

Table 1D. Federal obligations for total research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003

[Dollars in thousands]

Page 1 of 5

Field of science & engineering	1970	1971	1972	1973	1974	1975	1976
Total, all fields	1,329,900	1,309,263	1,504,554	1,436,079	1,434,408	1,431,007	1,527,481
Life sciences, total	100,309	91,920	104,037	120,175	116,863	99,411	118,007
Biol & agricultural, total	51,441	44,318	48,926	34,866	39,707	32,808	28,946
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	48,703	47,190	54,866	85,309	76,927	66,298	88,638
Clinical medical	47,052	45,085	52,351	70,780	64,760	48,921	62,117
Other medical	1,651	2,105	2,515	14,529	12,167	17,377	26,521
Life sciences, n.e.c.	165	412	245	0	229	305	423
Psychology, total	29,921	28,655	28,642	37,221	34,250	39,573	40,284
Biological aspects	5,409	4,740	4,946	4,445	4,628	2,198	2,419
Social aspects	13,792	13,567	11,243	18,442	14,980	22,031	22,887
Psychological sciences, n.e.c.	10,720	10,348	12,453	14,334	14,642	15,344	14,978
Physical sciences, total	287,824	248,549	305,186	251,332	232,872	245,107	249,993
Astronomy	11,620	9,450	16,521	9,406	9,540	12,228	9,659
Chemistry	47,092	48,343	50,894	49,474	44,496	44,030	54,562
Physics	203,184	149,327	187,294	148,508	147,589	153,854	141,621
Physical sciences, n.e.c.	25,928	41,429	50,477	43,944	31,247	34,995	44,151
Environmental sciences, total	138,014	149,843	159,401	135,387	130,379	133,775	154,439
Atmospheric sciences	52,266	56,681	61,285	61,713	61,926	69,470	72,384
Geological sciences	27,103	29,084	27,757	22,511	18,592	16,972	24,518
Oceanography	42,832	44,270	49,491	35,585	39,722	38,926	51,885
Environmental sciences, n.e.c.	15,813	19,808	20,868	15,578	10,139	8,407	5,652
Math & computer sciences, total	61,192	64,325	70,683	69,794	70,454	70,917	90,746
Mathematics	NA	NA	NA	NA	NA	NA	30,687
Computer sciences	NA	NA	NA	NA	NA	NA	50,275
Math & computer sciences, n.e.c.	NA	NA	NA	NA	NA	NA	9,784
Engineering, total	675,253	679,256	773,236	762,882	793,480	770,833	806,387
Aeronautical	84,100	78,253	86,555	94,436	105,219	116,072	113,080
Astronautical	22,915	17,756	17,134	16,144	16,099	15,481	15,386
Chemical	35,179	31,970	24,289	24,030	25,348	16,328	21,288
Civil	14,743	13,104	19,854	23,031	24,186	25,870	34,537
Electrical	200,364	201,937	245,132	223,800	216,336	229,166	215,477
Mechanical	111,452	112,979	103,566	142,728	99,158	109,885	128,054
Metallurgy & materials	68,033	78,918	77,472	82,030	81,122	78,124	81,779
Engineering, n.e.c.	138,467	144,339	199,234	156,683	226,012	179,907	196,786
Social sciences, total	5,123	6,133	8,109	6,800	9,330	5,536	5,213
Anthropology	0	469	392	0	927	0	33
Economics	646	1,018	879	557	1,164	1,068	854
Political science	2,514	1,584	1,056	1,648	355	1,347	891
Sociology	1,360	2,140	4,385	4,040	5,853	1,567	1,745
Social sciences, n.e.c.	603	922	1,397	555	1,031	1,554	1,690
History	0	0	0	0	0	0	NA
Linguistics	111	366	593	8	321	406	NA
Other social sciences	492	556	804	547	710	1,148	NA
Other sciences, n.e.c.	32,264	40,582	55,260	52,488	46,780	65,855	62,412

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

Table 1D. Federal obligations for total research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003

[Dollars in thousands]

Page 2 of 5

Field of science & engineering	1977	1978	1979	1980	1981	1982	1983
Total, all fields	1,715,845	1,824,058	2,014,098	2,261,769	2,600,900	2,952,821	3,222,649
Life sciences, total	129,457	137,605	152,829	149,075	172,763	208,840	222,755
Biol & agricultural, total	50,470	44,057	54,042	62,142	74,513	53,020	48,879
Biol (excl environmental)	NA	39,521	48,184	54,693	66,526	42,272	37,478
Environmental biology	NA	4,356	5,683	7,223	7,739	10,520	11,401
Agricultural	NA	180	175	226	248	228	0
Medical sciences, total	77,912	89,563	95,259	83,015	98,152	119,228	134,681
Clinical medical	55,783	NA	NA	NA	NA	NA	NA
Other medical	22,129	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c.	1,075	3,985	3,528	3,918	98	36,592	39,195
Psychology, total	50,003	54,091	60,775	63,552	71,311	83,491	88,464
Biological aspects	1,674	1,947	1,201	264	280	118	59
Social aspects	27,741	29,676	46,922	55,047	58,778	68,775	73,078
Psychological sciences, n.e.c.	20,588	22,468	12,652	8,241	12,253	14,598	15,327
Physical sciences, total	312,915	323,907	356,403	410,530	530,076	688,740	760,433
Astronomy	9,454	10,509	12,789	13,194	14,590	16,989	17,076
Chemistry	54,560	63,354	88,098	78,221	90,693	118,147	121,828
Physics	174,468	180,333	244,528	269,385	348,822	445,990	497,464
Physical sciences, n.e.c.	74,433	69,711	10,988	49,730	75,971	107,614	124,065
Environmental sciences, total	120,917	138,683	149,817	181,847	188,623	204,613	255,259
Atmospheric sciences	43,744	47,621	57,235	79,916	83,814	86,496	125,227
Geological sciences	22,849	23,256	21,957	29,886	34,323	36,234	43,015
Oceanography	47,638	53,607	53,715	56,299	58,332	68,291	66,151
Environmental sciences, n.e.c.	6,686	14,199	16,910	15,746	12,154	13,592	20,866
Math & computer sciences, total	94,165	102,332	113,423	137,828	147,480	188,098	221,744
Mathematics	27,209	28,118	28,781	31,360	36,241	44,995	46,721
Computer sciences	57,674	61,000	70,663	89,729	80,823	95,844	114,364
Math & computer sciences, n.e.c.	9,282	13,214	13,979	16,739	30,416	47,259	60,659
Engineering, total	926,212	981,792	1,057,530	1,165,226	1,324,129	1,473,274	1,573,905
Aeronautical	133,563	142,747	189,052	214,221	232,560	252,632	315,003
Astronautical	27,624	29,729	35,930	67,813	69,216	79,504	92,351
Chemical	31,352	29,011	33,291	24,049	31,089	39,029	44,889
Civil	23,214	23,435	27,261	30,149	34,909	40,439	45,730
Electrical	301,178	345,145	363,190	442,299	477,428	493,177	515,578
Mechanical	136,066	157,700	141,635	122,378	136,560	144,000	138,696
Metallurgy & materials	99,622	88,910	92,815	104,171	131,600	159,276	179,343
Engineering, n.e.c.	173,593	165,115	174,356	160,146	210,767	265,217	242,315
Social sciences, total	3,555	5,933	8,442	5,120	4,726	4,845	7,140
Anthropology	0	0	0	0	0	0	0
Economics	252	1,127	100	101	143	703	1,742
Political science	1,404	2,003	1,940	1,245	788	1,393	2,164
Sociology	1,899	2,803	2,381	2,447	3,095	2,586	2,465
Social sciences, n.e.c.	0	0	4,021	1,327	700	163	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.	78,621	79,715	114,879	148,591	161,792	100,920	92,949

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

Table 1D. Federal obligations for total research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003

[Dollars in thousands]

Page 3 of 5

Field of science & engineering	1984	1985	1986	1987	1988	1989	1990
Total, all fields	3,048,531	3,168,283	3,227,263	3,347,556	3,239,123	3,656,124	3,529,229
Life sciences, total	244,937	271,951	267,531	293,553	280,414	334,218	284,459
Biol & agricultural, total	56,411	63,120	63,804	75,504	78,036	101,425	74,098
Biol (excl environmental)	44,456	54,168	54,100	64,876	67,463	45,873	58,730
Environmental biology	11,955	8,952	9,704	10,628	10,573	55,552	15,368
Agricultural	0	0	0	0	0	0	0
Medical sciences, total	146,468	170,091	162,933	175,695	158,292	187,832	166,060
Clinical medical	NA	NA	NA	NA	NA	NA	NA
Other medical	NA	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c.	42,058	38,740	40,794	42,354	44,086	44,961	44,301
Psychology, total	89,598	118,386	113,163	108,855	114,640	111,802	105,612
Biological aspects	6,812	6,913	7,040	8,020	6,708	10,242	12,277
Social aspects	71,120	97,535	90,786	97,134	90,260	75,327	78,308
Psychological sciences, n.e.c.	11,666	13,938	15,337	3,701	17,672	26,233	15,027
Physical sciences, total	689,442	597,479	592,022	555,194	504,074	523,562	498,247
Astronomy	16,822	14,228	15,559	15,387	12,261	12,704	11,719
Chemistry	139,826	156,403	163,350	144,933	124,958	133,544	120,991
Physics	411,784	298,699	313,645	286,846	283,832	294,101	310,035
Physical sciences, n.e.c.	121,010	128,149	99,468	108,028	83,023	83,213	55,502
Environmental sciences, total	217,173	273,853	286,949	263,564	262,808	291,350	279,894
Atmospheric sciences	91,896	100,747	105,870	109,611	104,585	102,544	102,069
Geological sciences	34,747	78,968	78,218	75,363	72,916	95,321	95,735
Oceanography	67,508	79,111	87,175	65,217	71,791	77,404	75,496
Environmental sciences, n.e.c.	23,022	15,027	15,686	13,373	13,516	16,081	6,594
Math & computer sciences, total	213,756	300,376	339,525	330,643	331,446	392,781	445,319
Mathematics	47,771	54,984	56,630	54,989	53,375	64,829	62,590
Computer sciences	103,114	143,715	163,995	149,720	154,455	200,475	355,210
Math & computer sciences, n.e.c.	62,871	101,677	118,900	125,934	123,616	127,477	27,519
Engineering, total	1,488,368	1,502,009	1,505,590	1,629,695	1,636,135	1,836,185	1,762,244
Aeronautical	261,293	206,432	212,925	259,905	233,684	245,287	237,616
Astronautical	79,319	67,691	66,263	67,420	84,706	81,303	79,950
Chemical	38,441	53,278	50,273	46,882	41,949	46,892	37,392
Civil	46,541	66,279	64,900	67,005	68,720	76,955	163,946
Electrical	522,805	526,739	570,373	683,690	626,362	721,779	535,067
Mechanical	127,170	182,629	163,418	142,945	145,245	166,659	182,648
Metallurgy & materials	180,335	260,923	253,736	203,575	294,420	343,371	370,532
Engineering, n.e.c.	232,464	138,038	123,702	158,273	141,049	153,939	155,093
Social sciences, total	3,949	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	2,155	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.	101,308	99,518	118,760	163,151	106,951	163,557	151,694

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

Table 1D. Federal obligations for total research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003

[Dollars in thousands]

Field of science & engineering	1991	1992	1993	1994	1995	1996	1997
Total, all fields	3,717,908	4,073,406	4,783,484	4,240,602	4,198,428	3,995,505	3,809,817
Life sciences, total	304,812	342,024	373,576	371,420	364,091	280,231	291,299
Biol & agricultural, total	82,229	120,951	137,455	133,167	116,112	93,826	93,558
Biol (excl environmental)	66,197	71,948	86,507	55,027	60,732	60,675	65,878
Environmental biology	16,032	49,003	50,778	78,140	55,380	33,101	26,290
Agricultural	0	0	170	0	0	50	1,390
Medical sciences, total	179,551	220,908	222,550	227,785	205,577	154,483	171,428
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	13,571	10,468	42,402	31,922	26,313
Psychology, total	97,328	112,434	99,614	82,194	119,287	76,511	77,171
Biological aspects	11,032	12,302	15,992	13,633	16,624	33,871	32,381
Social aspects	79,722	77,658	77,594	60,281	89,706	32,276	37,205
Psychological sciences, n.e.c.	6,574	22,474	6,028	8,280	12,957	10,364	7,585
Physical sciences, total	574,706	626,142	674,612	594,474	557,802	376,159	379,532
Astronomy	4,951	9,516	15,097	13,635	7,775	2,559	1,904
Chemistry	138,522	136,608	139,844	148,960	142,398	108,222	112,717
Physics	367,637	407,897	477,494	392,955	369,945	216,639	192,843
Physical sciences, n.e.c.	63,596	72,121	42,177	38,924	37,684	48,739	72,068
Environmental sciences, total	262,666	259,684	263,441	292,029	254,959	402,155	374,358
Atmospheric sciences	81,984	53,486	59,283	69,733	60,177	68,145	63,272
Geological sciences	86,250	74,880	84,402	95,050	62,158	52,944	12,099
Oceanography	86,641	84,721	86,686	88,335	88,137	119,125	117,889
Environmental sciences, n.e.c.	7,791	46,597	33,070	38,911	44,487	161,941	181,098
Math & computer sciences, total	380,536	536,983	575,430	603,290	743,553	626,128	605,184
Mathematics	42,480	86,691	80,967	93,255	101,189	94,180	45,369
Computer sciences	288,556	427,659	473,026	474,625	595,057	483,328	523,539
Math & computer sciences, n.e.c.	49,500	22,633	21,437	35,410	47,307	48,620	36,276
Engineering, total	1,938,019	2,032,672	2,451,480	2,136,063	2,026,201	2,093,394	1,933,425
Aeronautical	224,323	161,992	217,963	167,733	140,315	227,215	220,365
Astronautical	118,184	107,927	105,029	77,330	85,576	81,693	140,930
Chemical	41,853	34,672	69,837	38,280	38,510	44,375	30,315
Civil	160,848	183,970	99,273	81,211	82,857	59,653	60,871
Electrical	584,414	614,971	723,353	574,916	562,307	523,090	474,274
Mechanical	198,341	214,572	352,023	265,053	268,336	225,448	183,934
Metallurgy & materials	493,137	521,562	510,047	492,058	486,747	479,893	403,097
Engineering, n.e.c.	116,919	193,006	373,955	439,482	361,553	452,027	419,639
Social sciences, total	2,598	5,337	19,968	2,511	488	2,387	886
Anthropology	0	652	303	287	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.	824	3,205	18,434	1,615	0	2,025	329
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.	157,243	158,130	325,363	158,621	132,047	138,540	147,962

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

Table 1D. Federal obligations for total research, by detailed field of science & engineering: Department of Defense, fiscal years 1970-2003

[Dollars in thousands]

Page 5 of 5

Field of science & engineering	1998	1999	2000	2001	Preliminary	
					2002	2003
Total, all fields	3,969,891	4,142,262	4,920,353	6,806,183	7,011,698	6,510,444
Life sciences, total	438,542	473,764	623,034	1,051,922	1,047,394	861,910
Biol & agricultural, total	155,321	186,363	190,217	246,571	NA	NA
Biol (excl environmental)	137,328	161,919	158,827	229,098	NA	NA
Environmental biology	17,454	24,444	30,641	15,928	NA	NA
Agricultural	539	0	749	1,545	NA	NA
Medical sciences, total	254,965	224,430	241,215	590,076	NA	NA
Clinical medical	NA	NA	NA	NA	NA	NA
Other medical	NA	NA	NA	NA	NA	NA
Life sciences, n.e.c.	28,256	62,971	191,602	215,275	NA	NA
Psychology, total	74,069	45,823	66,021	71,128	82,482	80,819
Biological aspects	28,661	3,280	6,777	12,540	NA	NA
Social aspects	38,503	10,501	19,292	14,401	NA	NA
Psychological sciences, n.e.c.	6,905	32,042	39,952	44,187	NA	NA
Physical sciences, total	440,286	405,836	403,870	588,705	633,283	573,426
Astronomy	6,270	17,140	0	6,314	NA	NA
Chemistry	124,332	105,643	98,341	155,143	NA	NA
Physics	238,376	224,667	268,974	356,561	NA	NA
Physical sciences, n.e.c.	71,308	58,386	36,555	70,687	NA	NA
Environmental sciences, total	361,300	326,913	335,225	296,788	311,879	272,500
Atmospheric sciences	51,863	51,183	35,256	37,194	NA	NA
Geological sciences	11,242	6,832	6,784	14,208	NA	NA
Oceanography	112,459	182,778	198,318	214,262	NA	NA
Environmental sciences, n.e.c.	185,736	86,120	94,867	31,124	NA	NA
Math & computer sciences, total	658,680	643,403	700,416	946,681	1,032,487	1,083,064
Mathematics	63,966	59,051	65,196	82,383	NA	NA
Computer sciences	561,667	537,990	578,021	750,783	NA	NA
Math & computer sciences, n.e.c.	33,047	46,362	57,199	113,515	NA	NA
Engineering, total	1,805,538	1,950,341	2,500,609	3,571,247	3,500,502	3,257,074
Aeronautical	308,623	350,878	558,787	1,058,239	NA	NA
Astronautical	36,643	41,788	74,338	119,421	NA	NA
Chemical	34,798	34,773	32,446	33,636	NA	NA
Civil	51,871	46,818	83,582	67,057	NA	NA
Electrical	507,238	555,575	602,673	722,771	NA	NA
Mechanical	179,151	168,304	206,096	249,653	NA	NA
Metallurgy & materials	340,555	286,317	332,536	498,808	NA	NA
Engineering, n.e.c.	346,659	465,888	610,151	821,662	NA	NA
Social sciences, total	176	0	19,577	16,826	24,048	16,138
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	415	87	NA	NA
Social sciences, n.e.c.	0	0	14,106	16,390	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.	191,300	296,182	271,601	262,886	379,623	365,513

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