

Appendix table 5-5
Expenditures for academic R&D, by field: Selected years, 1973–2003

Field	1973	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Millions of current dollars																
All fields.....	2,884	6,063	16,286	17,585	18,818	19,951	21,027	22,170	23,046	24,370	25,855	27,530	30,067	32,797	36,370	40,077
Science	2,551	5,201	13,630	14,679	15,756	16,795	17,672	18,655	19,338	20,531	21,786	23,269	25,513	27,778	30,848	34,079
Physical sciences	328	677	1,807	1,939	2,055	2,130	2,177	2,256	2,258	2,371	2,483	2,605	2,712	2,804	3,016	3,273
Astronomy.....	24	59	170	211	238	259	267	304	276	288	303	385	386	378	402	392
Chemistry	114	244	648	671	705	740	760	771	802	821	876	919	961	1,007	1,131	1,220
Physics	167	323	842	881	921	940	957	989	988	1,059	1,078	1,149	1,207	1,241	1,287	1,420
Other.....	23	52	147	176	191	191	193	191	193	204	226	153	158	178	196	240
Mathematics	37	78	222	230	248	272	282	279	288	289	310	313	341	360	388	429
Computer sciences.....	36	124	515	554	555	608	646	682	690	710	747	861	876	956	1,125	1,304
Earth, atmospheric, and ocean sciences	209	508	1,069	1,119	1,242	1,319	1,397	1,434	1,489	1,533	1,624	1,692	1,765	1,831	2,020	2,188
Atmospheric sciences	NA	76	173	175	194	210	203	208	224	246	269	288	288	301	341	396
Earth sciences.....	NA	188	355	384	413	417	456	457	446	450	514	545	563	555	640	724
Ocean sciences.....	NA	176	377	389	427	458	455	473	533	537	546	604	633	675	720	774
Other.....	209	68	164	171	207	234	283	295	285	301	296	254	281	300	318	294
Life sciences	1,530	3,218	8,725	9,472	10,196	10,851	11,468	12,188	12,716	13,591	14,596	15,630	17,468	19,216	21,421	23,764
Agricultural sciences	277	676	1,349	1,458	1,512	1,558	1,661	1,814	1,910	1,966	1,996	2,036	2,177	2,326	2,452	2,555
Biological sciences.....	557	1,028	2,859	3,064	3,304	3,536	3,711	3,836	3,912	4,183	4,584	5,039	5,619	5,945	6,581	7,392
Medical sciences.....	646	1,423	4,154	4,546	4,964	5,324	5,639	6,070	6,391	6,908	7,472	8,003	8,986	10,191	11,501	12,787
Other.....	51	91	363	404	417	433	457	468	503	534	545	552	686	753	887	1,030
Psychology	74	110	253	283	329	350	358	371	382	396	444	464	517	583	672	769
Social sciences.....	231	339	703	750	815	896	954	1,019	1,097	1,125	1,131	1,252	1,299	1,442	1,586	1,661
Economics	48	91	201	209	222	231	243	250	271	261	261	266	255	272	285	314
Political science	26	54	115	125	142	151	161	173	180	175	176	200	230	253	272	289
Sociology	62	87	132	156	163	183	196	215	231	257	253	271	301	329	378	372
Other.....	96	107	255	260	288	331	354	380	415	432	442	514	513	588	651	686
Other sciences	106	146	336	332	315	369	390	427	419	515	449	451	535	586	620	691
Engineering	333	862	2,656	2,907	3,062	3,156	3,355	3,515	3,707	3,839	4,069	4,261	4,554	5,019	5,522	5,999
Aeronautical/astronautical	NA	53	164	180	197	213	217	241	233	247	250	260	257	339	343	402
Bioengineering/biomedical	NA	NA	NA	NA	NA	NA	NA	NA	NA	77	102	137	174	213	282	314
Chemical.....	NA	61	218	244	261	274	279	297	317	317	327	349	376	415	431	454
Civil.....	NA	83	284	315	340	371	403	431	455	472	495	529	601	664	717	776
Electrical/electronic.....	NA	183	663	679	704	698	745	819	888	942	1,042	1,017	1,118	1,163	1,306	1,402
Mechanical.....	NA	140	391	421	451	483	502	521	519	518	568	625	633	687	781	822
Materials.....	NA	NA	274	304	294	299	310	330	349	389	391	384	399	453	468	535
Other.....	333	341	663	764	817	818	899	877	946	878	894	960	998	1,085	1,195	1,295
Millions of constant 2000 dollars																
All fields.....	9,297	11,421	20,051	20,867	21,783	22,590	23,303	24,054	24,544	25,508	26,726	28,090	30,067	32,058	34,882	37,762
Science	8,223	9,798	16,781	17,418	18,238	19,017	19,585	20,240	20,596	21,490	22,519	23,742	25,513	27,152	29,585	32,110
Physical sciences	1,058	1,276	2,225	2,301	2,379	2,412	2,413	2,448	2,405	2,482	2,567	2,658	2,712	2,741	2,893	3,084
Astronomy.....	78	110	210	251	276	293	296	330	294	301	313	392	386	370	386	369
Chemistry	366	460	798	796	816	838	842	837	854	859	906	938	961	985	1,085	1,150
Physics	538	608	1,036	1,046	1,066	1,065	1,061	1,073	1,052	1,108	1,115	1,172	1,207	1,213	1,234	1,338
Other.....	76	98	181	208	221	216	214	208	205	214	233	156	158	174	188	226

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Field	1973	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Millions of constant 2000 dollars																
Mathematics	120	147	273	273	287	308	312	302	307	303	321	320	341	352	372	404
Computer sciences.....	115	234	634	658	643	688	716	740	735	743	772	879	876	935	1,079	1,229
Earth, atmospheric, and ocean sciences.....	675	957	1,316	1,328	1,438	1,493	1,548	1,556	1,586	1,604	1,679	1,726	1,765	1,790	1,937	2,061
Atmospheric sciences	NA	143	213	207	225	238	225	226	239	257	278	294	288	295	327	373
Earth sciences.....	NA	354	437	456	478	472	505	496	475	471	531	557	563	543	614	682
Ocean sciences.....	NA	332	464	462	495	519	504	514	568	562	564	616	633	660	691	729
Other.....	675	128	202	202	240	265	313	320	303	315	306	259	281	293	305	277
Life sciences.....	4,932	6,062	10,743	11,240	11,803	12,287	12,709	13,223	13,543	14,226	15,088	15,948	17,468	18,783	20,544	22,391
Agricultural sciences.....	893	1,273	1,660	1,730	1,750	1,764	1,841	1,968	2,034	2,058	2,063	2,077	2,177	2,274	2,351	2,408
Biological sciences.....	1,795	1,937	3,520	3,636	3,825	4,004	4,112	4,162	4,166	4,379	4,738	5,141	5,619	5,812	6,311	6,965
Medical sciences.....	2,082	2,681	5,115	5,395	5,746	6,028	6,249	6,586	6,806	7,231	7,723	8,166	8,986	9,961	11,031	12,048
Other.....	163	171	447	479	482	490	507	508	536	559	563	563	686	736	851	971
Psychology.....	238	207	311	336	380	396	397	402	406	415	459	474	517	570	645	724
Social sciences.....	745	639	866	890	944	1,015	1,057	1,106	1,168	1,178	1,170	1,277	1,299	1,409	1,521	1,565
Economics	154	171	247	248	256	262	269	272	289	273	270	272	255	266	273	296
Political science	82	103	142	148	164	171	178	188	191	184	181	204	230	248	261	272
Sociology	198	164	162	185	189	208	217	233	246	269	261	277	301	321	363	350
Other.....	311	201	314	309	334	374	393	413	442	452	457	524	513	575	624	646
Other sciences	341	275	414	394	365	417	432	463	446	539	464	461	535	573	594	651
Engineering	1,074	1,624	3,270	3,449	3,545	3,573	3,718	3,814	3,948	4,019	4,206	4,348	4,554	4,906	5,296	5,652
Aeronautical/astronautical.....	NA	100	201	214	228	241	241	262	248	259	258	266	257	331	329	379
Bioengineering/biomedical.....	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	105	139	174	208	270	295
Chemical.....	NA	114	269	290	302	310	309	322	338	331	338	356	376	405	413	427
Civil.....	NA	157	350	374	393	421	446	467	484	494	512	540	601	649	688	731
Electrical/electronic.....	NA	345	816	806	815	790	825	888	945	986	1,077	1,037	1,118	1,137	1,252	1,321
Mechanical.....	NA	264	481	499	522	547	557	565	553	542	587	638	633	672	749	775
Materials.....	NA	NA	337	360	340	338	344	358	372	407	405	392	399	443	449	504
Other.....	1,074	643	817	906	946	926	996	952	1,008	919	924	979	998	1,061	1,146	1,220
Percent distribution																
All fields.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Science	88.4	85.8	83.7	83.5	83.7	84.2	84.0	84.1	83.9	84.2	84.3	84.5	84.9	84.7	84.8	85.0
Physical sciences	11.4	11.2	11.1	11.0	10.9	10.7	10.4	10.2	9.8	9.7	9.6	9.5	9.0	8.6	8.3	8.2
Astronomy.....	0.8	1.0	1.0	1.2	1.3	1.3	1.3	1.4	1.2	1.2	1.2	1.4	1.3	1.2	1.1	1.0
Chemistry	3.9	4.0	4.0	3.8	3.7	3.7	3.6	3.5	3.5	3.4	3.4	3.3	3.2	3.1	3.1	3.0
Physics.....	5.8	5.3	5.2	5.0	4.9	4.7	4.6	4.5	4.3	4.3	4.2	4.2	4.0	3.8	3.5	3.5
Other.....	0.8	0.9	0.9	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.9	0.6	0.5	0.5	0.5	0.6
Mathematics	1.3	1.3	1.4	1.3	1.3	1.4	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.1
Computer sciences.....	1.2	2.0	3.2	3.2	3.0	3.0	3.1	3.1	3.0	2.9	2.9	3.1	2.9	2.9	3.1	3.3
Earth, atmospheric, and ocean sciences.....	7.3	8.4	6.6	6.4	6.6	6.6	6.6	6.5	6.5	6.3	6.3	6.1	5.9	5.6	5.6	5.5
Atmospheric sciences	NA	1.3	1.1	1.0	1.0	1.1	1.0	0.9	1.0	1.0	1.0	1.0	1.0	0.9	0.9	1.0
Earth sciences.....	NA	3.1	2.2	2.2	2.2	2.1	2.2	2.1	1.9	1.8	2.0	1.9	1.9	1.7	1.8	1.8
Ocean sciences.....	NA	2.9	2.3	2.2	2.3	2.3	2.2	2.1	2.3	2.2	2.1	2.2	2.1	2.1	2.0	1.9
Other.....	7.3	1.1	1.0	1.0	1.1	1.2	1.3	1.3	1.2	1.2	1.1	0.9	0.9	0.9	0.9	0.7

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Field	1973	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
	Percent distribution															
Life sciences	53.0	53.1	53.6	53.9	54.2	54.4	54.5	55.0	55.2	55.8	56.5	56.8	58.1	58.6	58.9	59.3
Agricultural sciences	9.6	11.1	8.3	8.3	8.0	7.8	7.9	8.2	8.3	8.1	7.7	7.4	7.2	7.1	6.7	6.4
Biological sciences	19.3	17.0	17.6	17.4	17.6	17.7	17.6	17.3	17.0	17.2	17.7	18.3	18.7	18.1	18.1	18.4
Medical sciences	22.4	23.5	25.5	25.9	26.4	26.7	26.8	27.4	27.7	28.3	28.9	29.1	29.9	31.1	31.6	31.9
Other	1.8	1.5	2.2	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.0	2.3	2.3	2.4	2.6
Psychology	2.6	1.8	1.6	1.6	1.7	1.8	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.9
Social sciences	8.0	5.6	4.3	4.3	4.3	4.5	4.5	4.6	4.8	4.6	4.4	4.5	4.3	4.4	4.4	4.1
Economics	1.7	1.5	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.1	1.0	1.0	0.8	0.8	0.8	0.8
Political science	0.9	0.9	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.7	0.7
Sociology	2.1	1.4	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	0.9
Other	3.3	1.8	1.6	1.5	1.5	1.7	1.7	1.7	1.8	1.8	1.7	1.9	1.7	1.8	1.8	1.7
Other sciences	3.7	2.4	2.1	1.9	1.7	1.8	1.9	1.9	1.8	2.1	1.7	1.6	1.8	1.8	1.7	1.7
Engineering	11.6	14.2	16.3	16.5	16.3	15.8	16.0	15.9	16.1	15.8	15.7	15.5	15.1	15.3	15.2	15.0
Aeronautical/astronautical	NA	0.9	1.0	1.0	1.0	1.1	1.0	1.1	1.0	1.0	1.0	0.9	0.9	1.0	0.9	1.0
Bioengineering/biomedical	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3	0.4	0.5	0.6	0.6	0.8	0.8
Chemical	NA	1.0	1.3	1.4	1.4	1.4	1.3	1.3	1.4	1.3	1.3	1.3	1.2	1.3	1.2	1.1
Civil	NA	1.4	1.7	1.8	1.8	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.0	2.0	1.9
Electrical/electronic	NA	3.0	4.1	3.9	3.7	3.5	3.5	3.7	3.9	3.9	4.0	3.7	3.7	3.5	3.6	3.5
Mechanical	NA	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.1	2.2	2.3	2.1	2.1	2.1	2.1
Materials	NA	NA	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.4	1.3	1.4	1.3	1.3
Other	11.6	5.6	4.1	4.3	4.3	4.1	4.3	4.0	4.1	3.6	3.5	3.5	3.3	3.3	3.3	3.2

NA = not available

NOTES: Detail may not add to total because of rounding. See appendix table 4-1 for gross domestic product implicit price deflators used to convert current dollars to constant 2000 dollars.

SOURCES: National Science Foundation, Division of Science Resources Statistics, *Academic Research and Development Expenditures: Fiscal Year 2003* (forthcoming); and Integrated Science and Engineering Resources Data System (WebCASPAR), <http://webcaspar.nsf.gov>.