

Appendix table 4-9

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

Year	Funding source:	All sources	Federal							Industry			U&C	Other nonprofit		Other government ^a			
	Performer:	All performers	Total	Federal	Industry ^{b, c}	FFRDCs ^c	U&C ^d	Other Nonprofit ^e	FFRDCs ^e	Total	Industry ^{b, f}	U&C ^d	Other nonprofit	Total	Other nonprofit	U&C ^d	U&C ^d		
Current \$millions																			
1953		3,412	1,762	567	1,123	NA	9	48	17	NA	1,637	1,630	1	6	3	7	6	1	3
1954		3,734	2,027	537	1,405	NA	9	59	18	NA	1,693	1,685	1	7	3	8	7	1	3
1955		4,189	2,427	543	1,785	NA	12	69	19	NA	1,748	1,738	2	8	3	8	7	1	4
1956		5,855	3,561	631	2,817	NA	14	81	20	NA	2,277	2,267	2	8	4	9	7	2	4
1957		6,681	4,477	728	3,616	NA	12	101	21	NA	2,185	2,174	3	8	4	10	8	2	5
1958		7,214	4,941	842	3,942	NA	13	120	25	NA	2,252	2,241	3	8	4	11	9	2	6
1959		8,463	5,872	940	4,750	NA	16	134	32	NA	2,569	2,557	3	9	5	12	10	2	6
1960		9,360	6,390	1,003	5,169	NA	19	151	49	NA	2,948	2,935	3	10	5	12	10	2	6
1961		9,930	6,701	1,090	5,347	NA	22	170	73	NA	3,201	3,189	2	10	5	16	14	2	7
1962		10,115	6,822	1,227	5,280	NA	23	190	103	NA	3,259	3,246	2	11	6	20	18	2	8
1963		11,540	7,956	1,465	6,116	NA	22	219	134	NA	3,548	3,535	2	11	6	22	20	2	8
1964		12,506	8,610	1,680	6,156	359	30	227	159	NA	3,861	3,848	2	11	7	21	18	3	8
1965		13,215	8,742	1,789	6,218	298	48	207	183	NA	4,433	4,419	2	12	8	24	20	4	9
1966		14,490	9,466	1,886	6,849	271	61	200	199	NA	4,977	4,961	2	14	10	28	23	5	9
1967		15,332	9,521	1,943	6,795	302	66	208	208	NA	5,762	5,744	3	15	10	31	24	7	9
1968		16,154	9,756	1,904	7,044	293	72	226	217	NA	6,346	6,326	4	16	9	35	26	9	8
1969		17,051	9,848	2,016	6,944	332	80	246	231	NA	7,150	7,127	5	18	8	38	28	10	7
1970		16,925	9,382	2,258	6,232	340	84	249	220	NA	7,489	7,466	5	18	7	40	30	10	6
1971		17,399	9,561	2,473	6,167	391	69	267	194	NA	7,780	7,757	4	19	9	42	33	9	8
1972		18,743	10,141	2,639	6,533	402	63	291	213	NA	8,533	8,510	4	19	14	44	35	9	12
1973		20,197	10,311	2,657	6,621	399	71	296	268	NA	9,798	9,773	5	20	20	51	38	13	18
1974		21,504	10,506	2,765	6,553	479	75	321	314	NA	10,896	10,868	7	22	25	57	42	15	20
1975		22,706	10,993	2,890	6,783	535	83	373	330	NA	11,600	11,569	8	23	27	63	47	16	22
1976		25,085	12,035	2,972	7,522	654	100	447	341	NA	12,927	12,890	12	25	31	68	52	16	24
1977		27,667	13,153	3,188	8,275	675	153	503	359	NA	14,370	14,328	15	27	40	76	58	19	28
1978		31,056	14,383	3,676	8,756	753	254	542	403	NA	16,504	16,460	15	30	49	88	64	24	32
1979		35,445	16,064	3,944	9,888	810	336	603	483	NA	19,193	19,145	16	32	56	99	71	28	34
1980		40,765	17,604	4,072	10,957	882	362	719	612	NA	22,945	22,891	19	35	68	110	79	31	38
1981		46,305	20,242	4,530	12,791	950	386	778	360	447	25,817	25,756	24	37	80	123	88	35	44
1982		51,879	22,323	5,178	14,215	989	397	745	362	436	29,286	29,219	27	40	88	137	98	39	46
1983		57,771	24,859	6,106	15,522	1,054	399	832	447	500	32,617	32,542	31	44	97	151	109	43	47
1984		66,461	28,320	7,078	17,640	1,056	435	986	594	530	37,815	37,731	37	47	108	167	120	47	51
1985		74,522	32,304	8,011	20,258	1,102	486	1,244	644	560	41,857	41,762	43	51	120	183	134	49	57
1986		75,855	33,993	8,275	21,517	1,145	513	1,504	587	453	41,460	41,354	50	55	136	201	149	53	65
1987		79,929	36,691	8,176	24,122	1,230	599	1,670	474	421	42,784	42,667	57	60	155	226	165	61	73
1988		84,567	37,285	8,864	23,719	1,414	698	1,762	407	420	46,765	46,634	66	65	180	254	183	71	83
1989		87,723	35,320	9,355	21,049	1,423	773	1,782	507	430	51,822	51,676	76	70	205	285	203	81	91
1990		94,067	33,859	9,700	18,966	1,438	910	1,735	619	490	59,568	59,410	83	75	226	315	226	89	99

Appendix table 4-9

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

Year	Funding source:	All sources	Federal								Industry			U&C	Other nonprofit		Other government ^a		
	Performer:	All performers	Total	Federal	Industry ^{b,c}	FFRDCs ^c	U&C ^d	U&C FFRDCs	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^{b,f}	U&C ^d	Other nonprofit	Total	Other nonprofit	U&C ^d	U&C ^d	
1991		95,105	31,220	8,778	17,256	1,383	1,012	1,537	722	533	63,197	63,030	86	82	239	345	251	94	103
1992		99,811	31,514	9,098	17,181	1,372	1,055	1,452	758	599	67,567	67,388	91	88	246	378	279	100	105
1993		99,705	30,054	9,071	16,083	1,038	1,127	1,374	787	574	68,866	68,674	97	95	259	416	309	107	109
1994		102,938	30,208	8,823	16,209	1,196	1,213	1,378	815	573	71,886	71,681	102	103	276	455	343	112	114
1995		113,079	32,436	9,262	17,824	1,208	1,180	1,616	744	603	79,738	79,518	108	111	288	495	381	113	123
1996		121,377	31,373	9,033	17,066	1,358	1,128	1,520	698	571	89,032	88,797	115	120	305	538	423	115	128
1997		128,677	32,270	9,077	18,121	1,292	1,055	1,454	687	585	95,332	95,063	114	155	305	649	536	112	121
1998		144,723	32,714	9,214	18,452	1,280	974	1,527	760	507	110,868	110,589	114	164	302	723	611	113	116
1999		154,376	30,609	9,265	16,571	1,208	710	1,640	727	487	122,533	122,236	119	178	321	793	673	121	120
2000		169,472	27,513	9,377	13,510	1,185	565	1,577	580	720	140,551	140,235	121	195	348	934	804	130	125
2001		167,812	28,547	11,062	12,542	647	673	1,717	874	1,033	137,727	137,410	121	197	376	1,030	890	140	132
2002		176,689	29,904	11,800	13,061	639	669	1,726	937	1,074	145,038	144,727	120	191	419	1,184	1,028	156	144
2003		175,591	30,185	12,646	11,939	747	940	1,954	743	1,216	143,438	143,121	121	195	461	1,349	1,182	167	160
2004		177,347	34,411	12,746	14,419	851	1,268	2,447	1,300	1,379	140,938	140,615	123	199	474	1,358	1,186	172	166
2005		195,864	36,697	13,994	15,512	1,052	1,199	2,360	1,211	1,369	157,034	156,696	126	212	493	1,477	1,301	175	163
2006		212,836	38,875	16,089	16,720	1,156	970	2,136	603	1,202	171,748	171,392	130	226	512	1,540	1,360	179	162
2007		227,834	39,482	18,016	14,860	1,738	939	2,488	568	872	185,947	185,569	138	240	533	1,703	1,511	192	169
2008		259,713	54,679	17,566	29,488	1,948	885	2,239	562	1,991	202,363	201,961	153	249	581	1,905	1,689	216	185
2009		255,993	55,901	17,245	30,436	2,008	1,636	1,868	550	2,158	196,615	196,118	256	241	951	2,220	1,846	374	306
2010		249,979	55,571	18,141	28,088	2,118	2,623	1,842	523	2,236	190,203	189,612	349	242	1,335	2,449	1,919	530	421
2011		267,074	54,461	18,884	26,228	2,053	2,792	1,768	400	2,336	208,271	207,659	357	255	1,405	2,506	1,955	551	431
2005 constant \$millions																			
1953		21,111	10,904	3,506	6,949	NA	53	294	102	NA	10,130	10,087	6	37	16	43	37	6	18
1954		22,895	12,425	3,293	8,615	NA	52	359	107	NA	10,381	10,331	6	43	19	49	43	6	21
1955		25,256	14,630	3,271	10,762	NA	69	416	112	NA	10,536	10,479	9	48	19	48	42	6	23
1956		34,127	20,758	3,675	16,421	NA	79	469	114	NA	13,273	13,215	12	47	21	50	41	9	26
1957		37,688	25,255	4,104	20,398	NA	68	570	116	NA	12,323	12,264	14	45	24	56	45	11	30
1958		39,798	27,257	4,643	21,749	NA	69	662	135	NA	12,425	12,364	17	44	24	61	50	11	31
1959		46,149	32,017	5,126	25,902	NA	85	731	174	NA	14,009	13,943	16	49	25	65	55	11	33
1960		50,337	34,362	5,391	27,798	NA	102	809	261	NA	15,851	15,784	13	54	25	65	54	11	34
1961		52,799	35,629	5,793	28,432	NA	114	901	388	NA	17,021	16,957	11	53	27	85	74	11	37
1962		53,058	35,786	6,436	27,697	NA	118	997	538	NA	17,096	17,028	10	58	30	105	94	10	40
1963		59,896	41,293	7,604	31,745	NA	114	1,134	696	NA	18,416	18,348	10	57	32	114	104	10	41
1964		63,930	44,014	8,588	31,469	1,835	151	1,158	813	NA	19,737	19,671	10	56	33	105	92	13	41
1965		66,343	43,885	8,979	31,216	1,496	241	1,037	916	NA	22,255	22,185	10	60	39	120	100	20	43
1966		70,733	46,208	9,207	33,435	1,323	298	976	969	NA	24,296	24,218	10	68	47	137	112	24	46
1967		72,615	45,094	9,203	32,183	1,430	310	985	983	NA	27,288	27,205	12	71	47	144	114	31	40
1968		73,389	44,321	8,650	32,002	1,331	325	1,027	986	NA	28,831	28,740	18	73	42	159	118	41	35
1969		73,818	42,634	8,727	30,063	1,437	344	1,065	998	NA	30,955	30,855	22	78	34	165	121	43	31

Appendix table 4-9

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

Year	Funding source:	All sources	Federal								Industry			U&C	Other nonprofit			Other government ^a	
	Performer:	All performers	Total	Federal	Industry ^{b,c}	FFRDCs ^c	U&C ^d	U&C FFRDCs	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^{b,f}	U&C ^d	Other nonprofit	Total	Other nonprofit	U&C ^d	U&C ^d	
1970		69,602	38,584	9,285	25,628	1,398	343	1,024	905	NA	30,798	30,703	21	74	29	164	123	41	27
1971		68,144	37,446	9,684	24,154	1,531	270	1,046	760	NA	30,472	30,382	16	74	34	163	129	33	31
1972		70,372	38,073	9,909	24,528	1,509	235	1,093	800	NA	32,035	31,951	13	71	51	165	131	34	47
1973		71,842	36,676	9,452	23,552	1,419	251	1,051	952	NA	34,853	34,764	18	71	71	180	135	44	62
1974		70,126	34,262	9,018	21,369	1,562	243	1,047	1,022	NA	35,533	35,441	21	71	80	187	138	49	65
1975		67,651	32,753	8,610	20,210	1,594	246	1,110	983	NA	34,563	34,470	24	70	82	187	140	48	66
1976		70,684	33,913	8,374	21,195	1,843	280	1,260	961	NA	36,425	36,321	32	71	88	192	147	45	67
1977		73,290	34,843	8,445	21,920	1,788	405	1,333	951	NA	38,066	37,955	38	72	107	202	153	49	74
1978		76,870	35,601	9,100	21,673	1,864	628	1,341	996	NA	40,851	40,742	36	73	121	217	159	58	79
1979		80,998	36,709	9,012	22,596	1,851	769	1,379	1,103	NA	43,858	43,749	36	73	127	226	163	63	78
1980		85,372	36,868	8,529	22,947	1,847	758	1,505	1,282	NA	48,053	47,940	41	72	142	230	166	64	80
1981		88,665	38,760	8,675	24,492	1,819	739	1,489	689	856	49,434	49,318	45	72	152	235	168	67	84
1982		93,624	40,285	9,345	25,653	1,785	717	1,344	654	787	52,851	52,730	48	73	159	247	176	70	82
1983		100,293	43,156	10,600	26,947	1,830	693	1,444	776	867	56,624	56,494	54	76	169	262	188	74	82
1984		111,201	47,384	11,843	29,515	1,767	727	1,650	995	887	63,271	63,131	62	79	180	280	202	78	86
1985		121,024	52,463	13,009	32,899	1,790	789	2,020	1,046	909	67,976	67,822	70	83	195	297	217	80	93
1986		120,524	54,010	13,147	34,188	1,819	816	2,389	932	719	65,874	65,706	80	88	216	320	236	84	104
1987		123,415	56,653	12,624	37,246	1,899	924	2,578	731	650	66,061	65,881	88	92	240	348	255	93	113
1988		126,241	55,659	13,232	35,408	2,111	1,042	2,630	608	627	69,811	69,615	99	96	268	380	274	106	124
1989		126,188	50,807	13,458	30,279	2,047	1,112	2,563	729	619	74,545	74,335	110	100	295	410	293	117	132
1990		130,286	46,895	13,435	26,269	1,992	1,260	2,403	857	679	82,504	82,285	115	104	313	436	313	123	138
1991		127,213	41,760	11,741	23,082	1,850	1,353	2,055	966	713	84,534	84,310	115	109	320	461	336	126	137
1992		130,416	41,178	11,887	22,449	1,793	1,378	1,897	991	783	88,286	88,052	119	115	321	494	364	130	137
1993		127,460	38,421	11,597	20,560	1,327	1,441	1,756	1,006	734	88,037	87,791	124	122	331	532	395	137	139
1994		128,879	37,820	11,047	20,294	1,497	1,519	1,726	1,020	717	90,001	89,745	128	129	345	570	430	140	142
1995		138,685	39,781	11,359	21,860	1,482	1,447	1,982	912	740	97,794	97,524	133	136	353	607	468	139	150
1996		146,081	37,759	10,872	20,540	1,634	1,358	1,829	840	687	107,153	106,870	138	145	367	648	510	138	154
1997		152,179	38,164	10,734	21,431	1,528	1,248	1,720	812	691	112,744	112,426	135	183	361	767	634	133	143
1998		169,245	38,257	10,775	21,579	1,497	1,139	1,786	889	593	129,653	129,328	134	192	354	846	714	132	135
1999		177,917	35,276	10,678	19,098	1,392	819	1,890	838	561	141,218	140,876	137	205	370	914	775	139	138
2000		191,013	31,010	10,568	15,227	1,336	637	1,778	653	812	158,416	158,060	137	220	392	1,053	907	146	141
2001		184,963	31,465	12,192	13,824	713	741	1,892	963	1,139	151,804	151,454	133	217	414	1,135	981	154	145
2002		191,644	32,435	12,798	14,167	693	725	1,872	1,016	1,165	157,314	156,977	130	207	455	1,284	1,115	169	156
2003		186,531	32,065	13,434	12,683	793	998	2,076	790	1,292	152,374	152,038	129	207	489	1,433	1,255	177	170
2004		183,236	35,554	13,169	14,898	879	1,310	2,529	1,344	1,425	145,618	145,284	128	206	489	1,403	1,226	178	172
2005		195,864	36,697	13,994	15,512	1,052	1,199	2,360	1,211	1,369	157,034	156,696	126	212	493	1,477	1,301	175	163
2006		206,175	37,658	15,586	16,197	1,120	940	2,069	584	1,164	166,373	166,028	126	219	496	1,491	1,318	174	157
2007		214,479	37,167	16,960	13,989	1,636	884	2,342	534	821	175,048	174,692	130	226	501	1,603	1,422	181	159
2008		239,185	50,357	16,178	27,157	1,794	815	2,062	518	1,833	186,368	185,998	141	229	535	1,754	1,555	199	170

Appendix table 4-9

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

Year	Funding source:	All sources	Federal								Industry			U&C	Other nonprofit			Other government ^a	
	Performer:	All performers	Total	Federal	Industry ^{b, c}	Industry FFRDCs ^c	U&C ^d	U&C FFRDCs	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^{b, f}	U&C ^d	Other nonprofit	Total	Other nonprofit	U&C ^d	U&C ^d	
2009		233,295	50,945	15,716	27,737	1,830	1,491	1,703	501	1,967	179,182	178,729	233	219	867	2,023	1,682	341	279
2010		225,224	50,068	16,344	25,307	1,908	2,364	1,659	472	2,015	171,368	170,835	315	218	1,203	2,207	1,729	478	379
2011		235,598	48,042	16,658	23,137	1,811	2,463	1,560	353	2,061	183,725	183,185	315	225	1,240	2,211	1,725	486	380

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 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).

^b 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.

^c 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.

^d 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 data reported in earlier years.

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

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

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 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 to 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, 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/>.