TABLE 8

U.S. applied research expenditures, by source of funds and performing sectors: 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	Non-federal government	Business	Higher education	NPO	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
Current $millions																									
1953	1,289	756	347	48	NA	288	59	14	30	NA	NA	NA	30	456	NA	438	7	11	28	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	443	401	NA	NA	194	207
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	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	547	471	NA	NA	224	247

TABLE 8

U.S. applied research expenditures, by source of funds and performing sectors: 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	Non-federal government	Business	Higher education	NPO	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
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	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	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	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	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	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	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	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	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	1,256	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	1,311	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	1,390	1,162	NA	NA	522	640
1997	46,516	12,852	4,997	1,679	NA	2,648	2,518	1,011	548	NA	NA	NA	548	30,502	NA	29,782	515	205	1,396	1,396	1,219	NA	NA	508	711
1998	46,247	12,751	5,146	1,725	NA	2,632	2,189	1,060	515	NA	NA	NA	515	30,303	NA	29,576	509	218	1,393	1,393	1,285	NA	NA	502	784
1999	51,853	13,869	5,530	1,651	NA	2,817	2,571	1,300	533	NA	NA	NA	533	34,586	NA	33,821	529	236	1,480	1,480	1,385	NA	NA	537	849
2000	56,503	15,450	6,105	1,750	NA	2,682	3,081	1,831	558	NA	NA	NA	558	37,293	NA	36,494	540	258	1,604	1,604	1,598	NA	NA	578	1,021
2001	64,201	18,781	7,052	2,564	NA	3,603	3,411	2,150	594	9	NA	NA	585	41,260	55	40,409	535	261	1,734	1,734	1,832	85	NA	621	1,126
2002	50,540	18,949	7,487	2,867	NA	2,452	3,877	2,267	649	12	NA	NA	636	26,917	52	26,081	531	253	1,937	1,937	2,089	106	NA	689	1,293
2003	60,983	22,101	7,672	3,020	NA	4,473	4,450	2,487	721	13	NA	NA	708	33,710	54	32,861	537	259	2,127	2,127	2,324	99	NA	739	1,486
2004	69,322	22,540	7,455	3,180	NA	4,775	4,682	2,448	749	14	NA	NA	735	41,521	56	40,657	545	264	2,190	2,190	2,322	75	NA	759	1,488
2005	69,768	23,376	7,557	3,288	NA	5,289	4,810	2,432	734	14	NA	NA	719	40,894	62	39,995	557	280	2,283	2,283	2,481	80	NA	774	1,627
2006	76,499	24,682	7,435	3,348	87	6,140	5,080	2,592	894	13	169	NA	712	45,978	72	45,033	573	300	2,368	2,368	2,579	84	NA	789	1,705
2007	83,662	27,788	7,222	3,643	111	8,945	5,284	2,583	968	13	210	NA	745	49,625	74	48,625	607	318	2,461	2,461	2,821	89	NA	848	1,885
2008	74,729	25,254	7,316	3,955	146	5,397	5,840	2,600	1,160	13	261	71	815	42,377	79	41,292	675	331	2,682	2,682	3,258	83	105	951	2,119
2009	72,577	30,584	7,874	4,517	186	7,797	7,161	3,049	1,311	17	316	38	941	34,277	79	33,124	755	319	2,907	2,907	3,498	93	96	1,003	2,305
2010	78,885	29,544	8,016	5,025	219	4,705	8,539	3,041	1,403	18	354	32	1,000	41,135	67	39,987	760	321	3,060	3,060	3,743	77	182	1,028	2,456
2011	81,718	29,435	8,024	5,057	226	4,404	9,031	2,693	1,410	13	348	70	979	43,786	80	42,590	776	340	3,311	3,311	3,776	76	122	1,066	2,512
2012	86,627	30,047	8,587	5,566	220	4,137	8,909	2,629	1,385	18	330	45	991	47,722	81	46,436	856	349	3,570	3,570	3,904	76	137	1,120	2,571
2013	87,979	32,300	8,309	6,639	213	6,028	8,646	2,465	1,417	22	300	47	1,049	46,117	94	44,738	914	371	3,823	3,823	4,322	69	199	1,253	2,801
2014	91,601	33,237	8,775	6,766	200	6,445	8,477	2,574	1,392	13	271	35	1,073	48,158	107	46,685	974	392	4,098	4,098	4,717	67	250	1,374	3,026
2015	97,059	34,459	9,347	7,182	199	6,102	8,838	2,791	1,397	9	282	24	1,083	51,718	96	50,137	1,079	407	4,425	4,425	5,062	65	209	1,557	3,231
2016	109,463	36,079	9,805	7,469	209	5,327	9,520	3,749	1,726	10	300	45	1,158	59,420	84	57,253	1,192	891	4,983	4,836	7,255	66	245	1,797	5,147
2017	113,334	38,264	10,124	7,868	208	5,386	9,987	4,692	1,765	15	279	33	1,219	60,772	91	58,429	1,259	979	5,328	5,184	7,205	72	193	1,911	5,022
2018	118,316	40,189	11,111	8,407	215	5,355	10,448	4,652	1,827	21	273	23	1,286	63,548	90	61,018	1,353	1,069	5,615	5,476	7,137	75	191	2,001	4,864
2019	130,225	42,151	11,264	9,075	225	5,246	10,965	5,375	1,895	23	269	42	1,338	73,357	83	70,679	1,439	1,139	5,863	5,732	6,958	77	209	2,066	4,597

TABLE 8

U.S. applied research expenditures, by source of funds and performing sectors: 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	Non-federal government	Business	Higher education	NPO	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
2020	132,524	43,498	11,554	9,384	224	5,906	11,527	4,902	1,927	20	262	84	1,360	74,743	82	72,119	1,433	1,094	6,039	5,928	6,317	76	262	2,050	3,919
2021[a]	144,037	42,226	11,132	9,951	232	3,491	12,341	5,080	1,922	21	266	142	1,391	87,335	118	84,782	1,476	947	6,324	6,236	6,229	83	292	2,085	3,761
2022[b]	159,927	46,068	13,299	10,452	239	3,869	13,103	5,106	1,975	22	273	149	1,427	98,768	214	96,007	1,583	952	6,744	6,656	6,373	91	310	2,182	3,780
Constant 2017 $millions																									
1953	9,586	5,618	2,580	353	NA	2,142	439	104	224	NA	NA	NA	224	3,387	NA	3,257	48	82	207	207	149	NA	NA	74	74
1954	10,154	5,784	2,428	431	NA	2,373	438	114	232	NA	NA	NA	232	3,776	NA	3,625	55	96	206	206	155	NA	NA	74	81
1955	10,881	6,073	2,413	623	NA	2,454	456	127	234	NA	NA	NA	234	4,221	NA	4,058	62	101	197	197	156	NA	NA	76	80
1956	13,514	7,187	2,708	872	NA	3,010	455	140	232	NA	NA	NA	232	5,732	NA	5,564	70	98	189	189	175	NA	NA	77	98
1957	16,367	8,842	3,022	1,011	NA	4,230	427	153	230	NA	NA	NA	230	6,901	NA	6,728	78	95	184	184	210	NA	NA	75	136
1958	18,295	9,927	3,422	1,034	NA	4,847	434	189	234	NA	NA	NA	234	7,712	NA	7,540	80	93	180	180	242	NA	NA	76	166
1959	19,230	10,664	3,771	1,171	NA	4,954	507	262	242	NA	NA	NA	242	7,886	NA	7,706	82	98	183	183	255	NA	NA	78	177
1960	19,782	11,177	3,966	1,297	NA	4,965	600	348	250	NA	NA	NA	250	7,912	NA	7,718	84	110	186	186	258	NA	NA	77	181
1961	19,942	11,564	4,266	1,529	NA	4,712	661	396	255	NA	NA	NA	255	7,631	NA	7,439	83	109	189	189	303	NA	NA	80	223
1962	23,328	13,237	4,470	1,571	NA	6,020	748	429	256	NA	NA	NA	256	9,277	NA	9,072	85	120	192	192	366	NA	NA	82	284
1963	24,104	13,999	5,046	1,712	NA	5,937	795	508	263	NA	NA	NA	263	9,250	NA	9,044	87	119	202	202	390	NA	NA	84	306
1964	25,811	15,123	5,815	1,923	NA	6,009	872	504	278	NA	NA	NA	278	9,784	NA	9,585	83	117	229	229	396	NA	NA	108	289
1965	26,387	15,400	5,994	1,771	NA	5,985	1,059	591	280	NA	NA	NA	280	9,979	NA	9,774	78	127	254	254	474	NA	NA	160	314
1966	27,306	15,403	5,939	1,702	NA	5,787	1,221	754	276	NA	NA	NA	276	10,811	NA	10,588	82	141	284	284	531	NA	NA	197	335
1967	27,651	15,759	6,094	1,902	NA	5,607	1,355	801	260	NA	NA	NA	260	10,777	NA	10,546	88	143	307	307	548	NA	NA	205	342
1968	28,102	15,375	6,081	1,827	NA	5,230	1,365	873	252	NA	NA	NA	252	11,625	NA	11,384	88	153	301	301	550	NA	NA	211	339
1969	28,442	15,246	6,410	1,750	NA	4,798	1,338	952	251	NA	NA	NA	251	12,098	NA	11,848	83	167	281	281	566	NA	NA	222	344
1970	28,494	15,358	6,608	1,664	NA	4,716	1,384	986	254	NA	NA	NA	254	12,029	NA	11,779	87	163	276	276	577	NA	NA	230	347
1971	27,498	14,572	6,388	1,469	NA	4,276	1,443	997	285	NA	NA	NA	285	11,755	NA	11,508	87	160	316	316	570	NA	NA	222	349
1972	27,777	14,654	6,480	1,618	NA	3,818	1,765	974	335	NA	NA	NA	335	11,828	NA	11,577	93	158	370	370	590	NA	NA	233	357
1973	28,512	14,691	6,543	1,431	NA	3,783	1,926	1,009	375	NA	NA	NA	375	12,398	NA	12,132	111	154	428	428	619	NA	NA	263	356
1974	28,865	14,284	6,494	1,315	NA	3,557	1,873	1,045	378	NA	NA	NA	378	13,101	NA	12,825	124	152	463	463	639	NA	NA	281	358
1975	29,105	14,839	6,877	1,380	NA	3,565	1,977	1,041	408	NA	NA	NA	408	12,662	NA	12,374	138	150	505	505	690	NA	NA	331	359
1976	30,606	15,220	7,052	1,558	NA	3,522	2,030	1,057	434	NA	NA	NA	434	13,642	NA	13,338	152	152	564	564	745	NA	NA	372	373
1977	31,017	15,034	6,679	1,733	NA	3,573	2,008	1,041	432	NA	NA	NA	432	14,157	NA	13,839	164	154	623	623	772	NA	NA	387	385
1978	32,104	15,236	6,723	1,789	NA	3,584	2,027	1,113	454	NA	NA	NA	454	14,942	NA	14,606	181	155	695	695	777	NA	NA	382	394
1979	33,500	15,515	6,688	1,811	NA	3,614	2,195	1,207	447	NA	NA	NA	447	16,053	NA	15,702	198	153	729	729	756	NA	NA	357	399
1980	34,871	15,879	6,467	1,902	NA	4,127	2,317	1,066	441	NA	NA	NA	441	17,012	NA	16,636	224	151	782	782	757	NA	NA	356	401
1981	37,890	16,023	6,338	1,829	NA	4,738	2,210	907	462	NA	NA	NA	462	19,794	NA	19,396	250	148	841	841	769	NA	NA	368	401

TABLE 8

U.S. applied research expenditures, by source of funds and performing sectors: 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	Non-federal government	Business	Higher education	NPO	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
1982	39,813	16,804	6,123	1,946	NA	5,667	2,200	869	453	NA	NA	NA	453	20,876	NA	20,461	264	150	878	878	802	NA	NA	388	413
1983	42,686	18,376	6,290	2,029	NA	6,786	2,360	910	452	NA	NA	NA	452	22,083	NA	21,631	297	155	932	932	843	NA	NA	408	435
1984	45,569	19,281	6,010	2,387	NA	7,463	2,489	932	475	NA	NA	NA	475	23,926	NA	23,425	341	160	997	997	890	NA	NA	430	459
1985	49,976	21,504	6,168	2,541	NA	9,281	2,551	963	515	NA	NA	NA	515	25,953	NA	25,397	389	167	1,077	1,077	927	NA	NA	441	487
1986	52,536	20,076	6,179	2,426	NA	7,809	2,686	975	574	NA	NA	NA	574	29,705	NA	29,088	442	176	1,197	1,197	984	NA	NA	462	521
1987	52,605	20,381	6,334	2,312	NA	7,598	3,092	1,045	627	NA	NA	NA	627	29,192	NA	28,519	489	184	1,331	1,331	1,075	NA	NA	519	556
1988	53,679	19,540	6,112	1,788	NA	6,992	3,560	1,088	685	NA	NA	NA	685	30,791	NA	30,052	549	190	1,487	1,487	1,176	NA	NA	590	586
1989	56,463	20,560	6,239	1,831	NA	7,564	3,711	1,215	729	NA	NA	NA	729	32,279	NA	31,476	607	196	1,632	1,632	1,263	NA	NA	647	616
1990	58,843	23,093	6,158	1,949	NA	10,062	3,609	1,314	763	NA	NA	NA	763	31,919	NA	31,080	636	203	1,739	1,739	1,329	NA	NA	682	647
1991	63,010	23,291	6,677	2,358	NA	9,114	3,640	1,502	763	NA	NA	NA	763	35,794	NA	34,945	639	210	1,779	1,779	1,381	NA	NA	699	683
1992	60,496	21,831	6,916	2,438	NA	7,138	3,851	1,489	763	NA	NA	NA	763	34,663	NA	33,782	661	220	1,786	1,786	1,452	NA	NA	725	727
1993	58,078	21,925	7,537	2,336	NA	6,691	3,959	1,401	772	NA	NA	NA	772	32,008	NA	31,087	690	230	1,840	1,840	1,533	NA	NA	759	774
1994	55,850	21,048	7,604	2,434	NA	5,515	4,032	1,463	789	NA	NA	NA	789	30,496	NA	29,547	708	242	1,916	1,916	1,601	NA	NA	776	825
1995	61,154	20,232	7,398	2,560	NA	4,727	4,152	1,395	835	NA	NA	NA	835	36,479	NA	35,488	738	253	1,959	1,959	1,650	NA	NA	771	879
1996	63,332	20,477	7,147	2,380	NA	5,340	4,201	1,408	856	NA	NA	NA	856	38,254	NA	37,219	769	266	2,040	2,040	1,705	NA	NA	766	939
1997	67,085	18,535	7,206	2,421	NA	3,819	3,631	1,458	791	NA	NA	NA	791	43,988	NA	42,951	742	296	2,013	2,013	1,758	NA	NA	733	1,025
1998	65,955	18,185	7,338	2,460	NA	3,754	3,122	1,512	735	NA	NA	NA	735	43,216	NA	42,180	726	310	1,986	1,986	1,833	NA	NA	716	1,118
1999	72,918	19,503	7,776	2,321	NA	3,961	3,616	1,828	750	NA	NA	NA	750	48,636	NA	47,561	744	332	2,081	2,081	1,948	NA	NA	755	1,194
2000	77,696	21,245	8,395	2,407	NA	3,688	4,237	2,518	768	NA	NA	NA	768	51,281	NA	50,183	743	355	2,205	2,205	2,198	NA	NA	794	1,403
2001	86,338	25,256	9,484	3,448	NA	4,845	4,588	2,891	799	12	NA	NA	787	55,487	75	54,343	719	351	2,332	2,332	2,464	115	NA	835	1,514
2002	66,927	25,093	9,915	3,796	NA	3,247	5,134	3,002	859	16	NA	NA	842	35,644	69	34,537	703	335	2,565	2,565	2,766	141	NA	913	1,712
2003	79,192	28,700	9,962	3,921	NA	5,809	5,779	3,230	936	17	NA	NA	919	43,776	70	42,673	697	336	2,762	2,762	3,018	129	NA	960	1,930
2004	87,664	28,504	9,427	4,021	NA	6,038	5,921	3,096	947	18	NA	NA	929	52,507	71	51,414	689	334	2,770	2,770	2,936	95	NA	960	1,881
2005	85,546	28,663	9,266	4,032	NA	6,485	5,898	2,981	899	17	NA	NA	882	50,142	76	49,040	682	344	2,799	2,799	3,042	98	NA	949	1,995
2006	90,993	29,358	8,843	3,983	103	7,303	6,042	3,083	1,063	15	200	NA	847	54,689	86	53,565	682	356	2,816	2,816	3,067	100	NA	939	2,028
2007	96,888	32,181	8,363	4,219	129	10,359	6,120	2,991	1,121	15	243	NA	862	57,470	86	56,312	703	369	2,850	2,850	3,267	103	NA	982	2,183
2008	84,907	28,694	8,313	4,494	166	6,132	6,635	2,954	1,318	15	297	80	926	48,148	90	46,915	767	376	3,047	3,047	3,701	94	119	1,080	2,408
2009	81,956	34,536	8,892	5,101	210	8,805	8,086	3,443	1,481	19	356	43	1,062	38,707	89	37,405	853	360	3,282	3,282	3,950	106	108	1,133	2,603
2010	88,011	32,962	8,943	5,606	244	5,249	9,527	3,393	1,566	20	394	36	1,116	45,893	75	44,613	847	358	3,414	3,414	4,176	86	203	1,147	2,740
2011	89,328	32,176	8,771	5,528	247	4,814	9,872	2,944	1,541	14	381	76	1,070	47,863	88	46,556	848	371	3,619	3,619	4,128	84	133	1,165	2,746
2012	92,963	32,245	9,215	5,973	237	4,440	9,561	2,821	1,486	20	354	48	1,063	51,212	87	49,833	918	374	3,831	3,831	4,189	81	147	1,202	2,760
2013	92,834	34,082	8,767	7,005	225	6,361	9,123	2,601	1,496	23	317	50	1,106	48,661	99	47,207	964	391	4,034	4,034	4,561	73	210	1,322	2,956
2014	95,001	34,470	9,101	7,017	207	6,684	8,792	2,669	1,443	13	281	36	1,113	49,945	111	48,418	1,010	407	4,250	4,250	4,892	70	259	1,425	3,138
2015	99,736	35,409	9,605	7,380	204	6,270	9,081	2,868	1,435	9	289	24	1,112	53,145	99	51,520	1,108	418	4,547	4,547	5,201	66	215	1,599	3,321

TABLE 8

U.S. applied research expenditures, by source of funds and performing sectors: 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	Non-federal government	Business	Higher education	NPO	Total	FFRDC	Non-federal government	Business	Higher education	Total	FFRDC	Business	Higher education	NPO	Total	Higher education	Total	FFRDC	Business	Higher education	NPO
2016	111,423	36,725	9,981	7,603	213	5,422	9,690	3,816	1,757	10	305	46	1,179	60,484	85	58,279	1,213	906	5,073	4,922	7,385	67	250	1,829	5,240
2017	113,334	38,264	10,124	7,868	208	5,386	9,987	4,692	1,765	15	279	33	1,219	60,772	91	58,429	1,259	979	5,328	5,184	7,205	72	193	1,911	5,022
2018	115,666	39,289	10,862	8,219	210	5,236	10,214	4,548	1,786	21	267	23	1,257	62,124	88	59,652	1,323	1,045	5,489	5,353	6,977	73	186	1,956	4,755
2019	125,207	40,527	10,830	8,725	216	5,044	10,542	5,168	1,822	22	258	40	1,286	70,531	80	67,955	1,384	1,095	5,637	5,511	6,690	74	201	1,986	4,420
2020	125,756	41,276	10,964	8,905	213	5,604	10,938	4,652	1,829	19	249	79	1,290	70,926	78	68,436	1,359	1,038	5,730	5,625	5,995	72	249	1,945	3,719
2021[a]	130,690	38,313	10,100	9,029	210	3,168	11,197	4,609	1,744	19	241	129	1,262	79,242	107	76,926	1,339	859	5,738	5,658	5,652	75	265	1,891	3,413
2022[b]	135,563	39,049	11,273	8,860	203	3,279	11,107	4,328	1,674	19	231	126	1,210	83,721	181	81,381	1,342	807	5,717	5,642	5,402	77	263	1,850	3,204

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 4 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 4, general notes.)

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