

TABLE 8

U.S. applied research expenditures, by source of funds and performing sector: 1953–2021

(Millions of current and of constant 2012 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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	471	NA	NA	224	247

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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	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	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	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	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	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	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	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	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	1,049	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	1,104	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	1,162	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	1,219	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	1,285	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	1,385	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	1,598	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	1,832	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	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	2,324	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	2,322	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	2,481	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	2,579	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	2,821	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	3,258	83	105	951	2,119	
2009	72,634	30,630	7,874	4,517	186	7,797	7,207	3,049	1,312	17	316	38	942	34,279	79	33,124	757	319	2,913	3,501	93	96	1,006	2,305	
2010	79,016	29,650	8,016	5,025	219	4,705	8,645	3,041	1,405	18	354	32	1,002	41,138	67	39,987	763	321	3,074	3,749	77	182	1,034	2,456	
2011	81,891	29,572	8,024	5,057	226	4,404	9,168	2,693	1,411	13	348	70	981	43,791	80	42,590	781	340	3,333	3,784	76	122	1,073	2,512	
2012	86,822	30,191	8,587	5,566	220	4,137	9,053	2,629	1,387	18	330	45	994	47,727	81	46,436	861	349	3,602	3,915	76	137	1,132	2,571	
2013	88,158	32,424	8,309	6,639	213	6,028	8,771	2,465	1,420	22	300	47	1,051	46,121	94	44,738	918	371	3,854	4,338	69	199	1,268	2,802	
2014	91,772	33,354	8,775	6,766	200	6,445	8,594	2,574	1,394	13	271	35	1,075	48,163	107	46,685	979	392	4,127	4,735	67	250	1,392	3,025	
2015	97,249	34,585	9,347	7,182	199	6,102	8,964	2,791	1,399	9	282	24	1,085	51,726	96	50,137	1,086	407	4,457	5,083	65	209	1,579	3,231	
2016	109,691	36,224	9,805	7,469	209	5,327	9,665	3,749	1,729	10	300	45	1,162	59,430	84	57,253	1,202	891	4,877	7,284	66	245	1,826	5,147	
2017	113,659	38,453	10,124	7,868	208	5,386	10,144	4,723	1,769	15	279	33	1,223	60,782	91	58,429	1,270	979	5,230	7,235	72	193	1,943	5,019	
2018	118,700	40,395	11,111	8,407	215	5,355	10,593	4,714	1,831	21	273	23	1,290	63,557	90	61,018	1,363	1,069	5,511	7,164	75	191	2,034	4,859	
2019	130,712	42,410	11,264	9,075	225	5,246	11,117	5,483	1,897	23	269	42	1,340	73,366	83	70,679	1,448	1,139	5,759	6,981	77	209	2,097	4,589	

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	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	Higher education	Total	FFRDC	Business	Higher education	NPO		
2020 ^a	133,326	43,855	11,494	9,384	224	6,140	11,704	4,908	1,924	20	262	62	1,363	74,646	82	71,934	1,441	1,174	5,956	6,590	76	234	2,077	4,193		
2021 ^b	143,995	44,718	10,651	9,863	224	6,541	12,261	5,179	1,972	20	258	67	1,398	83,859	89	81,066	1,453	1,238	6,186	6,884	78	256	2,117	4,424		
Constant 2012 \$millions																										
1953	8,928	5,233	2,403	329	NA	1,995	409	97	209	NA	NA	NA	209	3,155	NA	3,034	45	76	193	139	NA	NA	69	69		
1954	9,457	5,387	2,261	401	NA	2,210	408	106	216	NA	NA	NA	216	3,517	NA	3,377	51	89	192	144	NA	NA	69	75		
1955	10,133	5,656	2,247	580	NA	2,285	425	118	218	NA	NA	NA	218	3,931	NA	3,779	57	94	183	145	NA	NA	71	74		
1956	12,584	6,692	2,522	812	NA	2,803	424	131	216	NA	NA	NA	216	5,338	NA	5,181	65	91	176	163	NA	NA	72	91		
1957	15,243	8,235	2,814	941	NA	3,940	398	142	214	NA	NA	NA	214	6,427	NA	6,266	73	88	171	196	NA	NA	69	126		
1958	17,040	9,245	3,187	963	NA	4,514	405	176	218	NA	NA	NA	218	7,183	NA	7,022	74	86	168	225	NA	NA	71	154		
1959	17,909	9,931	3,512	1,090	NA	4,613	472	244	225	NA	NA	NA	225	7,344	NA	7,176	76	91	171	238	NA	NA	73	164		
1960	18,424	10,409	3,693	1,208	NA	4,624	559	325	233	NA	NA	NA	233	7,369	NA	7,188	78	102	173	240	NA	NA	72	168		
1961	18,573	10,770	3,973	1,424	NA	4,389	616	369	237	NA	NA	NA	237	7,107	NA	6,928	77	101	176	282	NA	NA	74	208		
1962	21,727	12,328	4,163	1,463	NA	5,607	696	400	238	NA	NA	NA	238	8,640	NA	8,449	79	112	179	341	NA	NA	76	264		
1963	22,446	13,036	4,699	1,594	NA	5,528	741	473	245	NA	NA	NA	245	8,614	NA	8,422	81	110	188	363	NA	NA	78	285		
1964	24,036	14,083	5,415	1,791	NA	5,596	812	469	259	NA	NA	NA	259	9,111	NA	8,925	77	109	213	369	NA	NA	100	269		
1965	24,574	14,342	5,582	1,649	NA	5,574	986	551	261	NA	NA	NA	261	9,293	NA	9,102	73	118	237	441	NA	NA	149	292		
1966	25,430	14,345	5,531	1,585	NA	5,389	1,137	702	257	NA	NA	NA	257	10,068	NA	9,860	77	131	265	495	NA	NA	183	312		
1967	25,750	14,675	5,675	1,771	NA	5,221	1,261	746	242	NA	NA	NA	242	10,036	NA	9,821	82	133	286	510	NA	NA	191	319		
1968	26,170	14,318	5,662	1,702	NA	4,870	1,271	813	234	NA	NA	NA	234	10,826	NA	10,601	82	143	280	512	NA	NA	196	316		
1969	26,489	14,199	5,970	1,629	NA	4,468	1,246	886	234	NA	NA	NA	234	11,267	NA	11,034	78	155	262	527	NA	NA	206	321		
1970	26,537	14,303	6,154	1,550	NA	4,392	1,289	918	236	NA	NA	NA	236	11,203	NA	10,970	81	152	257	537	NA	NA	215	323		
1971	25,609	13,570	5,949	1,368	NA	3,982	1,343	929	266	NA	NA	NA	266	10,947	NA	10,717	81	149	294	531	NA	NA	206	325		
1972	25,870	13,648	6,035	1,507	NA	3,556	1,643	907	312	NA	NA	NA	312	11,016	NA	10,783	86	147	344	549	NA	NA	217	332		
1973	26,554	13,683	6,094	1,333	NA	3,523	1,793	940	350	NA	NA	NA	350	11,547	NA	11,299	104	144	398	577	NA	NA	245	331		
1974	26,884	13,304	6,048	1,225	NA	3,313	1,744	974	352	NA	NA	NA	352	12,202	NA	11,945	115	142	432	595	NA	NA	262	333		
1975	27,107	13,820	6,405	1,285	NA	3,320	1,841	970	380	NA	NA	NA	380	11,793	NA	11,525	129	139	471	643	NA	NA	308	335		
1976	28,505	14,175	6,568	1,451	NA	3,280	1,891	984	404	NA	NA	NA	404	12,706	NA	12,423	141	142	526	694	NA	NA	346	348		
1977	28,888	14,002	6,220	1,614	NA	3,328	1,870	969	402	NA	NA	NA	402	13,185	NA	12,889	152	144	580	719	NA	NA	360	359		
1978	29,900	14,190	6,261	1,666	NA	3,338	1,888	1,037	422	NA	NA	NA	422	13,916	NA	13,603	169	144	647	724	NA	NA	356	367		
1979	31,202	14,450	6,229	1,687	NA	3,366	2,044	1,124	417	NA	NA	NA	417	14,952	NA	14,625	184	143	679	704	NA	NA	333	372		
1980	32,478	14,789	6,023	1,772	NA	3,844	2,158	993	411	NA	NA	NA	411	15,844	NA	15,495	209	141	729	705	NA	NA	332	373		
1981	35,289	14,923	5,903	1,703	NA	4,413	2,059	845	431	NA	NA	NA	431	18,436	NA	18,065	233	138	784	716	NA	NA	343	373		
1982	37,080	15,650	5,702	1,812	NA	5,278	2,049	810	422	NA	NA	NA	422	19,443	NA	19,057	246	140	818	747	NA	NA	362	385		

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1983	39,756	17,115	5,859	1,890	NA	6,321	2,198	848	421	NA	NA	NA	421	20,567	NA	20,147	277	144	868	785	NA	NA	380	405
1984	42,442	17,957	5,597	2,223	NA	6,951	2,318	868	443	NA	NA	NA	443	22,284	NA	21,817	317	149	929	829	NA	NA	401	428
1985	46,546	20,028	5,745	2,367	NA	8,644	2,376	897	479	NA	NA	NA	479	24,171	NA	23,654	362	155	1,003	864	NA	NA	411	453
1986	48,931	18,698	5,755	2,260	NA	7,273	2,502	908	535	NA	NA	NA	535	27,667	NA	27,092	411	163	1,114	916	NA	NA	431	486
1987	48,997	18,983	5,900	2,153	NA	7,077	2,880	973	584	NA	NA	NA	584	27,189	NA	26,563	456	171	1,240	1,001	NA	NA	483	518
1988	49,998	18,200	5,693	1,665	NA	6,512	3,316	1,014	638	NA	NA	NA	638	28,679	NA	27,991	511	177	1,385	1,096	NA	NA	550	546
1989	52,590	19,150	5,811	1,705	NA	7,045	3,456	1,132	679	NA	NA	NA	679	30,065	NA	29,317	565	183	1,520	1,176	NA	NA	603	573
1990	54,808	21,509	5,736	1,816	NA	9,372	3,362	1,224	711	NA	NA	NA	711	29,730	NA	28,949	592	189	1,619	1,238	NA	NA	635	603
1991	58,689	21,694	6,219	2,196	NA	8,489	3,390	1,399	711	NA	NA	NA	711	33,340	NA	32,549	595	196	1,657	1,287	NA	NA	651	636
1992	56,347	20,334	6,442	2,271	NA	6,648	3,587	1,387	711	NA	NA	NA	711	32,286	NA	31,466	615	205	1,664	1,353	NA	NA	675	678
1993	54,095	20,421	7,020	2,176	NA	6,232	3,688	1,305	719	NA	NA	NA	719	29,813	NA	28,955	643	215	1,714	1,428	NA	NA	707	721
1994	52,020	19,605	7,082	2,267	NA	5,137	3,756	1,363	735	NA	NA	NA	735	28,405	NA	27,520	660	225	1,784	1,491	NA	NA	722	769
1995	56,961	18,845	6,891	2,385	NA	4,403	3,867	1,299	777	NA	NA	NA	777	33,977	NA	33,054	687	236	1,825	1,537	NA	NA	718	819
1996	58,989	19,072	6,657	2,217	NA	4,974	3,913	1,311	798	NA	NA	NA	798	35,631	NA	34,667	716	248	1,900	1,588	NA	NA	714	875
1997	62,483	17,264	6,712	2,255	NA	3,557	3,382	1,358	737	NA	NA	NA	737	40,971	NA	40,005	691	275	1,875	1,637	NA	NA	683	954
1998	61,431	16,938	6,835	2,291	NA	3,496	2,908	1,408	684	NA	NA	NA	684	40,252	NA	39,286	676	289	1,850	1,708	NA	NA	667	1,041
1999	67,897	18,160	7,241	2,161	NA	3,689	3,367	1,702	698	NA	NA	NA	698	45,287	NA	44,285	693	309	1,938	1,814	NA	NA	703	1,111
2000	72,415	19,801	7,825	2,243	NA	3,437	3,949	2,347	715	NA	NA	NA	715	47,795	NA	46,772	692	331	2,055	2,048	NA	NA	740	1,308
2001	80,470	23,540	8,839	3,214	NA	4,516	4,276	2,695	744	11	NA	NA	733	51,716	70	50,649	671	327	2,173	2,297	107	NA	778	1,411
2002	62,375	23,387	9,241	3,538	NA	3,026	4,784	2,797	800	15	NA	NA	785	33,220	65	32,188	655	312	2,390	2,578	131	NA	851	1,596
2003	73,806	26,748	9,285	3,654	NA	5,414	5,386	3,010	872	16	NA	NA	856	40,799	65	39,771	649	313	2,574	2,813	120	NA	894	1,799
2004	81,705	26,566	8,786	3,748	NA	5,628	5,519	2,885	882	16	NA	NA	866	48,939	66	47,920	642	311	2,582	2,737	89	NA	894	1,753
2005	79,732	26,715	8,637	3,758	NA	6,044	5,497	2,779	838	16	NA	NA	822	46,734	71	45,707	636	321	2,609	2,836	91	NA	885	1,859
2006	84,807	27,362	8,242	3,712	96	6,807	5,632	2,873	991	14	187	NA	789	50,971	80	49,923	635	332	2,625	2,859	94	NA	875	1,890
2007	90,308	29,995	7,795	3,932	120	9,656	5,704	2,788	1,045	14	227	NA	804	53,566	80	52,487	655	344	2,656	3,045	96	NA	915	2,035
2008	79,147	26,747	7,749	4,189	155	5,716	6,185	2,754	1,228	14	276	75	863	44,882	84	43,732	715	350	2,840	3,450	88	111	1,007	2,245
2009	76,438	32,234	8,286	4,754	196	8,205	7,584	3,209	1,381	18	332	40	991	36,074	83	34,859	796	335	3,065	3,684	98	101	1,059	2,426
2010	82,167	30,833	8,336	5,225	227	4,893	8,990	3,162	1,461	19	368	33	1,041	42,779	70	41,582	793	334	3,197	3,898	80	189	1,075	2,554
2011	83,423	30,125	8,174	5,151	230	4,486	9,339	2,744	1,438	13	355	71	999	44,610	82	43,387	795	346	3,395	3,855	78	124	1,093	2,559
2012	86,822	30,191	8,587	5,566	220	4,137	9,053	2,629	1,387	18	330	45	994	47,727	81	46,436	861	349	3,602	3,915	76	137	1,132	2,571
2013	86,640	31,866	8,166	6,525	209	5,924	8,620	2,423	1,396	21	295	46	1,033	45,327	92	43,968	902	365	3,788	4,264	68	196	1,246	2,754
2014	88,537	32,178	8,466	6,527	193	6,218	8,291	2,483	1,345	12	262	34	1,037	46,465	103	45,040	944	378	3,982	4,568	65	241	1,343	2,919
2015	92,892	33,035	8,928	6,860	190	5,829	8,562	2,666	1,337	9	269	23	1,036	49,408	92	47,891	1,037	389	4,257	4,855	62	200	1,508	3,086
2016	103,737	34,257	9,273	7,063	198	5,038	9,140	3,545	1,635	10	284	43	1,098	56,204	79	54,146	1,137	842	4,612	6,889	62	232	1,727	4,868

TABLE 8

U.S. applied research expenditures, by source of funds and performing sector: 1953–2021

(Millions of current and of constant 2012 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	Higher education	Total	FFRDC	Business	Higher education	NPO
2017	105,486	35,688	9,396	7,302	193	4,998	9,415	4,384	1,642	14	259	30	1,135	56,411	85	54,227	1,178	909	4,854	6,714	66	179	1,803	4,658
2018	107,577	36,610	10,070	7,619	195	4,854	9,600	4,272	1,659	19	247	21	1,169	57,602	81	55,301	1,235	969	4,995	6,493	68	173	1,843	4,403
2019	116,376	37,759	10,029	8,080	200	4,671	9,898	4,881	1,689	20	239	37	1,193	65,320	74	62,927	1,289	1,014	5,127	6,215	69	186	1,867	4,085
2020 ^a	117,174	38,542	10,102	8,247	197	5,396	10,286	4,314	1,691	18	230	55	1,198	65,603	72	63,220	1,266	1,031	5,234	5,792	67	206	1,825	3,685
2021 ^b	121,111	37,612	8,959	8,295	188	5,501	10,312	4,356	1,658	17	217	56	1,176	70,532	75	68,183	1,222	1,041	5,203	5,790	66	215	1,780	3,721

NA = not available.

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

^a Some data for 2020 are preliminary and may be revised later.^b The data for 2021 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).