

Table 35. Federal obligations for basic research, by detailed field of science and engineering: fiscal years 1970-2002

[Dollars in thousands]

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Field of science and engineering	1970	1971	1972	1973	1974	1975	1976
Total, all fields	1,925,908	1,980,141	2,186,937	2,232,006	2,387,681	2,588,427	2,767,454
Life sciences, total	696,862	747,468	867,704	888,396	1,032,164	1,115,929	1,222,015
Biol & agricultural, total	485,035	519,032	596,786	608,640	691,875	747,014	818,412
Biol (excl environmental)	NA	NA	NA	NA	NA	NA	NA
Environmental biology	NA	NA	NA	NA	NA	NA	NA
Agricultural	NA	NA	NA	NA	NA	NA	NA
Medical sciences, total	198,747	211,107	245,820	253,231	317,584	342,355	374,381
Clinical medical	40,568	29,048	37,298	35,229	32,932	38,826	41,562
Other medical	158,179	182,059	208,522	218,002	284,652	303,529	332,819
Life sciences, n.e.c.	13,080	17,329	25,098	26,525	22,705	26,560	29,222
Psychology, total	48,088	46,026	51,432	45,364	46,124	58,642	45,529
Biological aspects	19,508	18,614	21,999	18,591	18,602	18,231	18,474
Social aspects	21,698	22,108	21,505	18,612	18,018	22,181	16,086
Psychological sciences, n.e.c.	6,882	5,304	7,928	8,161	9,504	18,230	10,969
Physical sciences, total	601,029	592,894	636,731	628,210	649,605	708,959	721,435
Astronomy	130,731	124,052	128,865	121,477	133,341	163,028	159,960
Chemistry	126,758	109,865	140,511	146,417	149,275	158,648	168,265
Physics	338,926	350,733	361,746	350,773	360,300	378,973	388,440
Physical sciences, n.e.c.	4,614	8,244	5,609	9,543	6,689	8,310	4,770
Environmental sciences, total	243,216	261,213	262,659	273,411	291,642	280,763	294,325
Atmospheric sciences	114,419	121,776	114,849	133,917	138,462	111,039	114,007
Geological sciences	78,174	76,784	66,990	79,904	80,909	88,593	95,705
Oceanography	47,457	57,567	71,179	46,195	62,870	73,211	76,580
Environmental sciences, n.e.c.	3,166	5,086	9,641	13,395	9,401	7,920	8,033
Math & computer sciences, total	59,379	55,313	66,588	60,082	52,739	62,007	81,805
Mathematics	NA	NA	NA	NA	NA	NA	43,176
Computer sciences	NA	NA	NA	NA	NA	NA	26,594
Math & computer sciences, n.e.c.	NA	NA	NA	NA	NA	NA	12,035
Engineering, total	202,377	191,250	206,154	220,760	214,872	262,847	272,799
Aeronautical	34,778	29,076	27,263	34,285	32,209	30,163	31,988
Astronautical	12,614	11,644	7,745	7,240	11,066	11,292	11,850
Chemical	12,131	11,560	10,805	12,409	11,309	16,350	18,425
Civil	5,537	6,259	8,867	10,428	10,080	7,722	7,786
Electrical	33,622	34,938	41,558	43,982	38,448	47,766	53,079
Mechanical	35,252	25,972	26,788	27,804	17,285	17,631	20,116
Metallurgy & materials	49,617	58,248	62,522	67,701	74,646	99,720	103,273
Engineering, n.e.c.	18,826	13,553	20,606	16,911	19,829	32,203	26,282
Social sciences, total	63,906	70,246	80,091	80,197	74,831	73,757	86,426
Anthropology	7,929	8,755	9,867	10,665	8,800	6,984	6,429
Economics	24,438	23,683	23,563	21,712	25,122	22,066	25,634
Political science	3,883	2,262	2,838	2,986	2,221	1,607	2,999
Sociology	12,643	16,378	20,722	12,479	14,430	15,069	16,602
Social sciences, n.e.c.	15,013	19,168	23,101	32,355	24,258	28,031	34,762
History	4,424	3,662	4,300	4,645	5,855	5,999	NA
Linguistics	1,662	1,931	2,533	3,059	2,143	2,108	NA
Other social sciences	8,927	13,575	16,268	24,651	16,260	19,924	NA
Other sciences, n.e.c.	11,051	15,731	15,578	35,586	25,704	25,523	43,120

See explanatory information, if any, and SOURCE at end of table.

Table 35. Federal obligations for basic research, by detailed field of science and engineering: fiscal years 1970-2002

[Dollars in thousands]

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Field of science and engineering	1977	1978	1979	1980	1981	1982	1983
Total, all fields	3,258,640	3,698,604	4,192,665	4,674,156	5,041,295	5,481,605	6,260,131
Life sciences, total	1,383,365	1,588,390	1,891,777	2,054,425	2,223,848	2,526,017	2,891,336
Biol & agricultural, total	933,574	1,078,679	1,279,290	1,339,434	1,462,372	1,674,752	1,928,774
Biol (excl environmental)	NA	874,485	1,055,525	1,099,856	1,201,686	1,401,192	1,621,857
Environmental biology	NA	64,345	90,802	86,118	83,299	83,164	92,672
Agricultural	NA	139,849	132,963	153,460	177,387	190,396	214,245
Medical sciences, total	414,789	467,672	560,110	656,963	706,205	793,419	878,922
Clinical medical	39,575	NA	NA	NA	NA	NA	NA
Other medical	375,214	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c.	35,002	42,039	52,377	58,028	55,271	57,846	83,640
Psychology, total	55,717	67,473	75,069	84,206	90,992	89,875	92,927
Biological aspects	22,526	23,487	26,360	30,160	30,545	32,897	31,396
Social aspects	20,043	25,259	33,989	31,259	30,211	33,655	32,822
Psychological sciences, n.e.c.	13,148	18,727	14,720	22,787	30,236	23,323	28,709
Physical sciences, total	889,994	941,421	1,050,002	1,220,588	1,324,940	1,393,844	1,587,183
Astronomy	193,321	209,832	280,643	279,420	274,227	271,114	354,466
Chemistry	208,695	203,260	224,798	256,922	298,188	312,002	362,188
Physics	467,414	518,798	535,624	668,155	735,417	790,741	855,104
Physical sciences, n.e.c.	20,564	9,531	8,937	16,091	17,108	19,987	15,425
Environmental sciences, total	387,454	451,278	457,284	522,360	532,833	520,049	580,050
Atmospheric sciences	143,464	163,275	169,172	179,048	173,829	163,195	172,633
Geological sciences	128,720	145,114	157,603	198,335	194,205	177,487	178,292
Oceanography	104,593	120,720	119,110	130,678	143,294	154,465	195,615
Environmental sciences, n.e.c.	10,677	22,169	11,399	14,299	21,505	24,902	33,510
Math & computer sciences, total	83,408	97,737	104,164	116,258	140,360	165,064	208,129
Mathematics	52,135	55,871	59,964	66,825	79,174	90,862	100,906
Computer sciences	31,018	40,294	42,956	46,215	52,205	67,448	90,441
Math & computer sciences, n.e.c.	255	1,572	1,244	3,218	8,981	6,754	16,782
Engineering, total	337,683	392,561	434,658	465,228	526,018	610,467	689,503
Aeronautical	49,520	82,815	88,437	104,157	113,284	126,465	140,713
Astronautical	10,180	14,941	25,167	27,184	33,179	44,845	50,352
Chemical	24,034	24,104	24,611	26,148	31,330	35,184	50,402
Civil	10,356	10,842	14,164	21,963	23,362	31,977	32,426
Electrical	55,139	57,405	62,025	70,586	78,508	93,625	95,820
Mechanical	29,628	29,488	35,891	42,227	47,378	53,120	60,722
Metallurgy & materials	124,888	134,539	151,117	121,337	138,480	155,888	182,892
Engineering, n.e.c.	33,938	38,427	33,246	51,626	60,497	69,363	76,176
Social sciences, total	95,513	124,347	129,718	147,180	136,951	120,198	137,723
Anthropology	8,040	11,957	12,488	14,234	13,078	13,063	11,175
Economics	29,085	33,564	32,676	40,010	34,112	38,950	40,982
Political science	2,544	3,245	4,135	7,403	6,286	4,361	4,596
Sociology	15,936	18,588	18,406	25,377	22,593	18,739	32,772
Social sciences, n.e.c.	39,908	56,993	62,013	60,156	60,882	45,085	48,198
History	NA	NA	NA	NA	NA	NA	NA
Linguistics	NA	NA	NA	NA	NA	NA	NA
Other social sciences	NA	NA	NA	NA	NA	NA	NA
Other sciences, n.e.c.	25,506	35,397	49,993	63,911	65,353	56,091	73,280

See explanatory information, if any, and SOURCE at end of table.

Table 35. Federal obligations for basic research, by detailed field of science and engineering: fiscal years 1970-2002

[Dollars in thousands]

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Field of science and engineering	1984	1985	1986	1987	1988	1989	1990
Total, all fields	7,067,359	7,818,682	8,153,076	8,942,425	9,473,618	10,602,011	11,285,593
Life sciences, total	3,287,634	3,786,595	3,858,783	4,361,947	4,501,756	4,915,721	5,177,543
Biol & agricultural, total	2,174,668	2,515,484	2,542,950	2,870,370	2,855,327	3,102,884	3,219,006
Biol (excl environmental)	1,835,765	2,106,327	2,151,462	2,461,499	2,414,895	2,647,192	2,742,154
Environmental biology	120,769	125,672	125,741	141,002	146,763	157,342	168,325
Agricultural	218,134	283,485	265,747	267,869	293,669	298,350	308,527
Medical sciences, total	1,015,300	1,145,437	1,196,592	1,340,986	1,573,227	1,708,392	1,849,627
Clinical medical	NA	NA	NA	NA	NA	NA	NA
Other medical	NA	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c.	97,666	125,674	119,241	150,591	73,202	104,445	108,910
Psychology, total	107,861	132,840	132,955	147,149	177,839	187,135	215,057
Biological aspects	43,674	48,032	47,007	49,283	52,385	61,043	65,334
Social aspects	33,434	46,854	45,282	45,548	40,941	38,088	60,948
Psychological sciences, n.e.c.	30,753	37,954	40,666	52,318	84,513	88,004	88,775
Physical sciences, total	1,727,982	1,815,239	1,914,426	2,096,007	2,199,620	2,506,466	2,661,508
Astronomy	379,553	400,676	453,050	504,500	458,524	524,643	579,940
Chemistry	403,367	425,019	433,359	445,056	470,752	504,631	502,080
Physics	921,430	959,884	1,003,363	1,072,285	1,205,504	1,395,314	1,474,342
Physical sciences, n.e.c.	23,632	29,660	24,654	74,166	64,840	81,878	105,146
Environmental sciences, total	656,731	699,675	749,093	781,010	872,666	1,016,909	1,274,810
Atmospheric sciences	192,172	209,215	240,417	243,805	280,712	316,396	443,719
Geological sciences	198,010	249,988	265,478	266,173	267,329	334,926	439,725
Oceanography	220,131	219,258	224,304	249,834	269,422	293,533	299,732
Environmental sciences, n.e.c.	46,418	21,214	18,894	21,198	55,203	72,054	91,634
Math & computer sciences, total	240,806	259,998	293,389	306,378	313,243	345,782	406,883
Mathematics	113,865	130,293	142,422	158,371	165,371	167,789	176,341
Computer sciences	104,789	116,071	131,401	128,547	125,496	159,544	225,209
Math & computer sciences, n.e.c.	22,152	13,634	19,566	19,460	22,376	18,449	5,333
Engineering, total	844,991	884,236	968,508	989,479	1,006,228	1,183,717	1,101,528
Aeronautical	225,509	191,480	226,257	237,386	230,979	327,892	269,647
Astronautical	52,378	41,575	52,457	48,769	48,433	58,867	62,292
Chemical	55,534	74,448	73,026	77,450	88,622	50,081	75,849
Civil	41,861	43,601	45,165	45,679	46,127	51,656	47,264
Electrical	130,365	144,890	156,323	175,440	153,957	173,838	146,938
Mechanical	64,129	88,204	83,585	87,229	83,549	100,832	91,424
Metallurgy & materials	187,340	211,852	228,479	209,769	230,116	254,840	260,165
Engineering, n.e.c.	87,875	88,186	103,216	107,757	124,445	165,711	147,949
Social sciences, total	132,581	140,684	113,464	129,519	146,781	154,620	145,998
Anthropology	16,839	15,822	11,196	12,325	12,064	12,084	12,535
Economics	29,671	34,274	26,262	28,954	34,706	37,695	37,110
Political science	4,086	5,761	4,143	5,533	5,101	5,426	6,354
Sociology	33,920	32,438	29,996	34,332	36,800	38,196	24,170
Social sciences, n.e.c.	48,065	52,389	41,867	48,375	58,110	61,219	65,829
History	NA	NA	NA	NA	NA	NA	NA
Linguistics	NA	NA	NA	NA	NA	NA	NA
Other social sciences	NA	NA	NA	NA	NA	NA	NA
Other sciences, n.e.c.	68,773	99,415	122,458	130,936	255,485	291,661	302,266

See explanatory information, if any, and SOURCE at end of table.

Table 35. Federal obligations for basic research, by detailed field of science and engineering: fiscal years 1970-2002

[Dollars in thousands]

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Field of science and engineering	1991	1992	1993	1994	1995	1996	1997
Total, all fields	12,170,794	12,489,864	13,399,121	13,523,476	13,877,031	14,464,035	14,941,892
Life sciences, total	5,433,552	5,841,708	6,288,812	6,472,123	6,601,267	6,878,992	7,203,755
Biol & agricultural, total	3,374,854	3,517,612	3,787,794	3,751,880	3,836,503	3,922,369	3,945,148
Biol (excl environmental)	2,868,497	2,981,840	3,222,473	3,139,188	3,248,329	3,387,156	3,391,000
Environmental biology	186,938	201,597	223,156	242,120	220,642	205,690	206,074
Agricultural	319,419	334,175	342,165	370,572	367,532	329,523	348,074
Medical sciences, total	1,857,739	2,131,031	2,380,887	2,610,297	2,615,880	2,740,761	3,035,174
Clinical medical	NA	NA	NA	NA	NA	NA	NA
Other medical	NA	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c.	200,959	193,065	120,131	109,946	148,884	215,862	223,433
Psychology, total	225,520	122,551	246,785	246,106	278,011	291,520	293,854
Biological aspects	68,228	14,332	18,085	24,804	31,397	33,488	30,202
Social aspects	69,227	16,856	16,016	16,273	22,230	10,056	12,950
Psychological sciences, n.e.c.	88,065	91,363	212,684	205,029	224,384	247,976	250,702
Physical sciences, total	2,881,462	2,951,429	2,907,135	2,826,949	2,864,792	2,862,556	2,976,361
Astronomy	612,311	729,687	663,436	724,818	731,557	708,798	754,176
Chemistry	538,731	556,614	543,688	540,259	559,408	550,740	517,846
Physics	1,644,949	1,607,500	1,600,628	1,502,263	1,507,412	1,545,634	1,561,715
Physical sciences, n.e.c.	85,471	57,628	99,383	59,609	66,415	57,384	142,624
Environmental sciences, total	1,263,526	1,303,634	1,533,470	1,516,482	1,467,468	1,554,037	1,543,481
Atmospheric sciences	448,972	435,242	635,122	698,310	688,220	671,166	679,540
Geological sciences	499,000	526,465	555,302	487,827	451,706	389,991	388,277
Oceanography	197,536	209,981	207,154	190,166	188,238	309,130	303,525
Environmental sciences, n.e.c.	118,018	131,946	135,892	140,179	139,304	183,750	172,139
Math & computer sciences, total	426,107	481,425	511,278	521,735	602,968	639,574	661,382
Mathematics	164,387	228,180	221,841	247,658	163,969	162,617	238,247
Computer sciences	223,516	247,731	284,334	262,291	317,096	376,773	389,530
Math & computer sciences, n.e.c.	38,204	5,514	5,103	11,786	121,903	100,184	33,605
Engineering, total	1,233,711	1,249,819	1,207,405	1,290,426	1,448,932	1,612,060	1,582,999
Aeronautical	256,223	245,072	246,181	275,869	271,041	261,721	269,052
Astronautical	69,651	94,408	53,585	59,812	66,343	71,811	69,796
Chemical	101,672	104,955	72,784	70,907	66,749	59,775	68,050
Civil	59,251	53,376	38,671	38,140	70,132	52,870	45,413
Electrical	142,457	165,379	203,086	205,702	204,613	201,452	172,866
Mechanical	115,561	113,857	142,614	141,575	164,701	113,205	104,852
Metallurgy & materials	294,558	273,582	241,347	330,158	368,462	501,814	462,577
Engineering, n.e.c.	194,338	199,190	209,137	168,263	236,891	349,412	390,393
Social sciences, total	161,276	139,861	194,101	184,040	206,669	212,496	221,031
Anthropology	12,701	11,044	10,025	9,659	15,107	12,736	14,812
Economics	37,324	39,299	45,993	38,359	44,707	39,397	46,141
Political science	7,064	6,434	6,391	4,750	7,100	5,748	4,894
Sociology	28,241	10,202	11,080	13,146	14,300	13,277	8,156
Social sciences, n.e.c.	75,946	72,882	120,612	118,126	125,455	141,338	147,028
History	NA	NA	NA	NA	NA	NA	NA
Linguistics	NA	NA	NA	NA	NA	NA	NA
Other social sciences	NA	NA	NA	NA	NA	NA	NA
Other sciences, n.e.c.	545,640	399,437	510,135	465,615	406,924	412,800	459,029

See explanatory information, if any, and SOURCE at end of table.

Table 35. Federal obligations for basic research, by detailed field of science and engineering: fiscal years 1970-2002

[Dollars in thousands]

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Field of science and engineering	1998	1999	2000	Preliminary	
				2001	2002
Total, all fields	15,613,012	17,443,653	19,569,849	22,704,680	23,399,291
Life sciences, total	7,853,424	9,197,114	10,048,971	11,951,708	12,537,579
Biol & agricultural, total	4,222,344	4,941,601	7,610,435	NA	NA
Biol (excl environmental)	3,652,992	4,236,900	6,851,114	NA	NA
Environmental biology	196,843	280,219	313,614	NA	NA
Agricultural	372,509	424,482	445,707	NA	NA
Medical sciences, total	3,392,433	3,956,451	1,923,803	NA	NA
Clinical medical	NA	NA	0	NA	NA
Other medical	NA	NA	0	NA	NA
Life sciences, n.e.c.	238,647	299,062	514,733	NA	NA
Psychology, total	312,016	347,303	817,786	943,973	1,044,868
Biological aspects	27,321	12,234	5,555	NA	NA
Social aspects	12,862	9,929	14,437	NA	NA
Psychological sciences, n.e.c.	271,833	325,140	797,794	NA	NA
Physical sciences, total	2,941,381	3,089,798	3,470,616	3,852,202	3,835,511
Astronomy	706,921	718,412	793,988	NA	NA
Chemistry	517,523	554,614	765,809	NA	NA
Physics	1,579,807	1,693,823	1,764,387	NA	NA
Physical sciences, n.e.c.	137,130	122,949	146,432	NA	NA
Environmental sciences, total	1,528,734	1,615,729	1,838,422	2,058,421	2,055,588
Atmospheric sciences	655,184	671,040	717,028	NA	NA
Geological sciences	391,170	412,072	429,565	NA	NA
Oceanography	285,997	383,886	364,890	NA	NA
Environmental sciences, n.e.c.	196,383	148,731	326,939	NA	NA
Math & computer sciences, total	705,486	734,928	798,258	923,127	927,529
Mathematics	250,725	254,035	308,616	NA	NA
Computer sciences	419,128	438,302	462,999	NA	NA
Math & computer sciences, n.e.c.	35,633	42,591	26,643	NA	NA
Engineering, total	1,594,442	1,639,691	1,764,175	2,071,781	2,024,796
Aeronautical	285,233	331,713	322,771	NA	NA
Astronautical	67,952	66,176	88,702	NA	NA
Chemical	52,266	55,178	52,573	NA	NA
Civil	35,854	68,846	59,706	NA	NA
Electrical	213,922	185,642	177,045	NA	NA
Mechanical	106,670	99,578	93,369	NA	NA
Metallurgy & materials	478,243	481,169	517,837	NA	NA
Engineering, n.e.c.	354,302	351,389	452,172	NA	NA
Social sciences, total	224,799	246,547	308,009	341,734	355,071
Anthropology	13,522	13,404	14,029	NA	NA
Economics	41,510	45,334	51,775	NA	NA
Political science	4,624	4,769	5,061	NA	NA
Sociology	23,463	9,157	11,775	NA	NA
Social sciences, n.e.c.	141,680	173,883	225,369	NA	NA
History	NA	NA	0	NA	NA
Linguistics	NA	NA	0	NA	NA
Other social sciences	NA	NA	0	NA	NA
Other sciences, n.e.c.	452,730	572,543	523,612	561,734	618,349

KEY: NA = Not applicable (indicates that the data collected for this table were not recorded at that level for that particular fiscal year)
n.e.c. = Not elsewhere classified

NOTE: During the Vol. 45 survey cycle, the National Aeronautics and Space Administration made a statistical adjustment to the 1994 and 1995 field of science and engineering values to diminish a computational error introduced by its software.

SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Federal Funds for Research and Development: Fiscal Years 2000, 2001, and 2002