

**Table 3D. Federal obligations for applied research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003**

[Dollars in thousands]

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Field of science & engineering	1970	1971	1972	1973	1974	1975	1976
Total, all fields .....	1,012,887	987,124	1,175,780	1,129,368	1,131,465	1,130,942	1,200,596
Life sciences, total .....	59,861	52,334	59,637	76,830	78,061	63,214	75,633
Biol & agricultural, total .....	33,671	26,425	30,063	21,654	25,264	23,812	24,264
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 .....	26,025	25,497	29,329	55,176	52,620	39,097	50,946
Clinical medical .....	24,374	23,977	27,396	46,510	44,344	25,880	29,977
Other medical .....	1,651	1,520	1,933	8,666	8,276	13,217	20,969
Life sciences, n.e.c. ....	165	412	245	0	177	305	423
Psychology, total .....	18,665	18,071	17,610	27,619	22,853	30,080	29,684
Biological aspects .....	3,782	3,056	2,953	3,246	2,841	804	706
Social aspects .....	4,934	5,488	4,017	11,977	7,545	15,551	15,951
Psychological sciences, n.e.c. ....	9,949	9,527	10,640	12,396	12,467	13,725	13,027
Physical sciences, total .....	196,009	162,836	227,722	178,188	161,698	175,419	186,515
Astronomy .....	447	630	6,450	323	442	2,259	495
Chemistry .....	31,321	31,101	34,212	34,317	31,873	30,950	35,448
Physics .....	142,506	96,532	137,814	100,977	99,817	108,952	107,605
Physical sciences, n.e.c. ....	21,735	34,573	49,246	42,571	29,566	33,258	42,967
Environmental sciences, total .....	79,487	88,421	94,651	79,744	70,505	74,100	88,536
Atmospheric sciences .....	27,589	28,858	31,776	34,294	33,143	41,882	43,055
Geological sciences .....	22,116	23,187	21,348	16,471	12,919	10,976	18,132
Oceanography .....	16,922	19,640	24,051	16,278	17,505	15,857	25,390
Environmental sciences, n.e.c. ....	12,860	16,736	17,476	12,701	6,938	5,385	1,959
Math & computer sciences, total .....	28,495	34,899	38,924	39,264	49,212	46,750	55,713
Mathematics .....	NA	NA	NA	NA	NA	NA	14,224
Computer sciences .....	NA	NA	NA	NA	NA	NA	40,544
Math & computer sciences, n.e.c. ....	NA	NA	NA	NA	NA	NA	945
Engineering, total .....	595,230	591,349	681,533	670,629	697,023	671,969	698,703
Aeronautical .....	82,250	74,004	82,882	91,533	94,879	105,342	100,679
Astronautical .....	16,458	9,727	9,984	9,750	10,519	9,797	10,166
Chemical .....	30,149	27,142	19,783	19,958	21,199	11,810	15,559
Civil .....	13,513	11,942	18,877	22,102	22,433	25,010	34,288
Electrical .....	180,720	177,632	222,007	200,908	192,167	196,878	179,887
Mechanical .....	92,929	100,123	86,064	126,800	90,922	100,242	117,226
Metallurgy & materials .....	44,208	46,525	43,104	43,368	39,662	43,739	44,684
Engineering, n.e.c. ....	135,003	144,254	198,832	156,210	225,242	179,151	196,214
Social sciences, total .....	2,876	3,237	5,435	4,706	6,516	3,733	3,767
Anthropology .....	0	217	392	0	402	0	18
Economics .....	646	848	879	557	1,164	1,068	854
Political science .....	889	661	529	908	264	1,347	891
Sociology .....	849	955	2,655	2,686	3,976	392	314
Social sciences, n.e.c. ....	492	556	980	555	710	926	1,690
History .....	0	0	0	0	0	0	NA
Linguistics .....	0	0	176	8	0	18	NA
Other social sciences .....	492	556	804	547	710	908	NA
Other sciences, n.e.c. ....	32,264	35,977	50,268	52,388	45,597	65,677	62,045

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

**Table 3D. Federal obligations for applied research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003**

[Dollars in thousands]

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Field of science & engineering	1977	1978	1979	1980	1981	1982	1983
Total, all fields .....	1,342,591	1,413,648	1,542,571	1,721,428	1,996,615	2,266,137	2,437,029
Life sciences, total .....	86,060	87,038	91,086	100,371	117,443	134,576	140,287
Biol & agricultural, total .....	37,700	29,009	36,728	41,958	51,584	21,912	17,453
Biol (excl environmental) .....	NA	27,288	34,101	38,757	47,693	18,208	15,006
Environmental biology .....	NA	1,541	2,452	2,975	3,643	3,476	2,447
Agricultural .....	NA	180	175	226	248	228	0
Medical sciences, total .....	47,285	54,757	50,830	54,495	65,761	76,072	83,639
Clinical medical .....	31,170	NA	NA	NA	NA	NA	NA
Other medical .....	16,115	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c. ....	1,075	3,272	3,528	3,918	98	36,592	39,195
Psychology, total .....	36,567	35,349	40,270	45,062	52,385	62,358	67,723
Biological aspects .....	697	1,181	621	0	0	0	0
Social aspects .....	18,815	18,828	26,997	38,505	43,168	49,765	54,844
Psychological sciences, n.e.c. ....	17,055	15,340	12,652	6,557	9,217	12,593	12,879
Physical sciences, total .....	215,279	225,772	237,016	243,399	335,188	500,046	561,991
Astronomy .....	1,189	1,304	1,250	1,498	1,200	1,250	1,133
Chemistry .....	33,685	38,891	59,487	42,549	47,218	66,601	66,260
Physics .....	119,766	118,186	165,477	158,217	220,454	334,984	379,741
Physical sciences, n.e.c. ....	60,639	67,391	10,802	41,135	66,316	97,211	114,857
Environmental sciences, total .....	64,746	69,051	75,107	98,677	107,066	109,205	151,685
Atmospheric sciences .....	29,683	29,741	41,866	61,195	63,009	63,915	100,961
Geological sciences .....	16,981	14,974	10,495	10,722	21,916	22,889	25,782
Oceanography .....	16,646	18,256	14,099	18,889	18,306	18,753	17,039
Environmental sciences, n.e.c. ....	1,436	6,080	8,647	7,871	3,835	3,648	7,903
Math & computer sciences, total .....	64,490	63,946	69,058	90,483	88,160	113,858	120,190
Mathematics .....	8,373	6,665	5,576	7,266	7,537	7,853	6,319
Computer sciences .....	47,079	45,599	50,442	69,336	56,984	64,613	69,046
Math & computer sciences, n.e.c. ....	9,038	11,682	13,040	13,881	23,639	41,392	44,825
Engineering, total .....	794,913	850,410	909,955	995,489	1,135,983	1,245,038	1,319,720
Aeronautical .....	117,897	124,562	167,716	186,702	204,101	218,344	279,460
Astronautical .....	24,596	26,876	35,930	67,813	68,409	75,222	81,434
Chemical .....	19,522	19,919	25,764	14,539	21,807	28,102	33,608
Civil .....	22,885	22,836	26,450	28,603	32,245	37,262	41,383
Electrical .....	268,119	310,676	322,832	395,636	426,543	432,200	455,923
Mechanical .....	116,649	139,045	120,583	98,640	109,272	114,742	106,598
Metallurgy & materials .....	55,758	44,150	38,560	46,825	65,717	79,812	82,569
Engineering, n.e.c. ....	169,487	162,346	172,120	156,731	207,889	259,354	238,745
Social sciences, total .....	2,054	4,282	6,484	686	765	1,129	3,939
Anthropology .....	0	0	0	0	0	0	0
Economics .....	218	1,033	100	101	143	703	1,742
Political science .....	1,404	2,003	1,940	71	0	0	1,106
Sociology .....	432	1,246	489	514	577	376	322
Social sciences, n.e.c. ....	0	0	3,955	0	45	50	769
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. ....	78,482	77,800	113,595	147,261	159,625	99,927	71,494

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

**Table 3D. Federal obligations for applied research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003**

[Dollars in thousands]

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Field of science & engineering	1984	1985	1986	1987	1988	1989	1990
Total, all fields .....	2,200,674	2,306,876	2,303,348	2,439,957	2,362,201	2,708,197	2,581,608
Life sciences, total .....	154,655	168,160	163,094	198,067	190,286	235,684	185,383
Biol & agricultural, total .....	23,157	24,908	23,933	32,607	33,436	56,093	32,366
Biol (excl environmental) .....	20,362	21,660	20,025	28,665	26,955	5,737	26,528
Environmental biology .....	2,795	3,248	3,908	3,942	6,481	50,356	5,838
Agricultural .....	0	0	0	0	0	0	0
Medical sciences, total .....	89,470	104,512	98,367	123,106	113,484	134,630	110,214
Clinical medical .....	NA	NA	NA	NA	NA	NA	NA
Other medical .....	NA	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c. ....	42,028	38,740	40,794	42,354	43,366	44,961	42,803
Psychology, total .....	66,194	86,163	81,315	78,996	77,193	80,250	70,009
Biological aspects .....	452	0	0	865	830	822	2,759
Social aspects .....	56,603	74,977	68,582	76,833	75,118	69,535	67,250
Psychological sciences, n.e.c. ....	9,139	11,186	12,733	1,298	1,245	9,893	0
Physical sciences, total .....	477,223	411,969	400,047	377,546	345,017	348,460	328,144
Astronomy .....	1,085	1,178	1,065	1,297	1,300	1,672	1,367
Chemistry .....	79,821	86,265	90,046	76,914	62,462	64,394	55,444
Physics .....	285,177	210,198	223,097	201,969	201,465	205,379	222,917
Physical sciences, n.e.c. ....	111,140	114,328	85,839	97,366	79,790	77,015	48,416
Environmental sciences, total .....	107,092	154,107	154,407	127,748	124,035	148,721	139,705
Atmospheric sciences .....	64,366	68,198	64,916	72,646	68,863	68,565	67,722
Geological sciences .....	16,589	35,255	34,079	34,554	34,157	56,349	54,993
Oceanography .....	14,873	36,331	40,582	8,210	7,738	8,541	12,329
Environmental sciences, n.e.c. ....	11,264	14,323	14,830	12,338	13,277	15,266	4,661
Math & computer sciences, total .....	104,852	200,124	230,217	226,631	223,586	273,697	308,798
Mathematics .....	4,690	6,929	4,462	6,658	8,493	17,760	14,766
Computer sciences .....	58,891	104,041	124,156	111,427	112,558	145,665	270,013
Math & computer sciences, n.e.c. ....	41,271	89,154	101,599	108,546	102,535	110,272	24,019
Engineering, total .....	1,208,097	1,196,816	1,162,720	1,275,081	1,295,464	1,462,108	1,404,278
Aeronautical .....	222,273	170,876	169,854	217,886	201,668	210,549	199,201
Astronautical .....	69,905	63,865	59,750	61,092	79,861	76,410	75,972
Chemical .....	25,756	34,579	31,699	29,874	27,127	40,176	32,200
Civil .....	41,605	61,116	54,161	55,642	55,769	59,859	149,246
Electrical .....	433,366	421,228	456,229	553,558	520,749	608,542	436,134
Mechanical .....	93,935	135,855	119,109	102,360	111,168	116,585	138,615
Metallurgy & materials .....	92,863	172,453	148,820	96,668	168,598	211,311	224,708
Engineering, n.e.c. ....	228,394	136,844	123,098	158,001	130,524	138,676	148,202
Social sciences, total .....	2,126	4,711	3,723	2,901	2,655	2,669	1,760
Anthropology .....	0	0	0	0	0	0	0
Economics .....	665	1,013	1,466	1,353	1,310	1,399	1,056
Political science .....	1,129	3,214	1,280	645	471	338	0
Sociology .....	332	484	977	903	874	932	704
Social sciences, n.e.c. ....	0	0	0	0	0	0	0
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. ....	80,435	84,826	107,825	152,987	103,965	156,608	143,531

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

**Table 3D. Federal obligations for applied research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003**

[Dollars in thousands]

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Field of science & engineering	1991	1992	1993	1994	1995	1996	1997
Total, all fields .....	2,723,754	2,974,461	3,515,246	3,039,950	2,950,098	2,857,639	2,786,947
Life sciences, total .....	189,087	201,894	212,513	192,328	231,606	175,932	201,910
Biol & agricultural, total .....	26,594	46,170	69,525	43,094	48,522	32,307	44,739
Biol (excl environmental) .....	20,958	26,586	41,708	12,599	16,990	19,355	31,822
Environmental biology .....	5,636	19,584	27,817	30,495	31,532	12,902	11,527
Agricultural .....	0	0	0	0	0	50	1,390
Medical sciences, total .....	119,461	155,559	137,417	139,885	144,407	116,215	134,297
Clinical medical .....	NA	NA	NA	NA	NA	NA	NA
Other medical .....	NA	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c. ....	43,032	165	5,571	9,349	38,677	27,410	22,874
Psychology, total .....	72,018	86,319	71,417	58,038	88,962	43,130	48,567
Biological aspects .....	3,137	3,930	3,520	3,403	3,627	10,524	10,603
Social aspects .....	68,881	65,723	67,367	51,643	80,127	29,519	34,357
Psychological sciences, n.e.c. ....	0	16,666	530	2,992	5,208	3,087	3,607
Physical sciences, total .....	394,395	426,542	469,039	391,176	351,906	206,489	222,303
Astronomy .....	0	0	0	0	0	0	0
Chemistry .....	69,884	57,908	63,709	68,093	52,263	26,920	44,160
Physics .....	270,032	305,412	366,602	287,186	268,857	144,917	119,956
Physical sciences, n.e.c. ....	54,479	63,222	38,728	35,897	30,786	34,652	58,187
Environmental sciences, total .....	110,371	84,987	94,206	97,586	95,849	239,444	239,249
Atmospheric sciences .....	52,944	17,110	24,087	25,028	21,079	26,130	28,266
Geological sciences .....	38,396	30,637	30,298	18,817	20,858	29,753	2,769
Oceanography .....	12,667	13,645	14,457	16,971	18,914	51,891	55,315
Environmental sciences, n.e.c. ....	6,364	23,595	25,364	36,770	34,998	131,670	152,899
Math & computer sciences, total .....	248,097	387,997	410,139	446,581	530,668	481,844	465,227
Mathematics .....	9,421	32,809	28,513	33,632	44,661	45,368	16,883
Computer sciences .....	218,781	335,283	361,281	381,217	442,154	407,466	434,375
Math & computer sciences, n.e.c. ....	19,895	19,905	20,345	31,732	43,853	29,010	13,969
Engineering, total .....	1,577,348	1,639,579	1,995,888	1,704,900	1,533,309	1,593,543	1,493,546
Aeronautical .....	197,536	129,083	190,514	129,279	106,112	199,129	200,788
Astronautical .....	111,074	97,559	102,537	73,261	81,241	67,950	131,963
Chemical .....	37,247	23,806	57,639	28,820	31,519	35,506	21,231
Civil .....	138,758	170,363	88,261	71,620	72,384	49,372	53,163
Electrical .....	496,284	498,317	578,666	425,379	410,802	366,756	350,470
Mechanical .....	144,145	153,417	262,654	176,294	174,872	146,299	113,276
Metallurgy & materials .....	341,595	383,649	371,785	372,906	327,818	348,143	302,895
Engineering, n.e.c. ....	110,709	183,385	343,832	427,341	328,561	380,388	319,760
Social sciences, total .....	1,774	2,132	1,534	981	488	2,387	557
Anthropology .....	0	652	303	217	0	0	0
Economics .....	1,064	888	739	365	292	217	373
Political science .....	0	0	0	0	0	0	0
Sociology .....	710	592	492	244	196	145	184
Social sciences, n.e.c. ....	0	0	0	155	0	2,025	0
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. ....	130,664	145,011	260,510	148,360	117,310	114,870	115,588

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

**Table 3D. Federal obligations for applied research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003**

[Dollars in thousands]

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Field of science & engineering	1998	1999	2000	2001	Preliminary	
					2002	2003
Total, all fields .....	2,939,052	3,102,052	3,690,234	4,796,874	5,162,071	4,773,055
Life sciences, total .....	322,860	327,733	392,974	476,361	545,859	557,305
Biol & agricultural, total .....	110,293	127,310	129,153	158,096	NA	NA
Biol (excl environmental) .....	100,600	117,915	114,408	154,627	NA	NA
Environmental biology .....	9,154	9,395	13,996	2,299	NA	NA
Agricultural .....	539	0	749	1,170	NA	NA
Medical sciences, total .....	187,449	163,325	142,811	167,974	NA	NA
Clinical medical .....	NA	NA	NA	NA	NA	NA
Other medical .....	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c. ....	25,118	37,098	121,010	150,291	NA	NA
Psychology, total .....	48,916	40,114	48,141	57,871	63,461	63,382
Biological aspects .....	9,787	964	1,761	2,671	NA	NA
Social aspects .....	36,199	10,501	11,362	14,401	NA	NA
Psychological sciences, n.e.c. ....	2,930	28,649	35,018	40,799	NA	NA
Physical sciences, total .....	280,665	262,109	249,816	365,043	414,656	363,153
Astronomy .....	0	15,000	0	0	NA	NA
Chemistry .....	55,936	42,256	30,849	67,467	NA	NA
Physics .....	164,598	158,175	197,986	251,415	NA	NA
Physical sciences, n.e.c. ....	60,131	46,678	20,981	46,161	NA	NA
Environmental sciences, total .....	224,179	180,579	182,655	135,113	158,719	112,344
Atmospheric sciences .....	28,023	36,178	17,063	19,715	NA	NA
Geological sciences .....	2,856	3,639	3,668	5,898	NA	NA
Oceanography .....	55,414	64,091	78,595	80,506	NA	NA
Environmental sciences, n.e.c. ....	137,886	76,671	83,329	28,994	NA	NA
Math & computer sciences, total .....	521,511	521,925	562,910	741,445	823,856	867,509
Mathematics .....	37,084	38,808	33,075	55,082	NA	NA
Computer sciences .....	476,710	472,861	492,202	650,378	NA	NA
Math & computer sciences, n.e.c. ....	7,717	10,256	37,633	35,985	NA	NA
Engineering, total .....	1,355,443	1,528,382	2,014,933	2,855,817	2,888,141	2,561,110
Aeronautical .....	287,129	285,140	489,679	899,768	NA	NA
Astronautical .....	31,800	39,254	57,528	117,078	NA	NA
Chemical .....	25,012	24,209	24,026	22,131	NA	NA
Civil .....	43,330	40,183	63,001	62,075	NA	NA
Electrical .....	339,663	414,573	469,205	528,063	NA	NA
Mechanical .....	106,266	102,269	143,888	151,757	NA	NA
Metallurgy & materials .....	230,409	193,481	231,160	355,452	NA	NA
Engineering, n.e.c. ....	291,834	429,273	536,446	719,493	NA	NA
Social sciences, total .....	176	0	19,162	16,638	16,774	14,943
Anthropology .....	0	0	0	349	NA	NA
Economics .....	0	0	3,091	0	NA	NA
Political science .....	0	0	1,965	0	NA	NA
Sociology .....	176	0	0	87	NA	NA
Social sciences, n.e.c. ....	0	0	14,106	16,202	NA	NA
History .....	NA	NA	NA	NA	NA	NA
Linguistics .....	NA	NA	NA	NA	NA	NA
Other social sciences .....	NA	NA	NA	NA	NA	NA
Other sciences, n.e.c. ....	185,302	241,210	219,643	148,586	250,605	233,309

**KEY:** NA = Not applicable (indicates that the data collected for this table were not recorded at that level in that particular fiscal year, or that the agency or subagency did not exist as such or in that organization in that year)  
n.e.c. = Not elsewhere classified

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, Survey of Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003