

Appendix table 4-11

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

(Millions of current dollars)

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Year	Performing sector:	Total	Federal	Industry			Industry FFRDCs	U&C ^a					U&C FFRDCs	Other nonprofit institutions			Nonprofit FFRDCs		
	Funding sector:	Total	Federal	Total	Federal ^b	Industry ^c	Federal ^b	Total	Federal	Non-Federal ^d	Industry	U&C	Non-profits	Federal ^e	Total	Federal ^b	Industry	Non-profits	Federal ^b
1953		1,289	347	726	288	438	—	134	59	30	7	28	10	48	35	14	11	10	—
1954		1,378	330	814	322	492	—	137	60	32	8	28	10	58	40	16	13	11	—
1955		1,514	333	928	368	560	—	142	63	32	9	27	11	68	43	18	14	11	—
1956		1,928	387	1,268	474	794	—	146	65	33	10	27	11	79	49	21	14	14	—
1957		2,414	446	1,670	678	992	—	147	63	34	12	27	11	94	58	24	14	20	—
1958		2,758	516	1,911	774	1,137	—	152	66	35	12	27	12	111	69	30	14	25	—
1959		2,940	577	1,991	813	1,178	—	167	78	37	13	28	12	121	85	43	15	27	—
1960		3,065	615	2,029	833	1,196	—	186	93	39	13	29	12	129	108	63	17	28	—
1961		3,123	668	1,977	812	1,165	—	199	104	40	13	30	13	145	135	83	17	35	—
1962		3,698	709	2,449	1,011	1,438	—	216	119	41	14	30	13	163	162	98	19	45	—
1963		3,865	809	2,457	1,007	1,450	—	230	128	42	14	32	14	186	183	115	19	49	—
1964		4,193	947	2,538	978	1,560	54	256	142	45	14	37	18	203	196	130	19	47	—
1965		4,377	994	2,612	992	1,620	50	304	176	46	13	42	27	206	213	140	21	52	—
1966		4,668	1,012	2,790	986	1,804	68	351	208	47	14	48	34	213	234	153	24	57	—
1967		4,850	1,069	2,832	983	1,849	85	389	238	46	16	54	36	225	251	166	25	60	—
1968		5,141	1,112	3,037	956	2,081	91	405	250	46	16	55	39	221	276	186	28	62	—
1969		5,455	1,229	3,192	920	2,272	96	417	257	48	16	54	43	213	308	210	32	66	—
1970		5,737	1,334	3,330	952	2,378	82	451	280	51	18	56	47	213	328	225	33	70	—
1971		5,853	1,355	3,348	907	2,441	87	499	306	61	19	67	47	216	349	241	34	74	—
1972		6,148	1,434	3,407	845	2,562	109	619	391	74	21	82	52	224	357	243	35	79	—
1973		6,660	1,527	3,715	883	2,832	115	725	450	88	26	100	62	203	376	257	36	83	—
1974		7,354	1,652	4,168	905	3,263	130	794	477	96	32	118	72	191	420	290	39	91	—
1975		8,105	1,912	4,431	991	3,440	153	934	550	113	39	141	92	219	456	315	42	100	—
1976		8,999	2,068	4,945	1,033	3,912	190	1,042	596	127	45	166	109	263	492	338	45	109	—
1977		9,668	2,081	5,424	1,113	4,311	218	1,126	626	134	51	194	121	297	523	355	48	120	—
1978		10,708	2,242	6,065	1,195	4,870	239	1,247	676	151	61	232	128	324	592	409	52	132	—
1979		12,103	2,415	6,975	1,305	5,670	256	1,418	793	161	71	263	129	360	680	480	55	144	—
1980		13,751	2,546	8,175	1,625	6,550	281	1,622	912	174	88	308	140	421	706	489	60	158	—
1981		16,409	2,731	10,401	2,042	8,359	315	1,781	953	199	108	363	159	422	758	521	64	173	—
1982		18,291	2,802	11,956	2,593	9,363	379	1,915	1,007	207	121	402	178	433	808	550	69	189	—
1983		20,406	2,991	13,513	3,227	10,286	447	2,116	1,122	215	141	443	194	473	866	585	74	207	—
1984		22,526	2,961	15,218	3,677	11,541	568	2,332	1,226	234	168	491	212	548	899	594	79	226	—
1985		25,410	3,135	17,625	4,717	12,908	630	2,527	1,296	262	198	547	224	579	913	581	85	247	—
1986		27,257	3,204	19,131	4,049	15,082	628	2,780	1,393	298	229	620	240	554	961	600	91	270	—
1987		27,852	3,366	19,190	4,037	15,153	560	3,219	1,643	333	260	707	276	532	986	593	98	295	—
1988		29,528	3,362	20,377	3,846	16,531	372	3,779	1,957	377	302	818	325	547	1,026	599	105	322	66
1989		32,280	3,566	22,317	4,324	17,993	377	4,188	2,120	417	347	933	370	603	1,159	695	112	352	70
1990		34,907	3,652	24,399	5,967	18,432	398	4,405	2,139	453	377	1,031	404	689	1,284	780	120	384	81
1991		38,648	4,094	27,013	5,588	21,425	452	4,608	2,230	468	392	1,091	428	927	1,468	921	129	419	86
1992		37,915	4,337	25,660	4,476	21,184	489	4,880	2,413	479	414	1,120	454	940	1,528	933	138	456	81

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(Millions of current dollars)

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	Funding sector:			Total	Federal ^b	Industry ^c		Federal ^b	Total	Federal	Non-Federal ^d	Industry		U&C	Non-profits	Federal ^e		Total	Federal ^b
1993		37,297	4,838	24,251	4,295	19,956	452	5,146	2,539	496	443	1,181	487	962	1,544	900	148	497	103
1994		36,623	4,985	22,988	3,616	19,372	511	5,387	2,640	517	464	1,256	508	982	1,659	960	158	541	111
1995		40,856	4,952	26,919	3,164	23,755	459	5,655	2,775	559	494	1,311	516	1,050	1,692	934	170	589	129
1996		43,160	4,872	29,010	3,640	25,370	227	5,879	2,859	584	524	1,390	522	1,270	1,781	960	182	640	122
1997		46,547	4,997	32,430	2,648	29,782	217	5,511	2,549	551	517	1,384	510	1,337	1,926	1,011	205	711	128
1998		46,364	5,146	32,208	2,632	29,576	241	5,215	2,286	524	518	1,375	511	1,372	2,060	1,060	223	777	123
1999		51,864	5,530	36,418	3,109	33,309	272	5,843	2,739	546	542	1,467	550	1,251	2,420	1,301	247	872	130
2000		56,511	6,105	38,818	2,688	36,130	263	6,688	3,342	579	563	1,603	601	1,329	3,099	1,837	279	983	209
2001 preliminary		63,609	7,164	43,486	3,603	39,883	267	7,350	3,706	620	591	1,780	654	1,473	3,567	2,209	281	1,077	302
2002 preliminary		64,802	8,083	42,590	3,643	38,947	304	8,007	4,105	645	611	1,946	701	1,645	3,901	2,456	275	1,171	271

FFRDC federally funded research and development center

U&C universities and colleges

^aAdjustments 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.

^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.

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

^dBecause 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.

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

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.

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