

National Patterns of R&D Resources: 2009 Data Update

Detailed Statistical Tables | NSF 12-321 | June 2012

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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 (March 2012) authored by the National Center for Science and Engineering Statistics (NCSES) discussing the National Patterns findings for 2009 (<http://www.nsf.gov/statistics/infbrief/nsf12310/>).

Content of Data Tables

Table 1 summarizes the 1953–2009 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 (1953–2009) are disaggregated by the following:

- R&D performer: business sector, federal government, federally funded research and development centers (FFRDCs), universities/colleges, and other nonprofit organizations
- Source of funding: business sector, federal government, nonfederal government, universities/colleges, and other nonprofit organizations
- Character of work: basic research, applied research, 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.

Table 10 describes the geographic distribution of U.S. R&D expenditures in calendar year 2008, by the 50 states and the District of Columbia.

Table 11 compares the R&D expenditures, in total and as a share of gross domestic product, of the United States and 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 chiefly 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, government, academia, other nonprofit

organizations). In some cases, the primary survey data are adjusted to enable consistent integration of the statistics from these separately conducted surveys. Estimated values may be used where final data from one or more of the surveys are not yet available and can reasonably be prepared.

The main R&D surveys utilized include NSF's new Business R&D and Innovation Survey (for 2008 and 2009; the preceding Survey of Industrial R&D for 2007 and earlier years), the Survey of R&D Expenditures at Universities and Colleges (FY 2009 and earlier years), the Survey of Federal Funds for R&D (FY 2009–11 and earlier years), and the Survey of R&D Expenditures at Federally Funded R&D Centers (FY 2009 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 Federal Funds and FFRDC surveys are reported on a federal fiscal-year basis and are adjusted to calendar year for the integration. The data from the Survey of Universities and Colleges are reported on an academic fiscal-year basis and converted to calendar year.

Prior to FY 2001, R&D data for the FFRDCs were collected as part of separate 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). The data collection for all FFRDCs was consolidated in FY 2001 into a separate survey.

In 1998 and later years, the university/college R&D figures have been adjusted to eliminate double counting of funds passed through from one academic institution to another. For example, in FY 1998, \$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 2009 are \$1.9 billion in total pass-through funds out of \$54.9 billion in academic R&D.

The character-of-work estimates for business-sector R&D were revised for 1998 and later years. These changes 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 new business R&D survey, starting in 2008, does not appear at present to have introduced further discontinuities in the character-of-work estimates. For university/college R&D, the character-of-work estimates were also revised for 1998 and later years. The revised procedure, along with respondent data corrections, yielded an increase of approximately 5 percentage points in the share of academic R&D identified as basic research. Similarly, these changes make the data for 1998 and later years not directly comparable to the data for 1997 and 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 FFRDCs. These amounts can differ substantially from the R&D that federal agencies have reported funding. The National Academies' Committee on National Statistics (CNSTAT) has recommended that NSF publish an annual reconciliation of estimates for federal R&D funding as reported by performers of R&D and as reported by federal agencies.[i]

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 \$124 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, CNSTAT notes that comparing federal outlays (as opposed to obligations) for R&D to performer expenditures results in a smaller discrepancy. 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).

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 industry (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: 1953–2009

Year	All performers		Industry			Industry FFRDCs ^a			
	Funding source:		Total	Federal ^a	Industry ^d	Total	Total	Federal	g
	All sources	Federal							Curr
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: 1953–2009

Year	All performers		Federal							
	Funding source:		Total	Federal	Industry	FFRDCs ^b	U&C ^c	U&C FFRDCs	Other nonprofit ^d	Nonprofit FFRDCs
	All sources									Current
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		
1955	6,281	3,603	973	2,057	123	191	187	64		

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

[i] 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: 2009 Data Update**

	Gross domestic product and R&D: 1953–2009
1	federal, nonfederal, and total R&D
	U.S. R&D expenditures
	by performing sector and source of funds: 1953–2009
2	total R&D
3	basic research
4	applied research
5	development
	by source of funds and performing sector: 1953–2009
6	total R&D
7	basic research
8	applied research
9	development
	by state, sector, and source of funds
10	2008
	International R&D expenditures, selected countries
11	total and as % of gross domestic product: 1981–2009

TABLE 1. Gross domestic product and research and development (total, federally funded, nonfederal): 1953–2009

Year	GDP			R&D				R&D/GDP (%)		
	Current	Implicit price deflator	2005 constant	Current	2005 constant	Federal support	Nonfederal support	Total	Federal support	Nonfederal support
	\$billions	(2005 = 1.00000)	\$billions	\$millions	\$millions	2005 constant \$millions	2005 constant \$millions			
1953	379.3	0.16160	2,347.2	5,160	31,931	17,219	14,713	1.36	0.73	0.63
1954	380.4	0.16309	2,332.4	5,617	34,437	18,995	15,442	1.48	0.81	0.66
1955	414.7	0.16586	2,500.3	6,281	37,871	21,725	16,146	1.51	0.87	0.65
1956	437.4	0.17155	2,549.7	8,500	49,548	29,018	20,531	1.94	1.14	0.81
1957	461.1	0.17727	2,601.1	9,908	55,893	35,159	20,734	2.15	1.35	0.80
1958	467.2	0.18125	2,577.6	10,915	60,220	38,477	21,743	2.34	1.49	0.84
1959	506.6	0.18338	2,762.5	12,490	68,106	44,535	23,571	2.47	1.61	0.85
1960	526.4	0.18595	2,830.9	13,711	73,737	47,944	25,792	2.60	1.69	0.91
1961	544.8	0.18806	2,896.9	14,564	77,444	50,431	27,012	2.67	1.74	0.93
1962	585.7	0.19063	3,072.4	15,636	82,022	53,182	28,841	2.67	1.73	0.94
1963	617.8	0.19266	3,206.7	17,519	90,932	60,446	30,486	2.84	1.88	0.95
1964	663.6	0.19562	3,392.3	19,103	97,653	65,251	32,402	2.88	1.92	0.96
1965	719.1	0.19919	3,610.1	20,252	101,672	66,236	35,436	2.82	1.83	0.98
1966	787.7	0.20485	3,845.3	22,072	107,747	69,147	38,599	2.80	1.80	1.00
1967	832.4	0.21114	3,942.5	23,346	110,576	68,974	41,601	2.80	1.75	1.06
1968	909.8	0.22011	4,133.4	24,666	112,063	67,985	44,078	2.71	1.64	1.07
1969	984.4	0.23098	4,261.8	25,996	112,544	65,928	46,616	2.64	1.55	1.09
1970	1,038.3	0.24317	4,269.9	26,271	108,038	61,621	46,417	2.53	1.44	1.09
1971	1,126.8	0.25532	4,413.3	26,952	105,561	59,573	45,988	2.39	1.35	1.04
1972	1,237.9	0.26635	4,647.7	28,740	107,905	60,219	47,686	2.32	1.30	1.03
1973	1,382.3	0.28113	4,917.0	30,952	110,098	59,002	51,096	2.24	1.20	1.04
1974	1,499.5	0.30665	4,889.9	33,359	108,784	56,373	52,411	2.22	1.15	1.07
1975	1,637.7	0.33563	4,879.5	35,671	106,282	55,220	51,063	2.18	1.13	1.05
1976	1,824.6	0.35489	5,141.3	39,435	111,118	57,177	53,941	2.16	1.11	1.05
1977	2,030.1	0.37750	5,377.7	43,338	114,802	58,467	56,335	2.13	1.09	1.05
1978	2,293.8	0.40401	5,677.6	48,719	120,589	60,429	60,161	2.12	1.06	1.06
1979	2,562.2	0.43761	5,855.0	55,379	126,549	62,213	64,336	2.16	1.06	1.10
1980	2,788.1	0.47750	5,839.0	63,224	132,407	62,799	69,608	2.27	1.08	1.19
1981	3,126.8	0.52225	5,987.2	72,292	138,425	64,603	73,822	2.31	1.08	1.23
1982	3,253.2	0.55412	5,870.9	80,748	145,722	67,013	78,710	2.48	1.14	1.34
1983	3,534.6	0.57602	6,136.2	89,950	156,156	71,960	84,196	2.54	1.17	1.37
1984	3,930.9	0.59766	6,577.1	102,244	171,072	77,753	93,319	2.60	1.18	1.42
1985	4,217.5	0.61576	6,849.3	114,671	186,227	85,490	100,737	2.72	1.25	1.47
1986	4,460.1	0.62938	7,086.5	120,249	191,059	86,788	104,271	2.70	1.22	1.47
1987	4,736.4	0.64764	7,313.3	126,360	195,108	90,497	104,612	2.67	1.24	1.43
1988	5,100.4	0.66988	7,613.9	133,881	199,858	89,764	110,095	2.62	1.18	1.45
1989	5,482.1	0.69518	7,885.9	141,891	204,107	86,979	117,129	2.59	1.10	1.49
1990	5,800.5	0.72200	8,033.9	151,993	210,515	85,332	125,183	2.62	1.06	1.56
1991	5,992.1	0.74760	8,015.1	160,876	215,189	81,304	133,885	2.68	1.01	1.67
1992	6,342.3	0.76532	8,287.1	165,350	216,053	79,593	136,459	2.61	0.96	1.65
1993	6,667.4	0.78225	8,523.4	165,730	211,865	77,377	134,488	2.49	0.91	1.58
1994	7,085.2	0.79872	8,870.7	169,207	211,847	76,093	135,754	2.39	0.86	1.53

TABLE 1. Gross domestic product and research and development (total, federally funded, nonfederal): 1953–2009

Year	GDP			R&D				R&D/GDP (%)		
	Current	Implicit price deflator	2005 constant	Current	2005 constant	Federal support	Nonfederal support	Total	Federal support	Nonfederal support
	\$billions	(2005 = 1.00000)	\$billions	\$millions	\$millions	2005 constant \$millions	2005 constant \$millions			
1995	7,414.7	0.81537	9,093.7	183,625	225,206	77,228	147,978	2.48	0.85	1.63
1996	7,838.5	0.83089	9,433.9	197,346	237,513	76,297	161,216	2.52	0.81	1.71
1997	8,332.4	0.84556	9,854.3	212,152	250,901	76,368	174,533	2.55	0.77	1.77
1998	8,793.5	0.85511	10,283.5	226,457	264,829	77,632	187,197	2.58	0.75	1.82
1999	9,353.5	0.86769	10,779.8	245,007	282,368	77,280	205,087	2.62	0.72	1.90
2000	9,951.5	0.88723	11,216.4	267,983	302,045	75,444	226,601	2.69	0.67	2.02
2001	10,286.2	0.90727	11,337.5	279,755	308,347	82,647	225,700	2.72	0.73	1.99
2002	10,642.3	0.92196	11,543.1	278,744	302,337	86,832	215,506	2.62	0.75	1.87
2003	11,142.2	0.94135	11,836.4	291,239	309,385	91,472	217,913	2.61	0.77	1.84
2004	11,853.3	0.96786	12,246.9	302,503	312,548	94,700	217,848	2.55	0.77	1.78
2005	12,623.0	1.00000	12,623.0	324,993	324,993	96,276	228,717	2.57	0.76	1.81
2006	13,377.2	1.03231	12,958.5	350,162	339,202	97,614	241,588	2.62	0.75	1.86
2007	14,028.7	1.06227	13,206.4	376,960	354,864	99,619	255,245	2.69	0.75	1.93
2008	14,291.5	1.08582	13,161.9	403,040	371,184	108,315	262,869	2.82	0.82	2.00
2009	13,939.0	1.09729	12,703.1	400,458	364,951	113,399	251,552	2.87	0.89	1.98

GDP = gross domestic product.

NOTES: Detail may not add to total because of rounding. Constant dollar estimates derived from unrounded data.

SOURCES: GDP figures from Bureau of Economic Analysis, Survey of Current Business, 20 July 2011; R&D figures from National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources.

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2009

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

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry				U&C ^b				U&C FFRDCs			Other nonprofit			Nonprofit FFRDCs ^c	
	Funding source:			Total	Federal ^a	Industry ^d	Total	Total	Federal	Other government ^e		U&C	Other nonprofit	Total	Total	Federal ^c	Industry	Other nonprofit	Total
	All sources	Federal	Other							Industry									
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	245,007	17,851	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	993	
2000	267,983	18,374	199,961	17,117	182,844	2,001	30,705	17,727	2,247	2,174	6,232	2,326	5,742	9,734	4,510	1,020	4,204	1,465	
2001	279,755	22,374	202,017	16,899	185,118	2,020	33,743	19,784	2,397	2,190	6,827	2,546	6,225	11,182	5,488	1,029	4,666	2,192	
2002	278,744	23,798	193,868	16,401	177,467	2,263	37,215	22,395	2,557	2,160	7,344	2,758	7,102	12,179	5,778	998	5,404	2,319	
2003	291,239	24,982	200,724	17,798	182,926	2,458	40,484	25,129	2,742	2,129	7,650	2,833	7,301	12,796	5,945	1,020	5,831	2,494	
2004	302,503	24,898	208,301	20,266	188,035	2,485	43,122	27,168	2,883	2,190	7,936	2,945	7,659	13,394	6,537	1,041	5,816	2,644	
2005	324,993	26,322	226,159	21,909	204,250	2,601	45,190	28,254	2,922	2,323	8,578	3,113	7,817	14,077	6,545	1,107	6,425	2,828	
2006	350,162	28,240	247,669	24,304	223,365	3,122	46,955	28,810	3,021	2,509	9,285	3,329	7,306	13,928	6,044	1,182	6,702	2,943	
2007	376,960	29,859	269,267	26,585	242,682	5,165	49,010	29,351	3,265	2,741	9,959	3,694	5,567	14,777	5,980	1,257	7,541	3,316	
2008	403,040	29,839	290,681	36,360	254,321	6,346	51,650	30,341	3,518	3,004	10,707	4,080	4,766	16,035	6,236	1,301	8,498	3,724	
2009	400,458	30,901	282,393	39,573	242,820	6,446	54,382	31,575	3,675	3,279	11,436	4,418	4,968	17,531	7,133	1,258	9,141	3,835	
2005 constant \$millions																			
1953	31,931	6,281	22,463	8,849	13,614	NA	1,686	922	244	127	226	167	811	690	356	161	173	NA	
1954	34,437	5,902	24,955	10,730	14,225	NA	1,846	1,009	273	144	242	178	984	751	371	190	190	NA	
1955	37,871	5,865	27,234	12,402	14,832	742	2,062	1,152	301	163	253	193	1,127	790	386	211	193	51	
1956	49,548	6,590	36,561	17,459	19,102	1,941	2,279	1,288	329	184	268	210	1,265	848	411	216	222	64	
1957	55,893	7,318	41,315	22,158	19,157	2,296	2,443	1,362	361	206	288	226	1,503	939	443	209	288	79	
1958	60,220	8,312	44,501	24,474	20,027	1,782	2,709	1,545	397	215	306	246	1,741	1,076	524	210	342	99	
1959	68,106	9,167	50,168	28,448	21,719	2,279	3,195	1,939	439	215	333	270	1,903	1,273	679	229	365	120	
1960	73,737	9,684	53,951	30,137	23,813	2,565	3,789	2,433	484	215	360	296	2,070	1,420	796	258	366	258	
1961	77,444	10,567	55,051	30,229	24,821	2,951	4,432	2,959	534	213	396	330	2,340	1,616	899	261	457	487	
1962	82,022	11,476	57,897	31,516	26,381	2,235	5,206	3,601	588	212	441	365	2,623	1,904	1,049	283	572	682	
1963	90,932	13,280	63,407	35,586	27,821	2,149	6,114	4,352	649	210	498	405	3,008	2,118	1,215	285	618	856	
1964	97,653	15,158	66,706	37,098	29,609	2,367	7,026	5,086	703	207	580	450	3,215	2,132	1,278	281	573	1,048	
1965	101,672	15,845	69,340	36,985	32,356	1,873	8,005	5,859	751	208	683	505	3,160	2,370	1,436	311	623	1,079	
1966	107,747	16,147	74,167	38,941	35,226	1,733	8,875	6,517	781	220	803	554	3,180	2,619	1,604	342	674	1,025	
1967	110,576	16,314	75,620	37,635	37,985	1,985	9,638	7,059	796	244	945	594	3,296	2,657	1,620	350	687	1,066	
1968	112,063	15,888	77,298	37,004	40,294	1,885	9,936	7,206	838	261	1,002	629	3,280	2,708	1,654	368	686	1,068	
1969	112,544	16,409	77,253	34,578	42,674	2,009	9,871	7,029	901	262	1,009	671	3,165	2,777	1,678	403	697	1,061	
1970	108,038	17,082	72,353	30,045	42,308	1,945	9,942	6,931	975	269	1,063	703	2,988	2,782	1,684	391	707	946	
1971	105,561	17,268	69,830	28,102	41,728	1,923	10,046	6,891	1,026	282	1,134	713	2,877	2,775	1,670	384	721	842	
1972	107,905	17,555	71,351	28,042	43,308	2,057	10,351	7,096	1,059	297	1,170	730	2,947	2,893	1,770	379	743	751	
1973	110,098	17,204	73,647	27,034	46,612	1,939	10,504	7,144	1,072	318	1,220	749	2,992	3,137	2,013	373	751	676	
1974	108,784	16,737	72,522	24,692	47,829	2,113	10,486	7,044	1,044	339	1,280	779	3,020	3,222	2,082	373	767	685	
1975	106,282	16,570	69,899	23,472	46,426	2,166	10,635	7,151	1,037	352	1,286	810	3,179	3,163	2,011	370	781	670	
1976	111,118	16,597	73,563	24,433	49,131	2,508	10,985	7,380	1,040	369	1,353	844	3,566	3,208	2,003	381	824	690	
1977	114,802	16,454	76,458	25,226	51,231	2,548	11,512	7,662	1,044	409	1,506	891	3,887	3,214	1,961	390	864	728	
1978	120,589	17,233	79,756	25,017	54,739	2,678	12,365	8,239	1,097	449	1,681	900	4,385	3,350	2,054	396	900	823	
1979	126,549	17,073	84,692	25,946	58,747	2,660	13,058	8,793	1,100	490	1,794	881	4,599	3,575	2,251	398	926	891	
1980	132,407	16,399	90,531	26,706	63,825	2,674	13,518	9,078	1,086	552	1,926	877	4,829	3,473	2,130	397	946	982	
1981	138,425	16,476	96,554	28,716	67,838	2,652	13,566	8,941	1,112	601	2,025	887	4,757	3,417	2,058	395	964	1,003	

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry				U&C ^b				U&C FFRDCs			Other nonprofit			Nonprofit FFRDCs ^c
	Funding source:			Total	Federal ^a	Industry ^d	Total	Total	Federal	Other government ^e	Industry	U&C	Other nonprofit	Total	Total	Federal ^c	Industry	Other nonprofit
	All sources	Federal	Total															
1982	145,722	17,146	103,165	30,789	72,376	2,678	13,720	8,804	1,121	655	2,177	963	4,590	3,456	2,038	405	1,013	967
1983	156,156	18,800	110,556	33,150	77,406	2,752	14,324	9,045	1,142	750	2,355	1,032	4,931	3,777	2,266	424	1,087	1,016
1984	171,072	19,937	122,244	36,236	86,008	2,910	15,315	9,617	1,206	866	2,533	1,093	5,427	4,202	2,590	444	1,168	1,038
1985	186,227	21,263	133,780	41,141	92,639	3,026	16,740	10,374	1,354	1,023	2,831	1,158	5,872	4,483	2,751	469	1,264	1,063
1986	191,059	21,457	136,534	41,311	95,224	3,005	18,336	11,166	1,540	1,184	3,207	1,239	6,312	4,556	2,678	499	1,378	860
1987	195,108	20,981	139,213	44,403	94,810	3,080	19,775	11,994	1,644	1,283	3,493	1,361	6,620	4,653	2,632	528	1,493	786
1988	199,858	21,410	141,657	42,128	99,528	3,168	21,229	12,828	1,739	1,393	3,772	1,497	6,838	4,796	2,631	555	1,610	761
1989	204,107	21,909	143,647	37,917	105,730	3,157	22,489	13,402	1,833	1,526	4,103	1,627	6,841	5,277	2,966	582	1,729	787
1990	210,515	21,705	148,758	35,737	113,022	3,217	23,461	13,766	1,938	1,614	4,413	1,730	6,778	5,715	3,249	610	1,856	881
1991	215,189	20,398	153,391	32,230	121,161	3,046	24,353	14,268	1,983	1,661	4,625	1,816	6,849	6,223	3,583	641	1,999	931
1992	216,053	20,714	152,559	29,228	123,331	3,075	25,333	15,062	1,993	1,724	4,663	1,891	6,872	6,524	3,666	681	2,177	977
1993	211,865	21,132	147,569	26,646	120,922	2,512	26,200	15,733	1,990	1,779	4,741	1,957	6,761	6,734	3,635	725	2,374	958
1994	211,847	20,477	146,975	25,367	121,608	2,757	27,051	16,270	2,031	1,823	4,930	1,996	6,628	7,009	3,645	772	2,592	949
1995	225,206	20,731	159,229	25,974	133,255	2,788	27,738	16,670	2,148	1,898	5,041	1,983	6,583	7,146	3,492	823	2,831	991
1996	237,513	19,960	171,348	25,703	145,646	2,765	28,545	16,951	2,240	2,012	5,338	2,004	6,493	7,473	3,497	879	3,097	929
1997	250,901	19,891	183,794	25,779	158,015	2,519	29,429	17,183	2,273	2,138	5,722	2,113	6,461	7,837	3,565	956	3,316	971
1998	264,829	20,304	195,416	25,828	169,588	2,430	30,617	17,745	2,306	2,280	6,038	2,247	6,501	8,574	3,837	1,005	3,733	986
1999	282,368	20,573	209,856	23,621	186,235	2,350	32,472	18,744	2,418	2,399	6,476	2,434	6,514	9,458	4,334	1,073	4,052	1,144
2000	302,045	20,710	225,378	19,293	206,085	2,255	34,608	19,980	2,532	2,450	7,024	2,622	6,472	10,971	5,083	1,149	4,739	1,651
2001	308,347	24,661	222,664	18,626	204,038	2,227	37,192	21,806	2,642	2,414	7,525	2,806	6,862	12,325	6,049	1,134	5,142	2,416
2002	302,337	25,812	210,278	17,789	192,488	2,455	40,365	24,291	2,774	2,343	7,965	2,992	7,703	13,210	6,267	1,083	5,861	2,515
2003	309,385	26,539	213,230	18,907	194,323	2,611	43,006	26,695	2,913	2,262	8,127	3,009	7,756	13,594	6,315	1,084	6,194	2,649
2004	312,548	25,724	215,218	20,939	194,279	2,568	44,554	28,070	2,979	2,262	8,200	3,043	7,913	13,839	6,754	1,076	6,009	2,732
2005	324,993	26,322	226,159	21,909	204,250	2,601	45,190	28,254	2,922	2,323	8,578	3,113	7,817	14,077	6,545	1,107	6,425	2,828
2006	339,202	27,356	239,917	23,543	216,374	3,024	45,485	27,908	2,926	2,431	8,995	3,225	7,078	13,492	5,854	1,145	6,492	2,851

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry				U&C ^b				Other nonprofit			Nonprofit FFRDCs ^c				
	Funding source:		Federal	Total	Federal ^a	Industry ^d	Total	Total	Federal	Other government ^e	Industry	U&C	Other nonprofit	Total	Total	Federal ^c	Industry	Other nonprofit	Total
	All sources	Federal	Total	Federal ^a	Industry ^d	Total	Total	Federal	Other government ^e	Industry	U&C	Other nonprofit	Total	Total	Federal ^c	Industry	Other nonprofit	Total	
2007	354,864	28,109	253,484	25,027	228,457	4,862	46,137	27,631	3,074	2,580	9,375	3,478	5,241	13,911	5,629	1,183	7,099	3,121	
2008	371,184	27,480	267,706	33,486	234,219	5,844	47,568	27,943	3,240	2,767	9,861	3,757	4,389	14,767	5,743	1,198	7,827	3,429	
2009	364,951	28,161	257,355	36,064	221,290	5,875	49,561	28,775	3,349	2,988	10,422	4,026	4,528	15,977	6,501	1,146	8,330	3,495	

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

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

^a Federal support for industry in 1953–54 did not separate federal support for industry and for industry FFRDCs; thus, figures for federal support to industry include support to FFRDCs for those years.

^b Adjustments made to U&C R&D for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years not directly comparable with data for 1997 and earlier years. For FY 1998, \$479 million in total pass-through funds and \$421 million in federal pass-through funds reported. For FY 2009, \$1,873 million in total pass-through funds and \$1,660 million in federal pass-through funds estimated.

^c Federal support for nonprofit FFRDCs in 1953–54 did not separate federal support for other nonprofits and for nonprofit FFRDCs; thus, figure for federal support to other nonprofit institutions includes support to FFRDCs for those years.

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

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

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures after 1997 involve estimates). R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal-year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2009

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

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2009

Year	2005 constant \$millions																		
	All performers		Federal	Industry ^a			Industry FFRDCs ^b			U&C ^c			U&C FFRDCs		Other nonprofit			Nonprofit FFRDCs ^d	
	Funding source:	All sources	Federal	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total
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		42,759	3,765	7,040	925	6,115	547	22,917	13,966	1,550	1,499	4,298	1,604	2,874	5,000	2,099	566	2,334	616
2001		47,751	4,260	8,053	754	7,299	552	25,240	15,553	1,663	1,519	4,737	1,767	3,104	5,626	2,464	571	2,590	915
2002		51,383	4,511	7,547	888	6,659	534	27,970	17,724	1,768	1,494	5,077	1,907	3,714	6,129	2,575	554	3,000	979
2003		54,611	4,664	8,330	1,386	6,944	299	30,023	19,658	1,850	1,438	5,165	1,913	3,747	6,519	2,714	567	3,238	1,029
2004		56,092	4,697	7,835	1,072	6,763	175	31,989	21,150	1,958	1,488	5,392	2,001	3,730	6,596	2,788	578	3,229	1,070
2005		59,686	4,770	8,667	1,108	7,559	136	34,028	22,186	2,042	1,624	5,999	2,177	3,820	7,084	2,903	614	3,568	1,181
2006		61,199	4,716	8,384	1,444	6,940	652	35,635	22,690	2,155	1,791	6,624	2,376	3,344	7,227	2,849	656	3,721	1,242
2007		66,206	4,621	11,268	2,780	8,488	2,258	37,271	23,043	2,363	1,983	7,207	2,674	1,724	7,714	2,829	698	4,187	1,350
2008		70,220	4,957	12,368	1,475	10,893	2,423	38,840	23,500	2,533	2,162	7,708	2,937	1,672	8,514	3,073	722	4,719	1,447
2009		75,969	5,507	14,784	1,340	13,444	2,550	40,543	24,242	2,627	2,344	8,173	3,158	1,808	9,270	3,496	698	5,075	1,508
1953		2,843	628	934	118	817	NA	761	504	40	80	37	99	223	297	167	56	74	NA
1954		3,118	589	1,018	141	877	NA	904	592	59	92	52	110	270	337	190	67	80	NA
1955		3,491	588	1,140	163	977	NA	1,082	702	84	102	70	124	301	380	217	78	84	NA
1956		4,185	662	1,475	216	1,259	NA	1,282	831	111	114	90	137	338	428	242	87	99	NA
1957		4,589	699	1,529	231	1,297	NA	1,470	939	140	127	111	152	403	488	274	85	130	NA
1958		5,205	822	1,628	237	1,390	NA	1,721	1,114	171	132	132	171	469	566	323	88	154	NA
1959		5,927	897	1,745	393	1,352	NA	2,116	1,431	205	131	155	194	515	654	393	98	164	NA
1960		6,916	987	2,022	425	1,597	NA	2,606	1,831	242	132	180	220	570	731	457	113	161	NA
1961		8,037	1,220	2,100	431	1,670	NA	3,177	2,294	285	133	212	253	667	872	558	117	197	NA
1962		9,568	1,322	2,560	750	1,810	NA	3,863	2,862	334	131	251	286	774	1,049	682	126	241	NA
1963		10,978	1,477	2,709	763	1,946	NA	4,716	3,576	389	127	299	324	908	1,168	779	130	260	NA
1964		12,248	1,733	2,592	629	1,963	215	5,472	4,210	431	128	356	348	1,020	1,217	849	128	240	NA
1965		13,374	1,880	2,826	788	2,038	146	6,127	4,737	474	133	432	351	1,092	1,303	896	146	261	NA
1966		14,303	2,001	2,895	693	2,202	151	6,737	5,204	505	142	520	366	1,164	1,355	915	156	283	NA
1967		15,002	2,053	2,818	796	2,022	161	7,358	5,624	539	159	642	393	1,246	1,366	916	161	289	NA
1968		15,338	2,190	2,758	659	2,099	159	7,635	5,747	594	170	710	413	1,252	1,345	890	168	286	NA
1969		15,112	2,360	2,515	533	1,983	160	7,591	5,574	662	171	741	444	1,178	1,307	831	186	290	NA
1970		14,780	2,311	2,328	502	1,826	148	7,628	5,439	738	177	805	471	1,088	1,277	800	181	296	NA
1971		14,571	2,276	2,182	396	1,786	129	7,708	5,423	758	194	838	495	987	1,289	811	176	302	NA
1972		14,455	2,262	2,080	342	1,738	146	7,650	5,395	734	206	811	503	1,014	1,303	811	176	315	NA
1973		14,582	2,319	2,116	341	1,775	128	7,481	5,295	698	208	794	486	1,220	1,318	823	174	320	NA
1974		14,709	2,331	2,120	372	1,748	160	7,440	5,247	665	215	816	497	1,352	1,307	799	176	333	NA
1975		14,524	2,264	2,017	310	1,707	158	7,388	5,268	633	213	785	489	1,417	1,281	760	177	344	NA
1976		15,140	2,395	2,113	327	1,786	194	7,536	5,421	613	211	798	492	1,567	1,334	782	184	369	NA
1977		15,916	2,498	2,215	358	1,857	199	7,858	5,600	614	236	885	523	1,766	1,380	798	190	392	NA
1978		17,224	2,585	2,329	386	1,943	233	8,356	5,938	643	264	986	526	2,242	1,480	869	195	415	NA
1979		17,907	2,542	2,409	368	2,041	238	8,746	6,213	653	291	1,065	523	2,398	1,574	943	198	434	NA
1980		18,314	2,539	2,524	356	2,168	251	9,037	6,409	643	326	1,139	519	2,443	1,520	871	200	450	NA

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry ^a			Industry FFRDCs ^b		U&C ^c				U&C FFRDCs		Other nonprofit			Nonprofit FFRDCs ^d	
	Funding source:	All sources	Federal	Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total
	1981		18,492	2,571	2,828	314	2,514	262	9,069	6,378	647	350	1,178	516	2,459	1,286	620	201	465
1982		19,221	2,746	3,205	457	2,748	231	9,187	6,270	664	389	1,293	572	2,466	1,370	666	208	496	16
1983		20,624	3,008	3,656	601	3,055	203	9,579	6,403	687	451	1,417	621	2,666	1,498	739	220	539	14
1984		22,306	3,140	4,136	569	3,567	228	10,281	6,837	729	523	1,531	661	2,859	1,647	827	233	588	15
1985		23,951	3,162	4,435	581	3,854	213	11,407	7,479	835	632	1,747	714	2,911	1,802	909	248	645	20
1986		27,255	3,219	6,244	690	5,555	186	12,620	8,137	962	740	2,005	775	3,043	1,923	943	267	713	21
1987		28,536	3,161	6,456	923	5,532	219	13,346	8,533	1,017	794	2,161	842	3,221	2,110	1,043	285	783	22
1988		29,538	3,159	6,215	979	5,235	503	13,948	8,862	1,053	843	2,284	906	3,391	2,286	1,129	303	855	36
1989		31,489	3,321	6,931	1,418	5,512	573	14,700	9,238	1,101	917	2,466	978	3,411	2,488	1,237	320	930	67
1990		31,896	3,212	6,411	1,204	5,208	691	15,410	9,541	1,173	977	2,672	1,047	3,421	2,662	1,312	339	1,012	89
1991		36,302	3,181	9,866	1,673	8,193	617	16,134	9,929	1,220	1,022	2,845	1,118	3,554	2,848	1,386	359	1,103	103
1992		36,068	3,160	8,530	930	7,599	619	16,868	10,529	1,230	1,064	2,878	1,167	3,746	3,058	1,456	385	1,217	87
1993		36,744	3,350	8,216	596	7,620	629	17,445	11,043	1,218	1,088	2,900	1,197	3,775	3,236	1,479	414	1,343	92
1994		37,123	3,189	8,156	546	7,610	630	18,029	11,441	1,241	1,114	3,013	1,220	3,673	3,353	1,423	445	1,485	93
1995		36,315	3,298	6,830	233	6,597	650	18,576	11,815	1,312	1,159	3,079	1,211	3,313	3,555	1,435	479	1,642	93
1996		39,475	3,225	9,024	782	8,242	852	19,306	12,146	1,383	1,242	3,297	1,238	3,136	3,836	1,502	516	1,817	95
1997		43,664	3,247	11,584	1,217	10,367	739	20,878	12,920	1,476	1,390	3,718	1,374	3,159	3,929	1,557	531	1,841	127
1998		41,366	3,511	6,845	1,172	5,673	664	22,647	13,964	1,556	1,538	4,073	1,516	3,111	4,339	1,708	558	2,073	249
1999		44,872	3,857	7,658	1,276	6,381	642	24,228	14,858	1,650	1,637	4,420	1,662	3,186	4,843	1,998	596	2,250	457
2000		48,193	4,243	7,935	1,043	6,892	616	25,830	15,741	1,746	1,690	4,844	1,808	3,239	5,636	2,366	638	2,631	694
2001		52,631	4,696	8,876	831	8,045	609	27,819	17,143	1,833	1,675	5,222	1,947	3,421	6,201	2,716	630	2,855	1,009
2002		55,732	4,892	8,186	963	7,223	580	30,337	19,224	1,918	1,620	5,507	2,068	4,028	6,648	2,793	601	3,254	1,062
2003		58,014	4,955	8,849	1,472	7,377	318	31,894	20,883	1,965	1,527	5,487	2,032	3,980	6,925	2,884	602	3,439	1,093
2004		57,954	4,853	8,095	1,108	6,988	181	33,051	21,853	2,023	1,537	5,571	2,068	3,854	6,815	2,881	597	3,337	1,106
2005		59,686	4,770	8,667	1,108	7,559	136	34,028	22,186	2,042	1,624	5,999	2,177	3,820	7,084	2,903	614	3,568	1,181
2006		59,284	4,568	8,122	1,399	6,723	632	34,520	21,979	2,087	1,735	6,417	2,301	3,239	7,000	2,760	636	3,605	1,203

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Industry ^a					U&C ^c					Other nonprofit			Nonprofit FFRDCs ^d			
	Performer:		Federal		Industry ^a			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 government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total
2007		62,325	4,350	10,608	2,617	7,990	2,126	35,086	21,692	2,225	1,867	6,785	2,517	1,623	7,262	2,663	657	3,941	1,271
2008		64,670	4,565	11,390	1,358	10,032	2,231	35,770	21,643	2,333	1,991	7,099	2,705	1,540	7,841	2,830	665	4,346	1,332
2009		69,234	5,019	13,473	1,221	12,252	2,324	36,948	22,093	2,394	2,136	7,448	2,878	1,647	8,448	3,186	636	4,625	1,375

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

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

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

^b Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^c For 1998 and later years, character-of-work estimation procedure revised and adjustments made to U&C R&D to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years not directly comparable with data for 1997 and earlier years.

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

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

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

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures involve estimates).

R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier.

Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal-year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2009

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

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry				U&C ^c				U&C FFRDCs		Other nonprofit			Nonprofit FFRDCs ^d		
	Performer:	Funding source:		Industry ^a		FFRDCs ^b		Other government ^f		U&C		Total	Total	Federal ^d	Industry	Other nonprofit	Total		
	All sources	Federal	Total	Federal ^b	Industry ^b	Total	Total	Federal	government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total	
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	56,685	6,105	39,176	2,682	36,494	269	6,498	3,196	572	553	1,585	592	1,291	3,155	1,831	258	1,066	190	
2001	64,188	7,052	44,012	3,603	40,409	821	7,061	3,558	602	550	1,713	639	1,405	3,593	2,150	261	1,182	244	
2002	50,688	7,487	28,533	2,452	26,081	1,090	7,760	4,010	647	546	1,859	698	1,663	3,889	2,267	253	1,369	266	
2003	61,135	7,672	37,334	4,473	32,861	1,413	8,644	4,553	731	567	2,038	755	1,600	4,223	2,487	259	1,478	249	
2004	69,183	7,455	45,432	4,775	40,657	1,459	8,976	4,781	759	576	2,087	774	1,481	4,186	2,448	264	1,474	194	
2005	69,588	7,557	45,284	5,289	39,995	1,414	9,077	4,900	721	573	2,115	768	1,637	4,340	2,432	280	1,628	278	
2006	76,277	7,435	51,173	6,140	45,033	1,314	9,440	5,176	710	589	2,182	782	1,827	4,590	2,592	300	1,699	500	
2007	83,069	7,222	57,570	8,945	48,625	1,168	9,849	5,396	740	621	2,256	837	1,354	4,812	2,583	318	1,911	1,094	
2008	74,321	7,316	46,864	5,397	41,467	1,975	10,875	5,980	808	690	2,460	937	855	5,083	2,600	330	2,154	1,352	
2009	71,328	8,006	41,055	7,797	33,258	1,930	11,912	6,577	860	767	2,675	1,033	1,289	5,697	3,062	319	2,317	1,440	
2005 constant \$millions																			
1953	7,977	2,147	4,493	1,782	2,710	NA	826	365	186	40	172	62	294	217	87	68	62	NA	
1954	8,449	2,020	4,991	1,974	3,017	NA	837	365	193	46	172	61	356	245	98	80	67	NA	
1955	9,125	2,008	5,595	2,219	3,376	NA	853	380	195	51	164	63	410	259	109	84	66	NA	
1956	11,236	2,253	7,391	2,763	4,628	NA	851	379	193	58	157	64	458	283	119	82	82	NA	
1957	13,615	2,513	9,421	3,825	5,596	NA	826	355	191	65	153	62	530	324	133	79	113	NA	
1958	15,216	2,847	10,543	4,270	6,273	NA	836	361	195	66	150	63	610	381	166	77	138	NA	
1959	16,029	3,144	10,857	4,433	6,424	NA	911	423	202	68	153	65	657	461	232	82	147	NA	
1960	16,483	3,305	10,912	4,480	6,432	NA	998	500	208	70	155	65	691	578	336	91	151	NA	
1961	16,606	3,552	10,512	4,318	6,195	NA	1,055	550	212	69	157	66	771	715	439	90	186	NA	
1962	19,396	3,717	12,847	5,303	7,543	NA	1,133	622	213	71	160	68	852	847	511	100	236	NA	
1963	20,059	4,199	12,753	5,227	7,526	NA	1,191	662	219	73	168	70	965	950	597	99	254	NA	
1964	21,475	4,838	12,974	5,000	7,975	317	1,306	726	231	69	191	89	1,038	1,002	665	97	240	NA	
1965	21,956	4,988	13,113	4,980	8,133	231	1,524	881	233	65	211	133	1,032	1,069	703	105	261	NA	
1966	22,712	4,940	13,620	4,813	8,807	259	1,713	1,015	230	68	236	164	1,040	1,140	744	117	278	NA	
1967	22,962	5,061	13,413	4,656	8,757	393	1,840	1,125	216	73	255	171	1,066	1,189	786	118	284	NA	
1968	23,338	5,050	13,798	4,343	9,454	395	1,840	1,134	209	73	250	175	1,002	1,254	845	127	282	NA	
1969	23,613	5,322	13,819	3,983	9,836	411	1,805	1,110	208	69	233	184	922	1,333	909	139	286	NA	
1970	23,656	5,486	13,694	3,915	9,779	399	1,853	1,149	210	72	230	191	876	1,349	925	136	288	NA	
1971	22,846	5,307	13,113	3,552	9,561	262	1,954	1,199	237	72	262	184	844	1,365	942	133	290	NA	
1972	23,079	5,384	12,792	3,173	9,619	402	2,322	1,466	279	77	307	193	841	1,338	910	131	297	NA	
1973	23,674	5,433	13,215	3,141	10,074	391	2,577	1,599	312	92	355	219	720	1,337	914	128	295	NA	
1974	23,949	5,388	13,592	2,951	10,641	391	2,588	1,554	313	103	384	233	621	1,369	946	126	297	NA	
1975	24,107	5,696	13,202	2,953	10,249	414	2,783	1,637	338	115	419	274	653	1,360	939	124	298	NA	
1976	25,294	5,828	13,934	2,911	11,023	471	2,936	1,678	359	125	467	307	740	1,385	951	126	309	NA	
1977	25,595	5,511	14,368	2,948	11,420	562	2,981	1,657	356	135	514	319	787	1,386	940	127	318	NA	
1978	26,495	5,549	15,012	2,958	12,054	582	3,086	1,673	374	150	574	316	802	1,465	1,012	128	326	NA	
1979	27,643	5,519	15,939	2,982	12,957	571	3,239	1,811	369	163	601	295	822	1,553	1,097	127	329	NA	
1980	28,722	5,332	17,121	3,403	13,717	576	3,397	1,910	364	185	645	294	881	1,414	959	125	330	NA	

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Industry					U&C						Other nonprofit			Nonprofit FFRDCs ^d		
	Performer:	Federal	Industry ^a		FFRDCs ^b			U&C ^c			FFRDCs			Other nonprofit			FFRDCs ^d		
	Funding source:	All sources	Federal	Total	Federal ^b	Industry ^b	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total
1981		31,267	5,230	19,916	3,910	16,006	571	3,410	1,824	381	206	694	304	808	1,202	749	122	331	130
1982		32,877	5,056	21,576	4,679	16,897	662	3,455	1,816	374	218	725	321	781	1,183	718	124	341	164
1983		35,238	5,193	23,459	5,602	17,857	719	3,673	1,948	373	245	769	337	822	1,238	751	128	359	135
1984		37,564	4,954	25,462	6,152	19,310	915	3,901	2,052	392	281	822	355	918	1,279	768	132	379	135
1985		41,251	5,091	28,623	7,660	20,963	1,023	4,104	2,106	425	321	889	364	941	1,335	795	138	402	133
1986		43,280	5,091	30,397	6,433	23,963	999	4,417	2,213	473	364	986	381	880	1,377	803	145	429	120
1987		43,158	5,197	29,631	6,233	23,397	962	4,970	2,537	514	401	1,092	426	821	1,464	857	151	456	114
1988		44,079	5,019	30,419	5,741	24,678	554	5,642	2,923	563	451	1,221	485	816	1,531	894	156	481	98
1989		46,430	5,130	32,103	6,220	25,883	538	6,024	3,051	600	499	1,342	532	867	1,667	999	161	506	101
1990		48,333	5,058	33,793	8,265	25,529	535	6,102	2,965	627	522	1,428	560	954	1,778	1,080	167	532	113
1991		51,674	5,475	36,133	7,475	28,658	579	6,167	2,985	626	524	1,459	573	1,239	1,964	1,232	172	560	115
1992		49,568	5,667	33,528	5,849	27,680	662	6,379	3,155	626	541	1,463	594	1,229	1,996	1,220	180	596	106
1993		47,661	6,185	31,002	5,491	25,511	556	6,582	3,249	634	566	1,510	623	1,230	1,974	1,150	189	635	131
1994		45,845	6,242	28,781	4,527	24,254	630	6,748	3,310	648	581	1,572	637	1,229	2,077	1,201	198	677	139
1995		50,206	6,074	33,015	3,880	29,134	656	6,940	3,408	685	606	1,608	633	1,288	2,075	1,145	208	722	158
1996		51,957	5,864	34,915	4,381	30,534	278	7,082	3,446	703	631	1,673	629	1,528	2,144	1,155	219	770	147
1997		55,058	5,909	38,353	3,132	35,222	252	6,531	3,016	654	613	1,643	606	1,582	2,278	1,196	242	840	152
1998		54,218	6,017	37,665	3,078	34,587	269	6,077	2,642	615	608	1,611	600	1,604	2,440	1,240	255	946	144
1999		59,938	6,373	42,225	3,247	38,978	316	6,641	3,067	630	625	1,686	634	1,437	2,797	1,498	272	1,027	149
2000		63,890	6,881	44,156	3,023	41,133	303	7,324	3,603	644	624	1,787	667	1,456	3,556	2,064	291	1,201	214
2001		70,748	7,773	48,510	3,971	44,539	905	7,783	3,921	663	606	1,888	704	1,548	3,960	2,370	287	1,303	268
2002		54,979	8,121	30,948	2,660	28,289	1,183	8,417	4,349	702	593	2,016	757	1,804	4,218	2,458	274	1,485	288
2003		64,944	8,149	39,660	4,752	34,908	1,501	9,183	4,837	777	602	2,165	802	1,700	4,486	2,642	275	1,570	264
2004		71,481	7,702	46,941	4,934	42,007	1,508	9,274	4,940	784	595	2,156	800	1,531	4,325	2,529	273	1,523	201
2005		69,588	7,557	45,284	5,289	39,995	1,414	9,077	4,900	721	573	2,115	768	1,637	4,340	2,432	280	1,628	278
2006		73,890	7,202	49,571	5,948	43,623	1,272	9,144	5,014	688	571	2,114	758	1,770	4,446	2,511	290	1,645	484

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Industry ^a					U&C ^c					Other nonprofit			Nonprofit FFRDCs ^d		
	Funding source:	Federal	Industry ^a		FFRDCs ^b		U&C ^c			FFRDCs		Other nonprofit		Other nonprofit	Total			
			Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Total	Total			Federal ^d	Industry	
2007	78,200	6,798	54,196	8,421	45,775	1,100	9,271	5,079	696	584	2,124	788	1,275	4,530	2,431	300	1,799	1,030
2008	68,446	6,738	43,160	4,970	38,189	1,819	10,015	5,507	744	636	2,265	863	787	4,682	2,395	304	1,984	1,245
2009	65,004	7,296	37,415	7,106	30,309	1,758	10,856	5,994	783	699	2,438	942	1,175	5,192	2,790	290	2,111	1,312

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

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

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

^b Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^c For 1998 and later years, character-of-work estimation procedure revised and adjustments made to U&C R&D to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years are not directly comparable with data for 1997 and earlier years.

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

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

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

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures involve estimates). R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal-year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2009

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

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry ^a			Industry FFRDCs ^b			U&C ^c			U&C FFRDCs		Other nonprofit			Nonprofit FFRDCs ^d	
	Funding source:	All sources		Total	Federal ^b	Industry ^b	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total
	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	154,356	9,265	138,807	16,571	122,236	1,208	1,391	710	120	119	321	121	1,640	1,578	727	178	673	467	
2000	169,412	9,377	153,745	13,510	140,235	1,185	1,290	565	125	121	348	130	1,577	1,579	580	195	804	659	
2001	167,817	11,062	149,952	12,542	137,410	647	1,442	673	132	121	376	140	1,717	1,963	874	197	893	1,033	
2002	176,672	11,800	157,788	13,061	144,727	639	1,485	662	142	120	408	153	1,726	2,161	937	191	1,034	1,074	
2003	175,493	12,646	155,060	11,939	143,121	747	1,816	918	161	124	447	166	1,954	2,054	743	195	1,116	1,216	
2004	177,228	12,746	155,034	14,419	140,615	851	2,158	1,237	167	126	458	170	2,447	2,612	1,300	199	1,113	1,379	
2005	195,720	13,994	172,208	15,512	156,696	1,052	2,085	1,168	158	126	464	169	2,360	2,652	1,211	212	1,229	1,369	
2006	212,686	16,089	188,112	16,720	171,392	1,156	1,880	944	156	129	479	172	2,136	2,111	603	226	1,282	1,202	
2007	227,685	18,016	200,429	14,860	185,569	1,738	1,891	913	162	136	495	184	2,488	2,251	568	240	1,443	872	
2008	258,499	17,566	231,449	29,488	201,961	1,948	1,935	861	177	152	540	206	2,239	2,437	562	249	1,626	925	
2009	253,160	17,389	226,554	30,436	196,118	1,967	1,927	756	189	168	587	227	1,872	2,564	575	241	1,749	887	
2005 constant \$millions																			
1953	21,111	3,506	17,036	6,949	10,087	NA	99	53	18	6	16	6	294	176	102	37	37	NA	
1954	22,895	3,293	18,946	8,615	10,331	NA	104	52	21	6	19	6	359	193	107	43	43	NA	
1955	25,256	3,271	21,241	10,762	10,479	NA	127	69	23	9	19	6	416	202	112	48	42	NA	
1956	34,127	3,675	29,636	16,421	13,215	NA	146	79	26	12	21	9	469	201	114	47	41	NA	
1957	37,688	4,104	32,662	20,398	12,264	NA	147	68	30	14	24	11	570	206	116	45	45	NA	
1958	39,798	4,643	34,112	21,749	12,364	NA	152	69	31	17	24	11	662	229	135	44	50	NA	
1959	46,149	5,126	39,845	25,902	13,943	NA	169	85	33	16	25	11	731	278	174	49	55	NA	
1960	50,337	5,391	43,582	27,798	15,784	NA	186	102	34	13	25	11	809	368	261	54	54	NA	
1961	52,799	5,793	45,389	28,432	16,957	NA	199	114	37	11	27	11	901	516	388	53	74	NA	
1962	53,058	6,436	44,725	27,697	17,028	NA	210	118	40	10	30	10	997	690	538	58	94	NA	
1963	59,896	7,604	50,094	31,745	18,348	NA	208	114	41	10	32	10	1,134	856	696	57	104	NA	
1964	63,930	8,588	51,140	31,469	19,671	1,835	248	151	41	10	33	13	1,158	961	813	56	92	NA	
1965	66,343	8,979	53,401	31,216	22,185	1,496	354	241	43	10	39	20	1,037	1,077	916	60	100	NA	
1966	70,733	9,207	57,653	33,435	24,218	1,323	425	298	46	10	47	24	976	1,150	969	68	112	NA	
1967	72,615	9,203	59,389	32,183	27,205	1,430	440	310	40	12	47	31	985	1,167	983	71	114	NA	
1968	73,389	8,650	60,743	32,002	28,740	1,331	461	325	35	18	42	41	1,027	1,177	986	73	118	NA	
1969	73,818	8,727	60,918	30,063	30,855	1,437	474	344	31	22	34	43	1,065	1,197	998	78	121	NA	
1970	69,602	9,285	56,332	25,628	30,703	1,398	461	343	27	21	29	41	1,024	1,102	905	74	123	NA	
1971	68,144	9,684	54,536	24,154	30,382	1,531	384	270	31	16	34	33	1,046	964	760	74	129	NA	
1972	70,372	9,909	56,479	24,528	31,951	1,509	379	235	47	13	51	34	1,093	1,002	800	71	131	NA	
1973	71,842	9,452	58,315	23,552	34,764	1,419	446	251	62	18	71	44	1,051	1,158	952	71	135	NA	
1974	70,126	9,018	56,810	21,369	35,441	1,562	458	243	65	21	80	49	1,047	1,231	1,022	71	138	NA	
1975	67,651	8,610	54,679	20,210	34,470	1,594	465	246	66	24	82	48	1,110	1,193	983	70	140	NA	
1976	70,684	8,374	57,516	21,195	36,321	1,843	513	280	67	32	88	45	1,260	1,179	961	71	147	NA	
1977	73,290	8,445	59,875	21,920	37,955	1,788	673	405	74	38	107	49	1,333	1,177	951	72	153	NA	
1978	76,870	9,100	62,414	21,673	40,742	1,864	923	628	79	36	121	58	1,341	1,228	996	73	159	NA	
1979	80,998	9,012	66,345	22,596	43,749	1,851	1,073	769	78	36	127	63	1,379	1,339	1,103	73	163	NA	
1980	85,372	8,529	70,886	22,947	47,940	1,847	1,084	758	80	41	142	64	1,505	1,520	1,282	72	166	NA	

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry ^a				U&C ^c				Other nonprofit				Nonprofit FFRDCs ^d			
	Funding source:	All sources		Industry ^a		FFRDCs ^b		U&C ^c		FFRDCs		Other nonprofit							
			Total	Federal ^b	Industry ^b	Total	Federal	Other government ^f	Industry	U&C	Total	Federal ^d	Industry	Other nonprofit	Total				
1981		88,665	8,675	73,810	24,492	49,318	1,819	1,087	739	84	45	152	67	1,489	929	689	72	168	856
1982		93,624	9,345	78,383	25,653	52,730	1,785	1,077	717	82	48	159	70	1,344	903	654	73	176	787
1983		100,293	10,600	83,441	26,947	56,494	1,830	1,072	693	82	54	169	74	1,444	1,041	776	76	188	867
1984		111,201	11,843	92,646	29,515	63,131	1,767	1,133	727	86	62	180	78	1,650	1,275	995	79	202	887
1985		121,024	13,009	100,722	32,899	67,822	1,790	1,228	789	93	70	195	80	2,020	1,346	1,046	83	217	909
1986		120,524	13,147	99,894	34,188	65,706	1,819	1,299	816	104	80	216	84	2,389	1,256	932	88	236	719
1987		123,415	12,624	103,126	37,246	65,881	1,899	1,459	924	113	88	240	93	2,578	1,078	731	92	255	650
1988		126,241	13,232	105,023	35,408	69,615	2,111	1,639	1,042	124	99	268	106	2,630	978	608	96	274	627
1989		126,188	13,458	104,614	30,279	74,335	2,047	1,765	1,112	132	110	295	117	2,563	1,122	729	100	293	619
1990		130,286	13,435	108,554	26,269	82,285	1,992	1,949	1,260	138	115	313	123	2,403	1,275	857	104	313	679
1991		127,213	11,741	107,391	23,082	84,310	1,850	2,052	1,353	137	115	320	126	2,055	1,411	966	109	336	713
1992		130,416	11,887	110,501	22,449	88,052	1,793	2,086	1,378	137	119	321	130	1,897	1,470	991	115	364	783
1993		127,460	11,597	108,351	20,560	87,791	1,327	2,173	1,441	139	124	331	137	1,756	1,523	1,006	122	395	734
1994		128,879	11,047	110,039	20,294	89,745	1,497	2,274	1,519	142	128	345	140	1,726	1,579	1,020	129	430	717
1995		138,685	11,359	119,384	21,860	97,524	1,482	2,222	1,447	150	133	353	139	1,982	1,516	912	136	468	740
1996		146,081	10,872	127,410	20,540	106,870	1,634	2,156	1,358	154	138	367	138	1,829	1,494	840	145	510	687
1997		152,179	10,734	133,857	21,431	112,426	1,528	2,020	1,248	143	135	361	133	1,720	1,629	812	183	634	691
1998		169,245	10,775	150,906	21,579	129,328	1,497	1,893	1,139	135	134	354	132	1,786	1,795	889	192	714	593
1999		177,893	10,678	159,974	19,098	140,876	1,392	1,603	819	138	137	370	139	1,890	1,818	838	205	775	538
2000		190,945	10,568	173,287	15,227	158,060	1,336	1,454	637	141	137	392	146	1,778	1,780	653	220	907	743
2001		184,968	12,192	165,278	13,824	151,454	713	1,590	742	146	133	415	155	1,892	2,164	963	217	984	1,139
2002		191,626	12,798	171,144	14,167	156,977	693	1,610	718	154	130	443	166	1,872	2,344	1,016	207	1,121	1,165
2003		186,427	13,434	164,721	12,683	152,038	793	1,929	975	171	132	475	176	2,076	2,182	790	207	1,185	1,292
2004		183,113	13,169	160,182	14,898	145,284	879	2,229	1,278	172	131	473	176	2,529	2,699	1,344	206	1,150	1,425
2005		195,720	13,994	172,208	15,512	156,696	1,052	2,085	1,168	158	126	464	169	2,360	2,652	1,211	212	1,229	1,369
2006		206,029	15,586	182,224	16,197	166,028	1,120	1,821	915	151	125	464	166	2,069	2,045	584	219	1,242	1,164

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2009

Year	All performers		Federal	Industry ^a				U&C ^c				Other nonprofit				Nonprofit FFRDCs ^d			
	Funding source:	All sources		Industry ^a		FFRDCs ^b		U&C ^c		FFRDCs		Other nonprofit							
			Total	Federal ^b	Industry ^e	Total	Total	Federal	Other government ^f	Industry	U&C	Other nonprofit	Total	Total	Federal ^d	Industry	Other nonprofit	Total	
2007		214,339	16,960	188,681	13,989	174,692	1,636	1,780	860	153	128	466	173	2,342	2,119	534	226	1,358	821
2008		238,067	16,178	213,155	27,157	185,998	1,794	1,782	793	163	140	497	189	2,062	2,244	518	229	1,497	852
2009		230,713	15,847	206,467	27,737	178,729	1,792	1,756	689	172	153	535	207	1,706	2,337	524	219	1,594	808

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

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

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

^b Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^c For 1998 and later years, character-of-work estimation procedure revised and adjustments made to U&C R&D to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years not directly comparable with data for 1997 and earlier years.

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

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

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

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures involve estimates). R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal-year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2009

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

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2009

Year	Funding source:		Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All sources	Federal		Industry		U&C	Other	Nonprofit	Industry		Other	U&C	Total	Other		U&C		
		performers	Total	Federal	Industry	FFRDCs ^b	U&C ^c	FFRDCs	nonprofit ^d	FFRDCs ^d	Total	Industry ^e	U&C ^c	nonprofit	U&C ^c	Total	Other nonprofit	U&C ^c	U&C ^c
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		245,007	67,055	17,851	20,496	2,039	16,264	5,652	3,761	993	164,606	161,594	2,082	931	5,619	5,628	3,516	2,112	2,098
2000		267,983	66,936	18,374	17,117	2,001	17,727	5,742	4,510	1,465	186,038	182,844	2,174	1,020	6,232	6,530	4,204	2,326	2,247
2001		279,755	74,983	22,374	16,899	2,020	19,784	6,225	5,488	2,192	188,337	185,118	2,190	1,029	6,827	7,211	4,666	2,546	2,397
2002		278,744	80,056	23,798	16,401	2,263	22,395	7,102	5,778	2,319	180,625	177,467	2,160	998	7,344	8,162	5,404	2,758	2,557
2003		291,239	86,107	24,982	17,798	2,458	25,129	7,301	5,945	2,494	186,076	182,926	2,129	1,020	7,650	8,664	5,831	2,833	2,742
2004		302,503	91,656	24,898	20,266	2,485	27,168	7,659	6,537	2,644	191,266	188,035	2,190	1,041	7,936	8,761	5,816	2,945	2,883
2005		324,993	96,276	26,322	21,909	2,601	28,254	7,817	6,545	2,828	207,680	204,250	2,323	1,107	8,578	9,538	6,425	3,113	2,922
2006		350,162	100,768	28,240	24,304	3,122	28,810	7,306	6,044	2,943	227,057	223,365	2,509	1,182	9,285	10,031	6,702	3,329	3,021
2007		376,960	105,822	29,859	26,585	5,165	29,351	5,567	5,980	3,316	246,679	242,682	2,741	1,257	9,959	11,235	7,541	3,694	3,265
2008		403,040	117,611	29,839	36,360	6,346	30,341	4,766	6,236	3,724	258,626	254,321	3,004	1,301	10,707	12,578	8,498	4,080	3,518
2009		400,458	124,432	30,901	39,573	6,446	31,575	4,968	7,133	3,835	247,357	242,820	3,279	1,258	11,436	13,559	9,141	4,418	3,675
2005 constant \$millions																			
1953		31,931	17,219	6,281	8,849	NA	922	811	356	0	13,902	13,614	127	161	226	340	173	167	244
1954		34,437	18,995	5,902	10,730	NA	1,009	984	371	0	14,559	14,225	144	190	242	368	190	178	273
1955		37,871	21,725	5,865	12,402	742	1,152	1,127	386	51	15,206	14,832	163	211	253	386	193	193	301
1956		49,548	29,018	6,590	17,459	1,941	1,288	1,265	411	64	19,502	19,102	184	216	268	431	222	210	329
1957		55,893	35,159	7,318	22,158	2,296	1,362	1,503	443	79	19,572	19,157	206	209	288	513	288	226	361
1958		60,220	38,477	8,312	24,474	1,782	1,545	1,741	524	99	20,452	20,027	215	210	306	588	342	246	397
1959		68,106	44,535	9,167	28,448	2,279	1,939	1,903	679	120	22,164	21,719	215	229	333	635	365	270	439
1960		73,737	47,944	9,684	30,137	2,565	2,433	2,070	796	258	24,286	23,813	215	258	360	661	366	296	484
1961		77,444	50,431	10,567	30,229	2,951	2,959	2,340	899	487	25,295	24,821	213	261	396	787	457	330	534
1962		82,022	53,182	11,476	31,516	2,235	3,601	2,623	1,049	682	26,876	26,381	212	283	441	936	572	365	588
1963		90,932	60,446	13,280	35,586	2,149	4,352	3,008	1,215	856	28,317	27,821	210	285	498	1,023	618	405	649
1964		97,653	65,251	15,158	37,098	2,367	5,086	3,215	1,278	1,048	30,097	29,609	207	281	580	1,022	573	450	703
1965		101,672	66,236	15,845	36,985	1,873	5,859	3,160	1,436	1,079	32,875	32,356	208	311	683	1,127	623	505	751
1966		107,747	69,147	16,147	38,941	1,733	6,517	3,180	1,604	1,025	35,788	35,226	220	342	803	1,228	674	554	781
1967		110,576	68,974	16,314	37,635	1,985	7,059	3,296	1,620	1,066	38,580	37,985	244	350	945	1,281	687	594	796
1968		112,063	67,985	15,888	37,004	1,885	7,206	3,280	1,654	1,068	40,923	40,294	261	368	1,002	1,315	686	629	838
1969		112,544	65,928	16,409	34,578	2,009	7,029	3,165	1,678	1,061	43,339	42,674	262	403	1,009	1,368	697	671	901
1970		108,038	61,621	17,082	30,045	1,945	6,931	2,988	1,684	946	42,968	42,308	269	391	1,063	1,411	707	703	975
1971		105,561	59,573	17,268	28,102	1,923	6,891	2,877	1,670	842	42,394	41,728	282	384	1,134	1,434	721	713	1,026
1972		107,905	60,219	17,555	28,042	2,057	7,096	2,947	1,770	751	43,984	43,308	297	379	1,170	1,474	743	730	1,059
1973		110,098	59,002	17,204	27,034	1,939	7,144	2,992	2,013	676	47,304	46,612	318	373	1,220	1,499	751	749	1,072
1974		108,784	56,373	16,737	24,692	2,113	7,044	3,020	2,082	685	48,541	47,829	339	373	1,280	1,547	767	779	1,044
1975		106,282	55,220	16,570	23,472	2,166	7,151	3,179	2,011	670	47,148	46,426	352	370	1,286	1,592	781	810	1,037
1976		111,118	57,177	16,597	24,433	2,508	7,380	3,566	2,003	690	49,881	49,131	369	381	1,353	1,668	824	844	1,040
1977		114,802	58,467	16,454	25,226	2,548	7,662	3,887	1,961	728	52,030	51,231	409	390	1,506	1,755	864	891	1,044
1978		120,589	60,429	17,233	25,017	2,678	8,239	4,385	2,054	823	55,584	54,739	449	396	1,681	1,799	900	900	1,097
1979		126,549	62,213	17,073	25,946	2,660	8,793	4,599	2,251	891	59,635	58,747	490	398	1,794	1,807	926	881	1,100
1980		132,407	62,799	16,399	26,706	2,674	9,078	4,829	2,130	982	64,773	63,825	552	397	1,926	1,824	946	877	1,086

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2009

Year	Funding source:																	Other government ^a	
	All sources		Federal					Industry				U&C	Other nonprofit						
	Performer:	All performers	Total	Federal	Industry	FFRDCs ^b	U&C ^c	U&C	Other nonprofit ^d	Nonprofit FFRDCs ^d	Total	Industry ^e	U&C ^c	Other nonprofit	U&C ^c	Total	Other nonprofit		U&C ^c
1981		138,425	64,603	16,476	28,716	2,652	8,941	4,757	2,058	1,003	68,834	67,838	601	395	2,025	1,851	964	887	1,112
1982		145,722	67,013	17,146	30,789	2,678	8,804	4,590	2,038	967	73,435	72,376	655	405	2,177	1,976	1,013	963	1,121
1983		156,156	71,960	18,800	33,150	2,752	9,045	4,931	2,266	1,016	78,580	77,406	750	424	2,355	2,119	1,087	1,032	1,142
1984		171,072	77,753	19,937	36,236	2,910	9,617	5,427	2,590	1,038	87,318	86,008	866	444	2,533	2,261	1,168	1,093	1,206
1985		186,227	85,490	21,263	41,141	3,026	10,374	5,872	2,751	1,063	94,131	92,639	1,023	469	2,831	2,422	1,264	1,158	1,354
1986		191,059	86,788	21,457	41,311	3,005	11,166	6,312	2,678	860	96,907	95,224	1,184	499	3,207	2,618	1,378	1,239	1,540
1987		195,108	90,497	20,981	44,403	3,080	11,994	6,620	2,632	786	96,621	94,810	1,283	528	3,493	2,854	1,493	1,361	1,644
1988		199,858	89,764	21,410	42,128	3,168	12,828	6,838	2,631	761	101,476	99,528	1,393	555	3,772	3,107	1,610	1,497	1,739
1989		204,107	86,979	21,909	37,917	3,157	13,402	6,841	2,966	787	107,837	105,730	1,526	582	4,103	3,356	1,729	1,627	1,833
1990		210,515	85,332	21,705	35,737	3,217	13,766	6,778	3,249	881	115,246	113,022	1,614	610	4,413	3,586	1,856	1,730	1,938
1991		215,189	81,304	20,398	32,230	3,046	14,268	6,849	3,583	931	123,462	121,161	1,661	641	4,625	3,815	1,999	1,816	1,983
1992		216,053	79,593	20,714	29,228	3,075	15,062	6,872	3,666	977	125,736	123,331	1,724	681	4,663	4,068	2,177	1,891	1,993
1993		211,865	77,377	21,132	26,646	2,512	15,733	6,761	3,635	958	123,426	120,922	1,779	725	4,741	4,331	2,374	1,957	1,990
1994		211,847	76,093	20,477	25,367	2,757	16,270	6,628	3,645	949	124,204	121,608	1,823	772	4,930	4,589	2,592	1,996	2,031
1995		225,206	77,228	20,731	25,974	2,788	16,670	6,583	3,492	991	135,976	133,255	1,898	823	5,041	4,814	2,831	1,983	2,148
1996		237,513	76,297	19,960	25,703	2,765	16,951	6,493	3,497	929	148,536	145,646	2,012	879	5,338	5,102	3,097	2,004	2,240
1997		250,901	76,368	19,891	25,779	2,519	17,183	6,461	3,565	971	161,109	158,015	2,138	956	5,722	5,428	3,316	2,113	2,273
1998		264,829	77,632	20,304	25,828	2,430	17,745	6,501	3,837	986	172,873	169,588	2,280	1,005	6,038	5,981	3,733	2,247	2,306
1999		282,368	77,280	20,573	23,621	2,350	18,744	6,514	4,334	1,144	189,707	186,235	2,399	1,073	6,476	6,486	4,052	2,434	2,418
2000		302,045	75,444	20,710	19,293	2,255	19,980	6,472	5,083	1,651	209,685	206,085	2,450	1,149	7,024	7,361	4,739	2,622	2,532
2001		308,347	82,647	24,661	18,626	2,227	21,806	6,862	6,049	2,416	207,586	204,038	2,414	1,134	7,525	7,948	5,142	2,806	2,642
2002		302,337	86,832	25,812	17,789	2,455	24,291	7,703	6,267	2,515	195,914	192,488	2,343	1,083	7,965	8,853	5,861	2,992	2,774
2003		309,385	91,472	26,539	18,907	2,611	26,695	7,756	6,315	2,649	197,669	194,323	2,262	1,084	8,127	9,204	6,194	3,009	2,913
2004		312,548	94,700	25,724	20,939	2,568	28,070	7,913	6,754	2,732	197,617	194,279	2,262	1,076	8,200	9,052	6,009	3,043	2,979
2005		324,993	96,276	26,322	21,909	2,601	28,254	7,817	6,545	2,828	207,680	204,250	2,323	1,107	8,578	9,538	6,425	3,113	2,922
2006		339,202	97,614	27,356	23,543	3,024	27,908	7,078	5,854	2,851	219,950	216,374	2,431	1,145	8,995	9,717	6,492	3,225	2,926

TABLE 6. U.S. research and development expenditures, by source of funds and performing sector: 1953–2009

Year	Funding source:		Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All sources	All		Industry		U&C	Other	Nonprofit	Total	Industry ^e		Other	U&C ^c	Total	Other		U&C ^c	
		performers	Total	Federal	Industry	FFRDCs ^b	U&C ^c	FFRDCs	nonprofit ^d		FFRDCs ^d	Industry ^e	U&C ^c			nonprofit	U&C ^c		nonprofit
2007		354,864	99,619	28,109	25,027	4,862	27,631	5,241	5,629	3,121	232,220	228,457	2,580	1,183	9,375	10,576	7,099	3,478	3,074
2008		371,184	108,315	27,480	33,486	5,844	27,943	4,389	5,743	3,429	238,184	234,219	2,767	1,198	9,861	11,584	7,827	3,757	3,240
2009		364,951	113,399	28,161	36,064	5,875	28,775	4,528	6,501	3,495	225,425	221,290	2,988	1,146	10,422	12,356	8,330	4,026	3,349

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

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

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

^b Federal support for industry in 1953–54 did not separate federal support for industry and for industry FFRDCs; thus, figure for federal support to industry includes support to FFRDCs for those years.

^c Adjustments made to U&C R&D for 1998 and later years to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years are not directly comparable with data for 1997 and earlier years. For FY 1998, \$479 million in total pass-through funds and \$421 million in federal pass-through funds reported. For FY 2009, \$1,873 million in total pass-through funds and \$1,660 million in federal pass-through funds estimated.

^d Federal support for nonprofit FFRDCs in 1953–54 did not separate federal support for other nonprofits and for nonprofit FFRDCs; thus, figures for federal support to other nonprofit institutions include support to FFRDCs for those years.

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

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures involve estimates). R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal-year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2009

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

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2009

Year	Funding source:										Other government ^a								
	All sources		Federal					Industry			U&C	Other nonprofit		Other government ^a					
	Performer:	All performers	Total Federal	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs	Other nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Total nonprofit	U&C ^d	U&C ^d		
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		42,759	24,791	3,765	925	547	13,966	2,874	2,099	616	8,181	6,115	1,499	566	4,298	3,939	2,334	1,604	1,550
2001		47,751	27,603	4,260	754	552	15,553	3,104	2,464	915	9,390	7,299	1,519	571	4,737	4,357	2,590	1,767	1,663
2002		51,383	30,924	4,511	888	534	17,724	3,714	2,575	979	8,707	6,659	1,494	554	5,077	4,907	3,000	1,907	1,768
2003		54,611	33,497	4,664	1,386	299	19,658	3,747	2,714	1,029	8,948	6,944	1,438	567	5,165	5,150	3,238	1,913	1,850
2004		56,092	34,683	4,697	1,072	175	21,150	3,730	2,788	1,070	8,829	6,763	1,488	578	5,392	5,231	3,229	2,001	1,958
2005		59,686	36,103	4,770	1,108	136	22,186	3,820	2,903	1,181	9,798	7,559	1,624	614	5,999	5,744	3,568	2,177	2,042
2006		61,199	36,936	4,716	1,444	652	22,690	3,344	2,849	1,242	9,387	6,940	1,791	656	6,624	6,097	3,721	2,376	2,155
2007		66,206	38,605	4,621	2,780	2,258	23,043	1,724	2,829	1,350	11,169	8,488	1,983	698	7,207	6,861	4,187	2,674	2,363
2008		70,220	38,547	4,957	1,475	2,423	23,500	1,672	3,073	1,447	13,777	10,893	2,162	722	7,708	7,655	4,719	2,937	2,533
2009		75,969	40,451	5,507	1,340	2,550	24,242	1,808	3,496	1,508	16,486	13,444	2,344	698	8,173	8,233	5,075	3,158	2,627

2005 constant \$millions

1953		2,843	1,640	628	118	NA	504	223	167	NA	953	817	80	56	37	173	74	99	40
1954		3,118	1,781	589	141	NA	592	270	190	NA	1,036	877	92	67	52	190	80	110	59
1955		3,491	1,972	588	163	NA	702	301	217	NA	1,158	977	102	78	70	208	84	124	84
1956		4,185	2,288	662	216	NA	831	338	242	NA	1,460	1,259	114	87	90	236	99	137	111
1957		4,589	2,547	699	231	NA	939	403	274	NA	1,509	1,297	127	85	111	282	130	152	140
1958		5,205	2,965	822	237	NA	1,114	469	323	NA	1,611	1,390	132	88	132	326	154	171	171
1959		5,927	3,629	897	393	NA	1,431	515	393	NA	1,581	1,352	131	98	155	357	164	194	205
1960		6,916	4,270	987	425	NA	1,831	570	457	NA	1,842	1,597	132	113	180	382	161	220	242
1961		8,037	5,171	1,220	431	NA	2,294	667	558	NA	1,920	1,670	133	117	212	449	197	253	285
1962		9,568	6,389	1,322	750	NA	2,862	774	682	NA	2,067	1,810	131	126	251	527	241	286	334
1963		10,978	7,503	1,477	763	NA	3,576	908	779	NA	2,203	1,946	127	130	299	584	260	324	389
1964		12,248	8,655	1,733	629	215	4,210	1,020	849	NA	2,219	1,963	128	128	356	588	240	348	431
1965		13,374	9,539	1,880	788	146	4,737	1,092	896	NA	2,317	2,038	133	146	432	612	261	351	474
1966		14,303	10,129	2,001	693	151	5,204	1,164	915	NA	2,499	2,202	142	156	520	649	283	366	505
1967		15,002	10,796	2,053	796	161	5,624	1,246	916	NA	2,342	2,022	159	161	642	682	289	393	539
1968		15,338	10,897	2,190	659	159	5,747	1,252	890	NA	2,437	2,099	170	168	710	700	286	413	594
1969		15,112	10,636	2,360	533	160	5,574	1,178	831	NA	2,340	1,983	171	186	741	734	290	444	662
1970		14,780	10,287	2,311	502	148	5,439	1,088	800	NA	2,184	1,826	177	181	805	767	296	471	738
1971		14,571	10,022	2,276	396	129	5,423	987	811	NA	2,156	1,786	194	176	838	797	302	495	758
1972		14,455	9,970	2,262	342	146	5,395	1,014	811	NA	2,121	1,738	206	176	811	818	315	503	734
1973		14,582	10,127	2,319	341	128	5,295	1,220	823	NA	2,157	1,775	208	174	794	806	320	486	698
1974		14,709	10,260	2,331	372	160	5,247	1,352	799	NA	2,139	1,748	215	176	816	830	333	497	665

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2009

Year	Funding source:		Federal								Industry				U&C	Other nonprofit		Other government ^a	
	Performer:	All sources	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	U&C ^d	Total nonprofit	U&C ^d	U&C ^d	
		All performers																	
1975		14,524	10,176	2,264	310	158	5,268	1,417	760	NA	2,097	1,707	213	177	785	833	344	489	633
1976		15,140	10,687	2,395	327	194	5,421	1,567	782	NA	2,182	1,786	211	184	798	860	369	492	613
1977		15,916	11,218	2,498	358	199	5,600	1,766	798	NA	2,283	1,857	236	190	885	916	392	523	614
1978		17,224	12,253	2,585	386	233	5,938	2,242	869	NA	2,402	1,943	264	195	986	941	415	526	643
1979		17,907	12,702	2,542	368	238	6,213	2,398	943	NA	2,530	2,041	291	198	1,065	957	434	523	653
1980		18,314	12,869	2,539	356	251	6,409	2,443	871	NA	2,694	2,168	326	200	1,139	969	450	519	643
1981		18,492	12,621	2,571	314	262	6,378	2,459	620	17	3,065	2,514	350	201	1,178	981	465	516	647
1982		19,221	12,851	2,746	457	231	6,270	2,466	666	16	3,345	2,748	389	208	1,293	1,067	496	572	664
1983		20,624	13,634	3,008	601	203	6,403	2,666	739	14	3,726	3,055	451	220	1,417	1,160	539	621	687
1984		22,306	14,475	3,140	569	228	6,837	2,859	827	15	4,323	3,567	523	233	1,531	1,248	588	661	729
1985		23,951	15,277	3,162	581	213	7,479	2,911	909	20	4,734	3,854	632	248	1,747	1,359	645	714	835
1986		27,255	16,238	3,219	690	186	8,137	3,043	943	21	6,562	5,555	740	267	2,005	1,487	713	775	962
1987		28,536	17,123	3,161	923	219	8,533	3,221	1,043	22	6,611	5,532	794	285	2,161	1,624	783	842	1,017
1988		29,538	18,059	3,159	979	503	8,862	3,391	1,129	36	6,381	5,235	843	303	2,284	1,761	855	906	1,053
1989		31,489	19,265	3,321	1,418	573	9,238	3,411	1,237	67	6,749	5,512	917	320	2,466	1,908	930	978	1,101
1990		31,896	19,469	3,212	1,204	691	9,541	3,421	1,312	89	6,524	5,208	977	339	2,672	2,059	1,012	1,047	1,173
1991		36,302	20,443	3,181	1,673	617	9,929	3,554	1,386	103	9,574	8,193	1,022	359	2,845	2,221	1,103	1,118	1,220
1992		36,068	20,528	3,160	930	619	10,529	3,746	1,456	87	9,049	7,599	1,064	385	2,878	2,384	1,217	1,167	1,230
1993		36,744	20,964	3,350	596	629	11,043	3,775	1,479	92	9,122	7,620	1,088	414	2,900	2,540	1,343	1,197	1,218
1994		37,123	20,996	3,189	546	630	11,441	3,673	1,423	93	9,169	7,610	1,114	445	3,013	2,705	1,485	1,220	1,241
1995		36,315	20,837	3,298	233	650	11,815	3,313	1,435	93	8,235	6,597	1,159	479	3,079	2,853	1,642	1,211	1,312
1996		39,475	21,739	3,225	782	852	12,146	3,136	1,502	95	10,000	8,242	1,242	516	3,297	3,055	1,817	1,238	1,383
1997		43,664	22,967	3,247	1,217	739	12,920	3,159	1,557	127	12,288	10,367	1,390	531	3,718	3,215	1,841	1,374	1,476
1998		41,366	24,380	3,511	1,172	664	13,964	3,111	1,708	249	7,769	5,673	1,538	558	4,073	3,589	2,073	1,516	1,556
1999		44,872	26,276	3,857	1,276	642	14,858	3,186	1,998	457	8,614	6,381	1,637	596	4,420	3,911	2,250	1,662	1,650
2000		48,193	27,943	4,243	1,043	616	15,741	3,239	2,366	694	9,221	6,892	1,690	638	4,844	4,439	2,631	1,808	1,746
2001		52,631	30,424	4,696	831	609	17,143	3,421	2,716	1,009	10,349	8,045	1,675	630	5,222	4,803	2,855	1,947	1,833
2002		55,732	33,542	4,892	963	580	19,224	4,028	2,793	1,062	9,444	7,223	1,620	601	5,507	5,323	3,254	2,068	1,918
2003		58,014	35,584	4,955	1,472	318	20,883	3,980	2,884	1,093	9,506	7,377	1,527	602	5,487	5,471	3,439	2,032	1,965
2004		57,954	35,835	4,853	1,108	181	21,853	3,854	2,881	1,106	9,122	6,988	1,537	597	5,571	5,404	3,337	2,068	2,023
2005		59,686	36,103	4,770	1,108	136	22,186	3,820	2,903	1,181	9,798	7,559	1,624	614	5,999	5,744	3,568	2,177	2,042
2006		59,284	35,780	4,568	1,399	632	21,979	3,239	2,760	1,203	9,093	6,723	1,735	636	6,417	5,906	3,605	2,301	2,087

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2009

Year	Funding source:	All sources										U&C		Other nonprofit		Other government ^a			
	Performer:	All performers	Federal		Industry				U&C				Other nonprofit		Other government ^a				
			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	U&C ^d	U&C ^d				
2007		62,325	36,342	4,350	2,617	2,126	21,692	1,623	2,663	1,271	10,514	7,990	1,867	657	6,785	6,459	3,941	2,517	2,225
2008		64,670	35,500	4,565	1,358	2,231	21,643	1,540	2,830	1,332	12,688	10,032	1,991	665	7,099	7,050	4,346	2,705	2,333
2009		69,234	36,864	5,019	1,221	2,324	22,093	1,647	3,186	1,375	15,024	12,252	2,136	636	7,448	7,503	4,625	2,878	2,394

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

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

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

^b Character-of-work estimates for industry revised for 1998 and later years; data are not directly comparable with data for 1997 and earlier years. Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^c Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^d For 1998 and later years, character-of-work estimation procedure revised and adjustments made to U&C R&D to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years not directly comparable with data for 1997 and earlier years.

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

^f Industry sources of funds for industry R&D expenditures include all nonfederal sources of funds for industry R&D expenditures. Character-of-work estimates for industry revised for 1998 and later years; data not directly comparable with data for 1997 and earlier years.

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures involve estimates). R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal-year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2009

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

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2009

Year	Funding	All sources										Industry				U&C	Other nonprofit		Other government ^a
	source:	All performers		Federal		Industry		U&C	Other nonprofit	Nonprofit	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Total	Other nonprofit	U&C ^d	U&C ^d
	Performer:	Total	Federal	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs	nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Total	Other nonprofit	U&C ^d	U&C ^d	
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		56,685	15,565	6,105	2,682	269	3,196	1,291	1,831	190	37,306	36,494	553	258	1,585	1,657	1,066	592	572
2001		64,188	18,832	7,052	3,603	821	3,558	1,405	2,150	244	41,220	40,409	550	261	1,713	1,821	1,182	639	602
2002		50,688	19,235	7,487	2,452	1,090	4,010	1,663	2,267	266	26,880	26,081	546	253	1,859	2,067	1,369	698	647
2003		61,135	22,447	7,672	4,473	1,413	4,553	1,600	2,487	249	33,687	32,861	567	259	2,038	2,232	1,478	755	731
2004		69,183	22,594	7,455	4,775	1,459	4,781	1,481	2,448	194	41,496	40,657	576	264	2,087	2,248	1,474	774	759
2005		69,588	23,507	7,557	5,289	1,414	4,900	1,637	2,432	278	40,848	39,995	573	280	2,115	2,396	1,628	768	721
2006		76,277	24,983	7,435	6,140	1,314	5,176	1,827	2,592	500	45,922	45,033	589	300	2,182	2,481	1,699	782	710
2007		83,069	27,761	7,222	8,945	1,168	5,396	1,354	2,583	1,094	49,564	48,625	621	318	2,256	2,748	1,911	837	740
2008		74,321	25,475	7,316	5,397	1,975	5,980	855	2,600	1,352	42,487	41,467	690	330	2,460	3,091	2,154	937	808
2009		71,328	30,100	8,006	7,797	1,930	6,577	1,289	3,062	1,440	34,344	33,258	767	319	2,675	3,350	2,317	1,033	860
2005 constant \$millions																			
1953		7,977	4,675	2,147	1,782	NA	365	294	87	NA	2,819	2,710	40	68	172	124	62	62	186
1954		8,449	4,813	2,020	1,974	NA	365	356	98	NA	3,142	3,017	46	80	172	129	67	61	193
1955		9,125	5,125	2,008	2,219	NA	380	410	109	NA	3,512	3,376	51	84	164	130	66	63	195
1956		11,236	5,972	2,253	2,763	NA	379	458	119	NA	4,768	4,628	58	82	157	146	82	64	193
1957		13,615	7,356	2,513	3,825	NA	355	530	133	NA	5,740	5,596	65	79	153	175	113	62	191
1958		15,216	8,254	2,847	4,270	NA	361	610	166	NA	6,416	6,273	66	77	150	201	138	63	195
1959		16,029	8,888	3,144	4,433	NA	423	657	232	NA	6,574	6,424	68	82	153	213	147	65	202
1960		16,483	9,312	3,305	4,480	NA	500	691	336	NA	6,593	6,432	70	91	155	215	151	65	208
1961		16,606	9,630	3,552	4,318	NA	550	771	439	NA	6,354	6,195	69	90	157	253	186	66	212
1962		19,396	11,005	3,717	5,303	NA	622	852	511	NA	7,714	7,543	71	100	160	304	236	68	213
1963		20,059	11,650	4,199	5,227	NA	662	965	597	NA	7,698	7,526	73	99	168	324	254	70	219
1964		21,475	12,583	4,838	5,000	317	726	1,038	665	NA	8,141	7,975	69	97	191	330	240	89	231
1965		21,956	12,814	4,988	4,980	231	881	1,032	703	NA	8,304	8,133	65	105	211	394	261	133	233
1966		22,712	12,812	4,940	4,813	259	1,015	1,040	744	NA	8,992	8,807	68	117	236	442	278	164	230
1967		22,962	13,086	5,061	4,656	393	1,125	1,066	786	NA	8,949	8,757	73	118	255	455	284	171	216
1968		23,338	12,769	5,050	4,343	395	1,134	1,002	845	NA	9,654	9,454	73	127	250	457	282	175	209
1969		23,613	12,658	5,322	3,983	411	1,110	922	909	NA	10,044	9,836	69	139	233	470	286	184	208
1970		23,656	12,750	5,486	3,915	399	1,149	876	925	NA	9,987	9,779	72	136	230	479	288	191	210
1971		22,846	12,106	5,307	3,552	262	1,199	844	942	NA	9,766	9,561	72	133	262	474	290	184	237
1972		23,079	12,176	5,384	3,173	402	1,466	841	910	NA	9,827	9,619	77	131	307	490	297	193	279
1973		23,674	12,199	5,433	3,141	391	1,599	720	914	NA	10,294	10,074	92	128	355	514	295	219	312
1974		23,949	11,851	5,388	2,951	391	1,554	621	946	NA	10,870	10,641	103	126	384	530	297	233	313
1975		24,107	12,291	5,696	2,953	414	1,637	653	939	NA	10,488	10,249	115	124	419	572	298	274	338
1976		25,294	12,578	5,828	2,911	471	1,678	740	951	NA	11,274	11,023	125	126	467	616	309	307	359
1977		25,595	12,406	5,511	2,948	562	1,657	787	940	NA	11,682	11,420	135	127	514	637	318	319	356
1978		26,495	12,575	5,549	2,958	582	1,673	802	1,012	NA	12,332	12,054	150	128	574	641	326	316	374
1979		27,643	12,802	5,519	2,982	571	1,811	822	1,097	NA	13,247	12,957	163	127	601	624	329	295	369
1980		28,722	13,062	5,332	3,403	576	1,910	881	959	NA	14,027	13,717	185	125	645	624	330	294	364

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2009

Year	Funding	All										Industry				U&C	Other nonprofit		Other government ^a	
	source:	All		Federal		Industry		U&C	Other	Nonprofit	Industry		Other	U&C	Other nonprofit		Other government ^a			
	Performer:	performers	Total	Federal	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs	nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Total	Other nonprofit	U&C ^d	U&C ^d	
1981		31,267	13,222	5,230	3,910	571	1,824	808	749	130	16,334	16,006	206	122	694	635	331	304	381	
1982		32,877	13,876	5,056	4,679	662	1,816	781	718	164	17,239	16,897	218	124	725	662	341	321	374	
1983		35,238	15,170	5,193	5,602	719	1,948	822	751	135	18,230	17,857	245	128	769	696	359	337	373	
1984		37,564	15,894	4,954	6,152	915	2,052	918	768	135	19,723	19,310	281	132	822	733	379	355	392	
1985		41,251	17,750	5,091	7,660	1,023	2,106	941	795	133	21,422	20,963	321	138	889	766	402	364	425	
1986		43,280	16,539	5,091	6,433	999	2,213	880	803	120	24,472	23,963	364	145	986	810	429	381	473	
1987		43,158	16,721	5,197	6,233	962	2,537	821	857	114	23,949	23,397	401	151	1,092	882	456	426	514	
1988		44,079	16,045	5,019	5,741	554	2,923	816	894	98	25,285	24,678	451	156	1,221	966	481	485	563	
1989		46,430	16,907	5,130	6,220	538	3,051	867	999	101	26,543	25,883	499	161	1,342	1,038	506	532	600	
1990		48,333	18,968	5,058	8,265	535	2,965	954	1,080	113	26,218	25,529	522	167	1,428	1,092	532	560	627	
1991		51,674	19,101	5,475	7,475	579	2,985	1,239	1,232	115	29,355	28,658	524	172	1,459	1,133	560	573	626	
1992		49,568	17,888	5,667	5,849	662	3,155	1,229	1,220	106	28,402	27,680	541	180	1,463	1,190	596	594	626	
1993		47,661	17,992	6,185	5,491	556	3,249	1,230	1,150	131	26,267	25,511	566	189	1,510	1,258	635	623	634	
1994		45,845	17,278	6,242	4,527	630	3,310	1,229	1,201	139	25,034	24,254	581	198	1,572	1,314	677	637	648	
1995		50,206	16,610	6,074	3,880	656	3,408	1,288	1,145	158	29,948	29,134	606	208	1,608	1,354	722	633	685	
1996		51,957	16,799	5,864	4,381	278	3,446	1,528	1,155	147	31,383	30,534	631	219	1,673	1,399	770	629	703	
1997		55,058	15,238	5,909	3,132	252	3,016	1,582	1,196	152	36,077	35,222	613	242	1,643	1,446	840	606	654	
1998		54,218	14,995	6,017	3,078	269	2,642	1,604	1,240	144	35,450	34,587	608	255	1,611	1,546	946	600	615	
1999		59,938	16,087	6,373	3,247	316	3,067	1,437	1,498	149	39,875	38,978	625	272	1,686	1,660	1,027	634	630	
2000		63,890	17,543	6,881	3,023	303	3,603	1,456	2,064	214	42,047	41,133	624	291	1,787	1,868	1,201	667	644	
2001		70,748	20,757	7,773	3,971	905	3,921	1,548	2,370	268	45,432	44,539	606	287	1,888	2,007	1,303	704	663	
2002		54,979	20,863	8,121	2,660	1,183	4,349	1,804	2,458	288	29,156	28,289	593	274	2,016	2,242	1,485	757	702	
2003		64,944	23,845	8,149	4,752	1,501	4,837	1,700	2,642	264	35,785	34,908	602	275	2,165	2,371	1,570	802	777	
2004		71,481	23,344	7,702	4,934	1,508	4,940	1,531	2,529	201	42,874	42,007	595	273	2,156	2,323	1,523	800	784	
2005		69,588	23,507	7,557	5,289	1,414	4,900	1,637	2,432	278	40,848	39,995	573	280	2,115	2,396	1,628	768	721	
2006		73,890	24,201	7,202	5,948	1,272	5,014	1,770	2,511	484	44,485	43,623	571	290	2,114	2,403	1,645	758	688	

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2009

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	FFRDCs	Other nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Total	Other nonprofit	U&C ^d	
2007		78,200	26,134	6,798	8,421	1,100	5,079	1,275	2,431	1,030	46,659	45,775	584	300	2,124	2,587	1,799	788	696
2008		68,446	23,461	6,738	4,970	1,819	5,507	787	2,395	1,245	39,129	38,189	636	304	2,265	2,847	1,984	863	744
2009		65,004	27,431	7,296	7,106	1,758	5,994	1,175	2,790	1,312	31,299	30,309	699	290	2,438	3,053	2,111	942	783

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

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

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

^b Character-of-work estimates for industry revised for 1998 and later years; data not directly comparable with data for 1997 and earlier years. Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^c Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^d For 1998 and later years, character-of-work estimation procedure revised and adjustments made to U&C R&D to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years not directly comparable with data for 1997 and earlier years.

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

^f Industry sources of funds for industry R&D expenditures include all nonfederal sources of funds for industry R&D expenditures. Character-of-work estimates for industry revised for 1998 and later years; data not directly comparable with data for 1997 and earlier years.

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures involve estimates). R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2009

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

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2009

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	FFRDCs	U&C	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Total	Other nonprofit	U&C ^d	U&C ^d
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		154,356	30,588	9,265	16,571	1,208	710	1,640	727	467	122,533	122,236	119	178	321	793	673	121	120	
2000		169,412	27,452	9,377	13,510	1,185	565	1,577	580	659	140,552	140,235	121	195	348	934	804	130	125	
2001		167,817	28,548	11,062	12,542	647	673	1,717	874	1,033	137,728	137,410	121	197	376	1,033	893	140	132	
2002		176,672	29,897	11,800	13,061	639	662	1,726	937	1,074	145,038	144,727	120	191	408	1,187	1,034	153	142	
2003		175,493	30,163	12,646	11,939	747	918	1,954	743	1,216	143,441	143,121	124	195	447	1,281	1,116	166	161	
2004		177,228	34,380	12,746	14,419	851	1,237	2,447	1,300	1,379	140,941	140,615	126	199	458	1,283	1,113	170	167	
2005		195,720	36,666	13,994	15,512	1,052	1,168	2,360	1,211	1,369	157,034	156,696	126	212	464	1,398	1,229	169	158	
2006		212,686	38,849	16,089	16,720	1,156	944	2,136	603	1,202	171,748	171,392	129	226	479	1,454	1,282	172	156	
2007		227,685	39,456	18,016	14,860	1,738	913	2,488	568	872	185,946	185,569	136	240	495	1,626	1,443	184	162	
2008		258,499	53,589	17,566	29,488	1,948	861	2,239	562	925	202,361	201,961	152	249	540	1,832	1,626	206	177	
2009		253,160	53,881	17,389	30,436	1,967	756	1,872	575	887	196,527	196,118	168	241	587	1,976	1,749	227	189	
2005 constant \$millions																				
1953		21,111	10,904	3,506	6,949	NA	53	294	102	NA	10,130	10,087	6	37	16	43	37	6	18	
1954		22,895	12,425	3,293	8,615	NA	52	359	107	NA	10,381	10,331	6	43	19	49	43	6	21	
1955		25,256	14,630	3,271	10,762	NA	69	416	112	NA	10,536	10,479	9	48	19	48	42	6	23	
1956		34,127	20,758	3,675	16,421	NA	79	469	114	NA	13,273	13,215	12	47	21	50	41	9	26	
1957		37,688	25,255	4,104	20,398	NA	68	570	116	NA	12,323	12,264	14	45	24	56	45	11	30	
1958		39,798	27,257	4,643	21,749	NA	69	662	135	NA	12,425	12,364	17	44	24	61	50	11	31	
1959		46,149	32,017	5,126	25,902	NA	85	731	174	NA	14,009	13,943	16	49	25	65	55	11	33	
1960		50,337	34,362	5,391	27,798	NA	102	809	261	NA	15,851	15,784	13	54	25	65	54	11	34	
1961		52,799	35,629	5,793	28,432	NA	114	901	388	NA	17,021	16,957	11	53	27	85	74	11	37	
1962		53,058	35,786	6,436	27,697	NA	118	997	538	NA	17,096	17,028	10	58	30	105	94	10	40	
1963		59,896	41,293	7,604	31,745	NA	114	1,134	696	NA	18,416	18,348	10	57	32	114	104	10	41	
1964		63,930	44,014	8,588	31,469	1,835	151	1,158	813	NA	19,737	19,671	10	56	33	105	92	13	41	
1965		66,343	43,885	8,979	31,216	1,496	241	1,037	916	NA	22,255	22,185	10	60	39	120	100	20	43	
1966		70,733	46,208	9,207	33,435	1,323	298	976	969	NA	24,296	24,218	10	68	47	137	112	24	46	
1967		72,615	45,094	9,203	32,183	1,430	310	985	983	NA	27,288	27,205	12	71	47	144	114	31	40	
1968		73,389	44,321	8,650	32,002	1,331	325	1,027	986	NA	28,831	28,740	18	73	42	159	118	41	35	
1969		73,818	42,634	8,727	30,063	1,437	344	1,065	998	NA	30,955	30,855	22	78	34	165	121	43	31	
1970		69,602	38,584	9,285	25,628	1,398	343	1,024	905	NA	30,798	30,703	21	74	29	164	123	41	27	
1971		68,144	37,446	9,684	24,154	1,531	270	1,046	760	NA	30,472	30,382	16	74	34	163	129	33	31	
1972		70,372	38,073	9,909	24,528	1,509	235	1,093	800	NA	32,035	31,951	13	71	51	165	131	34	47	
1973		71,842	36,676	9,452	23,552	1,419	251	1,051	952	NA	34,853	34,764	18	71	71	180	135	44	62	
1974		70,126	34,262	9,018	21,369	1,562	243	1,047	1,022	NA	35,533	35,441	21	71	80	187	138	49	65	
1975		67,651	32,753	8,610	20,210	1,594	246	1,110	983	NA	34,563	34,470	24	70	82	187	140	48	66	
1976		70,684	33,913	8,374	21,195	1,843	280	1,260	961	NA	36,425	36,321	32	71	88	192	147	45	67	
1977		73,290	34,843	8,445	21,920	1,788	405	1,333	951	NA	38,066	37,955	38	72	107	202	153	49	74	
1978		76,870	35,601	9,100	21,673	1,864	628	1,341	996	NA	40,851	40,742	36	73	121	217	159	58	79	
1979		80,998	36,709	9,012	22,596	1,851	769	1,379	1,103	NA	43,858	43,749	36	73	127	226	163	63	78	
1980		85,372	36,868	8,529	22,947	1,847	758	1,505	1,282	NA	48,053	47,940	41	72	142	230	166	64	80	

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2009

Year	Funding	All	Federal								Industry				U&C	Other nonprofit			Other
	source:	sources	Federal		Industry		U&C		Other nonprofit		Industry		U&C	Other nonprofit		Other			
	Performer:	All performers	Total	Industry ^b	FFRDCs ^c	U&C ^d	FFRDCs ^c	U&C ^d	Other nonprofit ^e	FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Total	Other nonprofit	U&C ^d	
1981		88,665	38,760	8,675	24,492	1,819	739	1,489	689	856	49,434	49,318	45	72	152	235	168	67	84
1982		93,624	40,285	9,345	25,653	1,785	717	1,344	654	787	52,851	52,730	48	73	159	247	176	70	82
1983		100,293	43,156	10,600	26,947	1,830	693	1,444	776	867	56,624	56,494	54	76	169	262	188	74	82
1984		111,201	47,384	11,843	29,515	1,767	727	1,650	995	887	63,271	63,131	62	79	180	280	202	78	86
1985		121,024	52,463	13,009	32,899	1,790	789	2,020	1,046	909	67,976	67,822	70	83	195	297	217	80	93
1986		120,524	54,010	13,147	34,188	1,819	816	2,389	932	719	65,874	65,706	80	88	216	320	236	84	104
1987		123,415	56,653	12,624	37,246	1,899	924	2,578	731	650	66,061	65,881	88	92	240	348	255	93	113
1988		126,241	55,659	13,232	35,408	2,111	1,042	2,630	608	627	69,811	69,615	99	96	268	380	274	106	124
1989		126,188	50,807	13,458	30,279	2,047	1,112	2,563	729	619	74,545	74,335	110	100	295	410	293	117	132
1990		130,286	46,895	13,435	26,269	1,992	1,260	2,403	857	679	82,504	82,285	115	104	313	436	313	123	138
1991		127,213	41,760	11,741	23,082	1,850	1,353	2,055	966	713	84,534	84,310	115	109	320	461	336	126	137
1992		130,416	41,178	11,887	22,449	1,793	1,378	1,897	991	783	88,286	88,052	119	115	321	494	364	130	137
1993		127,460	38,421	11,597	20,560	1,327	1,441	1,756	1,006	734	88,037	87,791	124	122	331	532	395	137	139
1994		128,879	37,820	11,047	20,294	1,497	1,519	1,726	1,020	717	90,001	89,745	128	129	345	570	430	140	142
1995		138,685	39,781	11,359	21,860	1,482	1,447	1,982	912	740	97,794	97,524	133	136	353	607	468	139	150
1996		146,081	37,759	10,872	20,540	1,634	1,358	1,829	840	687	107,153	106,870	138	145	367	648	510	138	154
1997		152,179	38,164	10,734	21,431	1,528	1,248	1,720	812	691	112,744	112,426	135	183	361	767	634	133	143
1998		169,245	38,257	10,775	21,579	1,497	1,139	1,786	889	593	129,653	129,328	134	192	354	846	714	132	135
1999		177,893	35,253	10,678	19,098	1,392	819	1,890	838	538	141,218	140,876	137	205	370	914	775	139	138
2000		190,945	30,942	10,568	15,227	1,336	637	1,778	653	743	158,417	158,060	137	220	392	1,053	907	146	141
2001		184,968	31,466	12,192	13,824	713	742	1,892	963	1,139	151,804	151,454	133	217	415	1,138	984	155	146
2002		191,626	32,428	12,798	14,167	693	718	1,872	1,016	1,165	157,314	156,977	130	207	443	1,288	1,121	166	154
2003		186,427	32,042	13,434	12,683	793	975	2,076	790	1,292	152,378	152,038	132	207	475	1,361	1,185	176	171
2004		183,113	35,521	13,169	14,898	879	1,278	2,529	1,344	1,425	145,621	145,284	131	206	473	1,325	1,150	176	172
2005		195,720	36,666	13,994	15,512	1,052	1,168	2,360	1,211	1,369	157,034	156,696	126	212	464	1,398	1,229	169	158
2006		206,029	37,633	15,586	16,197	1,120	915	2,069	584	1,164	166,372	166,028	125	219	464	1,408	1,242	166	151

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2009

Year	Funding source:	All sources	Federal								Industry				U&C	Other nonprofit			Other government ^a
	Performer:	All performers	Total	Industry		FFRDCs ^c	U&C ^d	U&C	Other nonprofit ^e	Nonprofit FFRDCs ^e	Total	Industry ^f	U&C ^d	Other nonprofit	U&C ^d	Other		U&C ^d	
				Federal	Industry ^b											Total	nonprofit		Total
2007		214,339	37,143	16,960	13,989	1,636	860	2,342	534	821	175,046	174,692	128	226	466	1,531	1,358	173	153
2008		238,067	49,353	16,178	27,157	1,794	793	2,062	518	852	186,367	185,998	140	229	497	1,687	1,497	189	163
2009		230,713	49,104	15,847	27,737	1,792	689	1,706	524	808	179,102	178,729	153	219	535	1,801	1,594	207	172

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

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

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

^b Character-of-work estimates for industry revised for 1998 and later years; data not directly comparable with data for 1997 and earlier years. Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^c Character-of-work estimates for industry FFRDCs for 1953–63 not separated from federal support for industry; thus, figure for federal support to industry includes support to FFRDCs for those years.

^d For 1998 and later years, character-of-work estimation procedure revised and adjustments made to U&C R&D to eliminate double counting of funds passed through from one academic institution to another. Data for 1998 and later years not directly comparable with data for 1997 and earlier years.

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

^f Industry sources of funds for industry R&D expenditures include all nonfederal sources of funds for industry R&D expenditures. Character-of-work estimates for industry revised for 1998 and later years; data not directly comparable with data for 1997 and earlier years.

NOTES: Technical notes explaining methodological issues of measurement available on request. Data based on annual reports by performers, except for nonprofit sector (where some figures involve estimates). R&D expenditures of FFRDCs are chiefly federal funds, but any nonfederal funds are also included in totals. For trend comparisons, use only historical data reported here; do not use data published earlier. Expenditures for industry and, prior to 2001, for industry-administered FFRDCs collected by calendar year. Expenditures for other performers are calendar-year approximations based on fiscal-year data. In most cases, approximation equals 75% of amount reported in same fiscal year plus 25% of amount reported in subsequent fiscal year. However, fiscal year for academic performers generally begins 1 July, not 1 October; also, prior to 1977, federal fiscal year began on 1 July, not 1 October. Therefore, calendar-year approximations for academic performers and federal performers prior to 1977 equal 50% of amount reported in same fiscal year plus 50% of amount reported in subsequent fiscal year. Detail may not add to total because of rounding. Constant-dollar estimates derived from unrounded data. Los Alamos National Laboratory (some \$2 billion in annual R&D expenditures in recent years) became industry administered in June 2006; previously, it was U&C administered. Lawrence Livermore National Laboratory (more than \$1 billion in annual R&D expenditures in recent years) became industry administered in October 2007; previously, it was U&C administered. Levels 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, drawing on the following NSF/NCSES surveys: Business R&D and Innovation Survey, Survey of R&D Expenditures at Universities and Colleges, Survey of Federal Funds for R&D, Survey of R&D Expenditures at FFRDCs, Survey of R&D Funding and Performance by Nonprofit Organizations.

TABLE 10. U.S. research and development expenditures, by state, performing sector, and source of funding: 2008
(Millions of dollars)

State	Performer: Funding source:	Source of funding																Other nonprofit institutions			State, internal ^b		R&D intensity ^c		
		Federal		FFRDCs				Business				U&C ^a						Federal ^f	Total	GDP	rank	Percent	Rank		
		All R&D	R&D rank	Federal	Total	Federal	Non-federal ^d	Total	Own funds	Non-federal ^e	Federal	Total	Federal	Other government	Business	U&C	Non-profit								
U.S. total ^g	403,040	na	29,839	14,835	NA	NA	290,681	232,505	21,816	36,360	51,650	30,341	3,518	3,004	10,707	4,080	6,236	NA	14,269,835	na	2.82	na			
States total ^g	372,660	na	28,730	14,695	14,251	444	271,671	220,020	19,433	30,644	51,784	31,138	3,409	2,864	10,422	3,951	5,780	NA	14,269,835	na	2.61	na			
Alabama	4,870	24	1,035	0	0	0	3,099	922	125	2,052	708	466	10	23	170	39	29	NA	170,672	25	2.85	12			
Alaska	269	49	78	0	0	0	69	52	10	6	111	97	2	*	0	12	10	NA	49,720	45	0.54	50			
Arizona	7,010	15	855	56	50	6	5,232	3,268	444	1,520	831	417	58	31	276	49	35	NA	261,537	18	2.68	15			
Arkansas	747	43	46	0	0	0	443	399	34	11	247	108	59	13	47	20	11	NA	100,232	34	0.75	45			
California	81,323	1	1,798	3,988	3,858	130	67,532	54,231	4,402	8,900	7,026	4,051	333	420	1,386	836	978	NA	1,925,499	1	4.22	9			
Colorado	5,810	21	295	391	359	32	4,019	3,396	229	394	924	722	20	51	90	42	181	NA	255,226	19	2.28	21			
Connecticut	11,322	12	38	0	0	0	10,518	8,938	D	D	732	503	17	23	96	92	34	NA	222,168	23	5.10	5			
Delaware	1,594	33	4	0	0	0	1,441	1,441	D	D	133	92	8	6	23	5	16	NA	58,357	42	2.73	14			
District of Columbia	5,946	19	4,737	6	6	0	571	155	82	334	369	290	8	8	27	37	264	NA	96,757	35	6.15	2			
Florida	6,515	17	665	0	0	0	4,178	3,009	500	669	1,592	850	177	106	379	80	81	NA	747,803	4	0.87	43			
Georgia	5,232	22	336	0	0	0	3,344	2,501	342	501	1,521	800	92	81	450	99	31	NA	402,097	10	1.30	36			
Hawaii	663	44	91	0	0	0	269	176	29	65	279	200	18	27	28	5	25	NA	66,038	39	1.00	41			
Idaho	1,375	34	60	236	224	12	961	786	166	9	113	67	22	5	17	2	5	NA	55,465	43	2.48	18			
Illinois	11,961	10	127	874	824	50	8,900	7,984	589	327	1,973	1,149	75	77	546	125	88	NA	635,080	5	1.88	27			
Indiana	6,111	18	162	0	0	0	4,991	4,375	407	209	954	436	59	99	292	68	4	NA	263,732	16	2.32	20			
Iowa	2,136	30	58	27	27	0	1,509	1,041	257	211	528	336	54	20	93	24	14	NA	136,007	30	1.57	33			
Kansas	2,029	32	19	0	0	0	1,600	1,111	288	201	404	190	53	11	131	18	6	NA	124,895	32	1.62	30			
Kentucky	1,463	35	23	0	0	0	933	879	42	13	506	242	62	12	144	46	1	NA	155,852	28	0.94	42			
Louisiana	1,193	37	115	0	0	0	411	303	64	44	660	300	118	21	164	57	7	NA	211,459	24	0.56	49			
Maine	516	46	12	0	0	0	308	253	23	32	128	60	12	4	50	2	68	NA	50,462	44	1.02	40			
Maryland	16,605	6	8,621	523	523	0	4,333	2,327	654	1,352	2,747	2,006	63	94	389	196	381	NA	280,509	15	5.92	3			
Massachusetts	20,090	4	891	641	638	4	15,028	12,625	931	1,472	2,272	1,722	17	168	139	226	1,258	NA	363,064	13	5.53	4			
Michigan	15,507	8	135	0	0	0	13,742	12,105	1,261	376	1,594	917	66	74	432	104	37	NA	376,184	12	4.12	10			
Minnesota	6,697	16	47	0	0	0	5,728	5,327	223	178	699	371	63	31	128	106	223	NA	261,951	17	2.56	17			
Mississippi	808	41	146	0	0	0	252	179	20	54	406	262	37	14	85	8	3	NA	95,653	36	0.84	44			
Missouri	3,884	26	46	0	0	0	2,857	2,857	D	D	960	609	34	21	223	74	21	NA	239,703	22	1.62	31			
Montana	401	48	55	0	0	0	148	125	15	8	186	111	28	8	35	4	12	NA	35,818	49	1.12	39			
Nebraska	988	39	41	0	0	0	561	464	83	14	376	147	12	25	161	31	10	NA	84,639	37	1.17	38			
Nevada	913	40	38	0	0	0	677	612	42	23	191	138	12	3	34	3	7	NA	132,133	31	0.69	46			
New Hampshire	2,496	29	21	0	0	0	2,169	876	127	1,166	302	206	7	12	56	21	4	NA	58,808	41	4.24	8			
New Jersey	20,713	2	679	78	78	0	19,054	17,331	1,459	264	877	458	57	42	241	78	25	NA	484,332	7	4.28	7			
New Mexico	5,906	20	561	4,150	4,075	75	735	326	172	238	417	287	25	15	84	6	42	NA	77,959	38	7.58	1			
New York	16,486	7	161	480	459	21	11,455	9,061	876	1,518	4,045	2,461	256	183	791	354	345	NA	1,110,712	3	1.48	34			
North Carolina	8,612	14	259	0	0	0	6,246	4,903	1,076	267	1,981	1,183	185	227	316	69	126	NA	404,386	9	2.13	25			
North Dakota	511	47	26	0	0	0	303	218	81	4	181	97	38	9	31	6	2	NA	31,118	50	1.64	29			
Ohio	10,164	13	750	0	0	0	7,405	5,367	588	1,450	1,827	1,056	169	163	339	101	182	NA	472,285	8	2.15	24			
Oklahoma	1,030	38	77	0	0	0	595	521	47	27	333	144	51	25	100	14	24	NA	151,540	29	0.68	47			
Oregon	4,802	25	94	0	0	0	4,074	3,913	112	49	595	425	45	26	66	33	39	NA	169,529	26	2.83	13			

TABLE 10. U.S. research and development expenditures, by state, performing sector, and source of funding: 2008
(Millions of dollars)

State	Performer: Funding source:	Source of funding																	R&D intensity ^c			
		Federal		FFRDCs			Business				U&C ^a			Other nonprofit institutions	State, internal ^b	GDP						
		All R&D	R&D rank	Federal	Total	Federal	Non-federal ^d	Total	Own funds	Non-federal ^e	Federal	Total	Federal	Business	Non-profit	Federal ^f	Total	GDP	rank	Percent	Rank	
Pennsylvania	13,068	9	313	81	67	14	9,735	8,783	643	309	2,604	1,773	137	199	341	155	335	NA	546,145	6	2.39	19
Rhode Island	1,233	36	389	0	0	0	538	489	20	29	237	147	8	9	69	4	69	NA	47,577	46	2.59	16
South Carolina	2,086	31	132	118	118	0	1,221	1,125	65	31	576	273	28	30	219	26	38	NA	159,688	27	1.31	35
South Dakota	254	50	25	0	0	0	133	98	31	4	92	57	17	3	4	11	4	NA	37,973	48	0.67	48
Tennessee	3,871	27	137	1,251	1,206	46	1,608	1,451	113	44	787	519	58	26	138	45	87	NA	246,436	20	1.57	32
Texas	20,316	3	276	18	17	1	16,166	12,830	1,231	2,106	3,744	1,950	457	235	711	390	112	NA	1,196,771	2	1.70	28
Utah	2,522	28	149	0	0	0	1,945	1,326	87	532	426	278	29	22	73	23	3	NA	112,725	33	2.24	22
Vermont	546	45	4	0	0	0	422	380	30	12	117	91	*	2	19	4	3	NA	24,993	51	2.18	23
Virginia	11,472	11	3,684	492	478	14	6,142	2,856	527	2,759	1,053	613	132	47	203	57	102	NA	400,457	11	2.86	11
Washington	16,696	5	258	1,137	1,097	40	13,876	12,724	435	717	1,058	721	61	81	156	39	367	NA	336,315	14	4.96	6
West Virginia	778	42	116	146	146	0	334	272	23	39	171	93	8	5	63	2	11	NA	61,306	40	1.27	37
Wisconsin	4,967	23	33	0	0	0	3,798	3,277	421	100	1,117	619	45	27	326	100	18	NA	241,174	21	2.06	26
Wyoming	154	51	14	0	0	0	63	52	7	4	75	28	6	2	37	1	2	NA	38,894	47	0.40	51
U.S. undistributed ^h	15,349	na	0	0	0	0	15,349	12,482	1,499	1,369	0	0	0	0	0	0	0	NA	na	na	na	na
Puerto Rico ⁱ	NA	na	9	13	12	0	NA	NA	NA	NA	100	74	6	4	13	3	*	na	92,926	na	NA	na
Other ^j	102	na	78	0	0	0	0	0	0	0	24	18	3	3	0	0	*	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 double counting of funds passed through from one academic institution to another. At national level, funds passed through to educational subrecipients account for 3.3% of total R&D expenditures reported by universities and colleges in FY 2008.

^b Internal performers include state agency and department employees and also services performed by others in support of an internal R&D project. National Science Foundation's (NSF's) survey of this state R&D spending is conducted every other year; data are not available for FY 2008. In FY 2007 these state R&D expenditures totaled \$309 million.

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

^d Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2008 included state and local governments (\$42 million), industry (\$198 million), FFRDC institutional funds (\$50 million), and other sources (\$155 million).

^e Examples of R&D paid for by nonfederal sources include funding from other companies located inside (\$12.181 billion) or outside (\$8.877 billion) United States, foreign government agencies and laboratories (\$48 million), and other organizations located inside (\$330 million) or outside (\$70 million) United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2008, total nonprofit performance is estimated at \$16.0 billion. Industry provided an estimated \$1.3 billion to nonprofit sector, and nonprofit institutions provided an estimated \$8.5 billion.

^g States totals differ from U.S. totals for four main reasons: some R&D expenditures cannot be allocated to 1 of 50 states or District of Columbia; nonfederal sources of other nonprofit R&D expenditures could not be allocated by state; state-level U&C data have not been adjusted to eliminate double counting of funds passed through from one academic institution to another; and 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 50 states or 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, U.S. 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, drawing on data from the following NSF/NCSES surveys: Business Research and Development and Innovation Survey, 2008; Survey of Research and Development Expenditures at Universities and Colleges, FY 2008; Survey of Federal Funds for Research and Development, FY 2008–10; Survey of R&D Expenditures at FFRDCs, FY 2008. State GDP data are from U.S. Bureau of Economic Analysis, <http://www.bea.gov/regional/gsp>, accessed 23 February 2011.

TABLE 11. Gross expenditures for R&D of selected countries, total and as share of gross domestic product: 1981–2009

Year	United States	EU	Germany	France	United Kingdom	Japan	China	South Korea
GERD PPP \$billions								
1981	72.7	na	18.3	11.0	11.9	25.6	NA	NA
1982	81.2	na	19.9	12.5	NA	29.2	NA	NA
1983	90.4	na	21.0	13.4	12.9	33.1	NA	NA
1984	102.9	na	22.5	14.7	NA	37.1	NA	NA
1985	115.2	na	25.4	15.8	14.9	42.7	NA	NA
1986	120.6	na	26.8	16.4	15.9	44.3	NA	NA
1987	126.7	na	29.2	17.6	16.6	48.8	NA	NA
1988	134.2	na	31.2	19.1	17.6	54.4	NA	NA
1989	142.2	na	33.4	21.0	18.8	61.4	NA	NA
1990	152.4	na	35.1	23.3	19.6	69.1	NA	NA
1991	161.4	na	39.2	24.4	19.3	73.4	7.5	7.1
1992	165.8	na	39.0	25.4	19.4	74.7	8.8	8.1
1993	166.1	na	38.4	26.2	20.6	74.9	9.8	9.6
1994	169.6	na	38.6	26.7	21.5	75.7	10.3	11.7
1995	184.1	138.3	40.2	27.5	21.9	82.3	10.5	13.3
1996	197.8	143.8	41.4	28.1	22.3	83.0	11.7	14.9
1997	212.7	151.0	43.3	28.5	23.1	87.8	14.7	16.3
1998	226.9	158.7	45.2	29.3	24.0	91.1	16.3	14.6
1999	245.5	170.2	49.4	30.8	25.9	92.8	20.6	15.8
2000	268.6	184.1	52.3	33.0	27.9	98.9	27.2	18.6
2001	280.3	196.2	54.4	35.8	29.2	104.0	31.7	21.3
2002	279.2	205.8	56.7	38.2	30.6	108.2	39.6	22.5
2003	292.0	210.1	59.4	36.8	31.0	112.3	47.1	24.0
2004	303.6	218.1	61.3	38.0	32.0	117.5	57.8	27.9
2005	325.9	229.9	64.3	39.2	34.1	128.7	71.1	30.6
2006	350.9	253.5	70.2	42.0	37.0	138.6	86.7	35.3
2007	377.6	270.4	74.1	44.0	38.8	147.8	102.4	40.7
2008	403.7	294.2	81.8	46.3	40.1	148.7	120.8	43.9
2009	401.6	297.9	82.7	48.0	40.3	137.9	154.1	NA
GERD/GDP (%)								
1981	2.34	na	2.35	1.90	2.35	2.29	NA	NA
1982	2.51	na	2.42	1.99	NA	2.38	NA	NA
1983	2.58	na	2.43	2.03	2.17	2.52	NA	NA
1984	2.64	na	2.43	2.12	NA	2.61	NA	NA
1985	2.75	na	2.60	2.17	2.20	2.73	NA	NA
1986	2.72	na	2.63	2.15	2.22	2.70	NA	NA
1987	2.70	na	2.74	2.19	2.15	2.78	NA	NA
1988	2.65	na	2.73	2.19	2.10	2.79	NA	NA
1989	2.61	na	2.71	2.23	2.11	2.88	NA	NA
1990	2.65	na	2.61	2.32	2.10	2.95	NA	NA
1991	2.72	na	2.47	2.32	2.03	2.93	0.73	1.80
1992	2.64	na	2.35	2.33	1.99	2.89	0.74	1.89
1993	2.51	na	2.28	2.38	2.02	2.83	0.70	2.06
1994	2.41	na	2.18	2.32	1.97	2.78	0.64	2.26
1995	2.50	1.66	2.19	2.29	1.91	2.91	0.57	2.30
1996	2.54	1.66	2.19	2.27	1.83	2.80	0.57	2.36
1997	2.55	1.66	2.24	2.19	1.77	2.87	0.64	2.41
1998	2.58	1.67	2.27	2.14	1.76	3.00	0.65	2.26
1999	2.63	1.72	2.40	2.16	1.82	3.02	0.76	2.17
2000	2.70	1.74	2.45	2.15	1.81	3.04	0.90	2.30
2001	2.72	1.76	2.46	2.20	1.79	3.12	0.95	2.47
2002	2.62	1.77	2.49	2.23	1.79	3.17	1.07	2.40
2003	2.62	1.76	2.52	2.17	1.75	3.20	1.13	2.49
2004	2.56	1.73	2.49	2.15	1.68	3.17	1.23	2.68
2005	2.58	1.74	2.49	2.10	1.73	3.32	1.32	2.79
2006	2.62	1.77	2.53	2.10	1.75	3.40	1.39	3.01
2007	2.69	1.77	2.53	2.07	1.78	3.44	1.40	3.21

TABLE 11. Gross expenditures for R&D of selected countries, total and as share of gross domestic product: 1981–2009

Year	United States	EU	Germany	France	United Kingdom	Japan	China	South Korea
2008	2.82	1.84	2.68	2.11	1.77	3.44	1.47	3.36
2009	2.88	1.90	2.78	2.21	1.85	3.33	1.70	NA

na = not applicable; NA = not available.

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

NOTES: Conversions of foreign currencies to U.S. dollars calculated with each country's GDP implicit price deflator and with Organisation for Economic Co-operation and Development (OECD) PPP exchange rates. Data for United States in this table reflect international standards for calculating gross expenditures on R&D, which vary slightly from National Science Foundation methods for tallying U.S. total R&D. Data for Germany, 1981–90, are for West Germany. EU data for all years based on current 27 EU member countries.

SOURCES: OECD, *Main Science and Technology Indicators*, volume 2011, issue 1.

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