

National Patterns of R&D Resources: 2011–12 Data Update

Detailed Statistical Tables | NSF 14-304 | December 2013

Mark Boroush
Project Officer
Research and Development Statistics Program
(703) 292-8726

General Notes

National Patterns of R&D Resources describes and analyzes the current patterns of research and development performance and funding in the United States, with comparisons to the historical record and the reported R&D levels of other industrialized countries. The data tables covered here are a statistical supplement to the recent InfoBrief authored by the National Center for Science and Engineering Statistics that discusses the National Patterns findings for 2011–12 (<https://www.nsf.gov/statistics/infbrief/nsf14307/>).

Content of Data Tables

Table 1 summarizes the 1953–2012 trends in U.S. gross domestic product (GDP), total R&D, and the ratio of R&D to GDP.

Tables 2–9 present the National Science Foundation’s (NSF’s) most current information on R&D performed in the United States. The statistics on expenditure levels over time (1953–2012) are disaggregated by the following:

R&D performer: business sector,¹ federal government, federally funded research and development centers (FFRDCs), universities and colleges, and other nonprofit organizations

Source of funding: business sector, federal government, nonfederal government, universities and colleges, and other nonprofit organizations

Character of work: basic research, applied research, and development

Monetary unit: current dollars and constant (inflation-adjusted) dollars

Please note: For trend comparisons, use only the historical data reported here. These tables incorporate the latest revisions to prior-year data for all R&D performers and funders. Do not use data published earlier.

Tables 10 and 11 provide cross-sectional data on R&D expenditures by performer, source of funding, and character of work for 2011 and 2012.

Tables 12 and 13 describe the geographic distribution of U.S. R&D expenditures in calendar years 2010 and 2011 for the 50 states, the District of Columbia, and Puerto Rico.

Table 14 compares U.S. R&D expenditures, in total and as a share of gross domestic product, with those of a number of other large R&D-performing countries and economic regions (China, the European Union, France, Germany, Japan, South Korea, and the United Kingdom).

Updates to Methodology

The statistics on U.S. R&D presented here are derived principally from data on R&D expenditures and funding collected by NSF's national surveys of the organizations that perform the bulk of U.S. R&D (businesses, federal and nonfederal government, universities and colleges, and other nonprofit organizations). In some cases, the primary survey data are adjusted to enable consistent integration of the statistics from these separately conducted surveys. Preliminary or otherwise estimated values may be used where final data from one or more of the surveys are not yet available. In all tables, the data for 2011 are final and revise previously published numbers. The data for 2012 are preliminary.

The R&D surveys utilized include NSF's Business R&D and Innovation Survey (2008 to 2011; Survey of Industrial R&D for 2007 and earlier years), the Higher Education R&D Survey (FYs 2010–12; Survey of R&D Expenditures at Universities and Colleges for FY 2009 and earlier years), the Survey of Federal Funds for R&D (FYs 2011–13 and earlier years), and the FFRDC Research and Development Survey (FY 2012 and earlier years). Figures for R&D performed by other nonprofit organizations with funding from within the nonprofit sector and business sources are estimated, based on parameters from the Survey of R&D Funding and Performance by Nonprofit Organizations, 1996–97.

Data from the Business R&D and Innovation Survey are reported on a calendar-year basis and are used directly in the integration of the National Patterns totals. Those from the Survey of Federal Funds for R&D and the FFRDC Research and Development Survey are reported on a federal fiscal-year basis (1 October to 30 September) and are adjusted to the calendar year for the integration. The data from the Higher Education R&D Survey are reported on an academic fiscal-year basis (typically, 1 July through 30 June) and converted to calendar year.

Prior to FY 2001, R&D expenditure data for the FFRDCs were collected as part of the major performer surveys: the Survey of R&D Expenditures at Universities and Colleges (for university-administered FFRDCs), the Survey of Industrial R&D (for industry-administered FFRDCs), and the Survey of Federal Funds for R&D (for nonprofit-administered FFRDCs). Starting with FY 2001, collection of R&D expenditures data for all FFRDCs was consolidated into a single survey (FFRDC Research and Development Survey).

For 1998 and later years, the R&D figures for universities and colleges have been adjusted to eliminate double counting of funds passed through from one academic institution to another. For example, in FY 1998, a total of \$479 million in total pass-through funds were reported out of \$25.9 billion of all academic R&D expenditures that year. Comparable figures for FY 2012 are \$3.1 billion in total pass-through funds out of \$65.8 billion in academic R&D. Additionally, the figures for universities and colleges prior to 2003 cover only science and engineering (S&E) fields; in 2003 and later years, R&D in non-S&E fields is also included. Non-S&E R&D was \$1.4 billion in FY 2003 and \$3.5 billion in FY 2012.

The method for character-of-work estimation in business-sector R&D was revised for 1998 and later years. This change resulted in a net decrease in the proportion of business R&D classified as basic research. As such, the data for 1998 and later years are not directly comparable with data for 1997 and earlier years. The business R&D survey (with data starting in 2008), does not appear to have introduced further discontinuities in the character-of-work estimates. For universities and colleges, the character-of-work estimation method was revised in 1998 and again in 2010. Hence, the latest data for universities and colleges are also not directly comparable to those reported in earlier years.

The data on federally funded R&D discussed in this report were derived from surveys of organizations that perform R&D, such as companies, universities and colleges, and FFRDCs. These amounts can differ

substantially from the R&D that federal agencies have reported funding. For example, in FY 2009, federal agencies reported obligating \$133 billion in total R&D to all R&D performers (including \$53 billion to the business sector), compared with an estimated \$127 billion in federal funding reported by all performers of R&D (\$40 billion by businesses). Although NSF has not found a definitive explanation for this divergence, the National Academies' Committee on National Statistics notes that comparing federal outlays (as opposed to obligations) for R&D to performer expenditures results in a smaller discrepancy.² For FY 2009, federal agencies reported R&D outlays of \$127 billion to all R&D performers.

Further discussion of the methodology and technical issues involved in obtaining and compiling these R&D statistics can be found in *National Patterns of R&D Resources: 2006 Methodology Report* (the most-recent edition; available on request from the Project Officer).

Notes on How to Read the Tables

Tables 2–9 are arranged to exhibit R&D data from two differing perspectives: (1) by type of performer, with subsequent breakouts by source of funds, and (2) by source of funds, with subsequent breakouts by type of performer. The first case describes the distribution of total R&D expenditures among the various performers and then, for each performer, the sources of funding. The second case describes the distribution of total R&D funding among the various source organizations and then how each source's funding is distributed to performers.

For example, the upper-left-hand corners of table 2 and table 6 are displayed below, and represent the above cases 1 and 2, respectively. In table 2, the column spanner for industry¹ (as a performer) in the first row breaks out in the second row to headers for the two main sources of industrial R&D funding: the federal government and industry's own funds. For the federal government as a performer (first row), federal is repeated in the second row because the federal government is the only source of funds for federal intramural research.

Example 1:

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2012

Year	Performer:	All performers	Federal	Industry		Industry FFRDCs ^a				
	Funding source:	All sources	Federal	Total	Federal ^a	Industry ^d	Total	Total	Federal	govern
										Cur
1953		5,160	1,015	3,630	1,430	2,200	NA	273	149	
1954		5,617	963	4,070	1,750	2,320	NA	301	165	

In table 6, the federal government as a source of funding (column spanner, first row) subdivides to a set of column heads in the second row, reflecting the various performers receiving federal funds for R&D (such as industry, universities and colleges, and the federal government itself).

Example 2:

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source: Performer:	All sources	Federal							
		All performers	Total	Federal	Industry ^b	Industry FFRDCs ^b	U&C ^c	U&C FFRDCs	Other nonprofit ^d	Nonprofit FFRDC
1953		5,160	2,783	1,015	1,430	NA	149	131	58	†
1954		5,617	3,098	963	1,750	NA	165	161	61	†

Tables 2–5 are structured the same, and tables 6–9 are structured the same. However, tables 3–5 and 7–9 focus separately, in turn, on basic research, applied research, and development rather than on total R&D expenditures (which is the sum of these three components).

Notes

1. The terms business and industry are used interchangeably in this report.
2. National Research Council. 2005. *Measuring Research and Development Expenditures in the U.S. Economy*. Panel on Research and Development Statistics at the National Science Foundation, Brown LD, Plewes TJ, Gerstein MA, editors. Committee on National Statistics, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academies Press.

Data Tables

Table **National Patterns of R&D Resources: 2011–12 Data Update**

	Gross domestic product and R&D: 1953–2012
1	federal, nonfederal, and total R&D
	U.S. R&D expenditures
	by performing sector and source of funds: 1953–2012
2	total R&D
3	basic research
4	applied research
5	development
	by source of funds and performing sector: 1953–2012
6	total R&D
7	basic research
8	applied research
9	development
	by performing sector, source of funds, and character of work
10	2011
11	2012
	by state, sector, and source of funds
12	2010
13	2011
	International R&D expenditures, selected countries
14	total and as % of gross domestic product: 1981–2011

TABLE 1. Gross domestic product and research and development (total, federally funded, nonfederal): 1953–2012

Year	GDP			R&D				R&D/GDP (%)		
	Current	Implicit price deflator	2005 constant	Current	2005 constant	Federally funded	Nonfederally funded	Total	Federal funded	Nonfederal funded
	\$billions	(2005 = 1.00000)	\$billions	\$millions	\$millions	2005 constant \$millions	2005 constant \$millions			
1953	379.3	0.16173	2,345.2	5,160	31,904	17,204	14,700	1.36	0.73	0.63
1954	380.4	0.16323	2,330.4	5,617	34,408	18,979	15,429	1.48	0.81	0.66
1955	414.7	0.16600	2,498.2	6,281	37,839	21,706	16,133	1.51	0.87	0.65
1956	437.4	0.17169	2,547.6	8,500	49,507	28,994	20,514	1.94	1.14	0.81
1957	461.1	0.17743	2,598.8	9,908	55,844	35,128	20,715	2.15	1.35	0.80
1958	467.2	0.18141	2,575.4	10,915	60,168	38,444	21,724	2.34	1.49	0.84
1959	506.6	0.18354	2,760.1	12,490	68,047	44,497	23,550	2.47	1.61	0.85
1960	526.4	0.18611	2,828.5	13,711	73,674	47,904	25,770	2.60	1.69	0.91
1961	544.8	0.18823	2,894.4	14,564	77,377	50,388	26,989	2.67	1.74	0.93
1962	585.7	0.19079	3,069.8	15,636	81,953	53,137	28,816	2.67	1.73	0.94
1963	617.8	0.19282	3,204.0	17,519	90,856	60,395	30,461	2.84	1.88	0.95
1964	663.6	0.19579	3,389.4	19,103	97,569	65,195	32,374	2.88	1.92	0.96
1965	719.1	0.19936	3,607.0	20,252	101,585	66,179	35,405	2.82	1.83	0.98
1966	787.7	0.20502	3,842.1	22,072	107,657	69,090	38,567	2.80	1.80	1.00
1967	832.4	0.21131	3,939.2	23,346	110,483	68,917	41,567	2.80	1.75	1.06
1968	909.8	0.22030	4,129.9	24,666	111,968	67,928	44,041	2.71	1.64	1.07
1969	984.4	0.23118	4,258.2	25,996	112,449	65,873	46,577	2.64	1.55	1.09
1970	1,038.3	0.24337	4,266.3	26,271	107,947	61,569	46,377	2.53	1.44	1.09
1971	1,126.8	0.25554	4,409.5	26,952	105,470	59,522	45,948	2.39	1.35	1.04
1972	1,237.9	0.26657	4,643.8	28,740	107,815	60,169	47,646	2.32	1.30	1.03
1973	1,382.3	0.28137	4,912.8	30,952	110,004	58,952	51,053	2.24	1.20	1.04
1974	1,499.5	0.30692	4,885.7	33,359	108,691	56,325	52,366	2.22	1.15	1.07
1975	1,637.7	0.33591	4,875.4	35,671	106,193	55,173	51,020	2.18	1.13	1.05
1976	1,824.6	0.35519	5,136.9	39,435	111,023	57,128	53,895	2.16	1.11	1.05
1977	2,030.1	0.37783	5,373.1	43,338	114,703	58,417	56,287	2.13	1.09	1.05
1978	2,293.8	0.40435	5,672.8	48,719	120,488	60,378	60,110	2.12	1.06	1.06
1979	2,562.2	0.43798	5,850.1	55,379	126,443	62,161	64,282	2.16	1.06	1.10
1980	2,788.1	0.47791	5,834.0	63,224	132,294	62,745	69,549	2.27	1.08	1.19
1981	3,126.8	0.52269	5,982.1	72,292	138,307	64,548	73,759	2.31	1.08	1.23
1982	3,253.2	0.55460	5,865.9	80,748	145,598	66,956	78,642	2.48	1.14	1.34
1983	3,534.6	0.57652	6,130.9	89,950	156,021	71,898	84,123	2.54	1.17	1.37
1984	3,930.9	0.59817	6,571.5	102,244	170,926	77,687	93,239	2.60	1.18	1.42
1985	4,217.5	0.61629	6,843.4	114,671	186,067	85,417	100,650	2.72	1.25	1.47
1986	4,460.1	0.62991	7,080.5	120,249	190,897	86,714	104,183	2.70	1.22	1.47
1987	4,736.4	0.64820	7,307.0	126,360	194,940	90,419	104,522	2.67	1.24	1.43
1988	5,100.4	0.67045	7,607.4	133,881	199,688	89,687	110,001	2.62	1.18	1.45
1989	5,482.1	0.69577	7,879.2	141,891	203,934	86,905	117,029	2.59	1.10	1.49
1990	5,800.5	0.72261	8,027.1	151,993	210,337	85,260	125,077	2.62	1.06	1.56
1991	5,992.1	0.74824	8,008.3	160,876	215,006	81,235	133,771	2.68	1.01	1.67
1992	6,342.3	0.76598	8,280.0	165,350	215,868	79,525	136,343	2.61	0.96	1.65
1993	6,667.4	0.78291	8,516.2	165,730	211,686	77,311	134,374	2.49	0.91	1.58
1994	7,085.2	0.79940	8,863.1	169,207	211,666	76,028	135,638	2.39	0.86	1.53

TABLE 1. Gross domestic product and research and development (total, federally funded, nonfederal): 1953–2012

Year	GDP			R&D				R&D/GDP (%)		
	Current \$billions	Implicit price deflator (2005 = 1.00000)	2005 constant \$billions	Current \$millions	2005 constant \$millions	Federally funded 2005 constant \$millions	Nonfederally funded 2005 constant \$millions	Total	Federal funded	Nonfederal funded
1995	7,414.7	0.81606	9,086.0	183,625	225,015	77,162	147,853	2.48	0.85	1.63
1996	7,838.5	0.83160	9,425.8	197,346	237,309	76,231	161,078	2.52	0.81	1.71
1997	8,332.4	0.84628	9,845.9	212,152	250,687	76,303	174,384	2.55	0.77	1.77
1998	8,793.5	0.85584	10,274.7	226,457	264,602	77,565	187,037	2.58	0.75	1.82
1999	9,353.5	0.86842	10,770.7	245,318	282,488	77,574	204,914	2.62	0.72	1.90
2000	9,951.5	0.88723	11,216.4	268,905	303,084	76,487	226,597	2.70	0.68	2.02
2001	10,286.2	0.90727	11,337.5	279,716	308,304	82,628	225,676	2.72	0.73	1.99
2002	10,642.3	0.92196	11,543.1	279,387	303,036	87,113	215,923	2.63	0.75	1.87
2003	11,142.2	0.94135	11,836.4	293,060	311,319	92,107	219,212	2.63	0.78	1.85
2004	11,853.3	0.96786	12,246.9	304,547	314,660	95,427	219,233	2.57	0.78	1.79
2005	12,623.0	1.00000	12,623.0	327,185	327,185	97,041	230,144	2.59	0.77	1.82
2006	13,377.2	1.03231	12,958.5	352,567	341,532	98,379	243,153	2.64	0.76	1.88
2007	14,028.7	1.06227	13,206.4	379,681	357,426	100,595	256,832	2.71	0.76	1.94
2008	14,291.5	1.08582	13,161.9	406,610	374,472	109,984	264,488	2.85	0.84	2.01
2009	13,973.7	1.09530	12,757.9	404,731	369,517	116,377	253,140	2.90	0.91	1.98
2010	14,498.9	1.10992	13,063.0	407,703	367,326	115,155	252,171	2.81	0.88	1.93
2011	15,075.7	1.13359	13,299.1	428,163	377,706	113,858	263,848	2.84	0.86	1.98
2012 (preliminary)	15,684.8	1.15387	13,593.2	452,556	392,206	117,013	275,193	2.89	0.86	2.02

GDP = gross domestic product.

NOTE: The R&D data for 2012 are preliminary and may later be revised.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics (NSF/NCSES), National Patterns of R&D Resources (annual series). GDP data are from the U.S. Bureau of Economic Analysis, Survey of Current Business, <http://www.bea.gov>, accessed 26 June 2013.

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry					U&C						Nonprofit					
	Performer:	performers	Federal	Industry		Industry FFRDCs ^a	U&C ^b			U&C FFRDCs	Other nonprofit		Nonprofit FFRDCs ^c						
	Funding	All	Federal	Total	Federal ^a	Industry ^d	Total	Total	Federal	Other		Other	Total	Total	Federal ^c	Industry ^f	Other nonprofit ^f	Total	
	source:	sources								government ^e	Industry								U&C
Current \$millions																			
1953		5,160	1,015	3,630	1,430	2,200	NA	273	149	40	21	37	27	131	112	58	26	28	NA
1954		5,617	963	4,070	1,750	2,320	NA	301	165	45	24	40	29	161	123	61	31	31	NA
1955		6,281	973	4,517	2,057	2,460	123	342	191	50	27	42	32	187	131	64	35	32	9
1956		8,500	1,130	6,272	2,995	3,277	333	391	221	57	32	46	36	217	146	71	37	38	11
1957		9,908	1,297	7,324	3,928	3,396	407	433	242	64	37	51	40	267	167	79	37	51	14
1958		10,915	1,507	8,066	4,436	3,630	323	491	280	72	39	56	45	316	195	95	38	62	18
1959		12,490	1,681	9,200	5,217	3,983	418	586	356	81	40	61	50	349	234	125	42	67	22
1960		13,711	1,801	10,032	5,604	4,428	477	705	453	90	40	67	55	385	264	148	48	68	48
1961		14,564	1,987	10,353	5,685	4,668	555	834	557	101	40	75	62	440	304	169	49	86	92
1962		15,636	2,188	11,037	6,008	5,029	426	993	687	112	41	84	70	500	363	200	54	109	130
1963		17,519	2,558	12,216	6,856	5,360	414	1,178	839	125	41	96	78	580	408	234	55	119	165
1964		19,103	2,965	13,049	7,257	5,792	463	1,375	995	138	41	114	88	629	417	250	55	112	205
1965		20,252	3,156	13,812	7,367	6,445	373	1,595	1,167	150	42	136	101	630	472	286	62	124	215
1966		22,072	3,308	15,193	7,977	7,216	355	1,818	1,335	160	45	165	114	652	537	329	70	138	210
1967		23,346	3,444	15,966	7,946	8,020	419	2,035	1,491	168	52	200	126	696	561	342	74	145	225
1968		24,666	3,497	17,014	8,145	8,869	415	2,187	1,586	185	58	221	139	722	596	364	81	151	235
1969		25,996	3,790	17,844	7,987	9,857	464	2,280	1,624	208	61	233	155	731	642	388	93	161	245
1970		26,271	4,154	17,594	7,306	10,288	473	2,418	1,686	237	66	259	171	727	677	410	95	172	230
1971		26,952	4,409	17,829	7,175	10,654	491	2,565	1,760	262	72	290	182	735	709	427	98	184	215
1972		28,740	4,676	19,004	7,469	11,535	548	2,757	1,890	282	79	312	195	785	771	472	101	198	200
1973		30,952	4,837	20,704	7,600	13,104	545	2,953	2,009	302	90	343	211	841	882	566	105	211	190
1974		33,359	5,132	22,239	7,572	14,667	648	3,216	2,160	320	104	393	239	926	988	639	114	235	210
1975		35,671	5,561	23,460	7,878	15,582	727	3,570	2,400	348	118	432	272	1,067	1,062	675	124	262	225
1976		39,435	5,890	26,107	8,671	17,436	890	3,899	2,619	369	131	480	300	1,266	1,139	711	135	292	245
1977		43,338	6,211	28,863	9,523	19,340	962	4,346	2,893	394	155	569	337	1,467	1,213	740	147	326	275
1978		48,719	6,962	32,222	10,107	22,115	1,082	4,996	3,329	443	182	679	364	1,772	1,353	830	160	363	333
1979		55,379	7,471	37,062	11,354	25,708	1,164	5,715	3,848	482	215	785	386	2,013	1,564	985	174	405	390
1980		63,224	7,831	43,228	12,752	30,476	1,277	6,455	4,335	519	264	920	419	2,306	1,658	1,017	189	452	469
1981		72,292	8,605	50,425	14,997	35,428	1,385	7,085	4,670	581	314	1,058	463	2,484	1,784	1,075	206	504	524
1982		80,748	9,501	57,166	17,061	40,105	1,484	7,603	4,879	621	363	1,207	534	2,544	1,915	1,129	224	561	536
1983		89,950	10,830	63,683	19,095	44,588	1,585	8,251	5,210	658	432	1,357	595	2,840	2,176	1,306	244	626	585
1984		102,244	11,916	73,061	21,657	51,404	1,739	9,154	5,748	721	518	1,514	654	3,243	2,511	1,548	265	698	620
1985		114,671	13,093	82,376	25,333	57,043	1,863	10,308	6,388	834	630	1,743	713	3,616	2,761	1,694	289	778	655
1986		120,249	13,504	85,932	26,000	59,932	1,891	11,540	7,028	969	745	2,019	780	3,973	2,867	1,686	314	867	541

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry					U&C			Other nonprofit			Nonprofit					
	Performer:	performers	Federal	Industry		Industry	U&C ^b		U&C		Other nonprofit		FFRDCs ^c						
	Funding source:	All sources	Federal	Total	Federal ^a	Industry ^d	Total	Total	Federal	Other government ^e	Industry	U&C	nonprofit	Total	Total	Federal ^c	Industry ^f	Other nonprofit ^f	Total
1987		126,360	13,588	90,160	28,757	61,403	1,995	12,807	7,768	1,065	831	2,262	882	4,287	3,013	1,704	342	967	509
1988		133,881	14,342	94,893	28,221	66,672	2,122	14,221	8,593	1,165	933	2,527	1,003	4,581	3,213	1,762	372	1,078	510
1989		141,891	15,231	99,860	26,359	73,501	2,195	15,634	9,317	1,274	1,061	2,852	1,131	4,756	3,669	2,062	405	1,202	547
1990		151,993	15,671	107,404	25,802	81,602	2,323	16,939	9,939	1,399	1,166	3,187	1,249	4,894	4,126	2,346	440	1,340	636
1991		160,876	15,249	114,675	24,095	90,580	2,277	18,206	10,667	1,483	1,242	3,458	1,358	5,120	4,652	2,679	479	1,494	696
1992		165,350	15,853	116,757	22,369	94,388	2,353	19,388	11,528	1,525	1,320	3,569	1,448	5,259	4,993	2,806	521	1,666	748
1993		165,730	16,531	115,435	20,844	94,591	1,965	20,495	12,307	1,557	1,392	3,709	1,531	5,289	5,267	2,843	567	1,857	749
1994		169,207	16,355	117,392	20,261	97,131	2,202	21,607	12,996	1,623	1,456	3,938	1,595	5,294	5,599	2,911	617	2,071	758
1995		183,625	16,904	129,830	21,178	108,652	2,273	22,617	13,592	1,751	1,548	4,110	1,617	5,367	5,827	2,847	671	2,308	808
1996		197,346	16,585	142,371	21,356	121,015	2,297	23,718	14,084	1,861	1,672	4,436	1,666	5,395	6,209	2,906	730	2,574	772
1997		212,152	16,819	155,409	21,798	133,611	2,130	24,884	14,530	1,922	1,808	4,838	1,786	5,463	6,626	3,014	809	2,804	821
1998		226,457	17,362	167,102	22,086	145,016	2,078	26,181	15,174	1,972	1,950	5,163	1,922	5,559	7,332	3,281	859	3,192	843
1999		245,318	18,142	182,090	20,496	161,594	2,039	28,176	16,264	2,098	2,082	5,619	2,112	5,652	8,207	3,761	931	3,516	1,013
2000		268,905	19,247	199,961	17,117	182,844	2,001	30,693	17,719	2,246	2,174	6,231	2,324	5,742	9,734	4,510	1,020	4,204	1,526
2001		279,716	22,374	202,017	16,899	185,118	2,020	33,720	19,767	2,395	2,189	6,826	2,542	6,225	11,167	5,488	1,029	4,650	2,192
2002		279,387	23,798	193,868	16,401	177,467	2,263	37,888	22,654	2,610	2,178	7,617	2,828	7,102	12,150	5,778	998	5,374	2,319
2003		293,060	24,982	200,724	17,798	182,926	2,458	41,959	25,727	2,856	2,166	8,226	2,984	7,301	13,141	5,945	1,020	6,176	2,494
2004		304,547	24,898	208,301	20,266	188,035	2,485	44,782	27,872	3,008	2,231	8,562	3,109	7,659	13,779	6,537	1,041	6,201	2,644
2005		327,185	26,322	226,159	21,909	204,250	2,601	47,006	29,019	3,060	2,368	9,265	3,294	7,817	14,452	6,545	1,107	6,800	2,828
2006		352,567	28,240	247,669	24,304	223,365	3,122	48,951	29,600	3,182	2,563	10,076	3,530	7,306	14,336	6,044	1,182	7,111	2,943
2007		379,681	29,859	269,267	26,585	242,682	5,165	51,149	30,160	3,438	2,803	10,833	3,915	5,567	15,132	5,980	1,257	7,896	3,543
2008		406,610	29,839	290,681	36,360	254,321	6,346	53,917	31,178	3,706	3,069	11,640	4,324	4,766	16,363	6,236	1,301	8,827	4,698
2009		404,731	30,560	282,393	39,573	242,820	6,646	56,972	33,434	3,809	3,193	11,917	4,620	5,052	18,002	7,097	1,258	9,647	5,106
2010		407,703	31,970	278,977	34,199	244,778	7,214	60,369	36,565	3,788	3,145	12,100	4,771	5,315	18,401	7,093	1,265	10,043	5,457
2011		428,163	35,775	294,093	31,309	262,784	6,956	62,457	37,714	3,718	3,189	12,965	4,872	5,246	18,120	6,553	1,333	10,234	5,516
2012 (preliminary)		452,556	37,574	316,700	36,300	280,400	6,808	62,723	37,393	3,659	3,242	13,506	4,923	5,174	18,113	6,305	1,398	10,410	5,464
2005 constant \$millions																			
1953		31,904	6,276	22,444	8,842	13,603	NA	1,685	921	244	127	226	167	810	689	356	161	173	NA
1954		34,408	5,896	24,934	10,721	14,213	NA	1,844	1,008	273	144	242	178	983	750	371	190	190	NA
1955		37,839	5,860	27,211	12,392	14,819	741	2,060	1,151	301	163	253	193	1,127	789	386	211	193	51
1956		49,507	6,584	36,531	17,444	19,087	1,940	2,277	1,287	329	183	268	210	1,264	847	411	216	221	64
1957		55,844	7,311	41,279	22,139	19,140	2,294	2,440	1,361	361	206	287	225	1,502	938	442	209	287	79
1958		60,168	8,305	44,463	24,453	20,010	1,781	2,707	1,543	397	215	306	245	1,739	1,075	524	209	342	99
1959		68,047	9,159	50,124	28,424	21,701	2,277	3,193	1,937	439	215	332	270	1,901	1,272	678	229	365	120
1960		73,674	9,675	53,905	30,112	23,793	2,563	3,785	2,431	484	215	360	296	2,069	1,419	795	258	365	258
1961		77,377	10,558	55,003	30,203	24,800	2,949	4,428	2,957	534	213	396	329	2,338	1,615	898	260	457	486
1962		81,953	11,466	57,848	31,489	26,358	2,233	5,202	3,598	587	212	440	364	2,621	1,903	1,048	283	571	681

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry					U&C				Nonprofit							
	Performer:	performers	Federal	Industry		Industry	U&C ^b		U&C		Other nonprofit		Nonprofit						
	Funding	All		Federal ^a	Industry ^d	FFRDCs ^a	Total	Federal	Other	FFRDCs	Total	Federal ^c	Industry ^f	Other					
	source:	sources	Federal	Total	Total	Total	Total	government ^e	Industry	U&C	nonprofit	Total	Total	nonprofit ^f	Total				
1963		90,856	13,269	63,354	35,556	27,798	2,147	6,109	4,349	648	210	498	405	3,005	2,116	1,214	285	617	856
1964		97,569	15,146	66,649	37,066	29,583	2,365	7,020	5,082	702	207	580	449	3,213	2,130	1,277	281	572	1,047
1965		101,585	15,831	69,281	36,953	32,328	1,871	7,998	5,854	750	208	682	504	3,158	2,368	1,435	311	622	1,078
1966		107,657	16,134	74,106	38,909	35,197	1,732	8,868	6,512	780	219	802	554	3,178	2,617	1,602	341	673	1,024
1967		110,483	16,300	75,557	37,603	37,953	1,983	9,630	7,054	795	244	944	594	3,294	2,655	1,618	350	686	1,065
1968		111,968	15,875	77,232	36,973	40,259	1,884	9,928	7,199	838	261	1,001	629	3,277	2,705	1,652	368	685	1,067
1969		112,449	16,395	77,187	34,549	42,638	2,007	9,863	7,023	900	262	1,008	670	3,162	2,775	1,676	402	696	1,060
1970		107,947	17,068	72,292	30,020	42,273	1,944	9,933	6,926	974	269	1,062	703	2,985	2,780	1,683	390	707	945
1971		105,470	17,253	69,770	28,078	41,692	1,921	10,038	6,885	1,025	282	1,133	712	2,874	2,773	1,669	384	720	841
1972		107,815	17,540	71,291	28,019	43,272	2,056	10,342	7,090	1,058	296	1,169	730	2,945	2,890	1,769	379	743	750
1973		110,004	17,189	73,584	27,011	46,573	1,937	10,495	7,138	1,072	318	1,219	748	2,989	3,135	2,012	373	750	675
1974		108,691	16,723	72,460	24,671	47,788	2,111	10,477	7,038	1,043	339	1,279	779	3,017	3,219	2,080	372	766	684
1975		106,193	16,556	69,840	23,453	46,387	2,164	10,626	7,145	1,036	351	1,285	810	3,176	3,160	2,009	370	781	670
1976		111,023	16,583	73,501	24,412	49,089	2,506	10,976	7,373	1,039	369	1,351	843	3,563	3,206	2,002	381	823	690
1977		114,703	16,440	76,392	25,205	51,188	2,546	11,503	7,656	1,043	409	1,505	891	3,883	3,211	1,959	389	863	728
1978		120,488	17,218	79,688	24,996	54,693	2,676	12,354	8,232	1,096	449	1,679	899	4,381	3,347	2,053	396	899	822
1979		126,443	17,059	84,621	25,924	58,697	2,658	13,048	8,786	1,099	490	1,792	880	4,596	3,572	2,249	398	925	890
1980		132,294	16,385	90,453	26,683	63,770	2,672	13,507	9,070	1,085	551	1,924	877	4,825	3,470	2,128	396	945	981
1981		138,307	16,462	96,472	28,692	67,780	2,650	13,555	8,934	1,112	601	2,023	886	4,753	3,414	2,056	394	964	1,003
1982		145,598	17,132	103,077	30,763	72,314	2,676	13,708	8,797	1,120	655	2,175	962	4,586	3,453	2,036	404	1,012	966
1983		156,021	18,784	110,461	33,121	77,340	2,749	14,312	9,037	1,141	749	2,353	1,031	4,927	3,774	2,264	423	1,086	1,015
1984		170,926	19,920	122,140	36,205	85,935	2,907	15,302	9,608	1,205	865	2,531	1,092	5,422	4,198	2,587	444	1,167	1,037
1985		186,067	21,245	133,665	41,106	92,559	3,023	16,725	10,365	1,352	1,022	2,828	1,157	5,867	4,479	2,748	469	1,263	1,062
1986		190,897	21,439	136,419	41,276	95,143	3,002	18,320	11,156	1,538	1,183	3,204	1,238	6,307	4,552	2,676	499	1,377	859
1987		194,940	20,963	139,093	44,364	94,728	3,078	19,758	11,984	1,642	1,282	3,490	1,360	6,614	4,649	2,629	527	1,492	786
1988		199,688	21,392	141,536	42,092	99,443	3,165	21,211	12,817	1,738	1,392	3,769	1,496	6,832	4,792	2,629	555	1,608	760
1989		203,934	21,890	143,525	37,885	105,640	3,155	22,470	13,390	1,831	1,524	4,099	1,626	6,835	5,273	2,964	582	1,728	786
1990		210,337	21,687	148,632	35,706	112,926	3,215	23,441	13,754	1,936	1,613	4,410	1,728	6,772	5,710	3,246	609	1,855	880
1991		215,006	20,380	153,260	32,202	121,058	3,043	24,332	14,256	1,981	1,659	4,621	1,815	6,843	6,217	3,580	640	1,997	930
1992		215,868	20,696	152,429	29,203	123,225	3,072	25,311	15,049	1,991	1,723	4,659	1,890	6,866	6,518	3,663	680	2,175	976
1993		211,686	21,114	147,444	26,624	120,820	2,510	26,177	15,720	1,989	1,777	4,737	1,955	6,756	6,728	3,632	724	2,372	957
1994		211,666	20,459	146,849	25,345	121,504	2,755	27,028	16,256	2,030	1,821	4,926	1,995	6,622	7,003	3,642	772	2,590	949
1995		225,015	20,714	159,094	25,952	133,143	2,785	27,715	16,656	2,146	1,896	5,036	1,981	6,577	7,140	3,489	822	2,829	990
1996		237,309	19,943	171,201	25,681	145,521	2,762	28,520	16,936	2,238	2,010	5,334	2,003	6,487	7,467	3,494	878	3,095	928
1997		250,687	19,874	183,638	25,757	157,880	2,517	29,404	17,169	2,271	2,136	5,717	2,111	6,455	7,830	3,561	956	3,313	970

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry						U&C				Nonprofit						
	Performer:	performers	Federal	Industry		FFRDCs ^a		U&C ^b		FFRDCs		Other nonprofit		FFRDCs ^c					
	Funding source:	All sources	Federal	Total	Federal ^a	Industry ^d	Total	Total	Federal	Other government ^e	Industry	U&C	Other nonprofit	Total	Total	Federal ^c	Industry ^f	Other nonprofit ^f	Total
1998		264,602	20,287	195,249	25,806	169,443	2,428	30,591	17,730	2,304	2,278	6,033	2,246	6,496	8,567	3,833	1,004	3,730	985
1999		282,488	20,891	209,679	23,601	186,078	2,348	32,445	18,728	2,416	2,397	6,471	2,432	6,508	9,450	4,330	1,072	4,048	1,167
2000		303,084	21,693	225,378	19,293	206,085	2,255	34,595	19,971	2,532	2,450	7,023	2,620	6,472	10,971	5,083	1,149	4,739	1,720
2001		308,304	24,661	222,664	18,626	204,038	2,227	37,166	21,787	2,640	2,413	7,523	2,802	6,862	12,308	6,049	1,134	5,125	2,416
2002		303,036	25,812	210,278	17,789	192,488	2,455	41,094	24,572	2,831	2,362	8,262	3,068	7,703	13,179	6,267	1,083	5,829	2,515
2003		311,319	26,539	213,230	18,907	194,323	2,611	44,573	27,330	3,034	2,301	8,739	3,169	7,756	13,960	6,315	1,084	6,561	2,649
2004		314,660	25,724	215,218	20,939	194,279	2,568	46,269	28,798	3,108	2,305	8,846	3,212	7,913	14,236	6,754	1,076	6,407	2,732
2005		327,185	26,322	226,159	21,909	204,250	2,601	47,006	29,019	3,060	2,368	9,265	3,294	7,817	14,452	6,545	1,107	6,800	2,828
2006		341,532	27,356	239,917	23,543	216,374	3,024	47,419	28,673	3,083	2,483	9,760	3,420	7,078	13,888	5,854	1,145	6,888	2,851
2007		357,426	28,109	253,484	25,027	228,457	4,862	48,151	28,393	3,237	2,638	10,198	3,685	5,241	14,245	5,629	1,183	7,433	3,335
2008		374,472	27,480	267,706	33,486	234,219	5,844	49,656	28,714	3,413	2,827	10,720	3,982	4,389	15,070	5,743	1,198	8,129	4,327
2009		369,517	27,901	257,823	36,130	221,693	6,068	52,015	30,525	3,477	2,915	10,880	4,218	4,612	16,436	6,480	1,148	8,808	4,662
2010		367,326	28,804	251,348	30,812	220,536	6,499	54,391	32,944	3,413	2,833	10,901	4,299	4,788	16,579	6,391	1,140	9,048	4,916
2011		377,706	31,559	259,436	27,619	231,816	6,136	55,097	33,269	3,280	2,813	11,437	4,298	4,628	15,985	5,781	1,176	9,028	4,866
2012 (preliminary)		392,206	32,563	274,467	31,459	243,008	5,900	54,359	32,407	3,171	2,809	11,705	4,266	4,484	15,697	5,464	1,212	9,022	4,735

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

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

^a Federal funding for industry in 1953–54 did not separate out industry-administered FFRDCs, and the data for federal funding to industry for these years include the funding to these FFRDCs.

^b The data for U&C R&D before 2003 cover only science and engineering (S&E) fields; in 2003 and later years, the R&D in non-S&E fields is also included. Non-S&E R&D was \$1.4 billion in 2003 and \$3.5 billion in 2012. Adjustments have also been made to U&C R&D for 1998 and later years to eliminate double counting of (since 1998) S&E R&D and (since 2010) non-S&E funds passed through from one academic institution to another. For FY 1998, \$479 million in total pass-through funds and \$421 million in federal pass-through funds were reported. For FY 2012, total pass-through funds were an estimated \$3.069 billion and federal pass-through funds were an estimated \$2.747 billion.

^c Federal funding for other nonprofit institutions in 1953–54 did not separate out nonprofit-administered FFRDCs, and the data for federal funding to other nonprofit institutions these years include the funding to these FFRDCs.

^d Industry sources of funding for industry R&D include all nonfederal sources of funding.

^e Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^f The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. 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 distribution 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), FFRDC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		Industry					U&C					Other nonprofit			Nonprofit			
	Performer:	All	Federal	Industry ^a		FFRDCs ^b	U&C ^c			FFRDCs	Other nonprofit		FFRDCs ^d						
	Funding	All	Federal	Total	Federal ^b	Industry ^e	Total	Federal	Other	U&C	Other	Total	Total	Federal ^d	Industry ^g	Other	Total		
	source:	sources	Federal	Total	Federal ^b	Industry ^e	Total	Federal	government ^f	Industry	U&C	nonprofit	Total	Total	Federal ^d	Industry ^g	nonprofit ^g	Total	
Current \$millions																			
1953		460	102	151	19	132	NA	123	82	7	13	6	16	36	48	27	9	12	NA
1954		509	96	166	23	143	NA	148	97	10	15	8	18	44	55	31	11	13	NA
1955		579	98	189	27	162	NA	180	117	14	17	12	21	50	63	36	13	14	NA
1956		718	114	253	37	216	NA	220	143	19	20	15	24	58	74	42	15	17	NA
1957		814	124	271	41	230	NA	261	167	25	23	20	27	72	87	49	15	23	NA
1958		944	149	295	43	252	NA	312	202	31	24	24	31	85	103	59	16	28	NA
1959		1,087	165	320	72	248	NA	388	263	38	24	28	36	95	120	72	18	30	NA
1960		1,286	184	376	79	297	NA	485	341	45	25	33	41	106	136	85	21	30	NA
1961		1,512	230	395	81	314	NA	598	432	54	25	40	48	126	164	105	22	37	NA
1962		1,824	252	488	143	345	NA	737	546	64	25	48	55	148	200	130	24	46	NA
1963		2,115	285	522	147	375	NA	909	689	75	25	58	63	175	225	150	25	50	NA
1964		2,396	339	507	123	384	42	1,071	824	84	25	70	68	200	238	166	25	47	NA
1965		2,664	375	563	157	406	29	1,221	944	94	27	86	70	218	260	179	29	52	NA
1966		2,930	410	593	142	451	31	1,380	1,066	104	29	106	75	239	278	188	32	58	NA
1967		3,168	434	595	168	427	34	1,554	1,188	114	34	136	83	263	289	194	34	61	NA
1968		3,376	482	607	145	462	35	1,681	1,265	131	38	156	91	276	296	196	37	63	NA
1969		3,491	545	581	123	458	37	1,754	1,288	153	40	171	103	272	302	192	43	67	NA
1970		3,594	562	566	122	444	36	1,855	1,323	179	43	196	115	265	311	195	44	72	NA
1971		3,720	581	557	101	456	33	1,968	1,385	194	50	214	127	252	329	207	45	77	NA
1972		3,850	603	554	91	463	39	2,038	1,437	195	55	216	134	270	347	216	47	84	NA
1973		4,099	652	595	96	499	36	2,103	1,489	196	59	223	137	343	371	232	49	90	NA
1974		4,511	715	650	114	536	49	2,282	1,609	204	66	250	153	415	401	245	54	102	NA
1975		4,875	760	677	104	573	53	2,480	1,768	212	72	264	164	476	430	255	59	116	NA
1976		5,373	850	750	116	634	69	2,675	1,924	218	75	283	175	556	474	278	65	131	NA
1977		6,008	943	836	135	701	75	2,967	2,114	232	89	334	198	667	521	301	72	148	NA
1978		6,959	1,044	941	156	785	94	3,376	2,399	260	107	398	213	906	598	351	79	168	NA
1979		7,836	1,112	1,054	161	893	104	3,828	2,719	286	128	466	229	1,050	689	413	87	190	NA
1980		8,745	1,212	1,205	170	1,035	120	4,315	3,061	307	156	544	248	1,167	726	416	95	215	NA
1981		9,658	1,343	1,477	164	1,313	137	4,737	3,331	338	183	615	269	1,284	671	324	105	243	9
1982		10,651	1,522	1,776	253	1,523	128	5,091	3,475	368	215	716	317	1,366	759	369	115	275	9
1983		11,880	1,733	2,106	346	1,760	117	5,518	3,689	396	260	816	358	1,536	863	426	127	311	8
1984		13,332	1,877	2,472	340	2,132	136	6,145	4,087	436	313	915	395	1,709	984	494	139	351	9
1985		14,748	1,947	2,731	358	2,373	131	7,024	4,606	514	389	1,075	440	1,793	1,110	560	153	397	13
1986		17,154	2,026	3,930	434	3,496	117	7,943	5,122	606	466	1,262	488	1,915	1,210	594	168	449	13

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry					U&C				Other nonprofit				Nonprofit			
	Performer:	performers	Federal	Industry ^a		FFRDCs ^b	U&C ^c		FFRDCs	Other nonprofit			FFRDCs ^d						
	Funding	All		Total	Federal ^b	Industry ^e	Total	Federal	Other	Other	Total	Total	Federal ^d	Industry ^g	Other				
	source:	sources	Federal	Total	Federal ^b	Industry ^e	Total	Federal	government ^f	Industry	U&C	nonprofit	Total	Total	Federal ^d	Industry ^g	nonprofit ^g	Total	
1987		18,481	2,047	4,181	598	3,583	142	8,644	5,527	659	514	1,399	545	2,086	1,367	675	185	507	14
1988		19,787	2,116	4,163	656	3,507	337	9,344	5,937	705	565	1,530	607	2,272	1,531	756	203	573	24
1989		21,891	2,309	4,818	986	3,832	398	10,219	6,422	766	637	1,714	680	2,371	1,730	860	223	647	46
1990		23,029	2,319	4,629	869	3,760	499	11,126	6,889	847	705	1,929	756	2,470	1,922	947	245	730	65
1991		27,140	2,378	7,376	1,251	6,125	461	12,062	7,423	912	764	2,127	836	2,657	2,129	1,036	269	825	77
1992		27,604	2,419	6,528	712	5,816	474	12,910	8,058	941	814	2,203	893	2,867	2,340	1,114	295	931	67
1993		28,743	2,621	6,427	466	5,961	492	13,646	8,638	952	851	2,268	936	2,953	2,532	1,157	324	1,051	72
1994		29,651	2,547	6,514	436	6,078	503	14,401	9,139	992	890	2,406	974	2,934	2,678	1,137	356	1,186	75
1995		29,610	2,689	5,569	190	5,379	530	15,147	9,634	1,070	945	2,511	987	2,702	2,899	1,170	390	1,338	75
1996		32,799	2,680	7,498	650	6,848	708	16,042	10,092	1,149	1,032	2,740	1,028	2,606	3,187	1,248	428	1,510	79
1997		36,921	2,746	9,795	1,029	8,766	625	17,654	10,924	1,248	1,175	3,144	1,162	2,671	3,322	1,317	449	1,557	108
1998		35,372	3,003	5,853	1,002	4,851	568	19,365	11,941	1,330	1,315	3,483	1,296	2,660	3,710	1,461	477	1,773	213
1999		38,935	3,347	6,645	1,108	5,537	557	21,022	12,892	1,432	1,421	3,835	1,442	2,765	4,203	1,734	517	1,952	397
2000		42,752	3,765	7,040	925	6,115	547	22,910	13,960	1,549	1,499	4,298	1,603	2,874	5,000	2,099	566	2,334	616
2001		47,727	4,260	8,053	754	7,299	552	25,225	15,541	1,663	1,519	4,738	1,765	3,104	5,617	2,464	571	2,582	915
2002		51,902	4,511	7,547	888	6,659	534	28,505	17,930	1,812	1,512	5,287	1,963	3,714	6,113	2,575	554	2,984	979
2003		56,089	4,664	8,330	1,386	6,944	299	31,310	20,127	1,967	1,493	5,667	2,055	3,747	6,710	2,714	567	3,429	1,029
2004		57,731	4,697	7,835	1,072	6,763	175	33,415	21,702	2,083	1,545	5,930	2,154	3,730	6,809	2,788	578	3,443	1,070
2005		61,321	4,770	8,667	1,108	7,559	136	35,454	22,788	2,155	1,667	6,525	2,319	3,820	7,293	2,903	614	3,776	1,181
2006		62,996	4,716	8,384	1,444	6,940	652	37,205	23,312	2,285	1,840	7,233	2,535	3,344	7,454	2,849	656	3,948	1,242
2007		68,047	4,621	11,268	2,780	8,488	2,258	38,929	23,673	2,499	2,037	7,874	2,845	1,724	7,911	2,829	698	4,384	1,335
2008		72,105	4,957	12,368	1,475	10,893	2,423	40,582	24,149	2,679	2,218	8,412	3,124	1,672	8,697	3,073	722	4,901	1,407
2009		75,854	5,441	14,784	1,340	13,444	2,629	40,012	24,090	2,576	2,161	8,065	3,120	1,902	9,553	3,498	698	5,357	1,533
2010		77,386	5,111	16,371	1,406	14,965	2,848	39,588	24,526	2,397	1,990	7,656	3,019	2,203	9,693	3,414	702	5,576	1,573
2011		74,161	4,911	13,020	677	12,343	2,673	40,281	24,786	2,329	1,997	8,117	3,051	2,213	9,489	3,066	740	5,683	1,575
2012 (preliminary)		74,849	5,086	13,955	785	13,170	2,446	40,045	24,295	2,275	2,016	8,398	3,061	2,160	9,624	3,067	776	5,780	1,533
2005 constant \$millions																			
1953		2,841	628	934	117	816	NA	761	504	40	80	37	99	223	297	167	56	74	NA
1954		3,115	588	1,017	141	876	NA	904	591	58	92	52	110	270	337	190	67	80	NA
1955		3,488	587	1,139	163	976	NA	1,081	702	84	102	70	123	301	380	217	78	84	NA
1956		4,182	661	1,474	216	1,258	NA	1,281	830	111	114	90	137	338	428	242	87	99	NA
1957		4,585	699	1,527	231	1,296	NA	1,468	938	140	127	111	152	403	488	273	85	130	NA
1958		5,201	821	1,626	237	1,389	NA	1,720	1,114	171	132	132	171	469	565	322	88	154	NA
1959		5,922	896	1,743	392	1,351	NA	2,114	1,430	205	131	155	193	515	654	392	98	163	NA
1960		6,910	986	2,020	424	1,596	NA	2,603	1,830	242	132	180	220	570	731	457	113	161	NA
1961		8,030	1,219	2,099	430	1,668	NA	3,174	2,292	285	133	211	252	667	871	558	117	197	NA
1962		9,560	1,321	2,558	749	1,808	NA	3,860	2,859	334	131	250	286	773	1,048	681	126	241	NA

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		Industry					U&C				Other nonprofit			Nonprofit				
	Performer:	All	Federal	Industry ^a		FFRDCs ^b	U&C ^c			FFRDCs	Other nonprofit		FFRDCs ^d						
	Funding	All	Federal	Total	Federal ^b	Industry ^e	Total	Federal	Other	U&C	Other	Total	Total	Federal ^d	Industry ^g	Other	Total		
	source:	sources	Federal	Total	Federal ^b	Industry ^e	Total	Federal	government ^f	Industry	U&C	nonprofit	Total	Total	Federal ^d	Industry ^g	nonprofit ^g	Total	
1963		10,969	1,475	2,707	762	1,945	NA	4,712	3,573	389	127	299	324	908	1,167	778	130	259	NA
1964		12,238	1,731	2,590	628	1,961	215	5,468	4,206	431	128	356	347	1,019	1,216	848	128	240	NA
1965		13,363	1,878	2,824	788	2,036	145	6,122	4,733	474	133	432	351	1,091	1,302	895	145	261	NA
1966		14,291	2,000	2,892	693	2,200	151	6,731	5,200	505	141	519	366	1,163	1,354	915	156	283	NA
1967		14,990	2,051	2,816	795	2,021	161	7,352	5,620	539	159	642	393	1,245	1,365	916	161	289	NA
1968		15,325	2,188	2,755	658	2,097	159	7,628	5,742	594	170	709	413	1,251	1,344	890	168	286	NA
1969		15,100	2,358	2,513	532	1,981	160	7,585	5,569	661	171	740	443	1,177	1,306	831	186	290	NA
1970		14,767	2,309	2,326	501	1,824	148	7,622	5,434	737	177	804	470	1,087	1,276	799	181	296	NA
1971		14,558	2,274	2,180	395	1,784	129	7,701	5,418	758	194	837	495	986	1,287	810	176	301	NA
1972		14,443	2,260	2,078	341	1,737	146	7,643	5,391	733	206	811	503	1,013	1,302	810	176	315	NA
1973		14,570	2,317	2,115	341	1,773	128	7,474	5,290	698	208	793	485	1,219	1,317	823	174	320	NA
1974		14,696	2,329	2,118	371	1,746	160	7,434	5,242	664	215	815	497	1,351	1,306	798	176	332	NA
1975		14,512	2,262	2,015	310	1,706	158	7,381	5,263	632	213	785	488	1,416	1,280	759	177	344	NA
1976		15,127	2,393	2,112	327	1,785	194	7,530	5,417	613	211	798	491	1,565	1,333	781	184	368	NA
1977		15,902	2,496	2,213	357	1,855	199	7,851	5,595	613	236	885	523	1,765	1,379	797	190	392	NA
1978		17,210	2,582	2,327	386	1,941	232	8,349	5,933	642	263	985	526	2,240	1,478	869	195	415	NA
1979		17,892	2,540	2,407	368	2,039	237	8,739	6,208	653	291	1,064	523	2,396	1,573	942	198	433	NA
1980		18,298	2,537	2,521	356	2,166	251	9,029	6,404	642	326	1,138	519	2,441	1,519	870	199	449	NA
1981		18,477	2,569	2,826	314	2,512	262	9,062	6,373	647	350	1,177	515	2,457	1,285	619	201	465	17
1982		19,204	2,744	3,202	456	2,746	231	9,180	6,265	664	389	1,292	571	2,464	1,369	666	208	495	16
1983		20,606	3,005	3,653	600	3,053	203	9,571	6,398	687	451	1,416	620	2,663	1,497	738	220	539	14
1984		22,287	3,137	4,133	568	3,564	227	10,272	6,832	728	523	1,529	660	2,857	1,646	826	233	587	15
1985		23,931	3,160	4,431	581	3,850	213	11,397	7,473	835	631	1,745	714	2,909	1,801	908	248	644	20
1986		27,232	3,216	6,239	689	5,550	186	12,609	8,130	962	739	2,003	774	3,040	1,921	942	267	712	21
1987		28,511	3,158	6,450	923	5,528	219	13,335	8,526	1,016	793	2,159	841	3,218	2,109	1,042	285	782	22
1988		29,512	3,156	6,209	978	5,231	503	13,936	8,854	1,052	842	2,282	906	3,388	2,284	1,128	302	854	36
1989		31,463	3,318	6,925	1,417	5,508	572	14,687	9,230	1,101	916	2,464	977	3,408	2,486	1,236	320	930	67
1990		31,869	3,209	6,406	1,203	5,203	691	15,397	9,533	1,172	976	2,670	1,046	3,418	2,660	1,310	338	1,011	89
1991		36,272	3,178	9,858	1,672	8,186	616	16,120	9,921	1,219	1,021	2,843	1,117	3,551	2,846	1,384	359	1,102	103
1992		36,037	3,158	8,522	930	7,593	619	16,854	10,520	1,229	1,063	2,876	1,166	3,743	3,055	1,455	385	1,215	87
1993		36,713	3,348	8,209	595	7,614	628	17,430	11,033	1,217	1,087	2,897	1,196	3,772	3,234	1,478	414	1,342	92
1994		37,092	3,186	8,149	545	7,603	629	18,014	11,432	1,240	1,113	3,010	1,219	3,670	3,350	1,422	445	1,484	93
1995		36,285	3,296	6,824	233	6,591	649	18,561	11,805	1,311	1,158	3,077	1,210	3,310	3,552	1,434	478	1,640	92
1996		39,441	3,222	9,016	782	8,235	851	19,290	12,136	1,382	1,241	3,295	1,237	3,133	3,832	1,501	515	1,816	95
1997		43,627	3,245	11,574	1,216	10,358	739	20,860	12,909	1,475	1,389	3,715	1,373	3,156	3,926	1,556	531	1,839	127

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry					U&C				Nonprofit							
	Performer:	performers	Federal	Industry ^a		FFRDCs ^b	U&C ^c			FFRDCs	Other nonprofit		FFRDCs ^d						
	Funding	All		Total	Federal ^b	Industry ^e	Total	Federal	Other	Other	Total	Total	Federal ^d	Industry ^g	Other	Total			
	source:	sources	Federal	Total	Federal ^b	Industry ^e	Total	Federal	government ^f	Industry	U&C	nonprofit	Total	Total	Federal ^d	Industry ^g	nonprofit ^g	Total	
1998		41,330	3,508	6,839	1,171	5,668	664	22,627	13,952	1,554	1,537	4,069	1,515	3,108	4,335	1,707	557	2,071	249
1999		44,834	3,854	7,651	1,275	6,376	642	24,207	14,846	1,649	1,636	4,416	1,660	3,184	4,839	1,997	595	2,248	457
2000		48,186	4,243	7,935	1,043	6,892	616	25,823	15,734	1,746	1,690	4,845	1,807	3,239	5,636	2,366	638	2,631	694
2001		52,605	4,696	8,876	831	8,045	609	27,803	17,129	1,832	1,675	5,222	1,945	3,421	6,192	2,716	630	2,846	1,009
2002		56,295	4,892	8,186	963	7,223	580	30,917	19,448	1,965	1,640	5,735	2,130	4,028	6,630	2,793	601	3,237	1,062
2003		59,584	4,955	8,849	1,472	7,377	318	33,260	21,381	2,090	1,586	6,020	2,184	3,980	7,128	2,884	602	3,643	1,093
2004		59,648	4,853	8,095	1,108	6,988	181	34,524	22,423	2,152	1,597	6,127	2,225	3,854	7,035	2,881	597	3,557	1,106
2005		61,321	4,770	8,667	1,108	7,559	136	35,454	22,788	2,155	1,667	6,525	2,319	3,820	7,293	2,903	614	3,776	1,181
2006		61,024	4,568	8,122	1,399	6,723	632	36,040	22,582	2,213	1,783	7,007	2,455	3,239	7,220	2,760	636	3,825	1,203
2007		64,058	4,350	10,608	2,617	7,990	2,126	36,647	22,285	2,353	1,918	7,413	2,679	1,623	7,447	2,663	657	4,127	1,257
2008		66,406	4,565	11,390	1,358	10,032	2,231	37,374	22,241	2,467	2,042	7,747	2,877	1,540	8,009	2,830	665	4,514	1,296
2009		69,254	4,967	13,498	1,223	12,274	2,400	36,531	21,994	2,352	1,973	7,363	2,849	1,736	8,722	3,194	638	4,891	1,400
2010		69,722	4,604	14,750	1,267	13,483	2,566	35,667	22,097	2,160	1,793	6,898	2,720	1,985	8,733	3,076	633	5,024	1,417
2011		65,422	4,332	11,486	597	10,888	2,358	35,534	21,865	2,054	1,762	7,161	2,692	1,952	8,370	2,705	653	5,013	1,389
2012 (preliminary)		64,868	4,408	12,094	680	11,414	2,120	34,705	21,055	1,972	1,747	7,278	2,653	1,872	8,340	2,658	673	5,009	1,328

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

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

^a Character-of-work estimates for industry were revised in 1998 and for later years; hence, the data for 1997 and earlier years are not directly comparable.

^b Character-of-work estimates for industry-administered FFRDCs in 1953–63 are not separate from the federal funding to industry; the data on federal funding to industry in those years include the funding to these FFRDCs.

^c The data for U&C R&D before 2003 covers only science and engineering (S&E) fields; in 2003 and later years, the 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 the double counting of funds passed through from one academic institution to another. The character-of-work estimation procedure for academic R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years.

^d Character-of-work estimates for nonprofit-administered FFRDCs in 1953–80 are not separate from federal funding for other nonprofit institutions; thus, the data for federal funding to other nonprofit institutions includes the funding to these FFRDCs in those years.

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

^f Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^g The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. Los Alamos National Laboratory became industry administered in June 2006—previously, it was U&C administered. Lawrence Livermore National Laboratory became industry administered in October 2007—previously, it was U&C administered.

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), FFRDC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		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 ^c		Other nonprofit	Total	Total	Federal ^d	Industry ^g	Other nonprofit ^g	Total	
										government ^f	Industry	U&C							
Current \$millions																			
1953		1,289	347	726	288	438	NA	134	59	30	7	28	10	48	35	14	11	10	NA
1954		1,378	330	814	322	492	NA	137	60	32	8	28	10	58	40	16	13	11	NA
1955		1,514	333	928	368	560	NA	142	63	32	9	27	11	68	43	18	14	11	NA
1956		1,928	387	1,268	474	794	NA	146	65	33	10	27	11	79	49	21	14	14	NA
1957		2,414	446	1,670	678	992	NA	147	63	34	12	27	11	94	58	24	14	20	NA
1958		2,758	516	1,911	774	1,137	NA	152	66	35	12	27	12	111	69	30	14	25	NA
1959		2,940	577	1,991	813	1,178	NA	167	78	37	13	28	12	121	85	43	15	27	NA
1960		3,065	615	2,029	833	1,196	NA	186	93	39	13	29	12	129	108	63	17	28	NA
1961		3,123	668	1,977	812	1,165	NA	199	104	40	13	30	13	145	135	83	17	35	NA
1962		3,698	709	2,449	1,011	1,438	NA	216	119	41	14	30	13	163	162	98	19	45	NA
1963		3,865	809	2,457	1,007	1,450	NA	230	128	42	14	32	14	186	183	115	19	49	NA
1964		4,201	947	2,538	978	1,560	62	256	142	45	14	37	18	203	196	130	19	47	NA
1965		4,374	994	2,612	992	1,620	46	304	176	46	13	42	27	206	213	140	21	52	NA
1966		4,653	1,012	2,790	986	1,804	53	351	208	47	14	48	34	213	234	153	24	57	NA
1967		4,848	1,069	2,832	983	1,849	83	389	238	46	16	54	36	225	251	166	25	60	NA
1968		5,137	1,112	3,037	956	2,081	87	405	250	46	16	55	39	221	276	186	28	62	NA
1969		5,454	1,229	3,192	920	2,272	95	417	257	48	16	54	43	213	308	210	32	66	NA
1970		5,752	1,334	3,330	952	2,378	97	451	280	51	18	56	47	213	328	225	33	70	NA
1971		5,833	1,355	3,348	907	2,441	67	499	306	61	19	67	47	216	349	241	34	74	NA
1972		6,147	1,434	3,407	845	2,562	107	619	391	74	21	82	52	224	357	243	35	79	NA
1973		6,655	1,527	3,715	883	2,832	110	725	450	88	26	100	62	203	376	257	36	83	NA
1974		7,344	1,652	4,168	905	3,263	120	794	477	96	32	118	72	191	420	290	39	91	NA
1975		8,091	1,912	4,431	991	3,440	139	934	550	113	39	141	92	219	456	315	42	100	NA
1976		8,976	2,068	4,945	1,033	3,912	167	1,042	596	127	45	166	109	263	492	338	45	109	NA
1977		9,662	2,081	5,424	1,113	4,311	212	1,126	626	134	51	194	121	297	523	355	48	120	NA
1978		10,704	2,242	6,065	1,195	4,870	235	1,247	676	151	61	232	128	324	592	409	52	132	NA
1979		12,097	2,415	6,975	1,305	5,670	250	1,418	793	161	71	263	129	360	680	480	55	144	NA
1980		13,714	2,546	8,175	1,625	6,550	275	1,622	912	174	88	308	140	421	675	458	60	158	NA
1981		16,329	2,731	10,401	2,042	8,359	298	1,781	953	199	108	363	159	422	628	391	64	173	68
1982		18,218	2,802	11,956	2,593	9,363	367	1,915	1,007	207	121	402	178	433	655	398	69	189	91
1983		20,298	2,991	13,513	3,227	10,286	414	2,116	1,122	215	141	443	194	473	713	433	74	207	78
1984		22,451	2,961	15,218	3,677	11,541	547	2,332	1,226	234	168	491	212	548	764	459	79	226	80
1985		25,401	3,135	17,625	4,717	12,908	630	2,527	1,296	262	198	547	224	580	822	490	85	247	82
1986		27,240	3,204	19,131	4,049	15,082	629	2,780	1,393	298	229	620	240	554	867	506	91	270	75

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		Industry					U&C			Other nonprofit			Nonprofit					
	Performer:	Federal	Industry ^a		FFRDCs ^b	U&C ^c		FFRDCs	Other nonprofit		FFRDCs ^d								
	Funding source:	All sources	Federal	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry ^g	Other nonprofit ^g	Total
1987		27,951	3,366	19,190	4,037	15,153	623	3,219	1,643	333	260	707	276	532	948	555	98	295	74
1988		29,528	3,362	20,377	3,846	16,531	371	3,779	1,958	377	302	818	325	547	1,026	599	105	322	66
1989		32,277	3,566	22,317	4,324	17,993	374	4,188	2,121	417	347	933	370	603	1,159	695	112	352	70
1990		34,897	3,652	24,399	5,967	18,432	386	4,406	2,140	453	377	1,031	404	689	1,284	780	120	384	81
1991		38,631	4,093	27,013	5,588	21,425	433	4,611	2,232	468	392	1,091	428	927	1,468	921	129	419	86
1992		37,936	4,337	25,660	4,476	21,184	507	4,882	2,415	479	414	1,120	454	940	1,528	933	138	456	81
1993		37,283	4,838	24,251	4,295	19,956	435	5,149	2,542	496	443	1,181	487	962	1,544	900	148	497	103
1994		36,618	4,985	22,988	3,616	19,372	503	5,390	2,644	517	464	1,256	509	982	1,659	960	158	541	111
1995		40,936	4,952	26,919	3,164	23,755	535	5,659	2,779	559	494	1,311	516	1,050	1,692	934	170	589	129
1996		43,170	4,872	29,010	3,640	25,370	231	5,885	2,864	584	524	1,390	522	1,270	1,781	960	182	640	122
1997		46,554	4,997	32,430	2,648	29,782	213	5,523	2,550	553	519	1,389	512	1,337	1,926	1,011	205	711	128
1998		46,362	5,146	32,208	2,632	29,576	230	5,197	2,260	526	520	1,378	513	1,372	2,087	1,060	218	809	123
1999		52,007	5,530	36,638	2,817	33,821	274	5,762	2,661	546	542	1,463	550	1,247	2,427	1,300	236	891	130
2000		56,681	6,105	39,176	2,682	36,494	269	6,494	3,194	571	553	1,585	591	1,291	3,155	1,831	258	1,066	190
2001		64,176	7,052	44,012	3,603	40,409	821	7,054	3,553	601	549	1,712	638	1,405	3,589	2,150	261	1,178	244
2002		50,796	7,487	28,533	2,452	26,081	1,090	7,876	4,056	654	546	1,911	709	1,663	3,882	2,267	253	1,362	266
2003		61,379	7,672	37,334	4,473	32,861	1,413	8,801	4,660	729	553	2,098	761	1,600	4,311	2,487	259	1,565	249
2004		69,469	7,455	45,432	4,775	40,657	1,459	9,164	4,902	758	562	2,158	783	1,481	4,283	2,448	264	1,572	194
2005		70,001	7,557	45,284	5,289	39,995	1,414	9,395	5,032	743	575	2,247	799	1,637	4,435	2,432	280	1,723	278
2006		76,735	7,435	51,173	6,140	45,033	1,314	9,794	5,318	736	593	2,331	816	1,827	4,694	2,592	300	1,802	500
2007		83,551	7,222	57,570	8,945	48,625	1,168	10,249	5,548	770	628	2,426	877	1,354	4,902	2,583	318	2,001	1,085
2008		74,793	7,316	46,864	5,397	41,467	1,975	11,316	6,144	843	698	2,647	983	855	5,167	2,600	330	2,237	1,300
2009		72,891	7,874	41,055	7,797	33,258	2,010	13,444	7,708	928	778	2,903	1,127	1,282	5,813	3,049	319	2,445	1,414
2010		79,526	8,016	44,906	4,705	40,201	2,249	15,517	9,407	972	807	3,106	1,225	1,274	5,907	3,041	321	2,545	1,658
2011		82,425	7,849	47,186	4,404	42,782	2,256	16,554	10,071	973	835	3,398	1,276	1,318	5,622	2,691	338	2,594	1,640
2012 (preliminary)		86,773	8,084	50,756	5,106	45,650	2,387	16,896	10,147	975	864	3,599	1,312	1,386	5,675	2,682	354	2,638	1,589
2005 constant \$millions																			
1953		7,970	2,145	4,489	1,781	2,708	NA	825	365	186	40	172	62	294	216	87	68	62	NA
1954		8,442	2,019	4,987	1,973	3,014	NA	836	365	193	46	171	61	355	245	98	80	67	NA
1955		9,117	2,006	5,590	2,217	3,374	NA	852	380	195	51	164	63	410	259	108	84	66	NA
1956		11,227	2,251	7,385	2,761	4,625	NA	850	379	193	58	157	64	457	282	119	82	82	NA
1957		13,603	2,511	9,412	3,821	5,591	NA	826	355	191	65	153	62	530	324	132	79	113	NA
1958		15,203	2,844	10,534	4,267	6,268	NA	835	361	195	66	150	63	609	380	165	77	138	NA
1959		16,015	3,141	10,848	4,429	6,418	NA	910	422	201	68	153	65	657	460	232	82	147	NA
1960		16,469	3,302	10,902	4,476	6,426	NA	997	500	208	70	155	64	690	578	336	91	150	NA
1961		16,592	3,549	10,503	4,314	6,189	NA	1,055	550	212	69	157	66	770	715	438	90	186	NA
1962		19,380	3,713	12,836	5,299	7,537	NA	1,132	621	213	71	159	68	852	846	511	100	236	NA
1963		20,042	4,196	12,742	5,222	7,520	NA	1,190	661	219	73	168	70	965	949	596	99	254	NA
1964		21,457	4,834	12,963	4,995	7,968	317	1,305	725	231	69	191	89	1,037	1,001	664	97	240	NA
1965		21,937	4,983	13,102	4,976	8,126	231	1,522	880	233	65	211	133	1,031	1,068	702	105	261	NA

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		Federal	Industry			U&C			Other nonprofit			Nonprofit FFRDCs ^d						
	Performer:	All		Industry ^a		FFRDCs ^b	U&C ^c		FFRDCs	Other nonprofit									
	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 ^g	Other nonprofit ^g	Total
1966		22,693	4,936	13,609	4,809	8,799	259	1,712	1,015	230	68	236	163	1,039	1,139	744	117	278	NA
1967		22,942	5,057	13,402	4,652	8,750	393	1,839	1,124	216	73	255	170	1,065	1,188	786	118	284	NA
1968		23,319	5,045	13,786	4,340	9,446	395	1,838	1,133	209	73	250	175	1,001	1,253	844	127	281	NA
1969		23,593	5,317	13,808	3,980	9,828	411	1,804	1,110	208	69	233	184	921	1,332	908	138	285	NA
1970		23,637	5,481	13,683	3,912	9,771	399	1,851	1,148	210	72	229	191	875	1,348	925	136	288	NA
1971		22,826	5,302	13,102	3,549	9,552	262	1,953	1,197	237	72	262	184	843	1,364	941	133	290	NA
1972		23,059	5,379	12,781	3,170	9,611	401	2,320	1,465	278	77	307	193	840	1,337	910	131	296	NA
1973		23,654	5,428	13,203	3,138	10,065	391	2,575	1,598	311	92	355	219	720	1,336	913	128	295	NA
1974		23,928	5,383	13,580	2,949	10,632	391	2,585	1,553	313	103	384	233	621	1,368	945	126	297	NA
1975		24,087	5,691	13,191	2,950	10,241	414	2,780	1,636	338	115	418	274	652	1,359	938	124	297	NA
1976		25,272	5,823	13,922	2,908	11,014	470	2,933	1,677	359	125	466	307	739	1,384	950	126	308	NA
1977		25,574	5,507	14,356	2,946	11,410	561	2,979	1,656	356	135	514	319	787	1,384	940	127	318	NA
1978		26,473	5,544	14,999	2,955	12,044	581	3,083	1,671	374	150	573	315	802	1,464	1,011	128	325	NA
1979		27,620	5,514	15,926	2,980	12,946	571	3,237	1,810	369	163	601	294	822	1,552	1,096	127	329	NA
1980		28,697	5,327	17,106	3,400	13,706	575	3,395	1,909	363	185	644	293	881	1,413	958	125	330	NA
1981		31,241	5,226	19,899	3,907	15,992	570	3,407	1,823	381	206	694	304	808	1,201	748	122	331	130
1982		32,849	5,052	21,558	4,675	16,883	662	3,452	1,815	374	218	725	321	780	1,182	717	124	341	163
1983		35,208	5,188	23,439	5,597	17,841	718	3,670	1,947	373	245	769	337	821	1,237	751	128	359	135
1984		37,532	4,950	25,441	6,147	19,294	914	3,898	2,050	391	281	821	355	917	1,278	767	132	378	135
1985		41,216	5,087	28,599	7,654	20,945	1,022	4,101	2,104	425	321	888	364	940	1,334	795	138	401	133
1986		43,243	5,086	30,371	6,428	23,943	999	4,413	2,211	473	364	985	381	879	1,376	803	144	429	120
1987		43,121	5,192	29,605	6,228	23,377	961	4,966	2,534	514	401	1,091	425	820	1,463	856	151	456	114
1988		44,042	5,014	30,393	5,736	24,656	553	5,637	2,921	562	450	1,220	484	816	1,530	893	156	481	98
1989		46,390	5,126	32,075	6,215	25,861	538	6,019	3,049	599	499	1,341	532	866	1,666	999	161	506	101
1990		48,292	5,054	33,765	8,258	25,507	534	6,097	2,962	626	522	1,427	559	953	1,776	1,079	166	531	113
1991		51,630	5,471	36,102	7,468	28,634	579	6,162	2,983	625	523	1,458	573	1,238	1,963	1,231	172	559	115
1992		49,526	5,662	33,500	5,844	27,656	662	6,374	3,153	625	541	1,462	593	1,228	1,995	1,219	180	596	106
1993		47,621	6,180	30,976	5,486	25,490	556	6,577	3,247	633	566	1,508	623	1,229	1,973	1,149	189	635	131
1994		45,806	6,236	28,756	4,523	24,233	629	6,742	3,307	647	581	1,571	636	1,228	2,075	1,200	198	677	139
1995		50,163	6,069	32,987	3,877	29,109	656	6,934	3,405	685	605	1,607	632	1,287	2,074	1,144	208	721	158
1996		51,912	5,859	34,885	4,377	30,507	278	7,076	3,444	702	630	1,672	628	1,527	2,142	1,154	218	770	147
1997		55,011	5,904	38,321	3,129	35,192	252	6,526	3,013	653	613	1,641	605	1,580	2,276	1,195	242	840	152
1998		54,171	6,012	37,633	3,075	34,558	269	6,072	2,640	615	608	1,610	599	1,603	2,438	1,238	254	945	144
1999		59,887	6,368	42,189	3,244	38,945	316	6,635	3,064	629	624	1,685	633	1,436	2,794	1,497	272	1,026	149
2000		63,885	6,881	44,156	3,023	41,133	303	7,319	3,600	644	623	1,786	666	1,456	3,556	2,064	291	1,201	214

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		Industry					U&C			Other nonprofit			Nonprofit					
	Performer:	Federal	Industry ^a		FFRDCs ^b	U&C ^c		FFRDCs	Other nonprofit		FFRDCs ^d								
	Funding source:	All sources	Federal	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry ^g	Other nonprofit ^g	Total
2001		70,735	7,773	48,510	3,971	44,539	905	7,774	3,917	662	606	1,887	703	1,548	3,956	2,370	287	1,299	268
2002		55,096	8,121	30,948	2,660	28,289	1,183	8,542	4,399	710	592	2,072	769	1,804	4,210	2,458	274	1,477	288
2003		65,203	8,149	39,660	4,752	34,908	1,501	9,349	4,950	774	587	2,229	808	1,700	4,579	2,642	275	1,663	264
2004		71,775	7,702	46,941	4,934	42,007	1,508	9,468	5,065	784	581	2,229	809	1,531	4,426	2,529	273	1,624	201
2005		70,001	7,557	45,284	5,289	39,995	1,414	9,395	5,032	743	575	2,247	799	1,637	4,435	2,432	280	1,723	278
2006		74,333	7,202	49,571	5,948	43,623	1,272	9,487	5,151	713	574	2,258	791	1,770	4,547	2,511	290	1,746	484
2007		78,653	6,798	54,196	8,421	45,775	1,100	9,648	5,223	725	591	2,284	825	1,275	4,615	2,431	300	1,884	1,021
2008		68,881	6,738	43,160	4,970	38,189	1,819	10,421	5,658	776	643	2,438	906	787	4,758	2,395	304	2,060	1,198
2009		66,549	7,189	37,483	7,119	30,364	1,835	12,274	7,038	847	710	2,650	1,029	1,170	5,307	2,784	291	2,232	1,291
2010		71,650	7,222	40,459	4,239	36,220	2,026	13,980	8,476	876	727	2,798	1,103	1,148	5,322	2,740	289	2,293	1,494
2011		72,712	6,924	41,625	3,885	37,740	1,990	14,603	8,884	859	737	2,997	1,126	1,163	4,960	2,374	298	2,288	1,447
2012 (preliminary)		75,202	7,006	43,988	4,425	39,562	2,068	14,643	8,794	845	749	3,119	1,137	1,201	4,918	2,325	307	2,286	1,377

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

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

^a Character-of-work estimates for industry were revised in 1998 and for later years; hence, the data for 1997 and earlier years are not directly comparable.

^b Character-of-work estimates for industry-administered FFRDCs in 1953–63 are not separate from the federal funding to industry; the data on federal funding to industry in those years include the funding to these FFRDCs.

^c The data for U&C R&D before 2003 covers only science and engineering (S&E) fields; in 2003 and later years, the 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 the double counting of funds passed through from one academic institution to another. The character-of-work estimation procedure for academic R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years.

^d Character-of-work estimates for nonprofit-administered FFRDCs in 1953–80 are not separate from federal funding for other nonprofit institutions; thus, the data for federal funding to other nonprofit institutions includes the funding to these FFRDCs in those years.

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

^f Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^g The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. Los Alamos National Laboratory became industry administered in June 2006—previously, it was U&C administered. Lawrence Livermore National Laboratory became industry administered in October 2007—previously, it was U&C administered.

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), FFRDC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry					U&C				Other nonprofit				Nonprofit			
	Performer:	performers	Federal	Industry ^a		FFRDCs ^b	U&C ^c			FFRDCs	Other nonprofit			FFRDCs ^d					
	Funding	All		Total	Federal ^b	Industry ^e	Total	Federal	Other	Other	Total	Total	Federal ^d	Industry ^g	Other	Total			
	source:	sources	Federal						government ^f	Industry	U&C	nonprofit			nonprofit ^g				
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

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		Industry					U&C					Other nonprofit			Nonprofit			
	Performer:	Federal	Industry ^a		FFRDCs ^b	U&C ^c			FFRDCs	Other nonprofit		FFRDCs ^d							
	Funding source:	All sources	Federal	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry ^g	Other nonprofit ^g	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		228,084	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	1,123
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		255,987	17,245	226,554	30,436	196,118	2,008	3,517	1,636	305	254	950	373	1,868	2,636	550	241	1,846	2,158
2010		250,791	18,844	217,700	28,088	189,612	2,118	5,265	2,633	419	348	1,338	528	1,838	2,801	638	242	1,921	2,226
2011		271,577	23,015	233,887	26,228	207,659	2,027	5,623	2,856	416	357	1,450	545	1,715	3,010	797	255	1,958	2,301
2012 (preliminary)		290,935	24,404	251,989	30,409	221,580	1,975	5,783	2,951	409	362	1,510	550	1,628	2,814	555	267	1,992	2,342
2005 constant \$millions																			
1953		21,093	3,503	17,022	6,943	10,078	NA	99	53	18	6	16	6	294	176	102	37	37	NA
1954		22,875	3,290	18,930	8,607	10,323	NA	104	52	21	6	19	6	358	193	107	43	43	NA
1955		25,235	3,268	21,223	10,753	10,470	NA	127	69	23	9	19	6	416	202	111	48	42	NA
1956		34,099	3,672	29,611	16,407	13,204	NA	146	79	26	12	21	9	469	201	114	47	41	NA
1957		37,655	4,100	32,633	20,380	12,253	NA	147	68	30	14	24	11	569	206	116	45	45	NA
1958		39,764	4,639	34,083	21,730	12,353	NA	152	69	31	17	24	11	661	229	135	44	50	NA
1959		46,109	5,121	39,811	25,879	13,931	NA	169	84	33	16	25	11	730	278	174	49	54	NA
1960		50,294	5,387	43,545	27,775	15,771	NA	185	102	34	13	25	11	809	368	261	54	54	NA
1961		52,753	5,788	45,350	28,407	16,942	NA	199	114	37	11	27	11	901	515	388	53	74	NA
1962		53,013	6,431	44,687	27,674	17,013	NA	210	118	40	10	30	10	996	689	537	58	94	NA

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2012

Year	All performers		Industry					U&C						Other nonprofit			Nonprofit		
	Performer:	All	Federal	Industry ^a		FFRDCs ^b	U&C ^c			FFRDCs	Other nonprofit		FFRDCs ^d						
	Funding			Total	Federal ^b	Industry ^e	Total	Federal	Other	U&C	Other	Total	Total	Federal ^d	Industry ^g	Other	Total		
	source:	sources	Federal	Total	Federal ^b	Industry ^e	Total	Federal	government ^f	Industry	U&C	nonprofit	Total	Total	Federal ^d	Industry ^g	nonprofit ^g	Total	
1963		59,846	7,598	50,051	31,718	18,333	NA	207	114	41	10	32	10	1,133	856	695	57	104	NA
1964		63,876	8,581	51,096	31,442	19,654	1,834	248	151	41	10	33	13	1,157	960	812	56	92	NA
1965		66,286	8,971	53,355	31,189	22,166	1,495	354	241	43	10	39	20	1,036	1,076	915	60	100	NA
1966		70,674	9,199	57,605	33,407	24,198	1,322	424	298	46	10	47	24	976	1,149	968	68	112	NA
1967		72,554	9,195	59,339	32,156	27,183	1,429	440	310	40	12	47	31	984	1,167	982	71	114	NA
1968		73,326	8,643	60,691	31,975	28,716	1,330	461	325	35	18	42	41	1,026	1,176	985	73	118	NA
1969		73,756	8,719	60,867	30,038	30,829	1,436	474	344	31	22	34	43	1,064	1,196	997	78	121	NA
1970		69,543	9,277	56,284	25,607	30,677	1,397	460	343	27	21	29	41	1,023	1,101	904	74	123	NA
1971		68,086	9,676	54,489	24,133	30,355	1,530	384	270	31	16	34	33	1,045	963	759	74	129	NA
1972		70,312	9,901	56,432	24,508	31,924	1,508	379	234	46	13	51	34	1,092	1,002	799	71	131	NA
1973		71,781	9,444	58,266	23,532	34,734	1,418	446	251	62	18	71	44	1,050	1,157	951	71	135	NA
1974		70,066	9,010	56,761	21,351	35,410	1,561	458	243	65	21	80	49	1,046	1,229	1,021	70	138	NA
1975		67,594	8,603	54,634	20,193	34,441	1,593	465	246	66	24	82	48	1,109	1,192	982	70	140	NA
1976		70,624	8,367	57,467	21,177	36,290	1,841	513	280	67	32	88	45	1,258	1,178	960	71	147	NA
1977		73,228	8,438	59,824	21,902	37,922	1,787	672	405	74	38	106	49	1,332	1,176	950	72	153	NA
1978		76,805	9,092	62,362	21,654	40,707	1,862	922	628	79	36	121	58	1,340	1,227	995	73	159	NA
1979		80,930	9,004	66,289	22,577	43,712	1,849	1,072	768	78	35	127	63	1,378	1,338	1,102	73	163	NA
1980		85,299	8,521	70,826	22,927	47,899	1,846	1,083	757	80	41	141	64	1,504	1,519	1,281	72	166	NA
1981		88,590	8,667	73,747	24,471	49,276	1,818	1,086	738	84	45	152	67	1,488	928	688	72	168	856
1982		93,544	9,337	78,317	25,631	52,685	1,783	1,076	717	82	48	159	70	1,343	902	653	73	176	787
1983		100,207	10,590	83,369	26,924	56,445	1,828	1,071	692	82	54	169	74	1,442	1,040	776	76	188	867
1984		111,107	11,833	92,567	29,490	63,077	1,765	1,132	727	86	62	180	78	1,648	1,274	994	79	201	887
1985		120,920	12,998	100,635	32,871	67,764	1,788	1,227	789	93	70	195	80	2,018	1,345	1,045	83	217	909
1986		120,422	13,136	99,809	34,159	65,650	1,818	1,298	815	104	80	216	84	2,387	1,255	931	88	236	719
1987		123,308	12,613	103,038	37,214	65,824	1,898	1,457	924	113	88	240	93	2,576	1,078	731	92	255	650
1988		126,134	13,221	104,934	35,378	69,556	2,109	1,638	1,041	123	99	268	106	2,628	977	608	96	273	627
1989		126,081	13,446	104,525	30,253	74,272	2,045	1,764	1,112	131	109	294	117	2,561	1,121	729	100	292	619
1990		130,176	13,424	108,462	26,246	82,215	1,990	1,947	1,259	138	115	313	123	2,401	1,274	857	104	313	678
1991		127,105	11,731	107,300	23,062	84,238	1,848	2,050	1,352	137	115	320	126	2,054	1,409	965	109	335	712
1992		130,305	11,877	110,407	22,430	87,976	1,791	2,084	1,377	137	119	321	130	1,895	1,468	990	115	364	782
1993		127,353	11,587	108,259	20,543	87,717	1,326	2,171	1,440	139	124	331	137	1,755	1,521	1,005	122	395	734
1994		128,768	11,037	109,944	20,276	89,668	1,496	2,272	1,518	142	128	345	140	1,724	1,578	1,019	129	430	716
1995		138,567	11,350	119,283	21,842	97,442	1,480	2,220	1,445	150	133	353	139	1,980	1,515	911	136	467	739
1996		145,956	10,862	127,300	20,522	106,778	1,633	2,154	1,357	154	138	367	138	1,827	1,492	839	144	509	686
1997		152,050	10,725	133,743	21,413	112,330	1,527	2,018	1,247	143	135	360	133	1,718	1,628	811	183	634	691

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2012

Year	All		Industry						U&C				Other nonprofit			Nonprofit			
	Performer:	performers	Federal	Industry ^a		FFRDCs ^b		U&C ^c			FFRDCs		Other nonprofit		FFRDCs ^d				
	Funding	All		Total	Federal ^b	Industry ^e	Total	Total	Federal	Other	U&C	Other	Total	Total	Federal ^d	Industry ^g	Other ^g	Total	
	source:	sources	Federal						government ^f			nonprofit							
1998		169,101	10,766	150,777	21,560	129,217	1,496	1,891	1,138	135	133	353	132	1,785	1,794	888	192	714	592
1999		177,766	10,669	159,839	19,082	140,757	1,391	1,602	818	138	137	370	139	1,888	1,817	837	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		214,715	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	1,057
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		233,714	15,745	206,842	27,788	179,054	1,833	3,211	1,494	278	232	867	340	1,706	2,407	502	220	1,685	1,971
2010		225,954	16,977	196,140	25,306	170,834	1,908	4,743	2,372	377	313	1,206	475	1,656	2,524	575	218	1,731	2,006
2011		239,573	20,303	206,325	23,137	183,187	1,788	4,960	2,520	367	315	1,279	481	1,513	2,655	703	225	1,727	2,030
2012 (preliminary)		252,138	21,149	218,385	26,354	192,032	1,712	5,012	2,558	354	314	1,309	477	1,411	2,439	481	232	1,726	2,030

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

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

^a Character-of-work estimates for industry were revised in 1998 and for later years; hence, the data for 1997 and earlier years are not directly comparable.

^b Character-of-work estimates for industry-administered FFRDCs in 1953–63 are not separate from the federal funding to industry; the data on federal funding to industry in those years include the funding to these FFRDCs.

^c The data for U&C R&D before 2003 covers only science and engineering (S&E) fields; in 2003 and later years, the 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 the double counting of funds passed through from one academic institution to another. The character-of-work estimation procedure for academic R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years.

^d Character-of-work estimates for nonprofit-administered FFRDCs in 1953–80 are not separate from federal funding for other nonprofit institutions; thus, the data for federal funding to other nonprofit institutions includes the funding to these FFRDCs in those years.

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

^f Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^g The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. Los Alamos National Laboratory became industry administered in June 2006—previously, it was U&C administered. Lawrence Livermore National Laboratory became industry administered in October 2007—previously, it was U&C administered.

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), FFRDC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source:	All sources	Federal								Industry			U&C	Other nonprofit		Other government ^a		
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^b	U&C ^c	FFRDCs	Other nonprofit ^d	Nonprofit FFRDCs ^d	Total	Industry ^e	U&C ^c	Other nonprofit ^f	U&C ^c	Total nonprofit ^f	U&C ^c	U&C ^c	
	Current \$millions																		
1953		5,160	2,783	1,015	1,430	NA	149	131	58	NA	2,247	2,200	21	26	37	55	28	27	40
1954		5,617	3,098	963	1,750	NA	165	161	61	NA	2,375	2,320	24	31	40	60	31	29	45
1955		6,281	3,603	973	2,057	123	191	187	64	9	2,522	2,460	27	35	42	64	32	32	50
1956		8,500	4,978	1,130	2,995	333	221	217	71	11	3,346	3,277	32	37	46	74	38	36	57
1957		9,908	6,233	1,297	3,928	407	242	267	79	14	3,470	3,396	37	37	51	91	51	40	64
1958		10,915	6,974	1,507	4,436	323	280	316	95	18	3,707	3,630	39	38	56	107	62	45	72
1959		12,490	8,167	1,681	5,217	418	356	349	125	22	4,065	3,983	40	42	61	117	67	50	81
1960		13,711	8,915	1,801	5,604	477	453	385	148	48	4,516	4,428	40	48	67	123	68	55	90
1961		14,564	9,484	1,987	5,685	555	557	440	169	92	4,757	4,668	40	49	75	148	86	62	101
1962		15,636	10,138	2,188	6,008	426	687	500	200	130	5,124	5,029	41	54	84	179	109	70	112
1963		17,519	11,645	2,558	6,856	414	839	580	234	165	5,456	5,360	41	55	96	197	119	78	125
1964		19,103	12,764	2,965	7,257	463	995	629	250	205	5,888	5,792	41	55	114	200	112	88	138
1965		20,252	13,194	3,156	7,367	373	1,167	630	286	215	6,549	6,445	42	62	136	225	124	101	150
1966		22,072	14,165	3,308	7,977	355	1,335	652	329	210	7,331	7,216	45	70	165	252	138	114	160
1967		23,346	14,563	3,444	7,946	419	1,491	696	342	225	8,146	8,020	52	74	200	271	145	126	168
1968		24,666	14,964	3,497	8,145	415	1,586	722	364	235	9,008	8,869	58	81	221	290	151	139	185
1969		25,996	15,228	3,790	7,987	464	1,624	731	388	245	10,011	9,857	61	93	233	316	161	155	208
1970		26,271	14,984	4,154	7,306	473	1,686	727	410	230	10,449	10,288	66	95	259	343	172	171	237
1971		26,952	15,210	4,409	7,175	491	1,760	735	427	215	10,824	10,654	72	98	290	366	184	182	262
1972		28,740	16,039	4,676	7,469	548	1,890	785	472	200	11,715	11,535	79	101	312	393	198	195	282
1973		30,952	16,587	4,837	7,600	545	2,009	841	566	190	13,299	13,104	90	105	343	422	211	211	302
1974		33,359	17,287	5,132	7,572	648	2,160	926	639	210	14,885	14,667	104	114	393	474	235	239	320
1975		35,671	18,533	5,561	7,878	727	2,400	1,067	675	225	15,824	15,582	118	124	432	534	262	272	348
1976		39,435	20,292	5,890	8,671	890	2,619	1,266	711	245	17,702	17,436	131	135	480	592	292	300	369
1977		43,338	22,071	6,211	9,523	962	2,893	1,467	740	275	19,642	19,340	155	147	569	662	326	337	394
1978		48,719	24,414	6,962	10,107	1,082	3,329	1,772	830	333	22,457	22,115	182	160	679	727	363	364	443
1979		55,379	27,225	7,471	11,354	1,164	3,848	2,013	985	390	26,097	25,708	215	174	785	791	405	386	482
1980		63,224	29,986	7,831	12,752	1,277	4,335	2,306	1,017	469	30,929	30,476	264	189	920	871	452	419	519
1981		72,292	33,739	8,605	14,997	1,385	4,670	2,484	1,075	524	35,948	35,428	314	206	1,058	967	504	463	581
1982		80,748	37,133	9,501	17,061	1,484	4,879	2,544	1,129	536	40,692	40,105	363	224	1,207	1,095	561	534	621
1983		89,950	41,451	10,830	19,095	1,585	5,210	2,840	1,306	585	45,264	44,588	432	244	1,357	1,220	626	595	658
1984		102,244	46,470	11,916	21,657	1,739	5,748	3,243	1,548	620	52,187	51,404	518	265	1,514	1,351	698	654	721
1985		114,671	52,641	13,093	25,333	1,863	6,388	3,616	1,694	655	57,962	57,043	630	289	1,743	1,491	778	713	834
1986		120,249	54,622	13,504	26,000	1,891	7,028	3,973	1,686	541	60,991	59,932	745	314	2,019	1,647	867	780	969

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source:	All sources	Federal									Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^b	U&C ^c	FFRDCs	Other nonprofit ^d	Nonprofit FFRDCs ^d	Total	Industry ^e	U&C ^c	Other nonprofit ^f	U&C ^c	Total	Other nonprofit ^f	U&C ^c	U&C ^c	
	1987		126,360	58,609	13,588	28,757	1,995	7,768	4,287	1,704	509	62,576	61,403	831	342	2,262	1,849	967	882	1,065
1988		133,881	60,131	14,342	28,221	2,122	8,593	4,581	1,762	510	67,977	66,672	933	372	2,527	2,081	1,078	1,003	1,165	
1989		141,891	60,466	15,231	26,359	2,195	9,317	4,756	2,062	547	74,966	73,501	1,061	405	2,852	2,333	1,202	1,131	1,274	
1990		151,993	61,610	15,671	25,802	2,323	9,939	4,894	2,346	636	83,208	81,602	1,166	440	3,187	2,589	1,340	1,249	1,399	
1991		160,876	60,783	15,249	24,095	2,277	10,667	5,120	2,679	696	92,300	90,580	1,242	479	3,458	2,852	1,494	1,358	1,483	
1992		165,350	60,915	15,853	22,369	2,353	11,528	5,259	2,806	748	96,229	94,388	1,320	521	3,569	3,113	1,666	1,448	1,525	
1993		165,730	60,528	16,531	20,844	1,965	12,307	5,289	2,843	749	96,549	94,591	1,392	567	3,709	3,388	1,857	1,531	1,557	
1994		169,207	60,777	16,355	20,261	2,202	12,996	5,294	2,911	758	99,204	97,131	1,456	617	3,938	3,665	2,071	1,595	1,623	
1995		183,625	62,969	16,904	21,178	2,273	13,592	5,367	2,847	808	110,871	108,652	1,548	671	4,110	3,925	2,308	1,617	1,751	
1996		197,346	63,394	16,585	21,356	2,297	14,084	5,395	2,906	772	123,417	121,015	1,672	730	4,436	4,239	2,574	1,666	1,861	
1997		212,152	64,574	16,819	21,798	2,130	14,530	5,463	3,014	821	136,228	133,611	1,808	809	4,838	4,590	2,804	1,786	1,922	
1998		226,457	66,383	17,362	22,086	2,078	15,174	5,559	3,281	843	147,825	145,016	1,950	859	5,163	5,114	3,192	1,922	1,972	
1999		245,318	67,366	18,142	20,496	2,039	16,264	5,652	3,761	1,013	164,606	161,594	2,082	931	5,619	5,628	3,516	2,112	2,098	
2000		268,905	67,862	19,247	17,117	2,001	17,719	5,742	4,510	1,526	186,037	182,844	2,174	1,020	6,231	6,528	4,204	2,324	2,246	
2001		279,716	74,966	22,374	16,899	2,020	19,767	6,225	5,488	2,192	188,336	185,118	2,189	1,029	6,826	7,192	4,650	2,542	2,395	
2002		279,387	80,315	23,798	16,401	2,263	22,654	7,102	5,778	2,319	180,643	177,467	2,178	998	7,617	8,203	5,374	2,828	2,610	
2003		293,060	86,705	24,982	17,798	2,458	25,727	7,301	5,945	2,494	186,113	182,926	2,166	1,020	8,226	9,160	6,176	2,984	2,856	
2004		304,547	92,360	24,898	20,266	2,485	27,872	7,659	6,537	2,644	191,307	188,035	2,231	1,041	8,562	9,310	6,201	3,109	3,008	
2005		327,185	97,041	26,322	21,909	2,601	29,019	7,817	6,545	2,828	207,725	204,250	2,368	1,107	9,265	10,095	6,800	3,294	3,060	
2006		352,567	101,558	28,240	24,304	3,122	29,600	7,306	6,044	2,943	227,110	223,365	2,563	1,182	10,076	10,641	7,111	3,530	3,182	
2007		379,681	106,858	29,859	26,585	5,165	30,160	5,567	5,980	3,543	246,741	242,682	2,803	1,257	10,833	11,810	7,896	3,915	3,438	
2008		406,610	119,423	29,839	36,360	6,346	31,178	4,766	6,236	4,698	258,691	254,321	3,069	1,301	11,640	13,151	8,827	4,324	3,706	
2009		404,731	127,467	30,560	39,573	6,646	33,434	5,052	7,097	5,106	247,270	242,820	3,193	1,258	11,917	14,268	9,647	4,620	3,809	
2010		407,703	127,813	31,970	34,199	7,214	36,565	5,315	7,093	5,457	249,188	244,778	3,145	1,265	12,100	14,814	10,043	4,771	3,788	
2011		428,163	129,068	35,775	31,309	6,956	37,714	5,246	6,553	5,516	267,306	262,784	3,189	1,333	12,965	15,106	10,234	4,872	3,718	
2012 (preliminary)		452,556	135,018	37,574	36,300	6,808	37,393	5,174	6,305	5,464	285,040	280,400	3,242	1,398	13,506	15,333	10,410	4,923	3,659	
2005 constant \$millions																				
1953		31,904	17,204	6,276	8,842	NA	921	810	356	0	13,890	13,603	127	161	226	340	173	167	244	
1954		34,408	18,979	5,896	10,721	NA	1,008	983	371	0	14,547	14,213	144	190	242	368	190	178	273	
1955		37,839	21,706	5,860	12,392	741	1,151	1,127	386	51	15,193	14,819	163	211	253	386	193	193	301	
1956		49,507	28,994	6,584	17,444	1,940	1,287	1,264	411	64	19,486	19,087	183	216	268	431	221	210	329	
1957		55,844	35,128	7,311	22,139	2,294	1,361	1,502	442	79	19,554	19,140	206	209	287	513	287	225	361	
1958		60,168	38,444	8,305	24,453	1,781	1,543	1,739	524	99	20,435	20,010	215	209	306	587	342	245	397	
1959		68,047	44,497	9,159	28,424	2,277	1,937	1,901	678	120	22,145	21,701	215	229	332	635	365	270	439	
1960		73,674	47,904	9,675	30,112	2,563	2,431	2,069	795	258	24,266	23,793	215	258	360	661	365	296	484	
1961		77,377	50,388	10,558	30,203	2,949	2,957	2,338	898	486	25,273	24,800	213	260	396	786	457	329	534	
1962		81,953	53,137	11,466	31,489	2,233	3,598	2,621	1,048	681	26,854	26,358	212	283	440	936	571	364	587	
1963		90,856	60,395	13,269	35,556	2,147	4,349	3,005	1,214	856	28,293	27,798	210	285	498	1,022	617	405	648	
1964		97,569	65,195	15,146	37,066	2,365	5,082	3,213	1,277	1,047	30,071	29,583	207	281	580	1,022	572	449	702	
1965		101,585	66,179	15,831	36,953	1,871	5,854	3,158	1,435	1,078	32,847	32,328	208	311	682	1,126	622	504	750	

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding	All	Federal										Industry				U&C	Other nonprofit			Other
	source:	sources	Federal								Industry				U&C	Other nonprofit			government ^a		
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^b	U&C ^c	U&C	Other nonprofit ^d	Nonprofit FFRDCs ^d	Total	Industry ^e	U&C ^c	Other nonprofit ^f	U&C ^c	Total	Other nonprofit ^f	U&C ^c	U&C ^c		
1966		107,657	69,090	16,134	38,909	1,732	6,512	3,178	1,602	1,024	35,758	35,197	219	341	802	1,227	673	554	780		
1967		110,483	68,917	16,300	37,603	1,983	7,054	3,294	1,618	1,065	38,547	37,953	244	350	944	1,280	686	594	795		
1968		111,968	67,928	15,875	36,973	1,884	7,199	3,277	1,652	1,067	40,888	40,259	261	368	1,001	1,314	685	629	838		
1969		112,449	65,873	16,395	34,549	2,007	7,023	3,162	1,676	1,060	43,302	42,638	262	402	1,008	1,367	696	670	900		
1970		107,947	61,569	17,068	30,020	1,944	6,926	2,985	1,683	945	42,932	42,273	269	390	1,062	1,409	707	703	974		
1971		105,470	59,522	17,253	28,078	1,921	6,885	2,874	1,669	841	42,357	41,692	282	384	1,133	1,432	720	712	1,025		
1972		107,815	60,169	17,540	28,019	2,056	7,090	2,945	1,769	750	43,947	43,272	296	379	1,169	1,472	743	730	1,058		
1973		110,004	58,952	17,189	27,011	1,937	7,138	2,989	2,012	675	47,264	46,573	318	373	1,219	1,498	750	748	1,072		
1974		108,691	56,325	16,723	24,671	2,111	7,038	3,017	2,080	684	48,499	47,788	339	372	1,279	1,545	766	779	1,043		
1975		106,193	55,173	16,556	23,453	2,164	7,145	3,176	2,009	670	47,109	46,387	351	370	1,285	1,590	781	810	1,036		
1976		111,023	57,128	16,583	24,412	2,506	7,373	3,563	2,002	690	49,838	49,089	369	381	1,351	1,666	823	843	1,039		
1977		114,703	58,417	16,440	25,205	2,546	7,656	3,883	1,959	728	51,986	51,188	409	389	1,505	1,753	863	891	1,043		
1978		120,488	60,378	17,218	24,996	2,676	8,232	4,381	2,053	822	55,537	54,693	449	396	1,679	1,798	899	899	1,096		
1979		126,443	62,161	17,059	25,924	2,658	8,786	4,596	2,249	890	59,585	58,697	490	398	1,792	1,805	925	880	1,099		
1980		132,294	62,745	16,385	26,683	2,672	9,070	4,825	2,128	981	64,718	63,770	551	396	1,924	1,822	945	877	1,085		
1981		138,307	64,548	16,462	28,692	2,650	8,934	4,753	2,056	1,003	68,775	67,780	601	394	2,023	1,849	964	886	1,112		
1982		145,598	66,956	17,132	30,763	2,676	8,797	4,586	2,036	966	73,373	72,314	655	404	2,175	1,974	1,012	962	1,120		
1983		156,021	71,898	18,784	33,121	2,749	9,037	4,927	2,264	1,015	78,512	77,340	749	423	2,353	2,117	1,086	1,031	1,141		
1984		170,926	77,687	19,920	36,205	2,907	9,608	5,422	2,587	1,037	87,244	85,935	865	444	2,531	2,259	1,167	1,092	1,205		
1985		186,067	85,417	21,245	41,106	3,023	10,365	5,867	2,748	1,062	94,050	92,559	1,022	469	2,828	2,419	1,263	1,157	1,352		
1986		190,897	86,714	21,439	41,276	3,002	11,156	6,307	2,676	859	96,825	95,143	1,183	499	3,204	2,615	1,377	1,238	1,538		
1987		194,940	90,419	20,963	44,364	3,078	11,984	6,614	2,629	786	96,538	94,728	1,282	527	3,490	2,852	1,492	1,360	1,642		
1988		199,688	89,687	21,392	42,092	3,165	12,817	6,832	2,629	760	101,390	99,443	1,392	555	3,769	3,104	1,608	1,496	1,738		
1989		203,934	86,905	21,890	37,885	3,155	13,390	6,835	2,964	786	107,746	105,640	1,524	582	4,099	3,353	1,728	1,626	1,831		
1990		210,337	85,260	21,687	35,706	3,215	13,754	6,772	3,246	880	115,148	112,926	1,613	609	4,410	3,583	1,855	1,728	1,936		
1991		215,006	81,235	20,380	32,202	3,043	14,256	6,843	3,580	930	123,357	121,058	1,659	640	4,621	3,812	1,997	1,815	1,981		
1992		215,868	79,525	20,696	29,203	3,072	15,049	6,866	3,663	976	125,628	123,225	1,723	680	4,659	4,064	2,175	1,890	1,991		
1993		211,686	77,311	21,114	26,624	2,510	15,720	6,756	3,632	957	123,322	120,820	1,777	724	4,737	4,327	2,372	1,955	1,989		
1994		211,666	76,028	20,459	25,345	2,755	16,256	6,622	3,642	949	124,097	121,504	1,821	772	4,926	4,585	2,590	1,995	2,030		
1995		225,015	77,162	20,714	25,952	2,785	16,656	6,577	3,489	990	135,861	133,143	1,896	822	5,036	4,810	2,829	1,981	2,146		
1996		237,309	76,231	19,943	25,681	2,762	16,936	6,487	3,494	928	148,409	145,521	2,010	878	5,334	5,097	3,095	2,003	2,238		
1997		250,687	76,303	19,874	25,757	2,517	17,169	6,455	3,561	970	160,972	157,880	2,136	956	5,717	5,424	3,313	2,111	2,271		
1998		264,602	77,565	20,287	25,806	2,428	17,730	6,496	3,833	985	172,725	169,443	2,278	1,004	6,033	5,976	3,730	2,246	2,304		
1999		282,488	77,574	20,891	23,601	2,348	18,728	6,508	4,330	1,167	189,547	186,078	2,397	1,072	6,471	6,480	4,048	2,432	2,416		
2000		303,084	76,487	21,693	19,293	2,255	19,971	6,472	5,083	1,720	209,684	206,085	2,450	1,149	7,023	7,358	4,739	2,620	2,532		

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source:	All sources	Federal								Industry			U&C	Other nonprofit			Other government ^a	
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^b	U&C ^c	FFRDCs	Other nonprofit ^d	FFRDCs ^d	Total	Industry ^e	U&C ^c	Other nonprofit ^f	U&C ^c	Total	Other nonprofit ^f	U&C ^c	U&C ^c
2001		308,304	82,628	24,661	18,626	2,227	21,787	6,862	6,049	2,416	207,585	204,038	2,413	1,134	7,523	7,927	5,125	2,802	2,640
2002		303,036	87,113	25,812	17,789	2,455	24,572	7,703	6,267	2,515	195,933	192,488	2,362	1,083	8,262	8,897	5,829	3,068	2,831
2003		311,319	92,107	26,539	18,907	2,611	27,330	7,756	6,315	2,649	197,708	194,323	2,301	1,084	8,739	9,730	6,561	3,169	3,034
2004		314,660	95,427	25,724	20,939	2,568	28,798	7,913	6,754	2,732	197,660	194,279	2,305	1,076	8,846	9,619	6,407	3,212	3,108
2005		327,185	97,041	26,322	21,909	2,601	29,019	7,817	6,545	2,828	207,725	204,250	2,368	1,107	9,265	10,095	6,800	3,294	3,060
2006		341,532	98,379	27,356	23,543	3,024	28,673	7,078	5,854	2,851	220,002	216,374	2,483	1,145	9,760	10,308	6,888	3,420	3,083
2007		357,426	100,595	28,109	25,027	4,862	28,393	5,241	5,629	3,335	232,278	228,457	2,638	1,183	10,198	11,118	7,433	3,685	3,237
2008		374,472	109,984	27,480	33,486	5,844	28,714	4,389	5,743	4,327	238,244	234,219	2,827	1,198	10,720	12,111	8,129	3,982	3,413
2009		369,517	116,377	27,901	36,130	6,068	30,525	4,612	6,480	4,662	225,756	221,693	2,915	1,148	10,880	13,026	8,808	4,218	3,477
2010		367,326	115,155	28,804	30,812	6,499	32,944	4,788	6,391	4,916	224,510	220,536	2,833	1,140	10,901	13,347	9,048	4,299	3,413
2011		377,706	113,858	31,559	27,619	6,136	33,269	4,628	5,781	4,866	235,805	231,816	2,813	1,176	11,437	13,326	9,028	4,298	3,280
2012 (preliminary)		392,206	117,013	32,563	31,459	5,900	32,407	4,484	5,464	4,735	247,029	243,008	2,809	1,212	11,705	13,288	9,022	4,266	3,171

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

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

^a Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^b Federal funding for industry in 1953–54 did not separate out industry-administered FFRDCs, and the data for federal funding to industry for these years include the funding to these FFRDCs.

^c The data for U&C R&D before 2003 cover only science and engineering (S&E) fields; in 2003 and later years, the R&D in non-S&E fields is also included. Non-S&E R&D was \$1.4 billion in 2003 and \$3.5 billion in 2012. Adjustments have also been made to U&C R&D for 1998 and later years to eliminate double counting of (since 1998) S&E R&D and (since 2010) non-S&E funds passed through from one academic institution to another. For FY 1998, \$479 million in total pass-through funds and \$421 million in federal pass-through funds were reported. For FY 2012, total pass-through funds were an estimated \$3.069 billion and federal pass-through funds were an estimated \$2.747 billion.

^d Federal funding for other nonprofit institutions in 1953–54 did not separate out nonprofit-administered FFRDCs, and the data for federal funding to other nonprofit institutions these years include the funding to these FFRDCs.

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

^f The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. 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 distribution 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), FFRDC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source:	All sources	Federal							Industry				U&C	Other nonprofit			Other government ^a	
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^c	U&C ^d	U&C	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g	U&C ^d	U&C ^d
	Current \$millions																		
1953		460	265	102	19	NA	82	36	27	NA	154	132	13	9	6	28	12	16	7
1954		509	291	96	23	NA	97	44	31	NA	169	143	15	11	8	31	13	18	10
1955		579	327	98	27	NA	117	50	36	NA	192	162	17	13	12	35	14	21	14
1956		718	393	114	37	NA	143	58	42	NA	251	216	20	15	15	41	17	24	19
1957		814	452	124	41	NA	167	72	49	NA	268	230	23	15	20	50	23	27	25
1958		944	538	149	43	NA	202	85	59	NA	292	252	24	16	24	59	28	31	31
1959		1,087	666	165	72	NA	263	95	72	NA	290	248	24	18	28	66	30	36	38
1960		1,286	794	184	79	NA	341	106	85	NA	343	297	25	21	33	71	30	41	45
1961		1,512	973	230	81	NA	432	126	105	NA	361	314	25	22	40	85	37	48	54
1962		1,824	1,218	252	143	NA	546	148	130	NA	394	345	25	24	48	101	46	55	64
1963		2,115	1,446	285	147	NA	689	175	150	NA	425	375	25	25	58	113	50	63	75
1964		2,396	1,693	339	123	42	824	200	166	NA	434	384	25	25	70	115	47	68	84
1965		2,664	1,900	375	157	29	944	218	179	NA	462	406	27	29	86	122	52	70	94
1966		2,930	2,075	410	142	31	1,066	239	188	NA	512	451	29	32	106	133	58	75	104
1967		3,168	2,280	434	168	34	1,188	263	194	NA	495	427	34	34	136	144	61	83	114
1968		3,376	2,399	482	145	35	1,265	276	196	NA	537	462	38	37	156	154	63	91	131
1969		3,491	2,457	545	123	37	1,288	272	192	NA	541	458	40	43	171	170	67	103	153
1970		3,594	2,501	562	122	36	1,323	265	195	NA	531	444	43	44	196	187	72	115	179
1971		3,720	2,559	581	101	33	1,385	252	207	NA	551	456	50	45	214	204	77	127	194
1972		3,850	2,656	603	91	39	1,437	270	216	NA	565	463	55	47	216	218	84	134	195
1973		4,099	2,847	652	96	36	1,489	343	232	NA	607	499	59	49	223	227	90	137	196
1974		4,511	3,146	715	114	49	1,609	415	245	NA	656	536	66	54	250	254	102	153	204
1975		4,875	3,415	760	104	53	1,768	476	255	NA	704	573	72	59	264	280	116	164	212
1976		5,373	3,793	850	116	69	1,924	556	278	NA	774	634	75	65	283	305	131	175	218
1977		6,008	4,235	943	135	75	2,114	667	301	NA	862	701	89	72	334	346	148	198	232
1978		6,959	4,950	1,044	156	94	2,399	906	351	NA	970	785	107	79	398	380	168	213	260
1979		7,836	5,558	1,112	161	104	2,719	1,050	413	NA	1,107	893	128	87	466	419	190	229	286
1980		8,745	6,145	1,212	170	120	3,061	1,167	416	NA	1,286	1,035	156	95	544	463	215	248	307
1981		9,658	6,591	1,343	164	137	3,331	1,284	324	9	1,600	1,313	183	105	615	512	243	269	338
1982		10,651	7,121	1,522	253	128	3,475	1,366	369	9	1,854	1,523	215	115	716	591	275	317	368
1983		11,880	7,853	1,733	346	117	3,689	1,536	426	8	2,146	1,760	260	127	816	668	311	358	396
1984		13,332	8,651	1,877	340	136	4,087	1,709	494	9	2,584	2,132	313	139	915	746	351	395	436
1985		14,748	9,407	1,947	358	131	4,606	1,793	560	13	2,915	2,373	389	153	1,075	837	397	440	514
1986		17,154	10,220	2,026	434	117	5,122	1,915	594	13	4,130	3,496	466	168	1,262	936	449	488	606

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2012

Year	Funding	All	Federal								Industry				U&C	Other nonprofit			Other
	source:	sources	Federal		Industry		U&C		Other	Nonprofit		Industry		Other	U&C	Other		government ^a	
	Performer:	performers	Total	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs	nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	nonprofit ^g	U&C ^d	Total	nonprofit ^g	U&C ^d	U&C ^d	
1987		18,481	11,090	2,047	598	142	5,527	2,086	675	14	4,282	3,583	514	185	1,399	1,052	507	545	659
1988		19,787	12,097	2,116	656	337	5,937	2,272	756	24	4,275	3,507	565	203	1,530	1,180	573	607	705
1989		21,891	13,392	2,309	986	398	6,422	2,371	860	46	4,692	3,832	637	223	1,714	1,327	647	680	766
1990		23,029	14,057	2,319	869	499	6,889	2,470	947	65	4,710	3,760	705	245	1,929	1,486	730	756	847
1991		27,140	15,283	2,378	1,251	461	7,423	2,657	1,036	77	7,157	6,125	764	269	2,127	1,660	825	836	912
1992		27,604	15,710	2,419	712	474	8,058	2,867	1,114	67	6,925	5,816	814	295	2,203	1,824	931	893	941
1993		28,743	16,399	2,621	466	492	8,638	2,953	1,157	72	7,136	5,961	851	324	2,268	1,987	1,051	936	952
1994		29,651	16,770	2,547	436	503	9,139	2,934	1,137	75	7,323	6,078	890	356	2,406	2,160	1,186	974	992
1995		29,610	16,990	2,689	190	530	9,634	2,702	1,170	75	6,715	5,379	945	390	2,511	2,326	1,338	987	1,070
1996		32,799	18,063	2,680	650	708	10,092	2,606	1,248	79	8,309	6,848	1,032	428	2,740	2,539	1,510	1,028	1,149
1997		36,921	19,420	2,746	1,029	625	10,924	2,671	1,317	108	10,390	8,766	1,175	449	3,144	2,718	1,557	1,162	1,248
1998		35,372	20,847	3,003	1,002	568	11,941	2,660	1,461	213	6,643	4,851	1,315	477	3,483	3,069	1,773	1,296	1,330
1999		38,935	22,799	3,347	1,108	557	12,892	2,765	1,734	397	7,474	5,537	1,421	517	3,835	3,394	1,952	1,442	1,432
2000		42,752	24,786	3,765	925	547	13,960	2,874	2,099	616	8,181	6,115	1,499	566	4,298	3,938	2,334	1,603	1,549
2001		47,727	27,591	4,260	754	552	15,541	3,104	2,464	915	9,390	7,299	1,519	571	4,738	4,347	2,582	1,765	1,663
2002		51,902	31,130	4,511	888	534	17,930	3,714	2,575	979	8,725	6,659	1,512	554	5,287	4,947	2,984	1,963	1,812
2003		56,089	33,967	4,664	1,386	299	20,127	3,747	2,714	1,029	9,003	6,944	1,493	567	5,667	5,485	3,429	2,055	1,967
2004		57,731	35,235	4,697	1,072	175	21,702	3,730	2,788	1,070	8,887	6,763	1,545	578	5,930	5,596	3,443	2,154	2,083
2005		61,321	36,705	4,770	1,108	136	22,788	3,820	2,903	1,181	9,841	7,559	1,667	614	6,525	6,095	3,776	2,319	2,155
2006		62,996	37,558	4,716	1,444	652	23,312	3,344	2,849	1,242	9,437	6,940	1,840	656	7,233	6,483	3,948	2,535	2,285
2007		68,047	39,220	4,621	2,780	2,258	23,673	1,724	2,829	1,335	11,223	8,488	2,037	698	7,874	7,230	4,384	2,845	2,499
2008		72,105	39,156	4,957	1,475	2,423	24,149	1,672	3,073	1,407	13,833	10,893	2,218	722	8,412	8,025	4,901	3,124	2,679
2009		75,854	40,433	5,441	1,340	2,629	24,090	1,902	3,498	1,533	16,303	13,444	2,161	698	8,065	8,477	5,357	3,120	2,576
2010		77,386	41,080	5,111	1,406	2,848	24,526	2,203	3,414	1,573	17,657	14,965	1,990	702	7,656	8,595	5,576	3,019	2,397
2011		74,161	39,901	4,911	677	2,673	24,786	2,213	3,066	1,575	15,080	12,343	1,997	740	8,117	8,734	5,683	3,051	2,329
2012 (preliminary)		74,849	39,372	5,086	785	2,446	24,295	2,160	3,067	1,533	15,962	13,170	2,016	776	8,398	8,841	5,780	3,061	2,275
2005 constant \$millions																			
1953		2,841	1,638	628	117	NA	504	223	167	NA	952	816	80	56	37	173	74	99	40
1954		3,115	1,780	588	141	NA	591	270	190	NA	1,035	876	92	67	52	190	80	110	58
1955		3,488	1,970	587	163	NA	702	301	217	NA	1,157	976	102	78	70	208	84	123	84
1956		4,182	2,286	661	216	NA	830	338	242	NA	1,459	1,258	114	87	90	236	99	137	111
1957		4,585	2,545	699	231	NA	938	403	273	NA	1,508	1,296	127	85	111	282	130	152	140
1958		5,201	2,963	821	237	NA	1,114	469	322	NA	1,610	1,389	132	88	132	325	154	171	171
1959		5,922	3,626	896	392	NA	1,430	515	392	NA	1,580	1,351	131	98	155	357	163	193	205
1960		6,910	4,266	986	424	NA	1,830	570	457	NA	1,840	1,596	132	113	180	382	161	220	242
1961		8,030	5,167	1,219	430	NA	2,292	667	558	NA	1,918	1,668	133	117	211	449	197	252	285
1962		9,560	6,384	1,321	749	NA	2,859	773	681	NA	2,065	1,808	131	126	250	527	241	286	334

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2012

Year	Funding	All	Federal									Industry				U&C	Other nonprofit			Other
	source:	sources	Federal		Industry		U&C		Other	Nonprofit	Industry		Other	U&C	Other		government ^a			
	Performer:	performers	Total	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs	nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	nonprofit ^g	U&C ^d	U&C ^d		
1963		10,969	7,497	1,475	762	NA	3,573	908	778	NA	2,202	1,945	127	130	299	583	259	324	389	
1964		12,238	8,647	1,731	628	215	4,206	1,019	848	NA	2,217	1,961	128	128	356	587	240	347	431	
1965		13,363	9,530	1,878	788	145	4,733	1,091	895	NA	2,315	2,036	133	145	432	612	261	351	474	
1966		14,291	10,121	2,000	693	151	5,200	1,163	915	NA	2,497	2,200	141	156	519	649	283	366	505	
1967		14,990	10,787	2,051	795	161	5,620	1,245	916	NA	2,340	2,021	159	161	642	681	289	393	539	
1968		15,325	10,888	2,188	658	159	5,742	1,251	890	NA	2,435	2,097	170	168	709	699	286	413	594	
1969		15,100	10,627	2,358	532	160	5,569	1,177	831	NA	2,338	1,981	171	186	740	733	290	443	661	
1970		14,767	10,278	2,309	501	148	5,434	1,087	799	NA	2,182	1,824	177	181	804	766	296	470	737	
1971		14,558	10,013	2,274	395	129	5,418	986	810	NA	2,154	1,784	194	176	837	796	301	495	758	
1972		14,443	9,962	2,260	341	146	5,391	1,013	810	NA	2,120	1,737	206	176	811	818	315	503	733	
1973		14,570	10,118	2,317	341	128	5,290	1,219	823	NA	2,156	1,773	208	174	793	805	320	485	698	
1974		14,696	10,251	2,329	371	160	5,242	1,351	798	NA	2,137	1,746	215	176	815	829	332	497	664	
1975		14,512	10,167	2,262	310	158	5,263	1,416	759	NA	2,095	1,706	213	177	785	832	344	488	632	
1976		15,127	10,677	2,393	327	194	5,417	1,565	781	NA	2,180	1,785	211	184	798	860	368	491	613	
1977		15,902	11,209	2,496	357	199	5,595	1,765	797	NA	2,281	1,855	236	190	885	915	392	523	613	
1978		17,210	12,242	2,582	386	232	5,933	2,240	869	NA	2,400	1,941	263	195	985	940	415	526	642	
1979		17,892	12,691	2,540	368	237	6,208	2,396	942	NA	2,528	2,039	291	198	1,064	956	433	523	653	
1980		18,298	12,858	2,537	356	251	6,404	2,441	870	NA	2,691	2,166	326	199	1,138	968	449	519	642	
1981		18,477	12,611	2,569	314	262	6,373	2,457	619	17	3,062	2,512	350	201	1,177	980	465	515	647	
1982		19,204	12,840	2,744	456	231	6,265	2,464	666	16	3,342	2,746	389	208	1,292	1,066	495	571	664	
1983		20,606	13,622	3,005	600	203	6,398	2,663	738	14	3,723	3,053	451	220	1,416	1,159	539	620	687	
1984		22,287	14,463	3,137	568	227	6,832	2,857	826	15	4,320	3,564	523	233	1,529	1,247	587	660	728	
1985		23,931	15,264	3,160	581	213	7,473	2,909	908	20	4,730	3,850	631	248	1,745	1,358	644	714	835	
1986		27,232	16,225	3,216	689	186	8,130	3,040	942	21	6,556	5,550	739	267	2,003	1,486	712	774	962	
1987		28,511	17,108	3,158	923	219	8,526	3,218	1,042	22	6,605	5,528	793	285	2,159	1,623	782	841	1,016	
1988		29,512	18,043	3,156	978	503	8,854	3,388	1,128	36	6,376	5,231	842	302	2,282	1,760	854	906	1,052	
1989		31,463	19,248	3,318	1,417	572	9,230	3,408	1,236	67	6,744	5,508	916	320	2,464	1,907	930	977	1,101	
1990		31,869	19,453	3,209	1,203	691	9,533	3,418	1,310	89	6,518	5,203	976	338	2,670	2,057	1,011	1,046	1,172	
1991		36,272	20,425	3,178	1,672	616	9,921	3,551	1,384	103	9,566	8,186	1,021	359	2,843	2,219	1,102	1,117	1,219	
1992		36,037	20,510	3,158	930	619	10,520	3,743	1,455	87	9,041	7,593	1,063	385	2,876	2,382	1,215	1,166	1,229	
1993		36,713	20,946	3,348	595	628	11,033	3,772	1,478	92	9,115	7,614	1,087	414	2,897	2,538	1,342	1,196	1,217	
1994		37,092	20,978	3,186	545	629	11,432	3,670	1,422	93	9,161	7,603	1,113	445	3,010	2,703	1,484	1,219	1,240	
1995		36,285	20,819	3,296	233	649	11,805	3,310	1,434	92	8,228	6,591	1,158	478	3,077	2,850	1,640	1,210	1,311	
1996		39,441	21,721	3,222	782	851	12,136	3,133	1,501	95	9,991	8,235	1,241	515	3,295	3,053	1,816	1,237	1,382	
1997		43,627	22,947	3,245	1,216	739	12,909	3,156	1,556	127	12,278	10,358	1,389	531	3,715	3,212	1,839	1,373	1,475	

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source:	All sources	Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	Industry		U&C	Other nonprofit ^e	Nonprofit	Total	Industry		Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g		U&C ^d
						FFRDCs ^c	U&C ^d					Industry ^f	U&C ^d				Other nonprofit ^g	U&C ^d	
1998		41,330	24,359	3,508	1,171	664	13,952	3,108	1,707	249	7,762	5,668	1,537	557	4,069	3,586	2,071	1,515	1,554
1999		44,834	26,254	3,854	1,275	642	14,846	3,184	1,997	457	8,607	6,376	1,636	595	4,416	3,908	2,248	1,660	1,649
2000		48,186	27,936	4,243	1,043	616	15,734	3,239	2,366	694	9,220	6,892	1,690	638	4,845	4,438	2,631	1,807	1,746
2001		52,605	30,411	4,696	831	609	17,129	3,421	2,716	1,009	10,349	8,045	1,675	630	5,222	4,791	2,846	1,945	1,832
2002		56,295	33,765	4,892	963	580	19,448	4,028	2,793	1,062	9,464	7,223	1,640	601	5,735	5,366	3,237	2,130	1,965
2003		59,584	36,083	4,955	1,472	318	21,381	3,980	2,884	1,093	9,564	7,377	1,586	602	6,020	5,826	3,643	2,184	2,090
2004		59,648	36,405	4,853	1,108	181	22,423	3,854	2,881	1,106	9,182	6,988	1,597	597	6,127	5,782	3,557	2,225	2,152
2005		61,321	36,705	4,770	1,108	136	22,788	3,820	2,903	1,181	9,841	7,559	1,667	614	6,525	6,095	3,776	2,319	2,155
2006		61,024	36,383	4,568	1,399	632	22,582	3,239	2,760	1,203	9,141	6,723	1,783	636	7,007	6,280	3,825	2,455	2,213
2007		64,058	36,921	4,350	2,617	2,126	22,285	1,623	2,663	1,257	10,565	7,990	1,918	657	7,413	6,806	4,127	2,679	2,353
2008		66,406	36,061	4,565	1,358	2,231	22,241	1,540	2,830	1,296	12,739	10,032	2,042	665	7,747	7,391	4,514	2,877	2,467
2009		69,254	36,915	4,967	1,223	2,400	21,994	1,736	3,194	1,400	14,885	12,274	1,973	638	7,363	7,739	4,891	2,849	2,352
2010		69,722	37,012	4,604	1,267	2,566	22,097	1,985	3,076	1,417	15,909	13,483	1,793	633	6,898	7,744	5,024	2,720	2,160
2011		65,422	35,199	4,332	597	2,358	21,865	1,952	2,705	1,389	13,303	10,888	1,762	653	7,161	7,704	5,013	2,692	2,054
2012 (preliminary)		64,868	34,122	4,408	680	2,120	21,055	1,872	2,658	1,328	13,834	11,414	1,747	673	7,278	7,662	5,009	2,653	1,972

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

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

^a Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^b Character-of-work estimates for industry were revised in 1998 and for later years; hence, the data for 1997 and earlier years are not directly comparable.

^c Character-of-work estimates for industry-administered FFRDCs in 1953–63 are not separate from the federal funding to industry; the data on federal funding to industry in those years include the funding to these FFRDCs.

^d The data for U&C R&D before 2003 covers only science and engineering (S&E) fields; in 2003 and later years, the 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 the double counting of funds passed through from one academic institution to another. The character-of-work estimation procedure for academic R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years.

^e Character-of-work estimates for nonprofit-administered FFRDCs in 1953–80 are not separate from federal funding for other nonprofit institutions; thus, the data for federal funding to other nonprofit institutions includes the funding to these FFRDCs in those years.

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

^g The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. Los Alamos National Laboratory became industry administered in June 2006—previously, it was U&C administered. Lawrence Livermore National Laboratory became industry administered in October 2007—previously, it was U&C administered.

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), FFRDC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2012

Year	Funding source:	All sources	Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^c	U&C ^d	U&C	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g	U&C ^d	U&C ^d
	Current \$millions																		
1953		1,289	756	347	288	NA	59	48	14	NA	456	438	7	11	28	20	10	10	30
1954		1,378	785	330	322	NA	60	58	16	NA	513	492	8	13	28	21	11	10	32
1955		1,514	850	333	368	NA	63	68	18	NA	583	560	9	14	27	22	11	11	32
1956		1,928	1,025	387	474	NA	65	79	21	NA	818	794	10	14	27	25	14	11	33
1957		2,414	1,304	446	678	NA	63	94	24	NA	1,018	992	12	14	27	31	20	11	34
1958		2,758	1,496	516	774	NA	66	111	30	NA	1,163	1,137	12	14	27	37	25	12	35
1959		2,940	1,630	577	813	NA	78	121	43	NA	1,206	1,178	13	15	28	39	27	12	37
1960		3,065	1,732	615	833	NA	93	129	63	NA	1,226	1,196	13	17	29	40	28	12	39
1961		3,123	1,811	668	812	NA	104	145	83	NA	1,195	1,165	13	17	30	48	35	13	40
1962		3,698	2,098	709	1,011	NA	119	163	98	NA	1,471	1,438	14	19	30	58	45	13	41
1963		3,865	2,245	809	1,007	NA	128	186	115	NA	1,483	1,450	14	19	32	63	49	14	42
1964		4,201	2,462	947	978	62	142	203	130	NA	1,593	1,560	14	19	37	65	47	18	45
1965		4,374	2,553	994	992	46	176	206	140	NA	1,654	1,620	13	21	42	79	52	27	46
1966		4,653	2,625	1,012	986	53	208	213	153	NA	1,842	1,804	14	24	48	91	57	34	47
1967		4,848	2,763	1,069	983	83	238	225	166	NA	1,890	1,849	16	25	54	96	60	36	46
1968		5,137	2,811	1,112	956	87	250	221	186	NA	2,125	2,081	16	28	55	101	62	39	46
1969		5,454	2,924	1,229	920	95	257	213	210	NA	2,320	2,272	16	32	54	109	66	43	48
1970		5,752	3,100	1,334	952	97	280	213	225	NA	2,429	2,378	18	33	56	117	70	47	51
1971		5,833	3,091	1,355	907	67	306	216	241	NA	2,494	2,441	19	34	67	121	74	47	61
1972		6,147	3,243	1,434	845	107	391	224	243	NA	2,618	2,562	21	35	82	131	79	52	74
1973		6,655	3,429	1,527	883	110	450	203	257	NA	2,894	2,832	26	36	100	145	83	62	88
1974		7,344	3,634	1,652	905	120	477	191	290	NA	3,333	3,263	32	39	118	163	91	72	96
1975		8,091	4,125	1,912	991	139	550	219	315	NA	3,520	3,440	39	42	141	192	100	92	113
1976		8,976	4,464	2,068	1,033	167	596	263	338	NA	4,001	3,912	45	45	166	218	109	109	127
1977		9,662	4,683	2,081	1,113	212	626	297	355	NA	4,410	4,311	51	48	194	241	120	121	134
1978		10,704	5,080	2,242	1,195	235	676	324	409	NA	4,982	4,870	61	52	232	259	132	128	151
1979		12,097	5,602	2,415	1,305	250	793	360	480	NA	5,797	5,670	71	55	263	273	144	129	161
1980		13,714	6,237	2,546	1,625	275	912	421	458	NA	6,698	6,550	88	60	308	298	158	140	174
1981		16,329	6,905	2,731	2,042	298	953	422	391	68	8,531	8,359	108	64	363	332	173	159	199
1982		18,218	7,689	2,802	2,593	367	1,007	433	398	91	9,553	9,363	121	69	402	367	189	178	207
1983		20,298	8,738	2,991	3,227	414	1,122	473	433	78	10,501	10,286	141	74	443	401	207	194	215
1984		22,451	9,499	2,961	3,677	547	1,226	548	459	80	11,788	11,541	168	79	491	438	226	212	234
1985		25,401	10,930	3,135	4,717	630	1,296	580	490	82	13,191	12,908	198	85	547	471	247	224	262
1986		27,240	10,409	3,204	4,049	629	1,393	554	506	75	15,402	15,082	229	91	620	510	270	240	298

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2012

Year	Funding source:	All sources	Federal									Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	Industry		U&C	Other	Nonprofit	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other		U&C ^d	
						FFRDCs ^c	U&C ^d	FFRDCs	nonprofit ^e	FFRDCs ^e							U&C ^d	nonprofit ^g		U&C ^d
1987		27,951	10,829	3,366	4,037	623	1,643	532	555	74	15,511	15,153	260	98	707	571	295	276	333	
1988		29,528	10,749	3,362	3,846	371	1,958	547	599	66	16,938	16,531	302	105	818	647	322	325	377	
1989		32,277	11,753	3,566	4,324	374	2,121	603	695	70	18,452	17,993	347	112	933	722	352	370	417	
1990		34,897	13,695	3,652	5,967	386	2,140	689	780	81	18,930	18,432	377	120	1,031	788	384	404	453	
1991		38,631	14,280	4,093	5,588	433	2,232	927	921	86	21,946	21,425	392	129	1,091	847	419	428	468	
1992		37,936	13,690	4,337	4,476	507	2,415	940	933	81	21,736	21,184	414	138	1,120	911	456	454	479	
1993		37,283	14,075	4,838	4,295	435	2,542	962	900	103	20,547	19,956	443	148	1,181	984	497	487	496	
1994		36,618	13,800	4,985	3,616	503	2,644	982	960	111	19,995	19,372	464	158	1,256	1,049	541	509	517	
1995		40,936	13,543	4,952	3,164	535	2,779	1,050	934	129	24,418	23,755	494	170	1,311	1,104	589	516	559	
1996		43,170	13,958	4,872	3,640	231	2,864	1,270	960	122	26,076	25,370	524	182	1,390	1,162	640	522	584	
1997		46,554	12,884	4,997	2,648	213	2,550	1,337	1,011	128	30,506	29,782	519	205	1,389	1,223	711	512	553	
1998		46,362	12,822	5,146	2,632	230	2,260	1,372	1,060	123	30,314	29,576	520	218	1,378	1,322	809	513	526	
1999		52,007	13,959	5,530	2,817	274	2,661	1,247	1,300	130	34,599	33,821	542	236	1,463	1,441	891	550	546	
2000		56,681	15,563	6,105	2,682	269	3,194	1,291	1,831	190	37,305	36,494	553	258	1,585	1,657	1,066	591	571	
2001		64,176	18,828	7,052	3,603	821	3,553	1,405	2,150	244	41,219	40,409	549	261	1,712	1,816	1,178	638	601	
2002		50,796	19,280	7,487	2,452	1,090	4,056	1,663	2,267	266	26,880	26,081	546	253	1,911	2,071	1,362	709	654	
2003		61,379	22,553	7,672	4,473	1,413	4,660	1,600	2,487	249	33,672	32,861	553	259	2,098	2,326	1,565	761	729	
2004		69,469	22,714	7,455	4,775	1,459	4,902	1,481	2,448	194	41,483	40,657	562	264	2,158	2,355	1,572	783	758	
2005		70,001	23,639	7,557	5,289	1,414	5,032	1,637	2,432	278	40,850	39,995	575	280	2,247	2,523	1,723	799	743	
2006		76,735	25,124	7,435	6,140	1,314	5,318	1,827	2,592	500	45,925	45,033	593	300	2,331	2,619	1,802	816	736	
2007		83,551	27,906	7,222	8,945	1,168	5,548	1,354	2,583	1,085	49,571	48,625	628	318	2,426	2,878	2,001	877	770	
2008		74,793	25,588	7,316	5,397	1,975	6,144	855	2,600	1,300	42,495	41,467	698	330	2,647	3,220	2,237	983	843	
2009		72,891	31,134	7,874	7,797	2,010	7,708	1,282	3,049	1,414	34,354	33,258	778	319	2,903	3,572	2,445	1,127	928	
2010		79,526	30,349	8,016	4,705	2,249	9,407	1,274	3,041	1,658	41,329	40,201	807	321	3,106	3,770	2,545	1,225	972	
2011		82,425	30,229	7,849	4,404	2,256	10,071	1,318	2,691	1,640	43,955	42,782	835	338	3,398	3,870	2,594	1,276	973	
2012 (preliminary)		86,773	31,382	8,084	5,106	2,387	10,147	1,386	2,682	1,589	46,868	45,650	864	354	3,599	3,950	2,638	1,312	975	
2005 constant \$millions																				
1953		7,970	4,671	2,145	1,781	NA	365	294	87	NA	2,816	2,708	40	68	172	124	62	62	186	
1954		8,442	4,809	2,019	1,973	NA	365	355	98	NA	3,140	3,014	46	80	171	129	67	61	193	
1955		9,117	5,120	2,006	2,217	NA	380	410	108	NA	3,509	3,374	51	84	164	130	66	63	195	
1956		11,227	5,967	2,251	2,761	NA	379	457	119	NA	4,764	4,625	58	82	157	146	82	64	193	
1957		13,603	7,349	2,511	3,821	NA	355	530	132	NA	5,735	5,591	65	79	153	175	113	62	191	
1958		15,203	8,247	2,844	4,267	NA	361	609	165	NA	6,411	6,268	66	77	150	201	138	63	195	
1959		16,015	8,881	3,141	4,429	NA	422	657	232	NA	6,568	6,418	68	82	153	212	147	65	201	
1960		16,469	9,304	3,302	4,476	NA	500	690	336	NA	6,588	6,426	70	91	155	215	150	64	208	
1961		16,592	9,621	3,549	4,314	NA	550	770	438	NA	6,349	6,189	69	90	157	252	186	66	212	
1962		19,380	10,996	3,713	5,299	NA	621	852	511	NA	7,707	7,537	71	100	159	304	236	68	213	

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2012

Year	Funding source:	All sources	Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	Industry		U&C	Other	Nonprofit	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g	U&C ^d	U&C ^d
						FFRDCs ^c	U&C ^d	FFRDCs	nonprofit ^e	FFRDCs ^e									
1963		20,042	11,640	4,196	5,222	NA	661	965	596	NA	7,691	7,520	73	99	168	324	254	70	219
1964		21,457	12,572	4,834	4,995	317	725	1,037	664	NA	8,134	7,968	69	97	191	329	240	89	231
1965		21,937	12,803	4,983	4,976	231	880	1,031	702	NA	8,296	8,126	65	105	211	394	261	133	233
1966		22,693	12,801	4,936	4,809	259	1,015	1,039	744	NA	8,985	8,799	68	117	236	441	278	163	230
1967		22,942	13,075	5,057	4,652	393	1,124	1,065	786	NA	8,942	8,750	73	118	255	454	284	170	216
1968		23,319	12,758	5,045	4,340	395	1,133	1,001	844	NA	9,646	9,446	73	127	250	456	281	175	209
1969		23,593	12,647	5,317	3,980	411	1,110	921	908	NA	10,036	9,828	69	138	233	469	285	184	208
1970		23,637	12,740	5,481	3,912	399	1,148	875	925	NA	9,979	9,771	72	136	229	479	288	191	210
1971		22,826	12,096	5,302	3,549	262	1,197	843	941	NA	9,758	9,552	72	133	262	474	290	184	237
1972		23,059	12,165	5,379	3,170	401	1,465	840	910	NA	9,819	9,611	77	131	307	490	296	193	278
1973		23,654	12,188	5,428	3,138	391	1,598	720	913	NA	10,285	10,065	92	128	355	514	295	219	311
1974		23,928	11,841	5,383	2,949	391	1,553	621	945	NA	10,860	10,632	103	126	384	530	297	233	313
1975		24,087	12,281	5,691	2,950	414	1,636	652	938	NA	10,479	10,241	115	124	418	571	297	274	338
1976		25,272	12,567	5,823	2,908	470	1,677	739	950	NA	11,265	11,014	125	126	466	615	308	307	359
1977		25,574	12,395	5,507	2,946	561	1,656	787	940	NA	11,672	11,410	135	127	514	637	318	319	356
1978		26,473	12,564	5,544	2,955	581	1,671	802	1,011	NA	12,321	12,044	150	128	573	641	325	315	374
1979		27,620	12,792	5,514	2,980	571	1,810	822	1,096	NA	13,236	12,946	163	127	601	623	329	294	369
1980		28,697	13,051	5,327	3,400	575	1,909	881	958	NA	14,015	13,706	185	125	644	624	330	293	363
1981		31,241	13,211	5,226	3,907	570	1,823	808	748	130	16,320	15,992	206	122	694	634	331	304	381
1982		32,849	13,865	5,052	4,675	662	1,815	780	717	163	17,224	16,883	218	124	725	661	341	321	374
1983		35,208	15,156	5,188	5,597	718	1,947	821	751	135	18,214	17,841	245	128	769	696	359	337	373
1984		37,532	15,880	4,950	6,147	914	2,050	917	767	135	19,707	19,294	281	132	821	733	378	355	391
1985		41,216	17,735	5,087	7,654	1,022	2,104	940	795	133	21,403	20,945	321	138	888	765	401	364	425
1986		43,243	16,525	5,086	6,428	999	2,211	879	803	120	24,451	23,943	364	144	985	810	429	381	473
1987		43,121	16,706	5,192	6,228	961	2,534	820	856	114	23,929	23,377	401	151	1,091	881	456	425	514
1988		44,042	16,032	5,014	5,736	553	2,921	816	893	98	25,263	24,656	450	156	1,220	965	481	484	562
1989		46,390	16,892	5,126	6,215	538	3,049	866	999	101	26,521	25,861	499	161	1,341	1,038	506	532	599
1990		48,292	18,952	5,054	8,258	534	2,962	953	1,079	113	26,196	25,507	522	166	1,427	1,091	531	559	626
1991		51,630	19,085	5,471	7,468	579	2,983	1,238	1,231	115	29,330	28,634	523	172	1,458	1,132	559	573	625
1992		49,526	17,872	5,662	5,844	662	3,153	1,228	1,219	106	28,377	27,656	541	180	1,462	1,189	596	593	625
1993		47,621	17,977	6,180	5,486	556	3,247	1,229	1,149	131	26,245	25,490	566	189	1,508	1,257	635	623	633
1994		45,806	17,263	6,236	4,523	629	3,307	1,228	1,200	139	25,012	24,233	581	198	1,571	1,313	677	636	647
1995		50,163	16,596	6,069	3,877	656	3,405	1,287	1,144	158	29,922	29,109	605	208	1,607	1,353	721	632	685
1996		51,912	16,784	5,859	4,377	278	3,444	1,527	1,154	147	31,356	30,507	630	218	1,672	1,398	770	628	702
1997		55,011	15,225	5,904	3,129	252	3,013	1,580	1,195	152	36,047	35,192	613	242	1,641	1,445	840	605	653

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2012

Year	Funding source:	All sources	Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^c	U&C ^d	U&C	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g	U&C ^d	U&C ^d
1998		54,171	14,982	6,012	3,075	269	2,640	1,603	1,238	144	35,420	34,558	608	254	1,610	1,545	945	599	615
1999		59,887	16,074	6,368	3,244	316	3,064	1,436	1,497	149	39,841	38,945	624	272	1,685	1,659	1,026	633	629
2000		63,885	17,541	6,881	3,023	303	3,600	1,456	2,064	214	42,047	41,133	623	291	1,786	1,867	1,201	666	644
2001		70,735	20,752	7,773	3,971	905	3,917	1,548	2,370	268	45,432	44,539	606	287	1,887	2,002	1,299	703	662
2002		55,096	20,912	8,121	2,660	1,183	4,399	1,804	2,458	288	29,155	28,289	592	274	2,072	2,247	1,477	769	710
2003		65,203	23,959	8,149	4,752	1,501	4,950	1,700	2,642	264	35,770	34,908	587	275	2,229	2,471	1,663	808	774
2004		71,775	23,469	7,702	4,934	1,508	5,065	1,531	2,529	201	42,861	42,007	581	273	2,229	2,433	1,624	809	784
2005		70,001	23,639	7,557	5,289	1,414	5,032	1,637	2,432	278	40,850	39,995	575	280	2,247	2,523	1,723	799	743
2006		74,333	24,338	7,202	5,948	1,272	5,151	1,770	2,511	484	44,488	43,623	574	290	2,258	2,537	1,746	791	713
2007		78,653	26,270	6,798	8,421	1,100	5,223	1,275	2,431	1,021	46,666	45,775	591	300	2,284	2,709	1,884	825	725
2008		68,881	23,565	6,738	4,970	1,819	5,658	787	2,395	1,198	39,136	38,189	643	304	2,438	2,966	2,060	906	776
2009		66,549	28,425	7,189	7,119	1,835	7,038	1,170	2,784	1,291	31,365	30,364	710	291	2,650	3,261	2,232	1,029	847
2010		71,650	27,344	7,222	4,239	2,026	8,476	1,148	2,740	1,494	37,236	36,220	727	289	2,798	3,397	2,293	1,103	876
2011		72,712	26,667	6,924	3,885	1,990	8,884	1,163	2,374	1,447	38,775	37,740	737	298	2,997	3,414	2,288	1,126	859
2012 (preliminary)		75,202	27,197	7,006	4,425	2,068	8,794	1,201	2,325	1,377	40,618	39,562	749	307	3,119	3,423	2,286	1,137	845

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

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

^a Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^b Character-of-work estimates for industry were revised in 1998 and for later years; hence, the data for 1997 and earlier years are not directly comparable.

^c Character-of-work estimates for industry-administered FFRDCs in 1953–63 are not separate from the federal funding to industry; the data on federal funding to industry in those years include the funding to these FFRDCs.

^d The data for U&C R&D before 2003 covers only science and engineering (S&E) fields; in 2003 and later years, the 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 the double counting of funds passed through from one academic institution to another. The character-of-work estimation procedure for academic R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years.

^e Character-of-work estimates for nonprofit-administered FFRDCs in 1953–80 are not separate from federal funding for other nonprofit institutions; thus, the data for federal funding to other nonprofit institutions includes the funding to these FFRDCs in those years.

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

^g The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. Los Alamos National Laboratory became industry administered in June 2006—previously, it was U&C administered. Lawrence Livermore National Laboratory became industry administered in October 2007—previously, it was U&C administered.

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), FFRDC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source:	All sources	Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^c	U&C ^d	U&C	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g	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

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding	All	Federal									Industry				U&C	Other nonprofit			Other
	source:	sources	Federal		Industry		U&C	Other	Nonprofit	Industry		U&C	Other	U&C	Other		government ^a			
	Performer:	All performers	Total	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs	nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	nonprofit ^g	U&C ^d	Total	nonprofit ^g	U&C ^d	U&C ^d		
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	
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		228,084	39,732	18,016	14,860	1,738	939	2,488	568	1,123	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		255,987	55,901	17,245	30,436	2,008	1,636	1,868	550	2,158	196,613	196,118	254	241	950	2,218	1,846	373	305	
2010		250,791	56,384	18,844	28,088	2,118	2,633	1,838	638	2,226	190,202	189,612	348	242	1,338	2,449	1,921	528	419	
2011		271,577	58,938	23,015	26,228	2,027	2,856	1,715	797	2,301	208,271	207,659	357	255	1,450	2,503	1,958	545	416	
2012 (preliminary)		290,935	64,264	24,404	30,409	1,975	2,951	1,628	555	2,342	222,210	221,580	362	267	1,510	2,542	1,992	550	409	
2005 constant \$millions																				
1953		21,093	10,894	3,503	6,943	NA	53	294	102	NA	10,122	10,078	6	37	16	43	37	6	18	
1954		22,875	12,415	3,290	8,607	NA	52	358	107	NA	10,372	10,323	6	43	19	49	43	6	21	
1955		25,235	14,618	3,268	10,753	NA	69	416	111	NA	10,527	10,470	9	48	19	48	42	6	23	
1956		34,099	20,741	3,672	16,407	NA	79	469	114	NA	13,262	13,204	12	47	21	50	41	9	26	
1957		37,655	25,233	4,100	20,380	NA	68	569	116	NA	12,312	12,253	14	45	24	56	45	11	30	
1958		39,764	27,234	4,639	21,730	NA	69	661	135	NA	12,414	12,353	17	44	24	61	50	11	31	
1959		46,109	31,990	5,121	25,879	NA	84	730	174	NA	13,997	13,931	16	49	25	65	54	11	33	
1960		50,294	34,333	5,387	27,775	NA	102	809	261	NA	15,838	15,771	13	54	25	64	54	11	34	
1961		52,753	35,598	5,788	28,407	NA	114	901	388	NA	17,006	16,942	11	53	27	85	74	11	37	
1962		53,013	35,756	6,431	27,674	NA	118	996	537	NA	17,081	17,013	10	58	30	105	94	10	40	

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding	All	Federal								Industry				U&C	Other nonprofit			Other
	source:	sources	Federal		Industry		U&C		Other		Industry		U&C	Other nonprofit		Other			
	Performer:	All performers	Total	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g	U&C ^d	U&C ^d	
1963		59,846	41,258	7,598	31,718	NA	114	1,133	695	NA	18,400	18,333	10	57	32	114	104	10	41
1964		63,876	43,976	8,581	31,442	1,834	151	1,157	812	NA	19,720	19,654	10	56	33	105	92	13	41
1965		66,286	43,847	8,971	31,189	1,495	241	1,036	915	NA	22,236	22,166	10	60	39	120	100	20	43
1966		70,674	46,169	9,199	33,407	1,322	298	976	968	NA	24,276	24,198	10	68	47	137	112	24	46
1967		72,554	45,057	9,195	32,156	1,429	310	984	982	NA	27,265	27,183	12	71	47	144	114	31	40
1968		73,326	44,284	8,643	31,975	1,330	325	1,026	985	NA	28,807	28,716	18	73	42	159	118	41	35
1969		73,756	42,598	8,719	30,038	1,436	344	1,064	997	NA	30,929	30,829	22	78	34	164	121	43	31
1970		69,543	38,552	9,277	25,607	1,397	343	1,023	904	NA	30,772	30,677	21	74	29	164	123	41	27
1971		68,086	37,413	9,676	24,133	1,530	270	1,045	759	NA	30,445	30,355	16	74	34	162	129	33	31
1972		70,312	38,041	9,901	24,508	1,508	234	1,092	799	NA	32,008	31,924	13	71	51	165	131	34	46
1973		71,781	36,645	9,444	23,532	1,418	251	1,050	951	NA	34,823	34,734	18	71	71	179	135	44	62
1974		70,066	34,232	9,010	21,351	1,561	243	1,046	1,021	NA	35,502	35,410	21	70	80	186	138	49	65
1975		67,594	32,726	8,603	20,193	1,593	246	1,109	982	NA	34,534	34,441	24	70	82	187	140	48	66
1976		70,624	33,884	8,367	21,177	1,841	280	1,258	960	NA	36,394	36,290	32	71	88	192	147	45	67
1977		73,228	34,813	8,438	21,902	1,787	405	1,332	950	NA	38,033	37,922	38	72	106	202	153	49	74
1978		76,805	35,571	9,092	21,654	1,862	628	1,340	995	NA	40,816	40,707	36	73	121	217	159	58	79
1979		80,930	36,678	9,004	22,577	1,849	768	1,378	1,102	NA	43,821	43,712	35	73	127	226	163	63	78
1980		85,299	36,836	8,521	22,927	1,846	757	1,504	1,281	NA	48,012	47,899	41	72	141	230	166	64	80
1981		88,590	38,727	8,667	24,471	1,818	738	1,488	688	856	49,392	49,276	45	72	152	235	168	67	84
1982		93,544	40,250	9,337	25,631	1,783	717	1,343	653	787	52,806	52,685	48	73	159	247	176	70	82
1983		100,207	43,119	10,590	26,924	1,828	692	1,442	776	867	56,575	56,445	54	76	169	262	188	74	82
1984		111,107	47,344	11,833	29,490	1,765	727	1,648	994	887	63,218	63,077	62	79	180	279	201	78	86
1985		120,920	52,418	12,998	32,871	1,788	789	2,018	1,045	909	67,917	67,764	70	83	195	297	217	80	93
1986		120,422	53,965	13,136	34,159	1,818	815	2,387	931	719	65,818	65,650	80	88	216	319	236	84	104
1987		123,308	56,604	12,613	37,214	1,898	924	2,576	731	650	66,004	65,824	88	92	240	348	255	93	113
1988		126,134	55,612	13,221	35,378	2,109	1,041	2,628	608	627	69,751	69,556	99	96	268	380	273	106	123
1989		126,081	50,764	13,446	30,253	2,045	1,112	2,561	729	619	74,482	74,272	109	100	294	409	292	117	131
1990		130,176	46,856	13,424	26,246	1,990	1,259	2,401	857	678	82,434	82,215	115	104	313	435	313	123	138
1991		127,105	41,725	11,731	23,062	1,848	1,352	2,054	965	712	84,462	84,238	115	109	320	461	335	126	137
1992		130,305	41,143	11,877	22,430	1,791	1,377	1,895	990	782	88,210	87,976	119	115	321	494	364	130	137
1993		127,353	38,388	11,587	20,543	1,326	1,440	1,755	1,005	734	87,962	87,717	124	122	331	532	395	137	139
1994		128,768	37,788	11,037	20,276	1,496	1,518	1,724	1,019	716	89,924	89,668	128	129	345	569	430	140	142
1995		138,567	39,747	11,350	21,842	1,480	1,445	1,980	911	739	97,711	97,442	133	136	353	606	467	139	150
1996		145,956	37,727	10,862	20,522	1,633	1,357	1,827	839	686	107,061	106,778	138	144	367	647	509	138	154
1997		152,050	38,132	10,725	21,413	1,527	1,247	1,718	811	691	112,648	112,330	135	183	360	767	634	133	143

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2012

Year	Funding source:	All sources	Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Federal	Industry ^b	FFRDCs ^c	U&C ^d	U&C	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit ^g	U&C ^d	Total	Other nonprofit ^g	U&C ^d	U&C ^d
1998		169,101	38,225	10,766	21,560	1,496	1,138	1,785	888	592	129,542	129,217	133	192	353	845	714	132	135
1999		177,766	35,246	10,669	19,082	1,391	818	1,888	837	561	141,099	140,757	137	205	370	913	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		214,715	37,403	16,960	13,989	1,636	884	2,342	534	1,057	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
2009		233,714	51,038	15,745	27,788	1,833	1,494	1,706	502	1,971	179,506	179,054	232	220	867	2,025	1,685	340	278
2010		225,954	50,800	16,977	25,306	1,908	2,372	1,656	575	2,006	171,365	170,834	313	218	1,206	2,207	1,731	475	377
2011		239,573	51,993	20,303	23,137	1,788	2,520	1,513	703	2,030	183,727	183,187	315	225	1,279	2,208	1,727	481	367
2012 (preliminary)		252,138	55,694	21,149	26,354	1,712	2,558	1,411	481	2,030	192,577	192,032	314	232	1,309	2,203	1,726	477	354

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

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

^a Due to survey limitations, data on R&D funded by other (nonfederal) government are separately available only for U&C; nonetheless, other government funded R&D is included in the own performance of these other sectors (e.g., other government funding to other nonprofits is included in other nonprofit funding for their own R&D).

^b Character-of-work estimates for industry were revised in 1998 and for later years; hence, the data for 1997 and earlier years are not directly comparable.

^c Character-of-work estimates for industry-administered FFRDCs in 1953–63 are not separate from the federal funding to industry; the data on federal funding to industry in those years include the funding to these FFRDCs.

^d The data for U&C R&D before 2003 covers only science and engineering (S&E) fields; in 2003 and later years, the 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 the double counting of funds passed through from one academic institution to another. The character-of-work estimation procedure for academic R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years.

^e Character-of-work estimates for nonprofit-administered FFRDCs in 1953–80 are not separate from federal funding for other nonprofit institutions; thus, the data for federal funding to other nonprofit institutions includes the funding to these FFRDCs in those years.

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

^g The 1998–2012 data for other nonprofit R&D are not based on a dedicated nonprofit survey and may later be revised.

NOTES: The R&D data for 2012 are preliminary and may later be revised. Some back-year data may have been revised, accordingly, for trend comparisons, use only the historical data reported here; do not use data published earlier. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. Data are based on annual reports by performers, except for the nonprofit sector. The R&D expenditures of FFRDCs are chiefly from federal funding, but any nonfederal funds are included in the totals. 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 1 July, not 1 October; also, prior to 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 amount reported in the subsequent fiscal year. Los Alamos National Laboratory became industry administered in June 2006—previously, it was U&C administered. Lawrence Livermore National Laboratory became industry administered in October 2007—previously, it was U&C administered.

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), FFRC R&D Survey (annual series), R&D Funding and Performance by Nonprofit Organizations (FYs 1996–97). All NSF/NCSES reports available at <http://www.nsf.gov/statistics/>.

TABLE 10. U.S. R&D expenditures, by performing sector, source of funds, and character of work: 2011

Performing sector and character of work	Source of funds (\$millions)						Total expenditures (% distribution)
	Total	Business	Federal government	Universities and colleges	Nonfederal government	Other nonprofit organizations	
R&D	428,163	267,306	129,068	12,965	3,718	15,106	100.0
Business	294,093	262,784	31,309	*	*	*	68.7
Federal government	53,493	*	53,493	*	*	*	12.5
Federal intramural	35,775	*	35,775	*	*	*	8.4
FFRDCs	17,718	*	17,718	*	*	*	4.1
FFRDCs, industry administered	6,956	*	6,956	*	*	*	1.6
FFRDCs, U&C administered	5,246	*	5,246	*	*	*	1.2
FFRDCs, nonprofit administered	5,516	*	5,516	*	*	*	1.3
Universities and colleges	62,457	3,189	37,714	12,965	3,718	4,872	14.6
Other nonprofit organizations	18,120	1,333	6,553	*	*	10,234	4.2
Percent distribution by source	100.0	62.4	30.1	3.0	0.9	3.5	-
Basic research	74,161	15,080	39,901	8,117	2,329	8,734	100.0
Business	13,020	12,343	677	*	*	*	17.6
Federal government	11,372	*	11,372	*	*	*	15.3
Federal intramural	4,911	*	4,911	*	*	*	6.6
FFRDCs	6,461	*	6,461	*	*	*	8.7
FFRDCs, industry administered	2,673	*	2,673	*	*	*	3.6
FFRDCs, U&C administered	2,213	*	2,213	*	*	*	3.0
FFRDCs, nonprofit administered	1,575	*	1,575	*	*	*	2.1
Universities and colleges	40,281	1,997	24,786	8,117	2,329	3,051	54.3
Other nonprofit organizations	9,489	740	3,066	*	*	5,683	12.8
Percent distribution by source	100.0	20.3	53.8	10.9	3.1	11.8	-
Applied research	82,425	43,955	30,229	3,398	973	3,870	100.0
Business	47,186	42,782	4,404	*	*	*	57.2
Federal government	13,063	*	13,063	*	*	*	15.8
Federal intramural	7,849	*	7,849	*	*	*	9.5
FFRDCs	5,215	*	5,215	*	*	*	6.3
FFRDCs, industry administered	2,256	*	2,256	*	*	*	2.7
FFRDCs, U&C administered	1,318	*	1,318	*	*	*	1.6
FFRDCs, nonprofit administered	1,640	*	1,640	*	*	*	2.0
Universities and colleges	16,554	835	10,071	3,398	973	1,276	20.1
Other nonprofit organizations	5,622	338	2,691	*	*	2,594	6.8
Percent distribution by source	100.0	53.3	36.7	4.1	1.2	4.7	-
Development	271,577	208,271	58,938	1,450	416	2,503	100.0
Business	233,887	207,659	26,228	*	*	*	86.1
Federal government	29,058	*	29,058	*	*	*	10.7
Federal intramural	23,015	*	23,015	*	*	*	8.5
FFRDCs	6,043	*	6,043	*	*	*	2.2
FFRDCs, industry administered	2,027	*	2,027	*	*	*	0.7
FFRDCs, U&C administered	1,715	*	1,715	*	*	*	0.6
FFRDCs, nonprofit administered	2,301	*	2,301	*	*	*	0.8
Universities and colleges	5,623	357	2,856	1,450	416	545	2.1
Other nonprofit organizations	3,010	255	797	*	*	1,958	1.1
Percent distribution by source	100.0	76.7	21.7	0.5	0.2	0.9	-

* = small to negligible amount; included as part of the funding provided by other sectors.

FFRDC = federally funded research and development center; U&C = universities and colleges.

NOTES: These data revise previously published numbers. Funding for FFRDC performance is chiefly federal, but any nonfederal support is included in the federal figures. State and local government support to business are included in business support for business performance. Some components of R&D performance and funding by other nonprofit organizations are projected and may later be revised.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).

TABLE 11. U.S. R&D expenditures, by performing sector, source of funds, and character of work: 2012 (preliminary)

Performing sector and character of work	Source of funds (\$millions)						Total expenditures (% distribution)
	Total	Business	Federal government	Universities and colleges	Nonfederal government	Other nonprofit organizations	
R&D	452,556	285,040	135,018	13,506	3,659	15,333	100.0
Business	316,700	280,400	36,300	*	*	*	70.0
Federal government	55,020	*	55,020	*	*	*	12.2
Federal intramural	37,574	*	37,574	*	*	*	8.3
FFRDCs	17,446	*	17,446	*	*	*	3.9
FFRDCs, industry administered	6,808	*	6,808	*	*	*	1.5
FFRDCs, U&C administered	5,174	*	5,174	*	*	*	1.1
FFRDCs, nonprofit administered	5,464	*	5,464	*	*	*	1.2
Universities and colleges	62,723	3,242	37,393	13,506	3,659	4,923	13.9
Other nonprofit organizations	18,113	1,398	6,305	*	*	10,410	4.0
Percent distribution by source	100.0	63.0	29.8	3.0	0.8	3.4	-
Basic research	74,849	15,962	39,372	8,398	2,275	8,841	100.0
Business	13,955	13,170	785	*	*	*	18.6
Federal government	11,225	*	11,225	*	*	*	15.0
Federal intramural	5,086	*	5,086	*	*	*	6.8
FFRDCs	6,139	*	6,139	*	*	*	8.2
FFRDCs, industry administered	2,446	*	2,446	*	*	*	3.3
FFRDCs, U&C administered	2,160	*	2,160	*	*	*	2.9
FFRDCs, nonprofit administered	1,533	*	1,533	*	*	*	2.0
Universities and colleges	40,045	2,016	24,295	8,398	2,275	3,061	53.5
Other nonprofit organizations	9,624	776	3,067	*	*	5,780	12.9
Percent distribution by source	100.0	21.3	52.6	11.2	3.0	11.8	-
Applied research	86,773	46,868	31,382	3,599	975	3,950	100.0
Business	50,756	45,650	5,106	*	*	*	58.5
Federal government	13,446	*	13,446	*	*	*	15.5
Federal intramural	8,084	*	8,084	*	*	*	9.3
FFRDCs	5,361	*	5,361	*	*	*	6.2
FFRDCs, industry administered	2,387	*	2,387	*	*	*	2.8
FFRDCs, U&C administered	1,386	*	1,386	*	*	*	1.6
FFRDCs, nonprofit administered	1,589	*	1,589	*	*	*	1.8
Universities and colleges	16,896	864	10,147	3,599	975	1,312	19.5
Other nonprofit organizations	5,675	354	2,682	*	*	2,638	6.5
Percent distribution by source	100.0	54.0	36.2	4.1	1.1	4.6	-
Development	290,935	222,210	64,264	1,510	409	2,542	100.0
Business	251,989	221,580	30,409	*	*	*	86.6
Federal government	30,349	*	30,349	*	*	*	10.4
Federal intramural	24,404	*	24,404	*	*	*	8.4
FFRDCs	5,945	*	5,945	*	*	*	2.0
FFRDCs, industry administered	1,975	*	1,975	*	*	*	0.7
FFRDCs, U&C administered	1,628	*	1,628	*	*	*	0.6
FFRDCs, nonprofit administered	2,342	*	2,342	*	*	*	0.8
Universities and colleges	5,783	362	2,951	1,510	409	550	2.0
Other nonprofit organizations	2,814	267	555	*	*	1,992	1.0
Percent distribution by source	100.0	76.4	22.1	0.5	0.1	0.9	-

* = small to negligible amount; included as part of the funding provided by other sectors.

FFRDC = federally funded research and development center; U&C = universities and colleges.

NOTES: The R&D data in this table are preliminary and may later be revised. Funding for FFRDC performance is chiefly federal, but any nonfederal support is included in the federal figures. State and local government support to business are included in business support for business performance. Some components of R&D performance and funding by other nonprofit organizations are projected and may later be revised.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).

TABLE 12. U.S. R&D expenditures, by state, performing sector, and funding sector: 2010
(Millions of current dollars)

State	Performer: Funding source:	Funding Sector																	R&D intensity ^c			
		Federal		FFRDCs			Business				U&C ^a				Other nonprofit institutions	State, internal ^b	GDP rank	Percent	Rank			
		All R&D	R&D rank	Federal	Total	Federal	Non-federal ^d	Total	Own	Non-federal ^e	Federal	Total	Federal	government	Business	U&C				Non-profit	Federal ^f	Total
U.S. total ^g	407,703	na	31,970	17,722	NA	NA	278,977	221,706	23,072	34,199	60,369	36,565	3,788	3,145	12,100	4,771	7,093	NA	14,498,900	na	2.81	na
States total ^g	377,369	na	29,779	18,031	17,578	453	261,016	205,336	18,583	24,717	61,028	37,358	3,849	3,200	11,845	4,776	7,099	416	14,416,604	na	2.62	na
Alabama	3,748	24	1,410	0	0	0	1,449	628	72	749	847	541	42	33	197	34	32	10	170,219	25	2.20	12
Alaska	355	49	89	0	0	0	74	D	D	D	181	111	10	6	49	5	4	8	47,713	45	0.74	50
Arizona	5,481	15	372	57	53	4	4,054	2,841	246	967	945	495	61	32	274	83	45	8	249,824	18	2.19	15
Arkansas	596	43	26	0	0	0	276	245	19	12	268	126	61	11	55	14	21	5	102,235	34	0.58	45
California	81,035	1	2,747	4,293	4,155	138	64,914	53,327	3,987	7,600	7,833	4,766	378	492	1,168	1,028	1,217	30	1,877,568	1	4.32	9
Colorado	6,171	21	283	547	505	42	3,899	3,270	219	410	1,180	893	46	65	102	75	256	7	253,101	19	2.44	21
Connecticut	7,458	12	23	0	0	0	6,498	5,482	429	587	889	620	20	29	147	73	25	23	221,347	23	3.37	5
Delaware	2,329	33	6	0	0	0	2,144	D	D	D	169	116	7	6	36	4	9	2	64,010	42	3.64	14
District of Columbia	3,568	19	2,551	6	6	0	235	84	28	123	470	308	12	11	84	55	305	*	103,546	35	3.45	2
Florida	8,002	17	709	0	0	0	5,127	3,045	313	1,770	1,995	1,103	194	80	520	97	121	51	736,065	4	1.09	43
Georgia	5,454	22	154	0	0	0	3,644	2,931	283	429	1,627	985	53	85	411	94	25	3	403,230	10	1.35	36
Hawaii	691	44	97	0	0	0	257	173	47	37	318	209	24	24	45	16	16	3	65,599	39	1.05	41
Idaho	1,783	34	50	478	464	15	1,120	810	296	13	126	76	23	3	22	3	4	5	56,038	43	3.18	18
Illinois	15,822	10	204	1,053	1,006	47	12,221	11,500	483	237	2,224	1,427	56	80	504	156	117	2	646,794	5	2.45	27
Indiana	6,340	18	165	0	0	0	4,985	4,219	580	186	1,186	530	68	57	404	127	2	1	267,277	16	2.37	20
Iowa	2,766	30	64	31	30	1	1,950	1,516	D	D	707	398	51	31	196	30	14	1	140,945	30	1.96	33
Kansas	2,004	32	21	0	0	0	1,492	1,039	406	47	483	232	53	34	141	23	6	1	126,074	32	1.59	30
Kentucky	1,499	35	24	0	0	0	889	820	48	21	575	283	55	19	187	31	10	2	159,350	28	0.94	42
Louisiana	1,206	37	53	0	0	0	428	340	39	49	714	333	109	39	193	40	5	7	232,394	24	0.52	49
Maine	489	46	18	0	0	0	251	228	9	14	138	66	22	4	38	7	81	2	50,674	44	0.97	40
Maryland	18,431	6	9,896	694	694	0	4,384	2,538	600	1,247	3,139	2,423	63	97	380	176	315	2	293,349	15	6.28	3
Massachusetts	20,658	4	835	1,252	1,248	4	14,020	11,139	1,804	1,077	2,750	2,010	24	185	240	291	1,801	1	377,846	13	5.47	4
Michigan	14,704	8	480	0	0	0	12,144	10,750	1,017	377	2,031	1,178	62	61	626	105	46	2	368,371	12	3.99	10
Minnesota	7,394	16	61	0	0	0	6,246	5,677	255	314	832	443	70	30	195	94	254	2	270,792	17	2.73	17
Mississippi	856	41	164	0	0	0	243	170	13	61	444	268	76	11	77	11	1	4	95,480	36	0.90	44
Missouri	9,261	26	26	0	0	0	8,106	D	D	D	1,087	684	28	55	223	97	33	8	243,386	22	3.81	31
Montana	392	48	29	0	0	0	145	123	15	7	208	140	8	1	47	12	8	2	36,540	49	1.07	39
Nebraska	936	39	34	0	0	0	527	491	22	15	368	195	16	16	103	39	6	*	90,072	37	1.04	38
Nevada	940	40	50	0	0	0	709	646	22	41	174	119	9	2	40	4	6	*	126,188	31	0.74	46
New Hampshire	2,159	29	26	0	0	0	1,818	841	D	D	311	204	7	19	56	25	4	1	61,636	41	3.50	8
New Jersey	17,880	2	766	84	84	*	15,925	13,916	1,750	259	1,076	602	103	41	249	81	26	3	480,446	7	3.72	7
New Mexico	6,225	20	550	4,663	4,577	86	546	231	48	267	423	290	25	14	81	13	43	1	77,095	38	8.08	1
New York	17,243	7	260	536	515	20	10,954	8,126	694	2,134	4,951	2,971	324	264	953	439	440	102	1,128,823	3	1.53	34
North Carolina	8,765	14	404	0	0	0	5,749	4,688	849	211	2,465	1,481	148	323	346	166	128	19	424,562	9	2.06	25
North Dakota	469	47	27	0	0	0	236	211	18	7	204	105	44	12	37	5	1	1	35,654	50	1.31	29
Ohio	10,050	13	898	0	0	0	6,857	5,134	561	1,162	2,052	1,250	165	166	364	107	241	2	466,930	8	2.15	24
Oklahoma	1,029	38	112	0	0	0	478	422	37	19	401	176	54	29	124	18	39	*	147,587	29	0.70	47
Oregon	5,264	25	110	0	0	0	4,396	4,188	144	64	696	503	41	23	75	54	48	14	185,211	26	2.84	13

TABLE 12. U.S. R&D expenditures, by state, performing sector, and funding sector: 2010
(Millions of current dollars)

State	Performer: Funding source:	Federal		FFRDCs			Business				U&C ^a				Other nonprofit institutions	State, internal ^b	R&D intensity ^c						
		All R&D	R&D rank	Federal	Total	Federal	Non-federal ^d	Total	Own	Non-federal ^e	Federal	Total	Federal	government	Business	U&C	Non-profit	Federal ^f	Total	GDP	rank	Percent	Rank
Pennsylvania	13,079	9	292	99	97	3	9,246	8,412	538	296	3,128	2,187	144	157	479	162	308	5	558,918	6	2.34	19	
Rhode Island	1,439	36	384	0	0	0	531	448	42	40	429	192	8	6	199	23	95	*	48,840	46	2.95	16	
South Carolina	2,417	31	220	127	127	0	1,316	944	264	109	660	346	8	42	238	27	61	33	160,374	27	1.51	35	
South Dakota	271	50	10	0	0	0	120	99	13	8	131	84	19	2	20	5	8	1	38,215	48	0.71	48	
Tennessee	3,955	27	138	1,538	1,495	44	1,244	1,113	88	43	938	642	65	31	158	43	96	0	256,194	20	1.54	32	
Texas	19,506	3	488	15	15	*	14,384	11,850	1,193	1,342	4,416	2,238	623	262	869	425	200	3	1,222,904	2	1.60	28	
Utah	3,207	28	567	0	0	0	2,066	1,419	D	D	562	340	30	27	137	28	2	10	119,231	33	2.69	22	
Vermont	453	45	6	0	0	0	313	278	16	19	133	101	*	2	23	6	*	1	25,264	51	1.79	23	
Virginia	10,845	11	3,406	1,440	1,415	24	4,655	2,340	292	2,023	1,199	726	116	46	241	70	138	7	419,365	11	2.59	11	
Washington	16,695	5	264	1,117	1,092	25	13,545	13,022	319	204	1,358	960	82	102	162	52	401	10	339,829	14	4.91	6	
West Virginia	591	42	137	0	0	0	240	191	12	38	195	110	14	5	63	3	12	7	61,934	40	0.95	37	
Wisconsin	5,351	23	65	0	0	0	3,927	3,399	449	79	1,336	723	124	26	265	197	18	5	245,720	21	2.18	26	
Wyoming	108	51	8	0	0	0	39	32	4	3	55	45	4	2	3	1	2	4	35,845	47	0.30	51	
U.S. undistributed ^h	17,960	na	0	0	0	0	17,960	12,534	3,063	2,363	0	0	0	0	0	0	0	0	0	0	na	na	na
Puerto Rico ⁱ	NA	na	6	13	13	*	NA	NA	NA	NA	125	84	2	5	31	3	*	*	96,260	na	NA	na	
Other ^j	227	na	189	0	0	0	0	0	0	0	38	33	2	*	*	2	*	na	na	na	na	na	

* = amount < \$0.5 million; na = not applicable; NA = not available; D = data withheld to avoid disclosing operations of individual companies.

FFRDC = federally funded research and development center; GDP = gross domestic product; U&C = universities and colleges.

^a State-level university R&D data have not been adjusted to eliminate double counting of funds passed through from one academic institution to another. At the national level, funds passed through to educational subrecipients account for 4.5% of total R&D expenditures reported by universities and colleges in FY 2010.

^b Internal performers include state agency and department employees, and services performed by others in support of an internal R&D project.

^c R&D intensity is ratio of total R&D performed in a state to its state GDP.

^d Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2010 included state and local governments (\$53 million), business (\$167 million), nonprofit organizations (\$44 million), and all other sources (\$190 million).

^e R&D paid for by nonfederal sources includes funding from other companies located inside (\$11.0 billion) or outside (\$11.0 billion) the United States, U.S. state government agencies (\$156 million), foreign government agencies and laboratories (\$37 million), other organizations located inside (\$779 million) or outside (\$74 million) the United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2010, total nonprofit performance is estimated at \$18.4 billion. Business provided an estimated \$1.3 billion to the nonprofit sector, and nonprofit institutions provided an estimated \$10.0 billion.

^g States totals differ from U.S. totals for several reasons: (a) some R&D expenditures cannot be allocated to 1 of 50 states or the District of Columbia, (b) nonfederal sources of other nonprofit R&D expenditures could not be allocated by state, (c) state-level U&C data have not been adjusted to eliminate double counting of funds passed through from one academic institution to another, and (d) state-level R&D data are not converted from fiscal years to calendar years.

^h Reported data that could not be assigned to 1 of the 50 states or the District of Columbia.

ⁱ Data on business R&D performance in Puerto Rico are not collected.

^j Includes R&D expenditures reported for outlying areas (Guam, Virgin Islands) and offices abroad, but excluding Puerto Rico.

NOTES: Some of the data in this table are revised from the previous version published in January 2013. Industry R&D data refer to calendar years; other R&D data refer to fiscal years but are used here as approximations to calendar year data.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics (NSF/NCSES), National Patterns of R&D Resources (annual series), Business Research and Development and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for Research and Development, Survey of State Government R&D. State GDP data are from the U.S. Bureau of Economic Analysis, <http://www.bea.gov>, accessed 27 November 2012.

TABLE 13. U.S. R&D expenditures, by state, performing sector, and funding sector: 2011
(Millions of current dollars)

State	Performer:		Federal		FFRDCs		Business				U&C ^a				Other nonprofit institutions	State, internal ^b	R&D intensity ^f					
	Funding source:	All R&D	R&D rank	Federal	Total	Fed-eral	Non-federal ^d	Total	Paid by others		Total	Other			Federal ^f	Total	GDP	rank	Percent	Rank		
									Own	Nonfederal ^e		govern-ment	Busi-ness	U&C							Non-profit	
U.S. total ^g	428,163	na	35,775	17,718	NA	NA	294,093	238,768	24,015	31,309	62,457	37,714	3,718	3,189	12,965	4,872	6,553	NA	15,075,700	na	2.84	na
States total ^g	396,465	na	29,622	17,794	17,372	422	277,243	232,658	21,743	24,191	64,882	40,622	3,813	3,158	12,415	4,875	6,463	462	14,959,781	na	2.65	na
Alabama	4,946	24	2,125	0	0	0	1,879	835	348	697	901	576	40	32	222	31	27	14	178,533	26	2.77	15
Alaska	381	48	82	0	0	0	84	52	19	14	196	117	11	5	57	5	10	9	51,237	45	0.74	45
Arizona	6,453	19	403	48	43	5	4,931	3,776	477	678	998	532	60	28	292	85	66	7	255,989	20	2.52	21
Arkansas	678	42	31	0	0	0	344	307	21	17	283	139	58	11	62	13	14	6	106,557	35	0.64	49
California	91,420	1	2,884	4,254	4,114	139	75,035	64,104	3,963	6,968	8,227	5,156	419	476	1,119	1,056	982	38	1,908,985	1	4.79	5
Colorado	6,862	18	294	585	553	32	4,310	3,642	242	426	1,291	987	45	62	121	77	375	7	264,733	18	2.59	19
Connecticut	8,736	15	240	0	0	0	7,504	6,272	304	928	946	680	16	20	153	76	23	24	225,409	24	3.88	8
Delaware	2,296	31	3	0	0	0	2,097	1,453	625	18	189	131	7	6	41	3	5	2	64,377	41	3.57	9
District of Columbia	3,418	26	2,245	9	9	0	415	162	23	230	493	312	6	12	105	59	255	0.22	107,201	34	3.19	10
Florida	9,073	14	792	0	0	0	5,988	3,855	453	1,680	2,126	1,171	179	89	590	97	119	48	746,439	4	1.22	36
Georgia	5,779	21	183	0	0	0	3,839	3,303	347	190	1,717	1,096	54	85	382	100	37	4	417,438	11	1.38	34
Hawaii	746	41	112	0	0	0	252	183	49	19	364	242	22	23	58	19	15	4	70,006	39	1.07	39
Idaho	1,795	34	51	425	415	10	1,171	871	294	7	142	91	24	3	23	2	2	4	57,096	43	3.14	12
Illinois	15,974	8	361	1,131	1,083	48	12,038	10,764	1,108	167	2,353	1,534	60	99	516	144	90	2	670,247	5	2.38	22
Indiana	7,579	16	148	0	0	0	6,158	5,484	593	82	1,270	587	68	63	425	128	1	1	284,344	16	2.67	16
Iowa	3,144	28	60	32	31	1	2,314	1,736	D	D	725	408	49	34	206	28	11	1	146,057	30	2.15	25
Kansas	2,081	32	39	0	0	0	1,509	1,037	455	17	526	262	50	37	143	34	6	2	134,767	31	1.54	32
Kentucky	1,895	33	13	0	0	0	1,278	1,017	41	220	596	294	61	21	190	30	5	2	168,019	28	1.13	38
Louisiana	1,523	35	320	0	0	0	459	382	40	37	729	349	105	40	192	43	7	7	237,389	23	0.64	48
Maine	535	44	20	0	0	0	295	264	12	18	140	76	24	5	33	3	78	2	52,489	44	1.02	41
Maryland	19,219	4	9,902	473	473	0	5,101	2,867	558	1,677	3,417	2,690	57	84	409	178	324	2	305,175	15	6.30	2
Massachusetts	22,022	2	521	1,293	1,290	3	15,722	12,712	2,091	919	2,949	2,196	17	192	247	297	1,537	1	388,575	12	5.67	3
Michigan	16,372	7	498	0	0	0	13,660	12,156	1,212	292	2,160	1,286	53	61	654	107	53	2	385,123	13	4.25	6
Minnesota	7,394	17	101	0	0	0	6,174	5,592	342	240	899	509	65	33	210	81	219	2	279,987	17	2.64	17
Mississippi	941	39	231	0	0	0	235	189	15	31	470	280	73	18	87	12	1	4	97,533	36	0.96	42
Missouri	NA	NA	53	0	0	0	D	2,818	230	D	1,121	695	26	60	236	104	29	8	249,546	22	NA	NA
Montana	408	47	68	0	0	0	136	118	10	8	195	132	6	2	45	10	7	2	38,933	49	1.05	40
Nebraska	1,115	38	57	0	0	0	636	601	27	8	413	215	13	20	153	11	8	*	96,230	37	1.16	37
Nevada	889	40	83	0	0	0	638	554	62	23	165	116	6	3	37	3	2	*	129,421	32	0.69	47
New Hampshire	2,471	29	39	0	0	0	2,069	943	D	D	360	243	10	20	63	24	2	1	63,333	42	3.90	7
New Jersey	15,705	9	528	85	84	*	13,930	11,977	1,706	246	1,142	649	86	53	269	83	17	3	493,175	7	3.18	11
New Mexico	6,070	20	575	4,584	4,504	81	472	250	41	182	405	292	21	9	71	13	33	*	79,555	38	7.63	1
New York	18,566	5	210	527	504	22	12,072	9,141	812	2,119	5,299	3,310	274	269	996	450	351	108	1,169,436	3	1.59	30
North Carolina	9,356	13	387	0	0	0	6,193	5,157	909	128	2,567	1,609	155	301	362	140	190	19	436,144	9	2.15	26
North Dakota	504	46	29	0	0	0	261	236	17	7	211	109	50	9	36	7	3	*	39,992	48	1.26	35
Ohio	10,359	12	960	0	0	0	6,993	5,403	634	956	2,227	1,426	158	151	395	98	176	3	490,265	8	2.11	27
Oklahoma	1,207	37	186	0	0	0	604	507	39	58	389	193	49	26	103	17	28	*	156,058	29	0.77	44
Oregon	5,515	23	93	0	0	0	4,631	4,415	168	48	740	549	44	23	74	50	35	17	188,981	25	2.92	13

TABLE 13. U.S. R&D expenditures, by state, performing sector, and funding sector: 2011
(Millions of current dollars)

State	Performer:		Federal		FFRDCs			Business				U&C ^a				Other nonprofit institutions		State, internal ^b		R&D intensity ^f				
	Funding source:	All R&D	R&D rank	Federal	Total	Fed-eral	Non-federal ^d	Total	Own	Paid by others			Total	Federal	Other govern-ment	Busi-ness	U&C	Non-profit	Federal ^f	Total	GDP	rank	Percent	Rank
										Nonfederal ^e	Federal	Other												
Pennsylvania	13,651	10	220	108	107	0	0	9,718	9,018	463	237	3,313	2,371	117	159	498	167	286	6	581,256	6	2.35	23	
Rhode Island	1,396	36	323	0	0	0	0	542	451	51	40	459	213	13	7	195	31	71	*	49,423	46	2.82	14	
South Carolina	2,389	30	157	135	135	0	0	1,399	949	334	116	623	332	9	30	220	31	33	43	168,716	27	1.42	33	
South Dakota	293	49	9	0	0	0	0	136	112	21	3	136	88	18	2	21	8	10	*	41,667	47	0.70	46	
Tennessee	4,218	25	108	1,558	1,514	44	0	1,434	1,279	119	35	1,017	719	36	30	192	39	101	*	263,626	19	1.60	29	
Texas	20,623	3	462	16	16	*	0	15,309	12,920	1,219	1,169	4,662	2,326	702	285	887	461	164	10	1,321,005	2	1.56	31	
Utah	3,276	27	193	0	0	0	0	2,438	1,874	83	482	627	403	31	22	148	23	8	10	124,454	33	2.63	18	
Vermont	519	45	6	0	0	0	0	374	329	20	24	137	106	*	2	25	5	*	2	26,545	51	1.95	28	
Virginia	11,166	11	2,738	1,436	1,424	12	0	5,562	3,138	339	2,085	1,284	772	129	53	264	67	139	7	433,611	10	2.58	20	
Washington	17,979	6	268	1,096	1,072	24	0	14,558	13,659	321	578	1,570	1,091	92	35	234	119	476	10	357,056	14	5.04	4	
West Virginia	597	43	119	0	0	0	0	247	213	13	22	211	122	15	4	65	4	12	8	66,109	40	0.90	43	
Wisconsin	5,605	22	83	0	0	0	0	4,053	3,548	467	38	1,444	788	126	43	289	198	18	6	253,349	21	2.21	24	
Wyoming	115	50	7	0	0	0	0	46	33	6	7	58	49	4	2	3	1	2	3	38,190	50	0.30	50	
U.S. undistributed ^h	NA	na	4,473	0	0	0	0	D	6,111	0	0	0	0	0	0	0	0	0	0	0	0	na	na	na
Puerto Rico ⁱ	188	na	9	14	14	*	0	NA	NA	NA	NA	164	122	4	4	30	4	1	*	98,757	na	NA	na	
Other ^j	62	na	35	0	0	0	0	0	0	0	0	28	22	3	*	0	3	*	na	na	na	na	na	

* = amount < \$0.5 million; D = data withheld to avoid disclosing operations of individual companies; na = not applicable; NA = not available.

FFRDC = federally funded research and development center; GDP = gross domestic product; U&C = universities and colleges.

^a State-level university R&D data have not been adjusted to eliminate the double counting of funds passed through from one academic institution to another. At the national level, funds passed through to educational subrecipients accounted for 4.7% of total R&D expenditures reported by universities and colleges in FY 2011.

^b Internal performers include state agency and department employees, and services performed by others in support of an internal R&D project.

^c R&D intensity is ratio of total R&D performed in a state to its state GDP.

^d Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2011 included state and local governments (\$27 million), business (\$190 million), nonprofit organizations (\$61 million), and all other sources (\$146 million).

^e R&D paid for by nonfederal sources includes funding from other companies located inside (\$11.1 billion) or outside (\$12.0 billion) the United States, U.S. state government agencies (\$321 million), foreign government agencies and laboratories (\$63 million), other organizations located inside (\$369 million) or outside (\$129 million) the United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2011, total nonprofit performance is estimated at \$18.1 billion. Business provided an estimated \$1.4 billion to the nonprofit sector, and nonprofit institutions provided an estimated \$10.4 billion.

^g States totals differ from U.S. totals for several reasons: (a) some R&D expenditures cannot be allocated to 1 of 50 states or the District of Columbia, (b) nonfederal sources of other nonprofit R&D expenditures could not be allocated by state, (c) state-level U&C data have not been adjusted to eliminate double counting of funds passed through from one academic institution to another, and (d) state-level R&D data are not converted from fiscal years to calendar years.

^h Reported data that could not be assigned to 1 of the 50 states or the District of Columbia.

ⁱ Data on business R&D performance in Puerto Rico are not collected.

^j Includes R&D expenditures reported for outlying areas (Guam, Virgin Islands) and offices abroad, but excluding Puerto Rico.

NOTES: Industry R&D data refer to calendar years; other R&D data refer to fiscal years but are used here as approximations to calendar year data.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics (NSF/NCSES), National Patterns of R&D Resources (annual series), Business Research and Development and Innovation Survey, Survey of Research and Development Expenditures at Universities and Colleges, Survey of Federal Funds for Research and Development, Survey of State Government R&D. State GDP data are from the U.S. Bureau of Economic Analysis, <http://www.bea.gov>, accessed 1 August 2013.

TABLE 14. Gross expenditures for R&D and expenditures for R&D as share of gross domestic product, for selected countries: 1981–2011

Year	European Union ^a						China	Japan	South Korea
	United States	France	Germany	United Kingdom					
GERD (PPP current \$billions)									
1981	72.7	na	11.0	18.4	12.0	NA	25.6	NA	
1982	81.2	na	12.4	20.0	NA	NA	29.2	NA	
1983	90.4	na	13.3	21.2	12.9	NA	33.1	NA	
1984	102.9	na	14.7	22.6	NA	NA	37.1	NA	
1985	115.2	na	15.8	25.6	14.8	NA	42.6	NA	
1986	120.6	na	16.4	27.0	15.9	NA	44.3	NA	
1987	126.7	na	17.6	29.4	16.6	NA	48.8	NA	
1988	134.2	na	19.0	31.4	17.6	NA	54.4	NA	
1989	142.2	na	21.0	33.7	18.8	NA	61.4	NA	
1990	152.4	na	23.2	35.3	19.6	NA	69.0	NA	
1991	161.4	na	24.3	39.5	19.3	7.5	73.3	7.1	
1992	165.8	na	25.4	39.2	19.4	8.9	74.6	8.1	
1993	166.1	na	26.1	38.4	20.6	9.8	74.8	9.6	
1994	169.6	na	26.6	38.6	21.4	10.3	75.7	11.7	
1995	184.1	138.1	27.4	40.1	21.9	10.5	82.5	13.3	
1996	197.8	143.8	28.1	41.4	22.3	11.7	83.0	14.9	
1997	212.7	150.8	28.5	43.2	23.1	14.7	87.8	16.3	
1998	226.9	158.6	29.3	45.2	23.9	16.3	91.1	14.6	
1999	245.8	170.2	30.8	49.4	25.9	20.6	92.8	15.8	
2000	269.5	184.2	33.0	52.3	27.9	27.2	98.7	18.6	
2001	280.2	196.3	35.8	54.4	29.2	31.7	103.7	21.3	
2002	279.9	206.3	38.2	56.7	30.6	39.6	108.2	22.5	
2003	293.9	210.8	36.9	59.4	31.0	47.1	112.2	24.0	
2004	305.6	218.6	38.0	61.3	32.0	57.8	117.6	27.9	
2005	328.1	230.5	39.2	64.3	34.1	71.1	128.7	30.6	
2006	353.3	253.9	41.9	70.1	37.0	86.6	138.3	35.3	
2007	380.3	270.9	44.0	74.0	38.7	102.3	147.7	40.7	
2008	407.2	294.2	46.5	82.0	39.4	120.7	148.7	43.9	
2009	406.0	298.4	49.5	82.4	39.2	154.0	136.0	46.7	
2010	409.6	303.8	49.9	86.3	39.5	178.2	139.6	52.8	
2011	429.1	320.5	51.9	93.1	39.6	208.2	146.5	59.9	
GERD (PPP constant \$billions)									
1981	139.3	na	21.4	35.6	23.7	NA	49.0	NA	
1982	146.5	na	22.9	36.5	NA	NA	52.6	NA	
1983	157.0	na	23.6	37.2	23.1	NA	57.4	NA	
1984	172.2	na	25.1	38.3	NA	NA	62.0	NA	
1985	187.1	na	26.2	42.0	25.0	NA	69.1	NA	
1986	191.5	na	26.6	43.4	26.2	NA	70.2	NA	
1987	195.5	na	27.8	45.9	26.6	NA	75.2	NA	
1988	200.2	na	29.0	47.3	27.2	NA	81.0	NA	
1989	204.4	na	30.8	48.9	27.9	NA	88.1	NA	
1990	210.9	na	32.8	49.4	28.1	NA	95.4	NA	
1991	215.7	na	33.2	53.3	26.7	10.0	97.9	9.2	
1992	216.5	na	33.8	51.7	26.2	11.5	97.3	10.3	
1993	212.2	na	34.1	49.6	27.2	12.5	95.5	11.9	
1994	212.2	na	34.0	48.8	27.8	12.8	94.6	14.2	
1995	225.6	171.2	34.3	49.7	27.7	12.8	101.0	15.8	
1996	237.9	174.3	34.5	50.3	27.4	13.9	99.7	17.3	
1997	251.4	179.2	34.1	52.2	27.0	17.3	103.6	18.7	
1998	265.2	185.8	34.4	54.1	27.9	18.8	106.3	16.5	
1999	283.1	197.2	35.8	58.2	30.0	23.5	106.7	17.6	
2000	303.8	208.2	36.9	61.6	31.2	30.4	110.0	20.2	
2001	308.9	215.4	38.5	62.6	31.6	34.7	113.1	22.6	
2002	303.6	220.3	39.5	63.3	32.5	42.6	114.9	23.6	

TABLE 14. Gross expenditures for R&D and expenditures for R&D as share of gross domestic product, for selected countries: 1981–2011

Year	European Union ^a					China	Japan	South Korea
	United States	Union ^a	France	Germany	United Kingdom			
2003	312.2	222.4	38.8	64.0	32.9	49.6	117.9	25.1
2004	315.8	224.7	39.4	63.8	32.6	59.3	120.3	28.3
2005	328.1	230.5	39.2	64.3	34.1	71.1	128.7	30.6
2006	342.3	242.7	40.2	67.6	35.4	83.9	134.8	34.7
2007	358.0	251.9	40.6	69.6	37.4	96.3	139.9	38.9
2008	375.1	263.8	41.4	74.7	37.2	111.2	138.7	41.7
2009	370.7	263.8	42.9	74.4	37.0	140.6	126.9	44.3
2010	369.0	268.4	43.0	76.9	36.7	160.5	128.7	49.4
2011	378.6	276.9	44.0	815.4	36.6	183.1	133.2	55.3
GERD/GDP (%)								
1981	2.34	na	1.90	2.35	2.35	NA	2.26	NA
1982	2.51	na	1.98	2.42	NA	NA	2.35	NA
1983	2.58	na	2.02	2.43	2.17	NA	2.48	NA
1984	2.64	na	2.11	2.43	NA	NA	2.57	NA
1985	2.75	na	2.17	2.60	2.20	NA	2.69	NA
1986	2.72	na	2.16	2.63	2.22	NA	2.66	NA
1987	2.70	na	2.20	2.74	2.15	NA	2.74	NA
1988	2.65	na	2.19	2.73	2.10	NA	2.75	NA
1989	2.61	na	2.23	2.71	2.11	NA	2.84	NA
1990	2.65	na	2.32	2.61	2.10	NA	2.91	NA
1991	2.72	na	2.32	2.47	2.03	0.73	2.89	1.80
1992	2.64	na	2.33	2.35	1.99	0.74	2.85	1.89
1993	2.51	na	2.36	2.28	2.02	0.70	2.79	2.06
1994	2.41	na	2.31	2.18	1.97	0.64	2.74	2.26
1995	2.50	1.66	2.28	2.19	1.91	0.57	2.87	2.30
1996	2.54	1.66	2.27	2.20	1.83	0.57	2.77	2.36
1997	2.55	1.66	2.19	2.24	1.75	0.64	2.83	2.41
1998	2.58	1.67	2.14	2.28	1.75	0.65	2.96	2.26
1999	2.63	1.72	2.16	2.41	1.82	0.76	2.98	2.17
2000	2.71	1.74	2.15	2.47	1.82	0.90	3.00	2.30
2001	2.72	1.76	2.20	2.47	1.79	0.95	3.07	2.47
2002	2.63	1.77	2.24	2.50	1.80	1.07	3.12	2.40
2003	2.64	1.75	2.18	2.54	1.75	1.13	3.14	2.49
2004	2.58	1.73	2.16	2.50	1.69	1.23	3.13	2.68
2005	2.60	1.73	2.11	2.51	1.72	1.32	3.31	2.79
2006	2.64	1.76	2.11	2.54	1.74	1.39	3.41	3.01
2007	2.71	1.76	2.08	2.53	1.77	1.40	3.46	3.21
2008	2.85	1.83	2.12	2.69	1.78	1.47	3.47	3.36
2009	2.91	1.91	2.27	2.82	1.84	1.70	3.36	3.56
2010	2.83	1.91	2.24	2.80	1.80	1.76	3.25	3.74
2011	2.85	1.94	2.24	2.88	1.77	1.84	3.39	4.03

na = not applicable; NA = not available.

GDP = gross domestic product; GERD = gross expenditures for R&D; PPP = purchasing power parity.

^a Data includes the 28 European Union member countries (including Organisation for Economic Cooperation and Development (OECD) estimates for Croatia).

NOTES: Conversions of foreign currencies to U.S. dollars calculated with each country's GDP implicit price deflator and with OECD purchasing power parity exchange rates. Data for the United States in this table reflect international standards for calculating gross expenditures on R&D, which vary slightly from the National Science Foundation protocol for tallying U.S. total R&D. Data for Japan, 1996 onward, may not be consistent with earlier data due to changes in methodology. Data for Germany, 1981–1990, are for West Germany.

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National Center for Science and Engineering Statistics

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Director

Jeri M. Mulrow

Deputy Director (Acting)

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Chief Statistician

John E. Jankowski

Program Director, Research and Development Statistics



National Center for Science and Engineering Statistics (NCSES)

The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA

Tel: (703) 292-8780, FIRS: (800) 877-8339 | TDD: (800) 281-8749