



National Patterns of R&D Resources: 2014–15 Data Update

Detailed Statistical Tables | NSF 17-311 | March 2017

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General Notes

National Patterns of R&D Resources provides current data on the levels and key trends of the performance and funding of research and experimental development (R&D) in the United States. The statistical tables included in this Data Update supplement the recent InfoBrief (September 2016, available at <https://www.nsf.gov/statistics/2016/nsf16316>) by the National Center for Science and Engineering Statistics (NCSES) that discusses the *National Patterns* findings for 2014–15.

The *National Patterns* statistics draw primarily from NCSES’s national surveys of the R&D expenditures and funding of the organizations that perform the bulk of U.S. R&D—including businesses, federal and nonfederal government, higher education, and other nonprofit organizations. Additional details on levels and trends are provided by type of R&D performed (i.e., basic research, applied research, and experimental development). The *National Patterns* data are reported in both current and inflation-adjusted dollars, with comparisons to the historical record for U.S. R&D (back to 1953) and to the corresponding pace of overall U.S. economic growth.

The data for 2014 are previously unreported in this series. These numbers reflect new input from the sectoral R&D expenditure surveys, which are generally final but still include a few estimated components. As such, the 2014 data are marked “preliminary” and may later be revised when the complete set of final survey data becomes available. The data for 2015 are chiefly estimates based on early findings from the 2015 sectoral surveys and evident recent trends. The data for 2015 are likely to be revised by the next edition of this report. The numbers for 1953–2013 reflect survey data that have been finalized in previous report editions but may still include further small revisions and corrections. (Accordingly, for trend comparisons readers should use the latest report in this series, not data published in earlier editions.)

The statistical tables are arranged to exhibit the U.S. R&D data from two differing perspectives. The first perspective (tables 2–5) is by type of R&D performer, with subsequent breakouts by the source of funds. The second perspective (tables 6–9) is by source of funds, with subsequent breakouts by type of performer. The data in both groups of tables sum to the same overall U.S. R&D performance totals. Table 1 provides data mainly on the U.S. R&D-to-gross domestic product (GDP) ratio and its components. Tables 10–12 present state-level breakdowns of the U.S. R&D totals, by performing sector and source of funds, for 2012–14.

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	U.S. gross domestic product and R&D: 1953–2015
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	U.S. R&D expenditures, by state
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TABLE 1. U.S. gross domestic product, R&D, and ratio of R&D to gross domestic product (and components): 1953–2015

Year	GDP			Total R&D		R&D/GDP (%)							
	Current \$billions	Constant 2009 \$billions	Deflator ^a (2009 = 1.00000)	Current \$billions	Constant 2009 \$billions	R&D, by performer				R&D, by source of funding			
						Total	Business	Federal ^b	Higher education	Other ^c	Business	Federal	Other ^d
1953	389.7	2,571.4	0.15155	5.2	34.0	1.32	0.93	0.29	0.07	0.03	0.58	0.71	0.03
1954	391.1	2,556.9	0.15296	5.6	36.7	1.44	1.04	0.29	0.08	0.03	0.61	0.79	0.04
1955	426.2	2,739.0	0.15560	6.2	39.7	1.45	1.04	0.30	0.08	0.03	0.59	0.82	0.04
1956	450.1	2,797.4	0.16090	8.5	52.8	1.89	1.39	0.38	0.09	0.03	0.74	1.11	0.04
1957	474.9	2,856.3	0.16626	9.9	59.6	2.09	1.54	0.42	0.09	0.04	0.73	1.31	0.04
1958	482.0	2,835.3	0.17000	10.9	64.2	2.26	1.67	0.45	0.10	0.04	0.77	1.45	0.05
1959	522.5	3,031.0	0.17239	12.5	72.5	2.39	1.76	0.47	0.11	0.04	0.78	1.56	0.05
1960	543.3	3,108.7	0.17477	13.7	78.5	2.52	1.85	0.50	0.13	0.05	0.83	1.64	0.05
1961	563.3	3,188.1	0.17669	14.6	82.4	2.59	1.84	0.55	0.15	0.05	0.84	1.68	0.06
1962	605.1	3,383.1	0.17886	15.6	87.4	2.58	1.82	0.54	0.16	0.06	0.85	1.68	0.06
1963	638.6	3,530.4	0.18089	17.5	96.9	2.74	1.91	0.58	0.18	0.06	0.85	1.82	0.07
1964	685.8	3,734.0	0.18366	19.1	104.0	2.79	1.90	0.62	0.20	0.06	0.86	1.86	0.07
1965	743.7	3,976.7	0.18701	20.3	108.3	2.72	1.86	0.59	0.21	0.06	0.88	1.77	0.07
1966	815.0	4,238.9	0.19227	22.1	114.8	2.71	1.86	0.56	0.22	0.07	0.90	1.74	0.07
1967	861.7	4,355.2	0.19786	23.3	118.0	2.71	1.85	0.56	0.24	0.07	0.95	1.69	0.07
1968	942.5	4,569.0	0.20628	24.7	119.6	2.62	1.81	0.52	0.23	0.06	0.96	1.59	0.07
1969	1,019.9	4,712.5	0.21642	26.0	120.1	2.55	1.75	0.51	0.22	0.06	0.98	1.49	0.07
1970	1,075.9	4,722.0	0.22785	26.3	115.3	2.44	1.64	0.52	0.22	0.06	0.97	1.39	0.08
1971	1,167.8	4,877.6	0.23942	27.0	112.6	2.31	1.53	0.50	0.22	0.06	0.93	1.30	0.08
1972	1,282.4	5,134.3	0.24977	28.7	115.1	2.24	1.48	0.48	0.21	0.06	0.91	1.25	0.08
1973	1,428.5	5,424.1	0.26336	31.0	117.5	2.17	1.45	0.45	0.21	0.06	0.93	1.16	0.07
1974	1,548.8	5,396.0	0.28703	33.4	116.2	2.15	1.44	0.45	0.21	0.06	0.96	1.12	0.08
1975	1,688.9	5,385.4	0.31361	35.7	113.7	2.11	1.39	0.45	0.21	0.06	0.94	1.10	0.08
1976	1,877.6	5,675.4	0.33083	39.4	119.2	2.10	1.39	0.44	0.21	0.06	0.94	1.08	0.08
1977	2,086.0	5,937.0	0.35136	43.3	123.3	2.08	1.38	0.43	0.21	0.06	0.94	1.06	0.08
1978	2,356.6	6,267.2	0.37602	48.7	129.6	2.07	1.37	0.43	0.21	0.06	0.95	1.04	0.08
1979	2,632.1	6,466.2	0.40706	55.4	136.0	2.10	1.41	0.42	0.22	0.06	0.99	1.03	0.08
1980	2,862.5	6,450.4	0.44377	63.2	142.5	2.21	1.51	0.42	0.23	0.06	1.08	1.05	0.08
1981	3,211.0	6,617.7	0.48521	72.3	149.0	2.25	1.57	0.40	0.22	0.06	1.12	1.05	0.08
1982	3,345.0	6,491.3	0.51531	80.7	156.7	2.41	1.71	0.42	0.23	0.06	1.22	1.11	0.09
1983	3,638.1	6,792.0	0.53564	89.9	167.9	2.47	1.75	0.44	0.23	0.06	1.24	1.14	0.09
1984	4,040.7	7,285.0	0.55466	102.2	184.3	2.53	1.81	0.43	0.23	0.06	1.29	1.15	0.09
1985	4,346.7	7,593.8	0.57240	114.7	200.3	2.64	1.90	0.44	0.24	0.06	1.33	1.21	0.09
1986	4,590.2	7,860.5	0.58396	120.2	205.9	2.62	1.87	0.43	0.25	0.06	1.33	1.19	0.10
1987	4,870.2	8,132.6	0.59885	126.4	211.0	2.59	1.85	0.42	0.26	0.06	1.28	1.20	0.11
1988	5,252.6	8,474.5	0.61981	133.9	216.0	2.55	1.81	0.41	0.27	0.06	1.29	1.14	0.11

TABLE 1. U.S. gross domestic product, R&D, and ratio of R&D to gross domestic product (and components): 1953–2015

Year	GDP			Total R&D		R&D/GDP (%)							
	Current \$billions	Constant 2009 \$billions	Deflator ^a (2009 = 1.00000)	Current \$billions	Constant 2009 \$billions	R&D, by performer					R&D, by source of funding		
						Total	Business	Federal ^b	Higher education	Other ^c	Business	Federal	Other ^d
1989	5,657.7	8,786.4	0.64392	141.9	220.4	2.51	1.77	0.40	0.28	0.06	1.33	1.07	0.11
1990	5,979.6	8,955.0	0.66774	152.0	227.6	2.54	1.80	0.39	0.28	0.07	1.39	1.03	0.12
1991	6,174.0	8,948.4	0.68996	160.9	233.2	2.61	1.86	0.38	0.29	0.08	1.49	0.98	0.13
1992	6,539.3	9,266.6	0.70568	165.4	234.3	2.53	1.79	0.37	0.30	0.08	1.47	0.93	0.13
1993	6,878.7	9,521.0	0.72248	165.7	229.4	2.41	1.68	0.36	0.30	0.08	1.40	0.88	0.13
1994	7,308.8	9,905.4	0.73786	169.2	229.3	2.32	1.61	0.34	0.30	0.08	1.36	0.83	0.13
1995	7,664.1	10,174.8	0.75324	183.6	243.8	2.40	1.69	0.33	0.30	0.08	1.45	0.82	0.13
1996	8,100.2	10,561.0	0.76699	197.3	257.3	2.44	1.76	0.31	0.29	0.08	1.52	0.78	0.13
1997	8,608.5	11,034.9	0.78012	212.2	271.9	2.46	1.81	0.29	0.29	0.08	1.58	0.75	0.13
1998	9,089.2	11,525.9	0.78859	226.5	287.2	2.49	1.84	0.28	0.29	0.08	1.63	0.73	0.13
1999	9,660.6	12,065.9	0.80065	245.3	306.4	2.54	1.88	0.28	0.29	0.08	1.70	0.70	0.14
2000	10,284.8	12,559.7	0.81887	268.9	328.4	2.61	1.94	0.28	0.30	0.09	1.81	0.66	0.15
2001	10,621.8	12,682.2	0.83754	279.7	334.0	2.63	1.90	0.31	0.32	0.11	1.77	0.70	0.16
2002	10,977.5	12,908.8	0.85039	279.4	328.5	2.55	1.77	0.32	0.35	0.11	1.65	0.73	0.17
2003	11,510.7	13,271.1	0.86735	293.1	337.9	2.55	1.74	0.32	0.36	0.11	1.62	0.75	0.18
2004	12,274.9	13,773.5	0.89120	304.5	341.7	2.48	1.70	0.31	0.36	0.11	1.56	0.75	0.17
2005	13,093.7	14,234.2	0.91988	327.2	355.7	2.50	1.73	0.30	0.36	0.11	1.59	0.74	0.17
2006	13,855.9	14,613.8	0.94814	352.9	372.2	2.55	1.79	0.30	0.35	0.11	1.64	0.73	0.18
2007	14,477.6	14,873.7	0.97337	380.0	390.4	2.62	1.86	0.30	0.35	0.11	1.71	0.74	0.18
2008	14,718.6	14,830.4	0.99246	407.0	410.0	2.76	1.97	0.31	0.37	0.11	1.75	0.81	0.20
2009	14,418.7	14,418.7	1.00000	405.3	405.3	2.81	1.96	0.33	0.40	0.13	1.71	0.88	0.22
2010	14,964.4	14,783.8	1.01222	409.0	404.1	2.73	1.86	0.34	0.40	0.13	1.66	0.86	0.22
2011	15,517.9	15,020.6	1.03311	428.7	414.9	2.76	1.90	0.34	0.40	0.12	1.72	0.83	0.21
2012	16,155.3	15,354.6	1.05215	436.2	414.5	2.70	1.87	0.32	0.39	0.11	1.71	0.78	0.21
2013	16,663.2	15,583.3	1.06930	456.6	427.0	2.74	1.94	0.31	0.38	0.11	1.78	0.73	0.22
2014 ^e	17,348.1	15,961.7	1.08686	477.7	439.5	2.75	1.96	0.30	0.37	0.12	1.84	0.69	0.23
2015 ^f	17,937.8	16,341.8	1.09766	499.3	454.9	2.78	2.00	0.29	0.37	0.11	1.92	0.63	0.23

GDP = gross domestic product.

^a Implicit price deflator for GDP.^b Includes federal intramural R&D and that by federally funded R&D centers.^c Includes R&D in the U.S. performed by nonfederal government and other nonprofit organizations.^d Includes funding for U.S. R&D by nonfederal government, higher education, and other nonprofit organizations.^e Data are preliminary and may later be revised.^f Data are estimates and will later be revised.SOURCES: GDP figures from Bureau of Economic Analysis, National Economic Accounts, Gross Domestic Product, <http://www.bea.gov/national/>, accessed 10 February 2016; R&D figures from National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c		Business ^d					Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Foreign	Other	Total	Federal	Nonfederal government	Busi-ness	Higher ed-ucation	ONP	Total	Federal	Busi-ness	ONP		
Current \$millions																						
1953	5,160	1,146	1,015	131	131	NA	3,630	2,200	1,430	NA	NA	NA	273	149	40	21	37	27	112	58	26	28
1954	5,621	1,127	963	165	165	NA	4,070	2,320	1,750	NA	NA	NA	301	165	45	24	40	29	123	61	31	31
1955	6,185	1,292	973	319	319	NA	4,420	2,460	1,960	NA	NA	NA	342	191	50	27	42	32	132	65	35	32
1956	8,501	1,692	1,131	561	561	NA	6,272	3,277	2,995	NA	NA	NA	391	221	57	32	46	36	146	71	37	38
1957	9,908	1,985	1,297	688	688	NA	7,324	3,396	3,928	NA	NA	NA	433	242	64	37	51	40	167	79	37	51
1958	10,915	2,163	1,507	657	657	NA	8,066	3,630	4,436	NA	NA	NA	491	280	72	39	56	45	195	95	38	62
1959	12,490	2,470	1,681	789	789	NA	9,200	3,983	5,217	NA	NA	NA	586	356	81	40	61	50	234	125	42	67
1960	13,711	2,711	1,801	910	910	NA	10,032	4,428	5,604	NA	NA	NA	705	453	90	40	67	55	264	148	48	68
1961	14,564	3,074	1,987	1,087	1,087	NA	10,353	4,668	5,685	NA	NA	NA	834	557	101	40	75	62	304	169	49	86
1962	15,636	3,244	2,188	1,056	1,056	NA	11,037	5,029	6,008	NA	NA	NA	993	687	112	41	84	70	363	200	54	109
1963	17,519	3,717	2,559	1,159	1,159	NA	12,216	5,360	6,856	NA	NA	NA	1,178	839	125	41	96	78	408	234	55	119
1964	19,103	4,263	2,966	1,297	1,297	NA	13,049	5,792	7,257	NA	NA	NA	1,375	995	138	41	114	88	417	250	55	112
1965	20,253	4,374	3,157	1,218	1,218	NA	13,812	6,445	7,367	NA	NA	NA	1,595	1,167	150	42	136	101	472	286	62	124
1966	22,072	4,525	3,308	1,217	1,217	NA	15,193	7,216	7,977	NA	NA	NA	1,818	1,335	160	45	165	114	537	329	70	138
1967	23,347	4,785	3,445	1,340	1,340	NA	15,966	8,020	7,946	NA	NA	NA	2,035	1,491	168	52	200	126	561	342	74	145
1968	24,667	4,870	3,498	1,372	1,372	NA	17,014	8,869	8,145	NA	NA	NA	2,187	1,586	185	58	221	139	596	364	81	151
1969	25,996	5,230	3,790	1,440	1,440	NA	17,844	9,857	7,987	NA	NA	NA	2,280	1,624	208	61	233	155	642	388	93	161
1970	26,271	5,583	4,154	1,430	1,430	NA	17,594	10,288	7,306	NA	NA	NA	2,418	1,686	237	66	259	171	677	410	95	172
1971	26,952	5,849	4,409	1,441	1,441	NA	17,829	10,654	7,175	NA	NA	NA	2,565	1,760	262	72	290	182	709	427	98	184
1972	28,740	6,209	4,676	1,533	1,533	NA	19,004	11,535	7,469	NA	NA	NA	2,757	1,890	282	79	312	195	771	472	101	198
1973	30,952	6,413	4,837	1,576	1,576	NA	20,704	13,104	7,600	NA	NA	NA	2,954	2,009	301	90	344	210	882	566	105	211
1974	33,359	6,916	5,132	1,784	1,784	NA	22,239	14,667	7,572	NA	NA	NA	3,216	2,160	320	105	394	239	988	639	114	235
1975	35,671	7,580	5,561	2,019	2,019	NA	23,460	15,582	7,878	NA	NA	NA	3,570	2,400	348	118	432	272	1,062	675	124	262
1976	39,435	8,291	5,890	2,401	2,401	NA	26,107	17,436	8,671	NA	NA	NA	3,899	2,619	369	131	480	300	1,139	711	135	292
1977	43,338	8,916	6,211	2,704	2,704	NA	28,863	19,340	9,523	NA	NA	NA	4,346	2,893	394	155	569	337	1,213	740	147	326
1978	48,719	10,148	6,962	3,186	3,186	NA	32,222	22,115	10,107	NA	NA	NA	4,996	3,329	443	182	679	364	1,353	830	160	363
1979	55,379	11,038	7,471	3,567	3,567	NA	37,062	25,708	11,354	NA	NA	NA	5,715	3,848	482	215	785	386	1,564	985	174	405
1980	63,224	11,882	7,831	4,052	4,052	NA	43,228	30,476	12,752	NA	NA	NA	6,455	4,335	519	264	920	419	1,658	1,017	189	452
1981	72,292	12,998	8,605	4,393	4,393	NA	50,425	35,428	14,997	NA	NA	NA	7,085	4,670	581	314	1,058	463	1,784	1,075	206	504
1982	80,748	14,065	9,501	4,563	4,563	NA	57,166	40,105	17,061	NA	NA	NA	7,603	4,879	621	363	1,207	534	1,915	1,129	224	561
1983	89,949	15,840	10,830	5,011	5,011	NA	63,683	44,588	19,095	NA	NA	NA	8,251	5,210	658	432	1,357	595	2,175	1,306	244	626

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c							Business ^d				Higher education ^e				Other nonprofit organizations ^f			
						Nonfederal government ^c		Business ^d			Higher education ^e		Other nonprofit organizations ^f											
						Total	Own	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Busi-ness	Higher ed-ucation	ONP	Total	Federal	Busi-ness	ONP				
1984	102,244	17,518	11,916	5,602	5,602	NA	73,061	51,404	21,657	NA	NA	NA	9,154	5,748	721	518	1,514	654	2,511	1,548	265	698		
1985	114,671	19,227	13,093	6,134	6,134	NA	82,376	57,043	25,333	NA	NA	NA	10,308	6,388	834	630	1,743	713	2,761	1,694	289	778		
1986	120,249	19,909	13,505	6,405	6,405	NA	85,932	59,932	26,000	NA	NA	NA	11,540	7,028	969	745	2,019	780	2,867	1,686	314	867		
1987	126,360	20,380	13,588	6,792	6,792	NA	90,160	61,403	28,757	NA	NA	NA	12,807	7,768	1,065	831	2,262	882	3,013	1,704	342	967		
1988	133,881	21,555	14,342	7,212	7,212	NA	94,893	66,672	28,221	NA	NA	NA	14,221	8,593	1,165	933	2,527	1,003	3,212	1,762	372	1,078		
1989	141,891	22,728	15,231	7,497	7,497	NA	99,860	73,501	26,359	NA	NA	NA	15,634	9,317	1,274	1,061	2,852	1,131	3,669	2,062	405	1,202		
1990	151,993	23,524	15,671	7,853	7,853	NA	107,404	81,602	25,802	NA	NA	NA	16,939	9,939	1,399	1,166	3,187	1,249	4,126	2,346	440	1,340		
1991	160,876	23,343	15,249	8,093	8,093	NA	114,675	90,580	24,095	NA	NA	NA	18,206	10,667	1,483	1,242	3,458	1,358	4,652	2,679	479	1,494		
1992	165,350	24,212	15,853	8,360	8,360	NA	116,757	94,388	22,369	NA	NA	NA	19,388	11,528	1,525	1,320	3,569	1,448	4,993	2,806	521	1,666		
1993	165,730	24,534	16,531	8,003	8,003	NA	115,435	94,591	20,844	NA	NA	NA	20,495	12,307	1,557	1,392	3,709	1,531	5,267	2,843	567	1,857		
1994	169,207	24,610	16,355	8,254	8,254	NA	117,392	97,131	20,261	NA	NA	NA	21,607	12,996	1,623	1,456	3,938	1,595	5,599	2,911	617	2,071		
1995	183,625	25,352	16,904	8,448	8,448	NA	129,830	108,652	21,178	NA	NA	NA	22,617	13,592	1,751	1,548	4,110	1,617	5,827	2,847	671	2,308		
1996	197,346	25,049	16,585	8,464	8,464	NA	142,371	121,015	21,356	NA	NA	NA	23,718	14,084	1,861	1,672	4,436	1,666	6,209	2,906	730	2,574		
1997	212,152	25,232	16,819	8,413	8,413	NA	155,409	133,611	21,798	NA	NA	NA	24,884	14,530	1,922	1,808	4,838	1,786	6,626	3,014	809	2,804		
1998	226,457	25,843	17,362	8,480	8,480	NA	167,102	145,016	22,086	NA	NA	NA	26,181	15,174	1,972	1,950	5,163	1,922	7,332	3,281	859	3,192		
1999	245,319	26,846	18,142	8,704	8,704	NA	182,090	161,594	20,496	NA	NA	NA	28,176	16,264	2,098	2,082	5,619	2,112	8,207	3,761	931	3,516		
2000	268,904	28,516	19,247	9,269	9,269	NA	199,961	182,844	17,117	NA	NA	NA	30,693	17,719	2,246	2,174	6,231	2,324	9,734	4,510	1,020	4,204		
2001	279,716	32,812	22,374	10,438	10,056	NA	202,017	185,118	16,899	NA	NA	NA	33,720	19,767	2,395	2,189	6,826	2,542	11,167	5,488	1,029	4,650		
2002	279,387	35,482	23,798	11,684	11,242	NA	193,868	177,467	16,401	NA	NA	NA	37,888	22,654	2,610	2,178	7,617	2,828	12,150	5,778	998	5,374		
2003	293,060	37,235	24,982	12,253	11,841	NA	200,724	182,926	17,798	NA	NA	NA	41,959	25,727	2,856	2,166	8,226	2,984	13,141	5,945	1,020	6,176		
2004	304,547	37,685	24,898	12,788	12,471	NA	208,301	188,035	20,266	NA	NA	NA	44,782	27,872	3,008	2,231	8,562	3,109	13,779	6,537	1,041	6,201		
2005	327,184	39,568	26,322	13,246	12,894	NA	226,159	204,250	21,909	NA	NA	NA	47,006	29,019	3,060	2,368	9,265	3,294	14,452	6,545	1,107	6,800		
2006	352,875	41,610	28,240	13,370	12,969	309	247,669	223,365	24,304	NA	NA	NA	48,951	29,600	3,182	2,563	10,076	3,530	14,336	6,044	1,182	7,111		
2007	380,019	44,132	29,859	14,273	13,845	339	269,267	242,682	26,585	NA	NA	NA	51,149	30,160	3,438	2,803	10,833	3,915	15,132	5,980	1,257	7,896		
2008	406,952	45,649	29,839	15,810	15,369	343	290,680	225,848	36,360	12,181	15,533	758	53,917	31,178	3,706	3,069	11,640	4,324	16,363	6,236	1,301	8,827		
2009	405,343	47,572	30,560	17,013	16,571	405	282,393	221,104	39,573	9,567	11,464	685	56,971	33,433	3,808	3,193	11,916	4,621	18,002	7,097	1,258	9,647		
2010	409,037	50,798	31,970	18,828	18,409	490	278,977	218,187	34,199	11,013	14,532	1,046	60,369	36,563	3,787	3,144	12,103	4,772	18,403	7,093	1,265	10,045		
2011	428,675	53,524	34,950	18,574	18,176	493	294,092	235,426	31,309	11,124	15,351	882	62,435	37,717	3,712	3,182	12,949	4,875	18,132	6,564	1,333	10,234		
2012	436,151	52,144	34,017	18,128	17,727	468	302,251	242,674	30,621	11,624	16,699	633	63,264	36,998	3,631	3,349	14,140	5,146	18,024	6,239	1,366	10,420		
2013	456,584	51,086	33,406	17,680	17,296	470	322,528	259,908	29,362	13,450	18,795	1,013	63,928	35,845	3,719	3,575	15,197	5,592	18,573	5,970	1,444	11,158		
2014 ^g	477,708	52,299	34,396	17,903	17,523	480	340,728	277,272	26,554	13,227	22,544	1,131	64,704	35,051	3,788	3,817	16,040	6,006	19,498	6,111	1,520	11,867		
2015 ^h	499,299	52,655	33,966	18,689	18,323	485	359,652	304,844	19,512	12,334	21,907	1,055	66,373	35,015	3,752	4,069	17,109	6,428	20,134	6,105	1,611	12,418		

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c		Business ^d					Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Foreign	Other	Total	Federal	Nonfederal government	Busi-ness	Higher ed-ucation	ONP	Total	Federal	Busi-ness	ONP		
Constant 2009 \$millions																						
1953	34,048	7,562	6,697	864	864	NA	23,952	14,516	9,436	NA	NA	NA	1,798	983	261	135	241	178	736	379	172	185
1954	36,745	7,368	6,293	1,075	1,075	NA	26,608	15,167	11,441	NA	NA	NA	1,968	1,075	291	154	258	190	801	396	203	203
1955	39,748	8,300	6,253	2,047	2,047	NA	28,405	15,809	12,596	NA	NA	NA	2,198	1,227	321	174	270	206	845	415	225	206
1956	52,831	10,513	7,026	3,487	3,487	NA	38,981	20,367	18,614	NA	NA	NA	2,430	1,374	351	196	286	224	907	441	230	236
1957	59,592	11,936	7,801	4,135	4,135	NA	44,050	20,425	23,625	NA	NA	NA	2,604	1,453	385	220	307	241	1,001	472	223	307
1958	64,206	12,724	8,862	3,862	3,862	NA	47,447	21,353	26,094	NA	NA	NA	2,888	1,647	424	229	326	262	1,147	559	224	365
1959	72,451	14,328	9,751	4,577	4,577	NA	53,369	23,105	30,264	NA	NA	NA	3,399	2,062	467	229	354	287	1,355	722	244	389
1960	78,453	15,509	10,302	5,207	5,207	NA	57,402	25,337	32,065	NA	NA	NA	4,031	2,589	515	229	383	315	1,511	847	275	389
1961	82,428	17,395	11,246	6,149	6,149	NA	58,595	26,419	32,175	NA	NA	NA	4,717	3,150	569	226	422	351	1,721	956	277	487
1962	87,421	18,134	12,230	5,904	5,904	NA	61,708	28,117	33,591	NA	NA	NA	5,549	3,838	626	226	470	389	2,030	1,118	302	609
1963	96,851	20,549	14,144	6,405	6,405	NA	67,534	29,632	37,902	NA	NA	NA	6,512	4,636	691	224	531	431	2,256	1,294	304	658
1964	104,011	23,208	16,146	7,062	7,062	NA	71,048	31,536	39,512	NA	NA	NA	7,484	5,418	749	221	618	479	2,270	1,361	299	610
1965	108,294	23,389	16,878	6,510	6,510	NA	73,855	34,463	39,393	NA	NA	NA	8,526	6,240	799	222	727	537	2,524	1,529	332	663
1966	114,799	23,532	17,205	6,327	6,327	NA	79,020	37,531	41,489	NA	NA	NA	9,456	6,943	832	234	856	590	2,790	1,709	364	718
1967	118,000	24,184	17,412	6,773	6,773	NA	80,695	40,535	40,161	NA	NA	NA	10,285	7,533	849	260	1,008	634	2,835	1,729	374	733
1968	119,577	23,606	16,955	6,651	6,651	NA	82,480	42,995	39,485	NA	NA	NA	10,602	7,689	894	279	1,069	671	2,889	1,765	393	732
1969	120,114	24,166	17,513	6,654	6,654	NA	82,449	45,545	36,904	NA	NA	NA	10,535	7,501	961	280	1,077	716	2,964	1,790	430	744
1970	115,302	24,504	18,231	6,274	6,274	NA	77,218	45,153	32,065	NA	NA	NA	10,610	7,397	1,040	287	1,135	750	2,969	1,797	417	755
1971	112,571	24,431	18,414	6,017	6,017	NA	74,467	44,499	29,968	NA	NA	NA	10,713	7,349	1,094	301	1,209	760	2,959	1,781	409	769
1972	115,066	24,857	18,720	6,138	6,138	NA	76,086	46,182	29,903	NA	NA	NA	11,038	7,567	1,129	316	1,247	779	3,085	1,888	404	793
1973	117,527	24,349	18,365	5,984	5,984	NA	78,614	49,757	28,858	NA	NA	NA	11,215	7,626	1,143	342	1,306	797	3,349	2,149	399	801
1974	116,224	24,097	17,881	6,215	6,215	NA	77,480	51,100	26,381	NA	NA	NA	11,205	7,525	1,113	364	1,371	831	3,442	2,225	398	820
1975	113,745	24,171	17,733	6,438	6,438	NA	74,807	49,686	25,121	NA	NA	NA	11,382	7,653	1,110	376	1,376	867	3,385	2,152	396	836
1976	119,199	25,060	17,804	7,256	7,256	NA	78,913	52,704	26,210	NA	NA	NA	11,784	7,916	1,115	396	1,451	905	3,442	2,149	409	884
1977	123,345	25,375	17,678	7,697	7,697	NA	82,147	55,044	27,104	NA	NA	NA	12,369	8,232	1,121	440	1,618	958	3,453	2,107	419	928
1978	129,565	26,988	18,515	8,473	8,473	NA	85,692	58,813	26,879	NA	NA	NA	13,285	8,852	1,178	483	1,806	967	3,600	2,207	426	967
1979	136,047	27,117	18,354	8,762	8,762	NA	91,049	63,156	27,893	NA	NA	NA	14,039	9,453	1,183	527	1,928	947	3,843	2,420	428	995
1980	142,470	26,776	17,646	9,130	9,130	NA	97,411	68,675	28,736	NA	NA	NA	14,546	9,767	1,168	594	2,072	944	3,737	2,292	427	1,018
1981	148,990	26,788	17,733	9,054	9,054	NA	103,923	73,015	30,908	NA	NA	NA	14,602	9,624	1,197	647	2,179	954	3,677	2,214	425	1,038
1982	156,699	27,294	18,438	8,855	8,855	NA	110,936	77,828	33,109	NA	NA	NA	14,753	9,467	1,205	704	2,341	1,035	3,716	2,191	435	1,090
1983	167,927	29,572	20,218	9,354	9,354	NA	118,890	83,242	35,649	NA	NA	NA	15,404	9,727	1,228	807	2,532	1,110	4,061	2,437	456	1,169

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a		FFRDCs ^b		Nonfederal government ^c				Business ^d				Higher education ^e				Other nonprofit organizations ^f					
			All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	ONP
1984	184,335	31,583	21,483	10,101	10,101	NA	131,722	92,677	39,046	NA	NA	NA	16,503	10,362	1,300	933	2,730	1,178	4,527	2,790	479	1,258		
1985	200,332	33,589	22,873	10,716	10,716	NA	143,913	99,656	44,257	NA	NA	NA	18,007	11,160	1,456	1,101	3,045	1,246	4,823	2,959	505	1,359		
1986	205,920	34,094	23,126	10,968	10,968	NA	147,154	102,631	44,524	NA	NA	NA	19,762	12,034	1,659	1,276	3,457	1,336	4,910	2,887	538	1,485		
1987	211,005	34,032	22,691	11,341	11,341	NA	150,555	102,535	48,020	NA	NA	NA	21,386	12,972	1,778	1,388	3,777	1,472	5,032	2,846	571	1,615		
1988	216,002	34,776	23,139	11,637	11,637	NA	153,100	107,568	45,532	NA	NA	NA	22,944	13,864	1,880	1,505	4,077	1,618	5,183	2,843	600	1,740		
1989	220,356	35,297	23,653	11,643	11,643	NA	155,082	114,147	40,935	NA	NA	NA	24,280	14,469	1,979	1,647	4,429	1,756	5,698	3,202	628	1,867		
1990	227,623	35,229	23,469	11,760	11,760	NA	160,847	122,206	38,641	NA	NA	NA	25,368	14,885	2,095	1,745	4,772	1,870	6,179	3,513	659	2,007		
1991	233,168	33,832	22,102	11,730	11,730	NA	166,206	131,284	34,923	NA	NA	NA	26,387	15,460	2,149	1,799	5,011	1,968	6,743	3,883	694	2,166		
1992	234,312	34,311	22,465	11,846	11,846	NA	165,452	133,754	31,698	NA	NA	NA	27,474	16,335	2,161	1,870	5,057	2,051	7,075	3,976	738	2,361		
1993	229,392	33,958	22,880	11,077	11,077	NA	159,777	130,926	28,851	NA	NA	NA	28,367	17,034	2,155	1,926	5,133	2,118	7,291	3,935	785	2,571		
1994	229,321	33,353	22,166	11,187	11,187	NA	159,098	131,639	27,459	NA	NA	NA	29,283	17,612	2,199	1,973	5,337	2,161	7,588	3,945	836	2,806		
1995	243,780	33,657	22,441	11,215	11,215	NA	172,361	144,246	28,116	NA	NA	NA	30,026	18,045	2,325	2,054	5,456	2,146	7,736	3,780	891	3,065		
1996	257,299	32,658	21,623	11,035	11,035	NA	185,623	157,779	27,844	NA	NA	NA	30,923	18,363	2,426	2,179	5,783	2,171	8,096	3,788	952	3,355		
1997	271,949	32,344	21,560	10,785	10,785	NA	199,213	171,271	27,942	NA	NA	NA	31,898	18,625	2,464	2,317	6,202	2,290	8,494	3,864	1,037	3,594		
1998	287,168	32,771	22,017	10,754	10,754	NA	211,900	183,893	28,007	NA	NA	NA	33,199	19,242	2,501	2,472	6,547	2,437	9,298	4,160	1,089	4,048		
1999	306,398	33,530	22,659	10,871	10,871	NA	227,427	201,828	25,599	NA	NA	NA	35,191	20,313	2,621	2,600	7,019	2,638	10,250	4,697	1,162	4,391		
2000	328,383	34,823	23,504	11,319	11,319	NA	244,190	223,287	20,903	NA	NA	NA	37,483	21,638	2,743	2,654	7,609	2,838	11,887	5,508	1,245	5,134		
2001	333,975	39,177	26,715	12,462	12,006	NA	241,204	221,027	20,177	NA	NA	NA	40,261	23,601	2,860	2,614	8,150	3,035	13,333	6,552	1,229	5,552		
2002	328,541	41,724	27,984	13,740	13,219	NA	227,976	208,689	19,286	NA	NA	NA	44,553	26,640	3,069	2,561	8,957	3,326	14,288	6,794	1,174	6,320		
2003	337,879	42,930	28,803	14,127	13,652	NA	231,422	210,902	20,520	NA	NA	NA	48,376	29,662	3,293	2,498	9,484	3,440	15,151	6,854	1,176	7,121		
2004	341,728	42,286	27,937	14,349	13,993	NA	233,732	210,992	22,740	NA	NA	NA	50,249	31,275	3,375	2,503	9,607	3,488	15,461	7,335	1,168	6,958		
2005	355,683	43,014	28,615	14,399	14,017	NA	245,858	222,041	23,817	NA	NA	NA	51,100	31,546	3,327	2,574	10,072	3,581	15,711	7,115	1,203	7,393		
2006	372,177	43,886	29,784	14,101	13,678	325	261,216	235,583	25,633	NA	NA	NA	51,629	31,219	3,357	2,703	10,627	3,724	15,121	6,374	1,247	7,500		
2007	390,416	45,339	30,676	14,663	14,224	348	276,634	249,322	27,312	NA	NA	NA	52,549	30,986	3,532	2,879	11,130	4,022	15,546	6,143	1,291	8,112		
2008	410,043	45,995	30,066	15,930	15,485	345	292,888	227,564	36,636	12,274	15,651	764	54,327	31,415	3,735	3,093	11,728	4,357	16,487	6,283	1,310	8,894		
2009	405,343	47,572	30,560	17,013	16,571	405	282,393	221,104	39,573	9,567	11,464	685	56,971	33,433	3,808	3,193	11,916	4,621	18,002	7,097	1,258	9,647		
2010	404,100	50,185	31,584	18,601	18,187	484	275,610	215,554	33,786	10,880	14,357	1,033	59,640	36,121	3,741	3,106	11,957	4,714	18,181	7,008	1,250	9,924		
2011	414,938	51,809	33,830	17,978	17,593	477	284,667	227,881	30,306	10,768	14,859	854	60,434	36,508	3,593	3,080	12,534	4,718	17,550	6,354	1,290	9,907		
2012	414,534	49,560	32,331	17,229	16,849	444	287,271	230,646	29,103	11,048	15,871	602	60,128	35,164	3,451	3,183	13,440	4,891	17,131	5,930	1,298	9,903		

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c		Business ^d					Higher education ^e				Other nonprofit organizations ^f						
	All funding sources	Total	Federal	Total	Federal	Total	Own	Total	domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Busi-ness	Higher ed-ucation	ONP	Total	Federal	Busi-ness	ONP
				Federal	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other
2013	426,994	47,776	31,241	16,534	16,175	439	301,626	243,064	27,459	12,578	17,577	947	59,785	33,522	3,478	3,343	14,212	5,230	17,369	5,583	1,351	10,435	
2014 ^g	439,531	48,119	31,647	16,473	16,122	442	313,498	255,113	24,432	12,170	20,742	1,041	59,533	32,250	3,486	3,512	14,759	5,526	17,939	5,622	1,398	10,919	
2015 ^h	454,875	47,970	30,944	17,026	16,692	442	327,652	277,721	17,776	11,237	19,958	961	60,468	31,900	3,418	3,707	15,587	5,856	18,343	5,561	1,468	11,313	

NA = not available.

FFRDC = federally funded R&D center; HE = higher education; ONP = other nonprofit organization.

^a Includes expenditures for federal intramural R&D as well as costs associated with administering extramural R&D.

^b The R&D expenditures of FFRDCs are chiefly federally funded; the small remainder (\$381 million of the \$17.9 billion total in 2014) reflects funding from state or local government, businesses, other nonprofit organizations, and other sources (see table 6 for further detail on this nonfederal funding). Prior to 2001, the data did not distinguish federal and nonfederal funding for FFRDC R&D and are reported as all federal funding. In 1953–54, federal funding for business R&D did not separate out industry-administered FFRDCs, and the data for federal funding to business for these years include the funding to these FFRDCs. Also in 1953–54, federal funding for other nonprofit organizations did not separate out nonprofit-administered FFRDCs, and the data for federal funding to other nonprofit organizations for these years include the funding to these FFRDCs.

^c State intramural R&D performance includes state agency and department employees and also services performed by others in support of internal R&D projects; also includes funding from both federal and nonfederal government sources (see table 6 for further detail). Data on state government intramural R&D became available starting in 2006.

^d R&D performed in the domestic United States by all companies with 5 employees or more, publicly or privately held. In 2008 and later years, the data on business R&D come from the National Science Foundation's (NSF's) annual Business R&D and Innovation Survey (BRDIS). BRDIS distinguishes R&D performed and paid for by the company from R&D performed by the company but paid for by one or more others (i.e., the federal government, state or local government, domestic companies, foreign companies, foreign governments, other organizations inside or outside the United States). Prior to 2008, the data distinguished only federally and nonfederally funded business R&D; for these years, the own domestic funding data column includes all nonfederal sources of funding. Business R&D performance in the United States paid for by foreign business includes funding from parent or unaffiliated businesses outside the United States (\$17.2 billion in 2014) and funding from U.S. businesses' foreign subsidiaries (\$5.3 billion in 2014). Business R&D performance funded by other sources includes U.S. state government, foreign government, and all other sources in the United States and abroad.

^e Before 2003, higher education R&D covered only science and engineering (S&E) fields; in 2003 and later years, R&D in non-S&E fields is also included. (Non-S&E R&D was \$1.4 billion in 2003 and \$3.4 billion in 2014.) In 1998 and later years, the higher education R&D data have been adjusted to eliminate double counting of R&D funds passed through from one academic institution to another. (In FY 1998, the total of pass-through funds reported was \$479 million, \$421 million of which were federal dollars. In FY 2014, total pass-through was \$3.169 billion, with \$2.835 billion federal.) The nonfederal government funding category includes support from state and local government. The other nonprofit funding category includes support from nonprofit organizations and other sources not elsewhere classified. (In 2014, \$4.063 billion was from nonprofit organizations, and \$1.944 billion was from these unclassified other sources.)

^f The data on other nonprofit R&D funded by the federal government come from NSF's annual Federal Funds for R&D Survey. That funded by nonfederal government is included in the ONP category. The 1998–2015 data for other components funded by businesses and by the nonprofit sector itself are estimated, based on parameters from the 1996–97 Survey of R&D Funding and Performance by Nonprofit Organizations.

^g Some data for 2014 are preliminary and may later be revised.

^h The data for 2015 are estimates and will later be revised.

NOTES: Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For trend comparisons, use only the historical data reported in this table because some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in NSF's annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also, before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data. For federal performers in 1977 and afterward, the approximation equals 75% of the amount reported in the same fiscal year plus 25% of the amount reported in the subsequent fiscal year. Prior to 1977, the federal fiscal year began on 1 July, not 1 October, and the approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year. The fiscal year for higher education performers and state government performers generally begins 1 July, and the calendar year approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year.

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

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c	Business ^d						Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Busi-ness	Higher ed-ucation	ONP	Total	Federal	Busi-ness	ONP
	Current \$millions																					
1953	460	138	102	36	36	NA	151	132	19	NA	NA	NA	123	82	7	13	6	16	48	27	9	12
1954	509	141	96	45	45	NA	166	143	23	NA	NA	NA	148	97	10	15	8	18	55	31	11	13
1955	570	160	98	62	62	NA	169	162	7	NA	NA	NA	180	117	14	17	12	21	62	35	13	14
1956	718	203	114	89	89	NA	223	216	7	NA	NA	NA	220	143	19	20	15	24	73	41	15	17
1957	813	234	124	110	110	NA	234	230	4	NA	NA	NA	261	167	25	23	20	27	86	48	15	23
1958	943	264	149	115	115	NA	266	252	14	NA	NA	NA	312	202	31	24	24	31	102	58	16	28
1959	1,087	298	165	134	134	NA	282	248	34	NA	NA	NA	388	263	38	24	28	36	119	71	18	30
1960	1,286	334	184	150	150	NA	333	297	36	NA	NA	NA	485	341	45	25	33	41	135	84	21	30
1961	1,511	407	230	177	177	NA	344	314	30	NA	NA	NA	598	432	54	25	40	48	163	104	22	37
1962	1,824	441	252	189	189	NA	449	345	104	NA	NA	NA	737	546	64	25	48	55	198	128	24	46
1963	2,115	501	285	216	216	NA	484	375	109	NA	NA	NA	909	689	75	25	58	63	222	147	25	50
1964	2,396	584	339	245	245	NA	507	384	123	NA	NA	NA	1,071	824	84	25	70	68	235	163	25	47
1965	2,664	625	375	250	250	NA	563	406	157	NA	NA	NA	1,221	944	94	27	86	70	256	175	29	52
1966	2,930	683	410	273	273	NA	593	451	142	NA	NA	NA	1,380	1,066	104	29	106	75	274	184	32	58
1967	3,168	735	434	301	301	NA	595	427	168	NA	NA	NA	1,554	1,188	114	34	136	83	285	190	34	61
1968	3,376	797	482	315	315	NA	607	462	145	NA	NA	NA	1,681	1,265	131	38	156	91	292	192	37	63
1969	3,491	858	545	313	313	NA	581	458	123	NA	NA	NA	1,754	1,288	153	40	171	103	298	188	43	67
1970	3,594	866	562	304	304	NA	566	444	122	NA	NA	NA	1,855	1,323	179	43	196	115	307	191	44	72
1971	3,720	870	581	289	289	NA	557	456	101	NA	NA	NA	1,968	1,385	194	50	214	127	326	204	45	77
1972	3,850	915	603	313	313	NA	554	463	91	NA	NA	NA	2,038	1,437	195	55	216	134	344	213	47	84
1973	4,099	1,034	652	382	382	NA	595	499	96	NA	NA	NA	2,103	1,489	196	59	223	137	368	229	49	90
1974	4,511	1,182	715	467	467	NA	650	536	114	NA	NA	NA	2,282	1,609	204	66	250	153	397	242	54	102
1975	4,875	1,292	760	533	533	NA	677	573	104	NA	NA	NA	2,480	1,768	212	72	264	164	426	251	59	116
1976	5,373	1,479	850	629	629	NA	750	634	116	NA	NA	NA	2,675	1,924	218	75	283	175	470	274	65	131
1977	6,008	1,689	943	746	746	NA	836	701	135	NA	NA	NA	2,967	2,114	232	89	334	198	517	297	72	148
1978	6,959	2,049	1,044	1,005	1,005	NA	941	785	156	NA	NA	NA	3,376	2,399	260	107	398	213	593	346	79	168
1979	7,836	2,272	1,112	1,160	1,160	NA	1,054	893	161	NA	NA	NA	3,828	2,719	286	128	466	229	683	406	87	190
1980	8,747	2,506	1,212	1,294	1,294	NA	1,205	1,035	170	NA	NA	NA	4,315	3,061	307	156	544	248	721	411	95	215
1981	9,658	2,773	1,343	1,430	1,430	NA	1,477	1,313	164	NA	NA	NA	4,737	3,331	338	183	615	269	671	324	105	243
1982	10,651	3,025	1,522	1,503	1,503	NA	1,776	1,523	253	NA	NA	NA	5,091	3,475	368	215	716	317	759	369	115	275
1983	11,880	3,393	1,733	1,661	1,661	NA	2,106	1,760	346	NA	NA	NA	5,518	3,689	396	260	816	358	863	426	127	311

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c	Business ^d						Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation	ONP	Total	Federal	Busi- ness	ONP
1984	13,332	3,731	1,877	1,854	1,854	NA	2,472	2,132	340	NA	NA	NA	6,145	4,087	436	313	915	395	984	494	139	351
1985	14,748	3,884	1,947	1,936	1,936	NA	2,731	2,373	358	NA	NA	NA	7,024	4,606	514	389	1,075	440	1,110	560	153	397
1986	17,154	4,071	2,026	2,045	2,045	NA	3,930	3,496	434	NA	NA	NA	7,943	5,122	606	466	1,262	488	1,210	594	168	449
1987	18,481	4,290	2,047	2,242	2,242	NA	4,181	3,583	598	NA	NA	NA	8,644	5,527	659	514	1,399	545	1,367	675	185	507
1988	19,787	4,749	2,116	2,633	2,633	NA	4,163	3,507	656	NA	NA	NA	9,344	5,937	705	565	1,530	607	1,531	756	203	573
1989	21,891	5,124	2,309	2,815	2,815	NA	4,818	3,832	986	NA	NA	NA	10,219	6,422	766	637	1,714	680	1,730	860	223	647
1990	23,029	5,352	2,319	3,033	3,033	NA	4,629	3,760	869	NA	NA	NA	11,126	6,889	847	705	1,929	756	1,922	947	245	730
1991	27,140	5,573	2,378	3,195	3,195	NA	7,376	6,125	1,251	NA	NA	NA	12,062	7,423	912	764	2,127	836	2,129	1,036	269	825
1992	27,604	5,826	2,419	3,408	3,408	NA	6,528	5,816	712	NA	NA	NA	12,910	8,058	941	814	2,203	893	2,340	1,114	295	931
1993	28,743	6,138	2,621	3,517	3,517	NA	6,427	5,961	466	NA	NA	NA	13,646	8,638	952	851	2,268	936	2,532	1,157	324	1,051
1994	29,651	6,058	2,547	3,512	3,512	NA	6,514	6,078	436	NA	NA	NA	14,401	9,139	992	890	2,406	974	2,678	1,137	356	1,186
1995	29,610	5,996	2,689	3,307	3,307	NA	5,569	5,379	190	NA	NA	NA	15,147	9,634	1,070	945	2,511	987	2,899	1,170	390	1,338
1996	32,799	6,073	2,680	3,393	3,393	NA	7,498	6,848	650	NA	NA	NA	16,042	10,092	1,149	1,032	2,740	1,028	3,187	1,248	428	1,510
1997	36,913	6,150	2,746	3,404	3,404	NA	9,795	8,766	1,029	NA	NA	NA	17,646	10,924	1,247	1,174	3,141	1,160	3,322	1,317	449	1,557
1998	35,355	6,444	3,003	3,441	3,441	NA	5,853	4,851	1,002	NA	NA	NA	19,348	11,941	1,327	1,312	3,474	1,293	3,710	1,461	477	1,773
1999	38,914	7,066	3,347	3,719	3,719	NA	6,645	5,537	1,108	NA	NA	NA	21,001	12,892	1,428	1,417	3,825	1,438	4,203	1,734	517	1,952
2000	42,729	7,801	3,765	4,037	4,037	NA	7,040	6,115	925	NA	NA	NA	22,887	13,960	1,545	1,495	4,287	1,599	5,000	2,099	566	2,334
2001	47,703	8,832	4,260	4,571	4,404	NA	8,053	7,299	754	NA	NA	NA	25,201	15,541	1,658	1,515	4,726	1,760	5,617	2,464	571	2,582
2002	51,873	9,737	4,511	5,227	5,029	NA	7,547	6,659	888	NA	NA	NA	28,475	17,930	1,807	1,508	5,273	1,958	6,113	2,575	554	2,984
2003	56,057	9,739	4,664	5,075	4,904	NA	8,330	6,944	1,386	NA	NA	NA	31,278	20,127	1,962	1,488	5,651	2,050	6,710	2,714	567	3,429
2004	57,699	9,672	4,697	4,976	4,852	NA	7,835	6,763	1,072	NA	NA	NA	33,382	21,702	2,077	1,541	5,914	2,147	6,809	2,788	578	3,443
2005	61,286	9,907	4,770	5,136	5,000	NA	8,667	7,559	1,108	NA	NA	NA	35,419	22,788	2,149	1,663	6,507	2,313	7,293	2,903	614	3,776
2006	63,041	9,953	4,716	5,238	5,080	NA	8,384	6,940	1,444	NA	NA	NA	37,173	23,312	2,279	1,836	7,216	2,529	7,454	2,849	656	3,948
2007	66,217	8,053	4,621	3,432	3,298	NA	11,268	8,488	2,780	NA	NA	NA	38,900	23,673	2,495	2,033	7,859	2,840	7,911	2,829	698	4,384
2008	70,236	8,533	4,957	3,576	3,432	NA	12,369	9,741	1,475	484	639	30	40,553	24,149	2,674	2,214	8,397	3,119	8,697	3,073	722	4,901
2009	74,349	10,012	5,441	4,571	4,432	NA	14,784	11,999	1,340	662	736	47	39,899	24,112	2,554	2,143	7,997	3,094	9,553	3,498	698	5,357
2010	77,336	11,748	5,111	6,637	6,475	NA	16,371	13,239	1,406	722	935	68	39,400	24,579	2,358	1,957	7,535	2,971	9,694	3,414	702	5,577
2011	74,262	11,522	5,047	6,475	6,333	NA	13,020	10,585	677	745	954	59	40,093	24,858	2,289	1,962	7,980	3,005	9,503	3,081	740	5,683
2012	74,643	11,150	5,489	5,661	5,530	NA	13,294	10,955	644	710	946	39	40,446	24,168	2,249	2,075	8,764	3,189	9,636	3,092	758	5,785
2013	80,146	9,519	5,330	4,188	4,085	NA	19,508	14,986	1,196	1,446	1,771	109	40,974	23,464	2,319	2,229	9,475	3,486	10,029	3,031	802	6,195
2014 ^g	84,012	10,047	5,807	4,239	4,144	NA	21,936	15,805	2,044	1,584	2,367	135	41,349	22,935	2,353	2,371	9,961	3,730	10,560	3,127	844	6,589
2015 ^h	86,705	10,598	6,173	4,425	4,333	NA	22,618	17,377	1,502	1,426	2,191	122	42,417	22,911	2,334	2,531	10,643	3,999	10,951	3,161	895	6,895

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c	Business ^d						Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	ONP
	Constant 2009 \$millions																					
1953	3,032	907	670	238	238	NA	996	871	125	NA	NA	NA	812	538	43	86	40	106	317	178	59	79
1954	3,324	919	628	291	291	NA	1,085	935	150	NA	NA	NA	964	631	62	98	55	118	356	199	72	85
1955	3,663	1,025	627	398	398	NA	1,086	1,041	45	NA	NA	NA	1,154	749	89	109	75	132	398	225	84	90
1956	4,461	1,259	705	553	553	NA	1,384	1,342	42	NA	NA	NA	1,367	886	118	121	96	146	451	252	93	106
1957	4,893	1,404	746	659	659	NA	1,407	1,383	24	NA	NA	NA	1,567	1,001	149	135	119	162	514	286	90	138
1958	5,548	1,553	876	676	676	NA	1,562	1,482	80	NA	NA	NA	1,835	1,188	183	141	141	182	597	338	94	165
1959	6,305	1,729	954	774	774	NA	1,636	1,439	197	NA	NA	NA	2,251	1,523	218	139	165	206	690	412	104	174
1960	7,356	1,908	1,050	858	858	NA	1,903	1,699	204	NA	NA	NA	2,772	1,948	258	140	192	235	772	481	120	172
1961	8,552	2,301	1,299	1,002	1,002	NA	1,950	1,777	173	NA	NA	NA	3,382	2,442	304	141	225	269	920	586	125	209
1962	10,199	2,466	1,409	1,057	1,057	NA	2,512	1,929	583	NA	NA	NA	4,118	3,050	356	140	267	305	1,104	713	134	257
1963	11,694	2,767	1,573	1,194	1,194	NA	2,678	2,073	604	NA	NA	NA	5,022	3,809	414	135	318	346	1,227	813	138	276
1964	13,046	3,180	1,846	1,334	1,334	NA	2,760	2,091	670	NA	NA	NA	5,829	4,484	459	136	379	370	1,277	885	136	256
1965	14,245	3,339	2,003	1,337	1,337	NA	3,010	2,171	840	NA	NA	NA	6,526	5,045	505	142	460	374	1,369	936	155	278
1966	15,239	3,552	2,132	1,420	1,420	NA	3,084	2,346	739	NA	NA	NA	7,178	5,544	539	151	554	390	1,425	957	166	302
1967	16,009	3,712	2,191	1,521	1,521	NA	3,007	2,158	849	NA	NA	NA	7,852	6,002	575	169	686	419	1,438	958	172	308
1968	16,366	3,861	2,337	1,525	1,525	NA	2,943	2,240	703	NA	NA	NA	8,147	6,132	634	182	757	441	1,416	931	179	305
1969	16,129	3,965	2,519	1,446	1,446	NA	2,685	2,116	568	NA	NA	NA	8,102	5,949	706	183	791	474	1,377	869	199	310
1970	15,773	3,801	2,466	1,334	1,334	NA	2,484	1,949	535	NA	NA	NA	8,141	5,804	787	189	859	503	1,347	838	193	316
1971	15,538	3,632	2,427	1,205	1,205	NA	2,326	1,905	422	NA	NA	NA	8,220	5,783	809	207	893	528	1,360	850	188	322
1972	15,414	3,663	2,412	1,251	1,251	NA	2,218	1,854	364	NA	NA	NA	8,157	5,753	782	220	865	536	1,375	851	188	336
1973	15,566	3,926	2,476	1,450	1,450	NA	2,259	1,895	365	NA	NA	NA	7,985	5,652	746	222	847	518	1,395	868	186	342
1974	15,715	4,117	2,490	1,627	1,627	NA	2,265	1,867	397	NA	NA	NA	7,949	5,606	710	230	871	531	1,384	841	188	355
1975	15,544	4,121	2,423	1,698	1,698	NA	2,159	1,827	332	NA	NA	NA	7,906	5,638	677	228	840	523	1,358	800	189	368
1976	16,241	4,471	2,569	1,901	1,901	NA	2,267	1,916	351	NA	NA	NA	8,084	5,816	658	227	856	527	1,419	827	197	395
1977	17,100	4,807	2,684	2,123	2,123	NA	2,379	1,995	384	NA	NA	NA	8,443	6,017	660	253	951	562	1,471	845	204	422
1978	18,506	5,450	2,777	2,673	2,673	NA	2,503	2,088	415	NA	NA	NA	8,978	6,380	691	283	1,059	565	1,576	920	210	446
1979	19,252	5,582	2,733	2,849	2,849	NA	2,589	2,194	396	NA	NA	NA	9,403	6,680	702	313	1,145	563	1,677	998	213	466
1980	19,710	5,648	2,732	2,916	2,916	NA	2,715	2,332	383	NA	NA	NA	9,723	6,897	691	351	1,226	559	1,624	925	215	484
1981	19,904	5,714	2,767	2,947	2,947	NA	3,044	2,706	338	NA	NA	NA	9,762	6,865	697	377	1,268	555	1,384	667	216	501
1982	20,668	5,869	2,953	2,917	2,917	NA	3,447	2,956	491	NA	NA	NA	9,880	6,743	714	418	1,390	615	1,473	716	224	533
1983	22,179	6,335	3,235	3,100	3,100	NA	3,932	3,286	646	NA	NA	NA	10,302	6,886	739	485	1,524	668	1,611	795	236	580

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c							Business ^d				Higher education ^e				Other nonprofit organizations ^f			
	All funding sources	Total	Federal	Total	Federal	Total	Business ^d			Higher education ^e				Other nonprofit organizations ^f										
							Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation	ONP	Total	Federal	Busi- ness	ONP			
1984	24,036	6,726	3,383	3,343	3,343	NA	4,457	3,844	613	NA	NA	NA	11,078	7,368	785	564	1,649	712	1,775	891	251	633		
1985	25,766	6,785	3,402	3,383	3,383	NA	4,771	4,146	625	NA	NA	NA	12,271	8,046	899	679	1,879	768	1,939	978	267	693		
1986	29,375	6,971	3,469	3,503	3,503	NA	6,730	5,987	743	NA	NA	NA	13,601	8,770	1,037	798	2,161	835	2,072	1,016	288	768		
1987	30,861	7,163	3,419	3,745	3,745	NA	6,982	5,983	999	NA	NA	NA	14,434	9,229	1,100	858	2,337	910	2,282	1,128	308	846		
1988	31,924	7,661	3,414	4,247	4,247	NA	6,717	5,658	1,058	NA	NA	NA	15,075	9,578	1,138	911	2,468	980	2,471	1,220	327	924		
1989	33,996	7,958	3,585	4,372	4,372	NA	7,482	5,951	1,531	NA	NA	NA	15,870	9,973	1,189	990	2,662	1,056	2,686	1,336	346	1,004		
1990	34,488	8,015	3,473	4,543	4,543	NA	6,932	5,631	1,301	NA	NA	NA	16,662	10,316	1,268	1,056	2,889	1,132	2,878	1,418	366	1,094		
1991	39,336	8,077	3,447	4,631	4,631	NA	10,691	8,877	1,813	NA	NA	NA	17,482	10,759	1,322	1,107	3,083	1,211	3,086	1,501	389	1,195		
1992	39,116	8,256	3,427	4,829	4,829	NA	9,251	8,242	1,009	NA	NA	NA	18,294	11,419	1,334	1,154	3,121	1,266	3,316	1,579	418	1,319		
1993	39,783	8,496	3,628	4,868	4,868	NA	8,896	8,251	645	NA	NA	NA	18,888	11,956	1,318	1,178	3,140	1,296	3,504	1,601	448	1,455		
1994	40,185	8,211	3,452	4,759	4,759	NA	8,828	8,237	591	NA	NA	NA	19,517	12,385	1,344	1,206	3,261	1,320	3,630	1,541	482	1,607		
1995	39,311	7,961	3,570	4,390	4,390	NA	7,393	7,141	252	NA	NA	NA	20,108	12,789	1,420	1,255	3,333	1,311	3,848	1,553	518	1,777		
1996	42,763	7,917	3,494	4,424	4,424	NA	9,776	8,928	847	NA	NA	NA	20,915	13,158	1,498	1,346	3,572	1,341	4,155	1,628	559	1,969		
1997	47,317	7,883	3,520	4,363	4,363	NA	12,556	11,237	1,319	NA	NA	NA	22,620	14,003	1,598	1,505	4,026	1,487	4,259	1,688	576	1,995		
1998	44,833	8,171	3,808	4,363	4,363	NA	7,422	6,151	1,271	NA	NA	NA	24,535	15,142	1,683	1,664	4,406	1,640	4,705	1,852	605	2,248		
1999	48,602	8,825	4,180	4,645	4,645	NA	8,299	6,916	1,384	NA	NA	NA	26,229	16,102	1,784	1,770	4,778	1,796	5,249	2,166	645	2,438		
2000	52,180	9,527	4,598	4,929	4,929	NA	8,597	7,468	1,130	NA	NA	NA	27,950	17,048	1,887	1,826	5,236	1,953	6,106	2,564	691	2,851		
2001	56,957	10,545	5,087	5,458	5,258	NA	9,615	8,715	900	NA	NA	NA	30,090	18,556	1,980	1,809	5,643	2,102	6,707	2,942	682	3,083		
2002	60,999	11,451	5,304	6,147	5,914	NA	8,875	7,831	1,044	NA	NA	NA	33,485	21,085	2,125	1,773	6,200	2,302	7,188	3,028	652	3,509		
2003	64,630	11,229	5,378	5,851	5,654	NA	9,604	8,006	1,598	NA	NA	NA	36,061	23,205	2,262	1,716	6,515	2,363	7,737	3,130	653	3,954		
2004	64,743	10,853	5,270	5,583	5,444	NA	8,792	7,589	1,203	NA	NA	NA	37,457	24,352	2,331	1,729	6,636	2,410	7,641	3,129	649	3,863		
2005	66,624	10,770	5,186	5,584	5,435	NA	9,422	8,217	1,205	NA	NA	NA	38,504	24,773	2,336	1,808	7,073	2,515	7,928	3,155	668	4,105		
2006	66,489	10,498	4,974	5,524	5,358	NA	8,843	7,320	1,523	NA	NA	NA	39,206	24,587	2,404	1,936	7,611	2,667	7,861	3,005	692	4,164		
2007	68,029	8,274	4,747	3,526	3,388	NA	11,576	8,720	2,856	NA	NA	NA	39,965	24,320	2,563	2,089	8,074	2,918	8,127	2,907	717	4,504		
2008	70,770	8,597	4,994	3,603	3,458	NA	12,463	9,815	1,486	487	644	30	40,861	24,333	2,694	2,231	8,461	3,143	8,763	3,097	728	4,938		
2009	74,349	10,012	5,441	4,571	4,432	NA	14,784	11,999	1,340	662	736	47	39,899	24,112	2,554	2,143	7,997	3,094	9,553	3,498	698	5,357		
2010	76,402	11,606	5,049	6,557	6,397	NA	16,173	13,080	1,389	713	924	68	38,925	24,283	2,329	1,934	7,444	2,935	9,577	3,373	694	5,510		
2011	71,882	11,153	4,885	6,268	6,130	NA	12,603	10,246	655	721	924	57	38,808	24,061	2,215	1,899	7,724	2,908	9,199	2,982	716	5,501		
2012	70,943	10,597	5,217	5,381	5,256	NA	12,635	10,412	612	675	900	37	38,441	22,970	2,137	1,972	8,330	3,031	9,158	2,939	721	5,499		

TABLE 3. U.S. basic research expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c	Business ^d						Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Business ^d				Higher education ^e				Other nonprofit organizations ^f							
							Total	Own domestic	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	ONP		
2013	74,952	8,902	4,985	3,917	3,821	NA	18,244	14,015	1,118	1,352	1,656	102	38,318	21,944	2,168	2,084	8,861	3,260	9,379	2,835	750	5,794
2014 ^g	77,298	9,244	5,343	3,900	3,812	NA	20,183	14,542	1,881	1,458	2,178	125	38,045	21,102	2,165	2,181	9,165	3,432	9,716	2,877	776	6,063
2015 ^h	78,991	9,655	5,623	4,031	3,947	NA	20,606	15,831	1,368	1,299	1,996	111	38,643	20,873	2,126	2,306	9,696	3,643	9,977	2,880	815	6,282

NA = not available.

FFRDC = federally funded R&D center; ONP = other nonprofit organization.

^a See table 2, footnote a.

^b Type-of-R&D data for FFRDC R&D in 1953–54 includes the R&D of only university-administered FFRDCs. Starting in 2001, type-of-R&D data distinguish federally funded from nonfederally funded FFRDC R&D. (See also table 2, footnote b.)

^c Type-of-R&D data for state intramural R&D are not currently collected by the Survey of State Government R&D. (See also table 2, footnote c.)

^d Type-of-R&D data for business R&D in 1998–2007 were revised in response to data quality review considerations and are not directly comparable with the data for 1997 and earlier years. For 2008 and later years, the type-of-R&D splits for other than total, own-funded, and federally funded R&D are estimated. (See also table 2, footnote d.)

^e The type-of-R&D estimation procedure for higher education R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years. Type-of-R&D splits for other than total and federally funded are estimated. (See also table 2, footnote e.)

^f Type-of-R&D data for R&D by other nonprofit organizations in 1998 and later years are estimated, except for the R&D that is federally funded. (See also table 2, footnote f.)

^g Some data for 2014 are preliminary and may later be revised.

^h The data for 2015 are estimates and will later be revised.

NOTES: Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For trend comparisons, use only the historical data reported in this table because some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation's annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also, before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data. For federal performers in 1977 and afterward, the approximation equals 75% of the amount reported in the same fiscal year plus 25% of the amount reported in the subsequent fiscal year. Prior to 1977, the federal fiscal year began on 1 July, not 1 October, and the approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year. The fiscal year for higher education performers and state government performers generally begins 1 July, and the calendar-year approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year.

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

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c			Business ^d				Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation	ONP	Total	Federal	Busi- ness	ONP
	Current \$millions																					
1953	1,289	395	347	48	48	NA	726	438	288	NA	NA	NA	134	59	30	7	28	10	35	14	11	10
1954	1,378	388	330	59	59	NA	814	492	322	NA	NA	NA	137	60	32	8	28	10	40	16	13	11
1955	1,502	419	333	86	86	NA	899	560	339	NA	NA	NA	142	63	32	9	27	11	43	18	14	11
1956	1,929	511	387	125	125	NA	1,224	794	430	NA	NA	NA	146	65	33	10	27	11	48	20	14	14
1957	2,413	595	446	149	149	NA	1,616	992	624	NA	NA	NA	147	63	34	12	27	11	57	23	14	20
1958	2,759	672	516	156	156	NA	1,868	1,137	731	NA	NA	NA	152	66	35	12	27	12	68	29	14	25
1959	2,940	756	577	179	179	NA	1,935	1,178	757	NA	NA	NA	167	78	37	13	28	12	82	40	15	27
1960	3,065	816	615	201	201	NA	1,965	1,196	769	NA	NA	NA	186	93	39	13	29	12	99	54	17	28
1961	3,123	908	668	240	240	NA	1,903	1,165	738	NA	NA	NA	199	104	40	13	30	13	114	62	17	35
1962	3,698	958	709	249	249	NA	2,392	1,438	954	NA	NA	NA	216	119	41	14	30	13	132	68	19	45
1963	3,864	1,084	809	275	275	NA	2,402	1,450	952	NA	NA	NA	230	128	42	14	32	14	150	82	19	49
1964	4,201	1,260	947	313	313	NA	2,538	1,560	978	NA	NA	NA	256	142	45	14	37	18	148	82	19	47
1965	4,374	1,287	994	294	294	NA	2,612	1,620	992	NA	NA	NA	304	176	46	13	42	27	171	98	21	52
1966	4,653	1,302	1,012	290	290	NA	2,790	1,804	986	NA	NA	NA	351	208	47	14	48	34	210	129	24	57
1967	4,848	1,402	1,069	334	334	NA	2,832	1,849	983	NA	NA	NA	389	238	46	16	54	36	226	141	25	60
1968	5,137	1,446	1,112	334	334	NA	3,037	2,081	956	NA	NA	NA	405	250	46	16	55	39	250	160	28	62
1969	5,454	1,565	1,229	336	336	NA	3,192	2,272	920	NA	NA	NA	417	257	48	16	54	43	281	183	32	66
1970	5,752	1,670	1,334	336	336	NA	3,330	2,378	952	NA	NA	NA	451	280	51	18	56	47	302	199	33	70
1971	5,833	1,666	1,355	312	312	NA	3,348	2,441	907	NA	NA	NA	499	306	61	19	67	47	320	212	34	74
1972	6,147	1,792	1,434	358	358	NA	3,407	2,562	845	NA	NA	NA	619	391	74	21	82	52	330	216	35	79
1973	6,655	1,861	1,527	334	334	NA	3,715	2,832	883	NA	NA	NA	725	450	88	26	100	62	355	236	36	83
1974	7,344	1,987	1,652	335	335	NA	4,168	3,263	905	NA	NA	NA	794	477	96	32	118	72	396	266	39	91
1975	8,091	2,295	1,912	384	384	NA	4,431	3,440	991	NA	NA	NA	934	550	113	39	141	92	431	290	42	100
1976	8,976	2,525	2,068	457	457	NA	4,945	3,912	1,033	NA	NA	NA	1,042	596	127	45	166	109	464	310	45	109
1977	9,662	2,621	2,081	540	540	NA	5,424	4,311	1,113	NA	NA	NA	1,126	626	134	51	194	121	492	324	48	120
1978	10,704	2,838	2,242	597	597	NA	6,065	4,870	1,195	NA	NA	NA	1,247	676	151	61	232	128	554	371	52	132
1979	12,097	3,069	2,415	654	654	NA	6,975	5,670	1,305	NA	NA	NA	1,418	793	161	71	263	129	635	436	55	144
1980	13,729	3,295	2,546	749	749	NA	8,175	6,550	1,625	NA	NA	NA	1,622	912	174	88	308	140	637	420	60	158
1981	16,329	3,520	2,731	788	788	NA	10,401	8,359	2,042	NA	NA	NA	1,781	953	199	108	363	159	628	391	64	173
1982	18,218	3,692	2,802	890	890	NA	11,956	9,363	2,593	NA	NA	NA	1,915	1,007	207	121	402	178	655	398	69	189
1983	20,298	3,956	2,991	965	965	NA	13,513	10,286	3,227	NA	NA	NA	2,116	1,122	215	141	443	194	713	433	74	207

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c		Business ^d				Higher education ^e				Other nonprofit organizations ^f						
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Business ^d		Higher education ^e		Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation	ONP	Total	Federal	Busi- ness	ONP
									Federal	Other domestic business	Foreign business	Other										
1984	22,451	4,137	2,961	1,176	1,176	NA	15,218	11,541	3,677	NA	NA	NA	2,332	1,226	234	168	491	212	764	459	79	226
1985	25,401	4,427	3,135	1,292	1,292	NA	17,625	12,908	4,717	NA	NA	NA	2,527	1,296	262	198	547	224	822	490	85	247
1986	27,240	4,462	3,204	1,258	1,258	NA	19,131	15,082	4,049	NA	NA	NA	2,780	1,393	298	229	620	240	867	506	91	270
1987	27,951	4,594	3,366	1,228	1,228	NA	19,190	15,153	4,037	NA	NA	NA	3,219	1,643	333	260	707	276	948	555	98	295
1988	29,528	4,346	3,362	984	984	NA	20,377	16,531	3,846	NA	NA	NA	3,779	1,958	377	302	818	325	1,026	599	105	322
1989	32,277	4,613	3,566	1,047	1,047	NA	22,317	17,993	4,324	NA	NA	NA	4,188	2,121	417	347	933	370	1,159	695	112	352
1990	34,897	4,808	3,652	1,156	1,156	NA	24,399	18,432	5,967	NA	NA	NA	4,406	2,140	453	377	1,031	404	1,284	780	120	384
1991	38,631	5,539	4,093	1,446	1,446	NA	27,013	21,425	5,588	NA	NA	NA	4,611	2,232	468	392	1,091	428	1,468	921	129	419
1992	37,936	5,866	4,337	1,529	1,529	NA	25,660	21,184	4,476	NA	NA	NA	4,882	2,415	479	414	1,120	454	1,528	933	138	456
1993	37,283	6,338	4,838	1,500	1,500	NA	24,251	19,956	4,295	NA	NA	NA	5,149	2,542	496	443	1,181	487	1,544	900	148	497
1994	36,618	6,581	4,985	1,596	1,596	NA	22,988	19,372	3,616	NA	NA	NA	5,390	2,644	517	464	1,256	509	1,659	960	158	541
1995	40,936	6,666	4,952	1,714	1,714	NA	26,919	23,755	3,164	NA	NA	NA	5,659	2,779	559	494	1,311	516	1,692	934	170	589
1996	43,170	6,495	4,872	1,623	1,623	NA	29,010	25,370	3,640	NA	NA	NA	5,885	2,864	584	524	1,390	522	1,781	960	182	640
1997	46,561	6,675	4,997	1,679	1,679	NA	32,430	29,782	2,648	NA	NA	NA	5,529	2,550	554	520	1,392	514	1,926	1,011	205	711
1998	46,377	6,871	5,146	1,725	1,725	NA	32,208	29,576	2,632	NA	NA	NA	5,211	2,260	529	523	1,385	515	2,087	1,060	218	809
1999	52,025	7,181	5,530	1,651	1,651	NA	36,638	33,821	2,817	NA	NA	NA	5,780	2,661	549	545	1,471	553	2,427	1,300	236	891
2000	56,699	7,856	6,105	1,750	1,750	NA	39,176	36,494	2,682	NA	NA	NA	6,513	3,194	575	556	1,594	595	3,155	1,831	258	1,066
2001	64,196	9,522	7,052	2,469	2,379	NA	44,012	40,409	3,603	NA	NA	NA	7,073	3,553	604	553	1,722	641	3,589	2,150	261	1,178
2002	50,821	10,506	7,487	3,019	2,905	NA	28,533	26,081	2,452	NA	NA	NA	7,900	4,056	659	549	1,923	714	3,882	2,267	253	1,362
2003	61,406	10,933	7,672	3,262	3,152	NA	37,334	32,861	4,473	NA	NA	NA	8,827	4,660	733	556	2,112	766	4,311	2,487	259	1,565
2004	69,495	10,589	7,455	3,135	3,057	NA	45,432	40,657	4,775	NA	NA	NA	9,190	4,902	763	566	2,171	788	4,283	2,448	264	1,572
2005	70,030	10,886	7,557	3,329	3,241	NA	45,284	39,995	5,289	NA	NA	NA	9,424	5,032	748	578	2,262	805	4,435	2,432	280	1,723
2006	76,916	11,075	7,435	3,640	3,531	NA	51,173	45,033	6,140	NA	NA	NA	9,821	5,318	741	596	2,345	821	4,694	2,592	300	1,802
2007	85,612	12,697	7,222	5,475	5,293	NA	57,570	48,625	8,945	NA	NA	NA	10,273	5,548	774	631	2,439	881	4,902	2,583	318	2,001
2008	76,897	13,356	7,316	6,040	5,843	NA	46,864	35,382	5,397	2,815	3,094	175	11,339	6,144	847	701	2,659	988	5,167	2,600	330	2,237
2009	75,187	14,063	7,874	6,189	5,979	NA	41,055	29,264	7,797	1,865	1,996	134	14,053	7,697	1,028	861	3,214	1,252	5,813	3,049	319	2,445
2010	81,003	13,203	8,016	5,187	5,025	NA	44,906	34,912	4,705	2,256	2,819	214	16,742	9,374	1,172	973	3,746	1,477	5,907	3,041	321	2,546
2011	84,112	13,251	8,024	5,227	5,057	NA	47,186	37,047	4,404	2,413	3,131	191	17,805	10,029	1,167	1,001	4,074	1,533	5,625	2,693	338	2,594
2012	89,063	14,328	8,587	5,741	5,566	NA	50,755	38,891	4,137	3,336	4,209	182	18,131	9,940	1,133	1,044	4,409	1,605	5,616	2,629	346	2,641
2013	90,265	15,132	8,309	6,823	6,639	NA	51,013	37,385	6,028	3,275	4,078	247	18,226	9,556	1,148	1,104	4,692	1,727	5,659	2,465	366	2,828
2014 ^g	93,631	15,519	8,609	6,910	6,721	NA	53,415	38,281	6,445	3,331	5,074	285	18,543	9,327	1,177	1,186	4,985	1,867	5,915	2,522	385	3,008
2015 ^h	96,297	15,896	8,683	7,213	7,028	NA	55,022	42,087	4,736	3,095	4,840	265	19,037	9,318	1,163	1,261	5,303	1,992	6,099	2,544	408	3,147

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c		Business ^d				Higher education ^e				Other nonprofit organizations ^f						
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation	ONP	Total	Federal	Busi- ness	ONP
	Constant 2009 \$millions																					
1953	8,505	2,603	2,290	313	313	NA	4,790	2,890	1,900	NA	NA	NA	881	389	199	43	184	66	231	92	73	66
1954	9,009	2,537	2,154	382	382	NA	5,322	3,217	2,105	NA	NA	NA	892	389	206	49	183	65	258	101	85	72
1955	9,650	2,693	2,140	553	553	NA	5,775	3,599	2,176	NA	NA	NA	909	405	208	55	175	67	273	112	90	71
1956	11,986	3,176	2,402	774	774	NA	7,605	4,935	2,670	NA	NA	NA	907	404	206	62	167	68	298	124	87	87
1957	14,514	3,576	2,679	896	896	NA	9,718	5,966	3,751	NA	NA	NA	881	379	204	69	163	66	340	135	84	120
1958	16,229	3,953	3,035	918	918	NA	10,988	6,688	4,299	NA	NA	NA	891	385	208	71	160	68	397	168	82	147
1959	17,053	4,383	3,344	1,038	1,038	NA	11,226	6,834	4,393	NA	NA	NA	969	450	214	73	163	70	476	232	87	157
1960	17,540	4,666	3,516	1,150	1,150	NA	11,246	6,843	4,402	NA	NA	NA	1,061	532	221	74	165	69	566	309	97	160
1961	17,675	5,136	3,781	1,355	1,355	NA	10,770	6,594	4,177	NA	NA	NA	1,123	586	226	74	167	71	645	351	96	198
1962	20,674	5,353	3,961	1,392	1,392	NA	13,375	8,040	5,335	NA	NA	NA	1,208	663	227	75	170	73	738	380	106	252
1963	21,363	5,990	4,472	1,518	1,518	NA	13,278	8,016	5,262	NA	NA	NA	1,269	705	233	77	179	75	826	451	105	271
1964	22,873	6,858	5,153	1,704	1,704	NA	13,819	8,494	5,325	NA	NA	NA	1,391	773	246	74	203	95	806	446	103	256
1965	23,386	6,882	5,312	1,569	1,569	NA	13,967	8,662	5,304	NA	NA	NA	1,623	938	248	70	225	142	914	524	112	278
1966	24,198	6,772	5,264	1,508	1,508	NA	14,511	9,383	5,128	NA	NA	NA	1,826	1,082	245	73	252	174	1,090	668	125	296
1967	24,503	7,086	5,400	1,686	1,686	NA	14,313	9,345	4,968	NA	NA	NA	1,964	1,200	231	78	272	182	1,140	710	126	303
1968	24,903	7,007	5,388	1,619	1,619	NA	14,723	10,088	4,634	NA	NA	NA	1,963	1,210	223	78	267	187	1,210	773	136	301
1969	25,202	7,230	5,680	1,550	1,550	NA	14,749	10,498	4,251	NA	NA	NA	1,927	1,185	222	74	249	196	1,296	843	148	305
1970	25,247	7,329	5,855	1,475	1,475	NA	14,615	10,437	4,178	NA	NA	NA	1,977	1,227	225	77	245	204	1,325	873	145	307
1971	24,363	6,960	5,659	1,301	1,301	NA	13,984	10,195	3,788	NA	NA	NA	2,084	1,278	253	77	280	196	1,334	883	142	309
1972	24,610	7,174	5,741	1,433	1,433	NA	13,640	10,257	3,383	NA	NA	NA	2,476	1,563	297	82	328	206	1,319	863	140	316
1973	25,271	7,068	5,799	1,268	1,268	NA	14,106	10,753	3,353	NA	NA	NA	2,751	1,707	333	99	379	234	1,346	894	137	315
1974	25,587	6,922	5,757	1,165	1,165	NA	14,521	11,368	3,153	NA	NA	NA	2,765	1,660	335	110	411	249	1,379	927	135	317
1975	25,800	7,319	6,096	1,223	1,223	NA	14,129	10,969	3,160	NA	NA	NA	2,978	1,752	362	123	448	293	1,374	923	133	318
1976	27,133	7,633	6,252	1,381	1,381	NA	14,947	11,825	3,122	NA	NA	NA	3,149	1,800	385	135	500	329	1,403	937	135	331
1977	27,500	7,458	5,922	1,537	1,537	NA	15,437	12,270	3,168	NA	NA	NA	3,203	1,780	383	145	552	343	1,401	923	137	342
1978	28,468	7,548	5,962	1,587	1,587	NA	16,129	12,951	3,178	NA	NA	NA	3,316	1,797	402	161	616	339	1,474	987	137	350
1979	29,718	7,540	5,933	1,607	1,607	NA	17,135	13,929	3,206	NA	NA	NA	3,482	1,947	397	175	646	317	1,561	1,070	136	354
1980	30,938	7,425	5,737	1,688	1,688	NA	18,422	14,760	3,662	NA	NA	NA	3,656	2,055	391	199	694	316	1,436	946	134	356
1981	33,654	7,254	5,629	1,625	1,625	NA	21,436	17,227	4,208	NA	NA	NA	3,670	1,963	411	222	747	327	1,294	806	132	356
1982	35,354	7,165	5,437	1,728	1,728	NA	23,202	18,170	5,032	NA	NA	NA	3,716	1,953	403	235	780	345	1,272	772	133	367
1983	37,895	7,386	5,584	1,801	1,801	NA	25,228	19,203	6,025	NA	NA	NA	3,950	2,095	401	264	827	362	1,332	808	138	386

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c							Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Business ^d			Higher education ^e				Other nonprofit organizations ^f								
							Own domestic	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation	ONP	Total	Federal	Busi- ness	ONP		
1984	40,477	7,458	5,338	2,120	2,120	NA	27,437	20,807	6,629	NA	NA	NA	4,204	2,211	422	303	886	382	1,378	828	143	408
1985	44,376	7,733	5,477	2,257	2,257	NA	30,791	22,551	8,241	NA	NA	NA	4,415	2,265	457	345	956	391	1,436	855	148	432
1986	46,646	7,641	5,487	2,154	2,154	NA	32,761	25,827	6,934	NA	NA	NA	4,760	2,385	510	392	1,062	411	1,484	866	156	463
1987	46,674	7,671	5,620	2,051	2,051	NA	32,045	25,304	6,741	NA	NA	NA	5,375	2,743	556	434	1,181	461	1,583	927	163	493
1988	47,640	7,011	5,424	1,587	1,587	NA	32,876	26,671	6,205	NA	NA	NA	6,098	3,159	608	487	1,319	524	1,655	966	169	520
1989	50,126	7,164	5,539	1,626	1,626	NA	34,658	27,943	6,715	NA	NA	NA	6,504	3,294	647	539	1,449	575	1,800	1,079	174	546
1990	52,261	7,201	5,469	1,731	1,731	NA	36,540	27,604	8,936	NA	NA	NA	6,598	3,206	678	565	1,544	605	1,922	1,167	180	575
1991	55,991	8,028	5,933	2,095	2,095	NA	39,152	31,053	8,099	NA	NA	NA	6,682	3,235	678	568	1,581	621	2,128	1,335	187	607
1992	53,757	8,312	6,145	2,166	2,166	NA	36,362	30,019	6,343	NA	NA	NA	6,918	3,422	678	587	1,587	644	2,165	1,323	196	646
1993	51,604	8,773	6,697	2,076	2,076	NA	33,566	27,622	5,945	NA	NA	NA	7,127	3,518	686	613	1,635	675	2,138	1,245	205	688
1994	49,627	8,919	6,756	2,162	2,162	NA	31,155	26,254	4,901	NA	NA	NA	7,305	3,583	701	629	1,702	689	2,248	1,300	215	733
1995	54,347	8,850	6,575	2,275	2,275	NA	35,737	31,537	4,201	NA	NA	NA	7,513	3,689	742	656	1,741	685	2,246	1,240	225	781
1996	56,285	8,468	6,352	2,115	2,115	NA	37,823	33,077	4,746	NA	NA	NA	7,672	3,734	761	683	1,813	681	2,322	1,251	237	834
1997	59,685	8,557	6,405	2,152	2,152	NA	41,571	38,176	3,394	NA	NA	NA	7,087	3,269	710	666	1,784	658	2,469	1,296	263	911
1998	58,809	8,713	6,525	2,187	2,187	NA	40,843	37,505	3,338	NA	NA	NA	6,608	2,865	671	663	1,756	654	2,646	1,344	276	1,026
1999	64,978	8,968	6,907	2,062	2,062	NA	45,760	42,242	3,518	NA	NA	NA	7,219	3,324	686	681	1,838	691	3,031	1,623	295	1,113
2000	69,241	9,593	7,456	2,138	2,138	NA	47,841	44,566	3,275	NA	NA	NA	7,953	3,900	702	679	1,946	726	3,853	2,236	316	1,301
2001	76,649	11,368	8,420	2,948	2,840	NA	52,549	48,247	4,302	NA	NA	NA	8,445	4,243	721	660	2,056	766	4,285	2,567	311	1,407
2002	59,762	12,355	8,805	3,550	3,416	NA	33,553	30,669	2,883	NA	NA	NA	9,290	4,769	774	646	2,261	839	4,564	2,665	297	1,602
2003	70,797	12,606	8,845	3,761	3,634	NA	43,044	37,887	5,157	NA	NA	NA	10,177	5,373	846	641	2,435	883	4,970	2,867	298	1,805
2004	77,980	11,882	8,365	3,518	3,430	NA	50,979	45,621	5,358	NA	NA	NA	10,312	5,500	856	635	2,437	885	4,806	2,747	296	1,763
2005	76,129	11,835	8,216	3,619	3,523	NA	49,228	43,479	5,750	NA	NA	NA	10,245	5,470	813	629	2,459	875	4,822	2,643	305	1,874
2006	81,123	11,680	7,841	3,839	3,724	NA	53,972	47,496	6,476	NA	NA	NA	10,358	5,609	781	629	2,473	866	4,950	2,734	316	1,901
2007	87,954	13,044	7,419	5,625	5,438	NA	59,145	49,955	9,190	NA	NA	NA	10,554	5,700	795	648	2,505	905	5,036	2,653	327	2,056
2008	77,481	13,457	7,372	6,086	5,887	NA	47,220	35,651	5,438	2,837	3,118	177	11,426	6,191	853	707	2,679	995	5,206	2,620	332	2,254
2009	75,187	14,063	7,874	6,189	5,979	NA	41,055	29,264	7,797	1,865	1,996	134	14,053	7,697	1,028	861	3,214	1,252	5,813	3,049	319	2,445
2010	80,025	13,044	7,919	5,125	4,964	NA	44,364	34,491	4,648	2,229	2,785	211	16,540	9,261	1,158	961	3,701	1,459	5,836	3,004	317	2,515
2011	81,417	12,826	7,767	5,059	4,895	NA	45,674	35,860	4,263	2,336	3,030	185	17,234	9,707	1,130	969	3,944	1,484	5,444	2,607	327	2,511
2012	84,649	13,618	8,161	5,457	5,290	NA	48,239	36,963	3,932	3,171	4,001	173	17,232	9,447	1,077	993	4,190	1,525	5,337	2,498	329	2,510

TABLE 4. U.S. applied research expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c							Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Business ^d			Higher education ^e				Other nonprofit organizations ^f								
							Own	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	ONP		
2013	84,415	14,151	7,770	6,381	6,208	NA	47,707	34,962	5,637	3,063	3,814	231	17,045	8,937	1,074	1,032	4,388	1,615	5,292	2,305	342	2,645
2014 ^g	86,149	14,279	7,921	6,358	6,184	NA	49,146	35,221	5,930	3,064	4,669	262	17,061	8,582	1,083	1,092	4,587	1,717	5,442	2,321	354	2,767
2015 ^h	87,729	14,482	7,910	6,572	6,403	NA	50,127	38,343	4,314	2,820	4,409	241	17,343	8,489	1,059	1,149	4,831	1,815	5,557	2,318	372	2,867

NA = not available.

FFRDC = federally funded R&D center; ONP = other nonprofit organization.

^a See table 2, footnote a.

^b Type-of-R&D data for FFRDC R&D in 1953–54 include the R&D of only university-administered FFRDCs. Starting in 2001, type-of-R&D data distinguish federally funded from non-federally funded FFRDC R&D. (See also table 2, footnote b.)

^c Type-of-R&D data for state intramural R&D are not currently collected by the Survey of State Government R&D. (See also table 2, footnote c.)

^d Type-of-R&D data for business R&D in 1998–2007 were revised in response to data quality review considerations and are not directly comparable with the data for 1997 and earlier years. For 2008 and later years, the type-of-R&D splits for other than total, own-funded, and federally funded R&D are estimated. (See also table 2, footnote d.)

^e The type-of-R&D estimation procedure for higher education R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years. Type-of-R&D splits for other than total and federally funded are estimated. (See also table 2, footnote e.)

^f Type-of-R&D data for R&D by other nonprofit organizations in 1998 and later years are estimated, except for the R&D that is federally funded. (See also table 2, footnote f.)

^g Some data for 2014 are preliminary and may later be revised.

^h The data for 2015 are estimates and will later be revised.

NOTES: Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For trend comparisons, use only the historical data reported in this table because some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation's annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also, before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data. For federal performers in 1977 and afterward, the approximation equals 75% of the amount reported in the same fiscal year plus 25% of the amount reported in the subsequent fiscal year. Prior to 1977, the federal fiscal year began on 1 July, not 1 October, and the approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year. The fiscal year for higher education performers and state government performers generally begins 1 July, and the calendar year approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year.

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

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c						Business ^d				Higher education ^e				Other nonprofit organizations ^f			
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	ONP	
	Current \$millions																						
1953	3,412	614	567	48	48	NA	2,753	1,630	1,123	NA	NA	NA	16	9	3	1	3	1	29	17	6	6	
1954	3,734	599	537	62	62	NA	3,090	1,685	1,405	NA	NA	NA	17	9	3	1	3	1	29	15	7	7	
1955	4,113	713	543	171	171	NA	3,352	1,738	1,614	NA	NA	NA	21	12	4	2	3	1	27	12	8	7	
1956	5,854	978	631	348	348	NA	4,826	2,267	2,559	NA	NA	NA	25	14	4	2	4	2	26	11	8	7	
1957	6,681	1,157	728	429	429	NA	5,474	2,174	3,300	NA	NA	NA	26	12	5	3	4	2	25	9	8	8	
1958	7,213	1,227	842	386	386	NA	5,932	2,241	3,691	NA	NA	NA	28	13	6	3	4	2	26	9	8	9	
1959	8,463	1,417	940	477	477	NA	6,983	2,557	4,426	NA	NA	NA	31	16	6	3	5	2	33	14	9	10	
1960	9,360	1,562	1,003	559	559	NA	7,734	2,935	4,799	NA	NA	NA	35	19	6	3	5	2	30	10	10	10	
1961	9,930	1,760	1,090	670	670	NA	8,106	3,189	4,917	NA	NA	NA	38	22	7	2	5	2	28	4	10	14	
1962	10,114	1,845	1,227	618	618	NA	8,196	3,246	4,950	NA	NA	NA	40	23	8	2	6	2	34	5	11	18	
1963	11,539	2,133	1,465	668	668	NA	9,330	3,535	5,795	NA	NA	NA	40	22	8	2	6	2	37	6	11	20	
1964	12,506	2,419	1,680	739	739	NA	10,004	3,848	6,156	NA	NA	NA	49	30	8	2	7	3	35	6	11	18	
1965	13,215	2,463	1,789	674	674	NA	10,637	4,419	6,218	NA	NA	NA	71	48	9	2	8	4	45	13	12	20	
1966	14,490	2,540	1,886	654	654	NA	11,810	4,961	6,849	NA	NA	NA	87	61	9	2	10	5	53	16	14	23	
1967	15,332	2,649	1,943	706	706	NA	12,539	5,744	6,795	NA	NA	NA	93	66	9	3	10	7	51	12	15	24	
1968	16,154	2,628	1,904	724	724	NA	13,370	6,326	7,044	NA	NA	NA	102	72	8	4	9	9	55	13	16	26	
1969	17,051	2,807	2,016	792	792	NA	14,071	7,127	6,944	NA	NA	NA	110	80	7	5	8	10	63	17	18	28	
1970	16,925	3,047	2,258	790	790	NA	13,698	7,466	6,232	NA	NA	NA	112	84	6	5	7	10	68	20	18	30	
1971	17,399	3,313	2,473	841	841	NA	13,924	7,757	6,167	NA	NA	NA	98	69	8	4	9	9	64	12	19	33	
1972	18,743	3,502	2,639	863	863	NA	15,043	8,510	6,533	NA	NA	NA	101	63	12	4	14	9	98	44	19	35	
1973	20,197	3,517	2,657	860	860	NA	16,394	9,773	6,621	NA	NA	NA	126	71	18	5	20	13	160	102	20	38	
1974	21,504	3,748	2,765	983	983	NA	17,421	10,868	6,553	NA	NA	NA	141	75	20	7	25	15	195	131	22	42	
1975	22,706	3,993	2,890	1,103	1,103	NA	18,352	11,569	6,783	NA	NA	NA	156	83	22	8	27	16	205	135	23	47	
1976	25,085	4,286	2,972	1,315	1,315	NA	20,412	12,890	7,522	NA	NA	NA	182	100	24	12	31	16	205	128	25	52	
1977	27,667	4,606	3,188	1,418	1,418	NA	22,603	14,328	8,275	NA	NA	NA	254	153	28	15	40	19	204	119	27	58	
1978	31,056	5,261	3,676	1,584	1,584	NA	25,216	16,460	8,756	NA	NA	NA	373	254	32	15	49	24	207	113	30	64	
1979	35,445	5,697	3,944	1,753	1,753	NA	29,033	19,145	9,888	NA	NA	NA	469	336	34	16	56	28	246	143	32	71	
1980	40,748	6,081	4,072	2,009	2,009	NA	33,848	22,891	10,957	NA	NA	NA	518	362	38	19	68	31	301	187	35	79	
1981	46,305	6,705	4,530	2,175	2,175	NA	38,547	25,756	12,791	NA	NA	NA	568	386	44	24	80	35	485	360	37	88	
1982	51,879	7,348	5,178	2,170	2,170	NA	43,434	29,219	14,215	NA	NA	NA	597	397	46	27	88	39	500	362	40	98	
1983	57,771	8,491	6,106	2,385	2,385	NA	48,064	32,542	15,522	NA	NA	NA	617	399	47	31	97	43	599	447	44	109	

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c							Business ^d				Higher education ^e				Other nonprofit organizations ^f			
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation	ONP	Total	Federal	Busi- ness	ONP		
	1984	66,461	9,651	7,078	2,572	2,572	NA	55,371	37,731	17,640	NA	NA	NA	677	435	51	37	108	47	762	594	47	120	
1985	74,522	10,916	8,011	2,906	2,906	NA	62,020	41,762	20,258	NA	NA	NA	756	486	57	43	120	49	829	644	51	134		
1986	75,855	11,376	8,275	3,101	3,101	NA	62,871	41,354	21,517	NA	NA	NA	818	513	65	50	136	53	790	587	55	149		
1987	79,929	11,496	8,176	3,321	3,321	NA	66,789	42,667	24,122	NA	NA	NA	945	599	73	57	155	61	698	474	60	165		
1988	84,567	12,460	8,864	3,596	3,596	NA	70,353	46,634	23,719	NA	NA	NA	1,098	698	83	66	180	71	655	407	65	183		
1989	87,723	12,991	9,355	3,635	3,635	NA	72,725	51,676	21,049	NA	NA	NA	1,227	773	91	76	205	81	780	507	70	203		
1990	94,067	13,363	9,700	3,663	3,663	NA	78,376	59,410	18,966	NA	NA	NA	1,407	910	99	83	226	89	920	619	75	226		
1991	95,105	12,230	8,778	3,452	3,452	NA	80,286	63,030	17,256	NA	NA	NA	1,534	1,012	103	86	239	94	1,054	722	82	251		
1992	99,811	12,521	9,098	3,423	3,423	NA	84,569	67,388	17,181	NA	NA	NA	1,596	1,055	105	91	246	100	1,125	758	88	279		
1993	99,705	12,058	9,071	2,986	2,986	NA	84,757	68,674	16,083	NA	NA	NA	1,700	1,127	109	97	259	107	1,191	787	95	309		
1994	102,938	11,970	8,823	3,147	3,147	NA	87,890	71,681	16,209	NA	NA	NA	1,816	1,213	114	102	276	112	1,261	815	103	343		
1995	113,079	12,689	9,262	3,427	3,427	NA	97,342	79,518	17,824	NA	NA	NA	1,812	1,180	123	108	288	113	1,236	744	111	381		
1996	121,377	12,481	9,033	3,448	3,448	NA	105,863	88,797	17,066	NA	NA	NA	1,791	1,128	128	115	305	115	1,241	698	120	423		
1997	128,678	12,407	9,077	3,331	3,331	NA	113,184	95,063	18,121	NA	NA	NA	1,709	1,055	122	114	306	113	1,378	687	155	536		
1998	144,726	12,528	9,214	3,314	3,314	NA	129,041	110,589	18,452	NA	NA	NA	1,622	974	116	115	304	113	1,535	760	164	611		
1999	154,380	12,600	9,265	3,335	3,335	NA	138,807	122,236	16,571	NA	NA	NA	1,395	710	121	120	323	121	1,578	727	178	673		
2000	169,476	12,859	9,377	3,482	3,482	NA	153,745	140,235	13,510	NA	NA	NA	1,293	565	126	122	350	131	1,579	580	195	804		
2001	167,816	14,459	11,062	3,397	3,273	NA	149,952	137,410	12,542	NA	NA	NA	1,445	673	133	121	378	141	1,960	874	197	890		
2002	176,694	15,238	11,800	3,438	3,308	NA	157,788	144,727	13,061	NA	NA	NA	1,513	669	145	121	422	157	2,156	937	191	1,028		
2003	175,597	16,563	12,646	3,917	3,785	NA	155,060	143,121	11,939	NA	NA	NA	1,854	940	161	122	464	168	2,120	743	195	1,182		
2004	177,353	17,424	12,746	4,677	4,561	NA	155,034	140,615	14,419	NA	NA	NA	2,210	1,268	168	124	477	173	2,686	1,300	199	1,186		
2005	195,870	18,775	13,994	4,781	4,654	NA	172,208	156,696	15,512	NA	NA	NA	2,163	1,199	164	127	496	177	2,723	1,211	212	1,301		
2006	212,919	20,582	16,089	4,493	4,358	NA	188,112	171,392	16,720	NA	NA	NA	1,958	970	163	131	515	180	2,189	603	226	1,360		
2007	228,190	23,381	18,016	5,365	5,254	NA	200,429	185,569	14,860	NA	NA	NA	1,976	939	170	138	535	193	2,319	568	240	1,511		
2008	259,818	23,760	17,566	6,194	6,094	NA	231,447	180,724	29,488	8,882	11,799	553	2,025	885	186	154	584	217	2,500	562	249	1,689		
2009	255,808	23,497	17,245	6,252	6,159	NA	226,554	179,841	30,435	7,041	8,732	505	3,019	1,624	226	189	706	275	2,636	550	241	1,846		
2010	250,698	25,847	18,844	7,004	6,909	NA	217,700	170,036	28,089	8,035	10,778	762	4,227	2,610	257	214	822	324	2,802	638	242	1,922		
2011	270,301	28,751	21,879	6,872	6,786	NA	233,886	187,794	26,228	7,966	11,266	632	4,537	2,831	256	220	894	337	3,004	790	255	1,958		
2012	272,445	26,666	19,941	6,725	6,631	NA	238,202	192,828	25,840	7,578	11,543	413	4,687	2,889	249	229	968	352	2,773	518	261	1,994		
2013	286,173	26,436	19,767	6,668	6,572	NA	252,007	207,537	22,137	8,729	12,946	658	4,728	2,825	252	242	1,030	379	2,885	474	276	2,135		
2014 ^g	300,065	26,734	19,979	6,754	6,658	NA	265,377	223,186	18,065	8,312	15,103	711	4,812	2,789	258	260	1,094	410	3,022	461	291	2,270		
2015 ^h	316,298	26,161	19,110	7,051	6,962	NA	282,012	245,380	13,274	7,813	14,876	668	4,920	2,786	255	277	1,164	437	3,084	399	308	2,376		

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c						Business ^d				Higher education ^e				Other nonprofit organizations ^f			
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Federal	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	ONP	
	Constant 2009 \$millions																						
1953	22,510	4,051	3,738	313	313	NA	18,165	10,755	7,410	NA	NA	NA	106	56	19	7	17	7	188	109	40	40	
1954	24,412	3,913	3,511	402	402	NA	20,202	11,016	9,185	NA	NA	NA	111	56	23	7	20	7	186	95	46	46	
1955	26,435	4,582	3,486	1,096	1,096	NA	21,544	11,169	10,375	NA	NA	NA	135	74	24	10	21	6	174	77	51	45	
1956	36,384	6,078	3,919	2,160	2,160	NA	29,992	14,090	15,903	NA	NA	NA	155	84	27	12	22	9	158	65	50	44	
1957	40,185	6,956	4,376	2,580	2,580	NA	32,926	13,076	19,850	NA	NA	NA	156	72	32	15	25	12	147	51	48	48	
1958	42,429	7,218	4,950	2,268	2,268	NA	34,897	13,182	21,715	NA	NA	NA	162	74	33	18	26	12	153	53	47	53	
1959	49,092	8,217	5,453	2,764	2,764	NA	40,507	14,833	25,674	NA	NA	NA	180	90	35	17	26	12	189	78	52	58	
1960	53,557	8,935	5,736	3,199	3,199	NA	44,253	16,794	27,460	NA	NA	NA	197	109	36	14	27	11	172	57	57	57	
1961	56,201	9,958	6,166	3,792	3,792	NA	45,875	18,049	27,826	NA	NA	NA	212	122	39	11	29	11	156	20	57	79	
1962	56,548	10,315	6,860	3,455	3,455	NA	45,821	18,148	27,673	NA	NA	NA	224	126	43	11	32	11	187	25	62	101	
1963	63,794	11,792	8,099	3,693	3,693	NA	51,579	19,543	32,036	NA	NA	NA	221	122	44	11	34	11	202	30	61	111	
1964	68,092	13,171	9,147	4,024	4,024	NA	54,469	20,951	33,518	NA	NA	NA	264	161	43	11	36	14	188	30	60	98	
1965	70,663	13,167	9,563	3,604	3,604	NA	56,878	23,629	33,249	NA	NA	NA	377	257	46	11	42	21	241	70	64	107	
1966	75,361	13,208	9,809	3,399	3,399	NA	61,425	25,803	35,622	NA	NA	NA	452	317	49	10	50	26	276	83	73	120	
1967	77,488	13,386	9,820	3,566	3,566	NA	63,375	29,031	34,343	NA	NA	NA	470	331	43	13	51	33	258	61	76	121	
1968	78,308	12,737	9,230	3,507	3,507	NA	64,814	30,667	34,148	NA	NA	NA	492	347	38	19	45	44	264	61	78	126	
1969	78,784	12,971	9,314	3,657	3,657	NA	65,016	32,931	32,085	NA	NA	NA	506	367	33	23	37	46	291	79	83	129	
1970	74,281	13,375	9,910	3,465	3,465	NA	60,119	32,767	27,352	NA	NA	NA	492	366	28	22	31	44	296	86	79	132	
1971	72,669	13,838	10,327	3,511	3,511	NA	58,157	32,399	25,758	NA	NA	NA	409	288	33	17	36	36	265	48	79	138	
1972	75,042	14,020	10,567	3,453	3,453	NA	60,227	34,071	26,156	NA	NA	NA	404	250	50	14	54	36	390	174	76	140	
1973	76,688	13,355	10,090	3,265	3,265	NA	62,249	37,109	25,140	NA	NA	NA	477	268	66	19	76	47	608	387	76	144	
1974	74,921	13,058	9,635	3,423	3,423	NA	60,695	37,864	22,831	NA	NA	NA	490	260	70	23	85	52	679	456	75	147	
1975	72,402	12,732	9,215	3,517	3,517	NA	58,519	36,890	21,629	NA	NA	NA	498	263	71	26	88	51	653	429	75	149	
1976	75,825	12,956	8,983	3,973	3,973	NA	61,699	38,962	22,737	NA	NA	NA	550	301	72	35	94	48	619	385	76	157	
1977	78,745	13,110	9,073	4,037	4,037	NA	64,331	40,779	23,552	NA	NA	NA	723	435	79	41	114	53	581	339	78	165	
1978	82,591	13,990	9,777	4,214	4,214	NA	67,060	43,774	23,286	NA	NA	NA	991	675	85	39	130	62	549	300	79	171	
1979	87,078	13,995	9,688	4,306	4,306	NA	71,324	47,033	24,292	NA	NA	NA	1,153	826	84	38	137	68	605	351	79	175	
1980	91,822	13,704	9,177	4,527	4,527	NA	76,274	51,583	24,691	NA	NA	NA	1,167	815	86	44	152	69	678	421	78	179	
1981	95,433	13,820	9,337	4,483	4,483	NA	79,443	53,082	26,362	NA	NA	NA	1,170	795	90	49	164	72	1,000	741	77	181	
1982	100,677	14,259	10,048	4,211	4,211	NA	84,288	56,702	27,586	NA	NA	NA	1,158	771	88	52	171	76	971	703	78	190	
1983	107,854	15,851	11,399	4,453	4,453	NA	89,731	60,753	28,978	NA	NA	NA	1,152	745	88	58	182	80	1,119	835	82	203	

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2015

Year	All per- formers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal govern- ment ^c							Business ^d				Higher education ^e				Other nonprofit organizations ^f			
	All funding sources	Total	Federal	Total	Federal	Total	Total	Own domestic	Business ^d			Total	Federal	Nonfederal govern- ment	Busi- ness	Higher ed- ucation		ONP	Total	Federal	Busi- ness	ONP		
									Federal	Other domestic business	Foreign business					Other	Busi- ness						Higher ed- ucation	
1984	119,823	17,399	12,761	4,638	4,638	NA	99,829	68,025	31,803	NA	NA	NA	1,221	784	93	66	194	84	1,374	1,072	85	217		
1985	130,191	19,071	13,995	5,076	5,076	NA	108,351	72,959	35,391	NA	NA	NA	1,321	849	100	76	210	86	1,448	1,125	89	234		
1986	129,899	19,481	14,170	5,311	5,311	NA	107,664	70,817	36,847	NA	NA	NA	1,400	879	112	86	233	90	1,354	1,004	95	254		
1987	133,470	19,198	13,652	5,545	5,545	NA	111,529	71,248	40,281	NA	NA	NA	1,577	1,000	122	95	259	101	1,166	791	100	276		
1988	136,439	20,103	14,301	5,802	5,802	NA	113,507	75,239	38,268	NA	NA	NA	1,772	1,127	133	107	290	115	1,057	657	104	296		
1989	136,234	20,174	14,529	5,645	5,645	NA	112,942	80,253	32,689	NA	NA	NA	1,906	1,201	142	118	318	126	1,212	787	108	316		
1990	140,874	20,013	14,527	5,486	5,486	NA	117,375	88,972	28,403	NA	NA	NA	2,107	1,363	149	124	339	133	1,378	927	113	338		
1991	137,842	17,726	12,722	5,004	5,004	NA	116,364	91,354	25,010	NA	NA	NA	2,223	1,466	149	125	347	136	1,528	1,047	118	364		
1992	141,438	17,743	12,892	4,851	4,851	NA	119,840	95,493	24,347	NA	NA	NA	2,262	1,495	149	129	348	141	1,594	1,074	125	395		
1993	138,005	16,689	12,556	4,133	4,133	NA	117,315	95,054	22,261	NA	NA	NA	2,352	1,560	151	135	359	148	1,649	1,089	132	428		
1994	139,508	16,223	11,958	4,265	4,265	NA	119,115	97,147	21,968	NA	NA	NA	2,461	1,644	154	138	374	151	1,709	1,104	139	465		
1995	150,123	16,846	12,296	4,550	4,550	NA	129,230	105,567	23,663	NA	NA	NA	2,405	1,566	163	144	382	150	1,641	987	148	506		
1996	158,251	16,273	11,777	4,496	4,496	NA	138,024	115,773	22,251	NA	NA	NA	2,336	1,471	167	150	398	150	1,618	910	157	552		
1997	164,947	15,904	11,635	4,269	4,269	NA	145,086	121,858	23,229	NA	NA	NA	2,191	1,353	156	146	392	144	1,766	880	198	688		
1998	183,525	15,887	11,684	4,203	4,203	NA	163,635	140,237	23,399	NA	NA	NA	2,056	1,235	147	146	385	143	1,947	964	208	775		
1999	192,817	15,737	11,572	4,165	4,165	NA	173,367	152,670	20,697	NA	NA	NA	1,742	887	151	149	403	152	1,971	908	222	840		
2000	206,963	15,703	11,451	4,252	4,252	NA	187,752	171,254	16,498	NA	NA	NA	1,579	690	154	149	427	159	1,928	708	238	982		
2001	200,369	17,263	13,208	4,056	3,907	NA	179,039	164,065	14,975	NA	NA	NA	1,726	803	158	145	451	168	2,341	1,043	235	1,062		
2002	207,781	17,919	13,876	4,043	3,890	NA	185,548	170,189	15,359	NA	NA	NA	1,779	786	170	142	496	184	2,535	1,101	225	1,209		
2003	202,452	19,096	14,580	4,515	4,364	NA	178,774	165,009	13,765	NA	NA	NA	2,138	1,083	186	141	534	194	2,444	857	225	1,362		
2004	199,005	19,551	14,302	5,248	5,118	NA	173,962	157,782	16,179	NA	NA	NA	2,479	1,423	188	139	535	194	3,014	1,459	224	1,331		
2005	212,931	20,411	15,213	5,197	5,059	NA	187,208	170,345	16,863	NA	NA	NA	2,352	1,304	178	138	540	192	2,961	1,316	230	1,414		
2006	224,565	21,708	16,969	4,738	4,596	NA	198,401	180,767	17,635	NA	NA	NA	2,065	1,023	171	138	543	190	2,309	636	239	1,435		
2007	234,433	24,021	18,509	5,512	5,398	NA	205,913	190,646	15,267	NA	NA	NA	2,030	965	175	142	550	199	2,382	583	247	1,552		
2008	261,792	23,941	17,700	6,241	6,141	NA	233,205	182,097	29,712	8,950	11,889	558	2,041	892	187	155	588	219	2,519	567	251	1,702		
2009	255,808	23,497	17,245	6,252	6,159	NA	226,554	179,841	30,435	7,041	8,732	505	3,019	1,624	226	189	706	275	2,636	550	241	1,846		
2010	247,673	25,535	18,616	6,919	6,825	NA	215,073	167,984	27,750	7,938	10,648	753	4,176	2,578	254	211	812	320	2,768	630	239	1,899		
2011	261,639	27,830	21,178	6,652	6,568	NA	226,391	181,776	25,387	7,711	10,905	611	4,392	2,740	248	213	866	326	2,907	765	247	1,895		
2012	258,942	25,345	18,953	6,392	6,303	NA	226,396	183,271	24,559	7,202	10,971	392	4,455	2,746	236	218	920	335	2,635	492	248	1,895		

TABLE 5. U.S. development expenditures, by performing sector and source of funds: 1953–2015

Year	All performers	All federal	Federal intramural ^a	FFRDCs ^b		Nonfederal government ^c	Business ^d						Higher education ^e				Other nonprofit organizations ^f					
	All funding sources	Total	Federal	Total	Federal	Total	Own			Other domestic business			Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	ONP
							Total	domestic	foreign	Other	Total	business										
2013	267,627	24,722	18,486	6,236	6,146	NA	235,675	194,087	20,702	8,163	12,107	615	4,421	2,642	236	227	963	354	2,698	443	258	1,996
2014 ^g	276,085	24,597	18,383	6,214	6,126	NA	244,169	205,350	16,621	7,648	13,896	654	4,428	2,566	238	240	1,007	377	2,781	424	268	2,089
2015 ^h	288,155	23,833	17,410	6,423	6,342	NA	256,920	223,548	12,093	7,118	13,552	609	4,482	2,539	233	252	1,060	398	2,809	364	281	2,165

NA = not available.

FFRDC = federally funded R&D center; ONP = other nonprofit organization.

^a See table 2, footnote a.

^b Type-of-R&D data for FFRDC R&D in 1953–54 includes the R&D of only university-administered FFRDCs. Starting in 2001, type-of-R&D data distinguish federally funded from nonfederally funded FFRDC R&D. (See also table 2), footnote b.)

^c Type-of-R&D data for state intramural R&D are not currently collected by the Survey of State Government R&D. (See also table 2, footnote c.)

^d Type-of-R&D data for business R&D in 1998–2007 were revised in response to data quality review considerations and are not directly comparable with the data for 1997 and earlier years. For 2008 and later years, the type-of-R&D splits for other than total, own-funded, and federally funded R&D are estimated. (See also table 2, footnote d.)

^e The type-of-R&D estimation procedure for higher education R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years. Type-of-R&D splits for other than total and federally funded are estimated. (See also table 2, footnote e.)

^f Type-of-R&D data for R&D by other nonprofit organizations in 1998 and later years are estimated, except for the R&D that is federally funded. (See also table 2, footnote f.)

^g Some data for 2014 are preliminary and may later be revised.

^h The data for 2015 are estimates and will later be revised.

NOTES: Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For trend comparisons, use only the historical data reported in this table, as some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation's annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also, before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data. For federal performers in 1977 and afterward, the approximation equals 75% of the amount reported in the same fiscal year plus 25% of the amount reported in the subsequent fiscal year. Prior to 1977, the federal fiscal year began on 1 July, not 1 October, and the approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year. The fiscal year for higher education performers and state government performers generally begins 1 July, and the calendar year approximation is 50% of the amount reported in the same fiscal year plus 50% of the amount reported in the subsequent fiscal year.

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

TABLE 6. U.S. R&D expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																							
	Federal								Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
Current \$millions																								
1953	5,160	2,783	1,015	131	NA	1,430	149	58	40	NA	NA	NA	40	2,247	NA	2,200	21	26	37	55	NA	NA	27	28
1954	5,621	3,102	963	165	NA	1,750	165	61	45	NA	NA	NA	45	2,375	NA	2,320	24	31	40	60	NA	NA	29	31
1955	6,185	3,507	973	319	NA	1,960	191	65	50	NA	NA	NA	50	2,522	NA	2,460	27	35	42	64	NA	NA	32	32
1956	8,501	4,979	1,131	561	NA	2,995	221	71	57	NA	NA	NA	57	3,346	NA	3,277	32	37	46	74	NA	NA	36	38
1957	9,908	6,233	1,297	688	NA	3,928	242	79	64	NA	NA	NA	64	3,470	NA	3,396	37	37	51	91	NA	NA	40	51
1958	10,915	6,974	1,507	657	NA	4,436	280	95	72	NA	NA	NA	72	3,707	NA	3,630	39	38	56	107	NA	NA	45	62
1959	12,490	8,167	1,681	789	NA	5,217	356	125	81	NA	NA	NA	81	4,065	NA	3,983	40	42	61	117	NA	NA	50	67
1960	13,711	8,915	1,801	910	NA	5,604	453	148	90	NA	NA	NA	90	4,516	NA	4,428	40	48	67	123	NA	NA	55	68
1961	14,564	9,484	1,987	1,087	NA	5,685	557	169	101	NA	NA	NA	101	4,757	NA	4,668	40	49	75	148	NA	NA	62	86
1962	15,636	10,138	2,188	1,056	NA	6,008	687	200	112	NA	NA	NA	112	5,124	NA	5,029	41	54	84	179	NA	NA	70	109
1963	17,519	11,646	2,559	1,159	NA	6,856	839	234	125	NA	NA	NA	125	5,456	NA	5,360	41	55	96	197	NA	NA	78	119
1964	19,103	12,765	2,966	1,297	NA	7,257	995	250	138	NA	NA	NA	138	5,888	NA	5,792	41	55	114	200	NA	NA	88	112
1965	20,253	13,194	3,157	1,218	NA	7,367	1,167	286	150	NA	NA	NA	150	6,549	NA	6,445	42	62	136	225	NA	NA	101	124
1966	22,072	14,165	3,308	1,217	NA	7,977	1,335	329	160	NA	NA	NA	160	7,331	NA	7,216	45	70	165	252	NA	NA	114	138
1967	23,347	14,564	3,445	1,340	NA	7,946	1,491	342	168	NA	NA	NA	168	8,146	NA	8,020	52	74	200	271	NA	NA	126	145
1968	24,667	14,965	3,498	1,372	NA	8,145	1,586	364	185	NA	NA	NA	185	9,008	NA	8,869	58	81	221	290	NA	NA	139	151
1969	25,996	15,228	3,790	1,440	NA	7,987	1,624	388	208	NA	NA	NA	208	10,011	NA	9,857	61	93	233	316	NA	NA	155	161
1970	26,271	14,984	4,154	1,430	NA	7,306	1,686	410	237	NA	NA	NA	237	10,449	NA	10,288	66	95	259	343	NA	NA	171	172
1971	26,952	15,210	4,409	1,441	NA	7,175	1,760	427	262	NA	NA	NA	262	10,824	NA	10,654	72	98	290	366	NA	NA	182	184
1972	28,740	16,039	4,676	1,533	NA	7,469	1,890	472	282	NA	NA	NA	282	11,715	NA	11,535	79	101	312	393	NA	NA	195	198
1973	30,952	16,587	4,837	1,576	NA	7,600	2,009	566	301	NA	NA	NA	301	13,299	NA	13,104	90	105	344	421	NA	NA	210	211
1974	33,359	17,287	5,132	1,784	NA	7,572	2,160	639	320	NA	NA	NA	320	14,886	NA	14,667	105	114	394	474	NA	NA	239	235
1975	35,671	18,533	5,561	2,019	NA	7,878	2,400	675	348	NA	NA	NA	348	15,824	NA	15,582	118	124	432	534	NA	NA	272	262
1976	39,435	20,292	5,890	2,401	NA	8,671	2,619	711	369	NA	NA	NA	369	17,702	NA	17,436	131	135	480	592	NA	NA	300	292
1977	43,338	22,071	6,211	2,704	NA	9,523	2,893	740	394	NA	NA	NA	394	19,642	NA	19,340	155	147	569	662	NA	NA	337	326
1978	48,719	24,414	6,962	3,186	NA	10,107	3,329	830	443	NA	NA	NA	443	22,457	NA	22,115	182	160	679	727	NA	NA	364	363
1979	55,379	27,225	7,471	3,567	NA	11,354	3,848	985	482	NA	NA	NA	482	26,097	NA	25,708	215	174	785	791	NA	NA	386	405
1980	63,224	29,986	7,831	4,052	NA	12,752	4,335	1,017	519	NA	NA	NA	519	30,929	NA	30,476	264	189	920	871	NA	NA	419	452
1981	72,292	33,739	8,605	4,393	NA	14,997	4,670	1,075	581	NA	NA	NA	581	35,948	NA	35,428	314	206	1,058	967	NA	NA	463	504
1982	80,748	37,133	9,501	4,563	NA	17,061	4,879	1,129	621	NA	NA	NA	621	40,692	NA	40,105	363	224	1,207	1,095	NA	NA	534	561
1983	89,949	41,451	10,830	5,011	NA	19,095	5,210	1,306	658	NA	NA	NA	658	45,264	NA	44,588	432	244	1,357	1,220	NA	NA	595	626

TABLE 6. U.S. R&D expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																		Higher education		Other nonprofit organizations				
	Federal								Nonfederal government					Business					Higher education	Other nonprofit organizations					
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP		Higher education	Total	FFRDC	Business	Higher education	ONP
1984	102,244	46,470	11,916	5,602	NA	21,657	5,748	1,548	721	NA	NA	NA	721	52,187	NA	51,404	518	265	1,514	1,351	NA	NA	654	698	
1985	114,671	52,641	13,093	6,134	NA	25,333	6,388	1,694	834	NA	NA	NA	834	57,962	NA	57,043	630	289	1,743	1,491	NA	NA	713	778	
1986	120,249	54,622	13,505	6,405	NA	26,000	7,028	1,686	969	NA	NA	NA	969	60,991	NA	59,932	745	314	2,019	1,647	NA	NA	780	867	
1987	126,360	58,609	13,588	6,792	NA	28,757	7,768	1,704	1,065	NA	NA	NA	1,065	62,576	NA	61,403	831	342	2,262	1,849	NA	NA	882	967	
1988	133,881	60,131	14,342	7,212	NA	28,221	8,593	1,762	1,165	NA	NA	NA	1,165	67,977	NA	66,672	933	372	2,527	2,081	NA	NA	1,003	1,078	
1989	141,891	60,465	15,231	7,497	NA	26,359	9,317	2,062	1,274	NA	NA	NA	1,274	74,966	NA	73,501	1,061	405	2,852	2,333	NA	NA	1,131	1,202	
1990	151,993	61,610	15,671	7,853	NA	25,802	9,939	2,346	1,399	NA	NA	NA	1,399	83,208	NA	81,602	1,166	440	3,187	2,589	NA	NA	1,249	1,340	
1991	160,876	60,783	15,249	8,093	NA	24,095	10,667	2,679	1,483	NA	NA	NA	1,483	92,300	NA	90,580	1,242	479	3,458	2,852	NA	NA	1,358	1,494	
1992	165,350	60,915	15,853	8,360	NA	22,369	11,528	2,806	1,525	NA	NA	NA	1,525	96,229	NA	94,388	1,320	521	3,569	3,113	NA	NA	1,448	1,666	
1993	165,730	60,528	16,531	8,003	NA	20,844	12,307	2,843	1,557	NA	NA	NA	1,557	96,549	NA	94,591	1,392	567	3,709	3,388	NA	NA	1,531	1,857	
1994	169,207	60,777	16,355	8,254	NA	20,261	12,996	2,911	1,623	NA	NA	NA	1,623	99,204	NA	97,131	1,456	617	3,938	3,665	NA	NA	1,595	2,071	
1995	183,625	62,969	16,904	8,448	NA	21,178	13,592	2,847	1,751	NA	NA	NA	1,751	110,871	NA	108,652	1,548	671	4,110	3,925	NA	NA	1,617	2,308	
1996	197,346	63,394	16,585	8,464	NA	21,356	14,084	2,906	1,861	NA	NA	NA	1,861	123,417	NA	121,015	1,672	730	4,436	4,239	NA	NA	1,666	2,574	
1997	212,152	64,574	16,819	8,413	NA	21,798	14,530	3,014	1,922	NA	NA	NA	1,922	136,228	NA	133,611	1,808	809	4,838	4,590	NA	NA	1,786	2,804	
1998	226,457	66,383	17,362	8,480	NA	22,086	15,174	3,281	1,972	NA	NA	NA	1,972	147,825	NA	145,016	1,950	859	5,163	5,114	NA	NA	1,922	3,192	
1999	245,319	67,367	18,142	8,704	NA	20,496	16,264	3,761	2,098	NA	NA	NA	2,098	164,606	NA	161,594	2,082	931	5,619	5,628	NA	NA	2,112	3,516	
2000	268,904	67,861	19,247	9,269	NA	17,117	17,719	4,510	2,246	NA	NA	NA	2,246	186,037	NA	182,844	2,174	1,020	6,231	6,528	NA	NA	2,324	4,204	
2001	279,716	74,584	22,374	10,056	NA	16,899	19,767	5,488	2,418	22	NA	NA	2,395	188,478	142	185,118	2,189	1,029	6,826	7,410	218	NA	2,542	4,650	
2002	279,387	79,873	23,798	11,242	NA	16,401	22,654	5,778	2,642	32	NA	NA	2,610	180,778	135	177,467	2,178	998	7,617	8,478	275	NA	2,828	5,374	
2003	293,060	86,293	24,982	11,841	NA	17,798	25,727	5,945	2,888	32	NA	NA	2,856	186,247	134	182,926	2,166	1,020	8,226	9,405	245	NA	2,984	6,176	
2004	304,547	92,043	24,898	12,471	NA	20,266	27,872	6,537	3,038	31	NA	NA	3,008	191,429	122	188,035	2,231	1,041	8,562	9,474	165	NA	3,109	6,201	
2005	327,184	96,689	26,322	12,894	NA	21,909	29,019	6,545	3,092	32	NA	NA	3,060	207,864	139	204,250	2,368	1,107	9,265	10,275	180	NA	3,294	6,800	
2006	352,875	101,261	28,240	12,969	105	24,304	29,600	6,044	3,417	31	204	NA	3,182	227,281	171	223,365	2,563	1,182	10,076	10,841	200	NA	3,530	7,111	
2007	380,019	106,549	29,859	13,845	120	26,585	30,160	5,980	3,689	32	219	NA	3,438	246,921	180	242,682	2,803	1,257	10,833	12,026	216	NA	3,915	7,896	
2008	406,952	119,113	29,839	15,369	131	36,360	31,178	6,236	4,257	33	212	306	3,706	258,131	199	253,562	3,069	1,301	11,640	13,811	209	452	4,324	8,827	
2009	405,343	127,395	30,560	16,571	162	39,573	33,433	7,097	4,286	40	244	195	3,808	246,770	184	242,135	3,193	1,258	11,916	14,976	218	490	4,621	9,647	
2010	409,037	128,426	31,970	18,409	192	34,199	36,563	7,093	4,287	46	298	156	3,787	248,315	174	243,732	3,144	1,265	12,103	15,906	199	890	4,772	10,045	
2011	428,675	128,917	34,950	18,176	201	31,309	37,717	6,564	4,355	30	292	321	3,712	266,605	189	261,901	3,182	1,333	12,949	15,849	179	561	4,875	10,234	
2012	436,151	125,796	34,017	17,727	195	30,621	36,998	6,239	4,103	42	273	157	3,631	275,896	185	270,997	3,349	1,366	14,140	16,215	173	476	5,146	10,420	
2013	456,584	122,068	33,406	17,296	188	29,362	35,845	5,970	4,239	45	281	194	3,719	297,368	195	292,153	3,575	1,444	15,197	17,713	144	819	5,592	11,158	
2014 ^a	477,708	119,826	34,396	17,523	192	26,554	35,051	6,111	4,240	26	288	138	3,788	318,598	218	313,043	3,817	1,520	16,040	19,004	137	993	6,006	11,867	
2015 ^b	499,299	113,114	33,966	18,323	194	19,512	35,015	6,105	4,190	19	291	129	3,752	344,977	211	339,085	4,069	1,611	17,109	19,909	136	926	6,428	12,418	

TABLE 6. U.S. R&D expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																							
	Federal								Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intra-mural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
Constant 2009 \$millions																								
1953	34,048	18,360	6,697	864	NA	9,436	983	379	261	NA	NA	NA	261	14,823	NA	14,516	135	172	241	363	NA	NA	178	185
1954	36,745	20,280	6,293	1,075	NA	11,441	1,075	396	291	NA	NA	NA	291	15,524	NA	15,167	154	203	258	392	NA	NA	190	203
1955	39,748	22,538	6,253	2,047	NA	12,596	1,227	415	321	NA	NA	NA	321	16,208	NA	15,809	174	225	270	411	NA	NA	206	206
1956	52,831	30,942	7,026	3,487	NA	18,614	1,374	441	351	NA	NA	NA	351	20,792	NA	20,367	196	230	286	460	NA	NA	224	236
1957	59,592	37,486	7,801	4,135	NA	23,625	1,453	472	385	NA	NA	NA	385	20,867	NA	20,425	220	223	307	547	NA	NA	241	307
1958	64,206	41,024	8,862	3,862	NA	26,094	1,647	559	424	NA	NA	NA	424	21,806	NA	21,353	229	224	326	626	NA	NA	262	365
1959	72,451	47,376	9,751	4,577	NA	30,264	2,062	722	467	NA	NA	NA	467	23,578	NA	23,105	229	244	354	676	NA	NA	287	389
1960	78,453	51,011	10,302	5,207	NA	32,065	2,589	847	515	NA	NA	NA	515	25,840	NA	25,337	229	275	383	704	NA	NA	315	389
1961	82,428	53,676	11,246	6,149	NA	32,175	3,150	956	569	NA	NA	NA	569	26,923	NA	26,419	226	277	422	838	NA	NA	351	487
1962	87,421	56,681	12,230	5,904	NA	33,591	3,838	1,118	626	NA	NA	NA	626	28,645	NA	28,117	226	302	470	998	NA	NA	389	609
1963	96,851	64,380	14,144	6,405	NA	37,902	4,636	1,294	691	NA	NA	NA	691	30,160	NA	29,632	224	304	531	1,089	NA	NA	431	658
1964	104,011	69,499	16,146	7,062	NA	39,512	5,418	1,361	749	NA	NA	NA	749	32,056	NA	31,536	221	299	618	1,089	NA	NA	479	610
1965	108,294	70,551	16,878	6,510	NA	39,393	6,240	1,529	799	NA	NA	NA	799	35,016	NA	34,463	222	332	727	1,200	NA	NA	537	663
1966	114,799	73,674	17,205	6,327	NA	41,489	6,943	1,709	832	NA	NA	NA	832	38,129	NA	37,531	234	364	856	1,308	NA	NA	590	718
1967	118,000	73,607	17,412	6,773	NA	40,161	7,533	1,729	849	NA	NA	NA	849	41,169	NA	40,535	260	374	1,008	1,367	NA	NA	634	733
1968	119,577	72,544	16,955	6,651	NA	39,485	7,689	1,765	894	NA	NA	NA	894	43,666	NA	42,995	279	393	1,069	1,403	NA	NA	671	732
1969	120,114	70,362	17,513	6,654	NA	36,904	7,501	1,790	961	NA	NA	NA	961	46,254	NA	45,545	280	430	1,077	1,460	NA	NA	716	744
1970	115,302	65,764	18,231	6,274	NA	32,065	7,397	1,797	1,040	NA	NA	NA	1,040	45,857	NA	45,153	287	417	1,135	1,505	NA	NA	750	755
1971	112,571	63,529	18,414	6,017	NA	29,968	7,349	1,781	1,094	NA	NA	NA	1,094	45,209	NA	44,499	301	409	1,209	1,529	NA	NA	760	769
1972	115,066	64,215	18,720	6,138	NA	29,903	7,567	1,888	1,129	NA	NA	NA	1,129	46,903	NA	46,182	316	404	1,247	1,571	NA	NA	779	793
1973	117,527	62,982	18,365	5,984	NA	28,858	7,626	2,149	1,143	NA	NA	NA	1,143	50,497	NA	49,757	342	399	1,306	1,599	NA	NA	797	801
1974	116,224	60,227	17,881	6,215	NA	26,381	7,525	2,225	1,113	NA	NA	NA	1,113	51,862	NA	51,100	364	398	1,371	1,651	NA	NA	831	820
1975	113,745	59,097	17,733	6,438	NA	25,121	7,653	2,152	1,110	NA	NA	NA	1,110	50,459	NA	49,686	376	396	1,376	1,704	NA	NA	867	836
1976	119,199	61,335	17,804	7,256	NA	26,210	7,916	2,149	1,115	NA	NA	NA	1,115	53,508	NA	52,704	396	409	1,451	1,789	NA	NA	905	884
1977	123,345	62,818	17,678	7,697	NA	27,104	8,232	2,107	1,121	NA	NA	NA	1,121	55,902	NA	55,044	440	419	1,618	1,886	NA	NA	958	928
1978	129,565	64,926	18,515	8,473	NA	26,879	8,852	2,207	1,178	NA	NA	NA	1,178	59,722	NA	58,813	483	426	1,806	1,933	NA	NA	967	967
1979	136,047	66,883	18,354	8,762	NA	27,893	9,453	2,420	1,183	NA	NA	NA	1,183	64,111	NA	63,156	527	428	1,928	1,942	NA	NA	947	995
1980	142,470	67,571	17,646	9,130	NA	28,736	9,767	2,292	1,168	NA	NA	NA	1,168	69,696	NA	68,675	594	427	2,072	1,962	NA	NA	944	1,018
1981	148,990	69,534	17,733	9,054	NA	30,908	9,624	2,214	1,197	NA	NA	NA	1,197	74,087	NA	73,015	647	425	2,179	1,992	NA	NA	954	1,038
1982	156,699	72,060	18,438	8,855	NA	33,109	9,467	2,191	1,205	NA	NA	NA	1,205	78,967	NA	77,828	704	435	2,341	2,125	NA	NA	1,035	1,090
1983	167,927	77,384	20,218	9,354	NA	35,649	9,727	2,437	1,228	NA	NA	NA	1,228	84,504	NA	83,242	807	456	2,532	2,279	NA	NA	1,110	1,169

TABLE 6. U.S. R&D expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																			Higher education				
	Federal								Nonfederal government					Business					Other nonprofit organizations					
	All performers	Total	Federal intra-mural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
1984	184,335	83,781	21,483	10,101	NA	39,046	10,362	2,790	1,300	NA	NA	NA	1,300	94,088	NA	92,677	933	479	2,730	2,436	NA	NA	1,178	1,258
1985	200,332	91,965	22,873	10,716	NA	44,257	11,160	2,959	1,456	NA	NA	NA	1,456	101,261	NA	99,656	1,101	505	3,045	2,605	NA	NA	1,246	1,359
1986	205,920	93,538	23,126	10,968	NA	44,524	12,034	2,887	1,659	NA	NA	NA	1,659	104,445	NA	102,631	1,276	538	3,457	2,821	NA	NA	1,336	1,485
1987	211,005	97,870	22,691	11,341	NA	48,020	12,972	2,846	1,778	NA	NA	NA	1,778	104,494	NA	102,535	1,388	571	3,777	3,087	NA	NA	1,472	1,615
1988	216,002	97,015	23,139	11,637	NA	45,532	13,864	2,843	1,880	NA	NA	NA	1,880	109,673	NA	107,568	1,505	600	4,077	3,358	NA	NA	1,618	1,740
1989	220,356	93,903	23,653	11,643	NA	40,935	14,469	3,202	1,979	NA	NA	NA	1,979	116,422	NA	114,147	1,647	628	4,429	3,623	NA	NA	1,756	1,867
1990	227,623	92,267	23,469	11,760	NA	38,641	14,885	3,513	2,095	NA	NA	NA	2,095	124,611	NA	122,206	1,745	659	4,772	3,878	NA	NA	1,870	2,007
1991	233,168	88,097	22,102	11,730	NA	34,923	15,460	3,883	2,149	NA	NA	NA	2,149	133,777	NA	131,284	1,799	694	5,011	4,134	NA	NA	1,968	2,166
1992	234,312	86,320	22,465	11,846	NA	31,698	16,335	3,976	2,161	NA	NA	NA	2,161	136,362	NA	133,754	1,870	738	5,057	4,412	NA	NA	2,051	2,361
1993	229,392	83,778	22,880	11,077	NA	28,851	17,034	3,935	2,155	NA	NA	NA	2,155	133,637	NA	130,926	1,926	785	5,133	4,689	NA	NA	2,118	2,571
1994	229,321	82,370	22,166	11,187	NA	27,459	17,612	3,945	2,199	NA	NA	NA	2,199	134,448	NA	131,639	1,973	836	5,337	4,967	NA	NA	2,161	2,806
1995	243,780	83,597	22,441	11,215	NA	28,116	18,045	3,780	2,325	NA	NA	NA	2,325	147,191	NA	144,246	2,054	891	5,456	5,211	NA	NA	2,146	3,065
1996	257,299	82,653	21,623	11,035	NA	27,844	18,363	3,788	2,426	NA	NA	NA	2,426	160,910	NA	157,779	2,179	952	5,783	5,527	NA	NA	2,171	3,355
1997	271,949	82,775	21,560	10,785	NA	27,942	18,625	3,864	2,464	NA	NA	NA	2,464	174,625	NA	171,271	2,317	1,037	6,202	5,884	NA	NA	2,290	3,594
1998	287,168	84,180	22,017	10,754	NA	28,007	19,242	4,160	2,501	NA	NA	NA	2,501	187,455	NA	183,893	2,472	1,089	6,547	6,485	NA	NA	2,437	4,048
1999	306,398	84,140	22,659	10,871	NA	25,599	20,313	4,697	2,621	NA	NA	NA	2,621	205,590	NA	201,828	2,600	1,162	7,019	7,029	NA	NA	2,638	4,391
2000	328,383	82,871	23,504	11,319	NA	20,903	21,638	5,508	2,743	NA	NA	NA	2,743	227,187	NA	223,287	2,654	1,245	7,609	7,973	NA	NA	2,838	5,134
2001	333,975	89,052	26,715	12,006	NA	20,177	23,601	6,552	2,887	27	NA	NA	2,860	225,039	169	221,027	2,614	1,229	8,150	8,848	260	NA	3,035	5,552
2002	328,541	93,925	27,984	13,219	NA	19,286	26,640	6,794	3,107	38	NA	NA	3,069	212,583	159	208,689	2,561	1,174	8,957	9,969	324	NA	3,326	6,320
2003	337,879	99,491	28,803	13,652	NA	20,520	29,662	6,854	3,330	37	NA	NA	3,293	214,731	154	210,902	2,498	1,176	9,484	10,843	283	NA	3,440	7,121
2004	341,728	103,280	27,937	13,993	NA	22,740	31,275	7,335	3,409	34	NA	NA	3,375	214,800	137	210,992	2,503	1,168	9,607	10,631	185	NA	3,488	6,958
2005	355,683	105,110	28,615	14,017	NA	23,817	31,546	7,115	3,362	35	NA	NA	3,327	225,970	152	222,041	2,574	1,203	10,072	11,170	196	NA	3,581	7,393
2006	372,177	106,799	29,784	13,678	111	25,633	31,219	6,374	3,603	32	215	NA	3,357	239,713	181	235,583	2,703	1,247	10,627	11,434	210	NA	3,724	7,500
2007	390,416	109,464	30,676	14,224	123	27,312	30,986	6,143	3,790	33	225	NA	3,532	253,677	185	249,322	2,879	1,291	11,130	12,355	221	NA	4,022	8,112
2008	410,043	120,017	30,066	15,485	132	36,636	31,415	6,283	4,289	33	213	308	3,735	260,092	201	255,488	3,093	1,310	11,728	13,916	210	455	4,357	8,894
2009	405,343	127,395	30,560	16,571	162	39,573	33,433	7,097	4,286	40	244	195	3,808	246,770	184	242,135	3,193	1,258	11,916	14,976	218	490	4,621	9,647
2010	404,100	126,876	31,584	18,187	190	33,786	36,121	7,008	4,235	46	294	154	3,741	245,318	172	240,790	3,106	1,250	11,957	15,714	196	879	4,714	9,924
2011	414,938	124,786	33,830	17,593	194	30,306	36,508	6,354	4,216	29	283	311	3,593	258,061	183	253,508	3,080	1,290	12,534	15,341	173	543	4,718	9,907
2012	414,534	119,561	32,331	16,849	185	29,103	35,164	5,930	3,899	40	259	149	3,451	262,222	176	257,566	3,183	1,298	13,440	15,411	164	452	4,891	9,903

TABLE 6. U.S. R&D expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources								Nonfederal government					Business				Higher education	Other nonprofit organizations					
	All performers	Federal			Non-federal government				Total	Non-federal government		Business			Total	FFRDC	Higher education		Total	Higher education			ONP	
		Total	Federal intra-mural	FFRDC	Non-federal government	Business	Higher education	ONP		FFRDC	Business	Higher education	ONP	FFRDC			Business	Higher education		FFRDC	Business	Higher education		ONP
2013	426,994	114,157	31,241	16,175	176	27,459	33,522	5,583	3,964	42	263	181	3,478	278,096	183	273,219	3,343	1,351	14,212	16,565	134	766	5,230	10,435
2014 ^a	439,531	110,250	31,647	16,122	177	24,432	32,250	5,622	3,901	24	265	127	3,486	293,137	200	288,026	3,512	1,398	14,759	17,485	126	914	5,526	10,919
2015 ^b	454,875	103,050	30,944	16,692	177	17,776	31,900	5,561	3,817	17	265	117	3,418	314,283	193	308,916	3,707	1,468	15,587	18,137	124	844	5,856	11,313

NA = not available.

FFRDC = federally funded R&D center; ONP = other nonprofit organization.

^a Some data for 2014 are preliminary and may later be revised.

^b The data for 2015 are estimates and will later be revised.

NOTES: This table reaggregates the R&D performer data in table 2 according to major categories of R&D funding: federal government, nonfederal government (state and local), business, higher education, and other nonprofit organizations. Business sources of R&D funding in this table include the own funds of domestic R&D performing businesses, funds from other domestic businesses, and funds from foreign businesses. For interpretive detail on the R&D performers listed, see table 2., footnotes a–f. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For trend comparisons, use only the historical data reported in this table, because some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation’s annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also, before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data (see table 2, general notes). The 1998–2015 data for ONP R&D performance funded by businesses and the nonprofit sector itself are estimated, based on parameters from the 1996–97 Survey of R&D Funding and Performance by Nonprofit Organizations.

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

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																							
	Federal								Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
Current \$millions																								
1953	460	265	102	36	NA	19	82	27	7	NA	NA	NA	7	154	NA	132	13	9	6	28	NA	NA	16	12
1954	509	291	96	45	NA	23	97	31	10	NA	NA	NA	10	169	NA	143	15	11	8	31	NA	NA	18	13
1955	570	318	98	62	NA	7	117	35	14	NA	NA	NA	14	192	NA	162	17	13	12	35	NA	NA	21	14
1956	718	392	114	89	NA	7	143	41	19	NA	NA	NA	19	251	NA	216	20	15	15	41	NA	NA	24	17
1957	813	451	124	110	NA	4	167	48	25	NA	NA	NA	25	268	NA	230	23	15	20	50	NA	NA	27	23
1958	943	537	149	115	NA	14	202	58	31	NA	NA	NA	31	292	NA	252	24	16	24	59	NA	NA	31	28
1959	1,087	665	165	134	NA	34	263	71	38	NA	NA	NA	38	290	NA	248	24	18	28	66	NA	NA	36	30
1960	1,286	794	184	150	NA	36	341	84	45	NA	NA	NA	45	343	NA	297	25	21	33	71	NA	NA	41	30
1961	1,511	972	230	177	NA	30	432	104	54	NA	NA	NA	54	361	NA	314	25	22	40	85	NA	NA	48	37
1962	1,824	1,218	252	189	NA	104	546	128	64	NA	NA	NA	64	394	NA	345	25	24	48	101	NA	NA	55	46
1963	2,115	1,446	285	216	NA	109	689	147	75	NA	NA	NA	75	425	NA	375	25	25	58	113	NA	NA	63	50
1964	2,396	1,693	339	245	NA	123	824	163	84	NA	NA	NA	84	434	NA	384	25	25	70	115	NA	NA	68	47
1965	2,664	1,900	375	250	NA	157	944	175	94	NA	NA	NA	94	462	NA	406	27	29	86	122	NA	NA	70	52
1966	2,930	2,075	410	273	NA	142	1,066	184	104	NA	NA	NA	104	512	NA	451	29	32	106	133	NA	NA	75	58
1967	3,168	2,280	434	301	NA	168	1,188	190	114	NA	NA	NA	114	495	NA	427	34	34	136	144	NA	NA	83	61
1968	3,376	2,399	482	315	NA	145	1,265	192	131	NA	NA	NA	131	537	NA	462	38	37	156	154	NA	NA	91	63
1969	3,491	2,457	545	313	NA	123	1,288	188	153	NA	NA	NA	153	541	NA	458	40	43	171	170	NA	NA	103	67
1970	3,594	2,501	562	304	NA	122	1,323	191	179	NA	NA	NA	179	531	NA	444	43	44	196	187	NA	NA	115	72
1971	3,720	2,559	581	289	NA	101	1,385	204	194	NA	NA	NA	194	551	NA	456	50	45	214	204	NA	NA	127	77
1972	3,850	2,656	603	313	NA	91	1,437	213	195	NA	NA	NA	195	565	NA	463	55	47	216	218	NA	NA	134	84
1973	4,099	2,847	652	382	NA	96	1,489	229	196	NA	NA	NA	196	607	NA	499	59	49	223	227	NA	NA	137	90
1974	4,511	3,146	715	467	NA	114	1,609	242	204	NA	NA	NA	204	656	NA	536	66	54	250	254	NA	NA	153	102
1975	4,875	3,415	760	533	NA	104	1,768	251	212	NA	NA	NA	212	704	NA	573	72	59	264	280	NA	NA	164	116
1976	5,373	3,793	850	629	NA	116	1,924	274	218	NA	NA	NA	218	774	NA	634	75	65	283	305	NA	NA	175	131
1977	6,008	4,235	943	746	NA	135	2,114	297	232	NA	NA	NA	232	862	NA	701	89	72	334	346	NA	NA	198	148
1978	6,959	4,950	1,044	1,005	NA	156	2,399	346	260	NA	NA	NA	260	970	NA	785	107	79	398	380	NA	NA	213	168
1979	7,836	5,558	1,112	1,160	NA	161	2,719	406	286	NA	NA	NA	286	1,107	NA	893	128	87	466	419	NA	NA	229	190
1980	8,747	6,147	1,212	1,294	NA	170	3,061	411	307	NA	NA	NA	307	1,286	NA	1,035	156	95	544	463	NA	NA	248	215
1981	9,658	6,591	1,343	1,430	NA	164	3,331	324	338	NA	NA	NA	338	1,600	NA	1,313	183	105	615	512	NA	NA	269	243
1982	10,651	7,121	1,522	1,503	NA	253	3,475	369	368	NA	NA	NA	368	1,854	NA	1,523	215	115	716	591	NA	NA	317	275
1983	11,880	7,853	1,733	1,661	NA	346	3,689	426	396	NA	NA	NA	396	2,146	NA	1,760	260	127	816	668	NA	NA	358	311

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																			Higher education	Other nonprofit organizations				
	All performers	Federal							Nonfederal government					Business					Higher education		Other nonprofit organizations				
		Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP			Total	FFRDC	Business	Higher education	ONP
1984	13,332	8,651	1,877	1,854	NA	340	4,087	494	436	NA	NA	NA	436	2,584	NA	2,132	313	139	915	746	NA	NA	395	351	
1985	14,748	9,407	1,947	1,936	NA	358	4,606	560	514	NA	NA	NA	514	2,915	NA	2,373	389	153	1,075	837	NA	NA	440	397	
1986	17,154	10,220	2,026	2,045	NA	434	5,122	594	606	NA	NA	NA	606	4,130	NA	3,496	466	168	1,262	936	NA	NA	488	449	
1987	18,481	11,090	2,047	2,242	NA	598	5,527	675	659	NA	NA	NA	659	4,282	NA	3,583	514	185	1,399	1,052	NA	NA	545	507	
1988	19,787	12,097	2,116	2,633	NA	656	5,937	756	705	NA	NA	NA	705	4,275	NA	3,507	565	203	1,530	1,180	NA	NA	607	573	
1989	21,891	13,392	2,309	2,815	NA	986	6,422	860	766	NA	NA	NA	766	4,692	NA	3,832	637	223	1,714	1,327	NA	NA	680	647	
1990	23,029	14,057	2,319	3,033	NA	869	6,889	947	847	NA	NA	NA	847	4,710	NA	3,760	705	245	1,929	1,486	NA	NA	756	730	
1991	27,140	15,283	2,378	3,195	NA	1,251	7,423	1,036	912	NA	NA	NA	912	7,157	NA	6,125	764	269	2,127	1,660	NA	NA	836	825	
1992	27,604	15,710	2,419	3,408	NA	712	8,058	1,114	941	NA	NA	NA	941	6,925	NA	5,816	814	295	2,203	1,824	NA	NA	893	931	
1993	28,743	16,399	2,621	3,517	NA	466	8,638	1,157	952	NA	NA	NA	952	7,136	NA	5,961	851	324	2,268	1,987	NA	NA	936	1,051	
1994	29,651	16,770	2,547	3,512	NA	436	9,139	1,137	992	NA	NA	NA	992	7,323	NA	6,078	890	356	2,406	2,160	NA	NA	974	1,186	
1995	29,610	16,990	2,689	3,307	NA	190	9,634	1,170	1,070	NA	NA	NA	1,070	6,715	NA	5,379	945	390	2,511	2,326	NA	NA	987	1,338	
1996	32,799	18,063	2,680	3,393	NA	650	10,092	1,248	1,149	NA	NA	NA	1,149	8,309	NA	6,848	1,032	428	2,740	2,539	NA	NA	1,028	1,510	
1997	36,913	19,420	2,746	3,404	NA	1,029	10,924	1,317	1,247	NA	NA	NA	1,247	10,389	NA	8,766	1,174	449	3,141	2,717	NA	NA	1,160	1,557	
1998	35,355	20,847	3,003	3,441	NA	1,002	11,941	1,461	1,327	NA	NA	NA	1,327	6,640	NA	4,851	1,312	477	3,474	3,066	NA	NA	1,293	1,773	
1999	38,914	22,800	3,347	3,719	NA	1,108	12,892	1,734	1,428	NA	NA	NA	1,428	7,471	NA	5,537	1,417	517	3,825	3,390	NA	NA	1,438	1,952	
2000	42,729	24,786	3,765	4,037	NA	925	13,960	2,099	1,545	NA	NA	NA	1,545	8,177	NA	6,115	1,495	566	4,287	3,934	NA	NA	1,599	2,334	
2001	47,703	27,424	4,260	4,404	NA	754	15,541	2,464	1,668	10	NA	NA	1,658	9,448	62	7,299	1,515	571	4,726	4,438	95	NA	1,760	2,582	
2002	51,873	30,933	4,511	5,029	NA	888	17,930	2,575	1,821	14	NA	NA	1,807	8,781	61	6,659	1,508	554	5,273	5,065	123	NA	1,958	2,984	
2003	56,057	33,796	4,664	4,904	NA	1,386	20,127	2,714	1,975	13	NA	NA	1,962	9,054	55	6,944	1,488	567	5,651	5,580	102	NA	2,050	3,429	
2004	57,699	35,111	4,697	4,852	NA	1,072	21,702	2,788	2,089	12	NA	NA	2,077	8,930	48	6,763	1,541	578	5,914	5,655	64	NA	2,147	3,443	
2005	61,286	36,569	4,770	5,000	NA	1,108	22,788	2,903	2,161	12	NA	NA	2,149	9,890	54	7,559	1,663	614	6,507	6,159	70	NA	2,313	3,776	
2006	63,041	37,427	4,716	5,080	NA	1,444	23,312	2,849	2,342	12	NA	NA	2,279	9,500	67	6,940	1,836	656	7,216	6,555	78	NA	2,529	3,948	
2007	66,217	37,231	4,621	3,298	NA	2,780	23,673	2,829	2,559	10	NA	NA	2,495	11,276	57	8,488	2,033	698	7,859	7,292	68	NA	2,840	4,384	
2008	70,236	37,119	4,957	3,432	NA	1,475	24,149	3,073	2,750	11	NA	12	2,674	13,865	65	10,864	2,214	722	8,397	8,106	68	18	3,119	4,901	
2009	74,349	38,864	5,441	4,432	NA	1,340	24,112	3,498	2,641	13	NA	13	2,554	16,296	58	13,397	2,143	698	7,997	8,553	69	34	3,094	5,357	
2010	77,336	41,034	5,111	6,475	NA	1,406	24,579	3,414	2,460	18	NA	10	2,358	17,623	67	14,897	1,957	702	7,535	8,683	77	58	2,971	5,577	
2011	74,262	40,045	5,047	6,333	NA	677	24,858	3,081	2,394	11	NA	21	2,289	15,053	67	12,284	1,962	740	7,980	8,789	64	38	3,005	5,683	
2012	74,643	38,972	5,489	5,530	NA	644	24,168	3,092	2,340	14	NA	10	2,249	15,505	61	12,611	2,075	758	8,764	9,061	57	29	3,189	5,785	
2013	80,146	37,154	5,330	4,085	NA	1,196	23,464	3,031	2,422	12	NA	21	2,319	21,286	53	18,203	2,229	802	9,475	9,809	39	88	3,486	6,195	
2014 ^a	84,012	38,105	5,807	4,144	NA	2,044	22,935	3,127	2,447	6	NA	17	2,353	23,026	55	19,757	2,371	844	9,961	10,472	34	119	3,730	6,589	
2015 ^b	86,705	38,128	6,173	4,333	NA	1,502	22,911	3,161	2,426	5	NA	15	2,334	24,473	53	20,994	2,531	895	10,643	11,035	34	107	3,999	6,895	

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
Constant 2009 \$millions																								
1953	3,032	1,749	670	238	NA	125	538	178	43	NA	NA	NA	43	1,016	NA	871	86	59	40	185	NA	NA	106	79
1954	3,324	1,899	628	291	NA	150	631	199	62	NA	NA	NA	62	1,105	NA	935	98	72	55	203	NA	NA	118	85
1955	3,663	2,044	627	398	NA	45	749	225	89	NA	NA	NA	89	1,234	NA	1,041	109	84	75	222	NA	NA	132	90
1956	4,461	2,438	705	553	NA	42	886	252	118	NA	NA	NA	118	1,557	NA	1,342	121	93	96	252	NA	NA	146	106
1957	4,893	2,715	746	659	NA	24	1,001	286	149	NA	NA	NA	149	1,609	NA	1,383	135	90	119	301	NA	NA	162	138
1958	5,548	3,159	876	676	NA	80	1,188	338	183	NA	NA	NA	183	1,718	NA	1,482	141	94	141	347	NA	NA	182	165
1959	6,305	3,860	954	774	NA	197	1,523	412	218	NA	NA	NA	218	1,682	NA	1,439	139	104	165	380	NA	NA	206	174
1960	7,356	4,541	1,050	858	NA	204	1,948	481	258	NA	NA	NA	258	1,960	NA	1,699	140	120	192	406	NA	NA	235	172
1961	8,552	5,501	1,299	1,002	NA	173	2,442	586	304	NA	NA	NA	304	2,043	NA	1,777	141	125	225	478	NA	NA	269	209
1962	10,199	6,811	1,409	1,057	NA	583	3,050	713	356	NA	NA	NA	356	2,203	NA	1,929	140	134	267	562	NA	NA	305	257
1963	11,694	7,993	1,573	1,194	NA	604	3,809	813	414	NA	NA	NA	414	2,347	NA	2,073	135	138	318	622	NA	NA	346	276
1964	13,046	9,218	1,846	1,334	NA	670	4,484	885	459	NA	NA	NA	459	2,363	NA	2,091	136	136	379	626	NA	NA	370	256
1965	14,245	10,160	2,003	1,337	NA	840	5,045	936	505	NA	NA	NA	505	2,468	NA	2,171	142	155	460	652	NA	NA	374	278
1966	15,239	10,792	2,132	1,420	NA	739	5,544	957	539	NA	NA	NA	539	2,663	NA	2,346	151	166	554	692	NA	NA	390	302
1967	16,009	11,521	2,191	1,521	NA	849	6,002	958	575	NA	NA	NA	575	2,499	NA	2,158	169	172	686	728	NA	NA	419	308
1968	16,366	11,627	2,337	1,525	NA	703	6,132	931	634	NA	NA	NA	634	2,601	NA	2,240	182	179	757	747	NA	NA	441	305
1969	16,129	11,351	2,519	1,446	NA	568	5,949	869	706	NA	NA	NA	706	2,497	NA	2,116	183	199	791	783	NA	NA	474	310
1970	15,773	10,979	2,466	1,334	NA	535	5,804	838	787	NA	NA	NA	787	2,330	NA	1,949	189	193	859	819	NA	NA	503	316
1971	15,538	10,687	2,427	1,205	NA	422	5,783	850	809	NA	NA	NA	809	2,299	NA	1,905	207	188	893	850	NA	NA	528	322
1972	15,414	10,632	2,412	1,251	NA	364	5,753	851	782	NA	NA	NA	782	2,262	NA	1,854	220	188	865	873	NA	NA	536	336
1973	15,566	10,810	2,476	1,450	NA	365	5,652	868	746	NA	NA	NA	746	2,303	NA	1,895	222	186	847	860	NA	NA	518	342
1974	15,715	10,961	2,490	1,627	NA	397	5,606	841	710	NA	NA	NA	710	2,285	NA	1,867	230	188	871	887	NA	NA	531	355
1975	15,544	10,890	2,423	1,698	NA	332	5,638	800	677	NA	NA	NA	677	2,244	NA	1,827	228	189	840	891	NA	NA	523	368
1976	16,241	11,464	2,569	1,901	NA	351	5,816	827	658	NA	NA	NA	658	2,340	NA	1,916	227	197	856	923	NA	NA	527	395
1977	17,100	12,053	2,684	2,123	NA	384	6,017	845	660	NA	NA	NA	660	2,453	NA	1,995	253	204	951	984	NA	NA	562	422
1978	18,506	13,165	2,777	2,673	NA	415	6,380	920	691	NA	NA	NA	691	2,581	NA	2,088	283	210	1,059	1,011	NA	NA	565	446
1979	19,252	13,655	2,733	2,849	NA	396	6,680	998	702	NA	NA	NA	702	2,720	NA	2,194	313	213	1,145	1,029	NA	NA	563	466
1980	19,710	13,852	2,732	2,916	NA	383	6,897	925	691	NA	NA	NA	691	2,898	NA	2,332	351	215	1,226	1,043	NA	NA	559	484
1981	19,904	13,585	2,767	2,947	NA	338	6,865	667	697	NA	NA	NA	697	3,299	NA	2,706	377	216	1,268	1,056	NA	NA	555	501
1982	20,668	13,819	2,953	2,917	NA	491	6,743	716	714	NA	NA	NA	714	3,597	NA	2,956	418	224	1,390	1,148	NA	NA	615	533
1983	22,179	14,661	3,235	3,100	NA	646	6,886	795	739	NA	NA	NA	739	4,007	NA	3,286	485	236	1,524	1,248	NA	NA	668	580

TABLE 7. U.S. basic research expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education		Other nonprofit organizations					
	All performers	Total	Federal intramural		Non-federal government		Higher education		Total	Non-federal government		Higher education		Total	Business		Higher education		Total	FFRDC		Business		Higher education		ONP
			FFRDC	ONP	FFRDC	ONP	FFRDC	ONP		FFRDC	ONP	FFRDC	ONP		FFRDC	ONP	FFRDC	ONP		FFRDC	ONP	FFRDC	ONP			
2013	74,952	34,746	4,985	3,821	NA	1,118	21,944	2,835	2,265	11	NA	20	2,168	19,907	49	17,023	2,084	750	8,861	9,173	36	82	3,260	5,794		
2014 ^a	77,298	35,060	5,343	3,812	NA	1,881	21,102	2,877	2,252	6	NA	15	2,165	21,186	50	18,178	2,181	776	9,165	9,635	32	109	3,432	6,063		
2015 ^b	78,991	34,736	5,623	3,947	NA	1,368	20,873	2,880	2,210	4	NA	14	2,126	22,296	49	19,126	2,306	815	9,696	10,053	31	98	3,643	6,282		

NA = not available.

FFRDC = federally funded R&D center; ONP = other nonprofit organizations.

^a Some data for 2014 are preliminary and may later be revised.

^b The data for 2015 are estimates and will later be revised.

NOTES: This table reaggregates the R&D performer data in table 3 according to major categories of R&D funding: federal government, nonfederal government (state and local), business, higher education, and other nonprofit organizations. Business sources of R&D funding in this table include the own funds of domestic R&D performing businesses, funds from other domestic businesses, and funds from foreign businesses. For interpretive detail on the R&D performers listed, see table 2, footnotes a–f. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For comparisons, use only the historical data reported in this table, as some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation's annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data (see table 3, general notes). The 1998–2015 data for ONP R&D performance funded by businesses and the nonprofit sector itself are estimated, based on parameters from the 1996–97 Survey of R&D Funding and Performance by Nonprofit Organizations. Type-of-R&D data for business R&D in 1998–2007 were revised in response to data quality review considerations and are not directly comparable with the data for 1997 and earlier years. For 2008 and onward, the type-of-R&D splits for other than total, own-funded, and federally funded R&D are estimated (see also table 2, footnote d). Type-of-R&D data for FFRDC R&D in 1953–54 includes only those of university-administered FFRDCs. Starting in 2001, type-of-R&D data distinguish federally funded from nonfederally funded FFRDC R&D (see also table 2, footnote b). The type-of-R&D estimation procedure for higher education R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years. Furthermore, the type-of-R&D splits for other than total and federally funded are estimated (see also table 2, footnote e). Type-of-R&D data for R&D by other nonprofit organizations in 1998 and later years are estimated, except for those that are federally funded (see also table 2, footnote f). Type-of-R&D data for state intramural R&D are not currently collected by the Survey of State Government R&D (see also table 2, footnote c).

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

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education		Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP	
																									Current \$millions
1953	1,289	756	347	48	NA	288	59	14	30	NA	NA	NA	30	456	NA	438	7	11	28	20	NA	NA	10	10	
1954	1,378	785	330	59	NA	322	60	16	32	NA	NA	NA	32	513	NA	492	8	13	28	21	NA	NA	10	11	
1955	1,502	838	333	86	NA	339	63	18	32	NA	NA	NA	32	583	NA	560	9	14	27	22	NA	NA	11	11	
1956	1,929	1,026	387	125	NA	430	65	20	33	NA	NA	NA	33	818	NA	794	10	14	27	25	NA	NA	11	14	
1957	2,413	1,304	446	149	NA	624	63	23	34	NA	NA	NA	34	1,018	NA	992	12	14	27	31	NA	NA	11	20	
1958	2,759	1,497	516	156	NA	731	66	29	35	NA	NA	NA	35	1,163	NA	1,137	12	14	27	37	NA	NA	12	25	
1959	2,940	1,630	577	179	NA	757	78	40	37	NA	NA	NA	37	1,206	NA	1,178	13	15	28	39	NA	NA	12	27	
1960	3,065	1,732	615	201	NA	769	93	54	39	NA	NA	NA	39	1,226	NA	1,196	13	17	29	40	NA	NA	12	28	
1961	3,123	1,811	668	240	NA	738	104	62	40	NA	NA	NA	40	1,195	NA	1,165	13	17	30	48	NA	NA	13	35	
1962	3,698	2,098	709	249	NA	954	119	68	41	NA	NA	NA	41	1,471	NA	1,438	14	19	30	58	NA	NA	13	45	
1963	3,864	2,244	809	275	NA	952	128	82	42	NA	NA	NA	42	1,483	NA	1,450	14	19	32	63	NA	NA	14	49	
1964	4,201	2,462	947	313	NA	978	142	82	45	NA	NA	NA	45	1,593	NA	1,560	14	19	37	65	NA	NA	18	47	
1965	4,374	2,553	994	294	NA	992	176	98	46	NA	NA	NA	46	1,654	NA	1,620	13	21	42	79	NA	NA	27	52	
1966	4,653	2,625	1,012	290	NA	986	208	129	47	NA	NA	NA	47	1,842	NA	1,804	14	24	48	91	NA	NA	34	57	
1967	4,848	2,763	1,069	334	NA	983	238	141	46	NA	NA	NA	46	1,890	NA	1,849	16	25	54	96	NA	NA	36	60	
1968	5,137	2,811	1,112	334	NA	956	250	160	46	NA	NA	NA	46	2,125	NA	2,081	16	28	55	101	NA	NA	39	62	
1969	5,454	2,924	1,229	336	NA	920	257	183	48	NA	NA	NA	48	2,320	NA	2,272	16	32	54	109	NA	NA	43	66	
1970	5,752	3,100	1,334	336	NA	952	280	199	51	NA	NA	NA	51	2,429	NA	2,378	18	33	56	117	NA	NA	47	70	
1971	5,833	3,091	1,355	312	NA	907	306	212	61	NA	NA	NA	61	2,494	NA	2,441	19	34	67	121	NA	NA	47	74	
1972	6,147	3,243	1,434	358	NA	845	391	216	74	NA	NA	NA	74	2,618	NA	2,562	21	35	82	131	NA	NA	52	79	
1973	6,655	3,429	1,527	334	NA	883	450	236	88	NA	NA	NA	88	2,894	NA	2,832	26	36	100	145	NA	NA	62	83	
1974	7,344	3,634	1,652	335	NA	905	477	266	96	NA	NA	NA	96	3,333	NA	3,263	32	39	118	163	NA	NA	72	91	
1975	8,091	4,125	1,912	384	NA	991	550	290	113	NA	NA	NA	113	3,520	NA	3,440	39	42	141	192	NA	NA	92	100	
1976	8,976	4,464	2,068	457	NA	1,033	596	310	127	NA	NA	NA	127	4,001	NA	3,912	45	45	166	218	NA	NA	109	109	
1977	9,662	4,683	2,081	540	NA	1,113	626	324	134	NA	NA	NA	134	4,410	NA	4,311	51	48	194	241	NA	NA	121	120	
1978	10,704	5,080	2,242	597	NA	1,195	676	371	151	NA	NA	NA	151	4,982	NA	4,870	61	52	232	259	NA	NA	128	132	
1979	12,097	5,602	2,415	654	NA	1,305	793	436	161	NA	NA	NA	161	5,797	NA	5,670	71	55	263	273	NA	NA	129	144	
1980	13,729	6,252	2,546	749	NA	1,625	912	420	174	NA	NA	NA	174	6,698	NA	6,550	88	60	308	298	NA	NA	140	158	
1981	16,329	6,905	2,731	788	NA	2,042	953	391	199	NA	NA	NA	199	8,531	NA	8,359	108	64	363	332	NA	NA	159	173	
1982	18,218	7,689	2,802	890	NA	2,593	1,007	398	207	NA	NA	NA	207	9,553	NA	9,363	121	69	402	367	NA	NA	178	189	
1983	20,298	8,738	2,991	965	NA	3,227	1,122	433	215	NA	NA	NA	215	10,501	NA	10,286	141	74	443	401	NA	NA	194	207	

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
1984	22,451	9,499	2,961	1,176	NA	3,677	1,226	459	234	NA	NA	NA	234	11,788	NA	11,541	168	79	491	438	NA	NA	212	226
1985	25,401	10,930	3,135	1,292	NA	4,717	1,296	490	262	NA	NA	NA	262	13,191	NA	12,908	198	85	547	471	NA	NA	224	247
1986	27,240	10,409	3,204	1,258	NA	4,049	1,393	506	298	NA	NA	NA	298	15,402	NA	15,082	229	91	620	510	NA	NA	240	270
1987	27,951	10,829	3,366	1,228	NA	4,037	1,643	555	333	NA	NA	NA	333	15,511	NA	15,153	260	98	707	571	NA	NA	276	295
1988	29,528	10,749	3,362	984	NA	3,846	1,958	599	377	NA	NA	NA	377	16,938	NA	16,531	302	105	818	647	NA	NA	325	322
1989	32,277	11,753	3,566	1,047	NA	4,324	2,121	695	417	NA	NA	NA	417	18,452	NA	17,993	347	112	933	722	NA	NA	370	352
1990	34,897	13,695	3,652	1,156	NA	5,967	2,140	780	453	NA	NA	NA	453	18,930	NA	18,432	377	120	1,031	788	NA	NA	404	384
1991	38,631	14,280	4,093	1,446	NA	5,588	2,232	921	468	NA	NA	NA	468	21,946	NA	21,425	392	129	1,091	847	NA	NA	428	419
1992	37,936	13,690	4,337	1,529	NA	4,476	2,415	933	479	NA	NA	NA	479	21,736	NA	21,184	414	138	1,120	911	NA	NA	454	456
1993	37,283	14,075	4,838	1,500	NA	4,295	2,542	900	496	NA	NA	NA	496	20,547	NA	19,956	443	148	1,181	984	NA	NA	487	497
1994	36,618	13,800	4,985	1,596	NA	3,616	2,644	960	517	NA	NA	NA	517	19,995	NA	19,372	464	158	1,256	1,049	NA	NA	509	541
1995	40,936	13,543	4,952	1,714	NA	3,164	2,779	934	559	NA	NA	NA	559	24,418	NA	23,755	494	170	1,311	1,104	NA	NA	516	589
1996	43,170	13,958	4,872	1,623	NA	3,640	2,864	960	584	NA	NA	NA	584	26,076	NA	25,370	524	182	1,390	1,162	NA	NA	522	640
1997	46,561	12,884	4,997	1,679	NA	2,648	2,550	1,011	554	NA	NA	NA	554	30,507	NA	29,782	520	205	1,392	1,224	NA	NA	514	711
1998	46,377	12,822	5,146	1,725	NA	2,632	2,260	1,060	529	NA	NA	NA	529	30,317	NA	29,576	523	218	1,385	1,324	NA	NA	515	809
1999	52,025	13,959	5,530	1,651	NA	2,817	2,661	1,300	549	NA	NA	NA	549	34,602	NA	33,821	545	236	1,471	1,444	NA	NA	553	891
2000	56,699	15,562	6,105	1,750	NA	2,682	3,194	1,831	575	NA	NA	NA	575	37,309	NA	36,494	556	258	1,594	1,660	NA	NA	595	1,066
2001	64,196	18,738	7,052	2,379	NA	3,603	3,553	2,150	610	5	NA	NA	604	41,256	33	40,409	553	261	1,722	1,871	52	NA	641	1,178
2002	50,821	19,166	7,487	2,905	NA	2,452	4,056	2,267	667	8	NA	NA	659	26,918	35	26,081	549	253	1,923	2,147	71	NA	714	1,362
2003	61,406	22,444	7,672	3,152	NA	4,473	4,660	2,487	742	9	NA	NA	733	33,711	36	32,861	556	259	2,112	2,396	65	NA	766	1,565
2004	69,495	22,637	7,455	3,057	NA	4,775	4,902	2,448	771	7	NA	NA	763	41,517	30	40,657	566	264	2,171	2,400	40	NA	788	1,572
2005	70,030	23,550	7,557	3,241	NA	5,289	5,032	2,432	756	8	NA	NA	748	40,889	35	39,995	578	280	2,262	2,573	45	NA	805	1,723
2006	76,916	25,067	7,435	3,531	NA	6,140	5,318	2,592	851	8	NA	NA	741	45,975	47	45,033	596	300	2,345	2,678	54	NA	821	1,802
2007	85,612	29,651	7,222	5,293	NA	8,945	5,548	2,583	897	14	NA	NA	774	49,651	77	48,625	631	318	2,439	2,974	92	NA	881	2,001
2008	76,897	27,365	7,316	5,843	NA	5,397	6,144	2,600	1,038	15	NA	71	847	42,412	89	41,292	701	330	2,659	3,423	93	105	988	2,237
2009	75,187	32,477	7,874	5,979	NA	7,797	7,697	3,049	1,207	19	NA	38	1,028	34,392	88	33,124	861	319	3,214	3,897	104	96	1,252	2,445
2010	81,003	30,257	8,016	5,025	NA	4,705	9,374	3,041	1,371	18	NA	32	1,172	41,348	67	39,987	973	321	3,746	4,282	77	182	1,477	2,546
2011	84,112	30,307	8,024	5,057	NA	4,404	10,029	2,693	1,396	13	NA	70	1,167	44,010	81	42,591	1,001	338	4,074	4,325	77	122	1,533	2,594
2012	89,063	30,955	8,587	5,566	NA	4,137	9,940	2,629	1,333	19	NA	45	1,133	47,908	81	46,436	1,044	346	4,409	4,458	76	137	1,605	2,641
2013	90,265	33,091	8,309	6,639	NA	6,028	9,556	2,465	1,358	22	NA	47	1,148	46,302	94	44,738	1,104	366	4,692	4,823	69	200	1,727	2,828
2014 ^a	93,631	33,721	8,609	6,721	NA	6,445	9,327	2,522	1,369	13	NA	35	1,177	48,365	108	46,685	1,186	385	4,985	5,192	68	250	1,867	3,008
2015 ^b	96,297	32,405	8,683	7,028	NA	4,736	9,318	2,544	1,350	9	NA	32	1,163	51,798	107	50,022	1,261	408	5,303	5,441	69	232	1,992	3,147

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
Constant 2009 \$millions																								
1953	8,505	4,985	2,290	313	NA	1,900	389	92	199	NA	NA	NA	199	3,006	NA	2,890	43	73	184	132	NA	NA	66	66
1954	9,009	5,132	2,154	382	NA	2,105	389	101	206	NA	NA	NA	206	3,351	NA	3,217	49	85	183	137	NA	NA	65	72
1955	9,650	5,386	2,140	553	NA	2,176	405	112	208	NA	NA	NA	208	3,743	NA	3,599	55	90	175	138	NA	NA	67	71
1956	11,986	6,374	2,402	774	NA	2,670	404	124	206	NA	NA	NA	206	5,084	NA	4,935	62	87	167	155	NA	NA	68	87
1957	14,514	7,841	2,679	896	NA	3,751	379	135	204	NA	NA	NA	204	6,120	NA	5,966	69	84	163	186	NA	NA	66	120
1958	16,229	8,805	3,035	918	NA	4,299	385	168	208	NA	NA	NA	208	6,841	NA	6,688	71	82	160	215	NA	NA	68	147
1959	17,053	9,457	3,344	1,038	NA	4,393	450	232	214	NA	NA	NA	214	6,993	NA	6,834	73	87	163	226	NA	NA	70	157
1960	17,540	9,910	3,516	1,150	NA	4,402	532	309	221	NA	NA	NA	221	7,015	NA	6,843	74	97	165	229	NA	NA	69	160
1961	17,675	10,249	3,781	1,355	NA	4,177	586	351	226	NA	NA	NA	226	6,763	NA	6,594	74	96	167	269	NA	NA	71	198
1962	20,674	11,731	3,961	1,392	NA	5,335	663	380	227	NA	NA	NA	227	8,222	NA	8,040	75	106	170	324	NA	NA	73	252
1963	21,363	12,407	4,472	1,518	NA	5,262	705	451	233	NA	NA	NA	233	8,199	NA	8,016	77	105	179	346	NA	NA	75	271
1964	22,873	13,402	5,153	1,704	NA	5,325	773	446	246	NA	NA	NA	246	8,671	NA	8,494	74	103	203	351	NA	NA	95	256
1965	23,386	13,649	5,312	1,569	NA	5,304	938	524	248	NA	NA	NA	248	8,844	NA	8,662	70	112	225	420	NA	NA	142	278
1966	24,198	13,650	5,264	1,508	NA	5,128	1,082	668	245	NA	NA	NA	245	9,580	NA	9,383	73	125	252	471	NA	NA	174	296
1967	24,503	13,965	5,400	1,686	NA	4,968	1,200	710	231	NA	NA	NA	231	9,550	NA	9,345	78	126	272	485	NA	NA	182	303
1968	24,903	13,625	5,388	1,619	NA	4,634	1,210	773	223	NA	NA	NA	223	10,301	NA	10,088	78	136	267	487	NA	NA	187	301
1969	25,202	13,509	5,680	1,550	NA	4,251	1,185	843	222	NA	NA	NA	222	10,720	NA	10,498	74	148	249	501	NA	NA	196	305
1970	25,247	13,608	5,855	1,475	NA	4,178	1,227	873	225	NA	NA	NA	225	10,658	NA	10,437	77	145	245	511	NA	NA	204	307
1971	24,363	12,910	5,659	1,301	NA	3,788	1,278	883	253	NA	NA	NA	253	10,415	NA	10,195	77	142	280	505	NA	NA	196	309
1972	24,610	12,984	5,741	1,433	NA	3,383	1,563	863	297	NA	NA	NA	297	10,480	NA	10,257	82	140	328	522	NA	NA	206	316
1973	25,271	13,021	5,799	1,268	NA	3,353	1,707	894	333	NA	NA	NA	333	10,989	NA	10,753	99	137	379	549	NA	NA	234	315
1974	25,587	12,662	5,757	1,165	NA	3,153	1,660	927	335	NA	NA	NA	335	11,613	NA	11,368	110	135	411	566	NA	NA	249	317
1975	25,800	13,154	6,096	1,223	NA	3,160	1,752	923	362	NA	NA	NA	362	11,225	NA	10,969	123	133	448	612	NA	NA	293	318
1976	27,133	13,493	6,252	1,381	NA	3,122	1,800	937	385	NA	NA	NA	385	12,094	NA	11,825	135	135	500	660	NA	NA	329	331
1977	27,500	13,329	5,922	1,537	NA	3,168	1,780	923	383	NA	NA	NA	383	12,551	NA	12,270	145	137	552	685	NA	NA	343	342
1978	28,468	13,511	5,962	1,587	NA	3,178	1,797	987	402	NA	NA	NA	402	13,250	NA	12,951	161	137	616	689	NA	NA	339	350
1979	29,718	13,763	5,933	1,607	NA	3,206	1,947	1,070	397	NA	NA	NA	397	14,241	NA	13,929	175	136	646	671	NA	NA	317	354
1980	30,938	14,088	5,737	1,688	NA	3,662	2,055	946	391	NA	NA	NA	391	15,093	NA	14,760	199	134	694	672	NA	NA	316	356
1981	33,654	14,232	5,629	1,625	NA	4,208	1,963	806	411	NA	NA	NA	411	17,581	NA	17,227	222	132	747	683	NA	NA	327	356
1982	35,354	14,922	5,437	1,728	NA	5,032	1,953	772	403	NA	NA	NA	403	18,538	NA	18,170	235	133	780	712	NA	NA	345	367
1983	37,895	16,313	5,584	1,801	NA	6,025	2,095	808	401	NA	NA	NA	401	19,604	NA	19,203	264	138	827	749	NA	NA	362	386

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
1984	40,477	17,126	5,338	2,120	NA	6,629	2,211	828	422	NA	NA	NA	422	21,253	NA	20,807	303	143	886	790	NA	NA	382	408
1985	44,376	19,095	5,477	2,257	NA	8,241	2,265	855	457	NA	NA	NA	457	23,044	NA	22,551	345	148	956	824	NA	NA	391	432
1986	46,646	17,825	5,487	2,154	NA	6,934	2,385	866	510	NA	NA	NA	510	26,375	NA	25,827	392	156	1,062	873	NA	NA	411	463
1987	46,674	18,083	5,620	2,051	NA	6,741	2,743	927	556	NA	NA	NA	556	25,901	NA	25,304	434	163	1,181	954	NA	NA	461	493
1988	47,640	17,342	5,424	1,587	NA	6,205	3,159	966	608	NA	NA	NA	608	27,327	NA	26,671	487	169	1,319	1,044	NA	NA	524	520
1989	50,126	18,252	5,539	1,626	NA	6,715	3,294	1,079	647	NA	NA	NA	647	28,656	NA	27,943	539	174	1,449	1,121	NA	NA	575	546
1990	52,261	20,510	5,469	1,731	NA	8,936	3,206	1,167	678	NA	NA	NA	678	28,349	NA	27,604	565	180	1,544	1,180	NA	NA	605	575
1991	55,991	20,697	5,933	2,095	NA	8,099	3,235	1,335	678	NA	NA	NA	678	31,807	NA	31,053	568	187	1,581	1,228	NA	NA	621	607
1992	53,757	19,399	6,145	2,166	NA	6,343	3,422	1,323	678	NA	NA	NA	678	30,802	NA	30,019	587	196	1,587	1,290	NA	NA	644	646
1993	51,604	19,481	6,697	2,076	NA	5,945	3,518	1,245	686	NA	NA	NA	686	28,440	NA	27,622	613	205	1,635	1,362	NA	NA	675	688
1994	49,627	18,703	6,756	2,162	NA	4,901	3,583	1,300	701	NA	NA	NA	701	27,098	NA	26,254	629	215	1,702	1,422	NA	NA	689	733
1995	54,347	17,980	6,575	2,275	NA	4,201	3,689	1,240	742	NA	NA	NA	742	32,418	NA	31,537	656	225	1,741	1,466	NA	NA	685	781
1996	56,285	18,198	6,352	2,115	NA	4,746	3,734	1,251	761	NA	NA	NA	761	33,997	NA	33,077	683	237	1,813	1,516	NA	NA	681	834
1997	59,685	16,516	6,405	2,152	NA	3,394	3,269	1,296	710	NA	NA	NA	710	39,105	NA	38,176	666	263	1,784	1,569	NA	NA	658	911
1998	58,809	16,260	6,525	2,187	NA	3,338	2,865	1,344	671	NA	NA	NA	671	38,444	NA	37,505	663	276	1,756	1,680	NA	NA	654	1,026
1999	64,978	17,434	6,907	2,062	NA	3,518	3,324	1,623	686	NA	NA	NA	686	43,217	NA	42,242	681	295	1,838	1,803	NA	NA	691	1,113
2000	69,241	19,005	7,456	2,138	NA	3,275	3,900	2,236	702	NA	NA	NA	702	45,561	NA	44,566	679	316	1,946	2,027	NA	NA	726	1,301
2001	76,649	22,372	8,420	2,840	NA	4,302	4,243	2,567	728	6	NA	NA	721	49,259	40	48,247	660	311	2,056	2,234	62	NA	766	1,407
2002	59,762	22,538	8,805	3,416	NA	2,883	4,769	2,665	784	10	NA	NA	774	31,654	41	30,669	646	297	2,261	2,525	84	NA	839	1,602
2003	70,797	25,876	8,845	3,634	NA	5,157	5,373	2,867	855	10	NA	NA	846	38,867	41	37,887	641	298	2,435	2,763	75	NA	883	1,805
2004	77,980	25,400	8,365	3,430	NA	5,358	5,500	2,747	865	8	NA	NA	856	46,585	34	45,621	635	296	2,437	2,693	45	NA	885	1,763
2005	76,129	25,601	8,216	3,523	NA	5,750	5,470	2,643	821	9	NA	NA	813	44,450	38	43,479	629	305	2,459	2,797	49	NA	875	1,874
2006	81,123	26,438	7,841	3,724	NA	6,476	5,609	2,734	897	9	NA	NA	781	48,490	49	47,496	629	316	2,473	2,824	57	NA	866	1,901
2007	87,954	30,462	7,419	5,438	NA	9,190	5,700	2,653	922	14	NA	NA	795	51,009	79	49,955	648	327	2,505	3,055	94	NA	905	2,056
2008	77,481	27,573	7,372	5,887	NA	5,438	6,191	2,620	1,046	15	NA	71	853	42,734	90	41,605	707	332	2,679	3,449	94	105	995	2,254
2009	75,187	32,477	7,874	5,979	NA	7,797	7,697	3,049	1,207	19	NA	38	1,028	34,392	88	33,124	861	319	3,214	3,897	104	96	1,252	2,445
2010	80,025	29,892	7,919	4,964	NA	4,648	9,261	3,004	1,354	18	NA	32	1,158	40,849	66	39,504	961	317	3,701	4,230	76	180	1,459	2,515
2011	81,417	29,336	7,767	4,895	NA	4,263	9,707	2,607	1,351	12	NA	67	1,130	42,600	78	41,226	969	327	3,944	4,187	74	118	1,484	2,511
2012	84,649	29,421	8,161	5,290	NA	3,932	9,447	2,498	1,267	18	NA	43	1,077	45,533	77	44,135	993	329	4,190	4,237	72	130	1,525	2,510

TABLE 8. U.S. applied research expenditures, by source of funds and performing sectors: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business				Higher education	Other nonprofit organizations					
	All performers	Total	Federal intramural		Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
			Federal	FFRDC																				
2013	84,415	30,946	7,770	6,208	NA	5,637	8,937	2,305	1,270	20	NA	44	1,074	43,301	88	41,839	1,032	342	4,388	4,511	65	187	1,615	2,645
2014 ^a	86,149	31,026	7,921	6,184	NA	5,930	8,582	2,321	1,259	12	NA	32	1,083	44,500	99	42,954	1,092	354	4,587	4,777	63	230	1,717	2,767
2015 ^b	87,729	29,522	7,910	6,403	NA	4,314	8,489	2,318	1,230	9	NA	29	1,059	47,189	97	45,571	1,149	372	4,831	4,957	63	212	1,815	2,867

NA = not available.

FFRDC = federally funded R&D center; ONP = other nonprofit organization.

^a Some data for 2014 are preliminary and may later be revised.

^b The data for 2015 are estimates and will later be revised.

NOTES: This table reaggregates the R&D performer data in table 4 according to major categories of R&D funding: federal government, nonfederal government (state and local), business, higher education, and other nonprofit organizations. Business sources of R&D funding in this table include the own funds of domestic R&D performing businesses, funds from other domestic businesses, and funds from foreign businesses. For interpretive detail on the R&D performers listed, see table 2, footnotes a–f. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For comparisons, use only the historical data reported in this table, as some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation's annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also, before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data (see table 4, general notes). The 1998–2015 data for ONP R&D performance funded by businesses and the nonprofit sector itself are estimated, based on parameters from the 1996–97 Survey of R&D Funding and Performance by Nonprofit Organizations. Type-of-R&D data for business R&D in 1998–2007 were revised in response to data quality review considerations and are not directly comparable with the data for 1997 and earlier years. For 2008 and onward, the type-of-R&D splits for other than total, own-funded, and federally funded R&D are estimated (see also table 2, footnote d). Type-of-R&D data for FFRDC R&D in 1953–54 includes only those of university-administered FFRDCs. Starting in 2001, type-of-R&D data distinguish federally funded from nonfederally funded FFRDC R&D (see also table 2, footnote b). The type-of-R&D estimation procedure for higher education R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years. Furthermore, the type-of-R&D splits for other than total and federally funded are estimated (see also table 2, footnote e). Type-of-R&D data for R&D by other nonprofit organizations in 1998 and later years are estimated, except for those that are federally funded (see also table 2, footnote f). Type-of-R&D data for state intramural R&D are not currently collected by the Survey of State Government R&D (see also table 2, footnote c).

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

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																									
	Federal								Nonfederal government					Business					Higher education				Other nonprofit organizations			
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP		
Current \$millions																										
1953	3,412	1,762	567	48	NA	1,123	9	17	3	NA	NA	NA	3	1,637	NA	1,630	1	6	3	7	NA	NA	1	6		
1954	3,734	2,027	537	62	NA	1,405	9	15	3	NA	NA	NA	3	1,693	NA	1,685	1	7	3	8	NA	NA	1	7		
1955	4,113	2,351	543	171	NA	1,614	12	12	4	NA	NA	NA	4	1,748	NA	1,738	2	8	3	8	NA	NA	1	7		
1956	5,854	3,561	631	348	NA	2,559	14	11	4	NA	NA	NA	4	2,277	NA	2,267	2	8	4	9	NA	NA	2	7		
1957	6,681	4,477	728	429	NA	3,300	12	9	5	NA	NA	NA	5	2,185	NA	2,174	3	8	4	10	NA	NA	2	8		
1958	7,213	4,940	842	386	NA	3,691	13	9	6	NA	NA	NA	6	2,252	NA	2,241	3	8	4	11	NA	NA	2	9		
1959	8,463	5,871	940	477	NA	4,426	16	14	6	NA	NA	NA	6	2,569	NA	2,557	3	9	5	12	NA	NA	2	10		
1960	9,360	6,390	1,003	559	NA	4,799	19	10	6	NA	NA	NA	6	2,948	NA	2,935	3	10	5	12	NA	NA	2	10		
1961	9,930	6,701	1,090	670	NA	4,917	22	4	7	NA	NA	NA	7	3,201	NA	3,189	2	10	5	16	NA	NA	2	14		
1962	10,114	6,822	1,227	618	NA	4,950	23	5	8	NA	NA	NA	8	3,259	NA	3,246	2	11	6	20	NA	NA	2	18		
1963	11,539	7,955	1,465	668	NA	5,795	22	6	8	NA	NA	NA	8	3,548	NA	3,535	2	11	6	22	NA	NA	2	20		
1964	12,506	8,610	1,680	739	NA	6,156	30	6	8	NA	NA	NA	8	3,861	NA	3,848	2	11	7	21	NA	NA	3	18		
1965	13,215	8,742	1,789	674	NA	6,218	48	13	9	NA	NA	NA	9	4,433	NA	4,419	2	12	8	24	NA	NA	4	20		
1966	14,490	9,466	1,886	654	NA	6,849	61	16	9	NA	NA	NA	9	4,977	NA	4,961	2	14	10	28	NA	NA	5	23		
1967	15,332	9,521	1,943	706	NA	6,795	66	12	9	NA	NA	NA	9	5,762	NA	5,744	3	15	10	31	NA	NA	7	24		
1968	16,154	9,756	1,904	724	NA	7,044	72	13	8	NA	NA	NA	8	6,346	NA	6,326	4	16	9	35	NA	NA	9	26		
1969	17,051	9,848	2,016	792	NA	6,944	80	17	7	NA	NA	NA	7	7,150	NA	7,127	5	18	8	38	NA	NA	10	28		
1970	16,925	9,382	2,258	790	NA	6,232	84	20	6	NA	NA	NA	6	7,489	NA	7,466	5	18	7	40	NA	NA	10	30		
1971	17,399	9,561	2,473	841	NA	6,167	69	12	8	NA	NA	NA	8	7,780	NA	7,757	4	19	9	42	NA	NA	9	33		
1972	18,743	10,141	2,639	863	NA	6,533	63	44	12	NA	NA	NA	12	8,533	NA	8,510	4	19	14	44	NA	NA	9	35		
1973	20,197	10,311	2,657	860	NA	6,621	71	102	18	NA	NA	NA	18	9,798	NA	9,773	5	20	20	51	NA	NA	13	38		
1974	21,504	10,506	2,765	983	NA	6,553	75	131	20	NA	NA	NA	20	10,896	NA	10,868	7	22	25	57	NA	NA	15	42		
1975	22,706	10,993	2,890	1,103	NA	6,783	83	135	22	NA	NA	NA	22	11,600	NA	11,569	8	23	27	63	NA	NA	16	47		
1976	25,085	12,035	2,972	1,315	NA	7,522	100	128	24	NA	NA	NA	24	12,927	NA	12,890	12	25	31	68	NA	NA	16	52		
1977	27,667	13,153	3,188	1,418	NA	8,275	153	119	28	NA	NA	NA	28	14,370	NA	14,328	15	27	40	76	NA	NA	19	58		
1978	31,056	14,383	3,676	1,584	NA	8,756	254	113	32	NA	NA	NA	32	16,504	NA	16,460	15	30	49	88	NA	NA	24	64		
1979	35,445	16,064	3,944	1,753	NA	9,888	336	143	34	NA	NA	NA	34	19,193	NA	19,145	16	32	56	99	NA	NA	28	71		
1980	40,748	17,587	4,072	2,009	NA	10,957	362	187	38	NA	NA	NA	38	22,945	NA	22,891	19	35	68	110	NA	NA	31	79		
1981	46,305	20,242	4,530	2,175	NA	12,791	386	360	44	NA	NA	NA	44	25,817	NA	25,756	24	37	80	123	NA	NA	35	88		
1982	51,879	22,323	5,178	2,170	NA	14,215	397	362	46	NA	NA	NA	46	29,286	NA	29,219	27	40	88	137	NA	NA	39	98		
1983	57,771	24,859	6,106	2,385	NA	15,522	399	447	47	NA	NA	NA	47	32,617	NA	32,542	31	44	97	151	NA	NA	43	109		

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education	Other nonprofit organizations				
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
1984	66,461	28,320	7,078	2,572	NA	17,640	435	594	51	NA	NA	NA	51	37,815	NA	37,731	37	47	108	167	NA	NA	47	120
1985	74,522	32,304	8,011	2,906	NA	20,258	486	644	57	NA	NA	NA	57	41,857	NA	41,762	43	51	120	183	NA	NA	49	134
1986	75,855	33,993	8,275	3,101	NA	21,517	513	587	65	NA	NA	NA	65	41,460	NA	41,354	50	55	136	201	NA	NA	53	149
1987	79,929	36,691	8,176	3,321	NA	24,122	599	474	73	NA	NA	NA	73	42,784	NA	42,667	57	60	155	226	NA	NA	61	165
1988	84,567	37,285	8,864	3,596	NA	23,719	698	407	83	NA	NA	NA	83	46,765	NA	46,634	66	65	180	254	NA	NA	71	183
1989	87,723	35,320	9,355	3,635	NA	21,049	773	507	91	NA	NA	NA	91	51,822	NA	51,676	76	70	205	285	NA	NA	81	203
1990	94,067	33,859	9,700	3,663	NA	18,966	910	619	99	NA	NA	NA	99	59,568	NA	59,410	83	75	226	315	NA	NA	89	226
1991	95,105	31,220	8,778	3,452	NA	17,256	1,012	722	103	NA	NA	NA	103	63,197	NA	63,030	86	82	239	345	NA	NA	94	251
1992	99,811	31,514	9,098	3,423	NA	17,181	1,055	758	105	NA	NA	NA	105	67,567	NA	67,388	91	88	246	378	NA	NA	100	279
1993	99,705	30,055	9,071	2,986	NA	16,083	1,127	787	109	NA	NA	NA	109	68,866	NA	68,674	97	95	259	416	NA	NA	107	309
1994	102,938	30,208	8,823	3,147	NA	16,209	1,213	815	114	NA	NA	NA	114	71,886	NA	71,681	102	103	276	455	NA	NA	112	343
1995	113,079	32,436	9,262	3,427	NA	17,824	1,180	744	123	NA	NA	NA	123	79,738	NA	79,518	108	111	288	495	NA	NA	113	381
1996	121,377	31,373	9,033	3,448	NA	17,066	1,128	698	128	NA	NA	NA	128	89,032	NA	88,797	115	120	305	538	NA	NA	115	423
1997	128,678	32,270	9,077	3,331	NA	18,121	1,055	687	122	NA	NA	NA	122	95,332	NA	95,063	114	155	306	649	NA	NA	113	536
1998	144,726	32,714	9,214	3,314	NA	18,452	974	760	116	NA	NA	NA	116	110,868	NA	110,589	115	164	304	724	NA	NA	113	611
1999	154,380	30,608	9,265	3,335	NA	16,571	710	727	121	NA	NA	NA	121	122,534	NA	122,236	120	178	323	794	NA	NA	121	673
2000	169,476	27,513	9,377	3,482	NA	13,510	565	580	126	NA	NA	NA	126	140,552	NA	140,235	122	195	350	935	NA	NA	131	804
2001	167,816	28,423	11,062	3,273	NA	12,542	673	874	140	7	NA	NA	133	137,774	46	137,410	121	197	378	1,101	71	NA	141	890
2002	176,694	29,774	11,800	3,308	NA	13,061	669	937	154	9	NA	NA	145	145,078	40	144,727	121	191	422	1,266	81	NA	157	1,028
2003	175,597	30,053	12,646	3,785	NA	11,939	940	743	171	10	NA	NA	161	143,481	43	143,121	122	195	464	1,428	78	NA	168	1,182
2004	177,353	34,295	12,746	4,561	NA	14,419	1,268	1,300	179	11	NA	NA	168	140,983	45	140,615	124	199	477	1,420	60	NA	173	1,186
2005	195,870	36,570	13,994	4,654	NA	15,512	1,199	1,211	176	11	NA	NA	164	157,085	50	156,696	127	212	496	1,543	65	NA	177	1,301
2006	212,919	38,766	16,089	4,358	NA	16,720	970	603	224	10	NA	NA	163	171,807	58	171,392	131	226	515	1,608	67	NA	180	1,360
2007	228,190	39,667	18,016	5,254	NA	14,860	939	568	233	8	NA	NA	170	185,995	47	185,569	138	240	535	1,760	56	NA	193	1,511
2008	259,818	54,629	17,566	6,094	NA	29,488	885	562	469	7	NA	223	186	201,853	45	201,406	154	249	584	2,283	47	330	217	1,689
2009	255,808	56,053	17,245	6,159	NA	30,435	1,624	550	438	8	NA	144	226	196,082	39	195,614	189	241	706	2,528	46	361	275	1,846
2010	250,698	57,136	18,844	6,909	NA	28,089	2,610	638	456	11	NA	114	257	189,344	40	188,849	214	242	822	2,940	45	649	324	1,922
2011	270,301	58,564	21,879	6,786	NA	26,228	2,831	790	566	6	NA	230	256	207,542	41	207,026	220	255	894	2,735	39	402	337	1,958
2012	272,445	55,869	19,941	6,631	NA	25,840	2,889	518	429	10	NA	102	249	212,483	43	211,949	229	261	968	2,697	40	310	352	1,994
2013	286,173	51,822	19,767	6,572	NA	22,137	2,825	474	459	11	NA	126	252	229,779	49	229,212	242	276	1,030	3,082	36	532	379	2,135
2014 ^a	300,065	48,001	19,979	6,658	NA	18,065	2,789	461	424	7	NA	87	258	247,208	55	246,601	260	291	1,094	3,339	35	624	410	2,270
2015 ^b	316,298	42,581	19,110	6,962	NA	13,274	2,786	399	414	5	NA	82	255	268,706	51	268,069	277	308	1,164	3,433	33	587	437	2,376

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business				Higher education	Other nonprofit organizations					
	All performers	Total	Federal intramural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Higher education	Total	FFRDC	Business	Higher education	ONP
1953	22,510	11,626	3,738	313	NA	7,410	56	109	19	NA	NA	NA	19	10,802	NA	10,755	7	40	17	46	NA	NA	7	40
1954	24,412	13,249	3,511	402	NA	9,185	56	95	23	NA	NA	NA	23	11,068	NA	11,016	7	46	20	52	NA	NA	7	46
1955	26,435	15,108	3,486	1,096	NA	10,375	74	77	24	NA	NA	NA	24	11,230	NA	11,169	10	51	21	51	NA	NA	6	45
1956	36,384	22,130	3,919	2,160	NA	15,903	84	65	27	NA	NA	NA	27	14,152	NA	14,090	12	50	22	53	NA	NA	9	44
1957	40,185	26,929	4,376	2,580	NA	19,850	72	51	32	NA	NA	NA	32	13,139	NA	13,076	15	48	25	60	NA	NA	12	48
1958	42,429	29,059	4,950	2,268	NA	21,715	74	53	33	NA	NA	NA	33	13,247	NA	13,182	18	47	26	65	NA	NA	12	53
1959	49,092	34,059	5,453	2,764	NA	25,674	90	78	35	NA	NA	NA	35	14,903	NA	14,833	17	52	26	70	NA	NA	12	58
1960	53,557	36,560	5,736	3,199	NA	27,460	109	57	36	NA	NA	NA	36	16,865	NA	16,794	14	57	27	69	NA	NA	11	57
1961	56,201	37,926	6,166	3,792	NA	27,826	122	20	39	NA	NA	NA	39	18,117	NA	18,049	11	57	29	91	NA	NA	11	79
1962	56,548	38,139	6,860	3,455	NA	27,673	126	25	43	NA	NA	NA	43	18,221	NA	18,148	11	62	32	112	NA	NA	11	101
1963	63,794	43,980	8,099	3,693	NA	32,036	122	30	44	NA	NA	NA	44	19,615	NA	19,543	11	61	34	122	NA	NA	11	111
1964	68,092	46,879	9,147	4,024	NA	33,518	161	30	43	NA	NA	NA	43	21,022	NA	20,951	11	60	36	112	NA	NA	14	98
1965	70,663	46,742	9,563	3,604	NA	33,249	257	70	46	NA	NA	NA	46	23,704	NA	23,629	11	64	42	128	NA	NA	21	107
1966	75,361	49,231	9,809	3,399	NA	35,622	317	83	49	NA	NA	NA	49	25,886	NA	25,803	10	73	50	146	NA	NA	26	120
1967	77,488	48,121	9,820	3,566	NA	34,343	331	61	43	NA	NA	NA	43	29,120	NA	29,031	13	76	51	154	NA	NA	33	121
1968	78,308	47,292	9,230	3,507	NA	34,148	347	61	38	NA	NA	NA	38	30,764	NA	30,667	19	78	45	170	NA	NA	44	126
1969	78,784	45,502	9,314	3,657	NA	32,085	367	79	33	NA	NA	NA	33	33,037	NA	32,931	23	83	37	176	NA	NA	46	129
1970	74,281	41,178	9,910	3,465	NA	27,352	366	86	28	NA	NA	NA	28	32,868	NA	32,767	22	79	31	176	NA	NA	44	132
1971	72,669	39,932	10,327	3,511	NA	25,758	288	48	33	NA	NA	NA	33	32,495	NA	32,399	17	79	36	173	NA	NA	36	138
1972	75,042	40,600	10,567	3,453	NA	26,156	250	174	50	NA	NA	NA	50	34,161	NA	34,071	14	76	54	176	NA	NA	36	140
1973	76,688	39,150	10,090	3,265	NA	25,140	268	387	66	NA	NA	NA	66	37,204	NA	37,109	19	76	76	192	NA	NA	47	144
1974	74,921	36,604	9,635	3,423	NA	22,831	260	456	70	NA	NA	NA	70	37,962	NA	37,864	23	75	85	199	NA	NA	52	147
1975	72,402	35,053	9,215	3,517	NA	21,629	263	429	71	NA	NA	NA	71	36,990	NA	36,890	26	75	88	200	NA	NA	51	149
1976	75,825	36,379	8,983	3,973	NA	22,737	301	385	72	NA	NA	NA	72	39,074	NA	38,962	35	76	94	206	NA	NA	48	157
1977	78,745	37,435	9,073	4,037	NA	23,552	435	339	79	NA	NA	NA	79	40,898	NA	40,779	41	78	114	217	NA	NA	53	165
1978	82,591	38,251	9,777	4,214	NA	23,286	675	300	85	NA	NA	NA	85	43,891	NA	43,774	39	79	130	233	NA	NA	62	171
1979	87,078	39,464	9,688	4,306	NA	24,292	826	351	84	NA	NA	NA	84	47,150	NA	47,033	38	79	137	243	NA	NA	68	175
1980	91,822	39,631	9,177	4,527	NA	24,691	815	421	86	NA	NA	NA	86	51,705	NA	51,583	44	78	152	248	NA	NA	69	179
1981	95,433	41,718	9,337	4,483	NA	26,362	795	741	90	NA	NA	NA	90	53,208	NA	53,082	49	77	164	253	NA	NA	72	181
1982	100,677	43,319	10,048	4,211	NA	27,586	771	703	88	NA	NA	NA	88	56,832	NA	56,702	52	78	171	265	NA	NA	76	190
1983	107,854	46,410	11,399	4,453	NA	28,978	745	835	88	NA	NA	NA	88	60,892	NA	60,753	58	82	182	282	NA	NA	80	203

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources																			Higher education				
	Federal								Nonfederal government					Business					Other nonprofit organizations					
	All performers	Total	Federal intra-mural	FFRDC	Non-federal government	Business	Higher education	ONP	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	ONP	Total	FFRDC	Business	Higher education	ONP	
1984	119,823	51,058	12,761	4,638	NA	31,803	784	1,072	93	NA	NA	NA	93	68,177	NA	68,025	66	85	194	301	NA	NA	84	217
1985	130,191	56,437	13,995	5,076	NA	35,391	849	1,125	100	NA	NA	NA	100	73,124	NA	72,959	76	89	210	320	NA	NA	86	234
1986	129,899	58,212	14,170	5,311	NA	36,847	879	1,004	112	NA	NA	NA	112	70,997	NA	70,817	86	95	233	345	NA	NA	90	254
1987	133,470	61,269	13,652	5,545	NA	40,281	1,000	791	122	NA	NA	NA	122	71,443	NA	71,248	95	100	259	377	NA	NA	101	276
1988	136,439	60,155	14,301	5,802	NA	38,268	1,127	657	133	NA	NA	NA	133	75,450	NA	75,239	107	104	290	411	NA	NA	115	296
1989	136,234	54,852	14,529	5,645	NA	32,689	1,201	787	142	NA	NA	NA	142	80,479	NA	80,253	118	108	318	442	NA	NA	126	316
1990	140,874	50,706	14,527	5,486	NA	28,403	1,363	927	149	NA	NA	NA	149	89,209	NA	88,972	124	113	339	471	NA	NA	133	338
1991	137,842	45,249	12,722	5,004	NA	25,010	1,466	1,047	149	NA	NA	NA	149	91,596	NA	91,354	125	118	347	500	NA	NA	136	364
1992	141,438	44,658	12,892	4,851	NA	24,347	1,495	1,074	149	NA	NA	NA	149	95,747	NA	95,493	129	125	348	536	NA	NA	141	395
1993	138,005	41,599	12,556	4,133	NA	22,261	1,560	1,089	151	NA	NA	NA	151	95,320	NA	95,054	135	132	359	576	NA	NA	148	428
1994	139,508	40,939	11,958	4,265	NA	21,968	1,644	1,104	154	NA	NA	NA	154	97,425	NA	97,147	138	139	374	617	NA	NA	151	465
1995	150,123	43,062	12,296	4,550	NA	23,663	1,566	987	163	NA	NA	NA	163	105,859	NA	105,567	144	148	382	657	NA	NA	150	506
1996	158,251	40,904	11,777	4,496	NA	22,251	1,471	910	167	NA	NA	NA	167	116,080	NA	115,773	150	157	398	702	NA	NA	150	552
1997	164,947	41,366	11,635	4,269	NA	23,229	1,353	880	156	NA	NA	NA	156	122,202	NA	121,858	146	198	392	832	NA	NA	144	688
1998	183,525	41,484	11,684	4,203	NA	23,399	1,235	964	147	NA	NA	NA	147	140,590	NA	140,237	146	208	385	918	NA	NA	143	775
1999	192,817	38,229	11,572	4,165	NA	20,697	887	908	151	NA	NA	NA	151	153,042	NA	152,670	149	222	403	992	NA	NA	152	840
2000	206,963	33,599	11,451	4,252	NA	16,498	690	708	154	NA	NA	NA	154	171,641	NA	171,254	149	238	427	1,142	NA	NA	159	982
2001	200,369	33,936	13,208	3,907	NA	14,975	803	1,043	167	9	NA	NA	158	164,499	55	164,065	145	235	451	1,315	85	NA	168	1,062
2002	207,781	35,012	13,876	3,890	NA	15,359	786	1,101	181	11	NA	NA	170	170,602	47	170,189	142	225	496	1,489	95	NA	184	1,209
2003	202,452	34,649	14,580	4,364	NA	13,765	1,083	857	198	12	NA	NA	186	165,425	49	165,009	141	225	534	1,647	90	NA	194	1,362
2004	199,005	38,482	14,302	5,118	NA	16,179	1,423	1,459	201	13	NA	NA	188	158,195	50	157,782	139	224	535	1,593	68	NA	194	1,331
2005	212,931	39,755	15,213	5,059	NA	16,863	1,304	1,316	191	12	NA	NA	178	170,768	55	170,345	138	230	540	1,677	71	NA	192	1,414
2006	224,565	40,886	16,969	4,596	NA	17,635	1,023	636	236	11	NA	NA	171	181,204	61	180,767	138	239	543	1,696	71	NA	190	1,435
2007	234,433	40,752	18,509	5,398	NA	15,267	965	583	239	9	NA	NA	175	191,083	48	190,646	142	247	550	1,808	58	NA	199	1,552
2008	261,792	55,044	17,700	6,141	NA	29,712	892	567	473	8	NA	225	187	203,387	45	202,935	155	251	588	2,301	48	333	219	1,702
2009	255,808	56,053	17,245	6,159	NA	30,435	1,624	550	438	8	NA	144	226	196,082	39	195,614	189	241	706	2,528	46	361	275	1,846
2010	247,673	56,447	18,616	6,825	NA	27,750	2,578	630	450	10	NA	112	254	187,059	39	186,569	211	239	812	2,904	45	641	320	1,899
2011	261,639	56,687	21,178	6,568	NA	25,387	2,740	765	547	6	NA	223	248	200,891	39	200,392	213	247	866	2,647	37	389	326	1,895
2012	258,942	53,100	18,953	6,303	NA	24,559	2,746	492	408	9	NA	97	236	201,952	41	201,445	218	248	920	2,563	38	295	335	1,895

TABLE 9. U.S. development expenditures, by source of funds and performing sector: 1953–2015

Year	All funding sources		Federal						Nonfederal government					Business					Higher education					Other nonprofit organizations							
	All performers	Total	Federal intramural		Non-federal government		Higher education		Total	Non-federal government		Higher education		Total	Business		Higher education		Total	Higher education		Total	Business		Higher education		Total	Business		Higher education	
			FFRDC	ONP	FFRDC	ONP	FFRDC	ONP		FFRDC	ONP	FFRDC	ONP		FFRDC	ONP	FFRDC	ONP		FFRDC	ONP		FFRDC	ONP	FFRDC	ONP		FFRDC	ONP	FFRDC	ONP
2013	267,627	48,464	18,486	6,146	NA	20,702	2,642	443	430	11	NA	118	236	214,888	46	214,357	227	258	963	2,882	34	498	354	1,996							
2014 ^a	276,085	44,165	18,383	6,126	NA	16,621	2,566	424	390	6	NA	80	238	227,452	51	226,894	240	268	1,007	3,072	32	574	377	2,089							
2015 ^b	288,155	38,792	17,410	6,342	NA	12,093	2,539	364	377	4	NA	74	233	244,798	47	244,218	252	281	1,060	3,127	30	534	398	2,165							

NA = not available.

FFRDC = federally funded R&D center; ONP = other nonprofit organization.

^a Some data for 2014 are preliminary and may later be revised.

^b The data for 2015 are estimates and will later be revised.

NOTES: This table reaggregates the R&D performer data in table 5 according to major categories of R&D funding: federal government, nonfederal government (state and local), business, higher education, and other nonprofit organizations. Business sources of R&D funding in this table include the own funds of domestic R&D performing businesses, funds from other domestic businesses, and funds from foreign businesses. For interpretive detail on the R&D performers listed, see table 2, footnotes a–f. Detail may not add to total due to rounding. Constant-dollar estimates are derived from unrounded data. For comparisons, use only the historical data reported in this table because some back-year data may have been revised. Except for the nonprofit sector, data are based on annual reports by performers in the National Science Foundation's annual R&D expenditure surveys: Business R&D and Innovation Survey, Higher Education R&D Survey, Survey of Federal Funds for R&D, FFRDC R&D Expenditures Survey, and Survey of State Government R&D. R&D expenditures by business performers—and also, before 2001, industry-administered FFRDCs—are collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data (see table 5, general notes). The 1998–2015 data for ONP R&D performance funded by businesses and the nonprofit sector itself are estimated, based on parameters from the 1996–97 Survey of R&D Funding and Performance by Nonprofit Organizations. Type-of-R&D data for business R&D in 1998–2007 were revised in response to data quality review considerations and are not directly comparable with the data for 1997 and earlier years. For 2008 and onward, the type-of-R&D splits for other than total, own-funded, and federally funded R&D are estimated (see also table 2, footnote d). Type-of-R&D data for FFRDC R&D in 1953–54 include only those of university-administered FFRDCs. Starting in 2001, type-of-R&D data distinguish federally funded from nonfederally funded FFRDC R&D (see also table 2, footnote b). The type-of-R&D estimation procedure for higher education R&D was revised in 1998 and again in 2010; hence, these data are not directly comparable with data reported for earlier years. Furthermore, the type-of-R&D splits for other than total and federally funded are estimated (see also table 2, footnote e). Type-of-R&D data for R&D by other nonprofit organizations in 1998 and later years are estimated, except for those that are federally funded (see also table 2, footnote f). Type-of-R&D data for state intramural R&D are not currently collected by the Survey of State Government R&D (see also table 2, footnote c).

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

TABLE 10. U.S. R&D expenditures, by state, performing sector, and source of funds: 2012
(Millions of current dollars)

State	All R&D	R&D rank	Per-	Fed-	FFRDCs			Business			Higher education ^a					Other	State,	R&D						
			former:	ederal	Total	Fed-	Non-	Total	Own	Non-	Fed-	Total	Fed-	govern-	Busi-	Higher	Non-	Other	nonprofit	in-	GDP	Per-	Rank	
			Fund-	Fed-	Fed-	Federal ^d	Total	Non-	Federal ^e	Total	Other	Higher	Non-	Other	Non-	Other	Federal ^f	Total	GDP	Per-	Rank			
U.S. total ^g	435,347	na		34,017	17,301	16,868	468	302,251	247,280	24,350	30,621	63,284	37,016	3,633	3,347	14,136	3,894	1,259	6,239	467	16,163,200	na	2.69	na
States total ^g	410,941	na		28,549	17,446	17,006	440	292,675	239,858	22,827	26,292	65,591	39,991	3,698	3,277	13,644	4,031	950	6,209	471	16,141,152	na	2.55	na
Alabama	3,924	26		1,772	0	0	0	1,284	779	58	447	833	538	36	33	201	19	5	27	9	189,542	26	2.07	27
Alaska	292	49		60	0	0	0	39	23	8	8	182	111	10	6	50	3	2	6	5	59,643	43	0.49	49
Arizona	6,510	19		399	47	42	4	4,962	3,864	417	682	1,039	542	46	30	340	55	26	50	13	271,503	21	2.40	18
Arkansas	636	43		20	0	0	0	305	275	16	15	289	128	59	11	75	2	14	19	3	118,993	34	0.53	48
California	97,531	1		2,324	4,110	3,958	152	81,689	69,493	4,615	7,581	8,390	5,095	440	513	1,263	746	333	958	59	2,125,717	1	4.59	4
Colorado	6,455	20		354	569	532	37	4,105	3,462	241	402	1,339	992	67	75	127	64	12	81	8	278,551	19	2.32	20
Connecticut	8,681	14		345	0	0	0	7,343	5,527	310	1,505	947	688	16	29	144	64	6	22	24	242,930	24	3.57	8
Delaware	2,614	31		3	0	0	0	2,415	1,866	530	19	186	128	8	7	40	2	2	8	2	60,650	42	4.31	6
District of Columbia	3,133	27		2,071	8	8	0	260	153	16	91	502	297	5	10	127	62	*	293	*	111,870	35	2.80	14
Florida	8,289	15		714	0	0	0	5,211	3,353	444	1,414	2,184	1,169	163	96	645	90	21	131	49	769,007	4	1.08	37
Georgia	5,952	22		184	0	0	0	3,875	3,295	340	240	1,866	1,156	53	91	463	92	11	23	4	438,324	11	1.36	35
Hawaii	676	42		127	0	0	0	188	130	39	19	336	216	16	21	68	7	8	21	4	72,512	39	0.93	42
Idaho	1,850	34		80	536	526	11	1,079	833	237	8	146	91	22	4	27	2	*	1	7	58,231	44	3.18	11
Illinois	16,736	9		191	1,092	1,037	55	13,001	11,769	1,018	214	2,363	1,517	53	102	543	143	5	87	2	704,138	5	2.38	19
Indiana	7,541	17		187	0	0	0	6,044	5,223	756	65	1,306	620	75	63	443	103	3	3	1	306,838	16	2.46	17
Iowa	2,605	32		78	34	33	1	1,763	1,186	149	428	718	394	49	31	218	25	2	7	4	156,606	30	1.66	30
Kansas	2,629	30		24	0	0	0	2,072	1,446	579	48	527	271	52	39	137	24	4	4	1	138,958	31	1.89	29
Kentucky	1,708	35		37	0	0	0	1,074	772	37	266	587	268	65	22	210	22	*	7	3	177,967	28	0.96	41
Louisiana	1,112	38		42	0	0	0	363	282	28	52	699	320	101	40	198	23	18	3	5	251,369	23	0.44	50
Maine	532	46		61	0	0	0	275	236	12	26	120	55	24	4	33	3	2	75	1	53,235	45	1.00	39
Maryland	18,354	4		10,137	461	461	0	4,028	1,929	544	1,555	3,368	2,641	57	75	408	171	16	359	1	336,481	15	5.45	3
Massachusetts	24,129	2		492	1,346	1,345	2	17,491	14,157	2,461	873	3,213	2,221	18	212	412	266	84	1,586	1	431,937	12	5.59	2
Michigan	17,844	6		655	0	0	0	14,912	13,460	1,100	352	2,236	1,268	42	62	758	74	33	39	2	416,769	13	4.28	7
Minnesota	7,381	18		57	0	0	0	6,216	5,616	320	280	865	502	55	31	230	25	23	242	1	298,272	17	2.47	16
Mississippi	1,143	37		392	0	0	0	273	219	10	44	476	260	77	22	107	6	4	0	2	101,549	37	1.13	36

TABLE 10. U.S. R&D expenditures, by state, performing sector, and source of funds: 2012
(Millions of current dollars)

State	All R&D	R&D rank	Per-	Fed-	FFRDCs			Business			Higher education ^a					Other nonprofit institutions	State, internal ^b	R&D intensity ^c						
			former:	ederal	Total	Fed-eral	Non-federal ^d	Total	Own	Non-federal ^e	Fed-eral	Total	Fed-eral	govern-ment	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank	
			Fund- ing source:	Fed-eral	Total	Fed-eral	Non-federal ^d	Total	Non-federal ^e	Fed-eral	Total	Fed-eral	govern-ment	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank		
Missouri	8,235	16		119	0	0	0	6,982	3,282	D	D	1,097	653	24	64	251	103	3	29	7	269,356	22	3.06	12
Montana	366	48		57	0	0	0	105	81	15	10	197	127	10	2	49	2	7	5	2	42,140	49	0.87	44
Nebraska	1,105	39		83	0	0	0	578	539	24	15	438	210	10	21	175	20	1	6	*	103,062	36	1.07	38
Nevada	845	41		55	0	0	0	634	552	64	19	153	108	5	2	35	4	*	2	*	128,896	33	0.66	45
New Hampshire	2,345	33		67	0	0	0	1,857	796	187	873	416	250	11	19	110	22	3	4	1	66,111	41	3.55	9
New Jersey	17,630	8		603	81	79	2.07	15,810	13,854	1,637	318	1,115	671	64	51	245	75	10	18	3	528,788	8	3.33	10
New Mexico	5,905	23		675	4,350	4,276	74	445	242	34	170	401	282	24	9	72	5	9	33	1	89,188	38	6.62	1
New York	18,249	5		210	517	489	27	11,732	8,831	963	1,937	5,361	3,212	282	288	1,121	383	75	353	76	1,280,737	3	1.42	33
North Carolina	9,382	13		319	0	0	0	6,254	5,143	931	180	2,682	1,665	116	317	425	156	2	106	20	452,358	9	2.07	26
North Dakota	480	47		41	0	0	0	222	202	11	9	216	101	53	11	42	3	5	1	1	49,509	47	0.97	40
Ohio	10,928	11		826	0	0	0	7,755	5,402	1,232	1,121	2,129	1,354	126	151	366	85	46	216	2	548,526	7	1.99	28
Oklahoma	1,044	40		109	0	0	0	463	406	32	25	437	232	61	23	107	8	5	34	1	171,432	29	0.61	46
Oregon	6,031	21		101	0	0	0	5,156	4,873	234	48	722	535	43	25	73	35	12	33	18	210,242	25	2.87	13
Pennsylvania	13,210	10		237	113	113	1	9,318	8,683	354	281	3,231	2,355	101	133	473	160	9	305	6	629,851	6	2.10	23
Rhode Island	1,291	36		272	0	0	0	450	408	24	18	493	228	15	7	206	36	1	75	*	51,566	46	2.50	15
South Carolina	2,660	29		188	132	132	0	1,615	1,206	301	108	637	321	9	32	242	19	13	37	50	177,985	27	1.49	32
South Dakota	266	50		13	0	0	0	112	94	14	4	129	77	18	2	25	6	2	11	*	43,758	48	0.61	47
Tennessee	4,328	25		218	1,553	1,512	42	1,437	1,118	253	67	1,025	709	33	34	209	37	3	94	1	280,485	18	1.54	31
Texas	20,673	3		625	13	12	0.68	15,163	12,859	1,039	1,266	4,651	2,173	727	303	985	416	47	208	12	1,463,021	2	1.41	34
Utah	2,912	28		137	0	0	0	2,134	1,546	127	461	622	404	32	21	140	18	7	2	18	134,483	32	2.17	22
Vermont	592	45		4	0	0	0	466	425	28	13	120	91	*	3	22	4	0	*	1	28,422	51	2.08	25
Virginia	10,101	12		2,370	1,449	1,439	10	4,756	2,356	303	2,098	1,379	767	129	54	352	70	6	139	9	445,090	10	2.27	21
Washington	17,678	7		246	1,034	1,013	21	14,494	13,678	284	531	1,475	1,056	83	32	198	83	24	416	13	390,918	14	4.52	5
West Virginia	627	44		105	0	0	0	305	257	15	33	196	106	16	4	65	5	*	16	5	69,711	40	0.90	43
Wisconsin	5,698	24		57	0	0	0	4,135	3,654	431	50	1,484	759	93	38	386	184	24	16	7	272,086	20	2.09	24
Wyoming	106	51		5	0	0	0	30	23	5	3	66	57	4	2	2	0	1	1	4	41,839	50	0.25	51

TABLE 10. U.S. R&D expenditures, by state, performing sector, and source of funds: 2012
(Millions of current dollars)

State	All R&D	R&D rank	Per- former:	Fed- eral	FFRDCs			Business			Higher education ^a					Other nonprofit institutions	State, in- ternal ^b	R&D intensity ^c						
			Fund- ing source:	Fed- eral	Total	Fed- eral	Non- federal ^d	Total	Own	Non- federal ^e	Fed- eral	Total	Fed- eral	govern- ment	Busi- ness	Higher ed- ucation	Non- profit	Other	Federal ^f	Total	GDP	Per- cent	Rank	
U.S. undistributed ^h	14,250	na		4,670	0	0	0	9,580	7,423	D	0	0	0	0	0	0	0	*	0	0	0	na	na	na
Puerto Rico ⁱ	164	na		6	0	0	0	NA	NA	NA	NA	152	111	4	5	30	2	*	1	6	101,496	na	na	na
Other ^j	154	na		119	0	0	0	0	0	0	0	32	28	3	*	*	*	1	3	na	na	na	na	na

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

FFRDC = federally funded R&D center; GDP = gross domestic product; HE = higher education.

^a State-level university R&D data have not been adjusted to eliminate the double counting of funds passed through from one academic institution to another. At the national level, funds passed through to educational subrecipients accounted for 4.7% of total R&D expenditures reported by universities and colleges (U&C) in FY 2012.

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

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

^d Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2012 included state and local governments (\$39 million), business (\$184 million), nonprofit organizations (\$77 million), and all other sources (\$139 million).

^e R&D paid for by nonfederal sources includes funds from other companies located inside (\$12 billion) or outside (\$12 billion) the United States, U.S. state government agencies (\$157 million), foreign government agencies and laboratories (\$120 million), and other organizations located inside (\$334 million) or outside (\$22 million) the United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2012, total nonprofit performance is estimated at \$18.1 billion. Business provided an estimated \$1.4 billion to the nonprofit sector, and nonprofit institutions provided an estimated \$10.4 billion.

^g States' totals differ from U.S. totals for several reasons: (1) some R&D expenditures cannot be allocated to 1 of the 50 states or the District of Columbia; (2) nonfederal sources of other nonprofit R&D expenditures could not be allocated by state; (3) state-level U&C data have not been adjusted to eliminate double counting of funds passed through from one academic institution to another; and (4) state-level R&D data are not converted from fiscal years to calendar years.

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

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

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

NOTE: 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, National Patterns of R&D Resources (annual series), Business R&D and Innovation Survey, Survey of Research and Development Expenditures at Universities and Colleges, Survey of Federal Funds for Research and Development, and Survey of State Government Research and Development. State GDP data are from the U.S. Bureau of Economic Analysis, <http://www.bea.gov>, accessed 11 February 2015.

TABLE 11. U.S. R&D expenditures, by state, performing sector, and funding sector: 2013
(Millions of current dollars)

State	All R&D	R&D rank	Per-former:	Fed-eral	FFRDCs			Business			Higher education ^a					Other nonprofit institutions	State, in-ternal ^b	R&D intensity ^c						
			Fund-ing source:	Fed-eral	Total	Fed-eral	Non-federal ^d	Total	Own	Non-federal ^e	Fed-eral	Total	Fed-eral	gov-ernment	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-cent	Rank	
U.S. total ^g	456,095	na		33,026	16,833	16,422	411	322,528	264,913	28,059	29,362	64,680	36,867	3,594	3,502	15,240	3,833	1,645	5,939	467	16,768,100	na	2.72	na
States total ^g	427,310	na		27,465	16,867	16,455	412	309,868	254,793	26,165	25,298	66,874	39,357	3,649	3,498	14,936	3,858	1,577	5,771	464	16,665,217	na	2.56	na
Alabama	3,920	27		1,483	0	0	0	1,563	802	97	663	842	517	42	35	220	20	7	23	9	194,671	26	2.01	25
Alaska	318	49		77	0	0	0	46	33	6	6	184	106	13	6	55	2	2	4	6	57,276	44	0.55	48
Arizona	6,712	20		311	41	37	3	5,208	4,036	563	609	1,065	556	45	27	315	53	70	70	16	274,734	22	2.44	19
Arkansas	611	44		14	0	0	0	288	252	23	13	295	115	63	12	82	6	17	12	3	118,553	34	0.52	49
California	104,676	1		1,962	4,091	3,965	126	89,373	76,851	5,374	7,147	8,367	4,895	402	523	1,376	784	387	826	57	2,212,991	1	4.73	4
Colorado	6,740	19		353	520	483	37	4,522	3,869	221	432	1,253	934	37	83	118	70	11	83	8	288,338	19	2.34	21
Connecticut	9,124	14		5	0	0	0	8,010	5,789	394	1,826	1,059	665	18	41	263	64	8	25	26	246,897	23	3.70	9
Delaware	2,521	30		4	0	0	0	2,310	1,705	587	18	197	132	10	6	45	2	3	7	3	60,816	43	4.15	7
District of Columbia	4,189	25		2,893	5	5	0	488	297	30	161	524	310	4	10	136	56	9	279	*	111,695	35	3.75	8
Florida	8,856	15		717	0	0	0	5,795	3,900	517	1,377	2,172	1,127	164	99	671	92	18	125	47	800,697	4	1.11	35
Georgia	6,191	22		194	0	0	0	4,023	3,350	491	182	1,957	1,195	50	101	524	68	19	15	2	456,483	10	1.36	34
Hawaii	659	42		84	0	0	0	214	158	44	12	344	242	12	4	74	6	7	13	4	75,095	39	0.88	42
Idaho	1,928	34		41	497	486	11	1,238	908	324	7	144	83	23	4	29	2	2	1	8	61,117	42	3.15	12
Illinois	16,932	8		156	1,085	1,036	49	13,096	11,961	936	200	2,501	1,566	51	119	587	152	27	92	2	724,795	5	2.34	22
Indiana	7,958	17		139	0	0	0	6,479	5,482	875	122	1,336	602	72	65	483	94	21	2	1	311,188	16	2.56	16
Iowa	2,875	29		56	34	33	1	2,052	1,498	124	430	714	383	44	32	227	25	4	13	6	166,787	30	1.72	30
Kansas	2,513	31		20	0	0	0	1,942	1,321	577	44	545	259	52	43	159	27	4	3	2	142,449	31	1.76	29
Kentucky	1,852	35		18	0	0	0	1,279	917	44	318	551	243	64	23	173	17	32	1	3	183,582	27	1.01	40
Louisiana	1,075	38		43	0	0	0	354	275	41	38	672	299	94	41	197	25	16	2	5	246,660	24	0.44	50
Maine	554	45		10	0	0	0	365	314	11	40	105	49	20	3	29	3	1	73	1	54,609	45	1.01	38
Maryland	19,105	4		10,057	481	481	0	4,770	2,665	530	1,575	3,451	2,724	56	65	406	174	26	345	1	339,409	15	5.63	2
Massachusetts	24,128	2		388	1,337	1,334	3	17,395	14,000	2,457	939	3,533	2,181	26	216	680	264	166	1,475	1	441,467	12	5.47	3
Michigan	18,805	5		566	0	0	0	15,925	14,409	1,154	363	2,267	1,265	51	71	761	88	31	44	3	434,674	13	4.33	6
Minnesota	7,845	18		90	0	0	0	6,614	6,057	268	288	901	510	61	30	255	24	22	239	1	307,270	17	2.55	17
Mississippi	1,063	39		433	0	0	0	211	183	15	13	417	208	78	26	95	7	2	0	2	104,095	37	1.02	37

TABLE 11. U.S. R&D expenditures, by state, performing sector, and funding sector: 2013
(Millions of current dollars)

State	All R&D	R&D rank	Per-	Fed-	FFRDCs			Business			Higher education ^a					Other nonprofit institutions	State, internal ^b	R&D intensity ^c						
			former:	ederal	Total	Fed-eral	Non-federal ^d	Total	Own	Non-federal ^e	Fed-eral	Total	Fed-eral	Other government	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank	
			Fund- ing source:	Fed-eral	Total	Fed-eral	Non-federal ^d	Total	Non-federal ^e	Fed-eral	Total	Fed-eral	Other government	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank		
Missouri	8,365	16		89	0	0	0	7,174	3,570	D	D	1,070	612	24	66	257	96	15	26	7	276,715	21	3.02	13
Montana	335	48		52	0	0	0	92	73	11	9	186	113	11	1	51	1	9	3	2	43,006	49	0.78	44
Nebraska	1,108	37		31	0	0	0	627	577	34	15	445	199	11	22	187	19	7	5	*	109,364	36	1.01	39
Nevada	761	41		82	0	0	0	525	460	38	28	153	104	7	2	34	3	4	1	*	127,989	33	0.59	46
New Hampshire	2,426	32		23	0	0	0	2,045	811	322	911	354	262	2	14	56	14	6	3	1	68,701	41	3.53	10
New Jersey	15,877	9		571	85	83	2	14,022	11,955	1,760	307	1,175	680	70	41	291	84	9	21	3	537,396	8	2.95	14
New Mexico	5,803	23		730	4,120	4,046	75	519	291	32	196	404	269	27	9	82	8	9	28	1	90,828	38	6.39	1
New York	18,619	6		156	530	505	25	12,032	9,456	863	1,713	5,521	3,130	272	427	1,205	358	129	307	74	1,341,591	3	1.39	33
North Carolina	11,318	11		281	0	0	0	8,083	5,690	2,250	142	2,740	1,653	124	269	504	144	45	194	21	467,075	9	2.42	20
North Dakota	489	47		39	0	0	0	229	215	10	4	219	85	56	11	61	2	5	1	*	51,048	47	0.96	41
Ohio	11,164	12		670	0	0	0	8,118	5,582	1,565	970	2,168	1,353	109	167	395	101	44	206	2	562,845	7	1.98	27
Oklahoma	1,016	40		58	0	0	0	505	450	36	19	420	188	63	27	128	8	6	31	1	176,398	29	0.58	47
Oregon	6,483	21		91	0	0	0	5,635	5,405	173	57	705	519	43	25	70	36	12	33	20	204,867	25	3.16	11
Pennsylvania	14,743	10		215	135	134	1	10,761	10,001	524	236	3,347	2,351	100	153	487	161	95	278	7	640,294	6	2.30	23
Rhode Island	1,328	36		208	0	0	0	571	501	33	37	477	214	10	7	213	26	7	72	*	53,300	46	2.49	18
South Carolina	1,949	33		107	116	116	0	1,016	861	69	87	648	305	11	35	266	20	11	24	37	182,400	28	1.07	36
South Dakota	308	50		14	0	0	0	164	149	11	3	117	62	19	1	25	6	3	13	*	44,673	48	0.69	45
Tennessee	4,146	26		141	1,452	1,414	38	1,423	1,188	180	56	1,042	697	41	28	229	35	14	87	1	290,125	18	1.43	31
Texas	21,690	3		1,137	12	11	1	15,550	13,406	1,159	984	4,813	2,174	717	303	1,120	339	160	167	12	1,557,193	2	1.39	32
Utah	3,825	28		173	0	0	0	2,945	2,384	141	420	689	432	36	47	146	23	6	1	18	134,974	32	2.83	15
Vermont	533	46		4	0	0	0	406	363	26	18	121	89	*	2	25	4	1	*	1	28,838	51	1.85	28
Virginia	9,430	13		2,052	1,392	1,369	22	4,445	2,465	284	1,695	1,420	761	144	55	398	54	7	108	13	454,984	11	2.07	24
Washington	18,005	7		272	934	916	18	14,860	13,996	362	501	1,562	1,077	83	57	207	116	21	364	13	407,160	14	4.42	5
West Virginia	616	43		97	0	0	0	306	273	28	4	196	95	15	5	69	4	8	11	5	70,595	40	0.87	43
Wisconsin	5,718	24		49	0	0	0	4,227	3,618	547	61	1,419	715	97	35	471	68	32	15	7	284,728	20	2.01	26
Wyoming	107	51		9	0	0	0	28	21	4	2	65	54	6	2	2	*	1	1	3	41,782	50	0.26	51

TABLE 11. U.S. R&D expenditures, by state, performing sector, and funding sector: 2013
(Millions of current dollars)

State	All R&D	R&D rank	Per-	Fed-	FFRDCs			Business			Higher education ^a					Other nonprofit institutions	State, internal ^b	R&D intensity ^c									
			former:	ederal	Total	Fed-eral	Non-federal ^d	Total	Own	Non-federal ^e	Fed-eral	Total	Fed-eral	govern-ment	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank				
			Fund- ing source:	Fed-eral	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total			
U.S. undistributed ^h	16,776	na		4,112	0	0	0	12,664	10,120	D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	na
Puerto Rico ⁱ	168	na		20	0	0	0	NA	NA	NA	NA	141	92	5	3	38	2	*	1	6	103,135	na	NA	na	na	na	
Other ^j	327	na		301	0	0	0	0	0	0	0	26	21	4	*	*	*	*	0	na	na	na	na	na	na	na	

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

FFRDC = federally funded R&D center; GDP = gross domestic product.

^a State-level university R&D data have not been adjusted to eliminate the double counting of funds passed through from one academic institution to another. At the national level, funds passed through to educational subrecipients accounted for 4.7% of total R&D expenditures reported by universities and colleges (U&C) in FY 2013.

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

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

^d Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2013 included state and local governments (\$50 million), business (\$180 million), nonprofit organizations (\$68 million), and all other sources (\$113 million).

^e R&D paid for by nonfederal sources includes funding from other companies located inside (\$13 billion) or outside (\$15 billion) the United States, U.S. state government agencies (\$194 million), foreign government agencies and laboratories (\$526 million), other organizations located inside (\$262 million) or outside (\$31 million) the United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2013, total nonprofit performance is estimated at \$18.6 billion. Business provided an estimated \$1.4 billion to the nonprofit sector, and nonprofit institutions provided an estimated \$11.2 billion.

^g States totals differ from U.S. totals for several reasons: (1) some R&D expenditures cannot be allocated to 1 of the 50 states or the District of Columbia; (2) nonfederal sources of other nonprofit R&D expenditures could not be allocated by state; (3) state-level U&C data have not been adjusted to eliminate double counting of funds passed through from one academic institution to another; and (4) state-level R&D data are not converted from fiscal years to calendar years.

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

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

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

NOTE: Business R&D data refer to calendar years; the data for the other R&D performers 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, National Patterns of R&D Resources (annual series). State GDP data are from the U.S. Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm>, accessed 11 June 2015.

TABLE 12. U.S. R&D expenditures, by state, performing sector, and funding sector: 2014
(Millions of current dollars)

State	All R&D	R&D rank	Performer:	Federal	FFRDCs			Business				Higher education ^a					Other nonprofit institutions	State, internal ^b	R&D intensity ^c					
			Funding source:	Federal	Total	Federal	Non-federal ^d	Total	Own	Non-federal ^e	Federal	Total	Federal	Other government	Business	Higher education	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank	
																					rank	cent	Rank	
U.S. total ^g	477,708	na		34,396	17,903	17,523	380	340,728	282,570	31,604	26,554	64,704	35,051	3,788	3,817	16,040	4,063	1,944	6,111	580	17,348,100	na	2.75	na
States total ^g	451,504	na		28,958	17,719	17,331	387	331,222	274,718	30,043	23,780	67,012	37,816	3,863	3,722	15,731	3,979	1,901	6,015	578	17,830,308	na	2.53	na
Alabama	4,616	25		1,812	0	0	0	1,961	1,299	101	561	816	486	45	38	215	21	11	23	5	204,235	26	2.26	20
Alaska	289	49		44	0	0	0	57	37	11	9	174	95	14	6	54	3	2	4	9	52,804	47	0.55	48
Arizona	6,936	20		310	25	21	4	5,499	4,307	680	512	1,047	505	49	33	338	47	75	46	9	290,578	22	2.39	17
Arkansas	636	43		26	0	0	0	317	277	26	14	282	94	65	13	86	2	22	11	1	123,207	34	0.52	49
California	114,845	1		2,147	4,888	4,763	125	98,488	85,750	6,004	6,734	8,400	4,705	397	508	1,521	738	531	868	54	2,458,535	1	4.67	4
Colorado	6,775	22		380	522	490	32	4,551	3,829	249	473	1,232	902	36	84	119	77	15	82	8	314,878	18	2.15	24
Connecticut	10,219	14		19	0	0	0	9,093	6,819	438	1,836	1,063	636	19	48	282	66	12	24	21	258,532	23	3.95	8
Delaware	2,732	30		8	0	0	0	2,520	1,839	668	13	193	129	10	6	42	2	4	10	2	68,071	42	4.01	7
District of Columbia	3,935	27		2,656	11	11	0	338	183	28	126	543	314	5	11	145	60	9	385	1	122,510	35	3.21	12
Florida	9,009	15		779	0	0	0	5,783	3,877	686	1,221	2,273	1,117	176	106	715	99	60	131	44	882,798	4	1.02	38
Georgia	6,881	21		268	0	0	0	4,635	3,843	599	193	1,951	1,140	56	109	549	73	23	25	2	495,727	10	1.39	32
Hawaii	639	42		97	0	0	0	196	138	45	13	331	213	8	3	89	7	11	14	1	79,745	39	0.80	44
Idaho	2,130	33		51	480	460	20	1,448	1,223	219	6	143	77	31	3	26	3	2	1	7	65,242	43	3.26	11
Illinois	15,964	8		129	1,054	1,019	35	12,371	11,196	1,031	143	2,327	1,383	57	116	578	171	22	82	2	775,007	5	2.06	25
Indiana	7,343	18		131	0	0	0	5,901	5,015	791	95	1,309	556	91	66	477	93	26	1	1	336,411	16	2.18	22
Iowa	3,003	29		84	42	41	1	2,098	1,513	143	442	775	356	48	38	297	31	4	1	4	174,103	30	1.73	28
Kansas	2,510	31		24	0	0	0	1,934	1,325	598	12	548	244	55	49	174	22	4	3	1	147,765	31	1.70	29
Kentucky	1,717	35		21	0	0	0	1,158	768	50	340	534	220	65	22	173	18	34	1	3	194,643	28	0.88	42
Louisiana	1,120	38		57	0	0	0	386	299	53	35	666	285	95	38	209	29	11	2	9	243,317	24	0.46	50
Maine	596	45		20	0	0	0	373	308	19	46	127	64	23	4	33	2	1	74	2	56,600	45	1.05	35
Maryland	20,211	5		10,618	549	549	0	5,124	3,445	523	1,156	3,573	2,826	68	74	408	170	27	345	1	363,845	15	5.55	3
Massachusetts	27,945	2		558	1,273	1,270	3	21,105	17,101	3,106	899	3,501	2,158	33	237	620	303	150	1,498	11	476,743	12	5.86	2
Michigan	19,764	6		393	0	0	0	17,077	15,421	1,318	338	2,243	1,184	44	72	810	97	35	50	1	466,536	13	4.24	6
Minnesota	8,244	16		74	0	0	0	6,975	6,403	284	288	919	502	56	29	276	15	40	273	2	333,267	17	2.47	16
Mississippi	1,125	37		445	0	0	0	269	198	53	18	411	194	89	25	93	6	4	1	1	107,100	37	1.05	36

TABLE 12. U.S. R&D expenditures, by state, performing sector, and funding sector: 2014
(Millions of current dollars)

State	All R&D	R&D rank	Per-	Fed-	FFRDCs			Business			Higher education ^a					Other nonprofit institutions	State, internal ^b	R&D intensity ^c						
			former:	ederal	Total	Fed-eral	Non-federal ^d	Total	Own	Non-federal ^e	Fed-eral	Total	Fed-eral	Other government	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank	
			Fund- ing source:	Fed-eral	Total	Fed-eral	Non-federal ^d	Total	Non-federal ^e	Fed-eral	Total	Fed-eral	Other government	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank		
Missouri	7,957	17		159	0	0	0	6,720	4,037	D	D	1,051	573	21	66	270	101	20	26	1	293,378	21	2.71	13
Montana	464	47		69	0	0	0	205	188	13	4	181	108	11	1	51	1	10	7	2	45,933	49	1.01	39
Nebraska	1,094	40		41	0	0	0	590	543	33	13	455	189	11	23	203	21	8	7	1	113,998	36	0.96	40
Nevada	817	41		31	0	0	0	631	576	36	19	154	100	14	3	29	2	6	1	*	141,282	33	0.58	47
New Hampshire	2,424	32		37	0	0	0	2,041	869	335	836	341	251	2	13	55	11	9	5	*	72,573	41	3.34	10
New Jersey	15,370	9		384	98	97	1	13,743	11,027	2,393	324	1,130	627	77	38	285	87	17	13	2	568,155	8	2.71	14
New Mexico	5,816	23		591	4,284	4,212	72	499	270	62	167	412	269	29	14	79	12	9	27	2	92,231	38	6.31	1
New York	20,820	4		195	573	556	17	13,818	10,794	1,347	1,677	5,639	3,039	347	389	1,328	393	142	336	259	1,441,003	3	1.44	30
North Carolina	11,343	12		310	0	0	0	8,091	6,125	1,856	110	2,815	1,612	143	349	527	148	35	113	14	499,449	9	2.27	19
North Dakota	523	46		27	0	0	0	271	247	21	2	222	77	58	13	65	2	7	1	1	54,830	46	0.95	41
Ohio	12,005	11		705	0	0	0	8,945	6,137	1,755	1,053	2,159	1,298	135	176	405	95	50	195	1	608,109	7	1.97	26
Oklahoma	1,113	39		57	0	0	0	607	543	47	18	420	169	75	36	116	12	11	29	*	180,425	29	0.62	45
Oregon	7,279	19		93	0	0	0	6,434	6,160	190	85	706	507	48	25	69	40	16	30	16	215,331	25	3.38	9
Pennsylvania	14,898	10		293	123	123	0	10,816	9,635	973	208	3,329	2,229	99	175	540	185	101	330	7	689,173	6	2.16	23
Rhode Island	1,298	36		248	0	0	0	542	479	26	37	446	205	10	5	204	17	6	61	*	57,049	44	2.27	18
South Carolina	2,034	34		124	121	121	0	1,089	936	72	81	656	291	26	44	269	18	8	26	17	198,714	27	1.02	37
South Dakota	271	50		17	0	0	0	135	121	13	2	105	53	19	2	23	6	2	14	*	46,674	48	0.58	46
Tennessee	4,245	26		141	1,294	1,259	35	1,586	1,365	172	49	1,133	665	32	47	342	36	12	90	1	314,191	19	1.35	34
Texas	22,467	3		1,025	12	11	1	16,373	13,674	1,566	1,134	4,899	2,030	771	334	1,182	365	218	154	3	1,586,468	2	1.42	31
Utah	3,669	28		151	0	0	0	2,809	2,275	114	420	689	428	37	47	145	27	5	1	18	147,108	32	2.49	15
Vermont	422	48		4	0	0	0	302	259	27	16	115	83	*	4	22	4	1	*	1	30,401	51	1.39	33
Virginia	10,489	13		2,653	1,347	1,318	29	4,994	2,877	381	1,735	1,381	744	73	59	449	47	9	103	10	479,809	11	2.19	21
Washington	18,987	7		262	1,022	1,010	12	15,699	15,195	298	205	1,537	1,053	68	67	204	119	26	456	10	443,665	14	4.28	5
West Virginia	604	44		112	0	0	0	279	252	23	5	196	90	14	13	65	5	8	13	4	73,741	40	0.82	43
Wisconsin	5,789	24		67	0	0	0	4,287	3,677	554	56	1,411	701	104	38	472	67	30	18	6	305,795	20	1.89	27
Wyoming	123	51		9	0	0	0	59	44	13	1	51	42	4	2	2	1	1	2	2	38,624	50	0.32	51

TABLE 12. U.S. R&D expenditures, by state, performing sector, and funding sector: 2014
(Millions of current dollars)

State	All R&D	R&D rank	Per-	Fed-	FFRDCs			Business			Higher education ^a					Other nonprofit institutions	State, internal ^b	R&D intensity ^c								
			former:	ederal	Total	Fed-eral	Non-federal ^d	Total	Own	Non-federal ^e	Fed-eral	Total	Fed-eral	govern-ment	Busi-ness	Higher ed-ucation	Non-profit	Other	Federal ^f	Total	GDP	Per-	Rank			
			Fund- ing source:	Fed-eral	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total		
U.S. undistributed ^h	14,013	na		4,507	0	0	0	9,506	7,852	D	0	0	0	0	0	0	0	0	0	0	0	0	0	na	na	na
Puerto Rico ⁱ	127	na		6	0	0	0	NA	NA	NA	NA	115	85	3	3	22	1	1	1	5	103,100	na	NA	na		
Other ^j	284	na		257	0	0	0	0	0	0	0	27	22	3	*	1	*	2	*	na	na	na	na	na	na	

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

FFRDC = federally funded R&D center; GDP = gross domestic product.

^a State-level higher education R&D data have not been adjusted to eliminate the double counting of funds passed through from one academic institution to another. At the national level, funds passed through to educational subrecipients accounted for 4.7% of total R&D expenditures reported by universities and colleges (U&C) in FY 2014.

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

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

^d Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2014 included state and local governments (\$28 million), business (\$221 million), nonprofit organizations (\$37 million), and all other sources (\$101 million).

^e R&D paid for by nonfederal sources includes funding from other companies located inside (\$13 billion) or outside (\$17 billion) the United States, U.S. state government agencies (\$138 million), foreign government agencies and laboratories (\$415 million), other organizations located inside (\$523 million) or outside (\$55 million) the United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2014, total nonprofit performance is estimated at \$19.5 billion. Business provided an estimated \$1.5 billion to the nonprofit sector, and nonprofit institutions provided an estimated \$11.9 billion.

^g States totals differ from U.S. totals for several reasons: (1) some R&D expenditures cannot be allocated to 1 of the 50 states or the District of Columbia; (2) nonfederal sources of other nonprofit R&D expenditures could not be allocated by state; (3) state-level higher education data have not been adjusted to eliminate double counting of funds passed through from one academic institution to another; and (4) state-level R&D data are not converted from fiscal years to calendar years.

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

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

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

NOTE: Business R&D data refer to calendar years; the data for the other R&D performers 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, National Patterns of R&D Resources (annual series). State GDP data are from the U.S. Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm>, accessed 15 June 2016.

Appendix. Technical Notes

Overview of 2014–15 Data Update

National Patterns of R&D Resources provides current data on the levels and key trends of the performance and funding of research and experimental development in the United States, with comparisons to the historical record (back to 1953). Detail is also provided for the U.S. total and by performer according to the types of R&D conducted (i.e., basic research, applied research, and experimental development).

Key Information on Publication Series

Report frequency. Reports in this series are typically published annually.

Current reference period. Data from 1953 to 2015 are provided for almost all variables. The data for 2014 and 2015 are new and previously unreported in this series. The data for 1953–2013 reflect data that have been finalized in previous report editions but may still include further small revisions and corrections.

Survey Data Sources for *National Patterns*

The *National Patterns* statistics draw primarily from NCSSES's annual national surveys of the R&D expenditures and funding of the organizations that perform the bulk of U.S. R&D. These organizations include the business sector, federal and nonfederal government, higher education, and other nonprofit organizations; they are summarized—including links to other sections of the NCSSES website with specifics on survey coverage, variables tracked, and survey/sampling implementation—in the following sections.

Business Sector

For 2008 and later years, annual data on the R&D performed in the domestic United States by the business sector come from NCSSES's Business Research and Development and Innovation Survey (BRDIS; cosponsored with the U.S. Census Bureau [<https://www.nsf.gov/statistics/srvyindustry/>]). BRDIS is a sample survey of companies in manufacturing and nonmanufacturing industries, designed to be nationally representative of all for-profit companies (publicly or privately held) with 5 employees or more in the United States (typically, a sample of around 44,000 companies representing a national population of around 2 million companies). Key variables covered include R&D performance (in the United States and worldwide); total and R&D employment (in the United States and worldwide); sources of R&D funding; the type of R&D activities (basic research, applied research, experimental development); type of R&D costs; R&D capital expenditures; R&D application and technology focus areas; geographic location (within the United States and in foreign countries); sales (in the United States and worldwide); patenting, licensing, other technology transfer activities; and innovation indicators.

For 2007 and earlier years, data come from the NCSSES Survey of Industrial Research and Development (SIRD), the predecessor to BRDIS (<https://www.nsf.gov/statistics/srvyindustry/sird.cfm>). SIRD was also a sample survey, conducted annually (1953–2007), that provided national estimates of the R&D performed within the United States by industrial firms, whether U.S. or foreign owned. The SIRD target population consisted (same as BRDIS) of all for-profit companies with 5 employees or more, manufacturing and nonmanufacturing, that performed R&D in the United States.

Federal Government

Federal intramural R&D. Data on the intramural R&D performed by the federal government comes from NCSSES's Survey of Federal Funds for Research and Development (Federal Funds Survey), which is

completed annually by all federal agencies conducting R&D programs (approximately 28 federal departments or independent agencies; <https://www.nsf.gov/statistics/srvyfedfunds/>). The Federal Funds Survey data provide intramural R&D totals as outlays and obligations on a federal fiscal-year basis. The obligations data are further detailed by federal agency, performer, type of R&D, geographical area, and field of science or engineering (for research, not for development). (Note: data on federal intramural R&D plant reported by the Federal Funds Survey are not included as a component in the *National Patterns* total of federal intramural R&D.)

Federally funded R&D centers (FFRDCs). The nation's FFRDCs are a second venue of federal R&D performance. (Currently, there are 41 FFRDCs, although the number can change from year to year; NCSSES maintains a Master List of the population of FFRDCs, which it regularly updates [<https://www.nsf.gov/statistics/ffrdclist/>].) FFRDCs are R&D-performing organizations administered by an industrial firm, a university, a nonprofit institution, or a consortium but that have funding exclusively or substantially from the federal government. An FFRDC is operated to provide R&D capability to serve an agency's mission objectives or, in some cases, to provide major facilities at universities for research and training purposes. Since FY 2001, NCSSES's FFRDC Research and Development Survey (known previously as the Survey of Research and Development Expenditures at FFRDCs) has provided annual data (by federal fiscal year) on the R&D expenditures (with additional detail) of all the nation's FFRDCs (<https://www.nsf.gov/statistics/srvyffrdc/>). Prior to FY 2001, R&D expenditure data for the FFRDCs were collected as part of the major performer surveys: the Survey of R&D Expenditures at Universities and Colleges (for university-administered FFRDCs), the Survey of Industrial R&D (for industry-administered FFRDCs), and the Federal Funds Survey (for nonprofit-administered FFRDCs).

Nonfederal Government

The category of nonfederal government R&D performance included in *National Patterns* is the intramural R&D of state governments (i.e., the R&D performance of state agency and department employees and also the services performed by others in support of internal R&D projects). Data on this state intramural R&D come from NCSSES's Survey of State Government Research and Development (<https://www.nsf.gov/statistics/srvystateerd/>). This state survey is a comparatively recent NCSSES initiative, fielded on a biennial basis, with the first data year in FY 2006.

In addition, the BRDIS, FFRDC, and Higher Education Research and Development Survey (HERD) surveys (see above and below) provide detail on R&D funding by nonfederal governments other than state government.

Higher Education Institutions

For academic FY 2010 and onward, data on the R&D performed in higher education come from NCSSES's HERD. HERD is an annual census of universities and colleges that grant the bachelor's degree or higher and expend at least \$150,000 in separately accounted for R&D over the fiscal year of academic institutions (<https://www.nsf.gov/statistics/srvyherd/>). The survey collects information on R&D expenditures by field of research, source of funds, type of R&D, and head counts of R&D personnel.

The HERD Survey replaced the earlier Survey of Research and Development Expenditures at Universities and Colleges (<https://www.nsf.gov/statistics/srvyrdexpenditures/>). For data years FY 2009 and earlier, the Universities and Colleges Survey provides the data on academic R&D.

Other Nonprofit Organizations

This sector refers to R&D performed in the United States by nonprofit organizations other than government or academia. Data on the R&D performed by such nonprofit organizations that are federally

funded comes from the aforementioned NCSES Federal Funds Survey (reported annually, on federal fiscal year basis). Data for the R&D performed by other nonprofit organizations with funding from within the nonprofit sector and from business sources (both reported on calendar year basis) are estimated, based on parameters from NCSES's past comprehensive R&D surveys of the sector. NCSES's most recent Survey of Research and Development Funding and Performance by Nonprofit Organizations dates to 1973 and 1996–97 (<https://www.nsf.gov/statistics/srvyrdnonprofit/>). Data for years prior to 1973 come from earlier *National Patterns* reports (which reflect, in part, surveys in 1957 and 1960).

Statistics on the U.S. Economy

Some of the trend analyses in *National Patterns* draw on National Income and Product Accounts data (e.g., U.S. gross domestic product, state domestic product) assembled by the U.S. Bureau of Economic Activity (BEA). For details on this U.S. economic data, see <http://www.bea.gov/national/index.htm#gdp>.

In keeping with international conventions, U.S. R&D expenditures in current dollars are adjusted for inflation based on BEA's implicit GDP price deflator.

Methodology

The *National Patterns* statistical picture of the U.S. R&D system arises from integration of the primary data from the NCSES sectoral R&D surveys. Adjustments to the primary data are needed in some cases to enable consistent addition. Furthermore, preliminary or otherwise estimated values may be used (and later revised) where final data from one or more of the surveys are not yet available but can reasonably be calculated.

Key features of the methodology include the following.

- Data from BRDIS are reported on a calendar year basis and are incorporated directly in the *National Patterns* totals. Data from the Federal Funds Survey and the FFRDC Research and Development Survey are reported on a federal fiscal year basis (1 October–30 September the next year) and are adjusted to the calendar year for *National Patterns* integration. The data from the HERD Survey are reported on an academic fiscal year basis (typically, 1 July–30 June the next year) and converted to calendar year. Data from the Survey of State Government R&D are reported according to each state's fiscal year and also are converted to calendar year (presuming that 1 July–30 June the next year is typical).
- For 1998 and later years, the R&D data for higher education have been adjusted to eliminate double counting of funds passed through from one academic institution to another. For example, in FY 1998, a total of \$479 million in pass-through funds were reported out of \$25.9 billion of all academic R&D expenditures that year. Comparable figures for FY 2014 are \$3.2 billion in double-counted pass-through funds out of \$64.7 billion in higher education R&D.
- The data for higher education prior to 2003 cover only science and engineering (S&E) fields; in 2003 and later years, R&D in non-S&E fields is also included. Non-S&E R&D was \$1.4 billion in FY 2003 and \$3.4 billion in FY 2014. Similarly, social science R&D was not included as part of business R&D until the 2008 data year, when it was \$0.8 billion of the \$290.7 billion business R&D total.
- The method for estimating type of R&D (i.e., basic research, applied research, experimental development) for the business sector was revised for 1998 and later years. This change resulted in a net decrease in the proportion of business R&D classified as basic research.

Accordingly, the data for 1998 and later years are not directly comparable with data for 1997 and earlier years. Adoption of BRDIS (data series starting in 2008) does not appear to have introduced further discontinuities in the type-of-work estimates. For universities and colleges, the type-of-R&D estimation method was revised in 1998 and again in 2010. Hence, the latest data for higher education are also not directly comparable to those reported in earlier years.

- 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. For example, in 2009, federal agencies reported obligating \$141 billion for R&D funding to all R&D performers (including \$53 billion to the business sector), compared with an estimated \$127 billion in federal funding reported by all performers of R&D that year (\$40 billion by businesses). And, in 2014, federal agencies reported obligating \$130 billion for R&D funding to all R&D performers (including \$50 billion to the business sector), compared with an estimated \$120 billion in federal funding reported by all performers of R&D that year (\$27 billion by businesses). Several investigations into the possible causes for these data disparities have produced insights but no conclusive explanation; for a further discussion, see the chapter 4 sidebar “Tracking R&D expenditures: Disparities in the data reported by performers and sources of funding” in *Science and Engineering Indicators 2016*.¹

Additional details on methodology and technical issues pertaining to specific variables are provided in the notes on each table. For further information about compiling the *National Patterns* statistics, contact the Project Officer.

Definitions

R&D performers and funders. The U.S. R&D system consists of the R&D activities of differing performers and sources of funding for these activities. The main categories of R&D performers tracked by NCSSES are businesses; federal agencies; FFRDCs (administered by businesses, universities, or nonprofit organizations); nonfederal government agencies (particularly those of the states); higher education; and other nonprofit organizations. For R&D funding, the main categories are businesses; the federal government; nonfederal government (state, regional, local); higher education; and other nonprofit organizations. Organizations that perform R&D often receive significant levels of outside funding; R&D funders may also be significant performers.

Type of R&D. As defined by the Organisation for Economic Co-operation and Development’s *Frascati Manual* (in seven editions since the early 1960s), “R&D” spans three main types of activities:

Basic research: Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

Applied research: Original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific, practical aim or objective.

Experimental development: Systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improve existing products or processes.²

Notes

¹ National Science Board. 2016. Tracking R&D expenditures: Disparities in the data reported by performers and sources of funding. In *Science and Engineering Indicators 2016*, Chapter 4. NSB 2016-1. Arlington, VA: National Science Foundation. Available at <https://www.nsf.gov/statistics/2016/nsb20161/#/>

² Organisation for Economic Co-operation and Development (OECD). 2015. *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development*. Page 45. OECD Publishing, Paris. Available at <http://www.oecd.org/publications/frascati-manual-2015-9789264239012-en.htm>

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