

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2016

Year	All per- formers	Federal				Nonfederal govern- ment <sup>c</sup>							Business <sup>d</sup>				Higher education <sup>e</sup>				Other nonprofit organizations <sup>f</sup>			
	All federal	intramural <sup>a</sup>	FFRDCs <sup>b</sup>																					
	Total	Federal	Total	Federal	Total	Total	Own domestic	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	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		

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	All federal	intramural <sup>a</sup>	FFRDCs <sup>b</sup>		Business <sup>d</sup>					Higher education <sup>e</sup>					Other nonprofit organizations <sup>f</sup>							
	Total	Federal	Total	Federal	Total	Own domestic	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	ONP	Total	Federal	Business	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	211,894	25,232	16,819	8,413	8,413	NA	155,409	133,611	21,798	NA	NA	NA	24,627	14,317	1,902	1,788	4,852	1,767	6,626	3,014	809	2,804
1998	225,759	25,843	17,362	8,480	8,480	NA	167,102	145,016	22,086	NA	NA	NA	25,583	14,699	1,920	1,898	5,193	1,871	7,232	3,281	859	3,092
1999	244,451	26,846	18,142	8,704	8,704	NA	182,090	161,594	20,496	NA	NA	NA	27,475	15,714	2,036	2,020	5,654	2,050	8,040	3,761	931	3,349
2000	267,950	28,516	19,247	9,269	9,269	NA	199,961	182,844	17,117	NA	NA	NA	29,916	17,095	2,182	2,112	6,270	2,258	9,557	4,510	1,020	4,027
2001	278,539	32,812	22,374	10,438	10,056	NA	202,017	185,118	16,899	NA	NA	NA	32,750	18,976	2,319	2,120	6,874	2,461	10,960	5,488	1,029	4,443
2002	277,911	35,482	23,798	11,684	11,242	NA	193,868	177,467	16,401	NA	NA	NA	36,684	21,655	2,521	2,103	7,673	2,732	11,878	5,778	998	5,102
2003	291,365	37,235	24,982	12,253	11,841	NA	200,724	182,926	17,798	NA	NA	NA	40,577	24,567	2,756	2,090	8,286	2,879	12,829	5,945	1,020	5,864
2004	302,731	37,685	24,898	12,788	12,471	NA	208,301	188,035	20,266	NA	NA	NA	43,296	26,624	2,896	2,148	8,637	2,993	13,448	6,537	1,041	5,870
2005	325,288	39,568	26,322	13,246	12,894	NA	226,159	204,250	21,909	NA	NA	NA	45,490	27,743	2,945	2,279	9,353	3,170	14,072	6,545	1,107	6,420
2006	350,908	41,610	28,240	13,370	12,969	309	247,669	223,365	24,304	NA	NA	NA	47,369	28,277	3,059	2,464	10,176	3,394	13,952	6,044	1,182	6,726
2007	377,890	44,132	29,859	14,273	13,845	388	269,267	242,682	26,585	NA	NA	NA	49,430	28,725	3,308	2,697	10,933	3,767	14,674	5,980	1,257	7,438
2008	404,773	45,649	29,839	15,810	15,369	491	290,680	225,848	36,360	12,181	15,533	758	52,054	29,635	3,567	2,954	11,738	4,161	15,898	6,236	1,301	8,362
2009	402,931	47,572	30,560	17,013	16,571	606	282,393	221,104	39,573	9,567	11,464	685	54,909	31,741	3,679	3,033	12,056	4,400	17,452	7,097	1,258	9,097
2010	406,580	50,798	31,970	18,828	18,409	691	278,977	218,187	34,199	11,013	14,532	1,046	58,084	34,682	3,673	2,953	12,262	4,515	18,030	7,093	1,265	9,672
2011	426,160	53,524	34,950	18,574	18,176	694	294,092	235,426	31,309	11,124	15,351	882	60,089	35,742	3,615	2,999	13,104	4,630	17,762	6,564	1,333	9,865
2012	433,619	52,144	34,017	18,128	17,727	665	302,251	242,674	30,621	11,624	16,699	633	60,896	34,968	3,560	3,169	14,300	4,899	17,663	6,239	1,366	10,059
2013	453,964	51,086	33,406	17,680	17,296	620	322,528	259,908	29,362	13,450	18,795	1,013	61,546	33,839	3,643	3,375	15,378	5,312	18,185	5,970	1,444	10,770
2014	475,426	52,687	34,783	17,903	17,523	583	340,728	277,272	26,554	13,227	22,544	1,131	62,354	33,121	3,715	3,601	16,217	5,701	19,075	6,135	1,520	11,420
2015 <sup>g</sup>	495,144	54,322	35,673	18,649	18,287	610	355,821	289,892	26,990	14,595	23,102	1,242	64,653	33,546	3,772	3,842	17,334	6,159	19,738	6,189	1,572	11,978
2016 <sup>h</sup>	509,967	57,459	37,999	19,460	19,091	651	363,753	297,399	24,717	15,740	24,558	1,339	67,520	34,205	3,877	4,064	18,686	6,689	20,583	6,382	1,607	12,594

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Year	All per- formers	Federal				Nonfederal govern- ment <sup>c</sup>							Business <sup>d</sup>				Higher education <sup>e</sup>				Other nonprofit organizations <sup>f</sup>			
	All federal	intramural <sup>a</sup>		FFRDCs <sup>b</sup>																				
	Total	Federal	Total	Federal	Total	Federal	Total	Own domestic	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	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		

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	All federal	intramural <sup>a</sup>	FFRDCs <sup>b</sup>			Business <sup>d</sup>			Higher education <sup>e</sup>				Other nonprofit organizations <sup>f</sup>											
	Total	Federal	Total	Federal	Total	Own domestic	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	271,619	32,344	21,560	10,785	10,785	NA	199,213	171,271	27,942	NA	NA	NA	31,568	18,353	2,438	2,293	6,219	2,265	8,494	3,864	1,037	3,594		
1998	286,282	32,771	22,017	10,754	10,754	NA	211,900	183,893	28,007	NA	NA	NA	32,441	18,640	2,435	2,407	6,585	2,373	9,170	4,160	1,089	3,921		
1999	305,315	33,530	22,659	10,871	10,871	NA	227,427	201,828	25,599	NA	NA	NA	34,315	19,627	2,544	2,524	7,061	2,560	10,042	4,697	1,162	4,183		
2000	327,218	34,823	23,504	11,319	11,319	NA	244,190	223,287	20,903	NA	NA	NA	36,533	20,876	2,665	2,579	7,656	2,757	11,671	5,508	1,245	4,918		
2001	332,570	39,177	26,715	12,462	12,006	NA	241,204	221,027	20,177	NA	NA	NA	39,103	22,657	2,769	2,531	8,207	2,939	13,086	6,552	1,229	5,305		
2002	326,805	41,724	27,984	13,740	13,219	NA	227,976	208,689	19,286	NA	NA	NA	43,138	25,464	2,965	2,473	9,023	3,213	13,967	6,794	1,174	5,999		
2003	335,926	42,930	28,803	14,127	13,652	NA	231,422	210,902	20,520	NA	NA	NA	46,782	28,324	3,177	2,410	9,553	3,319	14,791	6,854	1,176	6,761		
2004	339,690	42,286	27,937	14,349	13,993	NA	233,732	210,992	22,740	NA	NA	NA	48,582	29,874	3,249	2,410	9,691	3,358	15,090	7,335	1,168	6,587		
2005	353,622	43,014	28,615	14,399	14,017	NA	245,858	222,041	23,817	NA	NA	NA	49,452	30,159	3,202	2,477	10,167	3,446	15,297	7,115	1,203	6,980		
2006	370,102	43,886	29,784	14,101	13,678	325	261,216	235,583	25,633	NA	NA	NA	49,960	29,823	3,227	2,598	10,732	3,579	14,715	6,374	1,247	7,094		
2007	388,229	45,339	30,676	14,663	14,224	399	276,634	249,322	27,312	NA	NA	NA	50,782	29,511	3,399	2,771	11,232	3,870	15,075	6,143	1,291	7,641		
2008	407,848	45,995	30,066	15,930	15,485	495	292,888	227,564	36,636	12,274	15,651	764	52,450	29,860	3,594	2,976	11,827	4,193	16,019	6,283	1,310	8,426		
2009	402,931	47,572	30,560	17,013	16,571	606	282,393	221,104	39,573	9,567	11,464	685	54,909	31,741	3,679	3,033	12,056	4,400	17,452	7,097	1,258	9,097		
2010	401,673	50,185	31,584	18,601	18,187	683	275,610	215,554	33,786	10,880	14,357	1,033	57,383	34,263	3,629	2,917	12,114	4,460	17,812	7,008	1,250	9,555		
2011	412,503	51,809	33,830	17,978	17,593	672	284,667	227,881	30,306	10,768	14,859	854	58,163	34,597	3,499	2,902	12,684	4,482	17,193	6,354	1,290	9,549		
2012	412,127	49,560	32,331	17,229	16,849	632	287,271	230,646	29,103	11,048	15,871	602	57,877	33,234	3,384	3,012	13,591	4,656	16,788	5,930	1,298	9,560		
2013	424,610	47,783	31,246	16,537	16,178	580	301,673	243,102	27,463	12,580	17,580	947	57,566	31,650	3,407	3,156	14,383	4,969	17,009	5,584	1,351	10,074		

TABLE 2. U.S. research and development expenditures, by performing sector and source of funds: 1953–2016

Year	All performers		Federal			Nonfederal government		Business <sup>d</sup>					Higher education <sup>e</sup>				Other nonprofit organizations <sup>f</sup>					
	All federal	intragovernmental <sup>a</sup>	FFRDCs <sup>b</sup>					Own		Other domestic		Foreign		Nonfederal government		Higher education		Other nonprofit organizations				
	Total	Federal	Total	Federal	Total	Federal	Total	domestic	Federal	business	business	Other	Total	Federal	ment	ness	ed-ucation	ONP	Total	Federal	ness	ONP
2014	436,844	48,411	31,961	16,451	16,101	536	313,077	254,771	24,399	12,154	20,714	1,039	57,293	30,433	3,413	3,309	14,901	5,238	17,527	5,637	1,397	10,493
2015 <sup>g</sup>	450,080	49,378	32,427	16,951	16,622	555	323,437	263,508	24,534	13,267	20,999	1,129	58,768	30,493	3,429	3,492	15,756	5,598	17,942	5,625	1,429	10,888
2016 <sup>h</sup>	457,715	51,572	34,106	17,466	17,135	585	326,482	266,927	22,184	14,127	22,041	1,202	60,602	30,700	3,480	3,647	16,771	6,004	18,474	5,728	1,442	11,304

NA = not available.

FFRDC = federally funded research and development center; ONP = other nonprofit organization.

<sup>a</sup> Includes expenditures for federal intramural R&D as well as costs associated with administering extramural R&D.

<sup>b</sup> The R&D expenditures of FFRDCs are chiefly federally funded; the small remainder (\$362 million of the \$18.6 billion total in 2015) reflects funding from state or local government, businesses, other nonprofit organizations, and other sources (see Table 6 for further detail on this nonfederal funding). Before 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 includes 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.

<sup>c</sup> State intramural R&D performance includes state agency and department employees and also services performed by others in support of internal R&D projects. 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.

<sup>d</sup> R&D performed in the domestic United States by all companies with five or more employees, 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). Before 2008, the data distinguished only federally and nonfederally funded business R&D; for these years, the own 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 (\$16.3 billion in 2015) and funding from U.S. businesses' foreign subsidiaries (\$6.8 billion in 2015). 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.

<sup>e</sup> Before 2003, higher education R&D covered only 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 \$3.7 billion in 2015.) 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 academic institutions to other academic and nonacademic (businesses, nonprofit organizations, others) subrecipients. (In FY 1998, the total of pass-through funds reported was \$994 million, with \$479 million to other academic recipients and \$337 million nonacademic recipients. In FY 2015, total pass-through was \$5.640 billion, with \$3.107 billion to other academic recipients and \$2.537 billion to nonacademic recipients.) 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 2015, \$4.139 billion was from nonprofit organizations, and \$2.020 billion was from these unclassified other sources).

<sup>f</sup> The data on other nonprofit R&D funded by the federal government come from NSF's annual Federal Funds for R&D survey. The other nonprofit R&D 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.

<sup>g</sup> Some data for 2015 are preliminary and may later be revised.

<sup>h</sup> The data for 2016 are estimates and will later be revised.

NOTES: Detail may not add to total because of 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, Survey of State Government R&D. R&D expenditures by business performers—and, before 2001, also 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 afterwards, 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).