TABLE 3

U.S. basic research expenditures, by performing sector and source of funds: 1953–2023

(Millions of current and of constant 2017 dollars)

Year	All performers	All federal	Federal intramural[a]	FFRDCs[b]		Nonfederal government[c]		Business[d]							Higher education[e]						NPOs[f]			
	All funding sources	Total	Federal	Total	Federal	Total	Federal	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
Current $millions																								
1953	460	138	102	36	36	NA	NA	151	132	19	NA	NA	NA	NA	123	82	7	13	6	16	48	27	9	12
1954	509	141	96	45	45	NA	NA	166	143	23	NA	NA	NA	NA	148	97	10	15	8	18	55	31	11	13
1955	570	160	98	62	62	NA	NA	169	162	7	NA	NA	NA	NA	180	117	14	17	12	21	62	35	13	14
1956	718	203	114	89	89	NA	NA	223	216	7	NA	NA	NA	NA	220	143	19	20	15	24	73	41	15	17
1957	813	234	124	110	110	NA	NA	234	230	4	NA	NA	NA	NA	261	167	25	23	20	27	86	48	15	23
1958	943	264	149	115	115	NA	NA	266	252	14	NA	NA	NA	NA	312	202	31	24	24	31	102	58	16	28
1959	1,087	298	165	134	134	NA	NA	282	248	34	NA	NA	NA	NA	388	263	38	24	28	36	119	71	18	30
1960	1,286	334	184	150	150	NA	NA	333	297	36	NA	NA	NA	NA	485	341	45	25	33	41	135	84	21	30
1961	1,511	407	230	177	177	NA	NA	344	314	30	NA	NA	NA	NA	598	432	54	25	40	48	163	104	22	37
1962	1,824	441	252	189	189	NA	NA	449	345	104	NA	NA	NA	NA	737	546	64	25	48	55	198	128	24	46
1963	2,115	501	285	216	216	NA	NA	484	375	109	NA	NA	NA	NA	909	689	75	25	58	63	222	147	25	50
1964	2,396	584	339	245	245	NA	NA	507	384	123	NA	NA	NA	NA	1,071	824	84	25	70	68	235	163	25	47
1965	2,664	625	375	250	250	NA	NA	563	406	157	NA	NA	NA	NA	1,221	944	94	27	86	70	256	175	29	52
1966	2,930	683	410	273	273	NA	NA	593	451	142	NA	NA	NA	NA	1,380	1,066	104	29	106	75	274	184	32	58
1967	3,168	735	434	301	301	NA	NA	595	427	168	NA	NA	NA	NA	1,554	1,188	114	34	136	83	285	190	34	61
1968	3,376	797	482	315	315	NA	NA	607	462	145	NA	NA	NA	NA	1,681	1,265	131	38	156	91	292	192	37	63
1969	3,491	858	545	313	313	NA	NA	581	458	123	NA	NA	NA	NA	1,754	1,288	153	40	171	103	298	188	43	67
1970	3,594	866	562	304	304	NA	NA	566	444	122	NA	NA	NA	NA	1,855	1,323	179	43	196	115	307	191	44	72
1971	3,720	870	581	289	289	NA	NA	557	456	101	NA	NA	NA	NA	1,968	1,385	194	50	214	127	326	204	45	77
1972	3,850	915	603	313	313	NA	NA	554	463	91	NA	NA	NA	NA	2,038	1,437	195	55	216	134	344	213	47	84
1973	4,099	1,034	652	382	382	NA	NA	595	499	96	NA	NA	NA	NA	2,103	1,489	196	59	223	137	368	229	49	90
1974	4,511	1,182	715	467	467	NA	NA	650	536	114	NA	NA	NA	NA	2,282	1,609	204	66	250	153	397	242	54	102
1975	4,875	1,292	760	533	533	NA	NA	677	573	104	NA	NA	NA	NA	2,480	1,768	212	72	264	164	426	251	59	116
1976	5,373	1,479	850	629	629	NA	NA	750	634	116	NA	NA	NA	NA	2,675	1,924	218	75	283	175	470	274	65	131
1977	6,008	1,689	943	746	746	NA	NA	836	701	135	NA	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	NA	941	785	156	NA	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	NA	1,054	893	161	NA	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	NA	1,205	1,035	170	NA	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	NA	1,477	1,313	164	NA	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	NA	1,776	1,523	253	NA	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	NA	2,106	1,760	346	NA	NA	NA	NA	5,518	3,689	396	260	816	358	863	426	127	311
1984	13,332	3,731	1,877	1,854	1,854	NA	NA	2,472	2,132	340	NA	NA	NA	NA	6,145	4,087	436	313	915	395	984	494	139	351

TABLE 3

U.S. basic research expenditures, by performing sector and source of funds: 1953–2023

(Millions of current and of constant 2017 dollars)

Year	All performers	All federal	Federal intramural[a]	FFRDCs[b]		Nonfederal government[c]		Business[d]							Higher education[e]						NPOs[f]			
	All funding sources	Total	Federal	Total	Federal	Total	Federal	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
1985	14,748	3,884	1,947	1,936	1,936	NA	NA	2,731	2,373	358	NA	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	NA	3,930	3,496	434	NA	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	NA	4,181	3,583	598	NA	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	NA	4,163	3,507	656	NA	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	NA	4,818	3,832	986	NA	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	NA	4,629	3,760	869	NA	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	NA	7,376	6,125	1,251	NA	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	NA	6,528	5,816	712	NA	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	NA	6,427	5,961	466	NA	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	NA	6,514	6,078	436	NA	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	NA	5,569	5,379	190	NA	NA	NA	NA	15,146	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	NA	7,498	6,848	650	NA	NA	NA	NA	16,042	10,092	1,149	1,032	2,740	1,028	3,187	1,248	428	1,510
1997	36,717	6,150	2,746	3,404	3,404	NA	NA	9,795	8,766	1,029	NA	NA	NA	NA	17,449	10,758	1,233	1,161	3,150	1,147	3,322	1,317	449	1,557
1998	34,842	6,444	3,003	3,441	3,441	NA	NA	5,853	4,851	1,002	NA	NA	NA	NA	18,891	11,567	1,292	1,278	3,495	1,259	3,654	1,461	477	1,717
1999	38,282	7,066	3,347	3,719	3,719	NA	NA	6,645	5,537	1,108	NA	NA	NA	NA	20,462	12,456	1,386	1,375	3,848	1,396	4,110	1,734	517	1,860
2000	42,033	7,801	3,765	4,037	4,037	NA	NA	7,040	6,115	925	NA	NA	NA	NA	22,290	13,469	1,501	1,453	4,314	1,553	4,902	2,099	566	2,236
2001	46,363	8,353	4,260	4,092	3,925	NA	NA	8,053	7,299	754	NA	NA	NA	NA	24,455	14,919	1,606	1,467	4,759	1,704	5,503	2,464	571	2,467
2002	50,400	9,349	4,511	4,839	4,612	NA	NA	7,547	6,659	888	NA	NA	NA	NA	27,543	17,139	1,745	1,456	5,311	1,891	5,962	2,575	554	2,833
2003	54,823	9,739	4,664	5,074	4,858	NA	NA	8,330	6,944	1,386	NA	NA	NA	NA	30,217	19,220	1,893	1,436	5,692	1,978	6,537	2,714	567	3,256
2004	56,379	9,673	4,697	4,976	4,837	NA	NA	7,835	6,763	1,072	NA	NA	NA	NA	32,246	20,730	2,000	1,483	5,965	2,067	6,626	2,788	578	3,259
2005	59,899	9,902	4,770	5,132	4,995	NA	NA	8,667	7,559	1,108	NA	NA	NA	NA	34,248	21,786	2,068	1,600	6,568	2,226	7,082	2,902	614	3,565
2006	61,552	9,938	4,716	5,222	5,074	46	16	8,384	6,940	1,444	NA	NA	NA	NA	35,944	22,270	2,191	1,765	7,288	2,431	7,240	2,849	656	3,735
2007	66,488	9,938	4,621	5,317	5,166	58	20	11,268	8,488	2,780	NA	NA	NA	NA	37,568	22,546	2,400	1,956	7,932	2,733	7,656	2,829	698	4,130
2008	70,468	10,459	4,957	5,502	5,336	73	26	12,369	9,741	1,475	12	484	639	18	39,127	22,954	2,573	2,131	8,467	3,002	8,441	3,073	724	4,643
2009	74,409	11,508	5,441	6,067	5,907	90	33	14,784	11,999	1,340	13	662	736	34	38,780	23,034	2,457	1,996	8,258	3,035	9,248	3,498	698	5,051
2010	76,475	11,747	5,111	6,637	6,475	103	39	16,371	13,239	1,406	10	722	935	58	38,756	23,690	2,277	1,785	8,016	2,989	9,498	3,414	703	5,381
2011	73,691	11,522	5,047	6,475	6,333	103	41	13,020	10,585	677	21	745	954	38	39,717	24,111	2,245	1,807	8,512	3,043	9,329	3,081	744	5,504
2012	73,992	11,150	5,489	5,661	5,530	99	40	13,294	10,955	644	10	710	946	29	39,959	23,432	2,202	1,869	9,257	3,200	9,490	3,092	764	5,634
2013	79,255	9,519	5,330	4,188	4,085	92	38	19,508	14,986	1,196	21	1,446	1,771	88	40,156	22,602	2,208	1,979	9,927	3,442	9,981	3,031	813	6,137
2014	82,894	9,875	5,705	4,170	4,077	99	42	21,936	15,805	2,044	17	1,584	2,367	119	40,406	22,085	2,242	2,091	10,352	3,637	10,579	3,090	859	6,629
2015	84,428	10,017	5,890	4,127	4,043	100	42	21,792	15,933	2,038	14	1,565	2,123	120	41,514	22,193	2,299	2,211	10,985	3,826	11,005	3,034	891	7,080
2016	87,494	10,315	6,119	4,196	4,112	93	38	25,053	18,792	2,037	20	1,535	2,551	117	42,897	22,588	2,359	2,296	11,606	4,050	9,135	3,988	716	4,141
2017	90,118	10,388	6,259	4,128	4,054	100	41	25,617	18,299	1,853	17	2,085	3,260	103	44,811	23,345	2,392	2,417	12,278	4,379	9,204	3,726	844	4,322

TABLE 3

U.S. basic research expenditures, by performing sector and source of funds: 1953–2023

(Millions of current and of constant 2017 dollars)

Year	All performers	All federal	Federal intramural[a]	FFRDCs[b]		Nonfederal government[c]		Business[d]							Higher education[e]						NPOs[f]			
	All funding sources	Total	Federal	Total	Federal	Total	Federal	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
2018	97,803	11,096	6,827	4,269	4,188	107	45	29,204	21,100	2,535	12	2,069	3,377	112	47,305	24,487	2,454	2,605	13,001	4,758	10,092	4,274	989	4,494
2019	104,880	11,932	7,352	4,580	4,501	120	52	32,582	24,558	2,349	15	2,062	3,513	86	49,309	25,467	2,535	2,731	13,627	4,950	10,936	4,760	1,157	4,660
2020	111,637	12,105	7,316	4,789	4,714	125	54	36,371	27,909	2,200	23	2,311	3,827	101	50,821	26,499	2,624	2,744	14,061	4,894	12,215	5,169	1,452	5,183
2021	118,624	11,683	6,610	5,074	4,999	120	53	40,845	31,364	2,404	39	2,643	4,297	97	54,042	28,673	2,737	2,883	14,855	4,895	11,934	4,645	1,404	5,604
2022[g]	130,252	13,247	7,859	5,388	5,312	121	54	43,355	34,448	2,480	21	2,428	3,893	86	59,619	31,605	2,948	3,139	16,609	5,320	13,910	5,556	1,829	6,090
2023[h]	138,161	13,850	7,966	5,885	5,799	121	54	45,735	36,224	2,637	22	2,613	4,146	92	64,474	33,957	3,148	3,333	18,212	5,823	13,981	5,585	1,839	6,121
Constant 2017 $millions																								
1953	3,417	1,023	755	268	268	NA	NA	1,123	982	141	NA	NA	NA	NA	915	606	48	97	45	119	357	201	67	89
1954	3,747	1,035	707	328	328	NA	NA	1,223	1,054	169	NA	NA	NA	NA	1,087	711	70	111	62	133	402	225	81	96
1955	4,130	1,156	706	449	449	NA	NA	1,224	1,174	51	NA	NA	NA	NA	1,301	844	101	123	84	149	449	254	94	101
1956	5,029	1,419	795	624	624	NA	NA	1,560	1,513	47	NA	NA	NA	NA	1,541	998	133	137	108	165	508	284	105	119
1957	5,518	1,584	841	743	743	NA	NA	1,587	1,560	27	NA	NA	NA	NA	1,767	1,129	168	153	134	183	580	322	102	156
1958	6,254	1,751	988	763	763	NA	NA	1,761	1,671	90	NA	NA	NA	NA	2,069	1,340	206	159	159	206	673	381	106	186
1959	7,110	1,949	1,076	873	873	NA	NA	1,844	1,622	222	NA	NA	NA	NA	2,538	1,717	246	157	186	232	778	464	118	196
1960	8,296	2,152	1,184	968	968	NA	NA	2,146	1,917	230	NA	NA	NA	NA	3,127	2,197	290	158	216	265	871	542	136	194
1961	9,649	2,596	1,466	1,130	1,130	NA	NA	2,200	2,005	195	NA	NA	NA	NA	3,816	2,755	343	160	254	303	1,038	661	140	236
1962	11,509	2,782	1,590	1,192	1,192	NA	NA	2,834	2,177	658	NA	NA	NA	NA	4,647	3,442	402	158	302	344	1,246	804	151	290
1963	13,193	3,122	1,774	1,347	1,347	NA	NA	3,021	2,339	682	NA	NA	NA	NA	5,666	4,297	467	153	359	390	1,385	917	156	312
1964	14,720	3,588	2,083	1,505	1,505	NA	NA	3,115	2,359	756	NA	NA	NA	NA	6,577	5,059	518	154	428	418	1,441	998	154	289
1965	16,073	3,768	2,260	1,508	1,508	NA	NA	3,397	2,450	947	NA	NA	NA	NA	7,364	5,693	570	160	519	422	1,545	1,056	175	314
1966	17,196	4,009	2,406	1,602	1,602	NA	NA	3,480	2,647	833	NA	NA	NA	NA	8,099	6,256	608	170	625	440	1,608	1,080	188	340
1967	18,065	4,189	2,472	1,717	1,717	NA	NA	3,394	2,435	958	NA	NA	NA	NA	8,860	6,773	649	191	774	473	1,623	1,081	194	348
1968	18,468	4,357	2,637	1,720	1,720	NA	NA	3,320	2,527	793	NA	NA	NA	NA	9,193	6,920	715	205	855	498	1,597	1,050	202	345
1969	18,203	4,475	2,843	1,632	1,632	NA	NA	3,030	2,388	641	NA	NA	NA	NA	9,144	6,714	797	206	893	535	1,554	980	224	349
1970	17,802	4,289	2,783	1,506	1,506	NA	NA	2,804	2,199	604	NA	NA	NA	NA	9,188	6,551	888	213	969	567	1,521	946	218	357
1971	17,537	4,100	2,740	1,360	1,360	NA	NA	2,626	2,150	476	NA	NA	NA	NA	9,277	6,527	913	233	1,008	596	1,534	959	212	363
1972	17,397	4,135	2,723	1,412	1,412	NA	NA	2,503	2,092	411	NA	NA	NA	NA	9,207	6,494	883	249	976	606	1,552	960	212	380
1973	17,562	4,430	2,793	1,636	1,636	NA	NA	2,549	2,138	411	NA	NA	NA	NA	9,009	6,377	841	251	956	585	1,574	979	210	386
1974	17,729	4,645	2,809	1,836	1,836	NA	NA	2,555	2,107	448	NA	NA	NA	NA	8,967	6,324	801	259	983	599	1,562	949	212	401
1975	17,535	4,649	2,733	1,916	1,916	NA	NA	2,435	2,061	374	NA	NA	NA	NA	8,919	6,360	764	257	948	590	1,532	903	213	416
1976	18,320	5,043	2,898	2,145	2,145	NA	NA	2,557	2,162	396	NA	NA	NA	NA	9,119	6,560	742	256	966	595	1,601	933	222	446
1977	19,287	5,421	3,027	2,395	2,395	NA	NA	2,684	2,250	433	NA	NA	NA	NA	9,523	6,786	744	286	1,073	634	1,659	953	230	476

TABLE 3

U.S. basic research expenditures, by performing sector and source of funds: 1953–2023

(Millions of current and of constant 2017 dollars)

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	All funding sources	Total	Federal	Total	Federal	Total	Federal	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
1978	20,870	6,146	3,132	3,014	3,014	NA	NA	2,822	2,354	468	NA	NA	NA	NA	10,125	7,195	779	319	1,194	637	1,777	1,038	237	503
1979	21,702	6,293	3,081	3,212	3,212	NA	NA	2,919	2,473	446	NA	NA	NA	NA	10,600	7,530	792	353	1,291	634	1,891	1,125	240	526
1980	22,216	6,366	3,079	3,286	3,286	NA	NA	3,061	2,629	432	NA	NA	NA	NA	10,960	7,773	779	396	1,381	630	1,830	1,043	242	545
1981	22,409	6,434	3,116	3,318	3,318	NA	NA	3,427	3,047	381	NA	NA	NA	NA	10,991	7,729	784	424	1,428	625	1,558	751	243	564
1982	23,275	6,610	3,325	3,285	3,285	NA	NA	3,881	3,328	553	NA	NA	NA	NA	11,126	7,593	804	471	1,565	692	1,659	807	252	600
1983	24,984	7,136	3,644	3,492	3,492	NA	NA	4,429	3,701	728	NA	NA	NA	NA	11,604	7,757	832	546	1,716	752	1,815	895	266	653
1984	27,060	7,572	3,809	3,763	3,763	NA	NA	5,018	4,327	690	NA	NA	NA	NA	12,472	8,295	884	635	1,857	801	1,998	1,003	282	713
1985	29,017	7,641	3,831	3,810	3,810	NA	NA	5,373	4,669	704	NA	NA	NA	NA	13,820	9,061	1,012	765	2,116	865	2,183	1,102	301	781
1986	33,084	7,852	3,907	3,945	3,945	NA	NA	7,580	6,743	837	NA	NA	NA	NA	15,319	9,878	1,168	898	2,434	940	2,334	1,145	324	865
1987	34,782	8,073	3,853	4,220	4,220	NA	NA	7,869	6,743	1,125	NA	NA	NA	NA	16,267	10,401	1,239	967	2,634	1,026	2,572	1,271	347	954
1988	35,971	8,633	3,847	4,786	4,786	NA	NA	7,568	6,375	1,193	NA	NA	NA	NA	16,986	10,792	1,282	1,027	2,781	1,104	2,784	1,375	369	1,041
1989	38,294	8,964	4,039	4,925	4,925	NA	NA	8,428	6,703	1,725	NA	NA	NA	NA	17,876	11,234	1,339	1,115	2,999	1,189	3,026	1,505	389	1,131
1990	38,832	9,025	3,910	5,115	5,115	NA	NA	7,806	6,340	1,465	NA	NA	NA	NA	18,761	11,616	1,428	1,190	3,253	1,275	3,241	1,597	412	1,232
1991	44,266	9,090	3,879	5,211	5,211	NA	NA	12,031	9,990	2,040	NA	NA	NA	NA	19,673	12,107	1,487	1,246	3,470	1,363	3,473	1,690	438	1,345
1992	44,020	9,291	3,857	5,434	5,434	NA	NA	10,410	9,275	1,135	NA	NA	NA	NA	20,587	12,850	1,501	1,299	3,513	1,425	3,732	1,777	470	1,485
1993	44,775	9,561	4,083	5,479	5,479	NA	NA	10,012	9,286	726	NA	NA	NA	NA	21,257	13,456	1,484	1,326	3,534	1,458	3,944	1,802	504	1,637
1994	45,225	9,240	3,884	5,356	5,356	NA	NA	9,935	9,270	665	NA	NA	NA	NA	21,964	13,938	1,512	1,357	3,670	1,486	4,085	1,734	542	1,809
1995	44,235	8,958	4,018	4,940	4,940	NA	NA	8,320	8,036	284	NA	NA	NA	NA	22,627	14,392	1,598	1,412	3,751	1,475	4,330	1,748	583	2,000
1996	48,118	8,909	3,931	4,978	4,978	NA	NA	11,000	10,046	954	NA	NA	NA	NA	23,534	14,805	1,686	1,514	4,019	1,509	4,675	1,831	629	2,215
1997	52,951	8,869	3,960	4,909	4,909	NA	NA	14,126	12,642	1,484	NA	NA	NA	NA	25,165	15,515	1,779	1,674	4,542	1,655	4,791	1,899	648	2,245
1998	49,690	9,190	4,282	4,907	4,907	NA	NA	8,347	6,918	1,429	NA	NA	NA	NA	26,941	16,496	1,843	1,822	4,984	1,796	5,212	2,083	680	2,448
1999	53,834	9,936	4,706	5,229	5,229	NA	NA	9,344	7,786	1,558	NA	NA	NA	NA	28,774	17,517	1,949	1,934	5,412	1,963	5,780	2,438	727	2,615
2000	57,800	10,727	5,177	5,551	5,551	NA	NA	9,681	8,409	1,272	NA	NA	NA	NA	30,651	18,521	2,064	1,998	5,932	2,136	6,740	2,887	779	3,075
2001	62,350	11,233	5,729	5,503	5,279	NA	NA	10,830	9,816	1,014	NA	NA	NA	NA	32,888	20,063	2,159	1,973	6,400	2,292	7,400	3,314	768	3,318
2002	66,742	12,380	5,973	6,407	6,108	NA	NA	9,994	8,818	1,176	NA	NA	NA	NA	36,473	22,696	2,311	1,929	7,033	2,504	7,894	3,410	734	3,751
2003	71,193	12,647	6,057	6,589	6,308	NA	NA	10,817	9,017	1,800	NA	NA	NA	NA	39,240	24,958	2,458	1,865	7,391	2,568	8,489	3,525	736	4,228
2004	71,297	12,232	5,940	6,292	6,117	NA	NA	9,908	8,552	1,356	NA	NA	NA	NA	40,778	26,215	2,529	1,876	7,544	2,614	8,379	3,526	731	4,122
2005	73,445	12,142	5,849	6,292	6,124	NA	NA	10,627	9,268	1,359	NA	NA	NA	NA	41,994	26,713	2,536	1,962	8,054	2,730	8,683	3,559	753	4,371
2006	73,214	11,820	5,609	6,211	6,035	55	19	9,972	8,255	1,718	NA	NA	NA	NA	42,754	26,489	2,606	2,099	8,669	2,891	8,612	3,389	781	4,442
2007	76,998	11,509	5,352	6,157	5,982	67	23	13,049	9,830	3,219	NA	NA	NA	NA	43,507	26,110	2,780	2,266	9,186	3,165	8,867	3,276	808	4,782
2008	80,066	11,883	5,632	6,251	6,063	83	30	14,054	11,068	1,676	14	549	727	20	44,456	26,080	2,924	2,421	9,620	3,410	9,591	3,492	823	5,275
2009	84,025	12,995	6,144	6,851	6,671	102	38	16,695	13,550	1,513	15	747	831	38	43,791	26,011	2,774	2,253	9,326	3,427	10,443	3,950	789	5,704
2010	85,321	13,106	5,702	7,404	7,224	115	44	18,265	14,771	1,569	11	805	1,044	65	43,239	26,430	2,540	1,991	8,943	3,334	10,597	3,809	784	6,003

TABLE 3

U.S. basic research expenditures, by performing sector and source of funds: 1953–2023

(Millions of current and of constant 2017 dollars)

Year	All performers	All federal	Federal intramural[a]	FFRDCs[b]		Nonfederal government[c]		Business[d]							Higher education[e]						NPOs[f]			
	All funding sources	Total	Federal	Total	Federal	Total	Federal	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
2011	80,553	12,595	5,517	7,078	6,922	113	44	14,232	11,570	740	23	814	1,043	41	43,416	26,356	2,454	1,975	9,304	3,326	10,198	3,368	813	6,017
2012	79,404	11,966	5,890	6,075	5,934	106	42	14,266	11,756	691	10	762	1,016	31	42,882	25,146	2,363	2,006	9,934	3,434	10,184	3,318	820	6,046
2013	83,628	10,044	5,624	4,419	4,311	97	40	20,584	15,813	1,262	22	1,526	1,869	93	42,371	23,849	2,329	2,088	10,474	3,631	10,532	3,198	857	6,476
2014	85,971	10,242	5,917	4,325	4,228	102	43	22,750	16,392	2,120	17	1,643	2,455	123	41,906	22,905	2,325	2,169	10,736	3,771	10,971	3,205	891	6,875
2015	86,757	10,293	6,053	4,240	4,155	103	43	22,393	16,373	2,094	14	1,608	2,181	123	42,658	22,805	2,362	2,272	11,288	3,932	11,309	3,118	916	7,275
2016	89,061	10,500	6,229	4,271	4,185	95	39	25,502	19,129	2,074	20	1,562	2,597	119	43,665	22,992	2,401	2,337	11,814	4,122	9,299	4,059	729	4,215
2017	90,118	10,388	6,259	4,128	4,054	100	41	25,617	18,299	1,853	17	2,085	3,260	103	44,811	23,345	2,392	2,417	12,278	4,379	9,204	3,726	844	4,322
2018	95,613	10,847	6,674	4,173	4,094	104	44	28,550	20,628	2,479	12	2,022	3,301	109	46,245	23,939	2,399	2,547	12,710	4,651	9,866	4,178	967	4,393
2019	100,866	11,476	7,071	4,405	4,328	116	50	31,336	23,618	2,259	15	1,983	3,378	83	47,422	24,492	2,438	2,626	13,105	4,761	10,517	4,578	1,113	4,482
2020	105,957	11,489	6,944	4,546	4,474	118	52	34,521	26,489	2,088	22	2,193	3,632	96	48,235	25,151	2,490	2,604	13,345	4,645	11,594	4,906	1,378	4,919
2021	107,672	10,605	5,999	4,605	4,537	109	49	37,074	28,469	2,182	36	2,399	3,900	88	49,052	26,025	2,484	2,616	13,483	4,443	10,832	4,216	1,274	5,086
2022[g]	110,358	11,224	6,659	4,565	4,501	103	46	36,733	29,187	2,101	18	2,057	3,298	73	50,513	26,777	2,498	2,659	14,072	4,507	11,785	4,708	1,550	5,160
2023[h]	112,993	11,327	6,515	4,813	4,743	99	44	37,404	29,626	2,157	18	2,137	3,391	75	52,729	27,772	2,575	2,726	14,894	4,763	11,434	4,567	1,504	5,006

NA = not available.

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

[a] See table 2, footnotes a–f, for details on sectoral R&D.

[b] Type-of-R&D data for FFRDC R&D in 1953–63 reflect the R&D performance of only university-administered FFRDCs. In 1953–63, the R&D performance and funding of industry-administered FFRDCs were not separately reported but are included instead in the business R&D data for these years. Similarly, in 1953–63, the R&D performance and funding for nonprofit-administered FFRDCs were not separately reported but are included instead in the NPO R&D data for these years. The data for 1964–80 reflect the R&D performance of only university-administered FFRDCs and industry-administered FFRDCs; the R&D performance for nonprofit-administered FFRDCs is included in the NPO R&D data for these years. Starting in 2001, type-of-R&D data provide detail on federal and nonfederal sources of funding for FFRDC R&D. (See also table 2, footnote b.)

[c] Type-of-R&D data for state intramural R&D became available in 2016. These data prior to 2016 are estimated. (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. The pass-through adjusted data on higher education R&D, applied in 1998 and forward, reflect institution-specific detail on the type-of-R&D performed. Type-of-R&D splits besides total and federally funded are estimated. (See also table 2, footnote e.)

[f] Type-of-R&D data for R&D by NPOs 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 2022 are preliminary and may be revised later.

[h] The data for 2023 include estimates and are likely to be revised later.

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