TABLE 9

U.S. experimental development expenditures, by source of funds and performing sector: 1953–2022

(Millions of current and of constant 2017 dollars)

Year	All funding sources	Federal							Nonfederal government					Business					Higher education		NPOs				
	All performers	Total	Federal intramural	FFRDC	Nonfederal government	Business	Higher education	NPO	Total	FFRDC	Nonfederal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	97	151	NA	NA	43	109
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	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	120	183	NA	NA	49	134

TABLE 9

U.S. experimental development expenditures, by source of funds and performing sector: 1953–2022

(Millions of current and of constant 2017 dollars)

Year	All funding sources	Federal							Nonfederal government					Business					Higher education		NPOs				
	All performers	Total	Federal intramural	FFRDC	Nonfederal government	Business	Higher education	NPO	Total	FFRDC	Nonfederal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
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	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	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	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	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	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	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	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	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	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	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	305	538	NA	NA	115	423
1997	128,661	32,256	9,077	3,331	NA	18,121	1,041	687	120	NA	NA	NA	120	95,331	NA	95,063	113	155	306	306	648	NA	NA	112	536
1998	144,669	32,684	9,214	3,314	NA	18,452	943	760	113	NA	NA	NA	113	110,865	NA	110,589	112	164	306	306	702	NA	NA	110	592
1999	154,315	30,584	9,265	3,335	NA	16,571	686	727	117	NA	NA	NA	117	122,530	NA	122,236	116	178	325	325	759	NA	NA	118	641
2000	169,414	27,493	9,377	3,482	NA	13,510	545	580	123	NA	NA	NA	123	140,549	NA	140,235	119	195	352	352	897	NA	NA	127	771
2001	167,975	28,690	11,062	3,566	NA	12,542	646	874	132	4	NA	NA	128	137,749	24	137,410	117	197	381	381	1,024	37	NA	136	850
2002	176,971	30,199	11,800	3,763	NA	13,061	639	937	143	3	NA	NA	140	145,048	14	144,727	116	191	425	425	1,155	28	NA	151	976
2003	175,559	30,190	12,646	3,964	NA	11,939	897	743	158	2	NA	NA	155	143,443	9	143,121	118	195	467	467	1,301	17	NA	162	1,122
2004	177,030	34,131	12,746	4,454	NA	14,419	1,211	1,300	164	3	NA	NA	161	140,947	13	140,615	120	199	481	481	1,307	17	NA	167	1,123
2005	195,621	36,475	13,994	4,611	NA	15,512	1,146	1,211	163	5	NA	NA	158	157,053	23	156,696	122	212	501	501	1,428	30	NA	170	1,228
2006	212,857	38,888	16,089	4,547	2	16,720	927	603	167	6	5	NA	156	171,780	36	171,392	126	226	520	520	1,502	41	NA	173	1,287
2007	227,740	39,378	18,016	5,037	3	14,860	894	568	177	8	6	NA	163	185,985	42	185,569	133	240	540	540	1,660	51	NA	186	1,423
2008	259,579	54,540	17,566	6,078	4	29,488	841	562	417	7	7	223	179	201,848	45	201,406	148	250	589	589	2,186	47	330	209	1,600
2009	255,945	55,927	17,245	6,147	5	30,435	1,545	550	443	8	9	144	283	196,175	39	195,614	281	241	892	892	2,509	46	361	362	1,740
2010	251,239	56,937	18,844	6,909	6	28,089	2,452	638	531	11	10	114	397	189,540	40	188,850	408	242	1,186	1,186	3,044	45	647	498	1,854
2011	270,804	58,289	21,879	6,786	6	26,228	2,600	790	638	6	10	230	392	207,738	41	207,025	416	256	1,280	1,280	2,859	39	403	521	1,897
2012	273,078	55,563	19,941	6,632	6	25,840	2,626	518	489	10	9	102	368	212,701	43	211,949	445	263	1,455	1,455	2,871	40	310	579	1,941
2013	286,998	51,548	19,767	6,572	6	22,137	2,592	474	532	11	8	126	387	230,025	49	229,213	484	280	1,592	1,592	3,301	36	532	619	2,115
2014	301,441	48,087	20,303	6,681	6	18,065	2,562	471	501	7	8	87	400	247,492	57	246,601	537	296	1,726	1,726	3,636	36	624	692	2,284
2015	312,982	47,834	18,961	7,063	6	18,850	2,533	422	504	6	8	90	401	258,753	61	257,831	554	307	1,850	1,850	4,041	41	786	774	2,440
2016	324,729	43,213	15,838	7,479	7	16,790	2,580	520	659	8	11	129	420	274,937	64	273,926	562	386	2,021	1,957	3,899	50	760	861	2,228
2017	350,126	44,912	15,848	8,021	9	17,736	2,670	628	651	11	12	92	447	298,820	64	297,747	607	401	2,150	2,091	3,593	51	560	927	2,055
2018	387,827	48,512	18,856	8,567	9	17,301	2,796	983	685	15	12	85	485	332,750	65	331,637	625	423	2,245	2,191	3,635	54	748	910	1,923
2019	430,323	49,081	21,253	8,962	13	15,058	3,074	721	727	17	16	112	491	374,798	60	373,631	634	472	2,264	2,211	3,452	56	617	874	1,906

TABLE 9

U.S. experimental development expenditures, by source of funds and performing sector: 1953–2022

(Millions of current and of constant 2017 dollars)

Year	All funding sources	Federal							Nonfederal government					Business					Higher education		NPOs				
	All performers	Total	Federal intramural	FFRDC	Nonfederal government	Business	Higher education	NPO	Total	FFRDC	Nonfederal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
2020	472,545	58,651	22,356	9,379	19	21,666	3,391	1,840	764	15	22	134	492	407,321	62	406,060	658	539	2,320	2,267	3,490	58	618	882	1,931
2021[a]	526,408	57,896	23,728	9,915	20	18,690	3,650	1,894	823	14	23	211	505	461,034	79	459,578	719	656	2,489	2,429	4,165	56	592	911	2,606
2022[b]	596,199	62,478	25,703	10,208	18	20,779	3,867	1,904	831	10	20	223	505	526,035	96	524,496	782	659	2,637	2,576	4,220	41	627	932	2,619
Constant 2017 $millions																									
1953	25,370	13,103	4,213	353	NA	8,351	63	123	21	NA	NA	NA	21	12,174	NA	12,121	7	45	20	20	52	NA	NA	7	45
1954	27,513	14,932	3,957	453	NA	10,353	63	107	25	NA	NA	NA	25	12,475	NA	12,416	7	52	23	23	59	NA	NA	7	52
1955	29,806	17,034	3,931	1,235	NA	11,698	83	87	28	NA	NA	NA	28	12,662	NA	12,594	11	58	23	23	58	NA	NA	7	51
1956	41,022	24,951	4,418	2,435	NA	17,930	95	74	31	NA	NA	NA	31	15,956	NA	15,886	14	56	25	25	60	NA	NA	11	49
1957	45,315	30,367	4,934	2,910	NA	22,384	81	58	36	NA	NA	NA	36	14,816	NA	14,745	17	54	29	29	68	NA	NA	14	54
1958	47,832	32,759	5,580	2,556	NA	24,480	83	60	37	NA	NA	NA	37	14,934	NA	14,861	20	53	29	29	73	NA	NA	13	60
1959	55,360	38,407	6,149	3,117	NA	28,952	101	88	39	NA	NA	NA	39	16,805	NA	16,727	20	59	30	30	78	NA	NA	13	65
1960	60,405	41,235	6,470	3,608	NA	30,971	123	65	41	NA	NA	NA	41	19,022	NA	18,941	16	65	30	30	77	NA	NA	13	65
1961	63,410	42,790	6,957	4,278	NA	31,395	137	22	44	NA	NA	NA	44	20,440	NA	20,364	13	64	33	33	102	NA	NA	13	89
1962	63,809	43,037	7,741	3,899	NA	31,227	142	28	49	NA	NA	NA	49	20,561	NA	20,479	13	69	36	36	126	NA	NA	13	114
1963	71,978	49,622	9,138	4,167	NA	36,146	137	34	49	NA	NA	NA	49	22,131	NA	22,050	12	69	38	38	137	NA	NA	12	125
1964	76,836	52,899	10,322	4,540	NA	37,822	181	34	49	NA	NA	NA	49	23,722	NA	23,642	12	68	40	40	126	NA	NA	15	111
1965	79,732	52,741	10,791	4,067	NA	37,516	290	78	52	NA	NA	NA	52	26,746	NA	26,662	12	72	47	47	145	NA	NA	24	121
1966	85,039	55,553	11,069	3,835	NA	40,197	358	94	55	NA	NA	NA	55	29,210	NA	29,116	12	82	57	57	164	NA	NA	29	135
1967	87,445	54,304	11,082	4,024	NA	38,756	374	68	48	NA	NA	NA	48	32,861	NA	32,761	14	86	57	57	174	NA	NA	37	137
1968	88,369	53,368	10,416	3,958	NA	38,535	391	68	42	NA	NA	NA	42	34,716	NA	34,607	22	88	51	51	191	NA	NA	49	142
1969	88,915	51,353	10,511	4,127	NA	36,211	415	89	37	NA	NA	NA	37	37,285	NA	37,165	26	94	41	41	198	NA	NA	52	146
1970	83,834	46,474	11,184	3,911	NA	30,869	414	97	32	NA	NA	NA	32	37,095	NA	36,981	25	89	35	35	198	NA	NA	50	149
1971	82,022	45,071	11,656	3,962	NA	29,073	325	54	37	NA	NA	NA	37	36,677	NA	36,569	19	90	41	41	196	NA	NA	40	156
1972	84,697	45,824	11,926	3,897	NA	29,521	282	197	56	NA	NA	NA	56	38,557	NA	38,455	16	86	61	61	199	NA	NA	41	158
1973	86,524	44,171	11,384	3,684	NA	28,365	302	437	75	NA	NA	NA	75	41,975	NA	41,868	21	86	86	86	216	NA	NA	54	163
1974	84,520	41,294	10,869	3,862	NA	25,756	293	515	79	NA	NA	NA	79	42,826	NA	42,715	26	85	96	96	225	NA	NA	59	166
1975	81,676	39,543	10,395	3,968	NA	24,400	297	484	80	NA	NA	NA	80	41,729	NA	41,616	29	84	99	99	226	NA	NA	58	169
1976	85,529	41,035	10,132	4,482	NA	25,646	339	435	82	NA	NA	NA	82	44,074	NA	43,949	39	86	106	106	232	NA	NA	55	178
1977	88,814	42,223	10,233	4,553	NA	26,563	491	382	89	NA	NA	NA	89	46,128	NA	45,994	47	88	129	129	245	NA	NA	59	186
1978	93,141	43,137	11,026	4,752	NA	26,260	761	338	96	NA	NA	NA	96	49,498	NA	49,365	43	89	147	147	263	NA	NA	70	193
1979	98,161	44,487	10,922	4,854	NA	27,383	932	396	95	NA	NA	NA	95	53,151	NA	53,019	43	89	154	154	274	NA	NA	76	198
1980	103,496	44,670	10,344	5,103	NA	27,830	919	475	97	NA	NA	NA	97	58,278	NA	58,141	49	88	172	172	279	NA	NA	78	201
1981	107,445	46,969	10,512	5,047	NA	29,680	895	835	101	NA	NA	NA	101	59,905	NA	59,763	55	87	185	185	285	NA	NA	81	204

TABLE 9

U.S. experimental development expenditures, by source of funds and performing sector: 1953–2022

(Millions of current and of constant 2017 dollars)

Year	All funding sources	Federal							Nonfederal government					Business					Higher education		NPOs				
	All performers	Total	Federal intramural	FFRDC	Nonfederal government	Business	Higher education	NPO	Total	FFRDC	Nonfederal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
1982	113,374	48,783	11,316	4,742	NA	31,065	869	792	100	NA	NA	NA	100	64,000	NA	63,853	58	88	193	193	299	NA	NA	85	214
1983	121,491	52,278	12,840	5,016	NA	32,642	840	940	99	NA	NA	NA	99	68,592	NA	68,435	65	92	205	205	318	NA	NA	90	228
1984	134,899	57,482	14,367	5,221	NA	35,805	882	1,207	104	NA	NA	NA	104	76,755	NA	76,584	75	96	219	219	339	NA	NA	94	245
1985	146,622	63,560	15,761	5,717	NA	39,858	956	1,267	113	NA	NA	NA	113	82,353	NA	82,167	85	101	236	236	360	NA	NA	97	263
1986	146,300	65,562	15,959	5,982	NA	41,499	990	1,131	126	NA	NA	NA	126	79,962	NA	79,758	97	107	263	263	388	NA	NA	102	287
1987	150,429	69,054	15,387	6,250	NA	45,399	1,127	892	138	NA	NA	NA	138	80,521	NA	80,301	107	112	292	292	424	NA	NA	114	311
1988	153,735	67,781	16,114	6,538	NA	43,119	1,269	741	150	NA	NA	NA	150	85,015	NA	84,777	120	117	326	326	463	NA	NA	130	333
1989	153,457	61,786	16,366	6,359	NA	36,822	1,353	887	160	NA	NA	NA	160	90,654	NA	90,399	133	122	358	358	498	NA	NA	142	356
1990	158,617	57,093	16,357	6,177	NA	31,981	1,534	1,044	168	NA	NA	NA	168	100,445	NA	100,178	140	127	382	382	531	NA	NA	150	381
1991	155,121	50,922	14,317	5,631	NA	28,145	1,650	1,178	168	NA	NA	NA	168	103,078	NA	102,805	140	133	391	391	563	NA	NA	153	409
1992	159,169	50,256	14,508	5,459	NA	27,399	1,682	1,209	168	NA	NA	NA	168	107,750	NA	107,464	145	140	392	392	603	NA	NA	159	444
1993	155,320	46,819	14,131	4,652	NA	25,054	1,756	1,225	170	NA	NA	NA	170	107,279	NA	106,980	152	148	404	404	649	NA	NA	167	482
1994	157,003	46,073	13,457	4,800	NA	24,722	1,850	1,243	173	NA	NA	NA	173	109,642	NA	109,329	155	157	420	420	694	NA	NA	170	524
1995	168,928	48,456	13,836	5,120	NA	26,627	1,762	1,111	183	NA	NA	NA	183	119,120	NA	118,792	162	166	430	430	739	NA	NA	169	570
1996	178,065	46,026	13,252	5,059	NA	25,037	1,655	1,023	188	NA	NA	NA	188	130,614	NA	130,269	169	176	448	448	789	NA	NA	168	621
1997	185,552	46,519	13,090	4,803	NA	26,134	1,502	990	174	NA	NA	NA	174	137,483	NA	137,097	163	223	442	442	935	NA	NA	161	774
1998	206,319	46,612	13,141	4,727	NA	26,315	1,345	1,084	161	NA	NA	NA	161	158,110	NA	157,716	159	234	436	436	1,001	NA	NA	157	844
1999	217,005	43,009	13,029	4,690	NA	23,303	965	1,022	165	NA	NA	NA	165	172,307	NA	171,894	163	250	457	457	1,067	NA	NA	166	901
2000	232,960	37,806	12,894	4,788	NA	18,578	749	797	168	NA	NA	NA	168	193,268	NA	192,836	163	268	484	484	1,234	NA	NA	174	1,060
2001	225,895	38,582	14,876	4,796	NA	16,867	869	1,175	178	5	NA	NA	173	185,246	33	184,791	158	265	512	512	1,377	50	NA	183	1,143
2002	234,351	39,991	15,626	4,983	NA	17,296	846	1,240	189	4	NA	NA	185	192,078	18	191,653	154	253	563	563	1,530	37	NA	200	1,293
2003	227,981	39,205	16,422	5,148	NA	15,504	1,165	965	205	3	NA	NA	202	186,275	12	185,857	153	254	606	606	1,690	22	NA	211	1,457
2004	223,870	43,162	16,119	5,632	NA	18,234	1,532	1,645	208	4	NA	NA	204	178,240	16	177,820	151	252	608	608	1,653	22	NA	211	1,420
2005	239,860	44,723	17,159	5,654	NA	19,020	1,406	1,484	200	7	NA	NA	194	192,570	29	192,132	150	260	614	614	1,752	37	NA	208	1,506
2006	253,185	46,256	19,138	5,408	3	19,888	1,102	717	199	8	6	NA	186	204,326	42	203,865	150	269	618	618	1,786	49	NA	206	1,531
2007	263,743	45,603	20,864	5,833	4	17,209	1,036	657	205	9	7	NA	189	215,387	49	214,905	154	278	626	626	1,922	59	NA	216	1,648
2008	294,933	61,968	19,959	6,906	5	33,504	956	639	474	8	8	254	203	229,339	51	228,837	168	284	669	669	2,484	53	375	237	1,818
2009	289,022	63,154	19,474	6,941	6	34,368	1,745	621	501	9	10	162	319	221,527	44	220,894	318	272	1,007	1,007	2,833	51	408	408	1,965
2010	280,300	63,523	21,023	7,708	7	31,338	2,736	711	593	12	11	127	443	211,465	44	210,695	455	270	1,323	1,323	3,397	50	722	556	2,069
2011	296,022	63,717	23,917	7,418	7	28,670	2,842	864	697	7	11	251	428	227,083	45	226,304	455	280	1,399	1,399	3,125	42	441	569	2,073
2012	293,051	59,626	21,400	7,117	7	27,730	2,818	556	525	11	10	110	395	228,258	46	227,451	478	283	1,561	1,561	3,080	43	333	621	2,083
2013	302,834	54,393	20,858	6,935	6	23,359	2,735	500	561	12	9	133	408	242,718	52	241,861	510	295	1,679	1,679	3,483	38	561	653	2,232
2014	312,630	49,872	21,056	6,929	6	18,736	2,657	489	519	7	8	90	414	256,678	60	255,755	557	307	1,790	1,790	3,771	37	647	717	2,369
2015	321,615	49,153	19,484	7,258	6	19,370	2,602	434	518	6	8	92	412	265,890	63	264,942	569	316	1,901	1,901	4,152	43	808	795	2,507

TABLE 9

U.S. experimental development expenditures, by source of funds and performing sector: 1953–2022

(Millions of current and of constant 2017 dollars)

Year	All funding sources	Federal							Nonfederal government					Business					Higher education		NPOs				
	All performers	Total	Federal intramural	FFRDC	Nonfederal government	Business	Higher education	NPO	Total	FFRDC	Nonfederal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
2016	330,544	43,987	16,122	7,612	7	17,090	2,626	529	671	8	11	132	427	279,861	65	278,832	572	392	2,057	1,992	3,969	51	773	876	2,268
2017	350,126	44,912	15,848	8,021	9	17,736	2,670	628	651	11	12	92	447	298,820	64	297,747	607	401	2,150	2,091	3,593	51	560	927	2,055
2018	379,141	47,425	18,433	8,375	9	16,914	2,733	961	670	15	12	83	474	325,298	63	324,210	611	413	2,195	2,142	3,553	53	731	889	1,880
2019	413,741	47,190	20,434	8,616	13	14,478	2,956	693	699	16	15	107	472	360,355	57	359,234	609	454	2,177	2,125	3,319	53	593	840	1,833
2020	448,414	55,656	21,215	8,900	18	20,560	3,218	1,746	725	14	21	128	467	386,520	59	385,324	624	512	2,202	2,151	3,312	55	587	837	1,832
2021[a]	477,628	52,531	21,529	8,996	18	16,958	3,311	1,718	747	13	20	191	458	418,312	72	416,992	652	595	2,258	2,204	3,779	51	537	827	2,364
2022[b]	505,369	52,959	21,787	8,652	15	17,613	3,278	1,614	704	9	17	189	428	445,894	82	444,590	663	559	2,235	2,184	3,577	35	532	790	2,220

NA = not available.

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

[a] Some data for 2021 are preliminary and may be revised later.

[b] The data for 2022 include estimates and are likely to be revised later.

Note(s):
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 NPOs. 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 further detail on the R&D performers listed, see table 2, footnotes a–f. For detail on type-of-R&D data, see table 3, footnotes b–f. 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. Data are based on reports by performers in the National Center for Science and Engineering Statistics annual surveys on R&D expenditures: Business Enterprise Research and Development Survey, Annual Business Survey, Higher Education Research and Development Survey, Survey of Federal Funds for Research and Development, FFRDC Research and Development Survey, and Survey of State Government Research and Development. R&D expenditures by business performers—and, before 2001, also industry-administered FFRDCs—were collected on a calendar year basis. Expenditures for other performers are calendar year approximations based on fiscal year data. (See also table 5, general notes.)

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