

Appendix table 4-13

U.S. applied research expenditures, by source of funds and performing sector: 1953–2002

(Millions of current dollars)

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Year	Funding sector:	Total	Federal Government							Industry				U&C	Nonprofits			Non-Federal ^a	
	Performing sector:		Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profits ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Non-profits	U&C ^c	Total	Non-profits	U&C ^c	U&C ^c
1953		1,289	756	347	288	—	59	48	14	—	456	438	7	11	28	20	10	10	30
1954		1,378	785	330	322	—	60	58	16	—	513	492	8	13	28	21	11	10	32
1955		1,514	850	333	368	—	63	68	18	—	583	560	9	14	27	22	11	11	32
1956		1,928	1,025	387	474	—	65	79	21	—	818	794	10	14	27	25	14	11	33
1957		2,414	1,304	446	678	—	63	94	24	—	1,018	992	12	14	27	31	20	11	34
1958		2,758	1,496	516	774	—	66	111	30	—	1,163	1,137	12	14	27	37	25	12	35
1959		2,940	1,630	577	813	—	78	121	43	—	1,206	1,178	13	15	28	39	27	12	37
1960		3,065	1,732	615	833	—	93	129	63	—	1,226	1,196	13	17	29	40	28	12	39
1961		3,123	1,811	668	812	—	104	145	83	—	1,195	1,165	13	17	30	48	35	13	40
1962		3,698	2,098	709	1,011	—	119	163	98	—	1,471	1,438	14	19	30	58	45	13	41
1963		3,865	2,245	809	1,007	—	128	186	115	—	1,483	1,450	14	19	32	63	49	14	42
1964		4,193	2,454	947	978	54	142	203	130	—	1,593	1,560	14	19	37	65	47	18	45
1965		4,377	2,556	994	992	50	176	206	140	—	1,654	1,620	13	21	42	79	52	27	46
1966		4,668	2,640	1,012	986	68	208	213	153	—	1,842	1,804	14	24	48	91	57	34	47
1967		4,850	2,765	1,069	983	85	238	225	166	—	1,890	1,849	16	25	54	96	60	36	46
1968		5,141	2,815	1,112	956	91	250	221	186	—	2,125	2,081	16	28	55	101	62	39	46
1969		5,455	2,925	1,229	920	96	257	213	210	—	2,320	2,272	16	32	54	109	66	43	48
1970		5,737	3,085	1,334	952	82	280	213	225	—	2,429	2,378	18	33	56	117	70	47	51
1971		5,853	3,111	1,355	907	87	306	216	241	—	2,494	2,441	19	34	67	121	74	47	61
1972		6,148	3,244	1,434	845	109	391	224	243	—	2,618	2,562	21	35	82	131	79	52	74
1973		6,660	3,434	1,527	883	115	450	203	257	—	2,894	2,832	26	36	100	145	83	62	88
1974		7,354	3,644	1,652	905	130	477	191	290	—	3,333	3,263	32	39	118	163	91	72	96
1975		8,105	4,139	1,912	991	153	550	219	315	—	3,520	3,440	39	42	141	192	100	92	113
1976		8,999	4,486	2,068	1,033	190	596	263	338	—	4,001	3,912	45	45	166	218	109	109	127
1977		9,668	4,689	2,081	1,113	218	626	297	355	—	4,410	4,311	51	48	194	241	120	121	134
1978		10,708	5,084	2,242	1,195	239	676	324	409	—	4,982	4,870	61	52	232	259	132	128	151
1979		12,103	5,609	2,415	1,305	256	793	360	480	—	5,797	5,670	71	55	263	273	144	129	161
1980		13,751	6,273	2,546	1,625	281	912	421	489	—	6,698	6,550	88	60	308	298	158	140	174
1981		16,409	6,985	2,731	2,042	315	953	422	521	—	8,531	8,359	108	64	363	332	173	159	199
1982		18,291	7,763	2,802	2,593	379	1,007	433	550	—	9,553	9,363	121	69	402	367	189	178	207
1983		20,406	8,846	2,991	3,227	447	1,122	473	585	—	10,501	10,286	141	74	443	401	207	194	215
1984		22,526	9,574	2,961	3,677	568	1,226	548	594	—	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	—	13,191	12,908	198	85	547	471	247	224	262
1986		27,257	10,427	3,204	4,049	628	1,393	554	600	—	15,402	15,082	229	91	620	510	270	240	298
1987		27,852	10,730	3,366	4,037	560	1,643	532	593	—	15,511	15,153	260	98	707	571	295	276	333
1988		29,528	10,749	3,362	3,846	372	1,957	547	599	66	16,938	16,531	302	105	818	647	322	325	377
1989		32,280	11,755	3,566	4,324	377	2,120	603	695	70	18,452	17,993	347	112	933	722	352	370	417
1990		34,907	13,705	3,652	5,967	398	2,139	689	780	81	18,930	18,432	377	120	1,031	788	384	404	453
1991		38,648	14,297	4,094	5,588	452	2,230	927	921	86	21,946	21,425	392	129	1,091	847	419	428	468
1992		37,915	13,670	4,337	4,476	489	2,413	940	933	81	21,736	21,184	414	138	1,120	911	456	454	479

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(Millions of current dollars)

Year	Funding sector:	Federal Government								Industry				U&C	Nonprofits			Non-Federal ^a	
	Performing sector:	Total	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs ^d	Non-profits ^b	Nonprofit FFRDCs ^b	Total	Industry ^e	U&C ^c	Non-profits	U&C ^c	Total	Non-profits	U&C ^c	U&C ^c
1993		37,297	14,089	4,838	4,295	452	2,539	962	900	103	20,547	19,956	443	148	1,181	984	497	487	496
1994		36,623	13,805	4,985	3,616	511	2,640	982	960	111	19,995	19,372	464	158	1,256	1,049	541	508	517
1995		40,856	13,463	4,952	3,164	459	2,775	1,050	934	129	24,418	23,755	494	170	1,311	1,104	589	516	559
1996		43,160	13,949	4,872	3,640	227	2,859	1,270	960	122	26,076	25,370	524	182	1,390	1,162	640	522	584
1997		46,547	12,888	4,997	2,648	217	2,549	1,337	1,011	128	30,504	29,782	517	205	1,384	1,221	711	510	551
1998		46,364	12,860	5,146	2,632	241	2,286	1,372	1,060	123	30,317	29,576	518	223	1,375	1,287	777	511	524
1999		51,864	14,332	5,530	3,109	272	2,739	1,251	1,301	130	34,098	33,309	542	247	1,467	1,421	872	550	546
2000		56,511	15,773	6,105	2,688	263	3,342	1,329	1,837	209	36,972	36,130	563	279	1,603	1,584	983	601	579
2001 preliminary		63,609	18,724	7,164	3,603	267	3,706	1,473	2,209	302	40,755	39,883	591	281	1,780	1,731	1,077	654	620
2002 preliminary		64,802	20,507	8,083	3,643	304	4,105	1,645	2,456	271	39,833	38,947	611	275	1,946	1,871	1,171	701	645

FFRDC federally funded research and development center

U&C universities and colleges

^aBecause of limitations in survey information, data on non-Federal Government funding to other performers are not available and are consequently included in other sectors' support for their own R&D performance. For example, non-Federal Government support to nonprofits is included in nonprofits' support for their own R&D.

^bExpenditures of industry FFRDCs for 1953–63 were not separated from total Federal support to the industrial sector. Thus, the figure for Federal support to industry includes support to FFRDCs for those years. The same is true for expenditures of nonprofit FFRDCs, which are included in Federal support for nonprofit institutions in 1953–87.

^cAdjustments have been made to university R&D for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. The character-of-work estimation procedure for university and college R&D also was revised for 1998 and later years; hence, these data are not directly comparable with data for 1997 and earlier years.

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

^eIndustry sources of industry R&D expenditures include all non-Federal sources of industry R&D expenditures.

NOTES: Expenditure levels for academic and Federal Government performers are also in reference to calendar years. These levels are approximations based on FY data. For Federal Government expenditures starting in 1977, the calendar-year approximation is 75 percent of the amount reported in the same FY plus 25 percent of the amount reported in the subsequent FY. Academic expenditures in all years and Federal Government expenditures prior to 1977 are 50 and 50 percent, respectively, because those FYs (for most academic institutions and the Federal Government before 1977) began on July 1 instead of October 1. Because of changes in estimation procedures, character-of-work data before 1998 for industry and for U&C are not comparable with data for later years. Technical notes explaining methodological issues of measurement will be provided in NSF, *The Methodology Underlying the Measurement of R&D Expenditures: 2002* (Arlington, VA, forthcoming). Data are based on annual reports by performers except for the nonprofit sector. Data are preliminary for 2001 and 2002. For trend comparisons, use only the historical data reported here. Do not use data published earlier.

SOURCES: Data were derived from National Science Foundation, Division of Science Resources Statistics, *National Patterns of R&D Resources*, annual series.