

TABLE 4

U.S. applied research expenditures, by performing sector and source of funds: 1953–2020

(Millions of current and of constant 2012 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	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	1,289	395	347	48	48	NA	726	438	288	NA	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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: 1953–2020

(Millions of current and of constant 2012 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	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
1984	22,451	4,137	2,961	1,176	1,176	NA	15,218	11,541	3,677	NA	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	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	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	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	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	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	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	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	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	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	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	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	NA	5,885	2,864	584	524	1,390	522	1,781	960	182	640
1997	46,516	6,675	4,997	1,679	1,679	NA	32,430	29,782	2,648	NA	NA	NA	NA	5,485	2,518	548	515	1,396	508	1,926	1,011	205	711
1998	46,247	6,871	5,146	1,725	1,725	NA	32,208	29,576	2,632	NA	NA	NA	NA	5,108	2,189	515	509	1,393	502	2,061	1,060	218	784
1999	51,853	7,181	5,530	1,651	1,651	NA	36,638	33,821	2,817	NA	NA	NA	NA	5,650	2,571	533	529	1,480	537	2,384	1,300	236	849
2000	56,503	7,856	6,105	1,750	1,750	NA	39,176	36,494	2,682	NA	NA	NA	NA	6,361	3,081	558	540	1,604	578	3,110	1,831	258	1,021
2001	63,956	9,522	7,052	2,469	2,379	NA	44,012	40,409	3,603	NA	NA	NA	NA	6,886	3,411	585	535	1,734	621	3,537	2,150	261	1,126
2002	50,521	10,506	7,487	3,019	2,905	NA	28,533	26,081	2,452	NA	NA	NA	NA	7,670	3,877	636	531	1,937	689	3,812	2,267	253	1,293
2003	61,059	10,933	7,672	3,262	3,152	NA	37,334	32,861	4,473	NA	NA	NA	NA	8,560	4,450	708	537	2,127	739	4,232	2,487	259	1,486
2004	69,132	10,589	7,455	3,135	3,057	NA	45,432	40,657	4,775	NA	NA	NA	NA	8,911	4,682	735	545	2,190	759	4,200	2,448	264	1,488
2005	69,653	10,886	7,557	3,329	3,241	NA	45,284	39,995	5,289	NA	NA	NA	NA	9,144	4,810	719	557	2,283	774	4,339	2,432	280	1,627
2006	76,622	11,075	7,435	3,640	3,531	255	51,173	45,033	6,140	NA	NA	NA	NA	9,522	5,080	712	573	2,368	789	4,596	2,592	300	1,705
2007	85,319	12,697	7,222	5,475	5,293	321	57,570	48,625	8,945	NA	NA	NA	NA	9,945	5,284	745	607	2,461	848	4,786	2,583	318	1,885
2008	76,639	13,356	7,316	6,040	5,843	407	46,864	35,382	5,397	71	2,815	3,094	105	10,962	5,840	815	675	2,682	951	5,050	2,600	331	2,119
2009	74,117	14,063	7,874	6,189	5,979	502	41,055	29,264	7,797	38	1,865	1,996	96	12,824	7,207	942	757	2,913	1,006	5,673	3,049	319	2,305
2010	79,017	13,203	8,016	5,187	5,025	572	44,906	34,912	4,705	32	2,256	2,819	182	14,518	8,645	1,002	763	3,074	1,034	5,818	3,041	321	2,456
2011	81,891	13,251	8,024	5,227	5,057	575	47,186	37,047	4,404	70	2,413	3,130	122	15,335	9,168	981	781	3,333	1,073	5,545	2,693	340	2,512
2012	86,822	14,328	8,587	5,741	5,566	550	50,755	38,891	4,137	45	3,336	4,209	137	15,640	9,053	994	861	3,602	1,132	5,549	2,629	349	2,571
2013	88,158	15,132	8,309	6,823	6,639	513	51,013	37,385	6,028	47	3,275	4,078	199	15,862	8,771	1,051	918	3,854	1,268	5,638	2,465	371	2,802
2014	91,771	15,727	8,775	6,952	6,765	471	53,415	38,281	6,445	35	3,331	5,074	250	16,167	8,594	1,075	979	4,127	1,392	5,991	2,574	392	3,025
2015	97,249	16,698	9,347	7,351	7,182	481	56,472	43,330	6,102	24	2,735	4,072	209	17,170	8,964	1,085	1,086	4,457	1,579	6,429	2,791	407	3,231

TABLE 4

U.S. applied research expenditures, by performing sector and source of funds: 1953–2020

(Millions of current and of constant 2012 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	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
2016	110,484	17,433	9,805	7,628	7,469	509	62,871	48,543	5,327	45	3,174	5,536	245	18,731	9,665	1,162	1,202	4,877	1,826	10,940	4,541	891	5,508
2017	114,069	18,170	10,124	8,046	7,868	510	64,040	47,727	5,386	33	3,852	6,849	193	19,811	10,146	1,223	1,270	5,230	1,943	11,538	4,520	926	6,093
2018	119,837	19,704	11,111	8,593	8,407	514	66,587	50,898	5,355	23	3,469	6,651	191	20,826	10,616	1,290	1,363	5,523	2,034	12,206	4,648	979	6,579
2019	132,021	20,523	11,264	9,258	9,075	524	76,176	57,549	5,246	42	4,907	8,223	209	21,793	11,144	1,341	1,449	5,763	2,097	13,006	4,895	1,049	7,062
2020 ^g	139,527	21,560	12,032	9,527	9,350	526	81,007	61,748	4,877	44	5,273	8,840	224	22,620	11,565	1,366	1,504	6,033	2,151	13,815	5,667	1,092	7,055
Constant 2012 \$millions																							
1953	8,928	2,732	2,403	329	329	NA	5,028	3,034	1,995	NA	NA	NA	NA	925	409	209	45	193	69	242	97	76	69
1954	9,457	2,663	2,261	401	401	NA	5,586	3,377	2,210	NA	NA	NA	NA	937	408	216	51	192	69	271	106	89	75
1955	10,133	2,827	2,247	580	580	NA	6,064	3,779	2,285	NA	NA	NA	NA	955	425	218	57	183	71	287	118	94	74
1956	12,584	3,334	2,522	812	812	NA	7,984	5,181	2,803	NA	NA	NA	NA	953	424	216	65	176	72	313	131	91	91
1957	15,243	3,755	2,814	941	941	NA	10,206	6,266	3,940	NA	NA	NA	NA	925	398	214	73	171	69	357	142	88	126
1958	17,040	4,150	3,187	963	963	NA	11,537	7,022	4,514	NA	NA	NA	NA	936	405	218	74	168	71	417	176	86	154
1959	17,909	4,603	3,512	1,090	1,090	NA	11,789	7,176	4,613	NA	NA	NA	NA	1,017	472	225	76	171	73	500	244	91	164
1960	18,424	4,901	3,693	1,208	1,208	NA	11,813	7,188	4,624	NA	NA	NA	NA	1,115	559	233	78	173	72	595	325	102	168
1961	18,573	5,397	3,973	1,424	1,424	NA	11,317	6,928	4,389	NA	NA	NA	NA	1,181	616	237	77	176	74	678	369	101	208
1962	21,727	5,626	4,163	1,463	1,463	NA	14,056	8,449	5,607	NA	NA	NA	NA	1,269	696	238	79	179	76	776	400	112	264
1963	22,446	6,293	4,699	1,594	1,594	NA	13,951	8,422	5,528	NA	NA	NA	NA	1,333	741	245	81	188	78	868	473	110	285
1964	24,036	7,206	5,415	1,791	1,791	NA	14,521	8,925	5,596	NA	NA	NA	NA	1,462	812	259	77	213	100	847	469	109	269
1965	24,574	7,231	5,582	1,649	1,649	NA	14,676	9,102	5,574	NA	NA	NA	NA	1,705	986	261	73	237	149	961	551	118	292
1966	25,430	7,117	5,531	1,585	1,585	NA	15,250	9,860	5,389	NA	NA	NA	NA	1,919	1,137	257	77	265	183	1,145	702	131	312
1967	25,750	7,447	5,675	1,771	1,771	NA	15,042	9,821	5,221	NA	NA	NA	NA	2,063	1,261	242	82	286	191	1,198	746	133	319
1968	26,170	7,364	5,662	1,702	1,702	NA	15,472	10,601	4,870	NA	NA	NA	NA	2,063	1,271	234	82	280	196	1,271	813	143	316
1969	26,489	7,599	5,970	1,629	1,629	NA	15,502	11,034	4,468	NA	NA	NA	NA	2,025	1,246	234	78	262	206	1,362	886	155	321
1970	26,537	7,704	6,154	1,550	1,550	NA	15,362	10,970	4,392	NA	NA	NA	NA	2,078	1,289	236	81	257	215	1,393	918	152	323
1971	25,609	7,316	5,949	1,368	1,368	NA	14,699	10,717	3,982	NA	NA	NA	NA	2,191	1,343	266	81	294	206	1,403	929	149	325
1972	25,870	7,542	6,035	1,507	1,507	NA	14,339	10,783	3,556	NA	NA	NA	NA	2,603	1,643	312	86	344	217	1,387	907	147	332
1973	26,554	7,427	6,094	1,333	1,333	NA	14,822	11,299	3,523	NA	NA	NA	NA	2,891	1,793	350	104	398	245	1,414	940	144	331
1974	26,884	7,273	6,048	1,225	1,225	NA	15,258	11,945	3,313	NA	NA	NA	NA	2,905	1,744	352	115	432	262	1,449	974	142	333
1975	27,107	7,689	6,405	1,285	1,285	NA	14,845	11,525	3,320	NA	NA	NA	NA	3,129	1,841	380	129	471	308	1,444	970	139	335
1976	28,505	8,019	6,568	1,451	1,451	NA	15,703	12,423	3,280	NA	NA	NA	NA	3,309	1,891	404	141	526	346	1,474	984	142	348
1977	28,888	7,835	6,220	1,614	1,614	NA	16,217	12,889	3,328	NA	NA	NA	NA	3,365	1,870	402	152	580	360	1,472	969	144	359
1978	29,900	7,928	6,261	1,666	1,666	NA	16,941	13,603	3,338	NA	NA	NA	NA	3,482	1,888	422	169	647	356	1,549	1,037	144	367

TABLE 4

U.S. applied research expenditures, by performing sector and source of funds: 1953–2020

(Millions of current and of constant 2012 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	Total	Own domestic	Federal	Nonfederal government	Other domestic business	Foreign business	Other	Total	Federal	Nonfederal government	Business	Higher education	NPO	Total	Federal	Business	NPO
1979	31,202	7,916	6,229	1,687	1,687	NA	17,991	14,625	3,366	NA	NA	NA	NA	3,656	2,044	417	184	679	333	1,639	1,124	143	372
1980	32,478	7,794	6,023	1,772	1,772	NA	19,339	15,495	3,844	NA	NA	NA	NA	3,838	2,158	411	209	729	332	1,507	993	141	373
1981	35,289	7,607	5,903	1,703	1,703	NA	22,478	18,065	4,413	NA	NA	NA	NA	3,849	2,059	431	233	784	343	1,357	845	138	373
1982	37,080	7,514	5,702	1,812	1,812	NA	24,335	19,057	5,278	NA	NA	NA	NA	3,897	2,049	422	246	818	362	1,334	810	140	385
1983	39,756	7,748	5,859	1,890	1,890	NA	26,467	20,147	6,321	NA	NA	NA	NA	4,144	2,198	421	277	868	380	1,397	848	144	405
1984	42,442	7,820	5,597	2,223	2,223	NA	28,769	21,817	6,951	NA	NA	NA	NA	4,408	2,318	443	317	929	401	1,445	868	149	428
1985	46,546	8,112	5,745	2,367	2,367	NA	32,297	23,654	8,644	NA	NA	NA	NA	4,631	2,376	479	362	1,003	411	1,506	897	155	453
1986	48,931	8,015	5,755	2,260	2,260	NA	34,365	27,092	7,273	NA	NA	NA	NA	4,993	2,502	535	411	1,114	431	1,557	908	163	486
1987	48,997	8,053	5,900	2,153	2,153	NA	33,639	26,563	7,077	NA	NA	NA	NA	5,643	2,880	584	456	1,240	483	1,662	973	171	518
1988	49,998	7,358	5,693	1,665	1,665	NA	34,503	27,991	6,512	NA	NA	NA	NA	6,400	3,316	638	511	1,385	550	1,737	1,014	177	546
1989	52,590	7,516	5,811	1,705	1,705	NA	36,362	29,317	7,045	NA	NA	NA	NA	6,824	3,456	679	565	1,520	603	1,888	1,132	183	573
1990	54,808	7,552	5,736	1,816	1,816	NA	38,320	28,949	9,372	NA	NA	NA	NA	6,920	3,362	711	592	1,619	635	2,016	1,224	189	603
1991	58,689	8,415	6,219	2,196	2,196	NA	41,038	32,549	8,489	NA	NA	NA	NA	7,004	3,390	711	595	1,657	651	2,231	1,399	196	636
1992	56,347	8,712	6,442	2,271	2,271	NA	38,114	31,466	6,648	NA	NA	NA	NA	7,252	3,587	711	615	1,664	675	2,269	1,387	205	678
1993	54,095	9,196	7,020	2,176	2,176	NA	35,187	28,955	6,232	NA	NA	NA	NA	7,471	3,688	719	643	1,714	707	2,241	1,305	215	721
1994	52,020	9,349	7,082	2,267	2,267	NA	32,657	27,520	5,137	NA	NA	NA	NA	7,657	3,756	735	660	1,784	722	2,357	1,363	225	769
1995	56,961	9,276	6,891	2,385	2,385	NA	37,457	33,054	4,403	NA	NA	NA	NA	7,874	3,867	777	687	1,825	718	2,354	1,299	236	819
1996	58,989	8,874	6,657	2,217	2,217	NA	39,640	34,667	4,974	NA	NA	NA	NA	8,041	3,913	798	716	1,900	714	2,434	1,311	248	875
1997	62,483	8,967	6,712	2,255	2,255	NA	43,562	40,005	3,557	NA	NA	NA	NA	7,367	3,382	737	691	1,875	683	2,588	1,358	275	954
1998	61,431	9,126	6,835	2,291	2,291	NA	42,783	39,286	3,496	NA	NA	NA	NA	6,785	2,908	684	676	1,850	667	2,738	1,408	289	1,041
1999	67,897	9,402	7,241	2,161	2,161	NA	47,974	44,285	3,689	NA	NA	NA	NA	7,399	3,367	698	693	1,938	703	3,122	1,702	309	1,111
2000	72,415	10,068	7,825	2,243	2,243	NA	50,209	46,772	3,437	NA	NA	NA	NA	8,153	3,949	715	692	2,055	740	3,986	2,347	331	1,308
2001	80,163	11,934	8,839	3,095	2,982	NA	55,165	50,649	4,516	NA	NA	NA	NA	8,631	4,276	733	671	2,173	778	4,433	2,695	327	1,411
2002	62,352	12,967	9,241	3,726	3,585	NA	35,215	32,188	3,026	NA	NA	NA	NA	9,465	4,784	785	655	2,390	851	4,705	2,797	312	1,596
2003	73,898	13,232	9,285	3,948	3,815	NA	45,184	39,771	5,414	NA	NA	NA	NA	10,360	5,386	856	649	2,574	894	5,121	3,010	313	1,799
2004	81,482	12,481	8,786	3,695	3,603	NA	53,548	47,920	5,628	NA	NA	NA	NA	10,502	5,519	866	642	2,582	894	4,950	2,885	311	1,753
2005	79,600	12,441	8,637	3,804	3,703	NA	51,751	45,707	6,044	NA	NA	NA	NA	10,450	5,497	822	636	2,609	885	4,959	2,779	321	1,859
2006	84,942	12,277	8,242	4,035	3,914	283	56,730	49,923	6,807	NA	NA	NA	NA	10,557	5,632	789	635	2,625	875	5,095	2,873	332	1,890
2007	92,096	13,706	7,795	5,910	5,714	347	62,143	52,487	9,656	NA	NA	NA	NA	10,735	5,704	804	655	2,656	915	5,166	2,788	344	2,035
2008	81,169	14,145	7,749	6,397	6,188	431	49,634	37,474	5,716	75	2,982	3,277	111	11,610	6,185	863	715	2,840	1,007	5,349	2,754	350	2,245
2009	77,999	14,800	8,286	6,514	6,292	528	43,205	30,796	8,205	40	1,962	2,100	101	13,496	7,584	991	796	3,065	1,059	5,970	3,209	335	2,426
2010	82,167	13,730	8,336	5,394	5,225	595	46,696	36,304	4,893	33	2,346	2,932	189	15,096	8,990	1,041	793	3,197	1,075	6,050	3,162	334	2,554

TABLE 4

U.S. applied research expenditures, by performing sector and source of funds: 1953–2020

(Millions of current and of constant 2012 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	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	83,423	13,499	8,174	5,325	5,152	585	48,069	37,740	4,486	71	2,458	3,189	124	15,621	9,339	999	795	3,395	1,093	5,649	2,744	346	2,559
2012	86,822	14,328	8,587	5,741	5,566	550	50,755	38,891	4,137	45	3,336	4,209	137	15,640	9,053	994	861	3,602	1,132	5,549	2,629	349	2,571
2013	86,640	14,871	8,166	6,706	6,524	504	50,135	36,742	5,924	46	3,219	4,008	196	15,588	8,620	1,033	902	3,788	1,246	5,541	2,423	365	2,754
2014	88,537	15,173	8,466	6,707	6,527	454	51,532	36,931	6,218	34	3,213	4,895	241	15,597	8,291	1,037	944	3,982	1,343	5,780	2,483	378	2,919
2015	92,892	15,950	8,928	7,021	6,860	459	53,942	41,389	5,829	23	2,613	3,890	200	16,401	8,562	1,036	1,037	4,257	1,508	6,141	2,666	389	3,086
2016	104,487	16,487	9,273	7,214	7,063	481	59,458	45,908	5,038	43	3,002	5,235	232	17,714	9,140	1,098	1,137	4,612	1,727	10,346	4,295	842	5,209
2017	105,868	16,863	9,396	7,468	7,303	474	59,436	44,296	4,998	30	3,575	6,356	179	18,386	9,416	1,135	1,178	4,854	1,803	10,709	4,195	859	5,655
2018	108,626	17,861	10,072	7,789	7,621	466	60,358	46,136	4,854	21	3,145	6,029	173	18,877	9,622	1,169	1,235	5,006	1,844	11,064	4,213	887	5,964
2019	117,567	18,276	10,031	8,245	8,081	466	67,836	51,248	4,672	37	4,370	7,323	186	19,407	9,923	1,194	1,290	5,132	1,867	11,582	4,359	934	6,289
2020 ^g	122,772	18,971	10,588	8,383	8,227	463	71,279	54,333	4,292	39	4,640	7,778	197	19,904	10,177	1,202	1,324	5,308	1,893	12,156	4,987	961	6,208

NA = not available.

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

^a See table 2, footnote a.^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 the 2016 survey. 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 1998 and forward, reflect institution-specific detail on the type-of-R&D performed. 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 NPOs in 1998 and later years are estimated, except for the R&D that is federally funded. (See also table 2, footnote f.)^g The data for 2020 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. Except for the nonprofit sector, data are based on annual reports by performers in the National Center for Science and Engineering Statistics' annual R&D expenditure surveys: 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 Expenditures Survey, and Survey of State Government Research and Development. 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 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 amount reported in the subsequent fiscal year.

Source(s):

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