

Appendix table 4-5

U.S. development expenditures, by performing sector and source of funds: 1953–2011

Year	All performers		Industry ^a				U&C ^c				Other nonprofit			Nonprofit FFRDCs ^d					
	Performer:	Federal	Industry ^a		Industry FFRDCs ^b		U&C ^c		U&C FFRDCs		Other nonprofit		Nonprofit FFRDCs ^d						
	Funding source:	All sources	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total	
Current \$millions																			
1953		3,412	567	2,753	1,123	1,630	NA	16	9	3	1	3	1	48	29	17	6	6	NA
1954		3,734	537	3,090	1,405	1,685	NA	17	9	3	1	3	1	59	32	18	7	7	NA
1955		4,189	543	3,523	1,785	1,738	NA	21	12	4	2	3	1	69	34	19	8	7	NA
1956		5,855	631	5,084	2,817	2,267	NA	25	14	4	2	4	2	81	35	20	8	7	NA
1957		6,681	728	5,790	3,616	2,174	NA	26	12	5	3	4	2	101	37	21	8	8	NA
1958		7,214	842	6,183	3,942	2,241	NA	28	13	6	3	4	2	120	42	25	8	9	NA
1959		8,463	940	7,307	4,750	2,557	NA	31	16	6	3	5	2	134	51	32	9	10	NA
1960		9,360	1,003	8,104	5,169	2,935	NA	35	19	6	3	5	2	151	69	49	10	10	NA
1961		9,930	1,090	8,536	5,347	3,189	NA	38	22	7	2	5	2	170	97	73	10	14	NA
1962		10,115	1,227	8,526	5,280	3,246	NA	40	23	8	2	6	2	190	132	103	11	18	NA
1963		11,540	1,465	9,651	6,116	3,535	NA	40	22	8	2	6	2	219	165	134	11	20	NA
1964		12,506	1,680	10,004	6,156	3,848	359	49	30	8	2	7	3	227	188	159	11	18	NA
1965		13,215	1,789	10,637	6,218	4,419	298	71	48	9	2	8	4	207	215	183	12	20	NA
1966		14,490	1,886	11,810	6,849	4,961	271	87	61	9	2	10	5	200	236	199	14	23	NA
1967		15,332	1,943	12,539	6,795	5,744	302	93	66	9	3	10	7	208	247	208	15	24	NA
1968		16,154	1,904	13,370	7,044	6,326	293	102	72	8	4	9	9	226	259	217	16	26	NA
1969		17,051	2,016	14,071	6,944	7,127	332	110	80	7	5	8	10	246	277	231	18	28	NA
1970		16,925	2,258	13,698	6,232	7,466	340	112	84	6	5	7	10	249	268	220	18	30	NA
1971		17,399	2,473	13,924	6,167	7,757	391	98	69	8	4	9	9	267	246	194	19	33	NA
1972		18,743	2,639	15,043	6,533	8,510	402	101	63	12	4	14	9	291	267	213	19	35	NA
1973		20,197	2,657	16,394	6,621	9,773	399	126	71	18	5	20	13	296	326	268	20	38	NA
1974		21,504	2,765	17,421	6,553	10,868	479	141	75	20	7	25	15	321	377	314	22	42	NA
1975		22,706	2,890	18,352	6,783	11,569	535	156	83	22	8	27	16	373	400	330	23	47	NA
1976		25,085	2,972	20,412	7,522	12,890	654	182	100	24	12	31	16	447	418	341	25	52	NA
1977		27,667	3,188	22,603	8,275	14,328	675	254	153	28	15	40	19	503	444	359	27	58	NA
1978		31,056	3,676	25,216	8,756	16,460	753	373	254	32	15	49	24	542	496	403	30	64	NA
1979		35,445	3,944	29,033	9,888	19,145	810	469	336	34	16	56	28	603	586	483	32	71	NA
1980		40,765	4,072	33,848	10,957	22,891	882	518	362	38	19	68	31	719	726	612	35	79	NA
1981		46,305	4,530	38,547	12,791	25,756	950	568	386	44	24	80	35	778	485	360	37	88	447
1982		51,879	5,178	43,434	14,215	29,219	989	597	397	46	27	88	39	745	500	362	40	98	436
1983		57,771	6,106	48,064	15,522	32,542	1,054	617	399	47	31	97	43	832	599	447	44	109	500
1984		66,461	7,078	55,371	17,640	37,731	1,056	677	435	51	37	108	47	986	762	594	47	120	530
1985		74,522	8,011	62,020	20,258	41,762	1,102	756	486	57	43	120	49	1,244	829	644	51	134	560
1986		75,855	8,275	62,871	21,517	41,354	1,145	818	513	65	50	136	53	1,504	790	587	55	149	453

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U.S. development expenditures, by performing sector and source of funds: 1953–2011

Year	All performers		Industry ^a				U&C ^c				U&C FFRDCs				Other nonprofit			Nonprofit FFRDCs ^d	
	Performer:	All	Federal	Industry ^a		Industry FFRDCs ^b		U&C ^c		U&C FFRDCs		Other nonprofit			Nonprofit FFRDCs ^d				
	Funding source:	sources	Federal	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total
1987		79,929	8,176	66,789	24,122	42,667	1,230	945	599	73	57	155	61	1,670	698	474	60	165	421
1988		84,567	8,864	70,353	23,719	46,634	1,414	1,098	698	83	66	180	71	1,762	655	407	65	183	420
1989		87,723	9,355	72,725	21,049	51,676	1,423	1,227	773	91	76	205	81	1,782	780	507	70	203	430
1990		94,067	9,700	78,376	18,966	59,410	1,438	1,407	910	99	83	226	89	1,735	920	619	75	226	490
1991		95,105	8,778	80,286	17,256	63,030	1,383	1,534	1,012	103	86	239	94	1,537	1,054	722	82	251	533
1992		99,811	9,098	84,569	17,181	67,388	1,372	1,596	1,055	105	91	246	100	1,452	1,125	758	88	279	599
1993		99,705	9,071	84,757	16,083	68,674	1,038	1,700	1,127	109	97	259	107	1,374	1,191	787	95	309	574
1994		102,938	8,823	87,890	16,209	71,681	1,196	1,816	1,213	114	102	276	112	1,378	1,261	815	103	343	573
1995		113,079	9,262	97,342	17,824	79,518	1,208	1,812	1,180	123	108	288	113	1,616	1,236	744	111	381	603
1996		121,377	9,033	105,863	17,066	88,797	1,358	1,791	1,128	128	115	305	115	1,520	1,241	698	120	423	571
1997		128,677	9,077	113,184	18,121	95,063	1,292	1,708	1,055	121	114	305	112	1,454	1,378	687	155	536	585
1998		144,723	9,214	129,041	18,452	110,589	1,280	1,619	974	116	114	302	113	1,527	1,535	760	164	611	507
1999		154,376	9,265	138,807	16,571	122,236	1,208	1,391	710	120	119	321	121	1,640	1,578	727	178	673	487
2000		169,472	9,377	153,745	13,510	140,235	1,185	1,289	565	125	121	348	130	1,577	1,579	580	195	804	720
2001		167,812	11,062	149,952	12,542	137,410	647	1,441	673	132	121	376	140	1,717	1,960	874	197	890	1,033
2002		176,689	11,800	157,788	13,061	144,727	639	1,507	669	144	120	419	156	1,726	2,156	937	191	1,028	1,074
2003		175,591	12,646	155,060	11,939	143,121	747	1,849	940	160	121	461	167	1,954	2,120	743	195	1,182	1,216
2004		177,347	12,746	155,034	14,419	140,615	851	2,204	1,268	166	123	474	172	2,447	2,686	1,300	199	1,186	1,379
2005		195,864	13,994	172,208	15,512	156,696	1,052	2,157	1,199	163	126	493	175	2,360	2,723	1,211	212	1,301	1,369
2006		212,836	16,089	188,112	16,720	171,392	1,156	1,952	970	162	130	512	179	2,136	2,189	603	226	1,360	1,202
2007		227,834	18,016	200,429	14,860	185,569	1,738	1,971	939	169	138	533	192	2,488	2,319	568	240	1,511	872
2008		259,713	17,566	231,449	29,488	201,961	1,948	2,020	885	185	153	581	216	2,239	2,500	562	249	1,689	1,991
2009		255,993	17,245	226,554	30,436	196,118	2,008	3,523	1,636	306	256	951	374	1,868	2,636	550	241	1,846	2,158
2010		249,979	18,141	217,700	28,088	189,612	2,118	5,259	2,623	421	349	1,335	530	1,842	2,684	523	242	1,919	2,236
2011		267,074	18,884	233,887	26,228	207,659	2,053	5,536	2,792	431	357	1,405	551	1,768	2,610	400	255	1,955	2,336
2005 constant \$millions																			
1953		21,111	3,506	17,036	6,949	10,087	NA	99	53	18	6	16	6	294	176	102	37	37	NA
1954		22,895	3,293	18,946	8,615	10,331	NA	104	52	21	6	19	6	359	193	107	43	43	NA
1955		25,256	3,271	21,241	10,762	10,479	NA	127	69	23	9	19	6	416	202	112	48	42	NA
1956		34,127	3,675	29,636	16,421	13,215	NA	146	79	26	12	21	9	469	201	114	47	41	NA
1957		37,688	4,104	32,662	20,398	12,264	NA	147	68	30	14	24	11	570	206	116	45	45	NA
1958		39,798	4,643	34,112	21,749	12,364	NA	152	69	31	17	24	11	662	229	135	44	50	NA
1959		46,149	5,126	39,845	25,902	13,943	NA	169	85	33	16	25	11	731	278	174	49	55	NA
1960		50,337	5,391	43,582	27,798	15,784	NA	186	102	34	13	25	11	809	368	261	54	54	NA
1961		52,799	5,793	45,389	28,432	16,957	NA	199	114	37	11	27	11	901	516	388	53	74	NA
1962		53,058	6,436	44,725	27,697	17,028	NA	210	118	40	10	30	10	997	690	538	58	94	NA

Appendix table 4-5

U.S. development expenditures, by performing sector and source of funds: 1953–2011

Year	All performers		Federal	Industry ^a			Industry FFRDCs ^b		U&C ^c				U&C FFRDCs		Other nonprofit			Nonprofit FFRDCs ^d	
	Funding source:	All sources		Federal	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other		U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit
			government ^f								Industry								
1963		59,896	7,604	50,094	31,745	18,348	NA	208	114	41	10	32	10	1,134	856	696	57	104	NA
1964		63,930	8,588	51,140	31,469	19,671	1,835	248	151	41	10	33	13	1,158	961	813	56	92	NA
1965		66,343	8,979	53,401	31,216	22,185	1,496	354	241	43	10	39	20	1,037	1,077	916	60	100	NA
1966		70,733	9,207	57,653	33,435	24,218	1,323	425	298	46	10	47	24	976	1,150	969	68	112	NA
1967		72,615	9,203	59,389	32,183	27,205	1,430	440	310	40	12	47	31	985	1,167	983	71	114	NA
1968		73,389	8,650	60,743	32,002	28,740	1,331	461	325	35	18	42	41	1,027	1,177	986	73	118	NA
1969		73,818	8,727	60,918	30,063	30,855	1,437	474	344	31	22	34	43	1,065	1,197	998	78	121	NA
1970		69,602	9,285	56,332	25,628	30,703	1,398	461	343	27	21	29	41	1,024	1,102	905	74	123	NA
1971		68,144	9,684	54,536	24,154	30,382	1,531	384	270	31	16	34	33	1,046	964	760	74	129	NA
1972		70,372	9,909	56,479	24,528	31,951	1,509	379	235	47	13	51	34	1,093	1,002	800	71	131	NA
1973		71,842	9,452	58,315	23,552	34,764	1,419	446	251	62	18	71	44	1,051	1,158	952	71	135	NA
1974		70,126	9,018	56,810	21,369	35,441	1,562	458	243	65	21	80	49	1,047	1,231	1,022	71	138	NA
1975		67,651	8,610	54,679	20,210	34,470	1,594	465	246	66	24	82	48	1,110	1,193	983	70	140	NA
1976		70,684	8,374	57,516	21,195	36,321	1,843	513	280	67	32	88	45	1,260	1,179	961	71	147	NA
1977		73,290	8,445	59,875	21,920	37,955	1,788	673	405	74	38	107	49	1,333	1,177	951	72	153	NA
1978		76,870	9,100	62,414	21,673	40,742	1,864	923	628	79	36	121	58	1,341	1,228	996	73	159	NA
1979		80,998	9,012	66,345	22,596	43,749	1,851	1,073	769	78	36	127	63	1,379	1,339	1,103	73	163	NA
1980		85,372	8,529	70,886	22,947	47,940	1,847	1,084	758	80	41	142	64	1,505	1,520	1,282	72	166	NA
1981		88,665	8,675	73,810	24,492	49,318	1,819	1,087	739	84	45	152	67	1,489	929	689	72	168	856
1982		93,624	9,345	78,383	25,653	52,730	1,785	1,077	717	82	48	159	70	1,344	903	654	73	176	787
1983		100,293	10,600	83,441	26,947	56,494	1,830	1,072	693	82	54	169	74	1,444	1,041	776	76	188	867
1984		111,201	11,843	92,646	29,515	63,131	1,767	1,133	727	86	62	180	78	1,650	1,275	995	79	202	887
1985		121,024	13,009	100,722	32,899	67,822	1,790	1,228	789	93	70	195	80	2,020	1,346	1,046	83	217	909
1986		120,524	13,147	99,894	34,188	65,706	1,819	1,299	816	104	80	216	84	2,389	1,256	932	88	236	719
1987		123,415	12,624	103,126	37,246	65,881	1,899	1,459	924	113	88	240	93	2,578	1,078	731	92	255	650
1988		126,241	13,232	105,023	35,408	69,615	2,111	1,639	1,042	124	99	268	106	2,630	978	608	96	274	627
1989		126,188	13,458	104,614	30,279	74,335	2,047	1,765	1,112	132	110	295	117	2,563	1,122	729	100	293	619
1990		130,286	13,435	108,554	26,269	82,285	1,992	1,949	1,260	138	115	313	123	2,403	1,275	857	104	313	679
1991		127,213	11,741	107,391	23,082	84,310	1,850	2,052	1,353	137	115	320	126	2,055	1,411	966	109	336	713
1992		130,416	11,887	110,501	22,449	88,052	1,793	2,086	1,378	137	119	321	130	1,897	1,470	991	115	364	783
1993		127,460	11,597	108,351	20,560	87,791	1,327	2,173	1,441	139	124	331	137	1,756	1,523	1,006	122	395	734
1994		128,879	11,047	110,039	20,294	89,745	1,497	2,274	1,519	142	128	345	140	1,726	1,579	1,020	129	430	717
1995		138,685	11,359	119,384	21,860	97,524	1,482	2,222	1,447	150	133	353	139	1,982	1,516	912	136	468	740
1996		146,081	10,872	127,410	20,540	106,870	1,634	2,156	1,358	154	138	367	138	1,829	1,494	840	145	510	687
1997		152,179	10,734	133,857	21,431	112,426	1,528	2,020	1,248	143	135	361	133	1,720	1,629	812	183	634	691

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U.S. development expenditures, by performing sector and source of funds: 1953–2011

Year	All performers		Industry ^a				U&C ^c			U&C FFRDCs			Other nonprofit			Nonprofit FFRDCs ^d			
	Performer:	All	Federal	Industry ^a		Industry FFRDCs ^b	U&C ^c		U&C FFRDCs		Other nonprofit		Nonprofit FFRDCs ^d						
	Funding source:	sources	Federal	Total	Federal ^b	Industry ^e	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total	
1998		169,245	10,775	150,906	21,579	129,328	1,497	1,893	1,139	135	134	354	132	1,786	1,795	889	192	714	593
1999		177,917	10,678	159,974	19,098	140,876	1,392	1,603	819	138	137	370	139	1,890	1,818	838	205	775	561
2000		191,013	10,568	173,287	15,227	158,060	1,336	1,453	637	141	137	392	146	1,778	1,780	653	220	907	812
2001		184,963	12,192	165,278	13,824	151,454	713	1,588	741	145	133	414	154	1,892	2,161	963	217	981	1,139
2002		191,644	12,798	171,144	14,167	156,977	693	1,635	725	156	130	455	169	1,872	2,338	1,016	207	1,115	1,165
2003		186,531	13,434	164,721	12,683	152,038	793	1,964	998	170	129	489	177	2,076	2,252	790	207	1,255	1,292
2004		183,236	13,169	160,182	14,898	145,284	879	2,277	1,310	172	128	489	178	2,529	2,775	1,344	206	1,226	1,425
2005		195,864	13,994	172,208	15,512	156,696	1,052	2,157	1,199	163	126	493	175	2,360	2,723	1,211	212	1,301	1,369
2006		206,175	15,586	182,224	16,197	166,028	1,120	1,891	940	157	126	496	174	2,069	2,121	584	219	1,318	1,164
2007		214,479	16,960	188,681	13,989	174,692	1,636	1,856	884	159	130	501	181	2,342	2,183	534	226	1,422	821
2008		239,185	16,178	213,155	27,157	185,998	1,794	1,860	815	170	141	535	199	2,062	2,302	518	229	1,555	1,833
2009		233,295	15,716	206,467	27,737	178,729	1,830	3,211	1,491	279	233	867	341	1,703	2,402	501	219	1,682	1,967
2010		225,224	16,344	196,142	25,307	170,835	1,908	4,738	2,364	379	315	1,203	478	1,659	2,418	472	218	1,729	2,015
2011		235,598	16,658	206,322	23,137	183,185	1,811	4,884	2,463	380	315	1,240	486	1,560	2,303	353	225	1,725	2,061

NA = not available; included in data for federal support to industry and federal support to nonprofit institutions.

FFRDC = federally funded R&D center; U&C = universities and colleges.

^a Character-of-work estimates for industry have been revised for 1998 and later years; data are not directly comparable with data for 1997 and earlier years.

^b Character-of-work estimates for industry-administered FFRDCs for 1953–63 are not separated from federal support for industry; thus, the data for federal support to industry include support to FFRDCs for those years.

^c Data for U&C R&D before 2003 cover only S&E fields; in 2003 and later years, R&D in non-S&E fields is also included. Adjustments have been made to U&C 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 was revised in 1998 and again in 2010; hence, these data are not directly comparable with the data reported in earlier years.

^d Character-of-work estimates for nonprofit-administered FFRDCs for 1953–80 are not separated from federal support for other nonprofits; thus, the data for federal support to other nonprofit institutions include support to FFRDCs for those years.

^e Industry sources of funds for industry R&D expenditures include all nonfederal sources of industry funds for R&D expenditures.

^f Because of limitations in survey information, data on other government funding to performers other than U&C were not available and consequently are included in other sectors' support for their own R&D performance (e.g., other government support to other nonprofits is included in other nonprofit support for their own R&D).

NOTES: Technical notes explaining methodological issues of measurement are available on request. Data are based on annual reports by performers, except for the nonprofit sector. R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, before 2001, for industry-administered FFRDCs are collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal year data. In most cases, the approximation equals 75% of the amount reported in the same fiscal year plus 25% of the amount reported in the subsequent fiscal year. However, the fiscal year for academic performers generally begins on 1 July, not 1 October; also, before 1977, the federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers before 1977 equal 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year. Detail may not add to total due rounding. Constant-dollar estimates are derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006—previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007—previously, it was U&C administered. The tracks of R&D expenditures from 2006 to 2008 for both industry- and U&C-administered FFRDCs reflect these shifts.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics (NSF/NCSES), National Patterns of R&D Resources (annual series), Business R&D and Innovation Survey (annual series), Higher Education R&D Survey (annual series), Survey of Federal Funds for R&D (annual series), Federally Funded Research and Development Centers R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations: FYs 1996–97. All NSF/NCSES reports are available at <http://www.nsf.gov/statistics/>.