	9	4	15	10	15	12	15	44
Utilities	22	22	18	10	9	44	34	29	23
Construction	23	2	7	13	9	31	33	11	15
Trade.....	42, 44, 45	140	124	187	186	392	751	608	693
Transportation and warehousing.....	48, 49	14	14	21	16	18	17	21	19
Information.....	51	1,020	634	1,147	1,001	953	1,466	1,506	1,502
Publishing	511	699	277	707	623	635	858	913	975
Software	5112	686	264	686	603	612	840	890	952
Broadcasting and telecommunications	513	198	188	211	185	111	206	182	179
Finance, insurance, and real estate.....	52, 53	94	111	141	126	109	98	109	124
Professional, scientific, and technical services.....	54	420	418	612	650	2,383	2,645	2,959	2,887
Architectural, engineering, and related services.....	5413	15	34	43	44	142	211	163	136
Computer systems design and related services	5415	230	171	262	231	741	1,193	1,329	1,204
Scientific R&D services	5417	150	174	254	308	1,298	929	1,122	1,190
Management of companies and enterprises	55	43	13	37	82	55	39	66	52
Health care services	621–23	NA	4	1	1	NA	7	5	5

NA = not available

NAICS = North American Industry Classification System

NOTE: Data exclude IRS forms 1120S (S corporations), 1120-REIT (Real Estate Investment Trusts), and 1120-RIC (Regulated Investment Companies).

SOURCE: U.S. Internal Revenue Service, Statistics of Income program, special tabulations.

Appendix table 4-34

Company-funded R&D expenditures within company and contracted out to other companies in United States: 1993–2003

(Millions of dollars)

Sector	Within companies		Contracted out		Contracted out/ within company (%)
	Current	Constant	Current	Constant	
All industries					
1993	94,591	107,028	3,462	3,917	3.7
1994	97,131	107,614	3,618	4,009	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	170,492	7,846	7,538	4.4
2003	183,305	172,932	10,236	9,657	5.6
Manufacturing					
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	97,361	4,428	4,254	4.4
2003	108,079	101,963	5,212	4,917	4.8

NA = not available

NOTES: Data are company and other nonfederal funds for industrial R&D performance in United States within company and contracted to external organizations in United States. Starting with 1999 survey, estimates based on North American Industry Classification System. In prior years, 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/sbe/srs/indus/start.htm>.

Appendix table 4-35

R&D expenditures contracted out in United States, by selected NAICS industry: 1999–2003

(Millions of dollars)

Industry	NAICS code	1999	2000	2001	2002	2003
All industries.....	21–23, 31–33, 42, 44–81	9,240	NA	8,723	7,846	10,236
Manufacturing	31-33	4,080	4,794	3,957	4,428	5,212
Chemicals	325	2,386	2,783	2,065	2,485	2,838
Pharmaceuticals and medicines	3254	2,274	2,658	1,899	2,368	2,716
Computer and electronic products	334	101	168	565	411	409
Computers and peripheral equipment.....	3341	24	44	118	83	76
Communications equipment.....	3342	D	D	80	19	72
Semiconductor and other electronic components	3344	33	D	86	41	123
Navigational, measuring, electromedical, and control instruments	3345	12	31	278	264	130
Electrical equipment, appliances, and components	335	D	84	60 (S)	35	39
Transportation equipment.....	336	812	771	708	799	1,135
Motor vehicles, trailers, and parts.....	3361-63	D	D	657	617	946
Aerospace products and parts.....	3364	80	D	D	178	182
Selected nonmanufacturing industries						
Information.....	51	504	597	577	363	813
Publishing	511	D	161	187	113	410
Software	5112	181	157	177	102	395
Professional, scientific, and technical services.....	54	957	1,200	1,676	1,113	1,828
Computer systems design and related services	5415	51	119	233	86	153
Scientific R&D services	5417	832	907	1,310	890	1,533

NA = not available; D = data withheld to avoid disclosing operations of individual companies; S = imputation of >50%

NAICS = North American Industry Classification System

NOTE: Data are company and other nonfederal funds for industrial R&D performance contracted to external organizations in United States.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Industrial Research and Development (annual series), <http://www.nsf.gov/sbe/srs/indus/start.htm>.

Appendix table 4-36

Industrial technology alliances registered under National Cooperative Research and Production Act, by selected NAICS code: 1994–2003

NAICS code	Industry	1994–2003	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
na	All	524	63	115	97	45	31	50	45	26	30	22
311	Food manufacturing.....	1	0	0	0	0	0	0	0	0	1	0
324	Petroleum and coal products	43	6	15	10	0	3	3	0	3	3	0
325	Chemical	56	3	9	7	4	4	8	7	8	4	2
332	Fabricated metal products	20	2	2	6	1	2	1	0	4	1	1
333	Machinery	10	0	3	0	0	0	2	1	1	2	1
334	Computer and electronic products	55	3	11	10	1	7	0	4	0	11	8
335	Electrical equipment, appliances, and components	101	15	31	11	6	2	20	9	1	3	3
336	Transportation equipment	85	11	15	22	11	9	7	7	0	1	2
339	Miscellaneous manufacturing	1	0	0	0	0	0	0	0	0	1	0
513	Broadcasting and telecommunications	43	8	11	9	1	2	3	6	1	1	1
541	Professional, scientific, and technical services	31	1	7	2	5	0	1	4	6	2	3
na	Other	78	14	11	20	16	2	5	7	2	0	1

na = not applicable

NAICS = North American Industry Classification Code

NOTE: Data are annual counts of new alliances.

SOURCE: University of North Carolina–Greensboro, Cooperative Research (CORE) database, special tabulations.

Science and Engineering Indicators 2006

Industrial technology alliances classified by country of ultimate parent company, by technology and type (equity/nonequity): 1980–2003

Technology alliances	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total NT owned worldwide																								
Total	19	26	24	20	25	40	30	43	77	98	43	14	47	69	58	77	82	70	40	58	72	87	94	153
Equity	12	20	12	16	17	33	18	32	51	79	19	5	23	29	19	17	22	12	10	7	6	10	15	24
Nonequity	7	6	12	4	8	7	12	11	26	19	24	9	24	40	39	60	60	58	30	51	66	77	79	129
Information technologies	1	3	9	7	8	10	11	9	24	30	16	6	15	17	19	35	42	30	20	28	27	33	29	63
Equity	0	3	6	6	5	6	6	6	13	23	3	1	7	6	5	4	11	1	2	2	3	4	6	15
Nonequity	1	0	3	1	3	4	5	3	11	7	13	5	8	11	14	31	31	29	18	26	24	29	23	48
Biotechnology	3	5	4	1	3	6	2	7	9	5	11	1	11	9	12	12	20	14	6	18	22	48	56	52
Equity	0	3	0	0	3	6	0	3	3	2	7	1	3	4	4	1	7	2	2	1	2	2	4	3
Nonequity	3	2	4	1	0	0	2	4	6	3	4	0	8	5	8	11	13	12	4	17	20	46	52	49
New materials	0	5	3	0	1	2	4	5	11	4	4	2	4	8	3	3	6	2	3	2	4	3	1	7
Equity	0	4	2	0	0	2	2	4	6	3	2	1	4	5	2	2	2	0	0	0	1	0	0	0
Nonequity	0	1	1	0	1	0	2	1	5	1	2	1	0	3	1	1	4	0	3	2	4	2	1	7
Aerospace/defense	1	1	1	1	1	3	2	1	2	5	2	5	11	19	12	15	9	12	6	1	2	5	3	5
Equity	0	0	0	0	0	0	0	0	0	3	1	0	5	5	4	6	2	3	1	1	0	2	0	0
Nonequity	1	1	1	1	1	3	2	1	2	2	1	5	6	14	8	9	7	9	5	0	2	3	3	5
Automotive	1	0	1	1	1	3	1	2	10	12	0	0	0	1	3	2	3	7	5	3	9	3	5	16
Equity	1	0	1	1	0	3	1	2	9	12	0	0	0	0	1	1	1	4	1	0	3	1	4	4
Nonequity	0	0	0	0	1	0	0	0	1	0	0	0	0	1	3	1	2	6	1	2	9	0	4	12
Chemistry	10	9	3	4	5	10	1	9	15	19	6	3	7	11	8	7	2	3	3	7	4	0	1	4
Equity	10	8	1	4	4	10	1	9	14	18	5	3	5	7	6	5	1	2	1	2	1	0	0	1
Nonequity	0	1	2	0	1	0	0	0	1	1	1	0	2	4	2	2	1	1	2	5	3	0	1	3
United States only owned																								
Total	43	39	45	59	84	77	108	124	146	118	139	124	175	211	224	259	242	241	230	202	167	211	135	220
Equity	16	14	17	25	25	22	18	20	24	21	17	21	21	25	14	16	21	19	11	11	12	8	5	4
Nonequity	27	25	28	34	59	55	90	104	122	97	122	103	154	186	210	243	221	222	219	191	155	203	130	216
Information technologies	18	16	8	30	34	35	43	58	68	59	86	78	102	104	130	156	134	99	132	96	49	49	31	58
Equity	6	6	6	14	10	8	6	7	4	5	5	10	7	8	4	3	8	5	7	4	4	3	1	2
Nonequity	12	10	2	16	24	27	37	51	64	54	81	68	95	96	126	153	126	94	125	92	45	46	30	56
Biotechnology	6	11	21	11	27	25	38	33	34	20	11	16	27	53	52	51	51	84	56	79	87	135	94	135
Equity	0	4	4	2	4	8	2	6	5	3	3	3	2	3	4	5	2	4	2	3	4	2	2	1
Nonequity	6	7	17	9	23	17	36	27	29	17	8	13	25	50	48	46	49	80	54	76	83	133	92	134
New materials	0	2	4	4	4	4	12	10	12	7	7	7	13	17	11	13	14	12	10	8	8	5	6	8
Equity	0	1	2	0	4	2	4	1	4	2	4	3	4	4	1	3	2	3	0	2	2	0	0	0
Nonequity	0	1	2	4	0	2	8	9	8	5	3	4	9	13	10	10	12	9	10	6	6	5	6	8
Aerospace/defense	4	2	3	1	9	4	5	9	11	9	19	7	13	6	5	10	13	8	10	5	4	4	1	7
Equity	0	0	2	1	0	0	1	1	1	3	3	2	1	0	1	2	1	1	2	0	0	0	0	0
Nonequity	4	2	1	0	9	4	4	8	10	6	16	5	12	6	4	8	12	7	8	5	4	4	1	7
Automotive	1	1	0	1	0	1	3	5	6	6	6	1	1	4	8	6	12	18	9	6	12	8	4	8
Equity	1	0	0	0	0	0	2	3	3	1	3	0	0	0	2	0	3	4	2	1	2	1	2	1
Nonequity	0	1	0	1	0	1	1	2	3	5	3	1	1	4	6	6	9	14	7	5	10	7	2	7
Chemistry	4	1	1	4	6	2	4	3	5	11	9	9	10	21	14	13	3	23	24	9	9	11	5	9
Equity	4	1	0	3	5	2	3	2	4	6	3	3	6	4	1	2	0	3	0	1	1	1	1	0
Nonequity	0	0	1	1	1	0	1	1	1	5	6	6	4	17	13	11	3	20	24	8	8	10	4	9

Appendix table 4-37

Industrial technology alliances classified by country of ultimate parent company, by technology and type (equity/nonequity): 1980–2003

Technology alliances	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
United States-Europe owned																								
Total	38	35	67	44	78	82	100	114	111	115	87	92	125	129	158	178	151	138	165	135	151	151	128	147
Equity.....	16	21	31	20	27	25	43	41	45	51	23	22	26	34	22	9	17	18	19	25	18	14	5	4
Nonequity.....	22	14	36	24	51	57	57	73	66	64	64	70	99	95	136	169	134	120	146	110	133	137	123	143
Information technologies	5	12	31	12	31	29	37	46	43	39	38	38	48	45	49	60	39	49	62	40	51	35	35	36
Equity.....	3	7	16	4	11	6	16	18	16	13	6	8	6	8	5	3	5	6	7	4	2	2	4	0
Nonequity.....	2	5	15	8	20	23	21	28	27	26	32	30	42	37	44	57	34	43	55	36	49	33	31	36
Biotechnology.....	9	6	10	9	15	22	23	31	20	16	11	15	40	38	60	64	71	57	55	64	60	96	75	97
Equity.....	1	3	2	2	2	6	4	6	3	2	2	4	8	9	8	0	4	7	3	7	4	5	0	1
Nonequity.....	8	3	8	7	13	16	19	25	17	14	9	11	32	29	52	64	67	50	52	57	56	91	75	96
New materials.....	4	5	6	8	5	6	14	10	9	11	13	4	5	19	10	14	7	7	10	6	5	6	8	4
Equity.....	4	4	6	7	3	3	12	4	7	6	5	2	4	9	0	4	1	0	2	1	0	2	2	1
Nonequity.....	0	1	0	1	2	3	2	6	2	5	8	2	1	10	10	10	6	7	8	5	5	4	6	3
Aerospace/defense.....	6	1	4	3	9	3	4	5	7	9	15	11	14	6	8	10	9	10	14	4	2	10	7	5
Equity.....	0	0	1	0	2	0	0	0	1	1	5	3	4	0	3	1	3	0	0	1	0	1	0	0
Nonequity.....	6	1	3	3	7	3	4	5	6	8	10	8	10	6	5	9	6	10	14	3	2	9	7	5
Automotive.....	3	1	1	2	3	6	5	4	9	8	1	0	0	3	7	6	9	7	7	12	16	6	5	6
Equity.....	2	0	0	1	1	3	3	3	6	4	1	0	0	1	1	1	2	3	3	7	3	4	1	1
Nonequity.....	1	1	1	1	2	3	2	1	3	4	0	0	0	2	6	5	7	4	4	5	13	2	4	5
Chemistry.....	4	5	6	3	6	7	3	3	10	13	10	14	7	18	13	25	10	21	29	12	20	5	1	5
Equity.....	3	4	4	3	4	4	2	3	6	10	4	4	3	9	5	1	3	4	5	2	5	0	0	0
Nonequity.....	1	1	2	0	2	3	1	0	4	3	6	10	4	9	8	24	7	17	24	10	15	5	1	5
United States-Japan owned																								
Total	25	31	51	47	51	51	49	50	60	66	35	46	41	45	40	47	50	38	31	41	27	34	34	40
Equity.....	12	21	22	30	16	28	24	20	30	45	10	9	7	7	1	2	2	5	0	3	4	1	5	3
Nonequity.....	13	10	29	17	35	23	25	30	30	21	25	37	34	38	39	45	48	33	31	38	23	33	29	37
Information technologies	6	5	18	22	30	17	18	20	19	22	23	32	22	29	23	29	31	19	17	26	15	16	12	20
Equity.....	4	3	5	12	7	10	9	6	2	13	5	7	2	4	0	0	1	3	0	2	2	0	2	2
Nonequity.....	2	2	13	10	23	7	9	14	17	9	18	25	20	25	23	29	30	16	17	24	13	16	10	18
Biotechnology.....	6	8	12	7	7	15	14	10	6	6	2	2	5	10	7	6	12	13	7	12	7	13	21	11
Equity.....	1	1	1	3	0	1	3	3	1	0	1	0	2	3	0	0	0	1	0	0	1	0	2	0
Nonequity.....	5	7	11	4	7	14	11	7	5	6	1	2	3	7	7	6	12	12	7	12	6	13	19	11
New materials.....	0	3	2	6	4	6	9	8	9	8	4	3	6	1	3	4	1	3	2	2	3	2	2	3
Equity.....	0	3	2	5	4	4	6	2	6	5	2	0	2	0	0	0	0	0	0	1	0	0	1	0
Nonequity.....	0	0	0	1	0	2	3	6	3	3	2	3	4	1	3	4	1	3	2	1	3	2	1	3
Aerospace/defense.....	5	0	0	0	0	0	1	0	0	2	1	5	0	0	0	1	1	1	1	1	1	2	1	0
Equity.....	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonequity.....	5	0	0	0	0	0	0	0	0	2	1	5	0	0	0	1	1	1	1	1	1	2	1	0
Automotive.....	1	1	2	1	1	2	4	7	13	16	1	1	0	2	2	2	3	0	1	2	4	0	2	3
Equity.....	0	1	2	1	0	2	3	5	12	15	0	1	0	0	0	1	1	0	0	1	1	0	2	0
Nonequity.....	1	0	0	0	1	0	1	2	1	1	1	0	0	2	2	1	2	0	1	1	3	0	0	3
Chemistry.....	7	5	5	6	4	7	2	5	7	8	4	1	2	2	0	3	1	6	2	2	0	1	0	2
Equity.....	7	5	3	6	3	7	2	4	5	8	2	0	0	0	0	1	0	1	0	1	0	0	0	0
Nonequity.....	0	0	2	0	1	0	0	1	2	0	2	1	2	2	0	2	1	5	2	1	0	1	0	2

Industrial technology alliances classified by country of ultimate parent company, by technology and type (equity/nonequity): 1980-2003

Technology alliances	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
United States-NT owned																								
Total	12	15	14	10	13	14	11	14	34	30	21	9	26	28	27	42	45	31	18	35	40	51	43	84
Equity.....	8	14	8	10	9	11	8	10	22	20	7	4	9	13	8	6	11	3	3	3	4	3	5	9
Nonequity.....	4	1	6	0	4	3	3	4	12	10	14	5	17	15	19	36	34	28	15	32	36	48	38	75
Information technologies	0	1	5	4	2	5	2	4	10	10	9	4	9	6	12	24	25	16	11	21	18	17	14	35
Equity.....	0	1	3	4	1	2	1	3	5	6	1	1	2	1	2	2	5	1	0	1	2	0	3	4
Nonequity.....	0	0	2	0	1	3	1	1	5	4	8	3	7	5	10	22	20	15	11	20	16	17	11	31
Biotechnology.....	3	2	2	0	2	2	0	4	4	4	4	0	5	7	6	6	7	8	2	10	11	30	29	31
Equity.....	0	1	0	0	2	2	0	1	3	2	2	0	1	3	4	1	4	1	0	1	1	0	2	2
Nonequity.....	3	1	2	0	0	0	0	3	1	2	2	0	4	4	2	5	3	7	2	9	10	30	27	29
New materials.....	0	4	2	0	1	1	3	2	7	1	3	2	1	3	3	0	5	0	0	1	2	1	0	3
Equity.....	0	4	2	0	0	1	1	2	3	0	2	1	1	2	2	0	1	0	0	0	0	0	0	0
Nonequity.....	0	0	0	0	1	0	2	0	4	1	1	1	0	1	1	0	4	0	0	1	2	1	0	3
Aerospace/defense.....	0	0	1	0	1	0	0	0	0	3	1	2	7	5	3	7	7	2	4	0	1	3	2	2
Equity.....	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	3	1	0	1	0	0	1	0	0
Nonequity.....	0	0	1	0	1	0	0	0	0	1	1	2	5	3	3	4	6	2	3	0	1	2	2	2
Automotive.....	1	0	1	1	0	2	0	0	7	2	0	0	0	1	0	1	1	4	2	2	5	2	2	8
Equity.....	1	0	1	1	0	2	0	0	6	2	0	0	0	0	0	0	1	1	2	1	0	2	0	2
Nonequity.....	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	3	0	1	5	0	2	6
Chemistry.....	6	6	2	2	1	3	0	1	4	5	1	2	5	5	5	1	1	1	0	1	1	0	0	4
Equity.....	6	6	1	2	1	3	0	1	3	5	1	2	4	4	3	1	1	0	0	0	1	0	0	1
Nonequity.....	0	0	1	0	0	0	0	0	1	0	0	0	1	1	2	0	0	1	0	1	0	0	0	3
Europe only owned																								
Total	44	30	36	42	55	97	87	72	86	104	59	40	66	43	58	79	60	60	55	42	45	88	93	80
Equity.....	17	12	18	19	16	26	20	22	32	60	21	8	15	30	18	31	13	15	13	11	5	10	10	5
Nonequity.....	27	18	18	23	39	71	67	50	54	44	38	32	51	13	40	48	47	45	42	31	40	78	83	75
Information technologies	9	8	9	12	25	48	40	27	27	29	22	17	25	8	6	14	12	20	11	13	15	13	13	20
Equity.....	3	4	4	5	10	10	11	10	8	10	5	3	4	5	1	6	1	3	2	3	2	4	2	1
Nonequity.....	6	4	5	7	15	38	29	17	19	19	17	14	21	3	5	8	11	17	9	10	13	9	11	19
Biotechnology.....	6	5	3	11	10	29	10	17	26	14	7	1	12	9	26	24	17	14	19	13	22	59	69	58
Equity.....	2	0	2	4	2	8	2	3	4	6	5	0	1	5	6	7	3	4	3	3	0	4	2	1
Nonequity.....	4	5	1	7	8	21	8	14	22	8	2	1	11	4	20	17	14	10	16	10	22	55	67	57
New materials.....	4	5	5	9	4	8	13	5	7	12	2	2	6	9	4	3	5	4	4	2	0	4	1	0
Equity.....	2	3	4	4	1	3	3	2	4	7	1	0	1	8	0	0	1	0	0	1	0	2	0	0
Nonequity.....	2	2	1	5	3	5	10	3	3	5	1	2	5	1	4	3	4	4	1	0	2	1	0	0
Aerospace/defense.....	6	1	3	3	10	4	12	9	6	17	16	13	14	3	13	15	13	10	7	1	2	5	5	4
Equity.....	1	0	1	1	2	1	1	0	2	7	7	3	4	1	5	8	3	5	6	0	0	0	2	1
Nonequity.....	5	1	2	2	8	3	11	9	4	10	9	10	10	2	8	7	10	5	1	1	2	5	3	3
Automotive.....	8	2	4	1	2	1	3	2	3	4	3	0	0	0	3	6	7	10	8	13	5	1	4	5
Equity.....	1	0	1	1	1	0	0	0	2	3	1	0	0	0	0	1	3	3	4	3	3	0	3	2
Nonequity.....	7	2	3	0	1	1	3	2	1	1	2	0	0	0	3	5	4	7	4	10	2	1	1	3
Chemistry.....	8	3	5	4	1	3	5	5	8	9	8	4	5	7	6	9	8	4	13	4	5	3	1	2
Equity.....	6	2	4	4	1	2	3	5	7	9	4	0	2	5	5	4	3	1	1	2	0	0	0	0
Nonequity.....	2	1	1	0	0	1	2	0	1	0	4	4	3	2	1	5	5	3	12	2	5	3	1	2

Industrial technology alliances classified by country of ultimate parent company, by technology and type (equity/nonequity): 1980–2003

Technology alliances	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Europe-Japan owned																								
Total	9	17	17	17	19	29	31	25	18	21	20	17	20	23	16	23	18	9	19	10	15	23	19	21
Equity.....	6	10	8	3	7	14	14	14	6	17	13	8	9	8	2	3	6	0	4	4	2	8	1	3
Nonequity.....	3	7	9	14	12	15	17	11	12	4	7	9	11	15	14	20	12	9	15	6	13	15	18	18
Information technologies																								
Equity.....	2	3	2	0	1	3	3	1	2	3	3	3	1	2	1	1	1	0	1	2	1	5	0	2
Nonequity.....	2	3	6	5	8	4	11	3	5	3	3	6	6	7	6	7	6	4	8	2	7	9	5	6
Biotechnology.....																								
Equity.....	0	1	1	1	0	7	1	4	1	5	2	1	3	4	3	6	6	0	4	2	1	2	11	8
Nonequity.....	0	1	1	1	0	4	1	3	1	1	1	1	1	4	3	6	4	0	4	1	1	2	11	8
New materials.....																								
Equity.....	0	2	3	3	6	5	7	4	3	2	5	2	1	4	0	3	1	1	6	0	1	1	0	0
Nonequity.....	0	0	0	2	3	2	1	1	2	0	0	0	0	2	0	2	0	1	5	0	1	1	0	0
Aerospace/defense.....																								
Equity.....	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonequity.....	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Automotive.....																								
Equity.....	1	2	1	1	0	3	3	2	2	3	0	0	0	2	2	0	1	1	2	3	4	4	1	2
Nonequity.....	0	2	0	1	0	3	2	1	2	0	0	0	0	1	1	0	0	1	1	2	3	0	1	1
Chemistry.....																								
Equity.....	1	2	2	4	2	5	3	8	2	4	6	4	7	4	4	3	5	2	2	1	2	2	1	1
Nonequity.....	0	1	0	2	0	0	0	1	1	0	3	1	2	1	4	1	2	2	2	1	2	1	0	1
Europe-NT owned																								
Total	4	7	6	4	9	19	11	21	34	49	19	4	16	29	23	26	21	29	13	10	21	22	37	39
Equity.....	3	4	1	4	5	15	6	16	24	41	11	1	11	12	9	9	9	7	3	2	1	5	5	11
Nonequity.....	1	3	5	0	4	4	5	5	10	8	8	3	5	17	14	17	12	22	10	8	20	17	32	28
Information technologies																								
Equity.....	0	1	1	2	3	4	3	3	6	14	2	0	4	2	1	1	6	0	1	1	0	2	1	7
Nonequity.....	0	0	1	0	2	1	1	1	3	2	4	1	0	3	1	6	6	10	4	1	5	4	8	5
Biotechnology.....																								
Equity.....	0	2	0	0	0	3	0	0	0	0	5	1	2	1	0	0	3	1	1	0	1	2	0	1
Nonequity.....	0	0	1	0	0	1	0	4	1	1	0	4	1	6	4	4	4	4	2	4	7	12	21	13
New materials.....																								
Equity.....	0	1	1	0	0	1	0	3	4	3	1	0	2	5	0	3	0	2	2	0	1	1	0	2
Nonequity.....	0	0	0	0	0	0	0	1	1	0	1	0	0	2	0	2	0	2	0	0	0	0	0	0
Aerospace/defense.....																								
Equity.....	0	0	0	0	0	0	0	0	0	1	0	0	2	3	4	2	0	1	0	0	0	1	0	0
Nonequity.....	0	0	0	0	0	3	2	1	2	1	0	2	0	8	4	4	1	6	2	0	1	1	1	2
Automotive.....																								
Equity.....	0	0	0	0	1	0	1	0	2	5	0	0	0	0	1	1	1	1	0	0	3	1	2	5
Nonequity.....	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	3	0	1	3
Chemistry.....																								
Equity.....	3	2	1	2	3	3	1	7	9	10	5	1	2	4	3	6	0	2	3	5	3	0	1	0
Nonequity.....	0	1	1	0	1	0	0	0	0	1	1	0	1	2	0	2	0	0	2	4	3	0	1	0

Industrial technology alliances classified by country of ultimate parent company, by technology and type (equity/nonequity): 1980-2003

Technology alliances	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Japan only owned																								
Total	7	11	9	17	18	39	61	39	18	3	11	6	7	7	10	11	12	3	5	16	6	13	24	34
Equity	2	4	0	4	5	12	14	6	6	1	4	1	1	1	1	3	5	0	0	9	3	6	5	7
Nonequity	5	7	9	13	13	27	47	33	12	2	7	5	6	6	9	8	7	3	5	7	3	7	19	27
Information technologies																								
Equity	1	1	0	1	3	3	6	3	3	1	1	1	1	0	1	1	3	0	0	6	2	4	4	3
Nonequity	3	2	2	9	5	4	4	4	1	0	5	3	3	2	5	3	2	2	5	5	2	4	12	12
Biotechnology																								
Equity	0	0	0	1	1	2	3	2	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2
Nonequity	1	2	2	1	2	5	12	6	2	0	0	0	0	0	1	1	0	0	0	1	0	2	6	5
New materials																								
Equity	0	0	0	0	0	2	4	1	2	0	0	0	0	0	0	1	1	0	0	2	0	2	2	0
Nonequity	0	1	1	2	4	17	24	19	8	2	0	1	0	1	2	2	2	0	1	1	1	0	1	0
Aerospace/defense																								
Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Nonequity	0	1	0	1	1	0	3	1	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	2
Automotive																								
Equity	0	0	0	1	0	2	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0
Nonequity	0	0	0	0	1	2	2	0	2	0	0	1	3	3	0	3	1	0	0	0	0	0	0	3
Chemistry																								
Equity	0	0	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
Nonequity	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0
Japan-NT owned																								
Total	1	2	2	0	3	2	4	7	4	15	1	1	2	5	6	5	10	4	4	5	6	4	7	11
Equity	0	2	1	0	3	2	3	6	2	15	0	0	2	1	2	1	1	0	2	0	1	1	3	3
Nonequity	1	0	1	0	0	0	1	1	2	0	1	1	0	4	4	4	9	4	2	5	5	3	4	8
Information technologies																								
Equity	0	1	1	0	1	0	1	0	0	2	0	0	1	0	2	1	0	0	0	0	1	1	1	3
Nonequity	1	0	0	0	0	0	0	0	1	0	0	1	0	3	2	2	4	3	1	2	3	3	1	4
Biotechnology																								
Equity	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nonequity	0	0	1	0	0	0	1	1	1	0	1	0	0	0	0	2	2	0	0	2	0	0	2	2
New materials																								
Equity	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0
Nonequity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0
Aerospace/defense																								
Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonequity	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Automotive																								
Equity	0	0	0	0	0	1	0	2	1	5	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Nonequity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	3	0	1	0	0	1
Chemistry																								
Equity	0	1	0	0	1	1	0	1	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Nonequity	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Industrial technology alliances classified by country of ultimate parent company, by technology and type (equity/nonequity): 1980–2003

Technology alliances	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
NT only owned																								
Total	2	2	2	6	0	5	4	1	5	4	2	0	3	7	2	4	6	6	5	8	5	10	7	19
Equity.....	1	0	2	2	0	5	1	0	3	3	1	0	1	3	0	1	1	2	2	2	0	1	2	1
Nonequity.....	1	2	0	4	0	0	3	1	2	1	1	0	2	4	2	3	5	4	3	6	5	9	5	18
Information technologies	0	0	1	1	0	0	4	1	4	2	1	0	1	3	1	1	1	1	3	3	0	6	4	9
Equity.....	0	0	1	0	0	0	1	0	2	1	0	0	0	3	0	0	0	0	1	0	0	1	1	1
Nonequity.....	0	0	0	1	0	0	3	1	2	1	1	0	1	0	1	1	1	1	2	3	0	5	3	8
Biotechnology.....	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4	1	1	2	3	4	3	5
Equity.....	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Nonequity.....	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	2	3	4	2	5
New materials.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Equity.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonequity.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Aerospace/defense.....	1	1	0	1	0	0	0	0	0	0	1	0	2	3	1	2	1	3	0	1	0	0	0	1
Equity.....	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2	0	1	0	0	0	0
Nonequity.....	1	1	0	1	0	0	0	0	0	0	0	0	1	3	1	1	0	1	0	0	0	0	0	1
Automotive.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	2
Equity.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonequity.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	2
Chemistry.....	1	0	0	0	0	3	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Equity.....	1	0	0	0	0	3	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Nonequity.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

NT = non-Triad (country or region other than United States, Europe, or Japan)

NOTES: Data are annual counts of new technology alliances formed by domestic and multinational corporations worldwide. Alliances may be classified in more than one technology. Biotechnology includes biotechnological pharmaceuticals. Chemistry excludes biotechnology and includes nonbiotechnological pharmaceuticals. Country assignment based on headquarters of ultimate parent company of alliance members, not on location of members. Total number of alliances at top of table is sum of following exclusive ownership categories: U.S. only, U.S.-Europe, U.S.-Japan, U.S.-NT, Europe only, Europe-Japan, Europe-NT, Japan only, Japan-NT, and NT only. Special groupings: U.S. owned worldwide = sum of U.S. only, U.S.-Europe, U.S.-Japan, U.S.-NT; Europe owned worldwide = sum of Europe only, U.S.-Europe, Europe-Japan, Europe-NT; Japan owned worldwide = sum of Japan only, U.S.-Japan, Europe-Japan, Japan-NT; NT owned worldwide = sum of NT only, U.S.-NT, Japan-NT, Europe-NT.

SOURCE: Maastricht Economic Research Institute on Innovation and Technology, Cooperative Agreements and Technology Indicators (CATI-MERIT) database, special tabulations.

Science and Engineering Indicators 2006

Appendix table 4-38
Federal technology transfer indicators, by selected U.S. agency: FY 1987–2003

Agency	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Invention disclosures and patenting																	
All 10 agencies																	
Inventions disclosed	2,662	3,047	3,168	3,772	4,213	3,901	3,538	3,753	4,001	4,153	3,842	3,503	3,649	3,566	3,962	4,135	4,348
Patent applications filed	848	1,131	1,466	1,727	1,940	1,867	1,838	1,724	1,803	1,723	1,850	1,894	2,092	2,132	2,180	2,118	2,242
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,265	1,466	1,450	1,444	1,605	1,498	1,607
USDA																	
Inventions disclosed	83	144	127	158	127	83	110	111	133	129	260	208	162	109	118	151	121
Patent applications filed	44	50	71	76	110	70	68	40	80	91	56	64	84	78	83	90	60
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45	75	74	64	64	53	64
DOC																	
Inventions disclosed	43	31	49	46	30	55	66	51	65	71	58	40	38	34	26	17	21
Patent applications filed	8	15	28	28	18	53	43	41	35	60	49	66	30	20	12	12	5
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	19	28	18	21	20	9
DOD																	
Inventions disclosed	953	1,147	1,153	1,383	1,524	1,283	1,189	1,172	1,168	1,115	1,150	1,028	1,060	991	1,005	1,122	1,332
Patent applications filed	343	447	616	807	919	850	835	732	759	716	735	755	703	774	809	829	810
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	554	579	547	553	619	617	619
DOE																	
Inventions disclosed	857	1,003	1,053	1,335	1,666	1,698	1,443	1,588	1,758	1,886	1,500	1,313	1,474	1,371	1,527	1,498	1,469
Patent applications filed	252	336	382	366	397	432	497	543	571	564	705	751	850	788	792	711	866
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	384	512	525	515	605	551	627
EPA																	
Inventions disclosed	0	0	0	12	20	9	22	19	15	20	9	14	5	11	17	16	14
Patent applications filed	4	5	5	6	8	12	15	15	24	18	13	11	15	10	14	14	23
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	1	8	6	12	9	8
HHS																	
Inventions disclosed	194	226	209	215	215	311	282	307	307	305	268	287	328	375	434	431	472
Patent applications filed	98	145	225	239	261	224	193	171	166	147	148	132	241	263	255	262	279
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	152	171	180	132	119	116	136
DOI																	
Inventions disclosed	3	6	3	26	26	1	2	2	2	2	5	5	8	16	6	NA	NA
Patent applications filed	5	4	11	15	21	1	2	2	2	2	2	5	3	5	22	NA	NA
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	3	1	4	2	NA	NA
NASA																	
Inventions disclosed	496	462	532	538	570	416	384	457	517	550	550	554	525	574	696	775	736
Patent applications filed	94	129	125	181	205	225	185	179	164	123	140	105	129	158	152	166	163
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94	105	87	148	159	128	136
DOT																	
Inventions disclosed	0	0	0	1	2	1	1	1	0	4	2	4	1	0	2	0	0
Patent applications filed	0	0	0	1	1	0	0	1	2	2	1	3	0	1	3	0	0
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1	0	3	0	0	0
VA																	
Inventions disclosed	33	28	42	58	33	44	39	45	36	71	40	50	48	85	131	125	183
Patent applications filed	NA	NA	3	8	NA	0	0	0	0	0	1	2	37	35	38	34	36
Patents issued.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1	4	4	8

Federal technology transfer indicators, by selected U.S. agency: FY 1987–2003

Agency	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Invention licenses																	
All 10 agencies																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,719	3,035	3,140	3,580	3,656
New invention licenses.....	128	129	150	164	206	239	260	337	408	462	487	492	603	510	578	538	588
USDA																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	218	225	255	267	270
New invention licenses.....	30	24	23	33	29	31	28	9	21	26	22	23	29	24	32	26	27
DOC																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	43	43	40	41	101
New invention licenses.....	0	0	1	0	2	5	3	3	4	10	11	17	8	4	5	5	59
DOD																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	177	189	283	350	361
New invention licenses.....	10	10	14	15	25	19	20	28	34	41	34	34	61	67	49	39	49
DOE																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	981	1,094	1,162	1,327	1,223
New invention licenses.....	37	43	57	62	75	81	96	118	140	154	175	162	202	169	226	206	172
EPA																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	18	16	23	32
New invention licenses.....	0	0	0	1	2	2	2	9	1	2	1	0	2	3	4	9	9
HHS																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,041	1,222	1,007	1,213	1,298
New invention licenses.....	35	42	48	47	69	96	99	151	176	193	208	215	208	192	212	198	199
DOI																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	6	8	NA	NA
New invention licenses.....	3	3	0	0	0	NA	NA	8	3	NA	0	0	0	2	2	NA	NA
NASA																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	230	238	292	290	295
New invention licenses.....	13	7	7	6	4	5	12	11	29	36	36	40	46	46	42	52	66
DOT																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	1	0	0
New invention licenses.....	0	0	0	0	0	NA	NA	NA	NA	NA	0	1	0	0	1	0	0
VA																	
Active invention licenses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76	69	76
New invention licenses.....	0	0	0	0	0	NA	NA	NA	NA	NA	NA	NA	47	3	5	3	7
CRADAs																	
All 10 agencies																	
Traditional, active	34	98	271	460	731	1,078	1,628	2,471	3,121	3,530	3,078	3,038	2,996	2,939	2,837	2,816	2,936
New traditional	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,058	1,034	945	829	679	704	822
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	231	194	833	2,509	2,615
New nontraditional	NA	NA	NA	NA	NA	NA	NA	NA	NA	43	121	106	78	75	247	1,878	1,926
USDA																	
Traditional, active	9	51	98	128	177	172	172	208	229	244	273	288	298	257	217	222	223
New traditional	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93	102	101	69	49	58	51

Appendix table 4-38
Federal technology transfer indicators, by selected U.S. agency: FY 1987–2003

Agency	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	3	6
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1	4
DOC																	
Traditional, active.....	0	9	44	82	115	177	292	368	407	406	377	337	275	221	188	139	92
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90	77	67	46	26	26	12
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59	1,744	1,811
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	1,693	1,755
DOD																	
Traditional, active.....	3	10	36	113	193	277	365	563	845	1,086	1,360	1,424	1,350	1,364	1,418	1,376	1,523
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	408	399	449	425	296	347	523
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	547	537	611
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	163	102	107
DOE																	
Traditional, active.....	0	0	0	1	43	250	582	1,094	1,392	1,677	963	868	715	687	558	680	661
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	274	266	240	151	204	192	140
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0
EPA																	
Traditional, active.....	0	0	2	11	31	30	28	35	30	35	34	37	38	44	45	55	77
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	12	13	40	18	18	27
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	4	14
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	3	12
HHS																	
Traditional, active.....	22	28	89	110	144	146	149	147	152	NA	NA	NA	237	244	289	261	254
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	44	32	43	58	50	61	52	54
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	231	194	209	209	173
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	43	121	106	78	75	76	74	48
DOI																	
Traditional, active.....	0	0	1	12	11	1	3	9	15	22	23	30	30	40	41	NA	NA
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9	7	10	8	14	NA	NA
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9	NA	NA
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	NA	NA
NASA																	
Traditional, active.....	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	1	0	0	0	0
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0
DOT																	
Traditional, active.....	0	0	0	1	9	17	30	38	37	43	36	39	51	79	78	80	96
New traditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	13	5	38	11	9	7
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	4	12	0
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	5	0

Federal technology transfer indicators, by selected U.S. agency: FY 1987–2003

Agency	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
VA																	
Traditional, active	0	0	1	2	8	8	7	9	14	17	12	15	1	2	2	2	10
New traditional	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6	9	1	2	0	2	8
Nontraditional, active.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0
New nontraditional.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0

NA = data not requested or not available

CRADA = cooperative research and development agreement; DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; DOI = Department of the Interior; DOT = Department of Transportation; EPA = Environmental Protection Agency; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; USDA = Department of Agriculture; VA = Department of Veterans Affairs

NOTES: Licenses and patent data not limited to CRADA activity. Invention licenses include patent licenses and material transfer licenses. Data are for CRADAs for agreements established under authority of 15 U.S. Code § 3710a. NASA collaborative R&D agreements under the National Aeronautics and Space Act of 1958 not included. Active CRADAs are those legally in force at any time during fiscal year. Traditional CRADAs involve collaborative R&D by federal laboratory and nonfederal partners. Nontraditional CRADAs are established for special purposes, such as material transfer or technical assistance that may result in protected information. Data for FY 1999 on may not be comparable to prior years because of methodological changes in data collection and processing.

SOURCES: Before 1999: U.S. Department of Commerce, Office of the Secretary, *Summary Report on Federal Laboratory Technology Transfer: 2002 Report to the President and the Congress Under the Technology Transfer and Commercialization Act* (2002). For FY 1999 on: U.S. Department of Commerce, Office of the Secretary, *Summary Report on Federal Laboratory Technology Transfer: FY 2003 Activity Metrics and Outcomes, 2004 Report to the President and the Congress Under The Technology Transfer and Commercialization Act* (2004).

Science and Engineering Indicators 2006

Appendix table 4-39

SBIR award funding, by type of award and federal agency: FY 1983–2003

(Millions of current dollars)

FY	All agencies			DOD	HHS	NASA	DOE	NSF	USDA	DOT	EPA	ED	DOC
	Total	Phase I	Phase II										
1983.....	45	45	0	20	7	5	5	5	1	—	—	—	0
1984.....	108	48	60	45	23	13	16	7	2	2	1	1	0
1985.....	199	69	130	78	45	29	26	10	3	3	2	1	0
1986.....	298	99	199	151	57	36	29	15	4	4	3	2	1
1987.....	351	110	241	194	67	32	28	17	4	3	3	2	2
1988.....	389	102	285	208	73	47	30	17	4	3	3	2	1
1989.....	432	108	322	233	79	52	33	19	4	4	3	2	1
1990.....	461	118	342	241	84	62	39	20	4	4	3	2	1
1991.....	483	128	336	241	93	69	39	22	5	6	4	3	1
1992.....	508	128	371	242	102	79	43	23	6	3	4	2	2
1993.....	698	154	491	385	126	86	50	29	7	4	5	3	2
1994.....	718	220	474	354	133	116	53	34	7	7	5	3	4
1995.....	835	232	602	414	181	118	70	42	9	10	7	3	8
1996.....	916	229	646	479	189	114	62	41	9	7	5	3	6
1997.....	1,107	278	789	569	252	121	75	54	10	8	6	4	7
1998.....	1,067	262	804	540	267	96	76	53	13	6	5	5	7
1999.....	1,097	300	797	514	314	89	81	60	13	6	5	5	7
2000.....	1,190	302	888	549	355	93	86	65	15	6	8	6	7
2001.....	1,294	317	977	576	412	106	87	72	16	6	6	7	7
2002.....	1,435	412	1,023	621	487	110	96	78	17	6	6	8	7
2003.....	1,670	455	1,215	804	531	109	94	90	17	3	6	8	8

— = <\$500,000

DOC = Department of Commerce; DOD = Department of Defense; SBIR = Small Business Innovation Research program; 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; USDA = Department of Agriculture

NOTES: Data are agency obligations through FY 03 based on information from the Small Business Administration. Data on the SBIR program at the Department of Homeland Security are not available from this source because the program started in FY 04. Data do not necessarily contain subsequent-year revisions and may not add to total.

SOURCE: U.S. Small Business Administration, *Small Business Innovation Research Program Annual Report* (annual series).

Science and Engineering Indicators 2006

Appendix table 4-40

Small business technology transfer program award funding, by type of award and federal agency: FY 1994–2003

(Millions of current dollars)

FY	All agencies			DOD	HHS	NASA	DOE	NSF
	Total	Phase I	Phase II					
1994.....	19	19	0	9	5	2	2	1
1995.....	33	23	10	15	9	3	5	2
1996.....	65	23	42	29	18	9	5	3
1997.....	69	24	45	37	13	12	4	3
1998.....	65	20	45	33	17	6	5	3
1999.....	65	24	41	31	20	6	5	3
2000.....	70	24	46	33	22	6	5	5
2001.....	71	25	46	27	25	6	5	8
2002.....	92	36	55	43	31	7	6	6
2003.....	92	41	51	43	31	6	6	6

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: Data are agency obligations through FY 03 based on information from the Small Business Administration. Data do not necessarily contain subsequent-year revisions and may not add to total.

SOURCE: U.S. Small Business Administration, *Small Business Technology Transfer Program Annual Report* (annual series).

Science and Engineering Indicators 2006

Appendix table 4-41

Advanced Technology Program projects, number of participants, and funding: FY 1990–2002

Year	Projects	SA	JV	Participants	Project funding (current \$ millions)						
					Total	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

ATP = Advanced Technology Program; JV = joint ventures; SA = single applicants

NOTES: For multiyear projects, total funding attributed to year award was made. Participants include single applicants, JV leaders, and JV members and exclude subcontractors and informal collaborators.

SOURCE: U.S. Department of Commerce, National Institute of Standards and Technology, Advanced Technology Program, special tabulations.

Science and Engineering Indicators 2006

International R&D expenditures and R&D as percentage of gross domestic product, by selected country and for all OECD countries: 1981–2003

Year	United States	Japan ^a	Germany ^b	France	United Kingdom	Italy	Canada	Russian Federation	Total OECD
Billions of constant 2000 U.S. dollars ^c									
1981.....	123.1	42.3	29.7	19.5	21.1	8.6	6.4	NA	275.2
1982.....	129.7	45.3	30.4	20.9	NA	8.9	6.9	NA	288.4
1983.....	139.0	48.7	30.8	21.7	20.6	9.5	7.0	NA	304.1
1984.....	152.4	52.0	31.7	23.1	NA	10.4	7.6	NA	327.1
1985.....	165.5	57.6	34.8	24.1	22.3	11.9	8.2	NA	355.6
1986.....	169.4	58.6	35.8	24.5	23.4	12.3	8.6	NA	366.5
1987.....	173.0	62.6	37.7	25.5	23.8	13.3	8.7	NA	380.1
1988.....	177.3	67.3	39.0	26.7	24.3	14.1	9.0	NA	394.8
1989.....	181.1	73.4	40.5	28.4	25.0	14.8	9.6	NA	411.4
1990.....	186.7	79.4	41.0	30.2	25.1	15.7	10.0	33.5	429.8
1991.....	191.1	81.2	44.7	30.5	23.9	15.1	10.2	24.2	449.8
1992.....	191.8	80.4	43.5	31.0	23.4	14.7	10.7	10.2	451.7
1993.....	188.0	78.3	41.9	31.1	24.3	13.9	11.3	9.2	447.5
1994.....	188.0	77.6	41.2	30.9	24.8	13.2	12.2	8.8	450.7
1995.....	199.9	82.6	42.0	31.0	24.8	13.0	12.3	7.9	476.9
1996.....	210.7	88.1	42.3	31.2	24.5	13.2	12.2	8.7	498.0
1997.....	222.9	91.8	43.7	30.7	24.4	14.1	12.7	9.4	521.0
1998.....	235.1	94.2	45.0	31.0	25.0	14.5	14.1	8.4	540.7
1999.....	249.3	94.8	48.4	32.2	26.8	14.4	15.1	9.8	568.3
2000.....	265.2	98.4	50.9	33.4	27.4	15.2	16.8	11.1	601.5
2001.....	268.4	101.5	51.6	34.9	28.2	16.2	18.0	13.0	619.3
2002.....	266.6	102.8	52.2	35.8	29.0	NA	17.5	14.5	624.9
2003.....	269.3	NA	51.5	NA	NA	NA	17.6	15.9	NA
Percent of GDP									
1981.....	2.34	2.12	2.43	1.93	2.38	0.88	1.24	NA	1.93
1982.....	2.52	2.21	2.50	2.02	NA	0.90	1.39	NA	2.02
1983.....	2.58	2.34	2.50	2.06	2.20	0.95	1.36	NA	2.07
1984.....	2.64	2.43	2.50	2.16	NA	1.01	1.40	NA	2.13
1985.....	2.75	2.56	2.68	2.22	2.24	1.12	1.44	NA	2.24
1986.....	2.72	2.53	2.70	2.21	2.26	1.13	1.48	NA	2.24
1987.....	2.69	2.60	2.80	2.24	2.20	1.19	1.43	NA	2.25
1988.....	2.65	2.62	2.79	2.24	2.14	1.22	1.40	NA	2.23
1989.....	2.61	2.71	2.79	2.29	2.15	1.24	1.47	NA	2.24
1990.....	2.65	2.79	2.67	2.37	2.15	1.29	1.53	2.03	2.28
1991.....	2.71	2.76	2.52	2.37	2.07	1.23	1.60	1.43	2.21
1992.....	2.64	2.71	2.40	2.38	2.03	1.18	1.64	0.74	2.17
1993.....	2.52	2.63	2.33	2.40	2.06	1.13	1.70	0.77	2.12
1994.....	2.42	2.58	2.24	2.34	2.01	1.05	1.76	0.84	2.07
1995.....	2.51	2.69	2.25	2.31	1.95	1.00	1.72	0.85	2.09
1996.....	2.55	2.78	2.25	2.30	1.88	1.01	1.68	0.97	2.11
1997.....	2.58	2.84	2.29	2.22	1.81	1.05	1.68	1.04	2.13
1998.....	2.61	2.95	2.31	2.17	1.80	1.07	1.79	0.95	2.16

International R&D expenditures and R&D as percentage of gross domestic product, by selected country and for all OECD countries: 1981–2003

Year	United States	Japan ^a	Germany ^b	France	United Kingdom	Italy	Canada	Russian Federation	Total OECD
	Percent of GDP								
1999.....	2.65	2.96	2.44	2.18	1.87	1.04	1.82	1.00	2.19
2000.....	2.72	2.99	2.49	2.18	1.85	1.07	1.92	1.05	2.23
2001.....	2.73	3.07	2.51	2.23	1.86	1.11	2.03	1.18	2.28
2002.....	2.66	3.12	2.53	2.26	1.87	NA	1.90	1.25	2.26
2003.....	2.60	NA	2.50	NA	NA	NA	1.87	1.28	NA

NA = not available or not applicable

GDP = gross domestic product; OECD = Organisation for Economic Co-operation and Development

^aData for 1996 on may not be consistent with earlier data because of changes in methodology.

^b1981–90 data for West Germany.

^cConversions of foreign currencies to U.S. dollars calculated with each country's GDP implicit price deflator and with OECD purchasing power parity exchange rates.

SOURCE: OECD, *Main Science and Technology Indicators* (2004).

Science and Engineering Indicators 2006

Appendix table 4-43
International nondefense R&D expenditures and nondefense R&D as percentage of gross domestic product, by selected country: 1981–2003

Year	United States	Japan ^a	Germany ^b	France	United Kingdom	Italy	Canada
Billions of constant 2000 U.S. dollars ^c							
1981.....	92	42	29	16	16	8	6
1982.....	93	45	29	17	NA	9	7
1983.....	98	48	30	18	16	9	7
1984.....	106	52	30	19	NA	10	7
1985.....	114	57	33	20	18	11	8
1986.....	116	58	34	20	19	12	8
1987.....	118	62	36	21	20	13	8
1988.....	123	67	37	22	21	14	9
1989.....	130	73	39	23	19	15	9
1990.....	139	79	39	25	20	16	10
1991.....	148	81	43	25	20	15	10
1992.....	150	80	42	26	19	15	10
1993.....	147	77	41	26	20	14	11
1994.....	151	77	40	26	21	13	12
1995.....	162	82	41	27	21	13	12
1996.....	174	87	41	27	21	13	12
1997.....	185	91	42	28	21	14	12
1998.....	197	93	44	28	21	14	14
1999.....	213	94	47	30	23	14	15
2000.....	229	98	50	31	23	15	17
2001.....	231	101	51	32	25	16	18
2002.....	225	102	52	33	26	NA	NA
2003.....	225	NA	51	NA	NA	NA	NA
Percent of GDP							
1981.....	1.7	2.1	2.3	1.6	1.9	0.9	1.2
1982.....	1.8	2.2	2.4	1.6	NA	0.9	1.3
1983.....	1.8	2.3	2.4	1.7	1.7	0.9	1.3
1984.....	1.8	2.4	2.4	1.8	NA	1.0	1.3
1985.....	1.9	2.5	2.6	1.8	1.8	1.1	1.4
1986.....	1.9	2.5	2.6	1.8	1.8	1.1	1.4
1987.....	1.8	2.6	2.7	1.8	1.8	1.2	1.4
1988.....	1.8	2.6	2.7	1.8	1.8	1.2	1.3
1989.....	1.9	2.7	2.7	1.9	1.7	1.2	1.4
1990.....	2.0	2.8	2.5	1.9	1.7	1.3	1.5
1991.....	2.1	2.7	2.4	1.9	1.7	1.2	1.6
1992.....	2.1	2.7	2.3	2.0	1.7	1.2	1.6
1993.....	2.0	2.6	2.3	2.0	1.7	1.1	1.7
1994.....	1.9	2.6	2.2	2.0	1.7	1.0	1.7
1995.....	2.0	2.7	2.2	2.0	1.7	1.0	1.7
1996.....	2.1	2.8	2.2	2.0	1.6	1.0	1.7
1997.....	2.1	2.8	2.2	2.0	1.5	1.1	1.7
1998.....	2.2	2.9	2.3	2.0	1.5	1.1	1.8
1999.....	2.3	2.9	2.4	2.0	1.6	1.0	1.8
2000.....	2.4	3.0	2.4	2.0	1.6	1.1	1.9
2001.....	2.4	3.1	2.5	2.1	1.6	1.1	2.0
2002.....	2.2	3.1	2.5	2.1	1.7	NA	NA
2003.....	2.2	NA	2.5	NA	NA	NA	NA

NA = not available

GDP = gross domestic product

^aData for 1996 on may not be consistent with earlier data because of changes in methodology.

^b1981–90 data for West Germany.

^cNondefense R&D data are estimates. Nondefense R&D/GDP obtained directly from Organisation for Economic Co-operation and Development (OECD) reports, or for following countries and years, estimated by the National Science Foundation from OECD data: United States, all years; Japan, 1995 on; Germany, 1990 and earlier; United Kingdom, 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.

SOURCE: OECD, *Main Science and Technology Indicators* (2004).

Appendix table 4-44

International R&D expenditures for selected countries, by performing sector and source of funds: Selected years, 2002–04

Country and R&D performer	Source of R&D funds						Performers (% distribution)
	Total	Industry	Government	Higher education	Private nonprofit	Abroad	
Japan (2002) (billions of yen)	15,551,513	11,486,713	2,830,142	1,004,191	171,032	59,435	100.0
Industry	11,576,842	11,334,347	112,181	916	72,420	56,978	74.4
Government	1,483,209	17,621	1,460,999	768	3,696	125	9.5
Higher education	2,158,797	56,197	1,082,057	1,002,239	17,564	740	13.9
Private nonprofit	332,665	78,548	174,905	268	77,352	1,592	2.1
Percent distribution, sources	100.0	73.9	18.2	6.5	1.1	0.4	na
Germany (2003) (millions of euros)	54,310	35,910	16,910	0	230	1,260	100.0
Industry	37,910	34,610	2,310	NA	80	910	69.8
Government	7,300	200	6,800	NA	150	150	13.4
Higher education	9,100	1,100	7,800	NA	NA	200	16.8
Private nonprofit	NA	NA	NA	NA	NA	NA	0.0
Percent distribution, sources	100.0	66.1	31.1	0.0	0.4	2.3	na
France (2002) (millions of euros)	34,527	17,990	13,244	242	295	2,756	100.0
Industry	21,839	17,342	2,256	1	4	2,236	63.3
Government	5,709	382	4,997	16	13	301	16.5
Higher education	6,512	186	5,931	204	18	174	18.9
Private nonprofit	468	81	60	21	260	45	1.4
Percent distribution, sources	100.0	52.1	38.4	0.7	0.9	8.0	na
Italy (2003) (millions of euros)	NA	NA	NA	NA	NA	NA	na
Industry	7,102	5,555	1,025	5	15	502	na
Government	2,507	73	2,136	4	183	112	na
Higher education	NA	NA	NA	NA	NA	NA	na
Private nonprofit	NA	NA	NA	NA	NA	NA	na
Percent distribution, sources	NA	NA	NA	NA	NA	NA	na
United Kingdom (2002) (millions of pounds)	19,568	9,138	5,268	196	963	4,003	100.0
Industry	13,110	8,654	884	NA	4	3,567	67.0
Government	1,752	183	1,426	11	72	60	9.0
Higher education	4,416	257	2,914	182	714	349	22.6
Private nonprofit	290	44	44	2	174	26	1.5
Percent distribution, sources	100.0	46.7	26.9	1.0	4.9	20.5	na
Canada (2004) (millions of Canadian dollars)	24,487	11,314	8,672	1,781	787	1,933	100.0
Industry	12,534	10,403	327	NA	NA	1,804	51.2
Government	2,564	93	2,470	NA	NA	1	10.5
Higher education	9,319	807	5,847	1,781	758	126	38.1
Private nonprofit	70	11	28	NA	29	2	0.3
Percent distribution, sources	100.0	46.2	35.4	7.3	3.2	7.9	na
Russian Federation (2003) (billions of rubles)	169,862	52,257	101,252	807	278	15,268	100.0
Industry	116,248	44,402	59,897	78	205	11,667	68.4
Government	42,945	4,926	34,808	24	23	3,164	25.3
Higher education	10,298	2,870	6,294	704	13	416	6.1
Private nonprofit	372	59	253	1	38	21	0.2
Percent distribution, sources	100.0	30.8	59.6	0.5	0.2	9.0	na
South Korea (2003) (billions of won)	19,068,682	14,113,599	4,548,933	256,825	70,467	78,858	100.0
Industry	14,509,663	13,653,286	772,178	4,003	10,765	69,431	76.1
Government	2,401,051	130,956	2,264,378	557	3,861	1,299	12.6
Higher education	1,932,663	262,304	1,379,634	251,973	30,660	8,092	10.1
Private nonprofit	225,304	67,053	132,743	292	25,180	36	1.2
Percent distribution, sources	100.0	74.0	23.9	1.3	0.4	0.4	na
United States (2003) (millions of U.S. dollars)	284,584	179,615	88,778	7,944	8,247	NA	100.0
Industry	196,112	176,415	19,697	NA	NA	NA	68.9
Government	25,747	0	25,747	NA	NA	NA	9.0
Higher education	47,683	2,123	34,630	7,944	2,986	NA	16.8
Private nonprofit	15,042	1,077	8,704	NA	5,261	NA	5.3
Percent distribution, sources	100.0	63.1	31.2	2.8	2.9	NA	na

NA = assumed negligible or not available; na = not applicable

SOURCE: Organisation for Economic Co-operation and Development, special tabulations (2005).

Appendix table 4-45

Proportion of industry R&D expenditures financed by foreign sources, by selected country/region: 1981–2003

(Percent)

Year	Canada	France	Germany ^a	Italy	United Kingdom	Japan	Russian Federation	European Union-15
1981.....	7.4	7.1	1.2	4.3	8.7	0.1	NA	4.6
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	5.8
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.....	29.1	9.0	2.1	8.2	21.5	0.6	13.6	8.8
2001.....	21.0	8.7	2.4	6.6	24.4	0.5	9.2	9.4
2002.....	21.0	10.2	2.4	6.8	27.2	0.5	8.4	10.2
2003.....	21.0	NA	2.4	7.1	NA	NA	10.0	NA

NA = not available

^a1981–90 data for West Germany.SOURCE: Organisation for Economic Co-operation and Development, *Main Science and Technology Indicators* (2004).

Appendix table 4-46

Source of total and industry R&D expenditures for OECD countries: 1981–2002

(Percent distribution)

Year	Total R&D			Industry R&D	
	Government	Industry	Other	Government	Other sources
1981.....	44.0	51.8	4.2	22.1	77.9
1982.....	43.5	52.4	4.1	22.3	77.7
1983.....	43.1	52.8	4.1	22.0	78.0
1984.....	42.3	53.5	4.2	21.7	78.3
1985.....	41.5	54.3	4.3	21.8	78.3
1986.....	41.0	54.5	4.5	21.5	78.5
1987.....	40.9	54.4	4.7	21.5	78.5
1988.....	39.4	55.8	4.9	19.8	80.2
1989.....	37.8	57.0	5.2	17.7	82.3
1990.....	36.8	57.8	5.4	16.5	83.5
1991.....	35.6	58.8	5.6	14.6	85.4
1992.....	35.0	59.2	5.8	13.3	86.7
1993.....	35.2	58.6	6.2	12.7	87.3
1994.....	34.5	58.9	6.6	11.9	88.1
1995.....	34.0	59.4	6.6	11.7	88.3
1996.....	32.4	60.8	6.8	10.9	89.1
1997.....	31.2	61.9	6.9	10.2	89.8
1998.....	30.7	62.1	7.3	9.8	90.2
1999.....	29.7	63.0	7.3	8.9	91.1
2000.....	28.3	64.4	7.3	7.4	92.6
2001.....	28.8	63.6	7.6	7.2	92.8
2002.....	30.0	62.2	7.9	7.2	92.8

OECD = Organisation for Economic Co-operation and Development

SOURCE: OECD, *Main Science and Technology Indicators* (2004).

Science and Engineering Indicators 2006.

Appendix table 4-47

Government R&D budget appropriations, by selected country and socioeconomic objective: Selected years, 2001–04

(Percent)

Socioeconomic objective (2002)	United States (2004)	Japan (2003)	France (2003)	Germany (2004)	United Kingdom (2002)	Italy (2001)	South Korea (2004)	Russian Federation (2001)	Canada (2002)
Total (2000 US \$ millions)	116,889	24,525	17,316	16,263	12,041	10,189	7,275	6,092	5,421
Exploration and exploitation of Earth	0.8	1.7	0.9	1.8	1.7	1.9	1.4	1.5	2.9
Infrastructure and general planning of land use	1.6	4.1	0.5	1.9	1.3	0.4	4.2	1.4	3.2
Control and care of environment	0.5	0.9	3.0	3.4	1.6	2.3	4.5	1.6	4.6
Protection and improvement of human health	23.1	4.0	5.2	4.3	13.2	7.0	7.9	2.0	15.4
Energy	1.2	17.2	4.0	2.9	0.5	3.6	5.2	2.0	4.2
Agriculture production and technology	2.0	3.3	2.0	2.0	3.3	1.9	8.3	9.9	8.2
Industrial production and technology	0.4	7.2	6.4	12.1	4.7	10.2	27.4	11.2	12.4
Social structures and relationships	1.1	0.7	0.8	4.0	3.6	4.4	2.7	2.0	3.1
Exploration and exploitation of space	7.8	6.7	8.2	5.3	1.9	7.3	3.0	10.1	5.5
GUF	NA	34.4	22.8	39.4	20.2	43.7	NA	NA	29.5
Nonoriented research	5.7	15.3	21.9	17.1	13.3	13.3	22.1	14.0	6.1
Other civil research	0.0	0.0	1.6	0.6	0.4	0.0	NA	0.9	1.1
Defense	55.8	4.5	22.8	6.1	34.1	4.0	13.4	43.5	3.7

NA = not available

GUF = general university funds

NOTES: United States, Russian Federation, and South Korea do not have category equivalent to GUF. Conversions of foreign currency to U.S. dollars are calculated with Organisation for Economic Co-operation and Development (OECD) purchasing power parity exchange rates. Detail may not add to total because of rounding. 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.

SOURCES: OECD, unpublished tabulations (2005); and *Main Science and Technology Indicators* (2004).

Science and Engineering Indicators 2006.

Appendix table 4-48

R&D expenditures by majority-owned affiliates of foreign companies in United States, by country/region of ultimate beneficial owner: 1980 and 1987–2002

(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
Total	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	27,508
Manufacturing	1,245	3,809	4,773	5,915	7,282	7,839	9,056	9,560	10,855	12,828	13,090	14,270	18,788	19,991	20,990	20,054	20,228
Country/region																	
Canada.....	113	D	D	D	D	D	D	D	D	1,337	1,452	1,668	2,352	2,385	3,693	2,136	1,583
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	20,735
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	2,620
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	5,659
Italy.....	D	D	73	93	151	143	91	132	157	172	D	D	D	294	D	D	245
Netherlands.....	D	540	615	690	757	642	685	674	719	786	937	990	964	1,296	1,421	1,660	1,773
Sweden.....	D	124	160	205	271	225	322	180	263	D	D	687	713	428	373	465	454
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	3,295
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	5,459
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	3,263
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	D
Other.....	D	46	63	43	87	93	142	120	197	352	585	606	377	285	220	227	NA
Latin America/other Western Hemisphere	155	329	302	352	314	330	534	D	610	317	364	373	396	564	735	1,126	1,035
Middle East.....	2	14	9	10	9	9	20	38	62	72	100	103	132	D	D	177	D
Africa.....	D	D	D	D	D	D	4	5	2	D	D	D	D	D	D	36	35

D = data withheld to avoid disclosing operations of individual companies; NA = not available

NOTES: Preliminary estimates for 2002. Data are 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 refers to person proceeding up U.S. affiliate's ownership chain beginning with and including foreign parent not owned >50% by another person.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Foreign Direct Investment in the United States (annual series), <http://www.bea.gov/bea/di/di1fdiop.htm>.

Science and Engineering Indicators 2006

Appendix table 4-49

R&D performed by majority-owned affiliates of foreign companies in United States, by NAICS industry of affiliate: 1997–2002

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1997	1998	1999	2000	2001	2002
Total		17,216	22,375	24,027	26,180	26,463	27,508
Manufacturing	31–33	14,270	18,788	19,991	20,990	20,054	20,228
Food	311	239	224	205	200	197	117
Printing and related support activities	323	34	42	76	54	43	38
Petroleum and coal products	324	272	479	D	D	D	D
Chemicals	325	6,754	7,770	7,679	7,341	7,563	7,997
Basic chemicals	3251	617	623	832	D	D	491
Pharmaceuticals and medicines	3254	5,304	6,381	6,191	5,943	6,124	6,703
Other chemicals	325 (minus 3251, 3254)	833	766	656	NA	NA	542
Plastics and rubber products	326	331	349	372	301	305	285
Nonmetallic mineral products	327	214	146	172	199	206	214
Primary metals	331	60	65	61	67	D	50
Fabricated metal products	332	203	181	149	213	D	154
Machinery	333	721	677	898	1,748	D	1,872
Agriculture, construction, and mining machinery	3331	103	69	290	237	201	189
Industrial machinery	3332	83	90	D	119	D	333
Other machinery	333 (minus 3331, 3332)	535	518	D	1,392	1,408	1,351
Computer and electronic products	334	3,413	4,487	5,031	6,152	4,867	4,885
Computers and peripheral equipment	3341	120	324	D	D	104	675
Communications equipment	3342	2,243	3,045	3,431	4,607	2,998	2,087
Semiconductors and other electronic components	3344	586	635	917	1,003	1,077	351
Other electronic products	334 (minus 3341, 3342, 3344)	464	483	D	NA	688	1,772
Electrical equipment, appliances, and components	335	781	885	1,195	823	875	396
Transportation equipment	336	641	2,762	3,204	3,344	3,193	3,183
Motor vehicles, bodies, and trailers	3361, 3362, 3363	500	2,555	D	3,082	2,910	2,956
Other transportation equipment	336 (minus 3361, 3362, 3363)	141	207	D	262	283	227
Other manufacturing	607	721	NA	NA	NA	NA	—
Wholesale trade	42	D	D	D	D	D	4,973
Information	51	260	329	548	790	D	723
Publishing industries	511	D	D	D	D	D	679
Motion picture and sound recording industries	512	5	1	—	—	—	3
Broadcasting and telecommunications	513	7	6	D	D	13	NA
Information services and data processing services	514	D	D	D	D	180	NA
Finance and insurance (except depository institutions)	52	12	D	D	D	D	D
Professional, scientific, and technical services	54	597	685	836	828	804	964
Architectural, engineering, and related services	5413	12	13	36	18	13	D
Computer systems design and related services	5415	281	333	315	314	204	125
Management, scientific, and technical consulting	5416	—	—	0	0	D	12
Other professional, scientific, and technical services	54 (minus 5413, 5415, 5416)	303	339	485	495	D	D

D = data withheld to avoid disclosing operations of individual companies; NA = not available; — = <\$500,000

NAICS = North American Industry Classification System

NOTES: Preliminary estimates for 2002. Data for majority-owned (>50% ownership) nonbank U.S. affiliates of foreign parent companies. Data exclude expenditures for R&D conducted by others under contract.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Foreign Direct Investment in the United States (annual series), <http://www.bea.gov/bea/di/1fdiopl.htm>.

Appendix table 4-50

(Page 1 of 2)

**R&D funded by and performed by majority-owned affiliates of foreign companies in United States,
by NAICS industry of affiliate: 2002**

(Millions of current U.S. dollars)

Industry	Funded by affiliates			Performed by affiliates			
	Total	Performed by		Total	Funded by		
		Themselves	Others ^a		Themselves	Federal government	Others ^a
All industries.....	25,453	24,863	591	27,508	24,863	555	2,090
Manufacturing.....	19,746	19,222	524	20,228	19,222	521	484
Food.....	105	102	2	117	102	0	15
Beverages and tobacco products.....	84	80	4	80	80	0	0
Textiles, apparel, and leather products.....	D	D	0	D	D	0	0
Paper.....	82	81	1	81	81	0	0
Printing and related support activities.....	38	38	0	38	38	0	0
Petroleum and coal products.....	D	D	—	D	D	0	0
Chemicals.....	8,046	7,763	284	7,997	7,763	0	235
Basic chemicals.....	491	491	0	491	491	0	0
Resins and synthetic rubber, fibers, and filaments.....	261	261	0	261	261	0	0
Pharmaceuticals and medicines.....	6,752	6,469	284	6,703	6,469	0	235
Soap, cleaning compounds, and toilet preparations.....	321	321	0	321	321	0	0
Other.....	221	221	0	221	221	0	0
Plastics and rubber products.....	285	285	0	285	285	0	0
Nonmetallic mineral products.....	214	214	0	214	214	0	0
Primary and fabricated metals.....	161	155	6	204	155	45	4
Primary metals.....	49	48	1	50	48	0	2
Fabricated metal products.....	112	107	5	154	107	45	2
Machinery.....	1,732	1,727	5	1,872	1,727	D	D
Agriculture, construction, and mining machinery.....	190	189	2	189	189	0	0
Industrial machinery.....	333	333	—	333	333	0	0
Other.....	1,209	1,205	3	1,351	1,205	D	D
Computers and electronic products.....	4,579	4,395	185	4,885	4,395	D	D
Computers and peripheral equipment.....	675	675	0	675	675	0	0
Communications equipment.....	2,120	2,087	33	2,087	2,087	0	0
Semiconductors and other electronic components.....	351	351	0	351	351	0	0
Navigational, measuring, and other instruments.....	1,394	1,243	152	1,730	1,243	D	D
Other.....	39	39	0	42	39	0	3
Electrical equipment, appliances, and components.....	396	396	0	396	396	0	—
Transportation equipment.....	3,128	3,114	14	3,183	3,114	D	D
Motor vehicles, bodies and trailers, and parts.....	2,949	2,941	8	2,956	2,941	D	D
Other.....	179	173	6	227	173	54	0
Other.....	726	704	22	704	704	1	0
Wholesale trade.....	4,037	3,976	61	4,973	3,976	D	D
Motor vehicles and motor vehicle parts and supplies.....	382	328	55	334	328	0	6
Electrical goods.....	1,127	1,126	2	1,137	1,126	D	D
Petroleum and petroleum products.....	205	205	0	206	205	1	0
Other.....	2,321	2,317	5	3,296	2,317	0	979
Retail trade.....	53	53	0	53	53	0	0
Food and beverage stores.....	—	—	0	—	—	0	0
Other.....	53	53	0	53	53	0	0
Information.....	712	711	2	723	711	D	D
Publishing industries.....	668	667	1	679	667	D	D
Motion picture and sound recording industries.....	3	3	0	3	3	0	—
Telecommunications.....	11	11	1	11	11	0	0
Other.....	30	30	0	30	30	0	0
Finance (except depository institutions) and insurance.....	D	D	0	D	D	D	0
Finance, except depository institutions.....	D	D	0	D	D	D	0
Insurance carriers and related activities.....	6	6	0	6	6	0	0
Real estate and rental and leasing.....	21	21	0	21	21	0	0
Real estate.....	—	—	0	—	—	0	0
Rental and leasing (except real estate).....	21	21	0	21	21	0	0
Professional, scientific, and technical services.....	362	362	0	964	362	0	602
Architectural, engineering, and related services.....	58	58	0	D	58	0	D
Computer systems design and related services.....	125	125	0	125	125	0	0
Management, scientific, and technical consulting.....	12	12	0	12	12	0	0

Appendix table 4-50

(Page 2 of 2)

**R&D funded by and performed by majority-owned affiliates of foreign companies in United States,
by NAICS industry of affiliate: 2002**

(Millions of current U.S. dollars)

Industry	Funded by affiliates			Performed by affiliates			
	Total	Performed by		Total	Funded by		
		Themselves	Others ^a		Themselves	Federal government	Others ^a
Other	168	168	0	D	168	0	D
Other industries	D	D	4	D	D	D	0
Agriculture, forestry, fishing, and hunting	77	77	0	77	77	0	0
Mining	140	136	4	D	136	D	0
Utilities	13	13	0	13	13	0	0
Construction	D	D	—	D	D	0	0
Transportation and warehousing	3	3	0	3	3	0	0
Management of nonbank companies and enterprises	7	7	0	7	7	0	0
Administration, support, and waste management	30	30	0	30	30	0	0
Health care and social assistance	D	D	0	D	D	0	0
Accommodation and food services	—	—	0	—	—	0	0
Miscellaneous services	D	D	0	D	D	0	0

— = ≤\$500,000; D = data withheld to avoid disclosing operations of individual companies

NAICS = North American Industry Classification System

^a Including but not limited to foreign parents and affiliates of same company located outside United States.

NOTES: Second and fifth data columns show same data from two different perspectives. Data are preliminary estimates. Data for majority-owned (>50%) nonbank U.S. affiliates of foreign parent companies. R&D funded based on R&D spending according to funding source. R&D performed refers to R&D expenditures according to who conducts R&D activity, whether for performer itself or for others under contract, and excludes R&D expenditures conducted by others under contract.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Foreign Direct Investment in the United States (2002), <http://www.bea.gov/bea/di/di1fdiop.htm>.*Science and Engineering Indicators 2006*

Appendix table 4-51

R&D performed abroad by majority-owned foreign affiliates of U.S. parent companies, by country/economy/region: 1994–2002

(Millions of current U.S. dollars)

Country/economy/region	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	11,877	12,582	14,039	14,593	14,664	18,144	20,457	19,702	21,151
Manufacturing	10,053	10,791	12,205	12,505	12,819	16,388	18,455	17,383	18,696
Country/region									
Canada	836	1,068	1,563	1,823	1,750	1,681	2,332	2,131	2,345
Europe	8,676	9,144	9,662	10,003	10,387	12,217	12,870	12,060	D
Belgium	469	292	356	310	320	375	412	407	511
France	1,372	1,271	1,315	1,281	1,328	1,452	1,465	1,411	1,480
Germany	2,849	3,068	3,073	2,940	3,022	3,377	3,115	3,280	3,603
Ireland	396	171	193	320	363	251	465	537	D
Italy	365	346	554	569	584	504	592	541	567
Netherlands	415	495	547	480	384	374	369	475	477
Spain	D	288	327	181	184	D	213	181	199
Sweden	72	691	443	405	445	1,036	1,341	813	1,316
Switzerland	191	242	190	230	223	231	286	392	405
United Kingdom	2,158	1,935	2,139	2,843	3,065	4,000	4,111	3,642	3,735
Asia/Pacific	1,775	1,865	2,076	1,869	1,603	3,226	3,936	4,194	3,881
Australia	230	287	409	369	290	294	349	286	329
China	7	13	25	35	52	319	506	D	646
Hong Kong	51	55	38	82	66	214	D	289	D
India	5	5	9	22	23	20	D	D	80
Indonesia	5	9	6	5	4	1	2	3	3
Japan	1,130	1,286	1,333	1,089	962	1,523	1,630	1,507	1,433
Korea	17	29	34	41	29	101	143	157	167
Malaysia	27	21	23	32	30	161	218	D	D
New Zealand	7	9	16	18	15	9	8	10	6
Philippines	14	23	14	12	10	31	40	48	50
Singapore	167	63	88	73	62	426	551	755	589
Taiwan	110	61	75	84	55	122	143	139	70
Thailand	3	5	5	5	4	7	13	18	22
Latin America/other									
Western Hemisphere	477	389	546	663	748	613	663	562	D
Argentina	21	22	42	43	56	26	38	43	24
Brazil	238	249	346	437	446	288	253	199	306
Chile	2	15	6	7	6	4	11	8	6
Colombia	8	9	9	12	11	6	10	11	10
Costa Rica	2	2	2	4	6	2	D	4	7
Mexico	183	58	121	126	191	238	303	248	284
Venezuela	17	25	9	11	14	40	22	24	42
Middle East	98	97	170	208	141	389	630	726	889
Israel	96	97	169	208	141	389	630	726	889
Africa	15	19	21	26	35	18	25	29	D
South Africa	14	17	18	22	30	14	21	24	D
Addenda									
Eastern Europe	5	18	36	48	79	54	83	38	68
European Union	8,271	8,852	9,386	9,691	10,058	11,900	12,472	11,578	D
OPEC	24	35	16	18	19	42	25	27	46

D = data withheld to avoid disclosing operations of individual companies

OPEC = Organization of the Petroleum Exporting Countries

NOTES: Data for majority-owned (>50% ownership) 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 made by others for affiliates under contract. Manufacturing data exclude petroleum manufacturing before 1999. European Union includes 12 countries for 1994 and 15 countries thereafter. Preliminary estimates for 2002.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of U.S. Direct Investment Abroad (annual series), <http://www.bea.gov/bea/di/di1usdop.htm>.

Appendix table 4-52

R&D performed abroad by majority-owned foreign affiliates of U.S. parent companies, by selected NAICS industry of affiliate: 1999–2002

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1999	2000	2001	2002
All industries.....	na	18,144	20,457	19,702	21,151
Mining.....	21	8	16	10	13
Utilities.....	22	—	2	1	1
Manufacturing.....	31–33	16,388	18,455	17,383	18,696
Food.....	311	367	279	321	338
Chemicals.....	325	4,340	4,609	4,503	4,819
Primary and fabricated metals.....	na	151	184	153	181
Machinery.....	333	748	772	743	642
Computers and electronic products.....	334	3,773	5,440	5,697	5,278
Electrical equipment, appliances, and components....	335	214	310	339	418
Transportation equipment.....	336	5,669	5,765	4,690	5,898
Wholesale trade.....	42	515	553	739	635
Information.....	51	161	410	410	507
Finance (except depository institutions) and insurance....	52	1	3	13	14
Professional, scientific, and technical services.....	54	1,040	930	1,062	1,237
Other industries.....	na	31	89	83	48

— = ≤ \$500,000; na = not applicable

NAICS = North American Industry Classification System

NOTES: Data for majority-owned (>50% ownership) 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 made by others for affiliates under contract. Manufacturing data exclude petroleum manufacturing before 1999. Preliminary estimates for 2002.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of U.S. Direct Investment Abroad (annual series), <http://www.bea.gov/bea/di/di1usdop.htm>.

Appendix table 4-53

R&D expenditures in United States by U.S. MNC parent companies: 1994–2002

(Millions of current U.S. dollars)

Type of R&D expenditure and sector	1994	1995	1996	1997	1998	1999	2000	2001	2002
All industries									
Performed	91,574	97,667	100,551	106,800	113,777	126,291	135,467	143,017	137,968
For themselves	75,673	NA	NA	NA	NA	111,008	NA	NA	NA
For federal government	13,267	NA	NA	NA	NA	7,810	NA	NA	NA
For others	2,633	NA	NA	NA	NA	7,473	NA	NA	NA
Funded	81,234	NA	NA	NA	NA	121,352	NA	NA	NA
Performed by themselves	75,673	NA	NA	NA	NA	NA	NA	NA	NA
Performed by others	5,561	NA	NA	NA	NA	NA	NA	NA	NA
Manufacturing									
Performed	79,035	86,414	89,973	94,791	100,770	104,842	109,744	115,118	111,237
For themselves	64,762	NA	NA	NA	NA	91,575	NA	NA	NA
For federal government	12,039	NA	NA	NA	NA	7,658	NA	NA	NA
For others	2,233	NA	NA	NA	NA	5,609	NA	NA	NA
Funded	69,552	NA	NA	NA	NA	101,085	NA	NA	NA
Performed by themselves	64,762	NA	NA	NA	NA	NA	NA	NA	NA
Performed by others	4,790	NA	NA	NA	NA	NA	NA	NA	NA

NA = not available

MNC = multinational corporation

NOTES: Preliminary estimates for 2002. U.S. 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. Funded R&D is based on R&D funded by MNC parent company itself, regardless of performer. R&D performed includes 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; excludes R&D conducted by others under contract. Estimates for 1999 on based on North American Industry Classification System, and data for manufacturing include petroleum industry. In prior years, estimates based on Standard Industrial Classification System, and manufacturing data excluded the petroleum industry. Full methodology notes available at original source (see below).

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of U.S. Direct Investment Abroad (annual series), <http://www.bea.gov/bea/di/di1usdop.htm>.

Science and Engineering Indicators 2006

Appendix table 4-54

(Page 1 of 2)

R&D performed in United States by U.S. MNC parent companies, by NAICS industry: 1999–2002

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1999	2000	2001	2002
All industries.....	na	126,291	135,467	143,017	137,968
Mining.....	21	212	329	411	382
Oil and gas extraction.....	211	53	46	49	33
Other mining.....	na	159	284	362	349
Utilities.....	22	81	108	59	52
Manufacturing.....	31–33	104,842	109,744	115,118	111,237
Food.....	311	934	890	914	1,023
Beverages and tobacco products.....	312	501	467	469	D
Textiles, apparel, and leather products.....	313	275	248	125	D
Wood products.....	321	31	D	D	78
Paper.....	322	1,478	1,498	1,358	1,384
Printing and related support activities.....	323	129	148	D	157
Petroleum and coal products.....	324	990	977	1,002	1,044
Chemicals.....	325	28,198	29,212	31,927	32,830
Basic chemicals.....	3251	1,627	1,569	1,742	1,656
Resins and synthetic rubber, fibers and filaments.....	3252	2,784	2,963	2,972	2,537
Pharmaceuticals and medicines.....	3254	18,382	20,591	23,169	24,373
Soap, cleaning compounds, and toilet preparations.....	3256	1,957	2,249	2,153	2,007
Other chemicals.....	na	3,449	1,841	1,892	2,257
Plastics and rubber products.....	326	1,031	955	929	936
Nonmetallic mineral products.....	327	371	406	339	338
Primary and fabricated metals.....	na	1,320	1,417	1,038	1,308
Primary metals.....	331	760	818	484	513
Fabricated metal products.....	332	560	600	554	794
Machinery.....	333	5,252	7,196	8,561	8,023
Agriculture, construction, and mining machinery.....	3331	1,340	1,343	1,484	1,527
Industrial machinery.....	3332	1,250	1,607	1,579	1,377
Other machinery.....	na	2,662	4,247	5,497	5,120
Computers and electronic products.....	334	30,298	35,616	38,356	35,308
Computers and peripheral equipment.....	3341	5,659	6,952	7,727	7,675
Communications equipment.....	3342	13,276	14,614	14,526	11,588
Audio and video equipment.....	3343	407	436	359	334
Semiconductors and other electronic components.....	3344	8,997	10,252	11,114	11,213
Navigational, measuring, and other instruments.....	3345	1,579	2,960	4,158	4,146
Magnetic and optical media.....	3346	381	402	473	352
Electrical equipment, appliances, and components.....	335	2,958	2,511	2,008	1,745
Transportation equipment.....	336	29,162	25,834	25,147	23,224
Motor vehicles, bodies and trailers, and parts.....	3361, 3362, 3363	17,513	16,223	18,183	16,575
Other transportation equipment.....	na	11,649	9,611	6,964	6,649
Furniture and related products.....	337	90	D	128	130
Miscellaneous manufacturing.....	339	1,826	2,176	2,570	3,151
Wholesale trade: durable and nondurable goods.....	42	4,000	3,755	4,032	2,751
Professional and commercial equipment and supplies.....	4214	2,635	2,404	2,489	1,378
Other durable goods wholesalers.....	na	774	577	638	535
Petroleum and petroleum products.....	4227	D	231	238	219
Other nondurable goods wholesalers.....	na	D	543	666	619
Information.....	51	6,763	8,251	9,514	9,427
Publishing industries.....	511	4,050	5,510	6,452	6,436
Motion picture and sound recording industries.....	512	D	12	12	12
Broadcasting and telecommunications.....	513	869	820	796	626
Broadcasting, cable networks, and program distribution.....	5131, 5132	D	14	14	38
Telecommunications.....	5133	D	806	782	589
Information services and data processing services.....	514	D	1,909	2,254	2,353
Finance (except depository institutions) and insurance.....	52	315	510	617	672
Finance (except depository institutions).....	na	240	458	477	543
Securities, commodity contracts, and other intermediation and related activities.....	523	D	254	D	340
Other finance (except depository institutions).....	na	D	204	D	204
Insurance carriers and related activities.....	524	75	52	141	128
Professional, scientific, and technical services.....	54	8,522	10,042	10,348	10,471
Architectural, engineering, and related services.....	5413	49	24	18	D
Computer systems design and related services.....	5415	7,453	8,359	8,929	8,941

Appendix table 4-54

(Page 2 of 2)

R&D performed in United States by U.S. MNC parent companies, by NAICS industry: 1999–2002

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1999	2000	2001	2002
Management, scientific, and technical consulting	5416	D	D	D	544
Advertising and related services	5418	D	D	D	D
Other professional, scientific, and technical services	na	716	874	802	934
Other industries	na	1,556	2,729	2,918	2,977
Agriculture, forestry, fishing and hunting.....	11	2	2	D	31
Construction	23	D	D	D	D
Retail trade.....	44-45	D	D	D	D
Transportation and warehousing.....	48-49	26	8	12	13
Real estate and rental and leasing.....	53	D	6	7	7
Real estate.....	531	0	0	0	0
Rental and leasing (except real estate)	532	D	6	7	7
Management of companies and enterprises (except bank companies).....	55	0	0	0	0
Administration, support, and waste management	56	6	D	D	D
Health care and social assistance.....	62	D	30	32	31
Accommodation and food services	72	25	31	42	D
Accommodation	721	0	0	0	0
Food services and drinking places.....	722	25	31	42	D
Miscellaneous services.....	na	15	16	17	52

D = data withheld to avoid disclosing operations of individual companies; na = not applicable

MNC = multinational corporation; NAICS = North American Industry Classification System

NOTES: Preliminary estimates for 2002. U.S. 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: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of U.S. Direct Investment Abroad (annual series), <http://www.bea.gov/bea/di/di1usdop.htm>.

Appendix table 4-55

Company and other nonfederal funds for industrial R&D performed abroad: 1985–2003

(Millions of current U.S. dollars)

Year	Total	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

NAICS = North American Industry Classification System

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 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/sbe/srs/indus/start.htm>.

Science and Engineering Indicators 2006

Appendix table 4-56

(Page 1 of 2)

Company and other nonfederal funds for industrial R&D performed abroad, by NAICS industry: 1999–2003

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1999	2000	2001	2002	2003
All industries.....	21–23, 31–33, 42, 44–81	16,765	17,463	17,869	24,868	28,768
Manufacturing industries.....	31–33	12,354	12,252	10,998	17,093	17,509
Food.....	311	87	95 (S)	210	300	278
Beverage and tobacco products.....	312	D	D	0	D	D
Textiles, apparel, and leather.....	313–16	D	D	26	25	31
Wood products.....	321	D	0	D	D	7
Paper, printing, and support activities.....	322, 323	D	D	D	544	694
Petroleum and coal products.....	324	D	9	D	16	20
Chemicals.....	325	3,243	3,578	2,328	3,989	4,492
Basic chemicals.....	3251	D	256	152	249	230
Resin, synthetic rubber, fibers, and filament.....	3252	D	D	D	366	385
Pharmaceuticals and medicines.....	3254	2,832	3,030	1,720	3,268	3,751
Other chemicals.....	Other 325	95	D	D	107	126
Plastics and rubber products.....	326	172	168	181	218	234
Nonmetallic mineral products.....	327	40	40	15	32	27
Primary metals.....	331	7	D	12	23	19
Fabricated metal products.....	332	75	65	61	371	311
Machinery.....	333	707	736	527	788	772
Computer and electronic products.....	334	1,902	1,705	2,562	3,763	2,927
Computers and peripheral equipment.....	3341	289	D	478 (S)	383 (S)	172
Communications equipment.....	3342	D	377	633	969	983
Semiconductor and other electronic components.....	3344	302	327	852	1,647	1,006
Navigational, measuring, electromedical, and control instruments.....	3345	1,112	679	586	756	758
Other computer and electronic products.....	Other 334	D	D	12	7	9
Electrical equipment, appliances, and components.....	335	433	455	418 (S)	279	306
Transportation equipment.....	336	3,933	3,640	2,832	5,160	5,314
Motor vehicles, trailers, and parts.....	3361–63	D	D	D	4,598	4,680
Aerospace products and parts.....	3364	D	D	138	552	624
Other transportation equipment.....	Other 336	17	D	D	10	9
Furniture and related products.....	337	D	D	D	—	D
Miscellaneous manufacturing.....	339	963	942	1,226	1,578	2,076
Medical equipment and supplies.....	3391	D	D	1,150	1,472	1,963
Other miscellaneous manufacturing.....	Other 339	D	D	76	106	113
Nonmanufacturing industries.....	21–23, 42, 44–81	4,411	5,211	6,871	7,775	11,258
Mining, extraction, and support activities.....	21	48	43	37	48	46
Utilities.....	22	0	0	0	D	D
Construction.....	23	D	D	D	D	D
Wholesale trade.....	42	NA	NA	NA	NA	7,521
Professional and commercial equipment and supplies, including computers.....	4214	NA	NA	NA	NA	4,007
Electrical goods.....	4216	NA	NA	NA	NA	141
Drugs and druggists' sundries.....	4222	NA	NA	NA	NA	2,976
Other wholesale trade.....	Other 42	NA	NA	NA	NA	397
Retail trade.....	44, 45	NA	NA	NA	NA	299
Transportation and warehousing.....	48, 49	0	0	0	0	D
Information.....	51	1,379	1,564	1,672	1,806	2,074
Publishing.....	511	637	940	983	D	1,359
Newspaper, periodical, book, and database.....	5111	0	D	8	D	24
Software.....	5112	637	D	975	1,058	1,336
Broadcasting and telecommunications.....	513	D	D	D	D	D
Telecommunications.....	5133	D	D	D	D	D
Other broadcasting and telecommunications.....	Other 513	NA	NA	NA	NA	0
Other information.....	Other 51	D	D	D	D	D
Finance, insurance, and real estate.....	52, 53	D	D	24	113	72
Professional, scientific, and technical services.....	54	523	904	881	964	1,145
Architectural, engineering, and related services.....	5413	D	371	78	D	98
Computer systems design and related services.....	5415	146	D	302	600	592
Scientific R&D services.....	5417	287	292	488	297	449
Other professional, scientific, and technical services.....	Other 54	D	D	12	D	5

Appendix table 4-56

(Page 2 of 2)

Company and other nonfederal funds for industrial R&D performed abroad, by NAICS industry: 1999–2003

(Millions of current U.S. dollars)

Industry/sector	NAICS code	1999	2000	2001	2002	2003
Management of companies and enterprises	55	18	D	D	D	D
Health care services	621–23	D	D	D	D	3
Other nonmanufacturing	56, 61, 624, 71, 72, 81	14	75 (S)	43	65	76

S = imputation of >50%; D = data withheld to avoid disclosing operations of individual companies; — = < \$500,000; NA = not available

NAICS = North American Industry Classification System

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 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/sbe/srs/indus/start.htm>.

Science and Engineering Indicators 2006

Appendix table 4-57

R&D expenditures and population, by region: 2000

Region	R&D (PPP \$ billions)	Population (millions)
World.....	728,751	6,086
Africa.....	4,723	812
Asia.....	209,043	3,676
Europe.....	203,063	728
North America.....	285,295	415
Oceania.....	8,677	31
South America and Caribbean...	17,951	423

PPP = purchasing power parity

NOTES: R&D estimates from 80 countries. Detail may not add to total because of rounding.

SOURCES: Organisation for Economic Co-operation and Development, *Main Science and Technology Indicators* (2004); Iberoamerican Web of Science and Technology Indicators, <http://www.ricyt.edu.ar>, accessed 1 April 2005; and United Nations Educational, Scientific and Cultural Organization (UNESCO), Institute for Statistics, <http://www.uis.unesco.org>, accessed 7 April 2005.

Science and Engineering Indicators 2006

Share of business expenditures for R&D, by industry and selected country/economy: 2001–03

(Percent)

Industry	ISIC	EU (2002)	Australia (2002)	Belgium (2002)	Canada (2003)	Czech Republic (2003)	Denmark (2002)	Finland (2003)
Total business enterprise		100.0	100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing	15–37	82.9	47.3	82.3	60.1	63.6	59.4	84.0
Food products, beverages, and tobacco	15–16	1.9	3.9	2.4	0.7	0.4	4.4	1.3
Textiles, textile products, leather, and footwear	17–19	0.6	0.4	2.0	0.8	0.9	0.3	0.3
Wood, paper, printing, and publishing	20–22	0.6	1.9	1.1	2.7	0.3	0.6	3.3
Chemical, rubber, plastics, and fuel products	23–25	22.5	8.3	41.9	11.0	7.6	26.0	9.9
Coke, refined petroleum products, and nuclear fuel	23	0.7	0.8	0.9	0.6	0.0	0.0	0.4
Chemicals and chemical products	24	20.0	6.5	39.1	10.0	6.2	24.7	7.8
Chemicals excluding pharmaceuticals	24 (minus 2423)	6.8	2.7	15.8	1.4	3.1	2.5	5.4
Pharmaceuticals	2423	13.2	3.8	23.3	8.6	3.0	22.2	2.4
Rubber and plastics products	25	1.7	0.9	1.9	0.4	1.4	1.3	1.7
Other nonmetallic mineral products	26	0.8	1.4	1.5	0.1	2.9	0.2	0.5
Basic metals	27	1.0	4.6	2.5	1.6	1.0	0.3	1.2
Fabricated metal products (excluding machinery and equipment)	28	1.1	1.1	2.2	1.4	1.8	0.8	2.1
Machinery and equipment, instruments, and transportation equipment	29–35	53.9	25.3	27.8	41.3	48.1	26.0	64.6
Machinery and equipment, NEC	29	7.5	3.2	4.2	2.4	7.3	8.7	6.2
Office, accounting, and computing machinery	30	2.2	0.6	0.3	3.4	0.1	0.7	0.1
Electrical machinery and apparatus, NEC	31	3.1	0.7	2.2	1.3	3.3	3.5	4.1
Radio, TV, and communication equipment	32	12.2	3.5	15.2	22.2	3.7	4.5	49.8
Instruments, watches, and clocks	33	5.1	5.1	1.2	2.1	2.0	8.5	3.2
Motor vehicles	34	15.9	10.6	2.4	2.6	27.4	0.1	0.3
Other transportation equipment	35	7.9	1.7	2.4	7.4	4.3	0.1	0.9
Building and repairing ships and boats	351	0.3	1.0	0.0	NA	0.0	NA	0.3
Aircraft and spacecraft	353	6.8	0.0	2.1	7.3	2.5	NA	0.2
Railroad and other transportation equipment, NEC	352+359	0.8	0.7	0.2	0.1	1.7	NA	0.4
Furniture, manufacturing, NEC	36	0.6	0.3	0.7	0.5	0.4	0.8	0.4
Recycling	37	NA	0.1	0.1	NA	0.3	NA	0.2
Electricity, gas, and water	40–41	0.8	0.9	0.9	1.3	0.0	0.3	0.7
Construction	45	0.4	1.1	1.0	0.3	1.3	0.5	1.4
Services	50–99	14.8	42.2	14.5	35.8	34.6	39.7	13.4
Wholesale and retail trade, repairs	50–52	NA	7.2	1.0	5.1	2.9	3.9	0.0
Hotels and restaurants	55	NA	0.3	0.0	NA	0.0	NA	NA
Transport and storage	60–63	NA	0.5	0.9	0.2	0.5	NA	0.4
Post and telecommunications	64	NA	5.6	1.7	1.7	0.1	3.9	6.2
Post and courier activities	641	NA	0.5	0.0	NA	0.1	NA	NA
Telecommunications	642	NA	5.1	1.7	NA	0.0	3.8	NA
Financial intermediation	65–67	NA	4.0	0.7	2.1	0.1	6.5	NA
Real estate, renting, and business activities	70–74	NA	23.7	9.7	26.8	28.6	25.2	NA
Computer and related activities	72	NA	12.0	4.0	9.2	8.5	14.0	5.0
Software consultancy and supply	722	NA	11.6	2.3	NA	6.4	11.8	NA
Other computer and related activities, NEC	72 (minus 722)	NA	0.5	1.7	NA	2.1	2.2	NA
R&D	73	NA	5.8	0.3	13.4	16.6	1.2	NA
Other business activities	74	NA	5.8	5.3	4.2	3.5	10.0	1.0
Community, social, and personal services	75–99	NA	0.9	0.5	NA	2.4	0.2	0.8

Share of business expenditures for R&D, by industry and selected country/economy: 2001–03

(Percent)

Industry	ISIC	France (2002)	Germany (2003)	Ireland (2001)	Italy (2003)	Japan (2002)	Korea (2003)	Netherlands (2002)
Total business enterprise		100.0	100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing	15–37	84.6	90.9	68.3	78.1	91.1	85.5	76.0
Food products, beverages, and tobacco	15–16	2.3	0.8	5.5	1.7	2.2	1.4	6.2
Textiles, textile products, leather, and footwear	17–19	0.5	0.6	0.7	1.3	0.5	0.6	0.3
Wood, paper, printing, and publishing	20–22	0.4	0.3	1.4	0.5	1.0	0.3	0.9
Chemical, rubber, plastics, and fuel products	23–25	22.8	18.2	11.1	17.1	18.5	8.9	19.8
Coke, refined petroleum products, and nuclear fuel	23	0.8	0.1	0.0	0.1	0.3	1.0	0.2
Chemicals and chemical products	24	18.8	16.4	9.8	14.1	15.8	6.7	18.8
Chemicals excluding pharmaceuticals	24 (minus 2423)	6.0	9.5	2.1	5.8	7.5	5.0	10.4
Pharmaceuticals	2423	12.8	7.0	7.7	8.4	8.3	1.7	8.4
Rubber and plastics products	25	3.2	1.6	1.3	2.9	2.3	1.2	0.9
Other nonmetallic mineral products	26	1.1	0.8	1.2	0.6	1.3	0.7	0.7
Basic metals	27	1.3	0.7	0.3	0.4	2.4	1.9	1.8
Fabricated metal products (excluding machinery and equipment)	28	0.8	1.4	0.8	0.8	0.7	0.5	1.3
Machinery and equipment, instruments, and transportation equipment	29–35	54.6	67.6	47.1	55.1	64	70.8	44.6
Machinery and equipment, NEC	29	4.5	10.8	2.2	9.3	7.8	5.1	10.6
Office, accounting, and computing machinery	30	1.1	1.5	2.8	0.7	12.8	1.1	26.7
Electrical machinery and apparatus, NEC	31	3.5	2.9	1.3	3.3	8.1	1.5	1.7
Radio, TV, and communication equipment	32	13.1	9.4	33.5	13.2	15.9	45.5	0.2
Instruments, watches, and clocks	33	6.8	6.1	6.5	5.2	3.9	1.4	2.6
Motor vehicles	34	14.6	29.3	0.7	12.6	14.3	13.7	2.3
Other transportation equipment	35	10.9	7.6	0.1	10.8	1.1	2.5	0.6
Building and repairing ships and boats	351	0.1	0.2	0.0	0.2	0.1	1.7	0.4
Aircraft and spacecraft	353	10.7	6.3	0.0	9.7	0.8	0.6	0.0
Railroad and other transportation equipment, NEC	352+359	0.2	1.1	0.1	0.9	0.2	0.3	0.2
Furniture, manufacturing, NEC	36	0.9	0.4	0.5	0.5	0.7	0.3	0.4
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	0.5	0.7	1.1	0.5
Construction	45	0.4	0.1	NA	0.2	1.2	4.4	0.7
Services	50–99	11.1	8.5	31.6	20.9	6.8	9.0	19.5
Wholesale and retail trade, repairs	50–52	0.0	NA	0.3	1.7	0.4	0.1	5.4
Hotels and restaurants	55	0.0	NA	0.0	0.0	NA	0.0	NA
Transport and storage	60–63	NA	2.2	0.0	0.2	0.2	0.0	0.3
Post and telecommunications	64	5.8	NA	0.1	0.2	NA	3.0	0.3
Post and courier activities	641	NA	NA	0.0	0.0	NA	0.0	NA
Telecommunications	642	5.7	NA	0.1	0.2	NA	3.0	NA
Financial intermediation	65–67	NA	NA	1.1	3.0	0.0	0.0	0.9
Real estate, renting, and business activities	70–74	5.3	5.9	29.5	15.8	6.1	5.7	12.3
Computer and related activities	72	3.8	NA	27.5	3.3	1.7	4.1	6.5
Software consultancy and supply	722	3.4	NA	24.5	2.5	NA	3.5	5.2
Other computer and related activities, NEC	72 (minus 722)	0.3	NA	3.0	0.7	NA	0.6	1.3
R&D	73	NA	NA	0.8	10.9	4.2	0.3	2.5
Other business activities	74	1.5	NA	1.3	1.5	0.2	1.3	3.3
Community, social, and personal services	75–99	NA	NA	0.6	0.1	NA	0.2	0.2

Share of business expenditures for R&D, by industry and selected country/economy: 2001–03

(Percent)

Industry	ISIC	Norway (2003)	Poland (2002)	Spain (2002)	Sweden (2003)	United Kingdom (2002)	United States (2002) ^a
Total business enterprise		100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing		50.5	81.1	68.4	87.9	77.3	70.9
Food products, beverages, and tobacco	15–16	5.7	1.8	2.9	0.6	2.3	1.1
Textiles, textile products, leather, and footwear	17–19	0.8	1.2	1.6	0.1	0.1	0.1
Wood, paper, printing, and publishing	20–22	3.2	0.7	0.9	2.1	0.3	1.8
Chemical, rubber, plastics, and fuel products	23–25	7.5	32.9	20.5	21.8	32.1	12.1
Coke, refined petroleum products, and nuclear fuel	23	0.1	0.9	1.0	0.2	2.0	0.6
Chemicals and chemical products	24	6.6	28.3	18.1	21.1	29.6	10.7
Chemicals excluding pharmaceuticals	24 (minus 2423)	3.8	10.0	5.2	1.6	4.4	3.3
Pharmaceuticals	2423	2.8	18.3	13.0	19.5	25.2	10.9
Rubber and plastics products	25	0.8	3.7	1.3	0.4	0.5	0.8
Other nonmetallic mineral products	26	0.7	1.2	1.4	0.3	0.4	0.2
Basic metals	27	3.2	3.8	1.7	1.7	0.4	0.2
Fabricated metal products (excluding machinery and equipment)	28	1.9	0.5	1.6	0.6	0.4	0.7
Machinery and equipment, instruments, and transportation equipment	29–35	26.0	37.8	36.8	60.4	40.9	50.3
Machinery and equipment, NEC	29	7.1	9.0	6.6	7.0	5.9	3.3
Office, accounting, and computing machinery	30	0.1	0.1	1.1	1.0	1.1	10.1
Electrical machinery and apparatus, NEC	31	2.3	9.2	3.9	2.1	3.5	3.1
Radio, TV, and communication equipment	32	5.4	4.8	4.4	22.1	7.3	9.8
Instruments, watches, and clocks	33	5.8	2.0	2.2	5.5	3.4	10.3
Motor vehicles	34	1.8	6.2	9.6	18.9	7.1	7.9
Other transportation equipment	35	3.5	6.4	9.0	3.8	12.7	5.6
Building and repairing ships and boats	351	3.1	1.2	1.8	0.1	0.7	NA
Aircraft and spacecraft	353	0.3	4.5	6.1	3.2	10.3	5.0
Railroad and other transportation equipment, NEC	352+359	0.1	0.7	1.1	0.4	1.7	0.6
Furniture, manufacturing, NEC	36	1.3	1.3	0.8	0.3	0.4	0.8
Recycling	37	0.1	0.0	0.1	NA	0.0	NA
Electricity, gas, and water	40–41	2.1	1.1	1.5	0.7	0.9	0.1
Construction	45	2.2	0.4	1.1	0.2	0.3	0.1
Services	50–99	33.4	12.5	27.3	10.4	20.2	27.4
Wholesale and retail trade, repairs	50–52	2.8	0.0	2.0	0.0	NA	1.3
Hotels and restaurants	55	0.0	0.0	0.2	0.0	NA	NA
Transport and storage	60–63	1.4	0.2	0.8	0.1	NA	0.2
Post and telecommunications	64	3.3	5.1	7.3	1.5	5.7	NA
Post and courier activities	641	0.0	0.0	0.0	NA	NA	NA
Telecommunications	642	3.3	5.1	7.3	NA	NA	0.9
Financial intermediation	65–67	2.8	0.1	2.6	1.3	NA	1.0
Real estate, renting, and business activities	70–74	23.2	5.0	13.0	6.5	13.8	NA
Computer and related activities	72	13.6	0.0	6.7	2.6	6.8	10.4
Software consultancy and supply	722	9.9	0.0	5.6	1.6	NA	4.2
Other computer and related activities, NEC	72 (minus 722)	3.6	0.0	1.1	1.0	NA	6.2
R&D	73	3.6	4.9	0.1	3.7	4.3	6.8
Other business activities	74	6.0	0.1	6.2	0.3	2.7	NA
Community, social, and personal services	75–99	0.0	2.1	1.3	0.9	0.1	NA

NA = not available

EU = European Union; ISIC = International Standard Industrial Classification; NEC = not elsewhere classified

^aData for United States adjusted to reclassify some wholesale trade R&D as manufacturing R&D.

NOTES: Data are for years in parentheses. Because Organisation for Economic Co-operation and Development (OECD) and National Science Foundation (NSF) analysts adjust country data to achieve internationally comparable estimates, these 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 (March 2005); and NSF, special tabulations.