National Center for Science and Engineering Statistics

Federal Funds for Research and Development: Fiscal Years 2021–22

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General Notes

These tables present the results of volume 71 (FYs 2021–22) of the Survey of Federal Funds for Research and Development. This annual census, completed by the federal agencies that conduct R&D programs, is the primary source of information about federal funding for R&D in the United States. Actual data are collected for the fiscal year just completed; estimates are obtained for the current fiscal year.

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(Dollars in thousands)

Fiscal year	Total	Total R&D	Total research	Basic research	Applied research	Development	R&D plant
1951	1,851,571	1,521,527	NA	NA	NA	NA	330,044
1952	2,216,848	1,909,665	NA	120,945	NA	NA	307,183
1953	2,167,456	1,919,543	NA	115,997	NA	NA	247,913
1954	1,918,046	1,761,840	NA	116,033	NA	NA	156,206
1955	2,251,894	2,044,593	NA	130,068	NA	NA	207,301
1956	3,266,903	2,988,203	851,947	206,441	645,506	2,136,256	278,700
1957	4,389,237	3,932,001	924,547	262,348	662,199	3,007,454	457,236
1958	4,906,015	4,569,722	1,078,807	334,543	744,264	3,490,915	336,293
1959	7,122,610	6,693,510	1,340,253	465,981	874,272	5,353,257	429,100
1960	8,080,015	7,551,746	1,872,509	590,374	1,282,135	5,679,237	528,269
1961	9,607,023	9,058,623	2,477,944	814,513	1,663,431	6,580,679	548,400
1962	11,069,059	10,289,947	3,004,795	986,314	2,018,481	7,285,152	779,112
1963	13,662,879	12,494,611	3,507,903	1,151,753	2,356,150	8,986,708	1,168,268
1964	15,323,870	14,225,354	3,874,452	1,303,000	2,571,452	10,350,902	1,098,516
1965	15,745,852	14,614,249	4,247,230	1,435,469	2,811,761	10,367,019	1,131,603
1966	16,178,640	15,320,334	4,660,247	1,579,181	3,081,066	10,660,087	858,306
1967	17,149,186	16,529,099	4,631,390	1,845,847	2,785,543	11,897,709	620,087
1968	16,525,038	15,921,208	4,781,062	1,840,562	2,940,500	11,140,146	603,830
1969	16,309,900	15,640,888	4,644,890	1,944,773	2,700,117	10,995,998	669,012
1970	15,863,385	15,338,937	4,900,798	1,925,908	2,974,890	10,438,139	524,448
1971	16,153,756	15,542,512	5,123,171	1,980,141	3,143,030	10,419,341	611,244
1972	17,097,951	16,495,895	5,547,696	2,186,937	3,360,759	10,948,199	602,056
1973	17,574,486	16,800,153	5,581,429	2,232,006	3,349,423	11,218,724	774,333
1974	18,176,457	17,410,128	6,175,240	2,387,681	3,787,559	11,234,888	766,329
1975	19,859,548	19,038,818	6,729,708	2,588,427	4,141,281	12,309,110	820,730
1976	21,616,382	20,779,658	7,619,332	2,767,454	4,851,878	13,160,326	836,724
1977	24,817,577	23,450,377	8,514,115	3,258,640	5,255,475	14,936,262	1,367,200
1978	27,140,849	25,845,137	9,606,758	3,698,604	5,908,154	16,238,379	1,295,712
1979	29,620,597	28,145,142	10,535,005	4,192,665	6,342,340	17,610,137	1,475,455
1980	31,386,095	29,830,432	11,597,378	4,674,156	6,923,222	18,233,054	1,555,663
1981	34,589,634	33,103,924	12,212,780	5,041,295	7,171,485	20,891,144	1,485,710
1982	37,822,363	36,432,589	13,022,185	5,481,605	7,540,580	23,410,404	1,389,774
1983	40,009,032	38,711,537	14,253,525	6,260,131	7,993,394	24,458,012	1,297,495
1984	44,012,149	42,224,865	14,978,773	7,067,359	7,911,414	27,246,092	1,787,284
1985	50,180,369	48,359,565	16,133,421	7,818,682	8,314,739	32,226,144	1,820,804
1986	52,951,181	51,412,364	16,502,199	8,153,076	8,349,123	34,910,165	1,538,817
1987	57,099,656	55,253,693	17,940,521	8,942,425	8,998,096	37,313,172	1,845,963
1988	58,826,512	56,769,425	18,650,145	9,473,618	9,176,527	38,119,280	2,057,087
1989	63,571,605	61,406,484	20,765,531	10,602,011	10,163,520	40,640,953	2,165,121
1990	65,831,189	63,559,471	21,622,364	11,285,593	10,336,771	41,937,107	2,271,718
1991	64,147,951	61,295,152	23,968,377	12,170,794	11,797,583	37,326,775	2,852,799
1992	68,577,184	65,592,590	24,490,598	12,489,864	12,000,734	41,101,992	2,984,594
1993	70,414,697	67,314,025	26,890,497	13,399,121	13,491,376	40,423,528	3,100,672
1994	69,450,776	67,235,390	27,411,209	13,523,476	13,887,733	39,824,181	2,215,386
1995	70,442,935	68,186,798	28,434,396	13,877,031	14,557,365	39,752,402	2,256,137
1996	69,399,164	67,653,047	28,259,764	14,464,035	13,795,729	39,393,283	1,746,117
1997	71,753,430	69,826,779	29,365,289	14,941,892	14,423,397	40,461,490	1,926,651
1998	73,913,988	72,100,724	30,922,269	15,613,012	15,309,257	41,178,455	1,813,264
1999	77,386,368	75,340,622	33,527,514	17,443,653	16,083,861	41,813,108	2,045,746
2000	80,403,169	75,910,322	38,470,630	19,569,849	18,900,781	37,439,692	4,492,847
2001	88,562,350	84,492,522	44,713,736	21,958,136	22,755,600	39,778,786	4,069,828

TABLE 1

Federal obligations for research and development, by type of R&D, and for R&D plant: FYs 1951–2022

(Dollars in thousands)

Fiscal year	Total	Total R&D	Total research	Basic research	Applied research	Development	R&D plant
2002	98,013,347	93,708,604	48,006,711	23,668,345	24,338,366	45,701,893	4,304,743
2003	107,794,188	103,527,670	51,071,843	24,751,441	26,320,402	52,455,827	4,266,518
2004	116,068,604	112,074,452	53,357,811	26,120,663	27,237,148	58,716,641	3,994,152
2005	122,619,584	118,848,457	53,738,245	27,140,335	26,597,910	65,110,212	3,771,127
2006	123,854,731	121,729,949	53,535,650	26,584,592	26,951,058	68,194,299	2,124,782
2007	129,431,246	127,262,861	54,093,565	26,865,786	27,227,779	73,169,296	2,168,385
2008	129,049,945	127,106,084	53,893,678	27,153,966	26,739,712	73,212,406	1,943,861
2009	144,758,103	141,090,091	63,691,872	32,879,357	30,812,515	77,398,219	3,668,012
2010	146,967,800	140,354,521	63,727,973	31,795,342	31,932,631	76,626,548	6,613,279
2011	139,703,281	135,532,585	58,064,824	29,313,593	28,751,231	77,467,761	4,170,695
2012	140,670,243	138,524,568	61,986,310	30,958,893	31,027,417	76,538,258	2,145,676
2013	127,625,544	125,720,395	59,532,626	29,779,404	29,753,222	66,187,769	1,905,149
2014	132,778,962	130,561,320	63,191,428	31,587,903	31,603,525	67,369,892	2,217,642
2015	131,578,341	128,753,285	63,825,444	31,527,071	32,298,373	64,927,841	2,825,055
2016	118,273,784	115,832,794	67,104,649	32,292,659	34,811,990	48,728,145	2,440,989
2017	121,626,565	118,974,799	69,871,308	33,271,490	36,599,818	49,103,491	2,651,766
2018	133,277,540	129,424,802	74,587,573	36,195,128	38,392,445	54,837,230	3,852,737
2019	146,800,654	142,424,207	81,117,784	40,017,258	41,100,526	61,306,422	4,376,448
2020	173,552,852	167,402,781	85,304,757	41,546,622	43,758,135	82,098,024	6,150,070
2021	194,433,926	190,151,487	86,244,258	42,494,145	43,750,114	103,907,229	4,282,438
2022 (preliminary)	193,551,003	189,058,891	88,464,235	43,790,457	44,673,778	100,594,656	4,492,112

NA = not available; data were not collected at this level of detail.

Note(s):
Because of rounding, detail may not add to total. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. Beginning with FY 2016, the totals reported for development obligations represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) obligations. Those funds, previously included in DOD's development obligation totals, support the development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act).

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 2

Summary of federal obligations and outlays for research, experimental development, and R&D plant, by type of R&D, performer, and field of R&D: FYs 2020–22

(Dollars in millions)

Type of R&D, performer, and field	2020	2021	Preliminary 2022	Preliminary % change 2021–22
Outlays for R&D and R&D plant	149,706	178,334	183,632	3.0
R&D	144,920	174,529	179,316	2.7
R&D plant	4,786	3,805	4,316	13.4
Obligations for R&D and R&D plant	173,553	194,434	193,551	-0.5
R&D	167,403	190,151	189,059	-0.6
Performer				
Federal agencies[a]	51,472	71,665	69,232	-3.4
FFRDCs	13,150	14,791	15,162	2.5
Businesses	51,428	50,225	50,762	1.1
Higher education[b]	38,541	39,766	40,458	1.7
Nonprofit organizations	10,699	11,985	11,753	-1.9
State and local governments	720	966	937	-3.0
Non-U.S. performers	1,393	753	755	0.2
Research	85,305	86,244	88,464	2.6
Performer				
Federal agencies[a]	19,572	16,764	18,352	9.5
FFRDCs	9,892	10,529	10,789	2.5
Businesses	10,028	10,790	10,528	-2.4
Higher education[b]	35,474	37,027	37,605	1.6
Nonprofit organizations	9,191	9,760	9,839	0.8
State and local governments	645	887	849	-4.3
Non-U.S. performers	503	488	502	3.0
Field of R&D				
Computer and information sciences	NA	5,350	5,877	9.9
Computer sciences and mathematics	5,912	NA	NA	NA
Geosciences, atmospheric sciences, and ocean sciences[c]	5,039	3,569	6,052	69.6
Life sciences	42,525	38,178	38,511	0.9
Mathematics and statistics	NA	715	733	2.4
Physical sciences	8,420	8,044	11,112	38.1
Psychology	3,276	3,770	3,776	0.2
Social sciences	1,137	1,370	1,449	5.8
Engineering	13,222	13,374	13,861	3.6
Other fields	5,773	11,874	7,094	-40.3
Basic research	41,547	42,494	43,790	3.1
Performer				
Federal agencies[a]	7,688	6,199	6,533	5.4
FFRDCs	5,923	5,805	6,632	14.3
Businesses	3,147	3,785	3,557	-6.0
Higher education[b]	20,128	21,441	21,737	1.4
Nonprofit organizations	4,326	4,500	4,557	1.3
State and local governments	114	533	541	1.6
Non-U.S. performers	221	232	233	0.4
Field of R&D				
Computer and information sciences	NA	2,264	2,383	5.3
Computer sciences and mathematics	2,524	NA	NA	NA
Geosciences, atmospheric sciences, and ocean sciences[c]	3,167	1,772	3,568	101.3
Life sciences	20,805	19,008	19,188	0.9
Mathematics and statistics	NA	503	536	6.5

TABLE 2

Summary of federal obligations and outlays for research, experimental development, and R&D plant, by type of R&D, performer, and field of R&D: FYs 2020–22

(Dollars in millions)

Type of R&D, performer, and field	2020	2021	Preliminary 2022	Preliminary % change 2021–22
Physical sciences	6,513	6,432	8,737	35.8
Psychology	1,612	1,934	1,930	-0.2
Social sciences	440	537	542	0.8
Engineering	2,898	3,151	3,231	2.6
Other fields	3,588	6,892	3,675	-46.7
Applied research	43,758	43,750	44,674	2.1
Performer				
Federal agencies[a]	11,884	10,565	11,819	11.9
FFRDCs	3,969	4,724	4,157	-12.0
Businesses	6,882	7,004	6,970	-0.5
Higher education[b]	15,345	15,586	15,867	1.8
Nonprofit organizations	4,865	5,260	5,283	0.4
State and local governments	530	354	307	-13.2
Non-U.S. performers	282	256	270	5.4
Field of R&D				
Computer and information sciences	NA	3,086	3,493	13.2
Computer sciences and mathematics	3,388	NA	NA	NA
Geosciences, atmospheric sciences, and ocean sciences[c]	1,873	1,797	2,484	38.2
Life sciences	21,720	19,169	19,323	0.8
Mathematics and statistics	NA	212	197	-7.3
Physical sciences	1,907	1,612	2,375	47.3
Psychology	1,664	1,836	1,846	0.6
Social sciences	698	832	907	9.0
Engineering	10,324	10,223	10,629	4.0
Other fields	2,185	4,982	3,419	-31.4
Experimental development	82,098	103,907	100,595	-3.2
Performer				
Federal agencies[a]	31,899	54,901	50,879	-7.3
FFRDCs	3,258	4,263	4,373	2.6
Businesses	41,400	39,435	40,234	2.0
Higher education[b]	3,067	2,740	2,853	4.1
Nonprofit organizations	1,508	2,225	1,914	-14.0
State and local governments	75	79	88	12.3
Non-U.S. performers	890	265	252	-4.9
Field of R&D				
Computer and information sciences	NA	3,175	3,665	15.5
Computer sciences and mathematics	NA	NA	NA	NA
Geosciences, atmospheric sciences, and ocean sciences[c]	NA	2,055	824	-59.9
Life sciences	NA	39,394	31,702	-19.5
Mathematics and statistics	NA	292	269	-7.7
Physical sciences	NA	2,122	3,609	70.1
Psychology	NA	364	401	10.2
Social sciences	NA	139	133	-4.4
Engineering	NA	43,218	48,022	11.1
Other fields	NA	13,149	11,969	-9.0
R&D plant	6,150	4,282	4,492	4.9
Performer				
Federal agencies[a]	3,106	883	1,025	16.2

TABLE 2

Summary of federal obligations and outlays for research, experimental development, and R&D plant, by type of R&D, performer, and field of R&D: FYs 2020–22

(Dollars in millions)

Type of R&D, performer, and field	2020	2021	Preliminary 2022	Preliminary % change 2021–22
FFRDCs	1,884	2,019	1,809	-10.4
Businesses	678	858	782	-8.9
Higher education[b]	351	360	589	63.4
Nonprofit organizations	125	155	282	81.1
State and local governments	7	6	5	-14.3
Non-U.S. performers	*	*	*	41.3

* = amount greater than $0 but less than $500,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from non-federal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, as well as actual federal performance.
[b] Higher education include both public and private institutions as well as University Affiliated Research Centers.
[c] Formerly called "Environmental sciences" prior to volume 71.

Note(s):
Because of rounding, detail may not add to total. Percentages are computed using actual dollars reported. FYs 2020, 2021, and 2022 data include obligations from supplemental COVID-19 related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center of Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 3

Federal obligations and outlays for research, experimental development, and R&D plant, by agency: FYs 2021–22

(Dollars in millions)

Agency	Obligations		Outlays	
	2021	2022 (preliminary)	2021	2022 (preliminary)
All agencies	194,434	193,551	178,334	183,632
Departments				
Department of Agriculture	2,955	3,285	2,704	3,511
Agricultural Marketing Service	13	15	7	8
Agricultural Research Service	1,556	1,608	1,478	1,948
Animal and Plant Health Inspection Service	42	45	42	44
Economic Research Service	85	90	85	91
Forest Service	298	355	302	433
National Agricultural Statistics Service	9	11	9	11
National Institute of Food and Agriculture	937	1,148	779	975
Natural Resources Conservation Service	14	13	1	*
Department of Commerce	2,242	2,663	1,953	2,152
Census Bureau	109	149	109	149
National Institute of Standards and Technology	1,136	1,033	890	1,033
National Oceanic and Atmospheric Administration	990	1,473	944	958
National Telecommunications and Information Administration	7	7	10	12
Department of Defense	70,876	75,635	63,487	68,574
Defense Advanced Research Projects Agency	3,606	3,809	3,508	3,703
Defense Health Agency	2,852	2,537	2,427	2,474
Department of the Air Force	12,511	13,362	10,726	10,454
Department of the Army	11,921	12,934	11,440	12,524
Department of the Navy	16,771	18,705	16,298	17,984
Space Force	5,342	4,593	4,393	4,166
Other defense agencies	17,873	19,695	14,696	17,269
Department of Education	364	407	214	321
Department of Energy	16,121	16,384	14,593	16,056
Advanced Research Projects Agency—Energy	315	450	308	373
Electricity Delivery and Energy Reliability	129	127	146	1,280
Energy Efficiency and Renewable Energy	2,155	2,123	1,552	1,648
Environmental Management	30	35	23	20
Fossil Energy	720	765	708	737
National Nuclear Security Administration	5,180	4,970	4,702	4,633
Defense Programs	3,321	2,930	2,881	2,641
Naval Nuclear Propulsion Program	1,471	1,653	1,471	1,653
Office of Defense Nuclear Nonproliferation	388	387	349	339
Nuclear Energy	455	479	455	521
Office of Cybersecurity, Energy Security, and Emergency Response	2	120	31	53
Office of Science	7,135	7,315	6,669	6,790
Department of Health and Human Services	77,050	69,393	73,019	68,013
Administration for Children and Families	5	4	5	4
Administration for Community Living	107	111	107	111
Agency for Healthcare Research and Quality	338	350	338	350
Agency for Toxic Substances and Disease Registry	11	11	11	11
Biomedical Advanced Research and Development Authority	34,041	26,434	34,041	26,434
Centers for Disease Control and Prevention	696	661	299	284
Centers for Medicare and Medicaid Services	421	421	36	36
Food and Drug Administration	597	678	563	639
Health Resources and Services Administration	42	39	58	46
National Institutes of Health	40,775	40,666	37,545	40,080
Office of the Secretary of Health and Human Services	17	18	17	18

TABLE 3

Federal obligations and outlays for research, experimental development, and R&D plant, by agency: FYs 2021–22

(Dollars in millions)

Agency	Obligations		Outlays	
	2021	2022 (preliminary)	2021	2022 (preliminary)
Office of the Assistant Secretary for Planning and Evaluation	17	18	17	18
Department of Homeland Security	549	621	566	668
Coast Guard	10	7	10	7
Countering Weapons of Mass Destruction Office	32	39	87	68
Cybersecurity and Infrastructure Security Agency	13	11	13	11
Science and Technology Directorate	463	525	423	539
Secret Service	1	2	3	6
Transportation Security Administration	30	36	30	36
Department of the Interior	915	1,172	876	1,146
Bureau of Indian Affairs	5	4	5	4
Bureau of Land Management	10	12	9	12
Bureau of Ocean Energy Management	77	84	70	78
Bureau of Reclamation	40	43	40	43
Bureau of Safety and Environmental Enforcement	32	22	14	14
Fish and Wildlife Service	33	33	23	23
Geological Survey	691	947	691	947
National Park Service	28	28	23	25
Department of Justice	85	88	11	13
Bureau of Prisons	*	*	*	*
Federal Bureau of Investigation	4	5	4	5
Office of Justice Programs	81	83	8	8
Department of Labor	3	4	3	3
Employee Benefits Security Administration	1	2	1	1
Occupational Safety and Health Administration	2	2	2	2
Department of State	64	67	64	67
Department of Transportation	1,145	1,134	670	801
Federal Aviation Administration	542	552	248	368
Federal Highway Administration	410	391	257	245
Federal Motor Carrier Safety Administration	13	16	3	9
Federal Railroad Administration	44	53	39	44
Federal Transit Administration	43	33	29	34
National Highway Traffic Safety Administration	66	51	60	58
Office of the Secretary of Transportation	12	15	13	15
Pipeline and Hazardous Materials Safety Administration	16	24	21	29
Department of the Treasury	54	65	54	65
Bureau of Engraving and Printing	54	64	54	64
Mint	*	1	*	1
Department of Veterans Affairs	1,698	1,831	1,475	1,628
Other agencies				
Administrative Office of the U.S. Courts	4	1	4	1
Agency for Global Media	5	8	5	8
Agency for International Development	82	82	82	82
Appalachian Regional Commission	1	*	1	*
Consumer Product Safety Commission	*	*	*	*
Environmental Protection Agency	526	531	526	531
Federal Trade Commission	8	9	8	9
Library of Congress	3	3	3	3
National Aeronautics and Space Administration	11,805	11,503	11,133	12,252
National Science Foundation	7,138	7,843	5,917	6,711
Nuclear Regulatory Commission	80	82	77	79

TABLE 3

Federal obligations and outlays for research, experimental development, and R&D plant, by agency: FYs 2021–22

(Dollars in millions)

Agency	Obligations		Outlays	
	2021	2022 (preliminary)	2021	2022 (preliminary)
Patient-Centered Outcomes Research Trust Fund	460	481	460	481
Postal Service	15	16	15	16
RESTORE Act Centers of Excellence Research Grants Program	0	7	4	3
Smithsonian Institution	63	95	288	297
Social Security Administration	105	99	105	99
Tennessee Valley Authority	17	41	17	41

* = amount greater than $0 but less than $500,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations or outlays in variables represented by this table appear in the table. FYs 2021 and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 4

Federal obligations and outlays for research and experimental development, by agency: FYs 2021–22

(Dollars in millions)

Agency	Obligations		Outlays	
	2021	2022 (preliminary)	2021	2022 (preliminary)
All agencies	190,151	189,059	174,529	179,316
Departments				
Department of Agriculture	2,898	3,266	2,593	3,258
Agricultural Marketing Service	13	15	7	8
Agricultural Research Service	1,510	1,599	1,378	1,705
Animal and Plant Health Inspection Service	42	45	42	44
Economic Research Service	85	90	85	91
Forest Service	286	345	290	423
National Agricultural Statistics Service	9	11	9	11
National Institute of Food and Agriculture	937	1,148	779	975
Natural Resources Conservation Service	13	13	1	*
Department of Commerce	1,813	2,043	1,689	1,774
Census Bureau	109	149	109	149
National Institute of Standards and Technology	885	891	769	838
National Oceanic and Atmospheric Administration	812	996	800	776
National Telecommunications and Information Administration	7	7	10	12
Department of Defense	70,707	75,473	63,275	68,408
Defense Advanced Research Projects Agency	3,606	3,809	3,508	3,703
Defense Health Agency	2,852	2,537	2,427	2,474
Department of the Air Force	12,390	13,245	10,563	10,333
Department of the Army	11,921	12,934	11,440	12,524
Department of the Navy	16,734	18,669	16,260	17,947
Space Force	5,342	4,593	4,393	4,166
Other defense agencies	17,863	19,686	14,686	17,259
Department of Education	364	407	214	321
Department of Energy	13,453	13,912	12,263	13,669
Advanced Research Projects Agency—Energy	315	450	308	373
Electricity Delivery and Energy Reliability	129	127	146	1,280
Energy Efficiency and Renewable Energy	2,114	2,062	1,513	1,598
Environmental Management	30	35	23	20
Fossil Energy	691	736	681	708
National Nuclear Security Administration	4,213	4,107	3,866	3,861
Defense Programs	2,703	2,492	2,384	2,284
Naval Nuclear Propulsion Program	1,140	1,246	1,140	1,246
Office of Defense Nuclear Nonproliferation	369	368	342	332
Nuclear Energy	455	479	455	521
Office of Cybersecurity, Energy Security, and Emergency Response	2	120	31	53
Office of Science	5,506	5,795	5,241	5,255
Department of Health and Human Services	76,651	69,153	72,664	67,672
Administration for Children and Families	5	4	5	4
Administration for Community Living	107	111	107	111
Agency for Healthcare Research and Quality	338	350	338	350
Agency for Toxic Substances and Disease Registry	11	11	11	11
Biomedical Advanced Research and Development Authority	33,881	26,433	33,881	26,434
Centers for Disease Control and Prevention	696	661	299	284
Centers for Medicare and Medicaid Services	421	421	36	36
Food and Drug Administration	589	669	528	599
Health Resources and Services Administration	41	38	56	45
National Institutes of Health	40,546	40,436	37,386	39,781
Office of the Secretary of Health and Human Services	17	18	17	18

TABLE 4

Federal obligations and outlays for research and experimental development, by agency: FYs 2021–22

(Dollars in millions)

Agency	Obligations		Outlays	
	2021	2022 (preliminary)	2021	2022 (preliminary)
Office of the Assistant Secretary for Planning and Evaluation	17	18	17	18
Department of Homeland Security	529	601	553	641
Coast Guard	10	7	10	7
Countering Weapons of Mass Destruction Office	32	39	87	68
Cybersecurity and Infrastructure Security Agency	13	11	13	11
Science and Technology Directorate	444	506	411	513
Secret Service	1	2	3	6
Transportation Security Administration	29	35	29	35
Department of the Interior	902	1,165	874	1,145
Bureau of Indian Affairs	5	4	5	4
Bureau of Land Management	10	12	9	12
Bureau of Ocean Energy Management	77	84	70	78
Bureau of Reclamation	38	42	38	42
Bureau of Safety and Environmental Enforcement	21	16	14	14
Fish and Wildlife Service	33	33	23	23
Geological Survey	691	947	691	947
National Park Service	28	28	23	25
Department of Justice	85	88	11	13
Bureau of Prisons	*	*	*	*
Federal Bureau of Investigation	4	5	4	5
Office of Justice Programs	81	83	8	8
Department of Labor	3	4	3	3
Employee Benefits Security Administration	1	2	1	1
Occupational Safety and Health Administration	2	2	2	2
Department of State	64	67	64	67
Department of Transportation	1,108	1,096	642	771
Federal Aviation Administration	507	516	221	340
Federal Highway Administration	410	391	257	245
Federal Motor Carrier Safety Administration	13	16	3	9
Federal Railroad Administration	42	51	38	42
Federal Transit Administration	43	33	29	34
National Highway Traffic Safety Administration	66	50	60	57
Office of the Secretary of Transportation	12	15	13	15
Pipeline and Hazardous Materials Safety Administration	16	24	21	29
Department of the Treasury	54	65	54	65
Bureau of Engraving and Printing	54	64	54	64
Mint	*	1	*	1
Department of Veterans Affairs	1,698	1,831	1,475	1,628
Other agencies				
Administrative Office of the U.S. Courts	4	1	4	1
Agency for Global Media	5	8	5	8
Agency for International Development	82	82	82	82
Appalachian Regional Commission	1	*	1	*
Consumer Product Safety Commission	*	*	*	*
Environmental Protection Agency	520	525	520	525
Federal Trade Commission	8	9	8	9
Library of Congress	3	3	3	3
National Aeronautics and Space Administration	11,753	11,404	11,089	12,198
National Science Foundation	6,705	7,036	5,546	6,107
Nuclear Regulatory Commission	80	82	77	79

TABLE 4

Federal obligations and outlays for research and experimental development, by agency: FYs 2021–22

(Dollars in millions)

Agency	Obligations		Outlays	
	2021	2022 (preliminary)	2021	2022 (preliminary)
Patient-Centered Outcomes Research Trust Fund	460	481	460	481
Postal Service	15	16	15	16
RESTORE Act Centers of Excellence Research Grants Program	0	7	4	3
Smithsonian Institution	63	95	219	228
Social Security Administration	105	99	105	99
Tennessee Valley Authority	17	41	17	41

* = amount greater than $0 but less than $500,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations or outlays in variables represented by this table appear in the table. FYs 2021 and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 5

Federal obligations for research and experimental development, by agency and type of R&D: FY 2021

(Dollars in thousands)

Agency	Total R&D	Basic research	Applied research	Experimental development		
				Total	Advanced technology	Major systems
All agencies	190,151,487	42,494,145	43,750,114	103,907,229	9,240,810	51,730,686
Departments						
Department of Agriculture	2,897,678	1,299,030	1,361,790	236,858	na	na
Agricultural Marketing Service	13,327	0	6,663	6,663	na	na
Agricultural Research Service	1,510,403	755,202	604,161	151,040	na	na
Animal and Plant Health Inspection Service	41,980	21,101	0	20,880	na	na
Economic Research Service	85,476	0	85,476	0	na	na
Forest Service	286,416	79,155	154,223	53,038	na	na
National Agricultural Statistics Service	9,488	0	5,151	4,337	na	na
National Institute of Food and Agriculture	937,440	432,329	505,111	0	na	na
Natural Resources Conservation Service	13,148	11,244	1,004	900	na	na
Department of Commerce	1,812,956	277,665	1,228,287	307,003	na	na
Census Bureau	108,681	0	55,936	52,744	na	na
National Institute of Standards and Technology	885,352	277,665	506,747	100,940	na	na
National Oceanic and Atmospheric Administration	812,044	0	658,725	153,319	na	na
National Telecommunications and Information Administration	6,879	0	6,879	0	na	na
Department of Defense	70,706,915	2,834,851	6,900,567	60,971,497	9,240,810	51,730,686
Defense Advanced Research Projects Agency	3,605,914	509,680	1,335,666	1,760,568	1,576,059	184,509
Defense Health Agency	2,851,858	17,921	114,779	2,719,158	1,530,781	1,188,377
Department of the Air Force	12,390,080	703,068	1,683,718	10,003,295	1,055,245	8,948,050
Department of the Army	11,921,185	541,892	1,372,202	10,007,091	1,841,577	8,165,514
Department of the Navy	16,733,677	630,694	1,023,460	15,079,522	871,188	14,208,334
Space Force	5,341,594	98,285	0	5,243,308	0	5,243,308
Other defense agencies	17,862,607	333,311	1,370,742	16,158,554	2,365,960	13,792,594
Department of Education	363,657	29,730	232,600	101,327	na	na
Department of Energy	13,453,006	5,500,144	5,276,862	2,676,001	na	na
Advanced Research Projects Agency—Energy	314,725	0	157,363	157,363	na	na
Electricity Delivery and Energy Reliability	128,701	12,542	49,592	66,567	na	na
Energy Efficiency and Renewable Energy	2,113,529	0	1,394,973	718,556	na	na
Environmental Management	30,007	0	9,902	20,105	na	na
Fossil Energy	691,073	1,701	689,372	0	na	na
National Nuclear Security Administration	4,212,968	122,721	2,485,060	1,605,187	na	na
Defense Programs	2,703,374	0	2,328,172	375,201	na	na
Naval Nuclear Propulsion Program	1,140,270	0	0	1,140,270	na	na
Office of Defense Nuclear Nonproliferation	369,324	122,721	156,888	89,715	na	na
Nuclear Energy	454,678	0	346,454	108,224	na	na
Office of Cybersecurity, Energy Security, and Emergency Response	1,731	1,731	0	0	na	na
Office of Science	5,505,595	5,361,449	144,146	0	na	na
Department of Health and Human Services	76,651,162	21,508,382	21,209,856	33,932,925	na	na
Administration for Children and Families	4,590	0	4,590	0	na	na
Administration for Community Living	106,908	0	106,908	0	na	na
Agency for Healthcare Research and Quality	338,000	0	308,145	29,855	na	na
Agency for Toxic Substances and Disease Registry	10,935	0	10,935	0	na	na
Biomedical Advanced Research and Development Authority	33,881,017	0	0	33,881,017	na	na

TABLE 5

Federal obligations for research and experimental development, by agency and type of R&D: FY 2021

(Dollars in thousands)

Agency	Total R&D	Basic research	Applied research	Experimental development		
				Total	Advanced technology	Major systems
Centers for Disease Control and Prevention	695,608	89,306	592,250	14,053	na	na
Centers for Medicare and Medicaid Services	420,703	420,703	0	0	na	na
Food and Drug Administration	589,144	0	589,144	0	na	na
Health Resources and Services Administration	40,920	3,399	29,521	8,000	na	na
National Institutes of Health	40,545,951	20,994,974	19,550,976	0	na	na
Office of the Secretary of Health and Human Services	17,386	0	17,386	0	na	na
Office of the Assistant Secretary for Planning and Evaluation	17,386	0	17,386	0	na	na
Department of Homeland Security	529,184	50,791	187,372	291,022	na	na
Coast Guard	10,276	0	2,995	7,281	na	na
Countering Weapons of Mass Destruction Office	32,353	6,025	15,266	11,062	na	na
Cybersecurity and Infrastructure Security Agency	12,530	0	9,032	3,498	na	na
Science and Technology Directorate	444,031	44,766	159,079	240,186	na	na
Secret Service	994	0	0	994	na	na
Transportation Security Administration	29,000	0	1,000	28,000	na	na
Department of the Interior	902,479	86,089	668,110	148,280	na	na
Bureau of Indian Affairs	5,000	0	5,000	0	na	na
Bureau of Land Management	10,310	237	9,143	930	na	na
Bureau of Ocean Energy Management	76,782	0	62,582	14,200	na	na
Bureau of Reclamation	38,000	0	18,000	20,000	na	na
Bureau of Safety and Environmental Enforcement	20,686	1,530	18,918	238	na	na
Fish and Wildlife Service	32,650	0	32,650	0	na	na
Geological Survey	690,697	84,322	494,595	111,780	na	na
National Park Service	28,354	0	27,222	1,132	na	na
Department of Justice	85,066	8,401	70,562	6,102	na	na
Bureau of Prisons	*	0	*	*	na	na
Federal Bureau of Investigation	3,698	0	3,698	0	na	na
Office of Justice Programs	81,360	8,401	66,863	6,096	na	na
Department of Labor	3,493	0	3,493	0	na	na
Employee Benefits Security Administration	1,301	0	1,301	0	na	na
Occupational Safety and Health Administration	2,192	0	2,192	0	na	na
Department of State	64,000	4,000	40,000	20,000	na	na
Department of Transportation	1,108,204	2,072	820,890	285,241	na	na
Federal Aviation Administration	507,105	0	266,866	240,240	na	na
Federal Highway Administration	410,089	0	373,484	36,605	na	na
Federal Motor Carrier Safety Administration	12,812	893	11,451	468	na	na
Federal Railroad Administration	42,215	0	35,039	7,177	na	na
Federal Transit Administration	42,797	0	42,045	752	na	na
National Highway Traffic Safety Administration	65,559	0	65,559	0	na	na
Office of the Secretary of Transportation	11,714	0	11,714	0	na	na
Pipeline and Hazardous Materials Safety Administration	15,912	1,179	14,733	0	na	na
Department of the Treasury	54,092	5,264	41,289	7,539	na	na
Bureau of Engraving and Printing	53,918	5,264	41,271	7,384	na	na

TABLE 5

Federal obligations for research and experimental development, by agency and type of R&D: FY 2021

(Dollars in thousands)

Agency	Total R&D	Basic research	Applied research	Experimental development		
				Total	Advanced technology	Major systems
Mint	174	0	*	155	na	na
Department of Veterans Affairs	1,698,441	624,980	936,176	137,285	na	na
Other agencies						
Administrative Office of the U.S. Courts	4,362	0	4,362	0	na	na
Agency for Global Media	4,597	0	4,597	0	na	na
Agency for International Development	81,698	0	51,211	30,487	na	na
Appalachian Regional Commission	650	0	650	0	na	na
Consumer Product Safety Commission	391	0	391	0	na	na
Environmental Protection Agency	520,328	0	403,334	116,994	na	na
Federal Trade Commission	8,094	0	8,094	0	na	na
Library of Congress	2,727	0	550	2,177	na	na
National Aeronautics and Space Administration	11,752,520	4,429,290	2,697,919	4,625,310	na	na
National Science Foundation	6,705,056	5,770,954	934,101	0	na	na
Nuclear Regulatory Commission	80,133	0	76,714	3,418	na	na
Patient-Centered Outcomes Research Trust Fund	460,331	0	460,331	0	na	na
Postal Service	15,435	0	15,435	0	na	na
Smithsonian Institution	62,500	62,500	0	0	na	na
Social Security Administration	105,392	0	105,392	0	na	na
Tennessee Valley Authority	16,942	0	9,179	7,763	na	na

* = amount greater than $0 but less than $50,000.

na = not applicable; data were not collected at this level of detail for this agency or subagency.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 6

Preliminary federal obligations for research and experimental development, by agency and type of R&D: FY 2022

(Dollars in thousands)

Agency	Total R&D	Basic research	Applied research	Experimental development		
				Total	Advanced technology	Major systems
All agencies	189,058,891	43,790,457	44,673,778	100,594,656	10,488,317	54,607,650
Departments						
Department of Agriculture	3,266,354	1,458,701	1,558,776	248,877	na	na
Agricultural Marketing Service	14,968	0	7,484	7,484	na	na
Agricultural Research Service	1,599,000	799,500	639,600	159,900	na	na
Animal and Plant Health Inspection Service	44,580	23,363	0	21,217	na	na
Economic Research Service	90,389	0	90,389	0	na	na
Forest Service	345,000	95,083	194,781	55,136	na	na
National Agricultural Statistics Service	11,467	0	6,327	5,140	na	na
National Institute of Food and Agriculture	1,147,558	527,876	619,681	0	na	na
Natural Resources Conservation Service	13,393	12,878	514	0	na	na
Department of Commerce	2,042,768	287,118	1,473,125	282,525	na	na
Census Bureau	148,927	0	110,367	38,560	na	na
National Institute of Standards and Technology	890,837	287,118	530,008	73,711	na	na
National Oceanic and Atmospheric Administration	995,804	0	825,550	170,254	na	na
National Telecommunications and Information Administration	7,200	0	7,200	0	na	na
Department of Defense	75,473,326	2,976,752	7,400,607	65,095,967	10,488,317	54,607,650
Defense Advanced Research Projects Agency	3,809,053	512,844	1,483,950	1,812,259	1,639,449	172,810
Defense Health Agency	2,537,305	15,570	158,831	2,362,905	1,667,967	694,938
Department of the Air Force	13,244,994	724,626	1,697,363	10,823,005	989,532	9,833,473
Department of the Army	12,933,505	586,322	1,502,296	10,844,886	2,127,203	8,717,683
Department of the Navy	18,668,983	852,383	1,229,568	16,587,032	1,004,613	15,582,419
Space Force	4,593,357	76,353	0	4,517,004	0	4,517,004
Other defense agencies	19,686,128	208,654	1,328,599	18,148,876	3,059,553	15,089,322
Department of Education	406,774	33,255	260,178	113,341	na	na
Department of Energy	13,911,600	5,947,161	4,523,208	3,441,231	na	na
Advanced Research Projects Agency—Energy	450,000	0	225,000	225,000	na	na
Electricity Delivery and Energy Reliability	127,064	8,401	59,361	59,302	na	na
Energy Efficiency and Renewable Energy	2,062,099	0	677,946	1,384,153	na	na
Environmental Management	35,000	0	11,550	23,450	na	na
Fossil Energy	736,176	0	736,176	0	na	na
National Nuclear Security Administration	4,106,601	123,085	2,403,869	1,579,646	na	na
Defense Programs	2,492,463	0	2,257,778	234,685	na	na
Naval Nuclear Propulsion Program	1,246,109	0	0	1,246,109	na	na
Office of Defense Nuclear Nonproliferation	368,029	123,085	146,092	98,852	na	na
Nuclear Energy	479,455	0	330,824	148,631	na	na
Office of Cybersecurity, Energy Security, and Emergency Response	119,800	20,270	78,481	21,049	na	na
Office of Science	5,795,405	5,795,405	0	0	na	na
Department of Health and Human Services	69,152,856	21,411,636	21,258,821	26,482,399	na	na
Administration for Children and Families	4,265	0	4,265	0	na	na
Administration for Community Living	110,863	0	110,863	0	na	na
Agency for Healthcare Research and Quality	350,400	0	314,345	36,055	na	na
Agency for Toxic Substances and Disease Registry	10,935	0	10,935	0	na	na
Biomedical Advanced Research and Development Authority	26,433,481	0	0	26,433,481	na	na

TABLE 6

Preliminary federal obligations for research and experimental development, by agency and type of R&D: FY 2022

(Dollars in thousands)

Agency	Total R&D	Basic research	Applied research	Experimental development		
				Total	Advanced technology	Major systems
Centers for Disease Control and Prevention	661,450	96,501	552,086	12,863	na	na
Centers for Medicare and Medicaid Services	420,703	420,703	0	0	na	na
Food and Drug Administration	669,007	0	669,007	0	na	na
Health Resources and Services Administration	38,189	3,399	34,790	0	na	na
National Institutes of Health	40,436,064	20,891,033	19,545,031	0	na	na
Office of the Secretary of Health and Human Services	17,500	0	17,500	0	na	na
Office of the Assistant Secretary for Planning and Evaluation	17,500	0	17,500	0	na	na
Department of Homeland Security	600,768	67,631	248,069	285,068	na	na
Coast Guard	7,476	0	2,243	5,233	na	na
Countering Weapons of Mass Destruction Office	38,940	6,631	24,324	7,985	na	na
Cybersecurity and Infrastructure Security Agency	11,282	0	3,502	7,780	na	na
Science and Technology Directorate	506,000	61,000	216,000	229,000	na	na
Secret Service	2,070	0	0	2,070	na	na
Transportation Security Administration	35,000	0	2,000	33,000	na	na
Department of the Interior	1,164,686	174,008	817,025	173,653	na	na
Bureau of Indian Affairs	4,000	0	4,000	0	na	na
Bureau of Land Management	12,049	2,004	8,579	1,466	na	na
Bureau of Ocean Energy Management	83,642	0	67,918	15,724	na	na
Bureau of Reclamation	41,500	0	21,500	20,000	na	na
Bureau of Safety and Environmental Enforcement	15,768	1,500	14,018	250	na	na
Fish and Wildlife Service	32,650	0	32,650	0	na	na
Geological Survey	946,723	170,504	641,138	135,081	na	na
National Park Service	28,354	0	27,222	1,132	na	na
Department of Justice	88,162	8,265	74,032	5,865	na	na
Bureau of Prisons	*	0	*	*	na	na
Federal Bureau of Investigation	5,396	0	5,396	0	na	na
Office of Justice Programs	82,756	8,265	68,634	5,857	na	na
Department of Labor	3,803	0	3,803	0	na	na
Employee Benefits Security Administration	1,569	0	1,569	0	na	na
Occupational Safety and Health Administration	2,234	0	2,234	0	na	na
Department of State	67,000	7,000	40,000	20,000	na	na
Department of Transportation	1,096,384	9,016	803,325	284,043	na	na
Federal Aviation Administration	516,262	0	271,685	244,578	na	na
Federal Highway Administration	390,819	0	361,044	29,775	na	na
Federal Motor Carrier Safety Administration	16,000	900	14,100	1,000	na	na
Federal Railroad Administration	50,802	0	42,112	8,690	na	na
Federal Transit Administration	33,000	0	33,000	0	na	na
National Highway Traffic Safety Administration	50,000	0	50,000	0	na	na
Office of the Secretary of Transportation	15,022	0	15,022	0	na	na
Pipeline and Hazardous Materials Safety Administration	24,479	8,116	16,363	0	na	na
Department of the Treasury	65,079	5,900	44,134	15,045	na	na
Bureau of Engraving and Printing	64,373	5,900	44,081	14,392	na	na

TABLE 6

Preliminary federal obligations for research and experimental development, by agency and type of R&D: FY 2022

(Dollars in thousands)

Agency	Total R&D	Basic research	Applied research	Experimental development		
				Total	Advanced technology	Major systems
Mint	706	0	53	653	na	na
Department of Veterans Affairs	1,831,467	670,701	1,002,408	158,358	na	na
Other agencies						
Administrative Office of the U.S. Courts	1,443	0	1,443	0	na	na
Agency for Global Media	7,884	0	7,884	0	na	na
Agency for International Development	81,698	0	51,211	30,487	na	na
Appalachian Regional Commission	122	0	122	0	na	na
Consumer Product Safety Commission	440	0	440	0	na	na
Environmental Protection Agency	525,457	0	406,371	119,086	na	na
Federal Trade Commission	8,571	0	8,571	0	na	na
Library of Congress	2,899	0	493	2,406	na	na
National Aeronautics and Space Administration	11,403,647	4,588,766	3,009,641	3,805,240	na	na
National Science Foundation	7,035,853	6,049,547	986,305	0	na	na
Nuclear Regulatory Commission	81,663	0	78,147	3,516	na	na
Patient-Centered Outcomes Research Trust Fund	481,465	0	481,465	0	na	na
Postal Service	15,702	0	15,702	0	na	na
RESTORE Act Centers of Excellence Research Grants Program	6,960	0	6,960	0	na	na
Smithsonian Institution	95,000	95,000	0	0	na	na
Social Security Administration	98,560	0	98,560	0	na	na
Tennessee Valley Authority	40,501	0	12,952	27,549	na	na

* = amount greater than $0 but less than $50,000.

na = not applicable; data were not collected at this level of detail for this agency or subagency.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 7

Federal obligations for research and experimental development, by agency and performer: FY 2021

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
All agencies	190,151	71,665	14,791	50,225	39,766	11,985	966	753
Departments								
Department of Agriculture	2,898	1,710	0	26	1,093	50	12	7
Agricultural Marketing Service	13	7	0	*	5	*	1	*
Agricultural Research Service	1,510	1,300	0	0	190	13	*	6
Animal and Plant Health Inspection Service	42	29	0	0	13	0	0	0
Economic Research Service	85	75	0	*	8	2	0	0
Forest Service	286	259	0	*	16	4	6	*
National Agricultural Statistics Service	9	8	0	0	*	1	0	0
National Institute of Food and Agriculture	937	20	0	26	858	29	5	0
Natural Resources Conservation Service	13	10	0	0	2	*	*	0
Department of Commerce	1,813	1,310	21	59	398	21	3	1
Census Bureau	109	109	0	0	0	0	0	0
National Institute of Standards and Technology	885	684	20	41	132	8	*	1
National Oceanic and Atmospheric Administration	812	511	1	19	266	13	3	*
National Telecommunications and Information Administration	7	7	0	0	0	0	0	0
Department of Defense	70,707	24,434	3,502	36,306	4,626	1,531	12	296
Defense Advanced Research Projects Agency	3,606	279	101	2,397	637	163	*	29
Defense Health Agency	2,852	1,027	6	337	762	658	0	62
Department of the Air Force	12,390	4,443	574	6,418	853	74	2	26
Department of the Army	11,921	5,397	145	5,562	542	229	0	47
Department of the Navy	16,734	7,038	193	8,112	1,132	209	1	49
Space Force	5,342	237	255	4,801	38	5	6	0
Other defense agencies	17,863	6,013	2,227	8,680	661	195	3	84
Department of Education	364	0	0	31	182	105	45	0
Department of Energy	13,453	965	7,905	2,724	1,599	195	63	2
Advanced Research Projects Agency—Energy	315	1	35	163	107	8	0	0
Electricity Delivery and Energy Reliability	129	3	93	15	9	9	*	0
Energy Efficiency and Renewable Energy	2,114	0	959	650	393	76	35	0
Environmental Management	30	*	25	0	5	0	0	0
Fossil Energy	691	422	67	0	136	65	0	1
National Nuclear Security Administration	4,213	322	2,529	1,350	12	0	0	0
Defense Programs	2,703	272	2,191	239	1	0	0	0
Naval Nuclear Propulsion Program	1,140	49	1	1,091	0	0	0	0
Office of Defense Nuclear Nonproliferation	369	2	336	21	11	0	0	0
Nuclear Energy	455	2	315	76	54	7	0	1

TABLE 7

Federal obligations for research and experimental development, by agency and performer: FY 2021

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Office of Cybersecurity, Energy Security, and Emergency Response	2	2	*	0	0	0	0	0
Office of Science	5,506	214	3,882	469	883	29	28	*
Department of Health and Human Services	76,651	38,207	729	4,949	24,559	7,326	570	311
Administration for Children and Families	5	*	0	0	2	2	0	0
Administration for Community Living	107	0	0	5	81	21	*	0
Agency for Healthcare Research and Quality	338	77	0	130	101	30	*	0
Agency for Toxic Substances and Disease Registry	11	0	0	0	7	3	1	*
Biomedical Advanced Research and Development Authority	33,881	31,384	0	2,105	11	376	0	6
Centers for Disease Control and Prevention	696	108	1	171	232	109	43	32
Centers for Medicare and Medicaid Services	421	0	0	12	1	7	401	0
Food and Drug Administration	589	455	0	13	71	42	2	6
Health Resources and Services Administration	41	5	0	1	28	8	0	0
National Institutes of Health	40,546	6,176	728	2,508	24,023	6,723	122	267
Office of the Secretary of Health and Human Services	17	3	0	5	2	7	0	0
Office of the Assistant Secretary for Planning and Evaluation	17	3	0	5	2	7	0	0
Department of Homeland Security	529	182	71	221	36	8	3	7
Coast Guard	10	0	0	10	0	0	0	*
Countering Weapons of Mass Destruction Office	32	6	8	9	7	0	0	3
Cybersecurity and Infrastructure Security Agency	13	3	2	*	0	7	0	0
Science and Technology Directorate	444	143	61	202	29	1	3	5
Secret Service	1	1	0	0	0	0	0	0
Transportation Security Administration	29	29	0	0	0	0	0	0
Department of the Interior	902	782	*	19	71	9	21	1
Bureau of Indian Affairs	5	0	0	0	0	0	5	0
Bureau of Land Management	10	4	0	*	4	1	1	*
Bureau of Ocean Energy Management	77	55	0	8	7	2	3	1
Bureau of Reclamation	38	26	0	4	8	0	*	*
Bureau of Safety and Environmental Enforcement	21	10	*	5	5	1	0	*
Fish and Wildlife Service	33	33	0	0	0	0	0	0
Geological Survey	691	637	0	1	36	5	11	*

TABLE 7

Federal obligations for research and experimental development, by agency and performer: FY 2021

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
National Park Service	28	17	0	0	11	*	0	0
Department of Justice	85	11	0	7	37	30	1	0
Bureau of Prisons	*	*	0	0	0	0	*	0
Federal Bureau of Investigation	4	0	0	2	1	0	0	0
Office of Justice Programs	81	11	0	4	35	30	1	0
Department of Labor	3	3	0	1	0	0	0	0
Employee Benefits Security Administration	1	*	0	1	0	0	0	0
Occupational Safety and Health Administration	2	2	0	0	0	0	0	0
Department of State	64	64	0	0	0	0	0	0
Department of Transportation	1,108	177	87	412	162	55	212	3
Federal Aviation Administration	507	87	84	243	70	21	0	3
Federal Highway Administration	410	58	2	92	71	12	175	0
Federal Motor Carrier Safety Administration	13	3	1	4	4	*	0	0
Federal Railroad Administration	42	11	*	11	6	13	*	*
Federal Transit Administration	43	0	0	0	1	5	37	0
National Highway Traffic Safety Administration	66	0	0	59	7	*	0	0
Office of the Secretary of Transportation	12	11	0	*	0	0	0	0
Pipeline and Hazardous Materials Safety Administration	16	6	0	3	3	4	0	0
Department of the Treasury	54	3	9	26	*	0	0	17
Bureau of Engraving and Printing	54	3	9	26	*	0	0	17
Mint	*	*	0	0	0	0	0	0
Department of Veterans Affairs	1,698	1,609	89	0	0	0	0	0
Other agencies								
Administrative Office of the U.S. Courts	4	0	4	0	0	0	0	0
Agency for Global Media	5	0	0	5	0	0	0	0
Agency for International Development	82	9	0	15	15	19	0	24
Appalachian Regional Commission	1	0	0	*	*	*	0	0
Consumer Product Safety Commission	*	*	0	0	*	0	0	0
Environmental Protection Agency	520	264	*	201	40	14	0	0
Federal Trade Commission	8	8	0	0	0	0	0	0
Library of Congress	3	3	0	0	0	0	0	0
National Aeronautics and Space Administration	11,753	1,749	2,051	4,654	1,396	1,837	3	62
National Science Foundation	6,705	8	298	510	5,536	313	20	20

TABLE 7

Federal obligations for research and experimental development, by agency and performer: FY 2021

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Nuclear Regulatory Commission	80	36	24	7	10	1	0	2
Patient-Centered Outcomes Research Trust Fund	460	0	0	0	0	460	0	0
Postal Service	15	0	0	15	0	0	0	0
Smithsonian Institution	63	63	0	0	0	0	0	0
Social Security Administration	105	67	0	28	6	3	0	*
Tennessee Valley Authority	17	0	0	10	0	7	0	0

* = amount greater than $0 but less than $500,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. Federal agency amounts for the Biomedical Advanced Research and Development Authority are transfers to the other agencies in support of Operation Warp Speed. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 8

Preliminary federal obligations for research and experimental development, by agency and performer: FY 2022

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
All agencies	189,059	69,232	15,162	50,762	40,458	11,753	937	755
Departments								
Department of Agriculture	3,266	1,925	0	31	1,190	103	12	5
Agricultural Marketing Service	15	8	0	0	5	1	1	*
Agricultural Research Service	1,599	1,441	0	0	143	10	*	5
Animal and Plant Health Inspection Service	45	32	0	0	13	0	0	0
Economic Research Service	90	80	0	*	8	2	0	0
Forest Service	345	318	0	*	16	4	6	*
National Agricultural Statistics Service	11	11	0	0	*	1	0	0
National Institute of Food and Agriculture	1,148	23	0	30	1,004	85	5	0
Natural Resources Conservation Service	13	13	0	0	1	0	*	0
Department of Commerce	2,043	1,433	20	79	483	20	6	1
Census Bureau	149	149	0	0	0	0	0	0
National Institute of Standards and Technology	891	727	19	36	101	7	*	1
National Oceanic and Atmospheric Administration	996	550	1	43	382	13	6	*
National Telecommunications and Information Administration	7	7	0	0	0	0	0	0
Department of Defense	75,473	26,862	3,498	38,392	4,778	1,629	18	295
Defense Advanced Research Projects Agency	3,809	288	108	2,532	675	175	*	31
Defense Health Agency	2,537	601	6	342	823	698	0	67
Department of the Air Force	13,245	4,827	594	6,833	900	64	2	26
Department of the Army	12,934	5,878	158	6,004	594	249	0	51
Department of the Navy	18,669	8,144	192	8,880	1,180	227	6	40
Space Force	4,593	281	234	4,051	20	0	7	0
Other defense agencies	19,686	6,844	2,207	9,750	588	215	3	80
Department of Education	407	0	0	35	198	125	48	0
Department of Energy	13,912	1,249	8,301	2,518	1,762	35	45	1
Advanced Research Projects Agency—Energy	450	0	51	234	153	13	0	0
Electricity Delivery and Energy Reliability	127	3	91	15	9	9	*	0
Energy Efficiency and Renewable Energy	2,062	0	887	639	516	0	21	0
Environmental Management	35	0	29	0	6	0	0	0
Fossil Energy	736	635	46	0	55	0	0	*
National Nuclear Security Administration	4,107	389	2,247	1,451	19	0	0	0
Defense Programs	2,492	327	1,921	240	4	0	0	0
Naval Nuclear Propulsion Program	1,246	56	1	1,190	0	0	0	0
Office of Defense Nuclear Nonproliferation	368	7	325	22	15	0	0	0
Nuclear Energy	479	2	306	116	49	5	0	1

TABLE 8

Preliminary federal obligations for research and experimental development, by agency and performer: FY 2022

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Office of Cybersecurity, Energy Security, and Emergency Response	120	104	16	0	0	0	0	0
Office of Science	5,795	116	4,628	63	956	8	24	0
Department of Health and Human Services	69,153	32,301	726	3,756	24,549	6,933	571	316
Administration for Children and Families	4	1	0	0	2	2	0	0
Administration for Community Living	111	0	0	3	88	20	*	0
Agency for Healthcare Research and Quality	350	90	0	132	99	30	*	0
Agency for Toxic Substances and Disease Registry	11	0	0	0	7	3	1	*
Biomedical Advanced Research and Development Authority	26,433	25,424	0	967	32	*	9	0
Centers for Disease Control and Prevention	661	102	0	127	249	105	35	43
Centers for Medicare and Medicaid Services	421	0	0	11	2	7	401	0
Food and Drug Administration	669	517	0	14	79	50	3	6
Health Resources and Services Administration	38	5	0	1	32	1	0	0
National Institutes of Health	40,436	6,158	726	2,497	23,957	6,710	121	266
Office of the Secretary of Health and Human Services	18	3	0	5	3	7	0	0
Office of the Assistant Secretary for Planning and Evaluation	18	3	0	5	3	7	0	0
Department of Homeland Security	601	270	70	184	55	12	4	6
Coast Guard	7	0	0	7	0	0	0	0
Countering Weapons of Mass Destruction Office	39	6	2	15	16	0	0	1
Cybersecurity and Infrastructure Security Agency	11	2	0	0	0	9	0	0
Science and Technology Directorate	506	226	68	162	40	2	4	5
Secret Service	2	2	0	0	0	0	0	0
Transportation Security Administration	35	35	0	0	0	0	0	0
Department of the Interior	1,165	999	*	19	107	7	32	1
Bureau of Indian Affairs	4	0	0	0	0	0	4	0
Bureau of Land Management	12	5	*	*	5	2	*	0
Bureau of Ocean Energy Management	84	64	0	8	6	4	2	1
Bureau of Reclamation	42	28	0	5	8	0	1	*
Bureau of Safety and Environmental Enforcement	16	6	*	5	5	*	0	0
Fish and Wildlife Service	33	33	0	0	0	0	0	0
Geological Survey	947	849	0	1	69	2	25	0

TABLE 8

Preliminary federal obligations for research and experimental development, by agency and performer: FY 2022

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
National Park Service	28	14	0	0	14	0	0	0
Department of Justice	88	11	0	11	36	30	1	0
Bureau of Prisons	*	*	0	0	0	0	*	0
Federal Bureau of Investigation	5	0	0	5	0	0	0	0
Office of Justice Programs	83	11	0	5	36	30	1	0
Department of Labor	4	3	0	1	0	0	0	0
Employee Benefits Security Administration	2	1	0	1	0	0	0	0
Occupational Safety and Health Administration	2	2	0	0	0	0	0	0
Department of State	67	67	0	0	0	0	0	0
Department of Transportation	1,096	190	90	414	182	48	169	3
Federal Aviation Administration	516	89	86	247	73	19	0	3
Federal Highway Administration	391	59	*	96	84	10	142	0
Federal Motor Carrier Safety Administration	16	6	2	5	4	*	0	0
Federal Railroad Administration	51	13	2	15	10	11	0	0
Federal Transit Administration	33	0	0	0	1	5	27	0
National Highway Traffic Safety Administration	50	0	0	43	7	*	0	0
Office of the Secretary of Transportation	15	15	0	0	0	*	0	0
Pipeline and Hazardous Materials Safety Administration	24	8	0	10	4	3	0	0
Department of the Treasury	65	3	9	29	0	0	0	24
Bureau of Engraving and Printing	64	3	9	29	0	0	0	24
Mint	1	1	*	0	0	0	0	0
Department of Veterans Affairs	1,831	1,725	107	0	0	0	0	0
Other agencies								
Administrative Office of the U.S. Courts	1	0	1	0	0	0	0	0
Agency for Global Media	8	0	0	8	0	0	0	0
Agency for International Development	82	9	0	15	15	19	0	24
Appalachian Regional Commission	*	0	0	0	*	*	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0	0
Environmental Protection Agency	525	273	0	195	42	15	0	0
Federal Trade Commission	9	9	0	0	0	0	0	0
Library of Congress	3	3	0	0	0	0	0	0
National Aeronautics and Space Administration	11,404	1,709	2,002	4,447	1,242	1,944	3	56
National Science Foundation	7,036	8	313	536	5,798	339	21	20

TABLE 8

Preliminary federal obligations for research and experimental development, by agency and performer: FY 2022

(Dollars in millions)

Agency	Total R&D	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Nuclear Regulatory Commission	82	37	25	7	10	1	0	2
Patient-Centered Outcomes Research Trust Fund	481	0	0	0	0	481	0	0
Postal Service	16	0	0	16	0	0	0	0
RESTORE Act Centers of Excellence Research Grants Program	7	0	0	0	0	0	7	0
Smithsonian Institution	95	95	0	0	0	0	0	0
Social Security Administration	99	51	0	37	7	3	0	0
Tennessee Valley Authority	41	0	0	33	0	8	0	0

* = amount greater than $0 but less than $500,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. Federal agency amounts for the Biomedical Advanced Research and Development Authority are transfers to the other agencies in support of Operation Warp Speed. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 9

Extramural R&D plant and fields of R&D by type of agreement, by agency: FY 2021

(Dollars in thousands)

Agency	Total R&D and R&D plant		R&D		R&D plant	
	Contracts	Grants	Contracts	Grants	Contracts	Grants
All agencies	49,716,143	52,773,694	48,891,671	52,217,619	824,473	556,076
Departments						
Department of Agriculture	221,619	966,078	221,619	966,078	0	0
Agricultural Marketing Service	0	6,068	0	6,068	0	0
Agricultural Research Service	210,062	0	210,062	0	0	0
Animal and Plant Health Inspection Service	0	12,532	0	12,532	0	0
Economic Research Service	10,556	0	10,556	0	0	0
Forest Service	0	27,416	0	27,416	0	0
National Agricultural Statistics Service	1,001	0	1,001	0	0	0
National Institute of Food and Agriculture	0	917,382	0	917,382	0	0
Natural Resources Conservation Service	0	2,680	0	2,680	0	0
Department of Commerce	48,721	433,208	48,586	433,192	135	*
National Institute of Standards and Technology	32,546	148,637	32,546	148,637	0	0
National Oceanic and Atmospheric Administration	16,176	284,571	16,041	284,555	135	*
Department of Defense	36,635,838	3,551,439	36,634,186	3,551,439	1,651	0
Defense Advanced Research Projects Agency	2,826,120	399,541	2,826,120	399,541	0	0
Defense Health Agency	484,764	1,333,850	484,764	1,333,850	0	0
Department of the Air Force	6,987,733	385,071	6,987,733	385,071	0	0
Department of the Army	6,379,377	0	6,379,377	0	0	0
Department of the Navy	6,098,349	817,844	6,098,349	817,844	0	0
Space Force	4,849,923	0	4,849,923	0	0	0
Other defense agencies	9,009,571	615,132	9,007,920	615,132	1,651	0
Department of Education	56,023	307,634	56,023	307,634	0	0
Department of Energy	3,196,750	1,969,990	2,612,815	1,969,990	583,935	0
Advanced Research Projects Agency—Energy	18,826	259,497	18,826	259,497	0	0
Electricity Delivery and Energy Reliability	33,140	0	33,140	0	0	0
Energy Efficiency and Renewable Energy	1,154,106	0	1,154,106	0	0	0
Environmental Management	0	5,000	0	5,000	0	0
Fossil Energy	0	202,502	0	202,502	0	0
National Nuclear Security Administration	1,917,611	11,121	1,351,334	11,121	566,277	0
Defense Programs	475,741	0	240,464	0	235,277	0
Naval Nuclear Propulsion Program	1,420,666	1,002	1,089,666	1,002	331,000	0
Office of Defense Nuclear Nonproliferation	21,204	10,119	21,204	10,119	0	0
Nuclear Energy	6,919	131,110	6,919	131,110	0	0
Office of Science	66,148	1,360,761	48,490	1,360,761	17,658	0
Department of Health and Human Services	5,799,496	32,172,814	5,639,490	32,075,600	160,005	97,215
Administration for Children and Families	4,225	0	4,225	0	0	0
Administration for Community Living	0	106,908	0	106,908	0	0
Agency for Healthcare Research and Quality	0	261,217	0	261,217	0	0
Agency for Toxic Substances and Disease Registry	0	10,935	0	10,935	0	0
Biomedical Advanced Research and Development Authority	2,657,203	0	2,497,198	0	160,005	0
Centers for Disease Control and Prevention	318,356	268,889	318,356	268,889	0	0
Centers for Medicare and Medicaid Services	500	420,203	500	420,203	0	0
Food and Drug Administration	0	133,985	0	133,985	0	0
Health Resources and Services Administration	567	35,684	567	35,684	0	0
National Institutes of Health	2,804,359	30,934,993	2,804,359	30,837,778	0	97,215
Office of the Secretary of Health and Human Services	14,286	0	14,286	0	0	0
Office of the Assistant Secretary for Planning and Evaluation	14,286	0	14,286	0	0	0
Department of Homeland Security	254,911	35,647	240,267	35,647	14,644	0
Coast Guard	10,276	0	10,276	0	0	0

TABLE 9

Extramural R&D plant and fields of R&D by type of agreement, by agency: FY 2021

(Dollars in thousands)

Agency	Total R&D and R&D plant		R&D		R&D plant	
	Contracts	Grants	Contracts	Grants	Contracts	Grants
Countering Weapons of Mass Destruction Office	11,152	7,034	11,152	7,034	0	0
Cybersecurity and Infrastructure Security Agency	7,326	0	7,326	0	0	0
Science and Technology Directorate	226,156	28,613	211,513	28,613	14,644	0
Department of the Interior	44,862	86,658	33,567	86,658	11,295	0
Bureau of Indian Affairs	0	5,000	0	5,000	0	0
Bureau of Land Management	6,072	0	6,072	0	0	0
Bureau of Ocean Energy Management	11,677	10,429	11,677	10,429	0	0
Bureau of Reclamation	4,935	7,534	4,135	7,534	800	0
Bureau of Safety and Environmental Enforcement	20,794	0	10,299	0	10,495	0
Geological Survey	1,384	52,738	1,384	52,738	0	0
National Park Service	0	10,957	0	10,957	0	0
Department of Justice	6,626	67,026	6,626	67,026	0	0
Bureau of Prisons	*	0	*	0	0	0
Federal Bureau of Investigation	3,698	0	3,698	0	0	0
Office of Justice Programs	2,922	67,026	2,922	67,026	0	0
Department of Labor	897	0	897	0	0	0
Employee Benefits Security Administration	897	0	897	0	0	0
Department of Transportation	475,146	406,356	438,124	406,356	37,022	0
Federal Aviation Administration	307,666	62,926	272,576	62,926	35,090	0
Federal Highway Administration	119,733	230,614	119,733	230,614	0	0
Federal Motor Carrier Safety Administration	8,554	0	8,554	0	0	0
Federal Railroad Administration	29,548	3,100	28,116	3,100	1,432	0
Federal Transit Administration	0	42,797	0	42,797	0	0
National Highway Traffic Safety Administration	1,000	65,059	500	65,059	500	0
Office of the Secretary of Transportation	216	0	216	0	0	0
Pipeline and Hazardous Materials Safety Administration	8,429	1,859	8,429	1,859	0	0
Department of the Treasury	42,818	0	42,818	0	0	0
Bureau of Engraving and Printing	42,818	0	42,818	0	0	0
Other agencies						
Agency for Global Media	4,597	0	4,597	0	0	0
Agency for International Development	10,798	61,715	10,798	61,715	0	0
Appalachian Regional Commission	650	0	650	0	0	0
Consumer Product Safety Commission	150	0	150	0	0	0
Environmental Protection Agency	206,898	54,671	201,088	54,671	5,810	0
National Aeronautics and Space Administration	2,378,166	5,623,129	2,371,292	5,580,724	6,874	42,405
National Science Foundation	264,559	6,553,658	261,457	6,137,218	3,102	416,440
Nuclear Regulatory Commission	10,724	8,750	10,724	8,750	0	0
Patient-Centered Outcomes Research Trust Fund	0	460,331	0	460,331	0	0
Postal Service	15,435	0	15,435	0	0	0
Social Security Administration	23,516	14,590	23,516	14,590	0	0
Tennessee Valley Authority	16,942	0	16,942	0	0	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 10

Department of Defense obligations for research, development, test, and evaluation, by agency and performer: FY 2021

(Dollars in millions)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Department of Defense								
RDT&E	106,018	28,672	4,185	66,419	4,829	1,596	12	304
Total research	9,735	2,479	1,118	3,019	2,622	404	3	90
Basic research	2,835	483	76	532	1,596	93	1	55
Applied research	6,901	1,996	1,042	2,487	1,026	312	2	35
Total experimental development[c]	60,971	21,955	2,384	33,287	2,004	1,127	9	206
Advanced technology	9,241	2,683	238	4,303	1,100	791	2	124
Major systems	51,731	19,272	2,146	28,984	904	336	7	82
Total operational systems development[d]	35,311	4,238	683	30,113	204	65	0	8
Defense Advanced Research Projects Agency								
RDT&E	3,606	279	101	2,397	637	163	*	29
Total research	1,845	97	72	926	574	146	*	29
Basic research	510	17	25	140	274	42	0	11
Applied research	1,336	80	47	786	301	104	*	17
Total experimental development[c]	1,761	182	29	1,470	63	16	0	0
Advanced technology	1,576	113	29	1,355	63	16	0	0
Major systems	185	69	0	115	0	*	0	0
Total operational systems development[d]	0	0	0	0	0	0	0	0
Defense Health Agency								
RDT&E	2,873	1,041	6	344	762	658	0	62
Total research	133	16	3	18	42	52	0	2
Basic research	18	7	*	6	2	3	0	0
Applied research	115	9	3	12	40	50	0	2
Total experimental development[c]	2,719	1,012	3	318	720	606	0	60
Advanced technology	1,531	77	3	190	685	518	0	57
Major systems	1,188	934	*	129	35	87	0	3
Total operational systems development[d]	21	13	*	8	*	0	0	0
Department of the Air Force								
RDT&E	32,691	6,193	1,081	24,432	876	81	2	26
Total research	2,387	650	86	871	707	46	2	26
Basic research	703	57	2	74	543	4	0	23
Applied research	1,684	593	84	797	164	42	2	2
Total experimental development[c]	10,003	3,793	488	5,547	146	28	*	0
Advanced technology	1,055	215	10	771	53	6	*	0
Major systems	8,948	3,578	478	4,777	93	23	0	0
Total operational systems development[d]	20,301	1,750	506	18,014	23	7	0	*

TABLE 10

Department of Defense obligations for research, development, test, and evaluation, by agency and performer: FY 2021

(Dollars in millions)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Department of the Army								
RDT&E	13,660	6,317	149	6,354	542	244	0	54
Total research	1,914	898	50	491	420	45	0	10
Basic research	542	181	30	72	240	12	0	6
Applied research	1,372	717	20	419	180	33	0	3
Total experimental development[c]	10,007	4,499	95	5,071	122	183	0	37
Advanced technology	1,842	935	29	769	73	34	0	2
Major systems	8,166	3,564	66	4,302	49	149	0	36
Total operational systems development[d]	1,739	920	4	792	*	16	0	7
Department of the Navy								
RDT&E	19,762	8,008	242	9,989	1,245	228	1	50
Total research	1,654	553	19	301	689	70	1	21
Basic research	631	189	*	33	382	14	1	11
Applied research	1,023	365	18	268	306	56	*	10
Total experimental development[c]	15,080	6,485	175	7,811	443	139	*	27
Advanced technology	871	291	8	383	94	94	0	1
Major systems	14,208	6,194	166	7,428	349	45	*	27
Total operational systems development[d]	3,028	969	48	1,877	114	20	0	1
Space Force								
RDT&E	9,639	312	331	8,925	55	10	6	0
Total research	98	9	8	76	6	0	0	0
Basic research	98	9	8	76	6	0	0	0
Applied research	0	0	0	0	0	0	0	0
Total experimental development[c]	5,243	228	247	4,725	32	5	6	0
Advanced technology	0	0	0	0	0	0	0	0
Major systems	5,243	228	247	4,725	32	5	6	0
Total operational systems development[d]	4,298	76	76	4,125	17	5	0	0
Other defense agencies								
RDT&E	23,787	6,523	2,275	13,978	711	212	3	84
Total research	1,704	256	880	336	184	45	0	3
Basic research	333	23	11	131	148	18	0	3
Applied research	1,371	233	870	206	35	27	0	*
Total experimental development[c]	16,159	5,757	1,346	8,343	478	150	3	81
Advanced technology	2,366	1,053	158	835	132	122	2	64
Major systems	13,793	4,705	1,188	7,508	346	27	1	17
Total operational systems development[d]	5,924	510	49	5,298	49	17	0	0

* = amount greater than $0 but less than $500,000.

FFRDC = federally funded research and development center; RDT&E = research, development, test, and evaluation.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

[c] Department of Defense (DOD) development obligations have been reported in two categories, advanced technology and major systems, since volume 44 (FYs 1994–96). As of volume 66 (FYs 2016–17), the definition of major systems development was changed to represent DOD Budget Activities 4 through 6 instead of Budget Activities 4 through 7.

[d] Funding for DOD's Operational Systems Development (Budget Activity 7) was first reported as a separate category for volume 66.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 11

Preliminary Department of Defense obligations for research, development, test, and evaluation, by agency and performer: FY 2022

(Dollars in millions)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Department of Defense								
RDT&E	113,647	31,090	4,154	71,388	4,993	1,701	18	302
Total research	10,377	2,922	1,054	3,139	2,750	412	8	93
Basic research	2,977	629	72	511	1,602	104	4	56
Applied research	7,401	2,294	982	2,628	1,148	308	4	37
Total experimental development[c]	65,096	23,940	2,444	35,253	2,028	1,217	10	202
Advanced technology	10,488	3,092	261	4,866	1,205	931	2	131
Major systems	54,608	20,848	2,183	30,387	823	287	8	71
Total operational systems development[d]	38,173	4,228	656	32,996	214	72	0	7
Defense Advanced Research Projects Agency								
RDT&E	3,809	288	108	2,532	675	175	*	31
Total research	1,997	106	78	1,015	609	158	*	31
Basic research	513	18	25	141	276	43	0	11
Applied research	1,484	89	53	874	334	115	*	19
Total experimental development[c]	1,812	182	30	1,518	65	17	0	0
Advanced technology	1,639	117	30	1,409	65	17	0	0
Major systems	173	65	0	108	0	*	0	0
Total operational systems development[d]	0	0	0	0	0	0	0	0
Defense Health Agency								
RDT&E	2,558	611	6	352	823	698	0	67
Total research	174	48	3	33	44	46	0	1
Basic research	16	4	*	6	2	3	0	0
Applied research	159	43	2	27	42	43	0	1
Total experimental development[c]	2,363	554	3	309	778	653	0	66
Advanced technology	1,668	44	3	212	750	596	0	63
Major systems	695	509	*	98	28	57	0	3
Total operational systems development[d]	21	10	*	10	*	0	0	0
Department of the Air Force								
RDT&E	35,455	6,812	1,110	26,497	931	77	2	26
Total research	2,422	659	86	877	738	34	2	26
Basic research	725	60	2	75	560	4	0	24
Applied research	1,697	599	84	802	178	31	2	2
Total experimental development[c]	10,823	4,168	508	5,956	161	30	*	0
Advanced technology	990	217	10	702	53	6	*	0
Major systems	9,833	3,951	497	5,254	108	23	0	0
Total operational systems development[d]	22,210	1,985	516	19,664	31	13	0	0

TABLE 11

Preliminary Department of Defense obligations for research, development, test, and evaluation, by agency and performer: FY 2022

(Dollars in millions)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Department of the Army								
RDT&E	14,384	6,645	161	6,665	594	262	0	56
Total research	2,089	981	54	536	457	50	0	11
Basic research	586	196	32	78	260	13	0	7
Applied research	1,502	785	22	458	197	36	0	4
Total experimental development[c]	10,845	4,897	104	5,468	137	200	0	40
Advanced technology	2,127	1,080	34	888	84	40	0	2
Major systems	8,718	3,817	70	4,580	53	160	0	38
Total operational systems development[d]	1,450	767	4	661	*	13	0	6
Department of the Navy								
RDT&E	21,485	9,089	224	10,559	1,312	253	6	41
Total research	2,082	857	19	284	789	104	6	24
Basic research	852	323	*	29	443	40	4	13
Applied research	1,230	534	18	255	346	64	2	10
Total experimental development[c]	16,587	7,287	173	8,596	390	123	*	17
Advanced technology	1,005	403	7	394	104	96	0	1
Major systems	15,582	6,884	167	8,202	287	27	*	16
Total operational systems development[d]	2,816	945	32	1,679	133	26	0	1
Space Force								
RDT&E	9,977	365	304	9,258	38	6	7	0
Total research	76	7	6	59	5	0	0	0
Basic research	76	7	6	59	5	0	0	0
Applied research	0	0	0	0	0	0	0	0
Total experimental development[c]	4,517	274	228	3,992	15	0	7	0
Advanced technology	0	0	0	0	0	0	0	0
Major systems	4,517	274	228	3,992	15	0	7	0
Total operational systems development[d]	5,383	84	70	5,206	17	6	0	0
Other defense agencies								
RDT&E	25,979	7,281	2,241	15,525	620	230	3	80
Total research	1,537	265	809	335	107	20	0	1
Basic research	209	21	5	123	57	1	0	1
Applied research	1,329	244	803	212	50	19	0	*
Total experimental development[c]	18,149	6,579	1,398	9,415	481	195	3	79
Advanced technology	3,060	1,230	177	1,261	149	176	2	64
Major systems	15,089	5,348	1,221	8,154	332	19	1	15
Total operational systems development[d]	6,293	437	34	5,776	32	14	0	0

* = amount greater than $0 but less than $500,000.

FFRDC = federally funded research and development center; RDT&E = research, development, test, and evaluation.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

[c] Department of Defense (DOD) development obligations have been reported in two categories, advanced technology and major systems, since volume 44 (FYs 1994–96). As of volume 66 (FYs 2016–17), the definition of major systems development was changed to represent DOD Budget Activities 4 through 6 instead of Budget Activities 4 through 7.

[d] Funding for DOD's Operational Systems Development (Budget Activity 7) was first reported as a separate category for volume 66.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 12

Federal obligations for federal agency performance of R&D, by agency, type of R&D, and R&D plant: FY 2021

(Dollars in thousands)

Agency	Total R&D and R&D plant	Type of R&D				R&D plant
		Total R&D	Basic research	Applied research	Experimental development	
All agencies	72,547,782	71,665,012	6,198,988	10,565,461	54,900,563	882,770
Departments						
Department of Agriculture	1,767,407	1,709,981	758,591	746,155	205,234	57,426
Agricultural Marketing Service	7,259	7,259	0	3,629	3,629	0
Agricultural Research Service	1,345,867	1,300,341	650,171	520,137	130,034	45,525
Animal and Plant Health Inspection Service	29,448	29,448	14,802	0	14,647	0
Economic Research Service	74,920	74,920	0	74,920	0	0
Forest Service	270,540	259,000	72,354	133,608	53,038	11,540
National Agricultural Statistics Service	8,487	8,487	0	4,600	3,886	0
National Institute of Food and Agriculture	20,058	20,058	10,796	9,262	0	0
Natural Resources Conservation Service	10,829	10,469	10,469	0	0	360
Department of Commerce	1,739,267	1,310,469	259,019	893,197	158,253	428,798
Census Bureau	108,681	108,681	0	55,936	52,744	0
National Institute of Standards and Technology	934,846	684,255	259,019	416,196	9,040	250,591
National Oceanic and Atmospheric Administration	688,861	510,654	0	414,185	96,469	178,207
National Telecommunications and Information Administration	6,879	6,879	0	6,879	0	0
Department of Defense	24,601,093	24,433,843	482,933	1,996,015	21,954,895	167,250
Defense Advanced Research Projects Agency	278,772	278,772	17,454	79,804	181,514	0
Defense Health Agency	1,027,250	1,027,250	6,853	8,821	1,011,576	0
Department of the Air Force	4,564,124	4,442,791	56,858	592,873	3,793,060	121,334
Department of the Army	5,397,140	5,397,140	181,344	717,019	4,498,777	0
Department of the Navy	7,075,617	7,038,371	188,937	364,561	6,484,874	37,246
Space Force	236,617	236,617	8,643	0	227,974	0
Other defense agencies	6,021,572	6,012,901	22,844	232,937	5,757,121	8,670
Department of Energy	1,032,373	965,413	215,968	656,063	93,382	66,959
Advanced Research Projects Agency—Energy	1,060	1,060	0	530	530	0
Electricity Delivery and Energy Reliability	2,947	2,947	287	1,136	1,524	0
Environmental Management	*	*	0	*	*	0
Fossil Energy	450,796	421,796	0	421,796	0	29,000
National Nuclear Security Administration	355,141	321,819	0	231,172	90,647	33,322
Defense Programs	304,824	271,501	0	230,912	40,590	33,322
Naval Nuclear Propulsion Program	48,600	48,600	0	0	48,600	0
Office of Defense Nuclear Nonproliferation	1,718	1,718	0	260	1,458	0
Nuclear Energy	2,109	2,109	0	1,430	679	0
Office of Cybersecurity, Energy Security, and Emergency Response	1,531	1,531	1,531	0	0	0
Office of Science	218,787	214,150	214,150	0	0	4,637
Department of Health and Human Services	38,348,696	38,207,206	3,152,398	3,632,700	31,422,108	141,490
Administration for Children and Families	365	365	0	365	0	0
Agency for Healthcare Research and Quality	76,783	76,783	0	46,928	29,855	0
Biomedical Advanced Research and Development Authority	31,383,819	31,383,819	0	0	31,383,819	0

TABLE 12

Federal obligations for federal agency performance of R&D, by agency, type of R&D, and R&D plant: FY 2021

(Dollars in thousands)

Agency	Total R&D and R&D plant	Type of R&D				R&D plant
		Total R&D	Basic research	Applied research	Experimental development	
Centers for Disease Control and Prevention	107,747	107,747	27,193	72,121	8,433	0
Food and Drug Administration	463,152	455,159	0	455,159	0	7,993
Health Resources and Services Administration	5,979	4,669	2,832	1,837	0	1,311
National Institutes of Health	6,307,749	6,175,564	3,122,373	3,053,191	0	132,185
Office of the Secretary of Health and Human Services	3,100	3,100	0	3,100	0	0
Office of the Assistant Secretary for Planning and Evaluation	3,100	3,100	0	3,100	0	0
Department of Homeland Security	187,354	182,167	10,648	72,068	99,452	5,187
Countering Weapons of Mass Destruction Office	5,927	5,927	0	3,571	2,356	0
Cybersecurity and Infrastructure Security Agency	2,918	2,918	0	2,918	0	0
Science and Technology Directorate	147,514	143,327	10,648	64,578	68,102	4,187
Secret Service	994	994	0	0	994	0
Transportation Security Administration	30,000	29,000	0	1,000	28,000	1,000
Department of the Interior	783,416	781,846	78,249	576,265	127,332	1,570
Bureau of Land Management	4,238	4,238	86	3,878	274	0
Bureau of Ocean Energy Management	54,676	54,676	0	42,563	12,113	0
Bureau of Reclamation	27,031	26,331	0	13,478	12,853	700
Bureau of Safety and Environmental Enforcement	10,849	9,979	128	9,831	*	870
Fish and Wildlife Service	32,650	32,650	0	32,650	0	0
Geological Survey	636,575	636,575	78,035	457,153	101,387	0
National Park Service	17,397	17,397	0	16,712	685	0
Department of Justice	11,413	11,413	4,816	5,450	1,148	0
Bureau of Prisons	*	*	0	*	0	0
Office of Justice Programs	11,412	11,412	4,816	5,448	1,148	0
Department of Labor	2,596	2,596	0	2,596	0	0
Employee Benefits Security Administration	404	404	0	404	0	0
Occupational Safety and Health Administration	2,192	2,192	0	2,192	0	0
Department of State	64,000	64,000	4,000	40,000	20,000	0
Department of Transportation	176,518	176,506	1,119	147,531	27,857	*
Federal Aviation Administration	87,261	87,249	0	65,409	21,840	*
Federal Highway Administration	58,088	58,088	0	53,926	4,162	0
Federal Motor Carrier Safety Administration	3,283	3,283	*	2,990	268	0
Federal Railroad Administration	10,764	10,764	0	9,178	1,586	0
Office of the Secretary of Transportation	11,498	11,498	0	11,498	0	0
Pipeline and Hazardous Materials Safety Administration	5,624	5,624	1,094	4,530	0	0
Department of the Treasury	2,674	2,674	0	2,518	155	0
Bureau of Engraving and Printing	2,500	2,500	0	2,500	0	0
Mint	174	174	0	*	155	0
Department of Veterans Affairs	1,609,216	1,609,216	624,980	936,176	48,060	0
Other agencies						
Agency for International Development	9,185	9,185	0	5,985	3,200	0
Consumer Product Safety Commission	241	241	0	241	0	0

TABLE 12

Federal obligations for federal agency performance of R&D, by agency, type of R&D, and R&D plant: FY 2021

(Dollars in thousands)

Agency	Total R&D and R&D plant	Type of R&D				R&D plant
		Total R&D	Basic research	Applied research	Experimental development	
Environmental Protection Agency	264,460	264,460	0	205,004	59,456	0
Federal Trade Commission	8,094	8,094	0	8,094	0	0
Library of Congress	2,727	2,727	0	550	2,177	0
National Aeronautics and Space Administration	1,749,811	1,749,052	536,127	535,070	677,855	760
National Science Foundation	21,249	7,930	7,640	290	0	13,319
Nuclear Regulatory Commission	36,207	36,207	0	36,207	0	0
Smithsonian Institution	62,500	62,500	62,500	0	0	0
Social Security Administration	67,286	67,286	0	67,286	0	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 13

Federal agency interagency fund transfers for R&D: FY 2021

(Dollars in thousands)

Transferred from agency	DHS	DOC	DOD	DOE	DOI	DOJ	DOL	DOT	ED	HHS	NASA	NSF	USDA	VA	Other[a]
All agencies	36,927	133,897	35,125,143	422,339	28,288	4,947	807	17,561	162,351	61,428	40,130	9,649	609,477	31,455	1,658,940
Departments															
Department of Agriculture	0	0	0	0	0	0	0	0	0	497	0	0	497	61	0
Department of Commerce	9,094	0	14,285	3,624	0	0	0	*	0	4,579	1,352	74	141	0	8,149
Department of Defense	200	127,861	3,657,991	199,161	7,041	3,124	744	4,931	160,661	15,014	11,417	3,652	607,025	740	1,416,140
Department of Energy	0	592	3,375	21,800	2,856	0	0	0	0	455	1,083	1,575	589	0	2,120
Department of Health and Human Services	27,449	1,500	31,279,957	1,978	0	1,823	63	0	1,586	450	11,693	0	564	27,578	185,686
Department of Homeland Security	0	0	84,019	29,210	0	0	0	0	0	0	0	0	0	0	0
Department of the Interior	0	*	90	597	0	0	0	0	0	0	4,915	249	661	0	544
Department of Justice	161	0	0	0	0	0	0	0	0	277	277	0	0	0	11,251
Department of Transportation	0	0	5,125	*	0	0	0	0	104	26,017	3,516	0	0	3,076	6,592
Department of the Treasury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,500
Other agencies															
Agency for International Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,985
Consumer Product Safety Commission	0	0	201	0	0	0	0	*	0	241	0	0	0	0	0
Environmental Protection Agency	0	0	0	*	0	0	0	0	0	1,261	0	0	0	0	1,231
National Aeronautics and Space Administration	*	2,253	78,493	164,802	18,392	0	0	136	0	*	0	4,099	0	0	13,360
National Science Foundation	0	1,665	1,606	1,044	0	0	0	0	0	75	150	0	0	0	3,391
Nuclear Regulatory Commission	0	0	0	0	0	0	0	0	0	0	5,727	0	0	0	1,964
Social Security Administration	0	0	0	54	0	0	0	12,453	0	12,533	0	0	0	0	*

* = amount greater than $0 but less than $50,000.

DHS = Department of Homeland Security; DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; DOI = Department of the Interior; DOJ = Department of Justice; DOL = Department of Labor; DOT = Department of Transportation; ED = Department of Education; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = Department of Agriculture; VA = Department of Veterans Affairs.

[a] Includes funds from the Departments of Housing and Urban Development, State, and the Treasury; the Agency for International Development; the Appalachian Regional Commission; the Consumer Product Safety Commission; the Environmental Protection Agency; the Federal Communications Commission; the Federal Trade Commission; the Library of Congress; the National Archives and Records Administration; the Nuclear Regulatory Commission; the Patient-Centered Outcomes Research Trust Fund; the Postal Service; the Smithsonian Institution; the Social Security Administration; and the Tennessee Valley Authority.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 14

Federal agency interagency fund transfers for R&D plant: FY 2021

(Dollars in thousands)

Transferred from agency	DOC	DOD	DOE	DOI	DOT	HHS	NASA	NSF	VA	Other[a]
All agencies	529	6,181	4,187	*	156	*	387	*	1,267	6,028
Departments										
Department of Health and Human Services	0	0	0	0	0	0	0	*	1,267	0
Department of Homeland Security	0	0	4,187	0	0	0	0	0	0	0
Department of Transportation	0	0	0	0	0	*	0	0	0	*
Other agencies										
National Science Foundation	529	6,181	0	*	156	0	387	0	0	6,017

* = amount greater than $0 but less than $50,000.

DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; DOI = Department of the Interior; DOT = Department of Transportation; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; VA = Department of Veterans Affairs.

[a] Includes funds from the Smithsonian Institution.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 15

Federal obligations for research and experimental development and for R&D plant to federally funded research and development centers, by agency and type of administrator: FY 2021

(Dollars in thousands)

Agency	R&D				R&D plant			
	Total	Industry-administered FFRDCs	University-administered FFRDCs	Nonprofit-administered FFRDCs	Total	Industry-administered FFRDCs	University-administered FFRDCs	Nonprofit-administered FFRDCs
All agencies	14,791,390	4,134,050	5,810,343	4,846,997	2,019,120	350,805	869,479	798,836
Departments								
Department of Commerce	20,709	0	794	19,914	0	0	0	0
National Institute of Standards and Technology	19,914	0	0	19,914	0	0	0	0
National Oceanic and Atmospheric Administration	794	0	794	0	0	0	0	0
Department of Defense	3,501,650	379,548	1,127,840	1,994,262	0	0	0	0
Defense Advanced Research Projects Agency	101,480	33,254	36,960	31,266	0	0	0	0
Defense Health Agency	5,993	0	100	5,893	0	0	0	0
Department of the Air Force	574,485	114,458	75,540	384,488	0	0	0	0
Department of the Army	144,668	48,545	25,916	70,207	0	0	0	0
Department of the Navy	193,316	64,020	30,090	99,206	0	0	0	0
Space Force	255,054	4,302	21,927	228,825	0	0	0	0
Other defense agencies	2,226,654	114,970	937,307	1,174,377	0	0	0	0
Department of Energy	7,904,787	3,026,000	2,365,279	2,513,509	2,017,103	350,805	867,461	798,836
Advanced Research Projects Agency—Energy	35,342	5,713	5,744	23,886	0	0	0	0
Electricity Delivery and Energy Reliability	92,613	31,257	5,492	55,865	0	0	0	0
Energy Efficiency and Renewable Energy	959,423	128,617	170,389	660,416	41,696	0	0	41,696
Environmental Management	25,006	22,930	986	1,090	0	0	0	0
Fossil Energy	66,775	25,338	12,703	28,734	0	0	0	0
National Nuclear Security Administration	2,528,694	2,350,795	30,400	147,500	367,881	347,896	483	19,502
Defense Programs	2,191,408	2,133,640	13,329	44,439	348,876	347,896	483	497
Naval Nuclear Propulsion Program	1,002	912	0	90	0	0	0	0
Office of Defense Nuclear Nonproliferation	336,284	216,243	17,071	102,971	19,005	0	0	19,005
Nuclear Energy	314,540	211,911	34,834	67,796	0	0	0	0

TABLE 15

Federal obligations for research and experimental development and for R&D plant to federally funded research and development centers, by agency and type of administrator: FY 2021

(Dollars in thousands)

Agency	R&D				R&D plant			
	Total	Industry-administered FFRDCs	University-administered FFRDCs	Nonprofit-administered FFRDCs	Total	Industry-administered FFRDCs	University-administered FFRDCs	Nonprofit-administered FFRDCs
Office of Cybersecurity, Energy Security, and Emergency Response	200	0	0	200	0	0	0	0
Office of Science	3,882,194	249,440	2,104,731	1,528,022	1,607,526	2,909	866,978	737,638
Department of Health and Human Services	728,866	665,197	24,254	39,415	0	0	0	0
Centers for Disease Control and Prevention	616	0	0	616	0	0	0	0
National Institutes of Health	728,250	665,197	24,254	38,799	0	0	0	0
Department of Homeland Security	71,103	33,717	501	36,885	0	0	0	0
Countering Weapons of Mass Destruction Office	8,239	5,332	501	2,406	0	0	0	0
Cybersecurity and Infrastructure Security Agency	2,286	2,286	0	0	0	0	0	0
Science and Technology Directorate	60,578	26,099	0	34,479	0	0	0	0
Department of the Interior	408	0	250	158	0	0	0	0
Bureau of Safety and Environmental Enforcement	408	0	250	158	0	0	0	0
Department of Transportation	87,217	0	0	87,217	0	0	0	0
Federal Aviation Administration	84,354	0	0	84,354	0	0	0	0
Federal Highway Administration	1,654	0	0	1,654	0	0	0	0
Federal Motor Carrier Safety Administration	975	0	0	975	0	0	0	0
Federal Railroad Administration	235	0	0	235	0	0	0	0
Department of the Treasury	8,600	5,074	0	3,526	0	0	0	0
Bureau of Engraving and Printing	8,600	5,074	0	3,526	0	0	0	0
Department of Veterans Affairs	89,225	0	0	89,225	0	0	0	0
Other agencies								
Administrative Office of the U.S. Courts	4,362	0	0	4,362	0	0	0	0
Environmental Protection Agency	109	*	76	*	0	0	0	0

TABLE 15

Federal obligations for research and experimental development and for R&D plant to federally funded research and development centers, by agency and type of administrator: FY 2021

(Dollars in thousands)

Agency	R&D				R&D plant			
	Total	Industry-administered FFRDCs	University-administered FFRDCs	Nonprofit-administered FFRDCs	Total	Industry-administered FFRDCs	University-administered FFRDCs	Nonprofit-administered FFRDCs
National Aeronautics and Space Administration	2,051,453	14,480	1,994,948	42,025	2,017	0	2,017	0
National Science Foundation	298,451	0	293,711	4,740	0	0	0	0
Nuclear Regulatory Commission	24,451	10,025	2,690	11,736	0	0	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 16

Federal obligations for research and experimental development to federally funded research and development centers, by FFRDC and agency: FY 2021

(Dollars in thousands)

FFRDC	Total	DHS	DOC	DOD	DOE	HHS	NASA	NSF	Other[a]
All FFRDCs	14,791,390	71,103	20,709	3,501,650	7,904,787	728,866	2,051,453	298,451	214,372
Administered by industrial firms	4,134,050	33,717	0	379,548	3,026,000	665,197	14,480	0	15,109
Frederick National Laboratory for Cancer Research	673,036	15,788	0	386	0	656,862	0	0	0
Idaho National Laboratory	270,623	3,112	0	3,759	258,846	0	250	0	4,655
Lawrence Livermore National Laboratory	1,142,047	12,915	0	79,345	1,043,664	1,219	1,550	0	3,354
Los Alamos National Laboratory	942,044	1,000	0	46,194	875,961	5,632	11,537	0	1,720
Sandia National Laboratories	1,036,941	420	0	232,393	796,122	1,485	1,143	0	5,379
Savannah River National Laboratory	69,359	482	0	17,470	51,407	0	0	0	0
Administered by universities and colleges[b]	5,810,343	501	794	1,127,840	2,365,279	24,254	1,994,948	293,711	3,016
Ames Laboratory	30,513	0	0	0	30,513	0	0	0	0
Argonne National Laboratory	660,504	60	0	5,035	648,417	4,228	0	0	2,766
Fermi National Accelerator Laboratory	297,623	0	0	0	297,623	0	0	0	0
Green Bank Observatory	8,900	0	0	0	0	0	0	8,900	0
Jet Propulsion Laboratory	2,007,599	0	0	15,132	0	0	1,992,218	0	250
Lawrence Berkeley National Laboratory	831,585	0	0	12,905	797,934	18,015	2,731	0	0
Lincoln Laboratory	975,858	0	0	975,858	0	0	0	0	0
NSF's National Optical-Infrared Astronomy Research Laboratory	60,317	0	0	0	0	0	0	60,317	0
National Center for Atmospheric Research	106,662	0	794	1,767	0	0	0	104,100	0
National Radio Astronomy Observatory	98,205	0	0	0	0	0	0	98,205	0
National Solar Observatory	22,188	0	0	0	0	0	0	22,188	0
Princeton Plasma Physics Laboratory	126,515	0	0	0	126,515	0	0	0	0
SLAC National Accelerator Laboratory	334,039	441	0	828	330,759	2,012	0	0	0
Software Engineering Institute	64,146	0	0	64,146	0	0	0	0	0
Thomas Jefferson National Accelerator Facility	185,688	0	0	52,170	133,518	0	0	0	0
Administered by nonprofit institutions[c]	4,846,997	36,885	19,914	1,994,262	2,513,509	39,415	42,025	4,740	196,247
Aerospace FFRDC	552,436	0	0	516,597	0	0	35,838	0	0
Arroyo Center	2,710	0	0	2,710	0	0	0	0	0
Brookhaven National Laboratory	513,814	524	0	0	502,770	3,600	6,186	0	734
CMS Alliance to Modernize Healthcare	13,819	0	0	0	0	13,819	0	0	0
Center for Advanced Aviation System Development	101,961	0	0	17,607	0	0	0	0	84,354
Center for Communications and Computing	57,748	0	0	57,748	0	0	0	0	0
Center for Enterprise Modernization	127,526	0	0	35,979	0	0	0	0	91,547
Center for Naval Analyses	53,281	0	0	53,281	0	0	0	0	0
Center for Nuclear Waste Regulatory Analyses	22,918	0	0	20,718	0	0	0	0	2,201
Homeland Security Operational Analysis Center	6,346	6,346	0	0	0	0	0	0	0
Homeland Security Systems Engineering and Development Institute	33,404	27,610	0	5,794	0	0	0	0	0
Judiciary Engineering and Modernization Center	4,362	0	0	0	0	0	0	0	4,362
NSEC—Bedford, MA	890,187	0	0	890,187	0	0	0	0	0
NSEC—McLean, VA	59,155	0	0	59,155	0	0	0	0	0
National Cybersecurity Center of Excellence	33,501	0	19,914	13,586	0	0	0	0	0
National Defense Research Institute	18,107	0	0	13,367	0	0	0	4,740	0
National Renewable Energy Laboratory	457,685	0	0	4,074	453,297	0	0	0	313
Oak Ridge National Laboratory	1,169,440	685	0	34,976	1,123,627	616	0	0	9,536

TABLE 16

Federal obligations for research and experimental development to federally funded research and development centers, by FFRDC and agency: FY 2021

(Dollars in thousands)

FFRDC	Total	DHS	DOC	DOD	DOE	HHS	NASA	NSF	Other[a]
Pacific Northwest National Laboratory	485,925	1,721	0	26,124	433,499	21,380	0	0	3,201
Project Air Force	51,416	0	0	51,416	0	0	0	0	0
Science and Technology Policy Institute	857	0	0	542	315	0	0	0	0
Systems and Analyses Center	190,401	0	0	190,401	0	0	0	0	0

DHS = Department of Homeland Security; DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; FFRDC = federally funded research and development center; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation.

[a] Includes data for the Departments of the Interior, Transportation, the Treasury, and Veterans Affairs; the Administrative Office of the U.S. Courts; the Environmental Protection Agency; and the Nuclear Regulatory Commission.

[b] Includes university consortia.

[c] Other than universities and colleges.

Note(s):

Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 17

Federal obligations for R&D plant to federally funded research and development centers, by FFRDC and agency: FY 2021

(Dollars in thousands)

FFRDC	Total	DOE	NASA
All FFRDCs	2,019,120	2,017,103	2,017
Administered by industrial firms	350,805	350,805	0
Idaho National Laboratory	1,233	1,233	0
Lawrence Livermore National Laboratory	205,760	205,760	0
Los Alamos National Laboratory	106,251	106,251	0
Sandia National Laboratories	35,431	35,431	0
Savannah River National Laboratory	2,129	2,129	0
Administered by universities and colleges[a]	869,479	867,461	2,017
Ames Laboratory	4,250	4,250	0
Argonne National Laboratory	191,555	191,555	0
Fermi National Accelerator Laboratory	312,274	312,274	0
Jet Propulsion Laboratory	2,017	0	2,017
Lawrence Berkeley National Laboratory	131,138	131,138	0
Princeton Plasma Physics Laboratory	14,856	14,856	0
SLAC National Accelerator Laboratory	198,439	198,439	0
Thomas Jefferson National Accelerator Facility	14,949	14,949	0
Administered by nonprofit institutions[b]	798,836	798,836	0
Brookhaven National Laboratory	119,044	119,044	0
National Renewable Energy Laboratory	41,696	41,696	0
Oak Ridge National Laboratory	608,849	608,849	0
Pacific Northwest National Laboratory	29,247	29,247	0

DOE = Department of Energy; FFRDC = federally funded research and development center; NASA = National Aeronautics and Space Administration.

[a] Includes university consortia.

[b] Other than universities and colleges.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 18

Federal obligations to federally funded research and development centers by sponsoring agency, by type of R&D and R&D plant: FY 2021

(Dollars in thousands)

FFRDC	Total R&D and R&D plant	Type of R&D				R&D plant
		Total R&D	Basic research	Applied research	Experimental development	
All agencies sponsoring FFRDCs	16,810,510	14,791,390	5,804,862	4,723,897	4,262,632	2,019,120
Departments						
Department of Commerce	33,501	33,501	0	19,914	13,586	0
National Cybersecurity Center of Excellence	33,501	33,501	0	19,914	13,586	0
Department of Defense	2,915,444	2,915,444	62,281	934,610	1,918,553	0
Aerospace FFRDC	552,436	552,436	21,549	12,146	518,740	0
Arroyo Center	2,710	2,710	0	0	2,710	0
Center for Communications and Computing	57,748	57,748	0	0	57,748	0
Center for Naval Analyses	53,281	53,281	1,534	2,195	49,552	0
Lincoln Laboratory	975,858	975,858	5,416	681,913	288,528	0
NSEC—Bedford, MA	890,187	890,187	12,012	40,965	837,210	0
NSEC—McLean, VA	59,155	59,155	2,428	12,841	43,886	0
National Defense Research Institute	18,107	18,107	7,077	0	11,031	0
Project Air Force	51,416	51,416	1,052	43,086	7,278	0
Software Engineering Institute	64,146	64,146	8,117	17,450	38,579	0
Systems and Analyses Center	190,401	190,401	3,096	124,014	63,291	0
Department of Energy	10,571,447	8,554,345	4,082,614	3,266,255	1,205,475	2,017,103
Ames Laboratory	34,763	30,513	26,485	3,037	991	4,250
Argonne National Laboratory	852,060	660,504	516,929	102,867	40,709	191,555
Brookhaven National Laboratory	632,858	513,814	500,330	8,141	5,343	119,044
Fermi National Accelerator Laboratory	609,898	297,623	296,873	0	750	312,274
Idaho National Laboratory	271,856	270,623	9,143	200,786	60,694	1,233
Lawrence Berkeley National Laboratory	962,723	831,585	711,424	76,772	43,389	131,138
Lawrence Livermore National Laboratory	1,347,806	1,142,047	92,199	882,918	166,929	205,760
Los Alamos National Laboratory	1,048,296	942,044	144,529	674,229	123,286	106,251
National Renewable Energy Laboratory	499,381	457,685	24,247	275,725	157,713	41,696
Oak Ridge National Laboratory	1,778,289	1,169,440	823,040	197,908	148,492	608,849
Pacific Northwest National Laboratory	515,172	485,925	236,629	158,696	90,600	29,247
Princeton Plasma Physics Laboratory	141,371	126,515	125,397	667	451	14,856
SLAC National Accelerator Laboratory	532,478	334,039	318,323	11,053	4,664	198,439
Sandia National Laboratories	1,072,372	1,036,941	112,824	611,687	312,430	35,431
Savannah River National Laboratory	71,489	69,359	8,568	23,495	37,296	2,129
Thomas Jefferson National Accelerator Facility	200,637	185,688	135,674	38,275	11,739	14,949
Department of Health and Human Services	686,855	686,855	348,754	322,313	15,788	0
CMS Alliance to Modernize Healthcare	13,819	13,819	7,186	6,633	0	0
Frederick National Laboratory for Cancer Research	673,036	673,036	341,568	315,680	15,788	0
Department of Homeland Security	39,749	39,749	0	17,840	21,909	0
Homeland Security Operational Analysis Center	6,346	6,346	0	0	6,346	0
Homeland Security Systems Engineering and Development Institute	33,404	33,404	0	17,840	15,564	0
Department of Justice	4,362	4,362	0	4,362	0	0
Judiciary Engineering and Modernization Center	4,362	4,362	0	4,362	0	0

TABLE 18

Federal obligations to federally funded research and development centers by sponsoring agency, by type of R&D and R&D plant: FY 2021

(Dollars in thousands)

FFRDC	Total R&D and R&D plant	Type of R&D				R&D plant
		Total R&D	Basic research	Applied research	Experimental development	
Department of Transportation	101,961	101,961	0	3,731	98,230	0
Center for Advanced Aviation System Development	101,961	101,961	0	3,731	98,230	0
Departments of Treasury and Veterans Affairs, and the Social Security Administration	127,526	127,526	756	1,566	125,204	0
Center for Enterprise Modernization	127,526	127,526	756	1,566	125,204	0
Other agencies						
National Aeronautics and Space Administration	2,009,617	2,007,599	1,016,162	143,899	847,539	2,017
Jet Propulsion Laboratory	2,009,617	2,007,599	1,016,162	143,899	847,539	2,017
National Science Foundation	297,129	297,129	294,295	946	1,889	0
Green Bank Observatory	8,900	8,900	8,900	0	0	0
NSF's National Optical-Infrared Astronomy Research Laboratory	60,317	60,317	60,317	0	0	0
National Center for Atmospheric Research	106,662	106,662	104,654	384	1,624	0
National Radio Astronomy Observatory	98,205	98,205	98,205	0	0	0
National Solar Observatory	22,188	22,188	22,188	0	0	0
Science and Technology Policy Institute	857	857	*	561	265	0
Nuclear Regulatory Commission	22,918	22,918	0	8,461	14,457	0
Center for Nuclear Waste Regulatory Analyses	22,918	22,918	0	8,461	14,457	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 19

Federal obligations for research and experimental development to federally funded research and development centers, by sponsoring agency and funding agency: FY 2021

(Dollars in thousands)

FFRDC	Total R&D	Funding agency							
		DHS	DOC	DOD	DOE	HHS	NASA	NSF	Other[a]
All agencies sponsoring FFRDCs	14,791,390	71,103	20,709	3,501,650	7,904,787	728,866	2,051,453	298,451	214,372
Departments									
Department of Commerce	33,501	0	19,914	13,586	0	0	0	0	0
National Cybersecurity Center of Excellence	33,501	0	19,914	13,586	0	0	0	0	0
Department of Defense	2,915,444	0	0	2,874,866	0	0	35,838	4,740	0
Aerospace FFRDC	552,436	0	0	516,597	0	0	35,838	0	0
Arroyo Center	2,710	0	0	2,710	0	0	0	0	0
Center for Communications and Computing	57,748	0	0	57,748	0	0	0	0	0
Center for Naval Analyses	53,281	0	0	53,281	0	0	0	0	0
Lincoln Laboratory	975,858	0	0	975,858	0	0	0	0	0
NSEC—Bedford, MA	890,187	0	0	890,187	0	0	0	0	0
NSEC—McLean, VA	59,155	0	0	59,155	0	0	0	0	0
National Defense Research Institute	18,107	0	0	13,367	0	0	0	4,740	0
Project Air Force	51,416	0	0	51,416	0	0	0	0	0
Software Engineering Institute	64,146	0	0	64,146	0	0	0	0	0
Systems and Analyses Center	190,401	0	0	190,401	0	0	0	0	0
Department of Energy	8,554,345	21,359	0	515,273	7,904,472	58,185	23,397	0	31,659
Ames Laboratory	30,513	0	0	0	30,513	0	0	0	0
Argonne National Laboratory	660,504	60	0	5,035	648,417	4,228	0	0	2,766
Brookhaven National Laboratory	513,814	524	0	0	502,770	3,600	6,186	0	734
Fermi National Accelerator Laboratory	297,623	0	0	0	297,623	0	0	0	0
Idaho National Laboratory	270,623	3,112	0	3,759	258,846	0	250	0	4,655
Lawrence Berkeley National Laboratory	831,585	0	0	12,905	797,934	18,015	2,731	0	0
Lawrence Livermore National Laboratory	1,142,047	12,915	0	79,345	1,043,664	1,219	1,550	0	3,354
Los Alamos National Laboratory	942,044	1,000	0	46,194	875,961	5,632	11,537	0	1,720
National Renewable Energy Laboratory	457,685	0	0	4,074	453,297	0	0	0	313
Oak Ridge National Laboratory	1,169,440	685	0	34,976	1,123,627	616	0	0	9,536
Pacific Northwest National Laboratory	485,925	1,721	0	26,124	433,499	21,380	0	0	3,201
Princeton Plasma Physics Laboratory	126,515	0	0	0	126,515	0	0	0	0
SLAC National Accelerator Laboratory	334,039	441	0	828	330,759	2,012	0	0	0
Sandia National Laboratories	1,036,941	420	0	232,393	796,122	1,485	1,143	0	5,379
Savannah River National Laboratory	69,359	482	0	17,470	51,407	0	0	0	0
Thomas Jefferson National Accelerator Facility	185,688	0	0	52,170	133,518	0	0	0	0
Department of Health and Human Services	686,855	15,788	0	386	0	670,681	0	0	0
CMS Alliance to Modernize Healthcare	13,819	0	0	0	0	13,819	0	0	0
Frederick National Laboratory for Cancer Research	673,036	15,788	0	386	0	656,862	0	0	0
Department of Homeland Security	39,749	33,955	0	5,794	0	0	0	0	0
Homeland Security Operational Analysis Center	6,346	6,346	0	0	0	0	0	0	0
Homeland Security Systems Engineering and Development Institute	33,404	27,610	0	5,794	0	0	0	0	0
Department of Justice	4,362	0	0	0	0	0	0	0	4,362
Judiciary Engineering and Modernization Center	4,362	0	0	0	0	0	0	0	4,362
Department of Transportation	101,961	0	0	17,607	0	0	0	0	84,354
Center for Advanced Aviation System Development	101,961	0	0	17,607	0	0	0	0	84,354

TABLE 19

Federal obligations for research and experimental development to federally funded research and development centers, by sponsoring agency and funding agency: FY 2021

(Dollars in thousands)

FFRDC	Total R&D	Funding agency							
		DHS	DOC	DOD	DOE	HHS	NASA	NSF	Other[a]
Departments of Treasury and Veterans Affairs, and the Social Security Administration	127,526	0	0	35,979	0	0	0	0	91,547
Center for Enterprise Modernization	127,526	0	0	35,979	0	0	0	0	91,547
Other agencies									
National Aeronautics and Space Administration	2,007,599	0	0	15,132	0	0	1,992,218	0	250
Jet Propulsion Laboratory	2,007,599	0	0	15,132	0	0	1,992,218	0	250
National Science Foundation	297,129	0	794	2,309	315	0	0	293,711	0
Green Bank Observatory	8,900	0	0	0	0	0	0	8,900	0
NSF's National Optical-Infrared Astronomy Research Laboratory	60,317	0	0	0	0	0	0	60,317	0
National Center for Atmospheric Research	106,662	0	794	1,767	0	0	0	104,100	0
National Radio Astronomy Observatory	98,205	0	0	0	0	0	0	98,205	0
National Solar Observatory	22,188	0	0	0	0	0	0	22,188	0
Science and Technology Policy Institute	857	0	0	542	315	0	0	0	0
Nuclear Regulatory Commission	22,918	0	0	20,718	0	0	0	0	2,201
Center for Nuclear Waste Regulatory Analyses	22,918	0	0	20,718	0	0	0	0	2,201

DHS = Department of Homeland Security; DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; FFRDC = federally funded research and development center; HHS = Department of Health and Human Services; NASA = National Aeronautical and Space Administration; NSF = National Science Foundation.

[a] Includes data for the Departments of Transportation, Veterans Affairs, the Interior, and the Treasury; the Administrative Office of the U.S. Courts; the Environmental Protection Agency; and the Nuclear Regulatory Commission.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 20

Federal obligations for R&D plant to federally funded research and development centers, by sponsoring agency and funding agency: FY 2021

(Dollars in thousands)

FFRDC	Total R&D	Funding agency	
		DOE	NASA
All agencies sponsoring FFRDCs	2,019,120	2,017,103	2,017
Departments			
Department of Energy	2,017,103	2,017,103	0
Ames Laboratory	4,250	4,250	0
Argonne National Laboratory	191,555	191,555	0
Brookhaven National Laboratory	119,044	119,044	0
Fermi National Accelerator Laboratory	312,274	312,274	0
Idaho National Laboratory	1,233	1,233	0
Lawrence Berkeley National Laboratory	131,138	131,138	0
Lawrence Livermore National Laboratory	205,760	205,760	0
Los Alamos National Laboratory	106,251	106,251	0
National Renewable Energy Laboratory	41,696	41,696	0
Oak Ridge National Laboratory	608,849	608,849	0
Pacific Northwest National Laboratory	29,247	29,247	0
Princeton Plasma Physics Laboratory	14,856	14,856	0
SLAC National Accelerator Laboratory	198,439	198,439	0
Sandia National Laboratories	35,431	35,431	0
Savannah River National Laboratory	2,129	2,129	0
Thomas Jefferson National Accelerator Facility	14,949	14,949	0
Other agencies			
National Aeronautics and Space Administration	2,017	0	2,017
Jet Propulsion Laboratory	2,017	0	2,017

DOE = Department of Energy; FFRDC = federally funded research and development center; NASA = National Aeronautical and Space Administration.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 21

Federal obligations for research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
All agencies	86,244,258	16,764,449	10,528,758	10,789,591	37,026,681	9,759,755	887,328	487,696
Departments								
Department of Agriculture	2,660,820	1,504,747	0	25,917	1,064,254	48,075	11,703	6,124
Agricultural Marketing Service	6,663	3,629	0	*	2,509	212	250	*
Agricultural Research Service	1,359,363	1,170,307	0	0	171,055	12,095	200	5,705
Animal and Plant Health Inspection Service	21,101	14,802	0	0	6,299	0	0	0
Economic Research Service	85,476	74,920	0	*	8,247	2,263	0	0
Forest Service	233,378	205,962	0	312	16,404	3,997	6,309	395
National Agricultural Statistics Service	5,151	4,600	0	0	223	328	0	0
National Institute of Food and Agriculture	937,440	20,058	0	25,519	858,153	28,881	4,829	0
Natural Resources Conservation Service	12,248	10,469	0	0	1,365	300	115	0
Department of Commerce	1,505,953	1,152,216	19,924	56,506	253,406	20,433	2,347	1,121
Census Bureau	55,936	55,936	0	0	0	0	0	0
National Institute of Standards and Technology	784,412	675,215	19,914	40,586	39,844	7,726	*	1,117
National Oceanic and Atmospheric Administration	658,725	414,185	*	15,920	213,561	12,707	2,338	*
National Telecommunications and Information Administration	6,879	6,879	0	0	0	0	0	0
Department of Defense	9,735,418	2,478,948	1,118,082	3,019,003	2,621,887	404,410	3,051	90,037
Defense Advanced Research Projects Agency	1,845,346	97,258	72,165	926,482	574,361	146,153	300	28,627
Defense Health Agency	132,700	15,674	2,978	18,245	41,793	52,317	0	1,694
Department of the Air Force	2,386,786	649,731	86,377	870,940	706,722	45,703	1,670	25,643
Department of the Army	1,914,094	898,364	49,662	490,510	420,423	45,386	0	9,750
Department of the Navy	1,654,154	553,497	18,702	300,862	688,775	69,973	1,081	21,265
Space Force	98,285	8,643	7,892	75,591	6,160	0	0	0
Other defense agencies	1,704,053	255,781	880,307	336,374	183,653	44,879	0	3,059
Department of Education	262,330	0	0	16,684	139,724	79,803	26,119	0
Department of Energy	10,777,006	872,032	7,099,060	1,206,832	1,390,978	153,726	52,664	1,714
Advanced Research Projects Agency—Energy	157,363	530	17,671	81,691	53,383	4,088	0	0
Electricity Delivery and Energy Reliability	62,134	1,423	44,712	7,201	4,262	4,343	193	0
Energy Efficiency and Renewable Energy	1,394,973	0	620,946	446,084	258,811	44,935	24,196	0
Environmental Management	9,902	*	8,252	0	1,650	0	0	0
Fossil Energy	691,073	421,796	66,775	0	136,369	65,334	0	800

TABLE 21

Federal obligations for research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
National Nuclear Security Administration	2,607,781	231,172	2,191,612	173,214	11,784	0	0	0
Defense Programs	2,328,172	230,912	1,934,938	161,182	1,141	0	0	0
Office of Defense Nuclear Nonproliferation	279,609	260	256,673	12,032	10,644	0	0	0
Nuclear Energy	346,454	1,430	266,699	29,905	41,818	5,878	0	725
Office of Cybersecurity, Energy Security, and Emergency Response	1,731	1,531	200	0	0	0	0	0
Office of Science	5,505,595	214,150	3,882,194	468,737	882,901	29,149	28,275	189
Department of Health and Human Services	42,718,237	6,785,099	728,866	2,841,113	24,545,375	6,942,903	569,918	304,964
Administration for Children and Families	4,590	365	0	0	1,800	2,425	0	0
Administration for Community Living	106,908	0	0	4,810	80,767	20,832	500	0
Agency for Healthcare Research and Quality	308,145	46,928	0	130,303	100,709	30,110	95	0
Agency for Toxic Substances and Disease Registry	10,935	0	0	0	6,686	2,500	1,250	500
Centers for Disease Control and Prevention	681,556	99,314	616	167,525	231,097	107,837	42,918	32,249
Centers for Medicare and Medicaid Services	420,703	0	0	11,531	1,160	6,693	401,319	0
Food and Drug Administration	589,144	455,159	0	13,095	71,424	41,688	2,219	5,560
Health Resources and Services Administration	32,920	4,669	0	567	26,620	1,063	0	0
National Institutes of Health	40,545,951	6,175,564	728,250	2,507,997	24,022,712	6,723,154	121,617	266,656
Office of the Secretary of Health and Human Services	17,386	3,100	0	5,286	2,399	6,601	0	0
Office of the Assistant Secretary for Planning and Evaluation	17,386	3,100	0	5,286	2,399	6,601	0	0
Department of Homeland Security	238,163	82,715	19,237	105,450	22,925	4,634	0	3,201
Coast Guard	2,995	0	0	2,984	0	0	0	*
Countering Weapons of Mass Destruction Office	21,291	3,571	2,519	6,415	6,310	0	0	2,475
Cybersecurity and Infrastructure Security Agency	9,032	2,918	2,286	*	0	3,828	0	0
Science and Technology Directorate	203,845	75,226	14,432	96,051	16,614	807	0	716
Transportation Security Administration	1,000	1,000	0	0	0	0	0	0
Department of the Interior	754,199	654,513	408	16,253	56,022	7,056	18,697	1,250
Bureau of Indian Affairs	5,000	0	0	0	0	0	5,000	0

TABLE 21

Federal obligations for research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Bureau of Land Management	9,380	3,964	0	180	3,177	847	1,176	*
Bureau of Ocean Energy Management	62,582	42,563	0	6,939	7,421	2,201	2,691	767
Bureau of Reclamation	18,000	13,478	0	3,152	1,147	0	150	73
Bureau of Safety and Environmental Enforcement	20,448	9,959	408	4,901	4,596	576	0	*
Fish and Wildlife Service	32,650	32,650	0	0	0	0	0	0
Geological Survey	578,917	535,187	0	1,081	29,290	3,313	9,680	366
National Park Service	27,222	16,712	0	0	10,391	119	0	0
Department of Justice	78,964	10,265	0	6,464	33,623	28,203	409	0
Bureau of Prisons	*	*	0	0	0	0	0	0
Federal Bureau of Investigation	3,698	0	0	2,328	1,370	0	0	0
Office of Justice Programs	75,265	10,264	0	4,136	32,253	28,203	409	0
Department of Labor	3,493	2,596	0	897	0	0	0	0
Employee Benefits Security Administration	1,301	404	0	897	0	0	0	0
Occupational Safety and Health Administration	2,192	2,192	0	0	0	0	0	0
Department of State	44,000	44,000	0	0	0	0	0	0
Department of Transportation	822,962	148,650	6,553	276,195	156,857	52,396	179,735	2,578
Federal Aviation Administration	266,866	65,409	3,729	109,064	66,304	20,023	0	2,337
Federal Highway Administration	373,484	53,926	1,654	91,803	71,445	12,162	142,495	0
Federal Motor Carrier Safety Administration	12,344	3,015	975	4,082	4,141	131	0	0
Federal Railroad Administration	35,039	9,178	195	9,303	5,225	10,648	249	241
Federal Transit Administration	42,045	0	0	0	0	5,055	36,990	0
National Highway Traffic Safety Administration	65,559	0	0	58,594	6,549	416	0	0
Office of the Secretary of Transportation	11,714	11,498	0	216	0	0	0	0
Pipeline and Hazardous Materials Safety Administration	15,912	5,624	0	3,134	3,193	3,962	0	0
Department of the Treasury	46,553	2,518	8,600	19,280	200	0	0	15,954
Bureau of Engraving and Printing	46,534	2,500	8,600	19,280	200	0	0	15,954
Mint	*	*	0	0	0	0	0	0
Department of Veterans Affairs	1,561,156	1,561,156	0	0	0	0	0	0
Other agencies								
Administrative Office of the U.S. Courts	4,362	0	4,362	0	0	0	0	0
Agency for Global Media	4,597	0	0	4,597	0	0	0	0

TABLE 21

Federal obligations for research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Agency for International Development	51,211	5,985	0	12,961	2,975	15,840	0	13,450
Appalachian Regional Commission	650	0	0	372	113	164	0	0
Consumer Product Safety Commission	391	241	0	0	150	0	0	0
Environmental Protection Agency	403,334	205,004	109	143,550	40,338	14,333	0	0
Federal Trade Commission	8,094	8,094	0	0	0	0	0	0
Library of Congress	550	550	0	0	0	0	0	0
National Aeronautics and Space Administration	7,127,210	1,071,197	1,200,656	2,471,733	1,149,372	1,206,314	2,756	25,181
National Science Foundation	6,705,056	7,930	298,451	510,094	5,536,101	313,034	19,929	19,517
Nuclear Regulatory Commission	76,714	36,207	24,451	6,694	6,257	689	0	2,416
Patient-Centered Outcomes Research Trust Fund	460,331	0	0	0	0	460,331	0	0
Postal Service	15,435	0	0	15,435	0	0	0	0
Smithsonian Institution	62,500	62,500	0	0	0	0	0	0
Social Security Administration	105,392	67,286	0	28,327	6,124	3,464	0	190
Tennessee Valley Authority	9,179	0	0	5,232	0	3,947	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 22

Preliminary federal obligations for research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
All agencies	88,464,235	18,352,110	10,789,194	10,527,501	37,604,715	9,839,414	848,835	502,464
Departments								
Department of Agriculture	3,017,477	1,701,513	0	30,665	1,167,432	101,443	11,627	4,797
Agricultural Marketing Service	7,484	4,050	0	0	2,659	302	350	123
Agricultural Research Service	1,439,100	1,297,308	0	0	128,291	9,071	150	4,279
Animal and Plant Health Inspection Service	23,363	16,789	0	0	6,574	0	0	0
Economic Research Service	90,389	79,833	0	*	8,247	2,263	0	0
Forest Service	289,864	262,448	0	312	16,334	4,067	6,309	395
National Agricultural Statistics Service	6,327	5,796	0	0	58	473	0	0
National Institute of Food and Agriculture	1,147,558	22,790	0	30,307	1,004,492	85,266	4,703	0
Natural Resources Conservation Service	13,393	12,500	0	0	778	0	115	0
Department of Commerce	1,760,243	1,288,547	19,132	70,265	356,737	19,415	5,014	1,133
Census Bureau	110,367	110,367	0	0	0	0	0	0
National Institute of Standards and Technology	817,126	717,117	19,098	35,505	36,973	7,307	*	1,117
National Oceanic and Atmospheric Administration	825,550	453,864	*	34,760	319,764	12,108	5,005	*
National Telecommunications and Information Administration	7,200	7,200	0	0	0	0	0	0
Department of Defense	10,377,359	2,922,377	1,053,880	3,138,779	2,749,880	411,630	7,833	92,982
Defense Advanced Research Projects Agency	1,996,794	106,227	77,585	1,014,651	609,423	157,940	333	30,635
Defense Health Agency	174,400	47,527	2,636	32,908	44,242	45,609	0	1,479
Department of the Air Force	2,421,989	658,576	85,996	877,000	738,346	34,486	1,687	25,899
Department of the Army	2,088,619	981,211	53,987	536,093	457,205	49,529	0	10,593
Department of the Navy	2,081,951	856,639	18,728	284,431	789,119	103,719	5,812	23,501
Space Force	76,353	6,714	6,131	58,723	4,785	0	0	0
Other defense agencies	1,537,252	265,483	808,817	334,972	106,758	20,348	0	873
Department of Education	293,433	0	0	18,662	151,132	95,363	28,276	0
Department of Energy	10,470,369	1,153,412	7,314,864	624,227	1,321,583	24,792	30,791	700
Advanced Research Projects Agency—Energy	225,000	0	25,267	116,803	76,327	6,603	0	0
Electricity Delivery and Energy Reliability	67,762	1,569	48,550	7,860	4,781	4,789	212	0
Energy Efficiency and Renewable Energy	677,946	0	291,517	210,163	169,487	0	6,779	0
Environmental Management	11,550	0	9,702	0	1,848	0	0	0
Fossil Energy	736,176	635,008	45,517	0	55,405	0	0	247

TABLE 22

Preliminary federal obligations for research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
National Nuclear Security Administration	2,526,955	313,418	2,011,100	183,193	19,245	0	0	0
Defense Programs	2,257,778	309,723	1,773,810	170,050	4,195	0	0	0
Office of Defense Nuclear Nonproliferation	269,177	3,695	237,290	13,142	15,050	0	0	0
Nuclear Energy	330,824	1,135	242,650	42,814	38,273	5,499	0	453
Office of Cybersecurity, Energy Security, and Emergency Response	98,751	86,585	12,166	0	0	0	0	0
Office of Science	5,795,405	115,697	4,628,396	63,394	956,218	7,901	23,799	0
Department of Health and Human Services	42,670,457	6,832,941	726,269	2,785,853	24,515,357	6,931,969	561,957	316,111
Administration for Children and Families	4,265	915	0	0	1,800	1,550	0	0
Administration for Community Living	110,863	0	0	3,299	87,531	19,564	468	0
Agency for Healthcare Research and Quality	314,345	54,070	0	131,883	98,720	29,580	92	0
Agency for Toxic Substances and Disease Registry	10,935	0	0	0	6,686	2,500	1,250	500
Centers for Disease Control and Prevention	648,587	94,981	0	123,118	247,725	104,452	34,941	43,369
Centers for Medicare and Medicaid Services	420,703	0	0	10,793	1,982	6,608	401,319	0
Food and Drug Administration	669,007	516,699	0	13,991	79,147	50,257	2,601	6,311
Health Resources and Services Administration	38,189	4,655	0	567	31,903	1,063	0	0
National Institutes of Health	40,436,064	6,158,421	726,269	2,496,901	23,957,362	6,709,894	121,287	265,931
Office of the Secretary of Health and Human Services	17,500	3,200	0	5,300	2,500	6,500	0	0
Office of the Assistant Secretary for Planning and Evaluation	17,500	3,200	0	5,300	2,500	6,500	0	0
Department of Homeland Security	315,700	120,244	17,959	138,530	35,012	3,232	0	723
Coast Guard	2,243	0	0	2,243	0	0	0	0
Countering Weapons of Mass Destruction Office	30,955	4,171	892	12,346	12,823	0	0	723
Cybersecurity and Infrastructure Security Agency	3,502	1,790	0	0	0	1,712	0	0
Science and Technology Directorate	277,000	112,282	17,068	123,941	22,189	1,520	0	0
Transportation Security Administration	2,000	2,000	0	0	0	0	0	0
Department of the Interior	991,033	851,438	150	15,914	87,377	6,389	29,113	653
Bureau of Indian Affairs	4,000	0	0	0	0	0	4,000	0

TABLE 22

Preliminary federal obligations for research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Bureau of Land Management	10,583	3,859	0	97	5,118	1,310	199	0
Bureau of Ocean Energy Management	67,918	50,852	0	5,837	5,458	3,397	1,821	553
Bureau of Reclamation	21,500	15,500	0	4,000	1,400	0	500	100
Bureau of Safety and Environmental Enforcement	15,518	5,818	150	4,948	4,347	255	0	0
Fish and Wildlife Service	32,650	32,650	0	0	0	0	0	0
Geological Survey	811,642	729,148	0	1,032	57,443	1,427	22,593	0
National Park Service	27,222	13,611	0	0	13,611	0	0	0
Department of Justice	82,297	9,824	0	9,188	33,342	29,513	430	0
Bureau of Prisons	*	*	0	0	0	0	0	0
Federal Bureau of Investigation	5,396	0	0	5,396	0	0	0	0
Office of Justice Programs	76,899	9,822	0	3,792	33,342	29,513	430	0
Department of Labor	3,803	2,831	0	972	0	0	0	0
Employee Benefits Security Administration	1,569	597	0	972	0	0	0	0
Occupational Safety and Health Administration	2,234	2,234	0	0	0	0	0	0
Department of State	47,000	47,000	0	0	0	0	0	0
Department of Transportation	812,341	158,693	7,579	276,073	177,167	47,409	143,040	2,379
Federal Aviation Administration	271,685	66,590	3,797	111,033	69,800	18,085	0	2,379
Federal Highway Administration	361,044	54,573	468	95,793	83,769	10,401	116,040	0
Federal Motor Carrier Safety Administration	15,000	5,200	1,500	4,500	3,700	100	0	0
Federal Railroad Administration	42,112	9,178	1,815	12,574	7,898	10,648	0	0
Federal Transit Administration	33,000	0	0	0	1,000	5,000	27,000	0
National Highway Traffic Safety Administration	50,000	0	0	42,550	7,000	450	0	0
Office of the Secretary of Transportation	15,022	14,797	0	0	0	225	0	0
Pipeline and Hazardous Materials Safety Administration	24,479	8,356	0	9,623	4,000	2,500	0	0
Department of the Treasury	50,034	2,503	9,053	18,778	0	0	0	19,700
Bureau of Engraving and Printing	49,981	2,500	9,003	18,778	0	0	0	19,700
Mint	53	*	50	0	0	0	0	0
Department of Veterans Affairs	1,673,109	1,673,109	0	0	0	0	0	0
Other agencies								
Administrative Office of the U.S. Courts	1,443	0	1,443	0	0	0	0	0
Agency for Global Media	7,884	0	0	7,884	0	0	0	0

TABLE 22

Preliminary federal obligations for research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Agency for International Development	51,211	5,985	0	12,961	2,975	15,840	0	13,450
Appalachian Regional Commission	122	0	0	0	*	108	0	0
Consumer Product Safety Commission	440	440	0	0	0	0	0	0
Environmental Protection Agency	406,371	230,160	0	118,617	42,496	15,099	0	0
Federal Trade Commission	8,571	8,571	0	0	0	0	0	0
Library of Congress	493	493	0	0	0	0	0	0
National Aeronautics and Space Administration	7,598,407	1,150,832	1,301,090	2,653,693	1,152,257	1,310,745	2,877	26,912
National Science Foundation	7,035,853	8,315	312,858	536,299	5,798,312	338,689	20,918	20,462
Nuclear Regulatory Commission	78,147	36,899	24,918	6,821	6,344	703	0	2,462
Patient-Centered Outcomes Research Trust Fund	481,465	0	0	0	0	481,465	0	0
Postal Service	15,702	0	0	15,702	0	0	0	0
RESTORE Act Centers of Excellence Research Grants Program	6,960	0	0	0	0	0	6,960	0
Smithsonian Institution	95,000	95,000	0	0	0	0	0	0
Social Security Administration	98,560	50,984	0	37,126	7,300	3,150	0	0
Tennessee Valley Authority	12,952	0	0	10,491	0	2,461	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and as actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 23

Federal obligations for research, by detailed field of R&D: FYs 2021–22

(Dollars in thousands)

Field	2021	2022 (preliminary)
All fields	86,244,258	88,464,235
Computer and information sciences	5,349,660	5,876,825
Geosciences, atmospheric sciences, and ocean sciences	3,569,077	6,051,877
Atmospheric science and meteorology	888,365	NA
Geological and earth sciences	602,193	NA
Ocean sciences and marine sciences	1,095,816	NA
Other geosciences, atmospheric sciences, and ocean sciences	982,703	NA
Life sciences	38,177,668	38,511,237
Agricultural sciences	1,073,374	NA
Biological and biomedical sciences	18,232,787	NA
Health sciences	15,007,812	NA
Natural resources and conservation	227,170	NA
Other life sciences	3,636,525	NA
Mathematics and statistics	715,493	732,546
Physical sciences	8,044,401	11,112,001
Astronomy and astrophysics	307,541	NA
Chemistry	1,140,891	NA
Materials science	552,275	NA
Physics	3,139,200	NA
Other physical sciences	2,904,494	NA
Psychology	3,769,968	3,775,941
Biological aspects	13,953	NA
Social aspects	50,459	NA
Other psychological sciences	3,705,556	NA
Social sciences	1,369,741	1,449,146
Anthropology	41,957	NA
Economics	227,999	NA
Political science and government	10,541	NA
Sociology, demography, and population studies	110,796	NA
Other social sciences	978,447	NA
Engineering	13,374,364	13,860,763
Aerospace, aeronautical, and astronautical engineering	1,717,013	NA
Bioengineering and biomedical engineering	39,678	NA
Chemical engineering	733,101	NA
Civil engineering	648,951	NA
Electrical, electronics, and communications engineering	887,145	NA
Industrial and manufacturing engineering	291,018	NA
Mechanical engineering	289,150	NA
Metallurgical and materials engineering	811,117	NA
Other engineering	7,957,190	NA
Other fields	11,873,886	7,093,900
Business management and business administration	119,810	NA
Communication and communications technologies	12,257	NA
Education research	987,034	NA
Humanities	67	NA
Law	6,940	NA
Social work	0	NA
Visual and performing arts	0	NA
All other fields	10,747,777	NA

NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. FYs 2021 and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 24

Federal obligations for research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	86,244,258	5,349,660	3,569,077	38,177,668	715,493	8,044,401	3,769,968	1,369,741	13,374,364	11,873,886
Departments										
Department of Agriculture	2,660,820	28,239	37,974	2,038,836	9,780	114,525	13,117	187,251	107,421	123,677
Agricultural Marketing Service	6,663	0	0	6,663	0	0	0	0	0	0
Agricultural Research Service	1,359,363	1,767	5,981	1,248,847	0	87,271	0	3,262	12,234	0
Animal and Plant Health Inspection Service	21,101	0	0	21,101	0	0	0	0	0	0
Economic Research Service	85,476	0	0	0	0	0	0	85,476	0	0
Forest Service	233,378	0	4,688	180,699	0	5,149	0	34,844	7,996	0
National Agricultural Statistics Service	5,151	5,151	0	0	0	0	0	0	0	0
National Institute of Food and Agriculture	937,440	21,321	27,304	569,278	9,780	22,105	13,117	63,669	87,190	123,677
Natural Resources Conservation Service	12,248	0	0	12,248	0	0	0	0	0	0
Department of Commerce	1,505,953	191,659	541,903	95,746	11,297	282,839	*	52,563	314,308	15,597
Census Bureau	55,936	14,013	0	0	5,692	0	0	36,232	0	0
National Institute of Standards and Technology	784,412	173,961	9,020	40,274	3,763	258,897	*	399	298,058	0
National Oceanic and Atmospheric Administration	658,725	3,685	532,883	55,472	1,842	23,942	0	15,932	9,371	15,597
National Telecommunications and Information Administration	6,879	0	0	0	0	0	0	0	6,879	0
Department of Defense	9,735,418	2,577,396	483,403	1,090,223	71,529	611,672	108,663	61,066	3,566,248	1,165,221
Defense Advanced Research Projects Agency	1,845,346	971,573	67,164	286,581	3,950	76,984	21,340	167	317,500	100,085
Defense Health Agency	132,700	0	0	129,779	0	*	0	0	388	2,519
Department of the Air Force	2,386,786	217,129	0	101,034	0	302,937	300	12,994	1,608,466	143,926
Department of the Army	1,914,094	891,472	13,584	320,396	11,441	45,935	71,157	2,597	0	557,512
Department of the Navy	1,654,154	203,093	392,903	95,443	11,787	48,372	8,637	8,380	641,261	244,279
Space Force	98,285	0	0	0	0	0	0	0	98,285	0
Other defense agencies	1,704,053	294,129	9,751	156,989	44,351	137,431	7,229	36,928	900,347	116,899
Department of Education	262,330	0	0	0	0	0	0	0	0	262,330
Department of Energy	10,777,006	1,441,881	329,205	533,434	5,661	4,366,414	0	0	3,696,940	403,470
Advanced Research Projects Agency—Energy	157,363	15,308	1,582	26,219	0	0	0	0	114,253	0
Electricity Delivery and Energy Reliability	62,134	0	0	0	0	0	0	0	62,134	0
Energy Efficiency and Renewable Energy	1,394,973	0	0	0	0	0	0	0	1,394,973	0
Environmental Management	9,902	0	9,902	0	0	0	0	0	0	0
Fossil Energy	691,073	0	65,490	0	0	111,311	0	0	514,272	0

TABLE 24

Federal obligations for research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
National Nuclear Security Administration	2,607,781	606,976	7,844	1,090	5,661	871,273	0	0	1,114,936	0
Defense Programs	2,328,172	585,635	0	0	0	640,781	0	0	1,101,756	0
Office of Defense Nuclear Nonproliferation	279,609	21,341	7,844	1,090	5,661	230,492	0	0	13,180	0
Nuclear Energy	346,454	0	0	0	0	0	0	0	346,454	0
Office of Cybersecurity, Energy Security, and Emergency Response	1,731	1,731	0	0	0	0	0	0	0	0
Office of Science	5,505,595	817,866	244,387	506,125	0	3,383,829	0	0	149,918	403,470
Department of Health and Human Services	42,718,237	35,256	499,711	31,015,958	352,080	234,071	3,597,199	636,374	2,835,631	3,511,957
Administration for Children and Families	4,590	0	0	0	0	0	0	4,590	0	0
Administration for Community Living	106,908	0	0	0	0	0	0	106,908	0	0
Agency for Healthcare Research and Quality	308,145	34,989	0	172,574	8,400	0	7,799	20,813	803	62,767
Agency for Toxic Substances and Disease Registry	10,935	0	10,935	0	0	0	0	0	0	0
Centers for Disease Control and Prevention	681,556	267	0	570,021	236	4,677	778	42,874	35,067	27,635
Centers for Medicare and Medicaid Services	420,703	0	0	420,703	0	0	0	0	0	0
Food and Drug Administration	589,144	0	0	589,144	0	0	0	0	0	0
Health Resources and Services Administration	32,920	0	0	32,920	0	0	0	0	0	0
National Institutes of Health	40,545,951	0	488,775	29,230,596	343,444	229,394	3,588,622	461,189	2,799,761	3,404,169
Office of the Secretary of Health and Human Services	17,386	0	0	0	0	0	0	0	0	17,386
Office of the Assistant Secretary for Planning and Evaluation	17,386	0	0	0	0	0	0	0	0	17,386
Department of Homeland Security	238,163	57,936	9,672	2,675	*	17,277	65	*	94,436	56,102
Coast Guard	2,995	1,030	100	0	0	0	65	0	1,800	0
Countering Weapons of Mass Destruction Office	21,291	6,656	0	2,675	0	11,959	0	0	0	0
Cybersecurity and Infrastructure Security Agency	9,032	7,213	1,026	0	0	0	0	0	793	0
Science and Technology Directorate	203,845	43,037	8,546	*	*	5,318	*	*	91,843	55,102
Transportation Security Administration	1,000	0	0	0	0	0	0	0	0	1,000
Department of the Interior	754,199	0	410,039	289,214	0	0	0	16,498	38,448	0
Bureau of Indian Affairs	5,000	0	0	5,000	0	0	0	0	0	0
Bureau of Land Management	9,380	0	0	9,380	0	0	0	0	0	0

TABLE 24

Federal obligations for research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Bureau of Ocean Energy Management	62,582	0	62,582	0	0	0	0	0	0	0
Bureau of Reclamation	18,000	0	0	0	0	0	0	0	18,000	0
Bureau of Safety and Environmental Enforcement	20,448	0	0	0	0	0	0	0	20,448	0
Fish and Wildlife Service	32,650	0	0	32,650	0	0	0	0	0	0
Geological Survey	578,917	0	347,457	231,460	0	0	0	0	0	0
National Park Service	27,222	0	0	10,724	0	0	0	16,498	0	0
Department of Justice	78,964	2,046	452	3,234	377	5,924	0	58,197	4,836	3,897
Bureau of Prisons	*	0	0	0	0	0	0	*	0	0
Federal Bureau of Investigation	3,698	0	0	0	0	0	0	0	0	3,698
Office of Justice Programs	75,265	2,046	452	3,234	377	5,924	0	58,196	4,836	200
Department of Labor	3,493	0	0	0	0	0	0	3,493	0	0
Employee Benefits Security Administration	1,301	0	0	0	0	0	0	1,301	0	0
Occupational Safety and Health Administration	2,192	0	0	0	0	0	0	2,192	0	0
Department of State	44,000	0	0	42,000	0	0	0	2,000	0	0
Department of Transportation	822,962	17,317	15,813	21,460	5,075	12,095	18,059	18,008	707,642	7,492
Federal Aviation Administration	266,866	13,112	15,706	7,949	5,075	0	17,696	0	206,334	993
Federal Highway Administration	373,484	0	0	0	0	0	0	0	373,484	0
Federal Motor Carrier Safety Administration	12,344	0	0	0	0	11,451	0	0	0	893
Federal Railroad Administration	35,039	0	108	0	0	0	0	0	34,931	0
Federal Transit Administration	42,045	0	0	0	0	0	363	5,463	30,731	5,488
National Highway Traffic Safety Administration	65,559	4,205	0	13,511	0	0	0	12,480	35,363	0
Office of the Secretary of Transportation	11,714	0	0	0	0	0	0	0	11,696	*
Pipeline and Hazardous Materials Safety Administration	15,912	0	0	0	0	644	0	65	15,103	100
Department of the Treasury	46,553	0	0	0	0	46,553	0	0	0	0
Bureau of Engraving and Printing	46,534	0	0	0	0	46,534	0	0	0	0
Mint	*	0	0	0	0	*	0	0	0	0
Department of Veterans Affairs	1,561,156	0	0	1,561,156	0	0	0	0	0	0
Other agencies										
Administrative Office of the U.S. Courts	4,362	4,362	0	0	0	0	0	0	0	0
Agency for Global Media	4,597	0	0	0	0	0	0	4,597	0	0
Agency for International Development	51,211	0	0	43,631	0	0	0	4,331	0	3,250

TABLE 24

Federal obligations for research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Appalachian Regional Commission	650	0	0	0	0	0	0	650	0	0
Consumer Product Safety Commission	391	0	0	0	0	0	0	0	391	0
Environmental Protection Agency	403,334	5,524	166,238	159,342	3,067	9,630	0	2,330	57,202	*
Federal Trade Commission	8,094	0	0	0	0	0	0	8,094	0	0
Library of Congress	550	0	0	0	0	550	0	0	0	0
National Aeronautics and Space Administration	7,127,210	0	25,510	29,664	0	1,030,791	0	0	820,462	5,220,783
National Science Foundation	6,705,056	988,023	1,047,283	756,389	256,627	1,300,389	32,826	206,179	1,018,918	1,098,422
Nuclear Regulatory Commission	76,714	*	0	0	0	0	0	0	76,694	0
Patient-Centered Outcomes Research Trust Fund	460,331	0	0	460,331	0	0	0	0	0	0
Postal Service	15,435	0	0	0	0	0	0	0	15,435	0
Smithsonian Institution	62,500	0	1,875	34,375	0	11,672	0	2,718	10,172	1,688
Social Security Administration	105,392	0	0	0	0	0	0	105,392	0	0
Tennessee Valley Authority	9,179	0	0	0	0	0	0	0	9,179	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 25

Preliminary federal obligations for research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	88,464,235	5,876,825	6,051,877	38,511,237	732,546	11,112,001	3,775,941	1,449,146	13,860,763	7,093,900
Departments										
Department of Agriculture	3,017,477	33,439	38,158	2,289,693	11,675	124,789	15,660	230,978	125,974	147,110
Agricultural Marketing Service	7,484	0	0	7,484	0	0	0	0	0	0
Agricultural Research Service	1,439,100	1,871	0	1,328,433	0	92,390	0	3,454	12,952	0
Animal and Plant Health Inspection Service	23,363	0	0	23,363	0	0	0	0	0	0
Economic Research Service	90,389	0	0	0	0	0	0	90,389	0	0
Forest Service	289,864	0	5,382	226,453	0	6,202	0	42,194	9,632	*
National Agricultural Statistics Service	6,327	6,327	0	0	0	0	0	0	0	0
National Institute of Food and Agriculture	1,147,558	25,242	32,476	690,866	11,675	26,196	15,660	94,942	103,390	147,110
Natural Resources Conservation Service	13,393	0	300	13,093	0	0	0	0	0	0
Department of Commerce	1,760,243	201,766	668,036	104,460	13,187	303,663	*	100,956	327,521	40,615
Census Bureau	110,367	16,146	0	0	7,139	0	0	87,081	0	0
National Institute of Standards and Technology	817,126	181,051	8,405	40,274	3,763	273,973	*	399	308,980	240
National Oceanic and Atmospheric Administration	825,550	4,568	659,630	64,186	2,284	29,690	0	13,476	11,341	40,375
National Telecommunications and Information Administration	7,200	0	0	0	0	0	0	0	7,200	0
Department of Defense	10,377,359	2,822,519	613,831	1,166,868	33,651	606,299	119,925	39,853	3,734,924	1,239,488
Defense Advanced Research Projects Agency	1,996,794	1,046,489	73,015	309,333	4,007	81,305	22,723	186	349,285	110,451
Defense Health Agency	174,400	0	0	172,579	0	0	67	0	0	1,754
Department of the Air Force	2,421,989	217,574	0	104,116	0	307,967	300	12,994	1,635,112	143,926
Department of the Army	2,088,619	974,535	14,807	349,389	12,379	49,760	77,655	2,809	0	607,285
Department of the Navy	2,081,951	225,229	521,505	86,803	15,757	60,169	14,994	9,259	910,159	238,076
Space Force	76,353	0	0	0	0	0	0	0	76,353	0
Other defense agencies	1,537,252	358,691	4,505	144,648	1,508	107,099	4,186	14,605	764,015	137,995
Department of Education	293,433	0	0	0	0	0	0	0	0	293,433
Department of Energy	10,470,369	1,619,017	336,234	579,713	53,396	5,176,482	0	0	2,230,027	475,500
Advanced Research Projects Agency—Energy	225,000	21,888	2,262	37,489	0	0	0	0	163,362	0

TABLE 25

Preliminary federal obligations for research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Electricity Delivery and Energy Reliability	67,762	0	0	0	0	0	0	0	67,762	0
Energy Efficiency and Renewable Energy	677,946	0	0	0	0	0	0	0	677,946	0
Environmental Management	11,550	0	0	0	0	0	0	0	0	11,550
Fossil Energy	736,176	0	69,937	0	0	117,052	0	0	549,187	0
National Nuclear Security Administration	2,526,955	668,235	5,983	1,520	2,538	1,401,732	0	0	440,947	6,000
Defense Programs	2,257,778	642,993	0	0	0	1,178,976	0	0	435,808	0
Office of Defense Nuclear Nonproliferation	269,177	25,242	5,983	1,520	2,538	222,756	0	0	5,138	6,000
Nuclear Energy	330,824	0	0	0	0	0	0	0	330,824	0
Office of Cybersecurity, Energy Security, and Emergency Response	98,751	98,751	0	0	0	0	0	0	0	0
Office of Science	5,795,405	830,142	258,053	540,704	50,858	3,657,698	0	0	0	457,950
Department of Health and Human Services	42,670,457	51,705	498,386	30,986,815	342,965	232,537	3,587,720	637,392	2,831,200	3,501,737
Administration for Children and Families	4,265	0	0	0	0	0	0	4,265	0	0
Administration for Community Living	110,863	0	0	0	0	0	0	110,863	0	0
Agency for Healthcare Research and Quality	314,345	49,189	0	172,974	0	0	7,799	20,813	803	62,767
Agency for Toxic Substances and Disease Registry	10,935	0	10,935	0	0	0	0	0	0	0
Centers for Disease Control and Prevention	648,587	2,516	0	534,567	452	3,764	1,025	41,513	38,224	26,526
Centers for Medicare and Medicaid Services	420,703	0	0	420,703	0	0	0	0	0	0
Food and Drug Administration	669,007	0	0	669,007	0	0	0	0	0	0
Health Resources and Services Administration	38,189	0	0	38,189	0	0	0	0	0	0
National Institutes of Health	40,436,064	0	487,451	29,151,377	342,513	228,773	3,578,896	459,939	2,792,173	3,394,944
Office of the Secretary of Health and Human Services	17,500	0	0	0	0	0	0	0	0	17,500
Office of the Assistant Secretary for Planning and Evaluation	17,500	0	0	0	0	0	0	0	0	17,500
Department of Homeland Security	315,700	85,627	11,645	10,711	0	20,319	0	0	107,060	80,338
Coast Guard	2,243	763	0	67	0	0	0	0	1,413	0

TABLE 25

Preliminary federal obligations for research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Countering Weapons of Mass Destruction Office	30,955	7,719	0	10,644	0	12,593	0	0	0	0
Cybersecurity and Infrastructure Security Agency	3,502	2,709	0	0	0	0	0	0	793	0
Science and Technology Directorate	277,000	74,436	11,645	0	0	7,726	0	0	104,854	78,338
Transportation Security Administration	2,000	0	0	0	0	0	0	0	0	2,000
Department of the Interior	991,033	0	865,204	72,313	0	0	0	16,498	37,018	0
Bureau of Indian Affairs	4,000	0	0	4,000	0	0	0	0	0	0
Bureau of Land Management	10,583	0	0	10,583	0	0	0	0	0	0
Bureau of Ocean Energy Management	67,918	0	67,918	0	0	0	0	0	0	0
Bureau of Reclamation	21,500	0	0	0	0	0	0	0	21,500	0
Bureau of Safety and Environmental Enforcement	15,518	0	0	0	0	0	0	0	15,518	0
Fish and Wildlife Service	32,650	0	0	32,650	0	0	0	0	0	0
Geological Survey	811,642	0	797,286	14,356	0	0	0	0	0	0
National Park Service	27,222	0	0	10,724	0	0	0	16,498	0	0
Department of Justice	82,297	2,148	474	3,395	396	6,220	0	58,979	5,078	5,605
Bureau of Prisons	*	0	0	0	0	0	0	*	0	0
Federal Bureau of Investigation	5,396	0	0	0	0	0	0	0	0	5,396
Office of Justice Programs	76,899	2,148	474	3,395	396	6,220	0	58,977	5,078	209
Department of Labor	3,803	0	0	0	0	0	0	3,803	0	0
Employee Benefits Security Administration	1,569	0	0	0	0	0	0	1,569	0	0
Occupational Safety and Health Administration	2,234	0	0	0	0	0	0	2,234	0	0
Department of State	47,000	0	0	45,000	0	0	0	2,000	0	0
Department of Transportation	812,341	16,566	16,160	18,397	5,167	19,048	18,187	12,518	700,266	6,033
Federal Aviation Administration	271,685	13,349	15,989	8,093	5,167	0	18,016	0	210,060	1,011
Federal Highway Administration	361,044	0	0	0	0	0	0	0	361,044	0
Federal Motor Carrier Safety Administration	15,000	*	0	0	0	14,990	0	0	0	0
Federal Railroad Administration	42,112	0	171	0	0	0	171	0	41,770	0
Federal Transit Administration	33,000	0	0	0	0	0	0	3,000	25,000	5,000
National Highway Traffic Safety Administration	50,000	3,207	0	10,304	0	0	0	9,518	26,971	0

TABLE 25

Preliminary federal obligations for research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Office of the Secretary of Transportation	15,022	0	0	0	0	0	0	0	15,000	*
Pipeline and Hazardous Materials Safety Administration	24,479	0	0	0	0	4,058	0	0	20,421	0
Department of the Treasury	50,034	0	0	0	0	49,981	0	0	53	0
Bureau of Engraving and Printing	49,981	0	0	0	0	49,981	0	0	0	0
Mint	53	0	0	0	0	0	0	0	53	0
Department of Veterans Affairs	1,673,109	0	0	1,673,109	0	0	0	0	0	0
Other agencies										
Administrative Office of the U.S. Courts	1,443	1,443	0	0	0	0	0	0	0	0
Agency for Global Media	7,884	0	0	0	0	0	0	7,884	0	0
Agency for International Development	51,211	0	0	43,631	0	0	0	4,331	0	3,250
Appalachian Regional Commission	122	0	0	0	0	0	0	122	0	0
Consumer Product Safety Commission	440	0	0	0	0	0	0	0	440	0
Environmental Protection Agency	406,371	5,566	167,490	160,542	3,090	9,703	0	2,348	57,633	0
Federal Trade Commission	8,571	0	0	0	0	0	0	8,571	0	0
Library of Congress	493	0	0	0	0	493	0	0	0	0
National Aeronautics and Space Administration	7,598,407	0	1,721,197	29,923	0	3,188,694	0	0	2,526,071	132,522
National Science Foundation	7,035,853	1,037,030	1,097,961	792,951	269,019	1,363,323	34,410	216,153	1,070,696	1,154,309
Nuclear Regulatory Commission	78,147	0	0	0	0	0	0	0	78,147	0
Patient-Centered Outcomes Research Trust Fund	481,465	0	0	481,465	0	0	0	0	0	0
Postal Service	15,702	0	0	0	0	0	0	0	15,702	0
RESTORE Act Centers of Excellence Research Grants Program	6,960	0	0	0	0	0	0	0	0	6,960
Smithsonian Institution	95,000	0	17,100	52,250	0	10,450	0	8,200	0	7,000
Social Security Administration	98,560	0	0	0	0	0	0	98,560	0	0
Tennessee Valley Authority	12,952	0	0	0	0	0	0	0	12,952	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 26

Federal obligations for basic research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
All agencies	42,494,145	6,198,988	5,804,862	3,785,310	21,440,653	4,499,600	532,916	231,817
Departments								
Department of Agriculture	1,299,030	758,591	0	12,681	506,425	14,303	3,822	3,210
Agricultural Research Service	755,202	650,171	0	0	95,030	6,720	111	3,170
Animal and Plant Health Inspection Service	21,101	14,802	0	0	6,299	0	0	0
Forest Service	79,155	72,354	0	*	5,658	133	957	*
National Institute of Food and Agriculture	432,329	10,796	0	12,668	399,076	7,150	2,639	0
Natural Resources Conservation Service	11,244	10,469	0	0	360	300	115	0
Department of Commerce	277,665	259,019	0	5,579	9,784	2,925	0	359
National Institute of Standards and Technology	277,665	259,019	0	5,579	9,784	2,925	0	359
Department of Defense	2,834,851	482,933	76,067	531,657	1,595,541	92,813	761	55,079
Defense Advanced Research Projects Agency	509,680	17,454	24,735	140,130	273,850	42,355	0	11,156
Defense Health Agency	17,921	6,853	360	6,098	1,928	2,682	0	0
Department of the Air Force	703,068	56,858	2,156	74,398	542,531	3,855	0	23,270
Department of the Army	541,892	181,344	29,889	71,810	240,097	12,463	0	6,290
Department of the Navy	630,694	188,937	315	32,893	382,485	13,874	761	11,429
Space Force	98,285	8,643	7,892	75,591	6,160	0	0	0
Other defense agencies	333,311	22,844	10,721	130,738	148,490	17,584	0	2,934
Department of Education	29,730	0	0	484	23,533	5,022	692	0
Department of Energy	5,500,144	215,968	4,000,694	329,247	895,706	30,026	28,314	189
Electricity Delivery and Energy Reliability	12,542	287	9,026	1,454	860	877	*	0
Fossil Energy	1,701	0	0	0	1,701	0	0	0
National Nuclear Security Administration	122,721	0	109,274	3,203	10,244	0	0	0
Office of Defense Nuclear Nonproliferation	122,721	0	109,274	3,203	10,244	0	0	0
Office of Cybersecurity, Energy Security, and Emergency Response	1,731	1,531	200	0	0	0	0	0
Office of Science	5,361,449	214,150	3,882,194	324,591	882,901	29,149	28,275	189
Department of Health and Human Services	21,508,382	3,152,398	378,690	1,318,860	12,528,168	3,512,332	479,271	138,661
Centers for Disease Control and Prevention	89,306	27,193	0	2,604	35,198	9,599	14,712	0
Centers for Medicare and Medicaid Services	420,703	0	0	11,531	1,160	6,693	401,319	0
Health Resources and Services Administration	3,399	2,832	0	567	0	0	0	0
National Institutes of Health	20,994,974	3,122,373	378,690	1,304,158	12,491,810	3,496,040	63,241	138,661

TABLE 26

Federal obligations for basic research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Department of Homeland Security	50,791	10,648	0	22,980	16,824	0	0	340
Countering Weapons of Mass Destruction Office	6,025	0	0	500	5,525	0	0	0
Science and Technology Directorate	44,766	10,648	0	22,480	11,299	0	0	340
Department of the Interior	86,089	78,249	0	454	5,094	1,064	1,229	0
Bureau of Land Management	237	86	0	0	*	140	0	0
Bureau of Safety and Environmental Enforcement	1,530	128	0	277	864	261	0	0
Geological Survey	84,322	78,035	0	177	4,219	663	1,229	0
Department of Justice	8,401	4,816	0	0	1,586	2,000	0	0
Office of Justice Programs	8,401	4,816	0	0	1,586	2,000	0	0
Department of State	4,000	4,000	0	0	0	0	0	0
Department of Transportation	2,072	1,119	0	953	0	0	0	0
Federal Motor Carrier Safety Administration	893	*	0	868	0	0	0	0
Pipeline and Hazardous Materials Safety Administration	1,179	1,094	0	85	0	0	0	0
Department of the Treasury	5,264	0	2,800	0	0	0	0	2,464
Bureau of Engraving and Printing	5,264	0	2,800	0	0	0	0	2,464
Department of Veterans Affairs	624,980	624,980	0	0	0	0	0	0
Other agencies								
National Aeronautics and Space Administration	4,429,290	536,127	1,048,160	1,259,864	973,267	597,033	2,443	12,397
National Science Foundation	5,770,954	7,640	298,451	302,550	4,884,726	242,084	16,384	19,119
Smithsonian Institution	62,500	62,500	0	0	0	0	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 27

Preliminary federal obligations for basic research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
All agencies	43,790,457	6,533,077	6,632,343	3,557,074	21,737,399	4,556,513	541,349	232,702
Departments								
Department of Agriculture	1,458,701	850,192	0	14,952	539,151	48,300	3,689	2,417
Agricultural Research Service	799,500	720,727	0	0	71,273	5,040	83	2,377
Animal and Plant Health Inspection Service	23,363	16,789	0	0	6,574	0	0	0
Forest Service	95,083	88,282	0	*	5,658	133	957	*
National Institute of Food and Agriculture	527,876	12,194	0	14,939	455,082	43,128	2,534	0
Natural Resources Conservation Service	12,878	12,200	0	0	563	0	115	0
Department of Commerce	287,118	267,962	0	6,009	9,864	2,925	0	359
National Institute of Standards and Technology	287,118	267,962	0	6,009	9,864	2,925	0	359
Department of Defense	2,976,752	628,760	71,558	510,962	1,602,164	103,525	4,262	55,520
Defense Advanced Research Projects Agency	512,844	17,563	24,888	141,000	275,550	42,618	0	11,225
Defense Health Agency	15,570	4,158	351	6,211	1,871	2,980	0	0
Department of the Air Force	724,626	59,774	2,177	75,142	560,137	3,894	0	23,502
Department of the Army	586,322	196,213	32,340	77,697	259,782	13,485	0	6,805
Department of the Navy	852,383	322,958	327	29,022	442,989	39,574	4,262	13,250
Space Force	76,353	6,714	6,131	58,723	4,785	0	0	0
Other defense agencies	208,654	21,381	5,344	123,167	57,050	975	0	736
Department of Education	33,255	0	0	541	26,323	5,617	773	0
Department of Energy	5,947,161	132,329	4,742,878	67,862	971,787	8,481	23,825	0
Electricity Delivery and Energy Reliability	8,401	190	5,968	1,068	569	580	*	0
National Nuclear Security Administration	123,085	1,750	102,935	3,400	15,000	0	0	0
Office of Defense Nuclear Nonproliferation	123,085	1,750	102,935	3,400	15,000	0	0	0
Office of Cybersecurity, Energy Security, and Emergency Response	20,270	14,692	5,578	0	0	0	0	0
Office of Science	5,795,405	115,697	4,628,396	63,394	956,218	7,901	23,799	0
Department of Health and Human Services	21,411,636	3,139,491	376,815	1,307,288	12,470,722	3,498,582	480,204	138,534
Centers for Disease Control and Prevention	96,501	30,137	0	443	38,774	10,632	15,957	559
Centers for Medicare and Medicaid Services	420,703	0	0	10,793	1,982	6,608	401,319	0
Health Resources and Services Administration	3,399	2,832	0	567	0	0	0	0
National Institutes of Health	20,891,033	3,106,523	376,815	1,295,485	12,429,966	3,481,342	62,928	137,975
Department of Homeland Security	67,631	20,717	0	25,387	21,527	0	0	0

TABLE 27

Preliminary federal obligations for basic research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Countering Weapons of Mass Destruction Office	6,631	500	0	0	6,131	0	0	0
Science and Technology Directorate	61,000	20,217	0	25,387	15,396	0	0	0
Department of the Interior	174,008	147,046	0	466	16,931	673	8,892	0
Bureau of Land Management	2,004	802	0	0	990	131	81	0
Bureau of Safety and Environmental Enforcement	1,500	126	0	272	847	255	0	0
Geological Survey	170,504	146,118	0	194	15,094	287	8,811	0
Department of Justice	8,265	4,500	0	0	1,665	2,100	0	0
Office of Justice Programs	8,265	4,500	0	0	1,665	2,100	0	0
Department of State	7,000	7,000	0	0	0	0	0	0
Department of Transportation	9,016	6,493	0	2,523	0	0	0	0
Federal Motor Carrier Safety Administration	900	0	0	900	0	0	0	0
Pipeline and Hazardous Materials Safety Administration	8,116	6,493	0	1,623	0	0	0	0
Department of the Treasury	5,900	0	2,900	0	0	0	0	3,000
Bureau of Engraving and Printing	5,900	0	2,900	0	0	0	0	3,000
Department of Veterans Affairs	670,701	670,701	0	0	0	0	0	0
Other agencies								
National Aeronautics and Space Administration	4,588,766	554,878	1,125,334	1,303,929	964,450	624,817	2,529	12,831
National Science Foundation	6,049,547	8,009	312,858	317,156	5,112,813	261,494	17,175	20,042
Smithsonian Institution	95,000	95,000	0	0	0	0	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 28

Federal obligations for basic research, by detailed field of R&D: FYs 2021–22

(Dollars in thousands)

Field	2021	2022 (preliminary)
All fields	42,494,145	43,790,457
Computer and information sciences	2,264,158	2,383,428
Geosciences, atmospheric sciences, and ocean sciences	1,772,255	3,567,880
Atmospheric science and meteorology	561,043	NA
Geological and earth sciences	314,811	NA
Ocean sciences and marine sciences	489,358	NA
Other geosciences, atmospheric sciences, and ocean sciences	407,044	NA
Life sciences	19,008,170	19,188,161
Agricultural sciences	587,420	NA
Biological and biomedical sciences	9,766,823	NA
Health sciences	6,832,015	NA
Natural resources and conservation	32,116	NA
Other life sciences	1,789,795	NA
Mathematics and statistics	503,181	535,798
Physical sciences	6,432,049	8,737,145
Astronomy and astrophysics	307,022	NA
Chemistry	792,064	NA
Materials science	337,081	NA
Physics	2,530,622	NA
Other physical sciences	2,465,259	NA
Psychology	1,934,423	1,929,607
Biological aspects	13,496	NA
Social aspects	16,755	NA
Other psychological sciences	1,904,172	NA
Social sciences	537,330	541,744
Anthropology	22,026	NA
Economics	52,556	NA
Political science and government	1,235	NA
Sociology, demography, and population studies	43,042	NA
Other social sciences	418,470	NA
Engineering	3,151,032	3,231,480
Aerospace, aeronautical, and astronautical engineering	208,895	NA
Bioengineering and biomedical engineering	26,603	NA
Chemical engineering	121,281	NA
Civil engineering	70,027	NA
Electrical, electronics, and communications engineering	199,814	NA
Industrial and manufacturing engineering	40,752	NA
Mechanical engineering	114,059	NA
Metallurgical and materials engineering	238,474	NA
Other engineering	2,131,128	NA
Other fields	6,891,548	3,675,215
Business management and business administration	33,687	NA
Communication and communications technologies	0	NA
Education research	359,764	NA
Humanities	*	NA
Law	6,570	NA
Social work	0	NA
Visual and performing arts	0	NA
All other fields	6,491,493	NA

* = amount greater than $0 but less than $50,000.

NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. FYs 2021 and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 29

Federal obligations for basic research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	42,494,145	2,264,158	1,772,255	19,008,170	503,181	6,432,049	1,934,423	537,330	3,151,032	6,891,548
Departments										
Department of Agriculture	1,299,030	13,885	15,218	1,069,626	2,596	63,325	1,289	34,224	58,646	40,221
Agricultural Research Service	755,202	982	3,323	693,804	0	48,484	0	1,812	6,797	0
Animal and Plant Health Inspection Service	21,101	0	0	21,101	0	0	0	0	0	0
Forest Service	79,155	0	2,862	60,346	0	2,959	0	9,384	3,604	0
National Institute of Food and Agriculture	432,329	12,904	9,033	283,132	2,596	11,882	1,289	23,027	48,245	40,221
Natural Resources Conservation Service	11,244	0	0	11,244	0	0	0	0	0	0
Department of Commerce	277,665	11,701	0	13,421	2,523	208,428	0	0	41,592	0
National Institute of Standards and Technology	277,665	11,701	0	13,421	2,523	208,428	0	0	41,592	0
Department of Defense	2,834,851	598,087	140,159	325,787	62,466	226,079	41,945	49,652	819,284	571,392
Defense Advanced Research Projects Agency	509,680	314,345	15,324	86,480	3,644	40,323	9,407	0	33,044	7,113
Defense Health Agency	17,921	0	0	17,892	0	0	0	0	0	*
Department of the Air Force	703,068	52,055	0	30,348	0	99,937	300	12,994	408,784	98,649
Department of the Army	541,892	113,558	5,118	107,917	11,441	41,347	19,394	2,597	0	240,521
Department of the Navy	630,694	63,574	110,191	44,067	11,787	14,769	7,322	4,413	163,625	210,946
Space Force	98,285	0	0	0	0	0	0	0	98,285	0
Other defense agencies	333,311	54,555	9,526	39,083	35,594	29,703	5,522	29,648	115,546	14,134
Department of Education	29,730	0	0	0	0	0	0	0	0	29,730
Department of Energy	5,500,144	822,465	244,235	507,085	1,578	3,482,365	0	0	48,736	393,680
Electricity Delivery and Energy Reliability	12,542	0	0	0	0	0	0	0	12,542	0
Fossil Energy	1,701	0	0	0	0	1,701	0	0	0	0
National Nuclear Security Administration	122,721	4,800	2,902	960	1,578	109,674	0	0	2,805	0

TABLE 29

Federal obligations for basic research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Office of Defense Nuclear Nonproliferation	122,721	4,800	2,902	960	1,578	109,674	0	0	2,805	0
Office of Cybersecurity, Energy Security, and Emergency Response	1,731	1,731	0	0	0	0	0	0	0	0
Office of Science	5,361,449	815,933	241,333	506,125	0	3,370,990	0	0	33,388	393,680
Department of Health and Human Services	21,508,382	0	253,091	15,617,833	177,838	120,849	1,858,373	238,807	1,461,026	1,780,565
Centers for Disease Control and Prevention	89,306	0	0	57,925	0	2,067	160	0	11,291	17,862
Centers for Medicare and Medicaid Services	420,703	0	0	420,703	0	0	0	0	0	0
Health Resources and Services Administration	3,399	0	0	3,399	0	0	0	0	0	0
National Institutes of Health	20,994,974	0	253,091	15,135,806	177,838	118,782	1,858,213	238,807	1,449,735	1,762,703
Department of Homeland Security	50,791	2,097	8,546	924	*	3,004	*	*	30,912	5,308
Countering Weapons of Mass Destruction Office	6,025	2,097	0	924	0	3,004	0	0	0	0
Science and Technology Directorate	44,766	0	8,546	*	*	*	*	*	30,912	5,308
Department of the Interior	86,089	0	54,202	30,357	0	0	0	0	1,530	0
Bureau of Land Management	237	0	0	237	0	0	0	0	0	0
Bureau of Safety and Environmental Enforcement	1,530	0	0	0	0	0	0	0	1,530	0
Geological Survey	84,322	0	54,202	30,120	0	0	0	0	0	0
Department of Justice	8,401	0	0	0	0	0	0	8,401	0	0
Office of Justice Programs	8,401	0	0	0	0	0	0	8,401	0	0
Department of State	4,000	0	0	4,000	0	0	0	0	0	0
Department of Transportation	2,072	0	0	0	0	644	0	65	370	993

TABLE 29

Federal obligations for basic research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Federal Motor Carrier Safety Administration	893	0	0	0	0	0	0	0	0	893
Pipeline and Hazardous Materials Safety Administration	1,179	0	0	0	0	644	0	65	370	100
Department of the Treasury	5,264	0	0	0	0	5,264	0	0	0	0
Bureau of Engraving and Printing	5,264	0	0	0	0	5,264	0	0	0	0
Department of Veterans Affairs	624,980	0	0	624,980	0	0	0	0	0	0
Other agencies										
National Aeronautics and Space Administration	4,429,290	0	23,428	29,664	0	1,030,791	0	0	0	3,345,407
National Science Foundation	5,770,954	815,923	1,031,500	750,117	256,181	1,279,629	32,816	203,463	678,762	722,564
Smithsonian Institution	62,500	0	1,875	34,375	0	11,672	0	2,718	10,172	1,688

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 30

Preliminary federal obligations for basic research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	43,790,457	2,383,428	3,567,880	19,188,161	535,798	8,737,145	1,929,607	541,744	3,231,480	3,675,215
Departments										
Department of Agriculture	1,458,701	16,242	13,846	1,195,875	3,062	68,880	1,531	43,472	68,389	47,403
Agricultural Research Service	799,500	1,039	0	738,018	0	51,328	0	1,919	7,196	0
Animal and Plant Health Inspection Service	23,363	0	0	23,363	0	0	0	0	0	0
Forest Service	95,083	0	3,182	72,689	0	3,564	0	11,306	4,342	*
National Institute of Food and Agriculture	527,876	15,203	10,663	348,926	3,062	13,989	1,531	30,247	56,852	47,403
Natural Resources Conservation Service	12,878	0	0	12,878	0	0	0	0	0	0
Department of Commerce	287,118	12,001	1,631	13,421	2,523	215,094	0	0	42,448	0
National Institute of Standards and Technology	287,118	12,001	1,631	13,421	2,523	215,094	0	0	42,448	0
Department of Defense	2,976,752	639,958	201,025	342,584	33,311	221,941	44,663	30,806	893,086	569,378
Defense Advanced Research Projects Agency	512,844	316,297	15,419	87,017	3,666	40,573	9,465	0	33,249	7,158
Defense Health Agency	15,570	0	0	15,418	0	0	0	0	0	152
Department of the Air Force	724,626	53,047	0	30,875	0	102,937	300	12,994	425,824	98,649
Department of the Army	586,322	122,868	5,537	116,765	12,379	44,737	20,984	2,809	0	260,242
Department of the Navy	852,383	88,411	175,753	65,663	15,757	23,595	11,386	7,472	273,474	190,872
Space Force	76,353	0	0	0	0	0	0	0	76,353	0
Other defense agencies	208,654	59,335	4,315	26,845	1,508	10,099	2,528	7,531	84,186	12,307
Department of Education	33,255	0	0	0	0	0	0	0	0	33,255
Department of Energy	5,947,161	855,763	260,485	541,469	51,283	3,765,319	0	0	8,892	463,950
Electricity Delivery and Energy Reliability	8,401	0	0	0	0	0	0	0	8,401	0
National Nuclear Security Administration	123,085	5,351	2,432	765	425	107,621	0	0	491	6,000
Office of Defense Nuclear Nonproliferation	123,085	5,351	2,432	765	425	107,621	0	0	491	6,000

TABLE 30

Preliminary federal obligations for basic research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Office of Cybersecurity, Energy Security, and Emergency Response	20,270	20,270	0	0	0	0	0	0	0	0
Office of Science	5,795,405	830,142	258,053	540,704	50,858	3,657,698	0	0	0	457,950
Department of Health and Human Services	21,411,636	2,403	251,838	15,542,501	177,072	119,519	1,849,014	237,714	1,459,455	1,772,119
Centers for Disease Control and Prevention	96,501	2,403	0	57,528	115	1,326	0	90	16,897	18,143
Centers for Medicare and Medicaid Services	420,703	0	0	420,703	0	0	0	0	0	0
Health Resources and Services Administration	3,399	0	0	3,399	0	0	0	0	0	0
National Institutes of Health	20,891,033	0	251,838	15,060,872	176,957	118,194	1,849,014	237,624	1,442,558	1,753,976
Department of Homeland Security	67,631	1,749	11,645	1,089	0	3,793	0	0	42,122	7,233
Countering Weapons of Mass Destruction Office	6,631	1,749	0	1,089	0	3,793	0	0	0	0
Science and Technology Directorate	61,000	0	11,645	0	0	0	0	0	42,122	7,233
Department of the Interior	174,008	0	167,488	5,020	0	0	0	0	1,500	0
Bureau of Land Management	2,004	0	0	2,004	0	0	0	0	0	0
Bureau of Safety and Environmental Enforcement	1,500	0	0	0	0	0	0	0	1,500	0
Geological Survey	170,504	0	167,488	3,016	0	0	0	0	0	0
Department of Justice	8,265	0	0	0	0	0	0	8,265	0	0
Office of Justice Programs	8,265	0	0	0	0	0	0	8,265	0	0
Department of State	7,000	0	0	7,000	0	0	0	0	0	0
Department of Transportation	9,016	0	0	0	0	4,958	0	0	4,058	0
Federal Motor Carrier Safety Administration	900	0	0	0	0	900	0	0	0	0

TABLE 30

Preliminary federal obligations for basic research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Pipeline and Hazardous Materials Safety Administration	8,116	0	0	0	0	4,058	0	0	4,058	0
Department of the Treasury	5,900	0	0	0	0	5,900	0	0	0	0
Bureau of Engraving and Printing	5,900	0	0	0	0	5,900	0	0	0	0
Department of Veterans Affairs	670,701	0	0	670,701	0	0	0	0	0	0
Other agencies										
National Aeronautics and Space Administration	4,588,766	0	1,561,526	29,923	0	2,979,886	0	0	0	17,431
National Science Foundation	6,049,547	855,311	1,081,295	786,329	268,548	1,341,403	34,400	213,286	711,529	757,446
Smithsonian Institution	95,000	0	17,100	52,250	0	10,450	0	8,200	0	7,000

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 31

Federal obligations for applied research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
All agencies	43,750,114	10,565,461	4,723,897	7,004,281	15,586,028	5,260,155	354,413	255,879
Departments								
Department of Agriculture	1,361,790	746,155	0	13,236	557,830	33,773	7,882	2,914
Agricultural Marketing Service	6,663	3,629	0	*	2,509	212	250	*
Agricultural Research Service	604,161	520,137	0	0	76,024	5,376	89	2,536
Economic Research Service	85,476	74,920	0	*	8,247	2,263	0	0
Forest Service	154,223	133,608	0	298	10,745	3,864	5,352	355
National Agricultural Statistics Service	5,151	4,600	0	0	223	328	0	0
National Institute of Food and Agriculture	505,111	9,262	0	12,851	459,077	21,731	2,190	0
Natural Resources Conservation Service	1,004	0	0	0	1,004	0	0	0
Department of Commerce	1,228,287	893,197	19,924	50,927	243,621	17,508	2,347	763
Census Bureau	55,936	55,936	0	0	0	0	0	0
National Institute of Standards and Technology	506,747	416,196	19,914	35,007	30,060	4,801	*	759
National Oceanic and Atmospheric Administration	658,725	414,185	*	15,920	213,561	12,707	2,338	*
National Telecommunications and Information Administration	6,879	6,879	0	0	0	0	0	0
Department of Defense	6,900,567	1,996,015	1,042,015	2,487,345	1,026,346	311,597	2,290	34,957
Defense Advanced Research Projects Agency	1,335,666	79,804	47,431	786,352	300,511	103,798	300	17,470
Defense Health Agency	114,779	8,821	2,618	12,147	39,864	49,635	0	1,694
Department of the Air Force	1,683,718	592,873	84,221	796,542	164,191	41,847	1,670	2,373
Department of the Army	1,372,202	717,019	19,773	418,700	180,327	32,923	0	3,460
Department of the Navy	1,023,460	364,561	18,387	267,969	306,290	56,099	320	9,835
Other defense agencies	1,370,742	232,937	869,586	205,636	35,164	27,295	0	124
Department of Education	232,600	0	0	16,200	116,191	74,781	25,427	0
Department of Energy	5,276,862	656,063	3,098,366	877,585	495,272	123,701	24,350	1,525
Advanced Research Projects Agency—Energy	157,363	530	17,671	81,691	53,383	4,088	0	0
Electricity Delivery and Energy Reliability	49,592	1,136	35,686	5,748	3,402	3,466	154	0
Energy Efficiency and Renewable Energy	1,394,973	0	620,946	446,084	258,811	44,935	24,196	0
Environmental Management	9,902	*	8,252	0	1,650	0	0	0
Fossil Energy	689,372	421,796	66,775	0	134,668	65,334	0	800
National Nuclear Security Administration	2,485,060	231,172	2,082,337	170,011	1,541	0	0	0
Defense Programs	2,328,172	230,912	1,934,938	161,182	1,141	0	0	0

TABLE 31

Federal obligations for applied research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Office of Defense Nuclear Nonproliferation	156,888	260	147,399	8,829	400	0	0	0
Nuclear Energy	346,454	1,430	266,699	29,905	41,818	5,878	0	725
Office of Science	144,146	0	0	144,146	0	0	0	0
Department of Health and Human Services	21,209,856	3,632,700	350,176	1,522,253	12,017,207	3,430,571	90,647	166,303
Administration for Children and Families	4,590	365	0	0	1,800	2,425	0	0
Administration for Community Living	106,908	0	0	4,810	80,767	20,832	500	0
Agency for Healthcare Research and Quality	308,145	46,928	0	130,303	100,709	30,110	95	0
Agency for Toxic Substances and Disease Registry	10,935	0	0	0	6,686	2,500	1,250	500
Centers for Disease Control and Prevention	592,250	72,121	616	164,921	195,900	98,238	28,207	32,249
Food and Drug Administration	589,144	455,159	0	13,095	71,424	41,688	2,219	5,560
Health Resources and Services Administration	29,521	1,837	0	0	26,620	1,063	0	0
National Institutes of Health	19,550,976	3,053,191	349,560	1,203,839	11,530,902	3,227,114	58,376	127,995
Office of the Secretary of Health and Human Services	17,386	3,100	0	5,286	2,399	6,601	0	0
Office of the Assistant Secretary for Planning and Evaluation	17,386	3,100	0	5,286	2,399	6,601	0	0
Department of Homeland Security	187,372	72,068	19,237	82,470	6,101	4,634	0	2,862
Coast Guard	2,995	0	0	2,984	0	0	0	*
Countering Weapons of Mass Destruction Office	15,266	3,571	2,519	5,915	785	0	0	2,475
Cybersecurity and Infrastructure Security Agency	9,032	2,918	2,286	*	0	3,828	0	0
Science and Technology Directorate	159,079	64,578	14,432	73,570	5,316	807	0	376
Transportation Security Administration	1,000	1,000	0	0	0	0	0	0
Department of the Interior	668,110	576,265	408	15,799	50,928	5,992	17,468	1,250
Bureau of Indian Affairs	5,000	0	0	0	0	0	5,000	0
Bureau of Land Management	9,143	3,878	0	180	3,166	707	1,176	*
Bureau of Ocean Energy Management	62,582	42,563	0	6,939	7,421	2,201	2,691	767
Bureau of Reclamation	18,000	13,478	0	3,152	1,147	0	150	73
Bureau of Safety and Environmental Enforcement	18,918	9,831	408	4,624	3,732	315	0	*
Fish and Wildlife Service	32,650	32,650	0	0	0	0	0	0

TABLE 31

Federal obligations for applied research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Geological Survey	494,595	457,153	0	904	25,071	2,650	8,451	366
National Park Service	27,222	16,712	0	0	10,391	119	0	0
Department of Justice	70,562	5,450	0	6,464	32,037	26,203	409	0
Bureau of Prisons	*	*	0	0	0	0	0	0
Federal Bureau of Investigation	3,698	0	0	2,328	1,370	0	0	0
Office of Justice Programs	66,863	5,448	0	4,136	30,667	26,203	409	0
Department of Labor	3,493	2,596	0	897	0	0	0	0
Employee Benefits Security Administration	1,301	404	0	897	0	0	0	0
Occupational Safety and Health Administration	2,192	2,192	0	0	0	0	0	0
Department of State	40,000	40,000	0	0	0	0	0	0
Department of Transportation	820,890	147,531	6,553	275,241	156,857	52,396	179,735	2,578
Federal Aviation Administration	266,866	65,409	3,729	109,064	66,304	20,023	0	2,337
Federal Highway Administration	373,484	53,926	1,654	91,803	71,445	12,162	142,495	0
Federal Motor Carrier Safety Administration	11,451	2,990	975	3,214	4,141	131	0	0
Federal Railroad Administration	35,039	9,178	195	9,303	5,225	10,648	249	241
Federal Transit Administration	42,045	0	0	0	0	5,055	36,990	0
National Highway Traffic Safety Administration	65,559	0	0	58,594	6,549	416	0	0
Office of the Secretary of Transportation	11,714	11,498	0	216	0	0	0	0
Pipeline and Hazardous Materials Safety Administration	14,733	4,530	0	3,048	3,193	3,962	0	0
Department of the Treasury	41,289	2,518	5,800	19,280	200	0	0	13,491
Bureau of Engraving and Printing	41,271	2,500	5,800	19,280	200	0	0	13,491
Mint	*	*	0	0	0	0	0	0
Department of Veterans Affairs	936,176	936,176	0	0	0	0	0	0
Other agencies								
Administrative Office of the U.S. Courts	4,362	0	4,362	0	0	0	0	0
Agency for Global Media	4,597	0	0	4,597	0	0	0	0
Agency for International Development	51,211	5,985	0	12,961	2,975	15,840	0	13,450
Appalachian Regional Commission	650	0	0	372	113	164	0	0
Consumer Product Safety Commission	391	241	0	0	150	0	0	0
Environmental Protection Agency	403,334	205,004	109	143,550	40,338	14,333	0	0
Federal Trade Commission	8,094	8,094	0	0	0	0	0	0

TABLE 31

Federal obligations for applied research, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Library of Congress	550	550	0	0	0	0	0	0
National Aeronautics and Space Administration	2,697,919	535,070	152,496	1,211,869	176,105	609,282	313	12,784
National Science Foundation	934,101	290	0	207,544	651,375	70,950	3,545	398
Nuclear Regulatory Commission	76,714	36,207	24,451	6,694	6,257	689	0	2,416
Patient-Centered Outcomes Research Trust Fund	460,331	0	0	0	0	460,331	0	0
Postal Service	15,435	0	0	15,435	0	0	0	0
Social Security Administration	105,392	67,286	0	28,327	6,124	3,464	0	190
Tennessee Valley Authority	9,179	0	0	5,232	0	3,947	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 32

Preliminary federal obligations for applied research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
All agencies	44,673,778	11,819,033	4,156,851	6,970,427	15,867,317	5,282,901	307,486	269,762
Departments								
Department of Agriculture	1,558,776	851,322	0	15,712	628,281	53,143	7,938	2,380
Agricultural Marketing Service	7,484	4,050	0	0	2,659	302	350	123
Agricultural Research Service	639,600	576,582	0	0	57,018	4,032	67	1,902
Economic Research Service	90,389	79,833	0	*	8,247	2,263	0	0
Forest Service	194,781	174,166	0	298	10,675	3,934	5,352	355
National Agricultural Statistics Service	6,327	5,796	0	0	58	473	0	0
National Institute of Food and Agriculture	619,681	10,597	0	15,368	549,409	42,138	2,169	0
Natural Resources Conservation Service	514	300	0	0	214	0	0	0
Department of Commerce	1,473,125	1,020,585	19,132	64,256	346,873	16,490	5,014	774
Census Bureau	110,367	110,367	0	0	0	0	0	0
National Institute of Standards and Technology	530,008	449,155	19,098	29,496	27,109	4,382	*	759
National Oceanic and Atmospheric Administration	825,550	453,864	*	34,760	319,764	12,108	5,005	*
National Telecommunications and Information Administration	7,200	7,200	0	0	0	0	0	0
Department of Defense	7,400,607	2,293,616	982,322	2,627,817	1,147,716	308,105	3,570	37,461
Defense Advanced Research Projects Agency	1,483,950	88,664	52,696	873,651	333,873	115,322	333	19,410
Defense Health Agency	158,831	43,369	2,285	26,698	42,371	42,629	0	1,479
Department of the Air Force	1,697,363	598,802	83,818	801,858	178,209	30,592	1,687	2,397
Department of the Army	1,502,296	784,998	21,647	458,396	197,423	36,044	0	3,788
Department of the Navy	1,229,568	533,681	18,401	255,410	346,130	64,145	1,550	10,251
Other defense agencies	1,328,599	244,102	803,473	211,805	49,709	19,373	0	137
Department of Education	260,178	0	0	18,121	124,809	89,746	27,503	0
Department of Energy	4,523,208	1,021,083	2,571,986	556,366	349,796	16,311	6,966	700
Advanced Research Projects Agency—Energy	225,000	0	25,267	116,803	76,327	6,603	0	0
Electricity Delivery and Energy Reliability	59,361	1,379	42,582	6,792	4,212	4,210	187	0
Energy Efficiency and Renewable Energy	677,946	0	291,517	210,163	169,487	0	6,779	0
Environmental Management	11,550	0	9,702	0	1,848	0	0	0
Fossil Energy	736,176	635,008	45,517	0	55,405	0	0	247
National Nuclear Security Administration	2,403,869	311,668	1,908,164	179,793	4,245	0	0	0
Defense Programs	2,257,778	309,723	1,773,810	170,050	4,195	0	0	0
Office of Defense Nuclear Nonproliferation	146,092	1,945	134,354	9,743	50	0	0	0

TABLE 32

Preliminary federal obligations for applied research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Nuclear Energy	330,824	1,135	242,650	42,814	38,273	5,499	0	453
Office of Cybersecurity, Energy Security, and Emergency Response	78,481	71,893	6,588	0	0	0	0	0
Department of Health and Human Services	21,258,821	3,693,450	349,454	1,478,565	12,044,635	3,433,387	81,753	177,577
Administration for Children and Families	4,265	915	0	0	1,800	1,550	0	0
Administration for Community Living	110,863	0	0	3,299	87,531	19,564	468	0
Agency for Healthcare Research and Quality	314,345	54,070	0	131,883	98,720	29,580	92	0
Agency for Toxic Substances and Disease Registry	10,935	0	0	0	6,686	2,500	1,250	500
Centers for Disease Control and Prevention	552,086	64,844	0	122,676	208,952	93,820	18,984	42,810
Food and Drug Administration	669,007	516,699	0	13,991	79,147	50,257	2,601	6,311
Health Resources and Services Administration	34,790	1,824	0	0	31,903	1,063	0	0
National Institutes of Health	19,545,031	3,051,898	349,454	1,201,416	11,527,395	3,228,553	58,359	127,956
Office of the Secretary of Health and Human Services	17,500	3,200	0	5,300	2,500	6,500	0	0
Office of the Assistant Secretary for Planning and Evaluation	17,500	3,200	0	5,300	2,500	6,500	0	0
Department of Homeland Security	248,069	99,526	17,959	113,143	13,485	3,232	0	723
Coast Guard	2,243	0	0	2,243	0	0	0	0
Countering Weapons of Mass Destruction Office	24,324	3,671	892	12,346	6,692	0	0	723
Cybersecurity and Infrastructure Security Agency	3,502	1,790	0	0	0	1,712	0	0
Science and Technology Directorate	216,000	92,065	17,068	98,554	6,793	1,520	0	0
Transportation Security Administration	2,000	2,000	0	0	0	0	0	0
Department of the Interior	817,025	704,392	150	15,448	70,445	5,716	20,221	653
Bureau of Indian Affairs	4,000	0	0	0	0	0	4,000	0
Bureau of Land Management	8,579	3,057	0	97	4,128	1,179	118	0
Bureau of Ocean Energy Management	67,918	50,852	0	5,837	5,458	3,397	1,821	553
Bureau of Reclamation	21,500	15,500	0	4,000	1,400	0	500	100
Bureau of Safety and Environmental Enforcement	14,018	5,692	150	4,676	3,500	0	0	0
Fish and Wildlife Service	32,650	32,650	0	0	0	0	0	0
Geological Survey	641,138	583,030	0	838	42,348	1,140	13,782	0

TABLE 32

Preliminary federal obligations for applied research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
National Park Service	27,222	13,611	0	0	13,611	0	0	0
Department of Justice	74,032	5,324	0	9,188	31,677	27,413	430	0
Bureau of Prisons	*	*	0	0	0	0	0	0
Federal Bureau of Investigation	5,396	0	0	5,396	0	0	0	0
Office of Justice Programs	68,634	5,322	0	3,792	31,677	27,413	430	0
Department of Labor	3,803	2,831	0	972	0	0	0	0
Employee Benefits Security Administration	1,569	597	0	972	0	0	0	0
Occupational Safety and Health Administration	2,234	2,234	0	0	0	0	0	0
Department of State	40,000	40,000	0	0	0	0	0	0
Department of Transportation	803,325	152,201	7,579	273,550	177,167	47,409	143,040	2,379
Federal Aviation Administration	271,685	66,590	3,797	111,033	69,800	18,085	0	2,379
Federal Highway Administration	361,044	54,573	468	95,793	83,769	10,401	116,040	0
Federal Motor Carrier Safety Administration	14,100	5,200	1,500	3,600	3,700	100	0	0
Federal Railroad Administration	42,112	9,178	1,815	12,574	7,898	10,648	0	0
Federal Transit Administration	33,000	0	0	0	1,000	5,000	27,000	0
National Highway Traffic Safety Administration	50,000	0	0	42,550	7,000	450	0	0
Office of the Secretary of Transportation	15,022	14,797	0	0	0	225	0	0
Pipeline and Hazardous Materials Safety Administration	16,363	1,863	0	8,000	4,000	2,500	0	0
Department of the Treasury	44,134	2,503	6,153	18,778	0	0	0	16,700
Bureau of Engraving and Printing	44,081	2,500	6,103	18,778	0	0	0	16,700
Mint	53	*	50	0	0	0	0	0
Department of Veterans Affairs	1,002,408	1,002,408	0	0	0	0	0	0
Other agencies								
Administrative Office of the U.S. Courts	1,443	0	1,443	0	0	0	0	0
Agency for Global Media	7,884	0	0	7,884	0	0	0	0
Agency for International Development	51,211	5,985	0	12,961	2,975	15,840	0	13,450
Appalachian Regional Commission	122	0	0	0	*	108	0	0
Consumer Product Safety Commission	440	440	0	0	0	0	0	0
Environmental Protection Agency	406,371	230,160	0	118,617	42,496	15,099	0	0
Federal Trade Commission	8,571	8,571	0	0	0	0	0	0
Library of Congress	493	493	0	0	0	0	0	0

TABLE 32

Preliminary federal obligations for applied research, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
National Aeronautics and Space Administration	3,009,641	595,954	175,756	1,349,764	187,808	685,928	349	14,081
National Science Foundation	986,305	306	0	219,143	685,498	77,195	3,743	420
Nuclear Regulatory Commission	78,147	36,899	24,918	6,821	6,344	703	0	2,462
Patient-Centered Outcomes Research Trust Fund	481,465	0	0	0	0	481,465	0	0
Postal Service	15,702	0	0	15,702	0	0	0	0
RESTORE Act Centers of Excellence Research Grants Program	6,960	0	0	0	0	0	6,960	0
Social Security Administration	98,560	50,984	0	37,126	7,300	3,150	0	0
Tennessee Valley Authority	12,952	0	0	10,491	0	2,461	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 33

Federal obligations for applied research, by detailed field of R&D: FYs 2021–22

(Dollars in thousands)

Field	2021	2022 (preliminary)
All fields	43,750,114	44,673,778
Computer and information sciences	3,085,502	3,493,397
Geosciences, atmospheric sciences, and ocean sciences	1,796,822	2,483,997
Atmospheric science and meteorology	327,323	NA
Geological and earth sciences	287,382	NA
Ocean sciences and marine sciences	606,458	NA
Other geosciences, atmospheric sciences, and ocean sciences	575,659	NA
Life sciences	19,169,498	19,323,075
Agricultural sciences	485,954	NA
Biological and biomedical sciences	8,465,964	NA
Health sciences	8,175,797	NA
Natural resources and conservation	195,054	NA
Other life sciences	1,846,730	NA
Mathematics and statistics	212,312	196,748
Physical sciences	1,612,352	2,374,856
Astronomy and astrophysics	518	NA
Chemistry	348,827	NA
Materials science	215,194	NA
Physics	608,578	NA
Other physical sciences	439,235	NA
Psychology	1,835,546	1,846,335
Biological aspects	457	NA
Social aspects	33,704	NA
Other psychological sciences	1,801,385	NA
Social sciences	832,410	907,402
Anthropology	19,931	NA
Economics	175,443	NA
Political science and government	9,305	NA
Sociology, demography, and population studies	67,754	NA
Other social sciences	559,977	NA
Engineering	10,223,332	10,629,283
Aerospace, aeronautical, and astronautical engineering	1,508,118	NA
Bioengineering and biomedical engineering	13,076	NA
Chemical engineering	611,820	NA
Civil engineering	578,925	NA
Electrical, electronics, and communications engineering	687,331	NA
Industrial and manufacturing engineering	250,266	NA
Mechanical engineering	175,092	NA
Metallurgical and materials engineering	572,643	NA
Other engineering	5,826,062	NA
Other fields	4,982,338	3,418,685
Business management and business administration	86,123	NA
Communication and communications technologies	12,257	NA
Education research	627,270	NA
Humanities	*	NA
Law	370	NA
Social work	0	NA
Visual and performing arts	0	NA
All other fields	4,256,284	NA

* = amount greater than $0 but less than $50,000.

NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. FYs 2021 and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 34

Federal obligations for applied research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	43,750,114	3,085,502	1,796,822	19,169,498	212,312	1,612,352	1,835,546	832,410	10,223,332	4,982,338
Departments										
Department of Agriculture	1,361,790	14,353	22,755	969,211	7,184	51,201	11,828	153,027	48,775	83,456
Agricultural Marketing Service	6,663	0	0	6,663	0	0	0	0	0	0
Agricultural Research Service	604,161	785	2,658	555,043	0	38,787	0	1,450	5,437	0
Economic Research Service	85,476	0	0	0	0	0	0	85,476	0	0
Forest Service	154,223	0	1,826	120,354	0	2,191	0	25,460	4,392	0
National Agricultural Statistics Service	5,151	5,151	0	0	0	0	0	0	0	0
National Institute of Food and Agriculture	505,111	8,417	18,271	286,146	7,184	10,223	11,828	40,641	38,945	83,456
Natural Resources Conservation Service	1,004	0	0	1,004	0	0	0	0	0	0
Department of Commerce	1,228,287	179,958	541,903	82,325	8,774	74,411	*	52,563	272,716	15,597
Census Bureau	55,936	14,013	0	0	5,692	0	0	36,232	0	0
National Institute of Standards and Technology	506,747	162,260	9,020	26,853	1,240	50,469	*	399	256,466	0
National Oceanic and Atmospheric Administration	658,725	3,685	532,883	55,472	1,842	23,942	0	15,932	9,371	15,597
National Telecommunications and Information Administration	6,879	0	0	0	0	0	0	0	6,879	0
Department of Defense	6,900,567	1,979,309	343,244	764,435	9,063	385,593	66,718	11,414	2,746,963	593,829
Defense Advanced Research Projects Agency	1,335,666	657,228	51,841	200,101	306	36,662	11,933	167	284,456	92,972
Defense Health Agency	114,779	0	0	111,887	0	*	0	0	388	2,490
Department of the Air Force	1,683,718	165,073	0	70,686	0	203,000	0	0	1,199,681	45,277
Department of the Army	1,372,202	777,914	8,467	212,479	0	4,587	51,764	0	0	316,991
Department of the Navy	1,023,460	139,519	282,712	51,376	0	33,602	1,315	3,967	477,637	33,333
Other defense agencies	1,370,742	239,574	225	117,906	8,757	107,728	1,706	7,280	784,801	102,766
Department of Education	232,600	0	0	0	0	0	0	0	0	232,600
Department of Energy	5,276,862	619,417	84,970	26,349	4,083	884,048	0	0	3,648,204	9,790
Advanced Research Projects Agency—Energy	157,363	15,308	1,582	26,219	0	0	0	0	114,253	0
Electricity Delivery and Energy Reliability	49,592	0	0	0	0	0	0	0	49,592	0
Energy Efficiency and Renewable Energy	1,394,973	0	0	0	0	0	0	0	1,394,973	0

TABLE 34

Federal obligations for applied research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Environmental Management	9,902	0	9,902	0	0	0	0	0	0	0
Fossil Energy	689,372	0	65,490	0	0	109,610	0	0	514,272	0
National Nuclear Security Administration	2,485,060	602,176	4,942	130	4,083	761,599	0	0	1,112,131	0
Defense Programs	2,328,172	585,635	0	0	0	640,781	0	0	1,101,756	0
Office of Defense Nuclear Nonproliferation	156,888	16,541	4,942	130	4,083	120,818	0	0	10,375	0
Nuclear Energy	346,454	0	0	0	0	0	0	0	346,454	0
Office of Science	144,146	1,933	3,054	0	0	12,839	0	0	116,530	9,790
Department of Health and Human Services	21,209,856	35,256	246,620	15,398,125	174,243	113,222	1,738,826	397,567	1,374,605	1,731,392
Administration for Children and Families	4,590	0	0	0	0	0	0	4,590	0	0
Administration for Community Living	106,908	0	0	0	0	0	0	106,908	0	0
Agency for Healthcare Research and Quality	308,145	34,989	0	172,574	8,400	0	7,799	20,813	803	62,767
Agency for Toxic Substances and Disease Registry	10,935	0	10,935	0	0	0	0	0	0	0
Centers for Disease Control and Prevention	592,250	267	0	512,096	236	2,609	618	42,874	23,777	9,773
Food and Drug Administration	589,144	0	0	589,144	0	0	0	0	0	0
Health Resources and Services Administration	29,521	0	0	29,521	0	0	0	0	0	0
National Institutes of Health	19,550,976	0	235,684	14,094,791	165,606	110,612	1,730,409	222,382	1,350,025	1,641,467
Office of the Secretary of Health and Human Services	17,386	0	0	0	0	0	0	0	0	17,386
Office of the Assistant Secretary for Planning and Evaluation	17,386	0	0	0	0	0	0	0	0	17,386
Department of Homeland Security	187,372	55,839	1,126	1,751	0	14,273	65	0	63,524	50,794
Coast Guard	2,995	1,030	100	0	0	0	65	0	1,800	0
Countering Weapons of Mass Destruction Office	15,266	4,559	0	1,751	0	8,955	0	0	0	0
Cybersecurity and Infrastructure Security Agency	9,032	7,213	1,026	0	0	0	0	0	793	0
Science and Technology Directorate	159,079	43,037	0	0	0	5,318	0	0	60,931	49,794
Transportation Security Administration	1,000	0	0	0	0	0	0	0	0	1,000
Department of the Interior	668,110	0	355,837	258,857	0	0	0	16,498	36,918	0

TABLE 34

Federal obligations for applied research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Bureau of Indian Affairs	5,000	0	0	5,000	0	0	0	0	0	0
Bureau of Land Management	9,143	0	0	9,143	0	0	0	0	0	0
Bureau of Ocean Energy Management	62,582	0	62,582	0	0	0	0	0	0	0
Bureau of Reclamation	18,000	0	0	0	0	0	0	0	18,000	0
Bureau of Safety and Environmental Enforcement	18,918	0	0	0	0	0	0	0	18,918	0
Fish and Wildlife Service	32,650	0	0	32,650	0	0	0	0	0	0
Geological Survey	494,595	0	293,255	201,340	0	0	0	0	0	0
National Park Service	27,222	0	0	10,724	0	0	0	16,498	0	0
Department of Justice	70,562	2,046	452	3,234	377	5,924	0	49,796	4,836	3,897
Bureau of Prisons	*	0	0	0	0	0	0	*	0	0
Federal Bureau of Investigation	3,698	0	0	0	0	0	0	0	0	3,698
Office of Justice Programs	66,863	2,046	452	3,234	377	5,924	0	49,795	4,836	200
Department of Labor	3,493	0	0	0	0	0	0	3,493	0	0
Employee Benefits Security Administration	1,301	0	0	0	0	0	0	1,301	0	0
Occupational Safety and Health Administration	2,192	0	0	0	0	0	0	2,192	0	0
Department of State	40,000	0	0	38,000	0	0	0	2,000	0	0
Department of Transportation	820,890	17,317	15,813	21,460	5,075	11,451	18,059	17,943	707,272	6,499
Federal Aviation Administration	266,866	13,112	15,706	7,949	5,075	0	17,696	0	206,334	993
Federal Highway Administration	373,484	0	0	0	0	0	0	0	373,484	0
Federal Motor Carrier Safety Administration	11,451	0	0	0	0	11,451	0	0	0	0
Federal Railroad Administration	35,039	0	108	0	0	0	0	0	34,931	0
Federal Transit Administration	42,045	0	0	0	0	0	363	5,463	30,731	5,488
National Highway Traffic Safety Administration	65,559	4,205	0	13,511	0	0	0	12,480	35,363	0
Office of the Secretary of Transportation	11,714	0	0	0	0	0	0	0	11,696	*
Pipeline and Hazardous Materials Safety Administration	14,733	0	0	0	0	0	0	0	14,733	0
Department of the Treasury	41,289	0	0	0	0	41,289	0	0	0	0
Bureau of Engraving and Printing	41,271	0	0	0	0	41,271	0	0	0	0
Mint	*	0	0	0	0	*	0	0	0	0
Department of Veterans Affairs	936,176	0	0	936,176	0	0	0	0	0	0

TABLE 34

Federal obligations for applied research, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Other agencies										
Administrative Office of the U.S. Courts	4,362	4,362	0	0	0	0	0	0	0	0
Agency for Global Media	4,597	0	0	0	0	0	0	4,597	0	0
Agency for International Development	51,211	0	0	43,631	0	0	0	4,331	0	3,250
Appalachian Regional Commission	650	0	0	0	0	0	0	650	0	0
Consumer Product Safety Commission	391	0	0	0	0	0	0	0	391	0
Environmental Protection Agency	403,334	5,524	166,238	159,342	3,067	9,630	0	2,330	57,202	*
Federal Trade Commission	8,094	0	0	0	0	0	0	8,094	0	0
Library of Congress	550	0	0	0	0	550	0	0	0	0
National Aeronautics and Space Administration	2,697,919	0	2,082	0	0	0	0	0	820,462	1,875,375
National Science Foundation	934,101	172,101	15,783	6,272	446	20,760	*	2,716	340,157	375,858
Nuclear Regulatory Commission	76,714	*	0	0	0	0	0	0	76,694	0
Patient-Centered Outcomes Research Trust Fund	460,331	0	0	460,331	0	0	0	0	0	0
Postal Service	15,435	0	0	0	0	0	0	0	15,435	0
Social Security Administration	105,392	0	0	0	0	0	0	105,392	0	0
Tennessee Valley Authority	9,179	0	0	0	0	0	0	0	9,179	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 35

Preliminary federal obligations for applied research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	44,673,778	3,493,397	2,483,997	19,323,075	196,748	2,374,856	1,846,335	907,402	10,629,283	3,418,685
Departments										
Department of Agriculture	1,558,776	17,197	24,313	1,093,818	8,614	55,909	14,129	187,506	57,585	99,707
Agricultural Marketing Service	7,484	0	0	7,484	0	0	0	0	0	0
Agricultural Research Service	639,600	831	0	590,415	0	41,062	0	1,535	5,756	0
Economic Research Service	90,389	0	0	0	0	0	0	90,389	0	0
Forest Service	194,781	0	2,200	153,764	0	2,639	0	30,887	5,291	0
National Agricultural Statistics Service	6,327	6,327	0	0	0	0	0	0	0	0
National Institute of Food and Agriculture	619,681	10,039	21,813	341,940	8,614	12,208	14,129	64,695	46,538	99,707
Natural Resources Conservation Service	514	0	300	214	0	0	0	0	0	0
Department of Commerce	1,473,125	189,765	666,405	91,039	10,664	88,569	*	100,956	285,073	40,615
Census Bureau	110,367	16,146	0	0	7,139	0	0	87,081	0	0
National Institute of Standards and Technology	530,008	169,050	6,774	26,853	1,240	58,879	*	399	266,532	240
National Oceanic and Atmospheric Administration	825,550	4,568	659,630	64,186	2,284	29,690	0	13,476	11,341	40,375
National Telecommunications and Information Administration	7,200	0	0	0	0	0	0	0	7,200	0
Department of Defense	7,400,607	2,182,561	412,807	824,285	340	384,358	75,263	9,047	2,841,838	670,109
Defense Advanced Research Projects Agency	1,483,950	730,193	57,596	222,316	340	40,732	13,258	186	316,036	103,294
Defense Health Agency	158,831	0	0	157,161	0	0	67	0	0	1,602
Department of the Air Force	1,697,363	164,527	0	73,241	0	205,030	0	0	1,209,288	45,277
Department of the Army	1,502,296	851,666	9,269	232,624	0	5,022	56,671	0	0	347,044
Department of the Navy	1,229,568	136,818	345,752	21,139	0	36,574	3,608	1,787	636,685	47,204
Other defense agencies	1,328,599	299,356	190	117,803	0	96,999	1,658	7,074	679,829	125,689
Department of Education	260,178	0	0	0	0	0	0	0	0	260,178
Department of Energy	4,523,208	763,254	75,749	38,244	2,113	1,411,163	0	0	2,221,135	11,550
Advanced Research Projects Agency—Energy	225,000	21,888	2,262	37,489	0	0	0	0	163,362	0
Electricity Delivery and Energy Reliability	59,361	0	0	0	0	0	0	0	59,361	0
Energy Efficiency and Renewable Energy	677,946	0	0	0	0	0	0	0	677,946	0

TABLE 35

Preliminary federal obligations for applied research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Environmental Management	11,550	0	0	0	0	0	0	0	0	11,550
Fossil Energy	736,176	0	69,937	0	0	117,052	0	0	549,187	0
National Nuclear Security Administration	2,403,869	662,884	3,550	755	2,113	1,294,111	0	0	440,456	0
Defense Programs	2,257,778	642,993	0	0	0	1,178,976	0	0	435,808	0
Office of Defense Nuclear Nonproliferation	146,092	19,891	3,550	755	2,113	115,135	0	0	4,647	0
Nuclear Energy	330,824	0	0	0	0	0	0	0	330,824	0
Office of Cybersecurity, Energy Security, and Emergency Response	78,481	78,481	0	0	0	0	0	0	0	0
Department of Health and Human Services	21,258,821	49,302	246,548	15,444,314	165,893	113,017	1,738,707	399,678	1,371,745	1,729,618
Administration for Children and Families	4,265	0	0	0	0	0	0	4,265	0	0
Administration for Community Living	110,863	0	0	0	0	0	0	110,863	0	0
Agency for Healthcare Research and Quality	314,345	49,189	0	172,974	0	0	7,799	20,813	803	62,767
Agency for Toxic Substances and Disease Registry	10,935	0	10,935	0	0	0	0	0	0	0
Centers for Disease Control and Prevention	552,086	113	0	477,039	337	2,439	1,025	41,423	21,327	8,383
Food and Drug Administration	669,007	0	0	669,007	0	0	0	0	0	0
Health Resources and Services Administration	34,790	0	0	34,790	0	0	0	0	0	0
National Institutes of Health	19,545,031	0	235,612	14,090,505	165,556	110,579	1,729,882	222,314	1,349,615	1,640,968
Office of the Secretary of Health and Human Services	17,500	0	0	0	0	0	0	0	0	17,500
Office of the Assistant Secretary for Planning and Evaluation	17,500	0	0	0	0	0	0	0	0	17,500
Department of Homeland Security	248,069	83,878	0	9,622	0	16,525	0	0	64,939	73,105
Coast Guard	2,243	763	0	67	0	0	0	0	1,413	0
Countering Weapons of Mass Destruction Office	24,324	5,969	0	9,555	0	8,799	0	0	0	0
Cybersecurity and Infrastructure Security Agency	3,502	2,709	0	0	0	0	0	0	793	0
Science and Technology Directorate	216,000	74,436	0	0	0	7,726	0	0	62,733	71,105
Transportation Security Administration	2,000	0	0	0	0	0	0	0	0	2,000

TABLE 35

Preliminary federal obligations for applied research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Department of the Interior	817,025	0	697,716	67,293	0	0	0	16,498	35,518	0
Bureau of Indian Affairs	4,000	0	0	4,000	0	0	0	0	0	0
Bureau of Land Management	8,579	0	0	8,579	0	0	0	0	0	0
Bureau of Ocean Energy Management	67,918	0	67,918	0	0	0	0	0	0	0
Bureau of Reclamation	21,500	0	0	0	0	0	0	0	21,500	0
Bureau of Safety and Environmental Enforcement	14,018	0	0	0	0	0	0	0	14,018	0
Fish and Wildlife Service	32,650	0	0	32,650	0	0	0	0	0	0
Geological Survey	641,138	0	629,798	11,340	0	0	0	0	0	0
National Park Service	27,222	0	0	10,724	0	0	0	16,498	0	0
Department of Justice	74,032	2,148	474	3,395	396	6,220	0	50,714	5,078	5,605
Bureau of Prisons	*	0	0	0	0	0	0	*	0	0
Federal Bureau of Investigation	5,396	0	0	0	0	0	0	0	0	5,396
Office of Justice Programs	68,634	2,148	474	3,395	396	6,220	0	50,712	5,078	209
Department of Labor	3,803	0	0	0	0	0	0	3,803	0	0
Employee Benefits Security Administration	1,569	0	0	0	0	0	0	1,569	0	0
Occupational Safety and Health Administration	2,234	0	0	0	0	0	0	2,234	0	0
Department of State	40,000	0	0	38,000	0	0	0	2,000	0	0
Department of Transportation	803,325	16,566	16,160	18,397	5,167	14,090	18,187	12,518	696,208	6,033
Federal Aviation Administration	271,685	13,349	15,989	8,093	5,167	0	18,016	0	210,060	1,011
Federal Highway Administration	361,044	0	0	0	0	0	0	0	361,044	0
Federal Motor Carrier Safety Administration	14,100	*	0	0	0	14,090	0	0	0	0
Federal Railroad Administration	42,112	0	171	0	0	0	171	0	41,770	0
Federal Transit Administration	33,000	0	0	0	0	0	0	3,000	25,000	5,000
National Highway Traffic Safety Administration	50,000	3,207	0	10,304	0	0	0	9,518	26,971	0
Office of the Secretary of Transportation	15,022	0	0	0	0	0	0	0	15,000	*
Pipeline and Hazardous Materials Safety Administration	16,363	0	0	0	0	0	0	0	16,363	0
Department of the Treasury	44,134	0	0	0	0	44,081	0	0	53	0
Bureau of Engraving and Printing	44,081	0	0	0	0	44,081	0	0	0	0
Mint	53	0	0	0	0	0	0	0	53	0

TABLE 35

Preliminary federal obligations for applied research, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Department of Veterans Affairs	1,002,408	0	0	1,002,408	0	0	0	0	0	0
Other agencies										
Administrative Office of the U.S. Courts	1,443	1,443	0	0	0	0	0	0	0	0
Agency for Global Media	7,884	0	0	0	0	0	0	7,884	0	0
Agency for International Development	51,211	0	0	43,631	0	0	0	4,331	0	3,250
Appalachian Regional Commission	122	0	0	0	0	0	0	122	0	0
Consumer Product Safety Commission	440	0	0	0	0	0	0	0	440	0
Environmental Protection Agency	406,371	5,566	167,490	160,542	3,090	9,703	0	2,348	57,633	0
Federal Trade Commission	8,571	0	0	0	0	0	0	8,571	0	0
Library of Congress	493	0	0	0	0	493	0	0	0	0
National Aeronautics and Space Administration	3,009,641	0	159,671	0	0	208,808	0	0	2,526,071	115,091
National Science Foundation	986,305	181,719	16,665	6,623	471	21,920	*	2,867	359,167	396,864
Nuclear Regulatory Commission	78,147	0	0	0	0	0	0	0	78,147	0
Patient-Centered Outcomes Research Trust Fund	481,465	0	0	481,465	0	0	0	0	0	0
Postal Service	15,702	0	0	0	0	0	0	0	15,702	0
RESTORE Act Centers of Excellence Research Grants Program	6,960	0	0	0	0	0	0	0	0	6,960
Social Security Administration	98,560	0	0	0	0	0	0	98,560	0	0
Tennessee Valley Authority	12,952	0	0	0	0	0	0	0	12,952	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 36

Federal obligations for experimental development, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
All agencies	103,907,229	54,900,563	4,262,632	39,434,956	2,739,770	2,225,159	78,836	265,314
Departments								
Department of Agriculture	236,858	205,234	0	*	28,830	1,824	272	657
Agricultural Marketing Service	6,663	3,629	0	*	2,509	212	250	*
Agricultural Research Service	151,040	130,034	0	0	19,006	1,344	*	634
Animal and Plant Health Inspection Service	20,880	14,647	0	0	6,233	0	0	0
Forest Service	53,038	53,038	0	0	0	0	0	0
National Agricultural Statistics Service	4,337	3,886	0	0	182	268	0	0
Natural Resources Conservation Service	900	0	0	0	900	0	0	0
Department of Commerce	307,003	158,253	785	2,589	144,134	329	911	*
Census Bureau	52,744	52,744	0	0	0	0	0	0
National Institute of Standards and Technology	100,940	9,040	0	*	91,900	0	0	0
National Oceanic and Atmospheric Administration	153,319	96,469	785	2,589	52,234	329	911	*
Department of Defense, total experimental development	60,971,497	21,954,895	2,383,568	33,286,909	2,003,619	1,126,956	9,247	206,302
Defense Advanced Research Projects Agency	1,760,568	181,514	29,315	1,470,454	62,804	16,482	0	0
Defense Health Agency	2,719,158	1,011,576	3,015	318,474	720,054	605,542	0	60,496
Department of the Air Force	10,003,295	3,793,060	488,108	5,547,110	146,439	28,368	210	0
Department of the Army	10,007,091	4,498,777	95,006	5,071,179	121,795	183,180	0	37,155
Department of the Navy	15,079,522	6,484,874	174,614	7,811,151	442,748	138,752	*	27,334
Space Force	5,243,308	227,974	247,162	4,725,137	31,943	4,814	6,278	0
Other defense agencies	16,158,554	5,757,121	1,346,347	8,343,405	477,836	149,819	2,709	81,317
Department of Defense, advanced technology	9,240,810	2,683,395	237,681	4,302,609	1,099,780	791,205	1,950	124,192
Defense Advanced Research Projects Agency	1,576,059	112,506	29,315	1,354,976	62,804	16,459	0	0
Defense Health Agency	1,530,781	77,441	2,522	189,661	685,329	518,368	0	57,460
Department of the Air Force	1,055,245	214,878	10,381	770,576	53,410	5,791	210	0
Department of the Army	1,841,577	934,968	29,251	768,770	72,634	34,311	0	1,642
Department of the Navy	871,188	291,076	8,315	383,463	93,826	93,845	0	664
Other defense agencies	2,365,960	1,052,526	157,897	835,163	131,777	122,431	1,740	64,426
Department of Defense, major systems	51,730,686	19,271,500	2,145,887	28,984,301	903,839	335,751	7,297	82,111

TABLE 36

Federal obligations for experimental development, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Defense Advanced Research Projects Agency	184,509	69,008	0	115,478	0	*	0	0
Defense Health Agency	1,188,377	934,136	493	128,813	34,725	87,174	0	3,036
Department of the Air Force	8,948,050	3,578,182	477,728	4,776,534	93,029	22,577	0	0
Department of the Army	8,165,514	3,563,809	65,754	4,302,409	49,161	148,869	0	35,513
Department of the Navy	14,208,334	6,193,798	166,299	7,427,688	348,922	44,907	*	26,671
Space Force	5,243,308	227,974	247,162	4,725,137	31,943	4,814	6,278	0
Other defense agencies	13,792,594	4,704,594	1,188,450	7,508,242	346,059	27,388	969	16,891
Department of Education	101,327	0	0	14,450	42,146	25,456	19,275	0
Department of Energy	2,676,001	93,382	805,727	1,517,021	207,867	41,037	10,817	151
Advanced Research Projects Agency—Energy	157,363	530	17,671	81,691	53,383	4,088	0	0
Electricity Delivery and Energy Reliability	66,567	1,524	47,901	7,715	4,566	4,653	206	0
Energy Efficiency and Renewable Energy	718,556	0	338,476	203,837	134,400	31,232	10,610	0
Environmental Management	20,105	*	16,754	0	3,350	0	0	0
National Nuclear Security Administration	1,605,187	90,647	337,082	1,177,247	210	0	0	0
Defense Programs	375,201	40,590	256,470	78,107	*	0	0	0
Naval Nuclear Propulsion Program	1,140,270	48,600	1,002	1,090,668	0	0	0	0
Office of Defense Nuclear Nonproliferation	89,715	1,458	79,611	8,472	175	0	0	0
Nuclear Energy	108,224	679	47,841	46,531	11,957	1,064	0	151
Department of Health and Human Services	33,932,925	31,422,108	0	2,108,117	14,066	382,853	0	5,781
Agency for Healthcare Research and Quality	29,855	29,855	0	0	0	0	0	0
Biomedical Advanced Research and Development Authority	33,881,017	31,383,819	0	2,104,536	11,314	375,567	0	5,781
Centers for Disease Control and Prevention	14,053	8,433	0	3,581	1,252	786	0	0
Health Resources and Services Administration	8,000	0	0	0	1,500	6,500	0	0
Department of Homeland Security	291,022	99,452	51,866	115,195	13,498	3,863	3,063	4,085
Coast Guard	7,281	0	0	7,281	0	0	0	0
Countering Weapons of Mass Destruction Office	11,062	2,356	5,720	2,172	664	0	0	150
Cybersecurity and Infrastructure Security Agency	3,498	0	0	0	0	3,498	0	0

TABLE 36

Federal obligations for experimental development, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
Science and Technology Directorate	240,186	68,102	46,146	105,741	12,834	365	3,063	3,935
Secret Service	994	994	0	0	0	0	0	0
Transportation Security Administration	28,000	28,000	0	0	0	0	0	0
Department of the Interior	148,280	127,332	0	2,616	14,778	1,461	2,090	*
Bureau of Land Management	930	274	0	*	470	153	*	0
Bureau of Ocean Energy Management	14,200	12,113	0	1,519	60	77	428	*
Bureau of Reclamation	20,000	12,853	0	761	6,386	0	0	0
Bureau of Safety and Environmental Enforcement	238	*	0	*	208	0	0	0
Geological Survey	111,780	101,387	0	303	7,207	1,231	1,652	0
National Park Service	1,132	685	0	0	447	0	0	0
Department of Justice	6,102	1,148	0	72	2,985	1,644	253	0
Bureau of Prisons	*	0	0	0	0	0	*	0
Office of Justice Programs	6,096	1,148	0	72	2,985	1,644	247	0
Department of State	20,000	20,000	0	0	0	0	0	0
Department of Transportation	285,241	27,857	80,664	135,642	5,388	2,955	32,494	241
Federal Aviation Administration	240,240	21,840	80,624	133,737	3,365	481	0	192
Federal Highway Administration	36,605	4,162	0	0	0	0	32,443	0
Federal Motor Carrier Safety Administration	468	268	0	0	200	0	0	0
Federal Railroad Administration	7,177	1,586	*	1,905	1,070	2,474	51	*
Federal Transit Administration	752	0	0	0	752	0	0	0
Department of the Treasury	7,539	155	0	6,393	0	0	0	991
Bureau of Engraving and Printing	7,384	0	0	6,393	0	0	0	991
Mint	155	155	0	0	0	0	0	0
Department of Veterans Affairs	137,285	48,060	89,225	0	0	0	0	0
Other agencies								
Agency for International Development	30,487	3,200	0	1,712	12,075	3,000	0	10,500
Environmental Protection Agency	116,994	59,456	0	57,538	0	0	0	0
Library of Congress	2,177	2,177	0	0	0	0	0	0
National Aeronautics and Space Administration	4,625,310	677,855	850,797	2,182,236	246,965	630,444	413	36,601
Nuclear Regulatory Commission	3,418	0	0	0	3,418	0	0	0
Tennessee Valley Authority	7,763	0	0	4,425	0	3,338	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 37

Preliminary federal obligations for experimental development, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	Non-U.S. performers
All agencies	100,594,656	50,879,431	4,373,221	40,234,425	2,852,861	1,913,840	88,494	252,385
Departments								
Department of Agriculture	248,877	223,283	0	0	22,931	1,698	367	599
Agricultural Marketing Service	7,484	4,050	0	0	2,659	302	350	123
Agricultural Research Service	159,900	144,145	0	0	14,255	1,008	*	475
Animal and Plant Health Inspection Service	21,217	15,247	0	0	5,970	0	0	0
Forest Service	55,136	55,136	0	0	0	0	0	0
National Agricultural Statistics Service	5,140	4,706	0	0	*	387	0	0
Department of Commerce	282,525	144,533	793	8,340	126,403	1,056	1,395	*
Census Bureau	38,560	38,560	0	0	0	0	0	0
National Institute of Standards and Technology	73,711	9,749	0	*	63,962	0	0	0
National Oceanic and Atmospheric Administration	170,254	96,224	793	8,340	62,441	1,056	1,395	*
Department of Defense, total experimental development	65,095,967	23,939,921	2,444,435	35,253,349	2,028,221	1,217,462	10,414	202,164
Defense Advanced Research Projects Agency	1,812,259	181,663	30,494	1,517,630	65,330	17,142	0	0
Defense Health Agency	2,362,905	553,586	3,092	309,357	778,275	652,651	0	65,945
Department of the Air Force	10,823,005	4,168,158	507,757	5,955,793	161,362	29,724	212	0
Department of the Army	10,844,886	4,896,625	103,908	5,467,811	136,577	199,655	0	40,310
Department of the Navy	16,587,032	7,287,341	173,385	8,595,560	390,473	123,175	304	16,795
Space Force	4,517,004	274,046	228,059	3,992,488	15,431	0	6,979	0
Other defense agencies	18,148,876	6,578,502	1,397,740	9,414,711	480,773	195,115	2,919	79,114
Department of Defense, advanced technology	10,488,317	3,091,775	261,139	4,866,070	1,205,489	930,853	2,162	130,829
Defense Advanced Research Projects Agency	1,639,449	117,031	30,494	1,409,474	65,330	17,121	0	0
Defense Health Agency	1,667,967	44,294	2,670	211,646	750,305	595,702	0	63,350
Department of the Air Force	989,532	217,027	10,497	701,876	53,452	6,468	212	0
Department of the Army	2,127,203	1,079,980	33,788	888,005	83,900	39,633	0	1,897
Department of the Navy	1,004,613	403,129	6,730	393,877	103,832	95,824	0	1,223
Other defense agencies	3,059,553	1,230,315	176,961	1,261,192	148,671	176,106	1,950	64,359
Department of Defense, major systems	54,607,650	20,848,146	2,183,296	30,387,280	822,732	286,609	8,252	71,335

TABLE 37

Preliminary federal obligations for experimental development, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Defense Advanced Research Projects Agency	172,810	64,633	0	108,156	0	*	0	0
Defense Health Agency	694,938	509,292	422	97,710	27,971	56,949	0	2,595
Department of the Air Force	9,833,473	3,951,131	497,260	5,253,916	107,910	23,255	0	0
Department of the Army	8,717,683	3,816,644	70,120	4,579,806	52,677	160,023	0	38,413
Department of the Navy	15,582,419	6,884,212	166,656	8,201,683	286,641	27,351	304	15,572
Space Force	4,517,004	274,046	228,059	3,992,488	15,431	0	6,979	0
Other defense agencies	15,089,322	5,348,187	1,220,780	8,153,520	332,102	19,009	969	14,755
Department of Education	113,341	0	0	16,163	47,143	30,085	19,950	0
Department of Energy	3,441,231	95,675	985,966	1,893,703	440,870	10,695	14,023	300
Advanced Research Projects Agency—Energy	225,000	0	25,267	116,803	76,327	6,603	0	0
Electricity Delivery and Energy Reliability	59,302	1,341	42,885	6,786	4,016	4,092	181	0
Energy Efficiency and Renewable Energy	1,384,153	0	595,186	429,087	346,038	0	13,842	0
Environmental Management	23,450	0	19,698	0	3,752	0	0	0
National Nuclear Security Administration	1,579,646	75,832	235,723	1,268,081	*	0	0	0
Defense Programs	234,685	17,328	147,269	70,078	*	0	0	0
Naval Nuclear Propulsion Program	1,246,109	55,579	1,002	1,189,528	0	0	0	0
Office of Defense Nuclear Nonproliferation	98,852	2,925	87,452	8,475	0	0	0	0
Nuclear Energy	148,631	983	63,677	72,945	10,725	0	0	300
Office of Cybersecurity, Energy Security, and Emergency Response	21,049	17,519	3,530	0	0	0	0	0
Department of Health and Human Services	26,482,399	25,467,693	0	970,426	33,588	1,257	9,435	0
Agency for Healthcare Research and Quality	36,055	36,055	0	0	0	0	0	0
Biomedical Advanced Research and Development Authority	26,433,481	25,424,301	0	966,938	32,336	471	9,435	0
Centers for Disease Control and Prevention	12,863	7,337	0	3,489	1,252	786	0	0
Department of Homeland Security	285,068	149,940	51,853	45,634	20,181	8,274	4,145	5,041
Coast Guard	5,233	0	0	5,233	0	0	0	0
Countering Weapons of Mass Destruction Office	7,985	1,498	844	2,329	2,815	0	0	498
Cybersecurity and Infrastructure Security Agency	7,780	0	0	0	0	7,780	0	0

TABLE 37

Preliminary federal obligations for experimental development, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Science and Technology Directorate	229,000	113,371	51,009	38,072	17,366	494	4,145	4,542
Secret Service	2,070	2,070	0	0	0	0	0	0
Transportation Security Administration	33,000	33,000	0	0	0	0	0	0
Department of the Interior	173,653	147,495	*	3,036	19,419	897	2,755	*
Bureau of Land Management	1,466	762	*	0	367	278	*	0
Bureau of Ocean Energy Management	15,724	13,417	0	1,911	94	134	166	*
Bureau of Reclamation	20,000	12,700	0	800	6,500	0	0	0
Bureau of Safety and Environmental Enforcement	250	*	0	*	219	0	0	0
Geological Survey	135,081	120,029	0	315	11,673	485	2,579	0
National Park Service	1,132	566	0	0	566	0	0	0
Department of Justice	5,865	1,097	0	1,367	3,134	0	267	0
Bureau of Prisons	*	0	0	0	0	0	*	0
Office of Justice Programs	5,857	1,097	0	1,367	3,134	0	259	0
Department of State	20,000	20,000	0	0	0	0	0	0
Department of Transportation	284,043	31,305	82,454	138,393	5,256	826	25,613	195
Federal Aviation Administration	244,578	22,235	82,080	136,152	3,426	489	0	195
Federal Highway Administration	29,775	4,162	0	0	0	0	25,613	0
Federal Motor Carrier Safety Administration	1,000	800	0	0	200	0	0	0
Federal Railroad Administration	8,690	4,108	374	2,241	1,630	337	0	0
Department of the Treasury	15,045	653	0	10,212	0	0	0	4,180
Bureau of Engraving and Printing	14,392	0	0	10,212	0	0	0	4,180
Mint	653	653	0	0	0	0	0	0
Department of Veterans Affairs	158,358	51,691	106,667	0	0	0	0	0
Other agencies								
Agency for International Development	30,487	3,200	0	1,712	12,400	2,675	0	10,500
Environmental Protection Agency	119,086	42,798	0	76,287	0	0	0	0
Library of Congress	2,406	2,406	0	0	0	0	0	0
National Aeronautics and Space Administration	3,805,240	557,741	701,003	1,793,488	89,799	633,681	130	29,398
Nuclear Regulatory Commission	3,516	0	0	0	3,516	0	0	0
Tennessee Valley Authority	27,549	0	0	22,315	0	5,234	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, as well as actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 38

Federal obligations for experimental development, by detailed field of R&D: FYs 2021–22

(Dollars in thousands)

Field	2021	2022 (preliminary)
All fields	103,907,229	100,594,656
Computer and information sciences	3,174,544	3,665,177
Geosciences, atmospheric sciences, and ocean sciences	2,054,665	823,525
Atmospheric science and meteorology	1,603,092	NA
Geological and earth sciences	88,122	NA
Ocean sciences and marine sciences	115,932	NA
Other geosciences, atmospheric sciences, and ocean sciences	247,519	NA
Life sciences	39,393,808	31,701,993
Agricultural sciences	62,072	NA
Biological and biomedical sciences	36,941,024	NA
Health sciences	2,199,623	NA
Natural resources and conservation	53,798	NA
Other life sciences	137,290	NA
Mathematics and statistics	291,595	269,168
Physical sciences	2,122,091	3,608,794
Astronomy and astrophysics	69,107	NA
Chemistry	528,513	NA
Materials science	107,667	NA
Physics	715,412	NA
Other physical sciences	701,393	NA
Psychology	363,912	401,193
Biological aspects	0	NA
Social aspects	0	NA
Other psychological sciences	363,912	NA
Social sciences	139,135	133,015
Anthropology	686	NA
Economics	13,905	NA
Political science and government	12,149	NA
Sociology, demography, and population studies	1,518	NA
Other social sciences	110,877	NA
Engineering	43,218,196	48,022,467
Aerospace, aeronautical, and astronautical engineering	17,845,476	NA
Bioengineering and biomedical engineering	500,892	NA
Chemical engineering	564,991	NA
Civil engineering	524,262	NA
Electrical, electronics, and communications engineering	2,022,922	NA
Industrial and manufacturing engineering	773,775	NA
Mechanical engineering	686,038	NA
Metallurgical and materials engineering	830,883	NA
Other engineering	19,468,957	NA
Other fields	13,149,281	11,969,324
Business management and business administration	2,233,179	NA
Communication and communications technologies	533,196	NA
Education research	108,016	NA
Humanities	0	NA
Law	135	NA
Social work	0	NA
Visual and performing arts	0	NA
All other fields	10,274,754	NA

NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. FYs 2021 and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 39

Federal obligations for experimental development, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	103,907,229	3,174,544	2,054,665	39,393,808	291,595	2,122,091	363,912	139,135	43,218,196	13,149,281
Departments										
Department of Agriculture	236,858	12,502	1,210	58,663	0	1,264	0	9,523	2,655	151,040
Agricultural Marketing Service	6,663	0	0	6,663	0	0	0	0	0	0
Agricultural Research Service	151,040	0	0	0	0	0	0	0	0	151,040
Animal and Plant Health Inspection Service	20,880	0	0	20,880	0	0	0	0	0	0
Forest Service	53,038	8,165	1,210	30,220	0	1,264	0	9,523	2,655	0
National Agricultural Statistics Service	4,337	4,337	0	0	0	0	0	0	0	0
Natural Resources Conservation Service	900	0	0	900	0	0	0	0	0	0
Department of Commerce	307,003	3,862	123,454	103,734	519	5,496	0	55,021	8,873	6,044
Census Bureau	52,744	3,500	0	0	79	0	0	49,166	0	0
National Institute of Standards and Technology	100,940	*	0	89,511	259	3,144	0	0	8,026	0
National Oceanic and Atmospheric Administration	153,319	362	123,454	14,224	181	2,352	0	5,855	847	6,044
Department of Defense	60,971,497	3,045,886	1,723,689	5,035,769	289,217	1,728,675	363,782	69,381	39,587,449	9,127,648
Defense Advanced Research Projects Agency	1,760,568	116,800	6,304	0	0	133,719	0	0	1,056,196	447,550
Defense Health Agency	2,719,158	0	0	2,710,956	0	6,583	0	0	170	1,449
Department of the Air Force	10,003,295	207,371	1,470,377	16,916	0	200,014	0	0	5,479,823	2,628,793
Department of the Army	10,007,091	2,097,064	94,510	1,992,899	211,276	763,558	358,143	47,950	0	4,441,690
Department of the Navy	15,079,522	162,353	128,828	35,868	818	181,833	5,639	11,171	14,380,282	172,731
Space Force	5,243,308	0	0	0	75,320	94,215	0	0	5,061,224	12,549
Other defense agencies	16,158,554	462,298	23,670	279,129	1,802	348,753	0	10,260	13,609,755	1,422,886
Department of Education	101,327	0	0	0	0	0	0	0	0	101,327
Department of Energy	2,676,001	28,773	27,509	26,349	969	70,523	0	0	2,520,420	1,458
Advanced Research Projects Agency—Energy	157,363	15,308	1,582	26,219	0	0	0	0	114,253	0
Electricity Delivery and Energy Reliability	66,567	0	0	0	0	0	0	0	66,567	0
Energy Efficiency and Renewable Energy	718,556	0	0	0	0	0	0	0	718,556	0
Environmental Management	20,105	0	20,105	0	0	0	0	0	0	0

TABLE 39

Federal obligations for experimental development, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
National Nuclear Security Administration	1,605,187	13,464	5,822	130	969	70,523	0	0	1,512,820	1,458
Defense Programs	375,201	0	0	0	0	5,234	0	0	369,968	0
Naval Nuclear Propulsion Program	1,140,270	0	0	0	0	0	0	0	1,140,270	0
Office of Defense Nuclear Nonproliferation	89,715	13,464	5,822	130	969	65,289	0	0	2,583	1,458
Nuclear Energy	108,224	0	0	0	0	0	0	0	108,224	0
Department of Health and Human Services	33,932,925	30,109	0	33,892,051	0	0	0	0	2,765	8,000
Agency for Healthcare Research and Quality	29,855	29,855	0	0	0	0	0	0	0	0
Biomedical Advanced Research and Development Authority	33,881,017	0	0	33,881,017	0	0	0	0	0	0
Centers for Disease Control and Prevention	14,053	254	0	11,034	0	0	0	0	2,765	0
Health Resources and Services Administration	8,000	0	0	0	0	0	0	0	0	8,000
Department of Homeland Security	291,022	51,325	11,144	0	0	28,660	130	0	116,392	83,370
Coast Guard	7,281	2,081	301	0	0	0	130	0	4,770	0
Countering Weapons of Mass Destruction Office	11,062	3,875	0	0	0	7,187	0	0	0	0
Cybersecurity and Infrastructure Security Agency	3,498	3,498	0	0	0	0	0	0	0	0
Science and Technology Directorate	240,186	41,872	10,844	0	0	21,473	0	0	110,627	55,370
Secret Service	994	0	0	0	0	0	0	0	994	0
Transportation Security Administration	28,000	0	0	0	0	0	0	0	0	28,000
Department of the Interior	148,280	0	81,706	45,650	0	0	0	686	20,238	0
Bureau of Land Management	930	0	0	930	0	0	0	0	0	0
Bureau of Ocean Energy Management	14,200	0	14,200	0	0	0	0	0	0	0
Bureau of Reclamation	20,000	0	0	0	0	0	0	0	20,000	0
Bureau of Safety and Environmental Enforcement	238	0	0	0	0	0	0	0	238	0
Geological Survey	111,780	0	67,506	44,274	0	0	0	0	0	0
National Park Service	1,132	0	0	446	0	0	0	686	0	0

TABLE 39

Federal obligations for experimental development, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Department of Justice	6,102	485	0	0	0	1,764	0	3,849	0	*
Bureau of Prisons	*	0	0	0	0	0	0	*	0	*
Office of Justice Programs	6,096	485	0	0	0	1,764	0	3,847	0	0
Department of State	20,000	0	0	20,000	0	0	0	0	0	0
Department of Transportation	285,241	0	*	0	0	468	0	0	44,522	240,240
Federal Aviation Administration	240,240	0	0	0	0	0	0	0	0	240,240
Federal Highway Administration	36,605	0	0	0	0	0	0	0	36,605	0
Federal Motor Carrier Safety Administration	468	0	0	0	0	468	0	0	0	0
Federal Railroad Administration	7,177	0	*	0	0	0	0	0	7,165	0
Federal Transit Administration	752	0	0	0	0	0	0	0	752	0
Department of the Treasury	7,539	0	0	0	0	7,539	0	0	0	0
Bureau of Engraving and Printing	7,384	0	0	0	0	7,384	0	0	0	0
Mint	155	0	0	0	0	155	0	0	0	0
Department of Veterans Affairs	137,285	0	0	137,285	0	0	0	0	0	0
Other agencies										
Agency for International Development	30,487	0	0	28,087	0	0	0	0	0	2,400
Environmental Protection Agency	116,994	1,602	48,220	46,220	890	2,793	0	675	16,592	*
Library of Congress	2,177	0	0	0	0	2,177	0	0	0	0
National Aeronautics and Space Administration	4,625,310	0	37,721	0	0	272,733	0	0	887,109	3,427,748
Nuclear Regulatory Commission	3,418	0	0	0	0	0	0	0	3,418	0
Tennessee Valley Authority	7,763	0	0	0	0	0	0	0	7,763	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 40

Preliminary federal obligations for experimental development, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	100,594,656	3,665,177	823,525	31,701,993	269,168	3,608,794	401,193	133,015	48,022,467	11,969,324
Departments										
Department of Agriculture	248,877	6,225	1,458	65,103	0	1,523	0	11,471	3,198	159,900
Agricultural Marketing Service	7,484	0	0	7,484	0	0	0	0	0	0
Agricultural Research Service	159,900	0	0	0	0	0	0	0	0	159,900
Animal and Plant Health Inspection Service	21,217	0	0	21,217	0	0	0	0	0	0
Forest Service	55,136	1,085	1,458	36,402	0	1,523	0	11,471	3,198	0
National Agricultural Statistics Service	5,140	5,140	0	0	0	0	0	0	0	0
Department of Commerce	282,525	4,515	135,891	75,677	593	7,276	0	40,186	11,720	6,667
Census Bureau	38,560	3,895	0	0	*	0	0	34,640	0	0
National Institute of Standards and Technology	73,711	*	0	59,608	259	3,253	0	0	10,590	0
National Oceanic and Atmospheric Administration	170,254	619	135,891	16,068	309	4,023	0	5,546	1,130	6,667
Department of Defense	65,095,967	3,505,010	269,246	4,821,855	267,031	1,799,394	401,161	76,481	43,907,285	10,048,505
Defense Advanced Research Projects Agency	1,812,259	120,229	6,489	0	0	137,645	0	0	1,087,206	460,690
Defense Health Agency	2,362,905	0	0	2,351,387	0	0	7,583	0	1,445	2,490
Department of the Air Force	10,823,005	414,320	1,263	16,842	0	166,068	0	0	7,129,073	3,095,439
Department of the Army	10,844,886	2,272,631	102,423	2,159,745	228,965	827,483	388,127	51,964	0	4,813,549
Department of the Navy	16,587,032	175,470	128,499	3,064	3,061	190,273	5,451	11,571	15,891,276	178,366
Space Force	4,517,004	0	0	0	32,586	75,480	0	0	4,366,047	42,890
Other defense agencies	18,148,876	522,360	30,572	290,818	2,418	402,445	0	12,945	15,432,237	1,455,081
Department of Education	113,341	0	0	0	0	0	0	0	0	113,341
Department of Energy	3,441,231	58,856	7,982	37,494	639	74,796	0	0	3,236,965	24,500
Advanced Research Projects Agency—Energy	225,000	21,888	2,262	37,489	0	0	0	0	163,362	0
Electricity Delivery and Energy Reliability	59,302	0	0	0	0	0	0	0	59,302	0
Energy Efficiency and Renewable Energy	1,384,153	0	0	0	0	0	0	0	1,384,153	0
Environmental Management	23,450	0	0	0	0	0	0	0	0	23,450
National Nuclear Security Administration	1,579,646	15,919	5,720	*	639	74,796	0	0	1,481,518	1,050
Defense Programs	234,685	0	0	0	0	977	0	0	233,708	0

TABLE 40

Preliminary federal obligations for experimental development, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Naval Nuclear Propulsion Program	1,246,109	0	0	0	0	0	0	0	1,246,109	0
Office of Defense Nuclear Nonproliferation	98,852	15,919	5,720	*	639	73,819	0	0	1,700	1,050
Nuclear Energy	148,631	0	0	0	0	0	0	0	148,631	0
Office of Cybersecurity, Energy Security, and Emergency Response	21,049	21,049	0	0	0	0	0	0	0	0
Department of Health and Human Services	26,482,399	36,120	0	26,443,863	0	0	0	0	2,416	0
Agency for Healthcare Research and Quality	36,055	36,055	0	0	0	0	0	0	0	0
Biomedical Advanced Research and Development Authority	26,433,481	0	0	26,433,481	0	0	0	0	0	0
Centers for Disease Control and Prevention	12,863	65	0	10,383	0	0	0	0	2,416	0
Department of Homeland Security	285,068	52,312	10,339	209	0	25,365	0	0	111,051	85,792
Coast Guard	5,233	1,518	0	209	0	0	0	0	3,506	0
Countering Weapons of Mass Destruction Office	7,985	3,092	0	0	0	4,892	0	0	0	0
Cybersecurity and Infrastructure Security Agency	7,780	7,780	0	0	0	0	0	0	0	0
Science and Technology Directorate	229,000	39,922	10,339	0	0	20,472	0	0	105,475	52,792
Secret Service	2,070	0	0	0	0	0	0	0	2,070	0
Transportation Security Administration	33,000	0	0	0	0	0	0	0	0	33,000
Department of the Interior	173,653	0	148,416	4,301	0	0	0	686	20,250	0
Bureau of Land Management	1,466	0	0	1,466	0	0	0	0	0	0
Bureau of Ocean Energy Management	15,724	0	15,724	0	0	0	0	0	0	0
Bureau of Reclamation	20,000	0	0	0	0	0	0	0	20,000	0
Bureau of Safety and Environmental Enforcement	250	0	0	0	0	0	0	0	250	0
Geological Survey	135,081	0	132,692	2,389	0	0	0	0	0	0
National Park Service	1,132	0	0	446	0	0	0	686	0	0
Department of Justice	5,865	509	0	0	0	1,852	0	3,504	0	0
Bureau of Prisons	*	0	0	0	0	0	0	*	0	0

TABLE 40

Preliminary federal obligations for experimental development, by agency and field of R&D: FY 2022

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Office of Justice Programs	5,857	509	0	0	0	1,852	0	3,496	0	0
Department of State	20,000	0	0	20,000	0	0	0	0	0	0
Department of Transportation	284,043	0	*	0	0	1,000	*	0	38,401	244,578
Federal Aviation Administration	244,578	0	0	0	0	0	0	0	0	244,578
Federal Highway Administration	29,775	0	0	0	0	0	0	0	29,775	0
Federal Motor Carrier Safety Administration	1,000	0	0	0	0	1,000	0	0	0	0
Federal Railroad Administration	8,690	0	*	0	0	0	*	0	8,626	0
Department of the Treasury	15,045	0	0	0	0	14,392	0	0	653	0
Bureau of Engraving and Printing	14,392	0	0	0	0	14,392	0	0	0	0
Mint	653	0	0	0	0	0	0	0	653	0
Department of Veterans Affairs	158,358	0	0	158,358	0	0	0	0	0	0
Other agencies										
Agency for International Development	30,487	0	0	28,087	0	0	0	0	0	2,400
Environmental Protection Agency	119,086	1,631	49,082	47,046	906	2,843	0	688	16,889	0
Library of Congress	2,406	0	0	0	0	2,406	0	0	0	0
National Aeronautics and Space Administration	3,805,240	0	201,079	0	0	1,677,947	0	0	642,573	1,283,641
Nuclear Regulatory Commission	3,516	0	0	0	0	0	0	0	3,516	0
Tennessee Valley Authority	27,549	0	0	0	0	0	0	0	27,549	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 41

Federal obligations and outlays for R&D plant, by agency: FYs 2021–22

(Dollars in thousands)

Agency	Obligations		Outlays	
	2021	2022 (preliminary)	2021	2022 (preliminary)
All agencies	4,282,438	4,492,112	3,804,699	4,315,922
Departments				
Department of Agriculture	57,426	19,038	111,441	253,038
Agricultural Research Service	45,525	9,000	99,541	243,000
Forest Service	11,540	10,038	11,540	10,038
Natural Resources Conservation Service	360	0	360	0
Department of Commerce	428,949	620,055	264,772	377,470
National Institute of Standards and Technology	250,591	142,515	120,772	195,470
National Oceanic and Atmospheric Administration	178,358	477,540	144,000	182,000
Department of Defense	168,901	161,628	211,478	166,381
Department of the Air Force	121,334	117,012	163,206	120,161
Department of the Navy	37,246	36,175	37,520	36,442
Other defense agencies	10,322	8,441	10,752	9,778
Department of Energy	2,667,997	2,472,518	2,329,800	2,386,247
Energy Efficiency and Renewable Energy	41,696	60,882	38,234	49,958
Fossil Energy	29,000	29,000	27,700	29,000
National Nuclear Security Administration	967,480	863,041	836,073	772,166
Defense Programs	617,475	437,136	497,539	357,732
Naval Nuclear Propulsion Program	331,000	406,900	331,000	406,900
Office of Defense Nuclear Nonproliferation	19,005	19,005	7,534	7,534
Office of Science	1,629,821	1,519,595	1,427,793	1,535,123
Department of Health and Human Services	398,710	240,556	354,960	340,376
Biomedical Advanced Research and Development Authority	160,005	171	160,005	171
Food and Drug Administration	7,993	9,074	35,411	40,200
Health Resources and Services Administration	1,311	1,311	1,289	1,289
National Institutes of Health	229,400	230,000	158,254	298,716
Department of Homeland Security	19,831	20,000	13,035	27,000
Science and Technology Directorate	18,831	19,000	12,035	26,000
Transportation Security Administration	1,000	1,000	1,000	1,000
Department of the Interior	12,865	7,650	1,500	1,650
Bureau of Reclamation	1,500	1,650	1,500	1,650
Bureau of Safety and Environmental Enforcement	11,365	6,000	0	0
Department of Transportation	37,033	37,997	28,500	30,500
Federal Aviation Administration	35,101	35,735	27,000	28,000
Federal Railroad Administration	1,432	1,762	1,000	2,000
National Highway Traffic Safety Administration	500	500	500	500
Department of the Treasury	0	360	0	360
Mint	0	360	0	360
Other agencies				
Environmental Protection Agency	5,810	5,800	5,810	5,800
National Aeronautics and Space Administration	52,056	99,400	43,303	54,000
National Science Foundation	432,861	807,110	371,000	604,000
Smithsonian Institution	0	0	69,100	69,100

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations or outlays in variables represented by this table appear in the table. FYs 2021 and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 42

Federal obligations for R&D plant, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
All agencies	4,282,438	882,770	2,019,120	858,176	360,338	155,441	6,358	236
Departments								
Department of Agriculture	57,426	57,426	0	0	0	0	0	0
Agricultural Research Service	45,525	45,525	0	0	0	0	0	0
Forest Service	11,540	11,540	0	0	0	0	0	0
Natural Resources Conservation Service	360	360	0	0	0	0	0	0
Department of Commerce	428,949	428,798	0	135	*	0	0	0
National Institute of Standards and Technology	250,591	250,591	0	0	0	0	0	0
National Oceanic and Atmospheric Administration	178,358	178,207	0	135	*	0	0	0
Department of Defense	168,901	167,250	0	1,651	0	0	0	0
Department of the Air Force	121,334	121,334	0	0	0	0	0	0
Department of the Navy	37,246	37,246	0	0	0	0	0	0
Other defense agencies	10,322	8,670	0	1,651	0	0	0	0
Department of Energy	2,667,997	66,959	2,017,103	572,239	5,338	0	6,358	0
Energy Efficiency and Renewable Energy	41,696	0	41,696	0	0	0	0	0
Fossil Energy	29,000	29,000	0	0	0	0	0	0
National Nuclear Security Administration	967,480	33,322	367,881	566,239	*	0	0	0
Defense Programs	617,475	33,322	348,876	235,239	*	0	0	0
Naval Nuclear Propulsion Program	331,000	0	0	331,000	0	0	0	0
Office of Defense Nuclear Nonproliferation	19,005	0	19,005	0	0	0	0	0
Office of Science	1,629,821	4,637	1,607,526	6,000	5,300	0	6,358	0
Department of Health and Human Services	398,710	141,490	0	160,005	88,469	8,746	0	0
Biomedical Advanced Research and Development Authority	160,005	0	0	160,005	*	0	0	0
Food and Drug Administration	7,993	7,993	0	0	0	0	0	0
Health Resources and Services Administration	1,311	1,311	0	0	0	0	0	0
National Institutes of Health	229,400	132,185	0	0	88,469	8,746	0	0
Department of Homeland Security	19,831	5,187	0	14,644	0	0	0	0
Science and Technology Directorate	18,831	4,187	0	14,644	0	0	0	0
Transportation Security Administration	1,000	1,000	0	0	0	0	0	0
Department of the Interior	12,865	1,570	0	11,295	0	0	0	0
Bureau of Reclamation	1,500	700	0	800	0	0	0	0

TABLE 42

Federal obligations for R&D plant, by agency and performer: FY 2021

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Bureau of Safety and Environmental Enforcement	11,365	870	0	10,495	0	0	0	0
Department of Transportation	37,033	*	0	35,464	0	1,432	0	126
Federal Aviation Administration	35,101	*	0	34,964	0	0	0	126
Federal Railroad Administration	1,432	0	0	0	0	1,432	0	0
National Highway Traffic Safety Administration	500	0	0	500	0	0	0	0
Other agencies								
Environmental Protection Agency	5,810	0	0	5,810	0	0	0	0
National Aeronautics and Space Administration	52,056	760	2,017	49,161	0	118	0	0
National Science Foundation	432,861	13,319	0	7,772	266,515	145,144	0	110

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 43

Preliminary federal obligations for R&D plant, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
All agencies	4,492,112	1,025,450	1,808,841	781,889	588,635	281,514	5,450	334
Departments								
Department of Agriculture	19,038	19,038	0	0	0	0	0	0
Agricultural Research Service	9,000	9,000	0	0	0	0	0	0
Forest Service	10,038	10,038	0	0	0	0	0	0
Department of Commerce	620,055	620,055	0	0	0	0	0	0
National Institute of Standards and Technology	142,515	142,515	0	0	0	0	0	0
National Oceanic and Atmospheric Administration	477,540	477,540	0	0	0	0	0	0
Department of Defense	161,628	161,096	0	532	0	0	0	0
Department of the Air Force	117,012	117,012	0	0	0	0	0	0
Department of the Navy	36,175	36,175	0	0	0	0	0	0
Other defense agencies	8,441	7,909	0	532	0	0	0	0
Department of Energy	2,472,518	51,299	1,804,967	607,920	3,033	0	5,300	0
Energy Efficiency and Renewable Energy	60,882	0	60,882	0	0	0	0	0
Fossil Energy	29,000	29,000	0	0	0	0	0	0
National Nuclear Security Administration	863,041	22,299	238,790	601,920	*	0	0	0
Defense Programs	437,136	22,299	219,785	195,020	*	0	0	0
Naval Nuclear Propulsion Program	406,900	0	0	406,900	0	0	0	0
Office of Defense Nuclear Nonproliferation	19,005	0	19,005	0	0	0	0	0
Office of Science	1,519,595	0	1,505,295	6,000	3,000	0	5,300	0
Department of Health and Human Services	240,556	143,087	0	0	88,700	8,769	0	0
Biomedical Advanced Research and Development Authority	171	171	0	0	0	0	0	0
Food and Drug Administration	9,074	9,074	0	0	0	0	0	0
Health Resources and Services Administration	1,311	1,311	0	0	0	0	0	0
National Institutes of Health	230,000	132,531	0	0	88,700	8,769	0	0
Department of Homeland Security	20,000	5,222	0	14,778	0	0	0	0
Science and Technology Directorate	19,000	4,222	0	14,778	0	0	0	0
Transportation Security Administration	1,000	1,000	0	0	0	0	0	0
Department of the Interior	7,650	1,260	0	6,240	0	0	150	0
Bureau of Reclamation	1,650	800	0	700	0	0	150	0

TABLE 43

Preliminary federal obligations for R&D plant, by agency and performer: FY 2022

(Dollars in thousands)

Agency	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
Bureau of Safety and Environmental Enforcement	6,000	460	0	5,540	0	0	0	0
Department of Transportation	37,997	*	0	37,857	0	0	0	128
Federal Aviation Administration	35,735	*	0	35,595	0	0	0	128
Federal Railroad Administration	1,762	0	0	1,762	0	0	0	0
National Highway Traffic Safety Administration	500	0	0	500	0	0	0	0
Department of the Treasury	360	360	0	0	0	0	0	0
Mint	360	360	0	0	0	0	0	0
Other agencies								
Environmental Protection Agency	5,800	0	0	5,800	0	0	0	0
National Aeronautics and Space Administration	99,400	1,030	3,874	94,268	0	228	0	0
National Science Foundation	807,110	22,992	0	14,494	496,901	272,518	0	205

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 44

Federal obligations to University Affiliated Research Centers, by type of R&D and R&D plant: FY 2021

(Dollars in thousands)

UARC	Total R&D and R&D plant	Type of R&D				R&D plant
		Total R&D	Basic research	Applied research	Experimental development	
All UARCs	1,511,567	1,511,567	536,896	178,369	796,302	0
Georgia Institute of Technology, Georgia Tech Research Institute	49,690	49,690	12,457	4,704	32,530	0
Johns Hopkins University Applied Physics Laboratory	831,344	831,344	249,491	67,219	514,634	0
Massachusetts Institute of Technology Institute for Soldier Nanotechnologies	108,453	108,453	67,819	17,575	23,059	0
Pennsylvania State University Applied Research Laboratory	128,932	128,932	37,784	24,949	66,199	0
Stevens Institute of Technology Systems Engineering Research Center	9,594	9,594	746	8,314	535	0
University of Alaska Geophysical Detection of Nuclear Proliferation	4,964	4,964	3,826	0	1,138	0
University of California, Santa Barbara Institute for Collaborative Biotechnologies	69,881	69,881	61,399	8,481	0	0
University of Hawaii, Manoa Applied Research Laboratory	15,909	15,909	8,089	1,260	6,560	0
University of Maryland College Park Applied Research Laboratory for Intelligence and Security	46,191	46,191	26,828	7,979	11,383	0
University of Nebraska National Strategic Research Institute	16,594	16,594	8,184	3,543	4,867	0
University of Southern California Institute for Creative Technologies	13,878	13,878	4,051	7,183	2,644	0
University of Texas at Austin Applied Research Laboratories	105,715	105,715	27,926	12,116	65,673	0
University of Washington Applied Physics Laboratory	43,603	43,603	25,182	9,500	8,922	0
Utah State University Space Dynamics Laboratory	66,818	66,818	3,115	5,547	58,157	0

UARC = University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. UARCs are research organizations within a university or college that are established by the Office of the Undersecretary of Defense for Research and Engineering to provide or maintain essential engineering, research, and development capabilities through a long-term strategic relationship. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 45

Federal obligations to University Affiliated Research Centers for research and experimental development, by agency: FY 2021

(Dollars in thousands)

UARC	Total	DHS	DOD	DOE	EPA	HHS	NASA	USDA	Other[a]
All UARCs	1,511,567	8,148	1,059,362	157,640	1,760	14,209	267,874	2,265	310
Georgia Institute of Technology, Georgia Tech Research Institute	49,690	0	38,299	9,242	1,760	120	0	269	0
Johns Hopkins University Applied Physics Laboratory	831,344	440	566,301	6,214	0	9,555	248,405	230	200
Massachusetts Institute of Technology Institute for Soldier Nanotechnologies	108,453	0	59,067	49,386	0	0	0	0	0
Pennsylvania State University Applied Research Laboratory	128,932	0	115,480	13,067	0	0	0	275	110
Stevens Institute of Technology Systems Engineering Research Center	9,594	0	9,594	0	0	0	0	0	0
University of Alaska Geophysical Detection of Nuclear Proliferation	4,964	0	1,138	3,826	0	0	0	0	0
University of California, Santa Barbara Institute for Collaborative Biotechnologies	69,881	0	58,089	11,792	0	0	0	0	0
University of Hawaii, Manoa Applied Research Laboratory	15,909	0	14,341	1,508	0	0	0	60	0
University of Maryland College Park Applied Research Laboratory for Intelligence and Security	46,191	0	45,879	297	0	*	0	0	0
University of Nebraska National Strategic Research Institute	16,594	7,708	1,934	5,588	0	554	0	810	0
University of Southern California Institute for Creative Technologies	13,878	0	9,827	4,051	0	0	0	0	0
University of Texas at Austin Applied Research Laboratories	105,715	0	82,767	20,961	0	0	1,368	620	0
University of Washington Applied Physics Laboratory	43,603	0	8,532	31,108	0	3,964	0	0	0
Utah State University Space Dynamics Laboratory	66,818	0	48,115	601	0	0	18,102	0	0

* = amount greater than $0 but less than $50,000.

DHS = Department of Homeland Security; DOD = Department of Defense; DOE = Department of Energy; EPA = Environmental Protection Agency; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; UARC = University Affiliated Research Center; USDA = Department of Agriculture.

[a] Includes data for the Department of the Treasury and the Nuclear Regulatory Commission.

Note(s):
Because of rounding, detail may not add to total. UARCs are research organizations within a university or college that are established by the Office of the Undersecretary of Defense for Research and Engineering to provide or maintain essential engineering, research, and development capabilities through a long-term strategic relationship. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 46

Federal obligations to University Affiliated Research Centers for R&D plant: FY 2021

(Dollars in thousands)

UARC	Total
All UARCs	0
Georgia Institute of Technology, Georgia Tech Research Institute	0
Johns Hopkins University Applied Physics Laboratory	0
Massachusetts Institute of Technology Institute for Soldier Nanotechnologies	0
Pennsylvania State University Applied Research Laboratory	0
Stevens Institute of Technology Systems Engineering Research Center	0
University of Alaska Geophysical Detection of Nuclear Proliferation	0
University of California, Santa Barbara Institute for Collaborative Biotechnologies	0
University of Hawaii, Manoa Applied Research Laboratory	0
University of Maryland College Park Applied Research Laboratory for Intelligence and Security	0
University of Nebraska National Strategic Research Institute	0
University of Southern California Institute for Creative Technologies	0
University of Texas at Austin Applied Research Laboratories	0
University of Washington Applied Physics Laboratory	0
Utah State University Space Dynamics Laboratory	0

UARC = University Affiliated Research Center.

Note(s):
Because of rounding, detail may not add to total. UARCs are research organizations within a university or college that are established by the Office of the Undersecretary of Defense for Research and Engineering to provide or maintain essential engineering, research, and development capabilities through a long-term strategic relationship. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act).

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 47

Federal obligations for research performed at higher education institutions, by detailed field of R&D: FY 2021

(Dollars in thousands)

Field	2021
All fields	37,026,661
Computer and information sciences	1,465,782
Geosciences, atmospheric sciences, and ocean sciences	1,664,581
Atmospheric science and meteorology	296,635
Geological and earth sciences	253,987
Ocean sciences and marine sciences	627,773
Other geosciences, atmospheric sciences, and ocean sciences	486,186
Life sciences	20,475,049
Agricultural sciences	168,533
Biological and biomedical sciences	11,340,905
Health sciences	6,800,734
Natural resources and conservation	12,558
Other life sciences	2,152,319
Mathematics and statistics	479,906
Physical sciences	2,412,951
Astronomy and astrophysics	80,635
Chemistry	608,381
Materials science	345,237
Physics	852,779
Other physical sciences	525,919
Psychology	2,471,457
Biological aspects	13,456
Social aspects	13,181
Other psychological sciences	2,444,820
Social sciences	789,582
Anthropology	27,715
Economics	90,106
Political science and government	8,727
Sociology, demography, and population studies	63,762
Other social sciences	599,272
Engineering	3,682,718
Aerospace, aeronautical, and astronautical engineering	125,887
Bioengineering and biomedical engineering	108,541
Chemical engineering	229,976
Civil engineering	101,364
Electrical, electronics, and communications engineering	243,921
Industrial and manufacturing engineering	55,826
Mechanical engineering	149,328
Metallurgical and materials engineering	185,740
Other engineering	2,482,135
Other fields	3,584,636
Business management and business administration	73,786
Communication and communications technologies	1,812
Education research	741,853
Humanities	5,486
Law	510
Social work	0
Visual and performing arts	0
All other fields	2,761,189

Note(s):
Because of rounding, detail may not add to total. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 48

Federal obligations for research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	37,026,661	1,465,782	1,664,581	20,475,049	479,906	2,412,951	2,471,457	789,582	3,682,718	3,584,636
Departments										
Department of Agriculture	1,064,254	20,018	32,046	699,498	9,548	30,184	12,659	82,929	79,610	97,762
Agricultural Marketing Service	2,509	0	0	2,509	0	0	0	0	0	0
Agricultural Research Service	171,055	222	753	157,148	0	10,982	0	411	1,539	0
Animal and Plant Health Inspection Service	6,299	0	0	6,299	0	0	0	0	0	0
Economic Research Service	8,247	0	0	0	0	0	0	8,247	0	0
Forest Service	16,404	470	4,410	8,804	0	107	0	2,383	229	0
National Agricultural Statistics Service	223	223	0	0	0	0	0	0	0	0
National Institute of Food and Agriculture	858,153	19,103	26,883	523,374	9,548	19,095	12,659	71,888	77,842	97,762
Natural Resources Conservation Service	1,365	0	0	1,365	0	0	0	0	0	0
Department of Commerce	253,406	3,372	184,515	14,205	724	18,876	0	5,357	25,931	425
National Institute of Standards and Technology	39,844	1,923	2,292	3,862	0	9,458	0	0	22,309	0
National Oceanic and Atmospheric Administration	213,561	1,449	182,223	10,343	724	9,418	0	5,357	3,622	425
Department of Defense	2,621,887	456,635	187,593	325,946	36,185	190,961	20,356	40,916	755,991	607,304
Defense Advanced Research Projects Agency	574,361	295,482	17,089	156,770	1,415	28,083	11,169	0	63,830	523
Defense Health Agency	41,793	0	0	41,793	0	0	0	0	0	0
Department of the Air Force	706,722	54,083	0	25,484	0	92,953	0	9,246	419,630	105,327
Department of the Army	420,423	3,175	960	20,648	10,324	14,166	0	2,401	12,882	355,867
Department of the Navy	688,775	82,541	163,219	54,558	10,588	21,473	5,800	3,713	217,245	129,638
Space Force	6,160	0	0	0	0	0	0	0	6,160	0
Other defense agencies	183,653	21,354	6,325	26,692	13,858	34,287	3,388	25,556	36,245	15,949
Department of Education	139,724	0	0	0	0	0	0	0	0	139,724
Department of Energy	1,390,978	41,220	55,339	150,054	0	709,589	0	0	434,643	132

TABLE 48

Federal obligations for research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Advanced Research Projects Agency—Energy	53,383	7,615	1,126	16,360	0	0	0	0	28,281	0
Electricity Delivery and Energy Reliability	4,262	0	0	0	0	0	0	0	4,262	0
Energy Efficiency and Renewable Energy	258,811	0	0	0	0	0	0	0	258,811	0
Environmental Management	1,650	0	1,650	0	0	0	0	0	0	0
Fossil Energy	136,369	0	12,793	0	0	23,113	0	0	100,462	0
National Nuclear Security Administration	11,784	0	0	0	0	10,775	0	0	1,009	0
Defense Programs	1,141	0	0	0	0	531	0	0	609	0
Office of Defense Nuclear Nonproliferation	10,644	0	0	0	0	10,244	0	0	400	0
Nuclear Energy	41,818	0	0	0	0	0	0	0	41,818	0
Office of Science	882,901	33,605	39,769	133,694	0	675,701	0	0	0	132
Department of Health and Human Services	24,545,375	1,828	309,313	18,548,935	191,182	151,730	2,406,286	439,263	1,433,491	1,063,347
Administration for Children and Families	1,800	0	0	0	0	0	0	1,800	0	0
Administration for Community Living	80,767	0	0	0	0	0	0	80,767	0	0
Agency for Healthcare Research and Quality	100,709	1,828	0	1,192	0	10,848	0	10,152	76,689	0
Agency for Toxic Substances and Disease Registry	6,686	0	6,686	0	0	0	0	0	0	0
Centers for Disease Control and Prevention	231,097	0	0	189,020	0	*	0	27,636	2,880	11,556
Centers for Medicare and Medicaid Services	1,160	0	0	1,160	0	0	0	0	0	0
Food and Drug Administration	71,424	0	0	71,424	0	0	0	0	0	0
Health Resources and Services Administration	26,620	0	0	26,620	0	0	0	0	0	0

TABLE 48

Federal obligations for research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
National Institutes of Health	24,022,712	0	302,627	18,259,519	191,182	140,877	2,406,286	318,907	1,353,922	1,049,391
Office of the Secretary of Health and Human Services	2,399	0	0	0	0	0	0	0	0	2,399
Office of the Assistant Secretary for Planning and Evaluation	2,399	0	0	0	0	0	0	0	0	2,399
Department of Homeland Security	22,925	5,110	0	924	0	2,504	0	0	14,386	0
Countering Weapons of Mass Destruction Office	6,310	2,882	0	924	0	2,504	0	0	0	0
Science and Technology Directorate	16,614	2,228	0	0	0	0	0	0	14,386	0
Department of the Interior	56,002	0	36,691	8,373	0	0	0	5,196	5,743	0
Bureau of Land Management	3,177	0	0	3,177	0	0	0	0	0	0
Bureau of Ocean Energy Management	7,401	0	7,401	0	0	0	0	0	0	0
Bureau of Reclamation	1,147	0	0	0	0	0	0	0	1,147	0
Bureau of Safety and Environmental Enforcement	4,596	0	0	0	0	0	0	0	4,596	0
Geological Survey	29,290	0	29,290	0	0	0	0	0	0	0
National Park Service	10,391	0	0	5,196	0	0	0	5,196	0	0
Department of Justice	33,623	1,996	452	550	377	2,630	0	25,496	751	1,370
Federal Bureau of Investigation	1,370	0	0	0	0	0	0	0	0	1,370
Office of Justice Programs	32,253	1,996	452	550	377	2,630	0	25,496	751	0
Department of Transportation	156,857	1,061	79	3,364	797	4,131	1,091	0	145,361	973
Federal Aviation Administration	66,304	1,051	64	104	797	0	1,076	0	62,238	973
Federal Highway Administration	71,445	0	0	0	0	0	0	0	71,445	0
Federal Motor Carrier Safety Administration	4,141	*	0	0	0	4,131	0	0	0	0
Federal Railroad Administration	5,225	0	*	0	0	0	*	0	5,196	0

TABLE 48

Federal obligations for research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
National Highway Traffic Safety Administration	6,549	0	0	3,260	0	0	0	0	3,289	0
Pipeline and Hazardous Materials Safety Administration	3,193	0	0	0	0	0	0	0	3,193	0
Department of the Treasury	200	0	0	0	0	200	0	0	0	0
Bureau of Engraving and Printing	200	0	0	0	0	200	0	0	0	0
Other agencies										
Agency for International Development	2,975	0	0	975	0	0	0	0	0	2,000
Appalachian Regional Commission	113	0	0	0	0	0	0	113	0	0
Consumer Product Safety Commission	150	0	0	0	0	0	0	0	150	0
Environmental Protection Agency	40,338	551	16,587	15,899	306	961	0	232	5,801	0
National Aeronautics and Space Administration	1,149,372	0	5,892	7,460	0	219,302	0	0	7,945	908,774
National Science Foundation	5,536,101	933,971	836,074	698,865	240,787	1,081,884	31,064	183,956	766,676	762,825
Nuclear Regulatory Commission	6,257	*	0	0	0	0	0	0	6,237	0
Social Security Administration	6,124	0	0	0	0	0	0	6,124	0	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 49

Federal obligations for basic research performed at higher education institutions, by detailed field of R&D: FY 2021

(Dollars in thousands)

Field	2021
All fields	21,440,653
Computer and information sciences	1,059,895
Geosciences, atmospheric sciences, and ocean sciences	1,116,727
Atmospheric science and meteorology	202,417
Geological and earth sciences	209,250
Ocean sciences and marine sciences	433,442
Other geosciences, atmospheric sciences, and ocean sciences	271,618
Life sciences	10,887,993
Agricultural sciences	90,479
Biological and biomedical sciences	6,258,458
Health sciences	3,442,503
Natural resources and conservation	371
Other life sciences	1,096,181
Mathematics and statistics	378,451
Physical sciences	2,221,178
Astronomy and astrophysics	80,239
Chemistry	500,765
Materials science	327,715
Physics	807,716
Other physical sciences	504,744
Psychology	1,295,247
Biological aspects	13,456
Social aspects	9,981
Other psychological sciences	1,271,810
Social sciences	406,248
Anthropology	19,706
Economics	37,620
Political science and government	1,235
Sociology, demography, and population studies	27,187
Other social sciences	320,500
Engineering	1,845,620
Aerospace, aeronautical, and astronautical engineering	59,084
Bioengineering and biomedical engineering	24,551
Chemical engineering	100,323
Civil engineering	57,185
Electrical, electronics, and communications engineering	145,790
Industrial and manufacturing engineering	39,603
Mechanical engineering	93,323
Metallurgical and materials engineering	79,694
Other engineering	1,246,065
Other fields	2,229,294
Business management and business administration	21,271
Communication and communications technologies	0
Education research	319,406
Humanities	5,453
Law	140
Social work	0
Visual and performing arts	0
All other fields	1,883,024

Note(s):
Because of rounding, detail may not add to total. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 50

Federal obligations for basic research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	21,440,653	1,059,895	1,116,727	10,887,993	378,451	2,221,178	1,295,247	406,248	1,845,620	2,229,294
Departments										
Department of Agriculture	506,425	11,974	10,651	367,339	2,510	16,021	1,003	22,559	43,020	31,347
Agricultural Research Service	95,030	124	418	87,304	0	6,101	0	228	855	0
Animal and Plant Health Inspection Service	6,299	0	0	6,299	0	0	0	0	0	0
Forest Service	5,658	0	1,402	4,016	0	85	0	91	64	0
National Institute of Food and Agriculture	399,076	11,851	8,830	269,360	2,510	9,835	1,003	22,240	42,101	31,347
Natural Resources Conservation Service	360	0	0	360	0	0	0	0	0	0
Department of Commerce	9,784	64	0	79	0	9,307	0	0	335	0
National Institute of Standards and Technology	9,784	64	0	79	0	9,307	0	0	335	0
Department of Defense	1,595,541	243,648	77,866	168,551	36,185	151,942	11,921	34,737	462,012	408,679
Defense Advanced Research Projects Agency	273,850	140,070	5,557	76,999	1,415	24,239	3,264	0	22,305	0
Defense Health Agency	1,928	0	0	1,928	0	0	0	0	0	0
Department of the Air Force	542,531	43,042	0	25,484	0	74,312	0	9,246	291,976	98,472
Department of the Army	240,097	3,121	960	20,648	10,324	14,166	0	2,401	12,485	175,991
Department of the Navy	382,485	40,606	65,023	26,029	10,588	11,124	5,800	3,454	95,315	124,546
Space Force	6,160	0	0	0	0	0	0	0	6,160	0
Other defense agencies	148,490	16,809	6,325	17,462	13,858	28,102	2,858	19,635	33,770	9,671
Department of Education	23,533	0	0	0	0	0	0	0	0	23,533
Department of Energy	895,706	33,605	39,769	133,694	0	687,645	0	0	860	132
Electricity Delivery and Energy Reliability	860	0	0	0	0	0	0	0	860	0
Fossil Energy	1,701	0	0	0	0	1,701	0	0	0	0
National Nuclear Security Administration	10,244	0	0	0	0	10,244	0	0	0	0

TABLE 50

Federal obligations for basic research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Office of Defense Nuclear Nonproliferation	10,244	0	0	0	0	10,244	0	0	0	0
Office of Science	882,901	33,605	39,769	133,694	0	675,701	0	0	0	132
Department of Health and Human Services	12,528,168	0	157,366	9,517,460	99,415	73,256	1,251,269	165,832	706,631	556,940
Centers for Disease Control and Prevention	35,198	0	0	21,350	0	0	0	0	2,591	11,256
Centers for Medicare and Medicaid Services	1,160	0	0	1,160	0	0	0	0	0	0
National Institutes of Health	12,491,810	0	157,366	9,494,950	99,415	73,256	1,251,269	165,832	704,040	545,684
Department of Homeland Security	16,824	2,097	0	924	0	2,504	0	0	11,299	0
Countering Weapons of Mass Destruction Office	5,525	2,097	0	924	0	2,504	0	0	0	0
Science and Technology Directorate	11,299	0	0	0	0	0	0	0	11,299	0
Department of the Interior	5,094	0	4,219	*	0	0	0	0	864	0
Bureau of Land Management	*	0	0	*	0	0	0	0	0	0
Bureau of Safety and Environmental Enforcement	864	0	0	0	0	0	0	0	864	0
Geological Survey	4,219	0	4,219	0	0	0	0	0	0	0
Department of Justice	1,586	0	0	0	0	0	0	1,586	0	0
Office of Justice Programs	1,586	0	0	0	0	0	0	1,586	0	0
Other agencies										
National Aeronautics and Space Administration	973,267	0	5,502	7,335	0	219,302	0	0	0	741,128
National Science Foundation	4,884,726	768,508	821,354	692,599	240,341	1,061,201	31,054	181,535	620,599	467,535

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 51

Federal obligations for applied research performed at higher education institutions, by detailed field of R&D: FY 2021

(Dollars in thousands)

Field	2021
All fields	15,586,008
Computer and information sciences	405,887
Geosciences, atmospheric sciences, and ocean sciences	547,854
Atmospheric science and meteorology	94,218
Geological and earth sciences	44,737
Ocean sciences and marine sciences	194,331
Other geosciences, atmospheric sciences, and ocean sciences	214,568
Life sciences	9,587,056
Agricultural sciences	78,053
Biological and biomedical sciences	5,082,447
Health sciences	3,358,231
Natural resources and conservation	12,187
Other life sciences	1,056,138
Mathematics and statistics	101,455
Physical sciences	191,773
Astronomy and astrophysics	396
Chemistry	107,616
Materials science	17,522
Physics	45,063
Other physical sciences	21,176
Psychology	1,176,210
Biological aspects	0
Social aspects	3,201
Other psychological sciences	1,173,010
Social sciences	383,334
Anthropology	8,009
Economics	52,487
Political science and government	7,491
Sociology, demography, and population studies	36,575
Other social sciences	278,772
Engineering	1,837,098
Aerospace, aeronautical, and astronautical engineering	66,803
Bioengineering and biomedical engineering	83,989
Chemical engineering	129,653
Civil engineering	44,178
Electrical, electronics, and communications engineering	98,131
Industrial and manufacturing engineering	16,223
Mechanical engineering	56,005
Metallurgical and materials engineering	106,046
Other engineering	1,236,069
Other fields	1,355,341
Business management and business administration	52,515
Communication and communications technologies	1,812
Education research	422,446
Humanities	*
Law	370
Social work	0
Visual and performing arts	0
All other fields	878,164

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 52

Federal obligations for applied research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	15,586,008	405,887	547,854	9,587,056	101,455	191,773	1,176,210	383,334	1,837,098	1,355,341
Departments										
Department of Agriculture	557,830	8,044	21,395	332,159	7,038	14,163	11,657	60,370	36,590	66,415
Agricultural Marketing Service	2,509	0	0	2,509	0	0	0	0	0	0
Agricultural Research Service	76,024	99	335	69,844	0	4,881	0	182	684	0
Economic Research Service	8,247	0	0	0	0	0	0	8,247	0	0
Forest Service	10,745	470	3,008	4,788	0	*	0	2,292	165	0
National Agricultural Statistics Service	223	223	0	0	0	0	0	0	0	0
National Institute of Food and Agriculture	459,077	7,252	18,053	254,014	7,038	9,260	11,657	49,648	35,741	66,415
Natural Resources Conservation Service	1,004	0	0	1,004	0	0	0	0	0	0
Department of Commerce	243,621	3,308	184,515	14,126	724	9,569	0	5,357	25,596	425
National Institute of Standards and Technology	30,060	1,859	2,292	3,783	0	151	0	0	21,974	0
National Oceanic and Atmospheric Administration	213,561	1,449	182,223	10,343	724	9,418	0	5,357	3,622	425
Department of Defense	1,026,346	212,987	109,728	157,394	0	39,019	8,435	6,179	293,979	198,625
Defense Advanced Research Projects Agency	300,511	155,412	11,532	79,771	0	3,843	7,905	0	41,525	523
Defense Health Agency	39,864	0	0	39,864	0	0	0	0	0	0
Department of the Air Force	164,191	11,041	0	0	0	18,641	0	0	127,654	6,855
Department of the Army	180,327	54	0	0	0	0	0	0	397	179,876
Department of the Navy	306,290	41,935	98,196	28,529	0	10,349	0	259	121,930	5,092
Other defense agencies	35,164	4,545	0	9,230	0	6,186	530	5,920	2,474	6,279
Department of Education	116,191	0	0	0	0	0	0	0	0	116,191
Department of Energy	495,272	7,615	15,570	16,360	0	21,944	0	0	433,783	0
Advanced Research Projects Agency—Energy	53,383	7,615	1,126	16,360	0	0	0	0	28,281	0

TABLE 52

Federal obligations for applied research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Electricity Delivery and Energy Reliability	3,402	0	0	0	0	0	0	0	3,402	0
Energy Efficiency and Renewable Energy	258,811	0	0	0	0	0	0	0	258,811	0
Environmental Management	1,650	0	1,650	0	0	0	0	0	0	0
Fossil Energy	134,668	0	12,793	0	0	21,412	0	0	100,462	0
National Nuclear Security Administration	1,541	0	0	0	0	531	0	0	1,009	0
Defense Programs	1,141	0	0	0	0	531	0	0	609	0
Office of Defense Nuclear Nonproliferation	400	0	0	0	0	0	0	0	400	0
Nuclear Energy	41,818	0	0	0	0	0	0	0	41,818	0
Department of Health and Human Services	12,017,207	1,828	151,947	9,031,475	91,767	78,474	1,155,017	273,431	726,860	506,407
Administration for Children and Families	1,800	0	0	0	0	0	0	1,800	0	0
Administration for Community Living	80,767	0	0	0	0	0	0	80,767	0	0
Agency for Healthcare Research and Quality	100,709	1,828	0	1,192	0	10,848	0	10,152	76,689	0
Agency for Toxic Substances and Disease Registry	6,686	0	6,686	0	0	0	0	0	0	0
Centers for Disease Control and Prevention	195,900	0	0	167,670	0	*	0	27,636	289	300
Food and Drug Administration	71,424	0	0	71,424	0	0	0	0	0	0
Health Resources and Services Administration	26,620	0	0	26,620	0	0	0	0	0	0
National Institutes of Health	11,530,902	0	145,261	8,764,569	91,767	67,621	1,155,017	153,075	649,883	503,708
Office of the Secretary of Health and Human Services	2,399	0	0	0	0	0	0	0	0	2,399

TABLE 52

Federal obligations for applied research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Office of the Assistant Secretary for Planning and Evaluation	2,399	0	0	0	0	0	0	0	0	2,399
Department of Homeland Security	6,101	3,013	0	0	0	0	0	0	3,088	0
Countering Weapons of Mass Destruction Office	785	785	0	0	0	0	0	0	0	0
Science and Technology Directorate	5,316	2,228	0	0	0	0	0	0	3,088	0
Department of the Interior	50,908	0	32,472	8,362	0	0	0	5,196	4,879	0
Bureau of Land Management	3,166	0	0	3,166	0	0	0	0	0	0
Bureau of Ocean Energy Management	7,401	0	7,401	0	0	0	0	0	0	0
Bureau of Reclamation	1,147	0	0	0	0	0	0	0	1,147	0
Bureau of Safety and Environmental Enforcement	3,732	0	0	0	0	0	0	0	3,732	0
Geological Survey	25,071	0	25,071	0	0	0	0	0	0	0
National Park Service	10,391	0	0	5,196	0	0	0	5,196	0	0
Department of Justice	32,037	1,996	452	550	377	2,630	0	23,911	751	1,370
Federal Bureau of Investigation	1,370	0	0	0	0	0	0	0	0	1,370
Office of Justice Programs	30,667	1,996	452	550	377	2,630	0	23,911	751	0
Department of Transportation	156,857	1,061	79	3,364	797	4,131	1,091	0	145,361	973
Federal Aviation Administration	66,304	1,051	64	104	797	0	1,076	0	62,238	973
Federal Highway Administration	71,445	0	0	0	0	0	0	0	71,445	0
Federal Motor Carrier Safety Administration	4,141	*	0	0	0	4,131	0	0	0	0
Federal Railroad Administration	5,225	0	*	0	0	0	*	0	5,196	0
National Highway Traffic Safety Administration	6,549	0	0	3,260	0	0	0	0	3,289	0
Pipeline and Hazardous Materials Safety Administration	3,193	0	0	0	0	0	0	0	3,193	0

TABLE 52

Federal obligations for applied research performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Department of the Treasury	200	0	0	0	0	200	0	0	0	0
Bureau of Engraving and Printing	200	0	0	0	0	200	0	0	0	0
Other agencies										
Agency for International Development	2,975	0	0	975	0	0	0	0	0	2,000
Appalachian Regional Commission	113	0	0	0	0	0	0	113	0	0
Consumer Product Safety Commission	150	0	0	0	0	0	0	0	150	0
Environmental Protection Agency	40,338	551	16,587	15,899	306	961	0	232	5,801	0
National Aeronautics and Space Administration	176,105	0	389	125	0	0	0	0	7,945	167,646
National Science Foundation	651,375	165,463	14,720	6,266	446	20,683	*	2,420	146,077	295,290
Nuclear Regulatory Commission	6,257	*	0	0	0	0	0	0	6,237	0
Social Security Administration	6,124	0	0	0	0	0	0	6,124	0	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 53

Federal obligations for experimental development performed at higher education institutions, by detailed field of R&D: FY 2021

(Dollars in thousands)

Field	2021
All fields	2,739,770
Computer and information sciences	58,620
Geosciences, atmospheric sciences, and ocean sciences	77,330
Atmospheric science and meteorology	29,076
Geological and earth sciences	9,092
Ocean sciences and marine sciences	27,940
Other geosciences, atmospheric sciences, and ocean sciences	11,222
Life sciences	884,162
Agricultural sciences	26,085
Biological and biomedical sciences	835,317
Health sciences	18,700
Natural resources and conservation	3,854
Other life sciences	207
Mathematics and statistics	5,440
Physical sciences	208,214
Astronomy and astrophysics	133,413
Chemistry	14,823
Materials science	317
Physics	53,907
Other physical sciences	5,753
Psychology	475
Biological aspects	0
Social aspects	0
Other psychological sciences	475
Social sciences	6,229
Anthropology	224
Economics	*
Political science and government	710
Sociology, demography, and population studies	*
Other social sciences	5,216
Engineering	1,116,901
Aerospace, aeronautical, and astronautical engineering	374,159
Bioengineering and biomedical engineering	5,300
Chemical engineering	13,950
Civil engineering	9,952
Electrical, electronics, and communications engineering	80,884
Industrial and manufacturing engineering	26,077
Mechanical engineering	17,724
Metallurgical and materials engineering	17,399
Other engineering	571,455
Other fields	382,398
Business management and business administration	4,984
Communication and communications technologies	22,117
Education research	66,595
Humanities	0
Law	0
Social work	0
Visual and performing arts	0
All other fields	288,703

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 54

Federal obligations for experimental development performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
All agencies	2,739,770	58,620	77,330	884,162	5,440	208,214	475	6,229	1,116,901	382,398
Departments										
Department of Agriculture	28,830	182	0	9,642	0	0	0	0	0	19,006
Agricultural Marketing Service	2,509	0	0	2,509	0	0	0	0	0	0
Agricultural Research Service	19,006	0	0	0	0	0	0	0	0	19,006
Animal and Plant Health Inspection Service	6,233	0	0	6,233	0	0	0	0	0	0
National Agricultural Statistics Service	182	182	0	0	0	0	0	0	0	0
Natural Resources Conservation Service	900	0	0	900	0	0	0	0	0	0
Department of Commerce	144,134	175	46,253	84,336	88	1,139	0	2,639	9,310	195
National Institute of Standards and Technology	91,900	0	0	83,000	0	0	0	0	8,900	0
National Oceanic and Atmospheric Administration	52,234	175	46,253	1,336	88	1,139	0	2,639	410	195
Department of Defense	2,003,619	43,045	17,943	750,490	5,353	72,166	472	2,033	911,521	200,596
Defense Advanced Research Projects Agency	62,804	2,100	0	0	0	1,693	0	0	32,528	26,483
Defense Health Agency	720,054	0	0	720,054	0	0	0	0	0	0
Department of the Air Force	146,439	722	0	0	0	3,723	0	0	117,454	24,540
Department of the Army	121,795	1,583	487	10,474	5,237	7,186	0	1,218	6,333	89,276
Department of the Navy	442,748	9,785	12,235	9,584	115	42,349	472	0	351,073	17,134
Space Force	31,943	0	0	0	0	0	0	0	31,943	0
Other defense agencies	477,836	28,855	5,221	10,377	0	17,215	0	815	372,189	43,164
Department of Education	42,146	0	0	0	0	0	0	0	0	42,146
Department of Energy	207,867	7,615	4,476	16,360	0	175	0	0	179,240	0
Advanced Research Projects Agency—Energy	53,383	7,615	1,126	16,360	0	0	0	0	28,281	0

TABLE 54

Federal obligations for experimental development performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Electricity Delivery and Energy Reliability	4,566	0	0	0	0	0	0	0	4,566	0
Energy Efficiency and Renewable Energy	134,400	0	0	0	0	0	0	0	134,400	0
Environmental Management	3,350	0	3,350	0	0	0	0	0	0	0
National Nuclear Security Administration	210	0	0	0	0	175	0	0	*	0
Defense Programs	*	0	0	0	0	0	0	0	*	0
Office of Defense Nuclear Nonproliferation	175	0	0	0	0	175	0	0	0	0
Nuclear Energy	11,957	0	0	0	0	0	0	0	11,957	0
Department of Health and Human Services	14,066	0	0	12,566	0	0	0	0	0	1,500
Biomedical Advanced Research and Development Authority	11,314	0	0	11,314	0	0	0	0	0	0
Centers for Disease Control and Prevention	1,252	0	0	1,252	0	0	0	0	0	0
Health Resources and Services Administration	1,500	0	0	0	0	0	0	0	0	1,500
Department of Homeland Security	13,498	7,117	0	0	0	514	0	0	2,590	3,277
Countering Weapons of Mass Destruction Office	664	150	0	0	0	514	0	0	0	0
Science and Technology Directorate	12,834	6,967	0	0	0	0	0	0	2,590	3,277
Department of the Interior	14,778	0	7,267	694	0	0	0	224	6,594	0
Bureau of Land Management	470	0	0	470	0	0	0	0	0	0
Bureau of Ocean Energy Management	60	0	60	0	0	0	0	0	0	0
Bureau of Reclamation	6,386	0	0	0	0	0	0	0	6,386	0
Bureau of Safety and Environmental Enforcement	208	0	0	0	0	0	0	0	208	0

TABLE 54

Federal obligations for experimental development performed at higher education institutions, by agency and field of R&D: FY 2021

(Dollars in thousands)

Agency	Total	Computer and information sciences	Geosciences, atmospheric sciences, and ocean sciences	Life sciences	Mathematics and statistics	Physical sciences	Psychology	Social sciences	Engineering	Other fields
Geological Survey	7,207	0	7,207	0	0	0	0	0	0	0
National Park Service	447	0	0	224	0	0	0	224	0	0
Department of Justice	2,985	485	0	0	0	1,167	0	1,333	0	0
Office of Justice Programs	2,985	485	0	0	0	1,167	0	1,333	0	0
Department of Transportation	5,388	0	*	0	0	200	*	0	1,816	3,365
Federal Aviation Administration	3,365	0	0	0	0	0	0	0	0	3,365
Federal Motor Carrier Safety Administration	200	0	0	0	0	200	0	0	0	0
Federal Railroad Administration	1,070	0	*	0	0	0	*	0	1,064	0
Federal Transit Administration	752	0	0	0	0	0	0	0	752	0
Other agencies										
Agency for International Development	12,075	0	0	10,075	0	0	0	0	0	2,000
National Aeronautics and Space Administration	246,965	0	1,387	0	0	132,853	0	0	2,413	110,313
Nuclear Regulatory Commission	3,418	0	0	0	0	0	0	0	3,418	0

* = amount greater than $0 but less than $50,000.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table. As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 55

Federal obligations for research and experimental development to non-U.S. performers, by region, country, or economy, and agency: FY 2021

(Dollars in thousands)

Region, country, or economy	Total	DHS	DOD	DOE	HHS	NASA	NSF	USDA	Other[a]
All areas and organizations	753,246	7,286	296,339	1,865	310,745	61,782	19,627	6,781	48,822
Africa	135,251	0	29,951	0	104,300	0	0	550	450
Benin	454	0	0	0	454	0	0	0	0
Botswana	1,670	0	0	0	1,670	0	0	0	0
Burkina Faso	*	0	0	0	*	0	0	0	0
Cameroon	29,926	0	28,492	0	1,433	0	0	0	0
Congo, Democratic Republic of the	417	0	0	0	417	0	0	0	0
Côte d'Ivoire	*	0	0	0	0	0	0	*	0
Egypt	*	0	0	0	*	0	0	0	0
Ethiopia	552	0	189	0	363	0	0	0	0
Gambia, The	112	0	0	0	112	0	0	0	0
Ghana	5,437	0	0	0	5,237	0	0	0	200
Kenya	10,506	0	994	0	8,996	0	0	266	250
Liberia	244	0	0	0	244	0	0	0	0
Madagascar	135	0	0	0	135	0	0	0	0
Malawi	1,220	0	0	0	1,220	0	0	0	0
Mali	3,141	0	0	0	3,141	0	0	0	0
Mozambique	1,660	0	0	0	1,660	0	0	0	0
Nigeria	10,069	0	0	0	10,069	0	0	0	0
Rwanda	338	0	0	0	338	0	0	0	0
Senegal	790	0	0	0	790	0	0	0	0
South Africa	49,261	0	249	0	48,758	0	0	254	0
Swaziland	*	0	*	0	0	0	0	0	0
Tanzania	2,207	0	0	0	2,207	0	0	0	0
Uganda	12,860	0	*	0	12,837	0	0	0	0
Zambia	2,473	0	0	0	2,473	0	0	0	0
Zimbabwe	1,690	0	0	0	1,690	0	0	0	0
Asia	103,617	2,119	71,010	*	26,580	2,503	*	589	780
Bangladesh	2,779	0	63	0	2,716	0	0	0	0
Brunei	*	0	*	0	0	0	0	0	0
Cambodia	334	0	334	0	0	0	0	0	0
China	2,809	0	0	0	2,701	0	0	109	0
Georgia	2,305	0	520	0	1,785	0	0	0	0
India	2,316	0	*	*	2,089	0	0	0	200
Indonesia	61	0	*	0	*	0	0	0	0
Israel	62,834	2,119	58,755	0	1,445	0	*	481	0
Japan	1,718	0	1,583	0	135	0	0	0	0
Korea, South	1,272	0	1,272	0	0	0	0	0	0
Lebanon	835	0	0	0	835	0	0	0	0
Malaysia	758	0	543	0	136	0	0	0	80
Nepal	650	0	0	0	150	0	0	0	500
Oman	2,611	0	111	0	0	2,500	0	0	0
Pakistan	789	0	0	0	789	0	0	0	0
Saudi Arabia	78	0	78	0	0	0	0	0	0
Singapore	2,193	0	2,193	0	0	0	0	0	0
Sri Lanka	477	0	93	0	384	0	0	0	0
Taiwan	2,696	0	1,180	0	1,513	*	0	0	0
Thailand	14,171	0	3,554	0	10,617	0	0	0	0
Turkey	509	0	509	0	0	0	0	0	0
United Arab Emirates	140	0	140	0	0	0	0	0	0

TABLE 55

Federal obligations for research and experimental development to non-U.S. performers, by region, country, or economy, and agency: FY 2021

(Dollars in thousands)

Region, country, or economy	Total	DHS	DOD	DOE	HHS	NASA	NSF	USDA	Other[a]
Vietnam	1,268	0	*	0	1,251	0	0	0	0
Europe	233,985	1,381	72,535	1,662	86,420	51,528	2,004	1,992	16,461
Austria	1,395	0	0	0	1,245	0	150	0	0
Belgium	4,041	0	3,730	0	311	*	0	0	0
Croatia	899	0	899	0	0	0	0	0	0
Czechia	778	0	678	0	0	0	0	0	100
Denmark	3,513	0	989	0	2,393	125	0	0	*
Estonia	637	0	637	0	0	0	0	0	0
Finland	3,107	0	2,000	0	1,104	*	0	0	0
France	15,569	*	3,012	372	9,848	1,072	0	867	395
Germany	34,596	0	5,269	*	16,094	4,530	1,369	*	7,319
Greece	282	0	76	0	0	0	0	0	206
Hungary	184	0	184	0	0	0	0	0	0
Iceland	815	0	102	0	713	0	0	0	0
Ireland	1,787	0	1,610	0	158	*	0	0	0
Italy	15,416	0	2,626	0	12,194	0	0	330	267
Luxembourg	106	0	106	0	0	0	0	0	0
Netherlands	31,209	0	4,338	164	4,510	21,414	50	202	530
Norway	883	0	871	*	0	*	0	0	*
Poland	1,170	0	1,170	0	0	0	0	0	0
Portugal	238	0	*	0	0	*	150	0	0
Russia	16,845	0	0	0	0	16,845	0	0	0
Slovakia	170	0	170	0	0	0	0	0	0
Slovenia	323	0	296	0	0	*	0	0	0
Spain	2,299	0	1,362	0	121	495	0	290	*
Sweden	6,226	0	903	60	5,088	98	0	0	76
Switzerland	29,895	0	4,026	433	15,443	5,263	0	*	4,725
Ukraine	707	0	65	0	621	0	0	*	0
United Kingdom	60,896	1,378	37,366	630	16,578	1,599	285	264	2,796
North America	111,777	3,227	32,824	*	50,324	3,633	12,320	1,697	7,750
Bahamas, The	11,843	0	11,843	0	0	0	0	0	0
Bermuda	10,612	0	53	0	0	227	10,332	0	0
Canada	77,002	3,227	20,914	*	38,861	3,406	1,989	854	7,750
Costa Rica	1,804	0	0	0	1,247	0	0	557	0
Guatemala	6,233	0	0	0	6,233	0	0	0	0
Haiti	2,158	0	0	0	2,158	0	0	0	0
Jamaica	114	0	0	0	114	0	0	0	0
Mexico	964	0	*	0	729	0	0	220	0
Nicaragua	134	0	0	0	134	0	0	0	0
Panama	143	0	0	0	78	0	0	66	0
Saint Kitts and Nevis	177	0	0	0	177	0	0	0	0
Trinidad and Tobago	594	0	0	0	594	0	0	0	0
Oceania	67,673	559	38,521	200	23,482	3,687	274	785	165
Australia	58,553	0	33,785	200	20,943	2,814	100	547	165
Marshall Islands	4,216	0	4,216	0	0	0	0	0	0
Micronesia, Federated States of	168	0	0	0	0	0	0	168	0
New Zealand	4,665	559	520	0	2,539	873	174	0	0
Palau	70	0	0	0	0	0	0	70	0
South America	25,193	0	4,593	0	19,003	430	0	1,167	0
Argentina	2,090	0	0	0	1,349	0	0	741	0

TABLE 55

Federal obligations for research and experimental development to non-U.S. performers, by region, country, or economy, and agency: FY 2021

(Dollars in thousands)

Region, country, or economy	Total	DHS	DOD	DOE	HHS	NASA	NSF	USDA	Other[a]
Brazil	7,431	0	1,477	0	5,295	276	0	383	0
Chile	4,078	0	3,023	0	1,032	0	0	*	0
Colombia	3,096	0	59	0	3,017	0	0	*	0
Ecuador	*	0	*	0	0	0	0	0	0
Paraguay	*	0	*	0	0	0	0	0	0
Peru	8,464	0	0	0	8,311	154	0	0	0
International organizations	75,750	0	46,905	0	635	0	4,994	0	23,216

* = amount greater than $0 but less than $50,000.

DHS = Department of Homeland Security; DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = Department of Agriculture.

[a] Includes data for the Departments of Commerce, the Interior, Transportation, and the Treasury; the Agency for International Development; the Nuclear Regulatory Commission; and the Social Security Administration.

Note(s):
Because of rounding, detail may not add to total. Only those countries that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2020–21.

TABLE 56

Federal obligations for R&D plant to non-U.S. performers, by region, country, or economy, and agency: FY 2021

(Dollars in thousands)

Region, country, or economy	Total	DOT	NSF
All areas	236	126	110
North America	236	126	110
Bermuda	110	0	110
Canada	126	126	0

DOT = Department of Transportation; NSF = National Science Foundation.

Note(s):
Because of rounding, detail may not add to total. Only those countries that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 57

Federal obligations for research and experimental development and for R&D plant, by state or location: FY 2021

(Dollars in thousands)

State or location	Total	R&D	R&D plant
All locations	193,680,669	189,398,467	4,282,202
Alabama	3,974,078	3,966,904	7,174
Alaska	331,271	322,626	8,646
Arizona	1,674,777	1,663,321	11,455
Arkansas	302,966	300,252	2,714
California	23,274,515	22,618,185	656,330
Colorado	6,367,010	6,229,985	137,025
Connecticut	2,617,235	2,597,155	20,080
Delaware	307,925	306,913	1,012
District of Columbia	39,172,915	39,038,621	134,294
Florida	4,168,258	4,094,695	73,563
Georgia	1,676,384	1,653,954	22,429
Hawaii	491,852	485,890	5,963
Idaho	994,022	672,104	321,918
Illinois	4,065,555	3,532,719	532,836
Indiana	1,083,239	1,080,842	2,396
Iowa	690,803	686,259	4,544
Kansas	426,576	413,888	12,688
Kentucky	548,279	542,299	5,981
Louisiana	486,649	456,813	29,836
Maine	248,866	248,866	0
Maryland	17,990,305	17,564,594	425,711
Massachusetts	9,518,485	9,496,432	22,053
Michigan	2,085,310	2,070,494	14,816
Minnesota	1,146,666	1,144,953	1,713
Mississippi	466,765	454,921	11,844
Missouri	2,069,981	2,058,775	11,205
Montana	287,513	287,208	305
Nebraska	304,894	302,638	2,255
Nevada	746,981	551,831	195,150
New Hampshire	530,068	522,631	7,437
New Jersey	3,603,135	3,398,171	204,964
New Mexico	4,083,574	3,881,144	202,430
New York	6,988,333	6,830,934	157,399
North Carolina	3,639,482	3,620,371	19,111
North Dakota	171,189	168,097	3,092
Ohio	3,923,225	3,856,489	66,737
Oklahoma	1,518,229	1,505,105	13,124
Oregon	1,097,142	1,069,952	27,190
Pennsylvania	4,569,401	4,544,785	24,616
Rhode Island	882,904	866,046	16,858
South Carolina	1,449,437	1,434,459	14,978
South Dakota	139,030	132,148	6,883
Tennessee	4,134,316	3,461,773	672,544
Texas	6,197,068	6,131,234	65,834
Utah	2,440,493	2,439,690	802
Vermont	245,219	244,489	730
Virginia	9,797,653	9,740,743	56,910
Washington	3,771,889	3,735,831	36,058
West Virginia	200,795	199,238	1,557
Wisconsin	991,547	989,462	2,085

TABLE 57

Federal obligations for research and experimental development and for R&D plant, by state or location: FY 2021

(Dollars in thousands)

State or location	Total	R&D	R&D plant
Wyoming	196,837	196,837	0
Outlying areas	233,908	228,980	4,927
Puerto Rico	120,462	120,136	325
Other areas[a]	113,446	108,844	4,602
Offices abroad[b]	179,044	179,044	0
Undistributed[c]	5,176,678	5,176,678	0

[a] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[b] Includes R&D performed or administered in foreign countries by the U.S. government and federal obligations for R&D plant located in foreign countries.

[c] Department of Defense (DOD) obligations for which the location of performance is not reported.

Note(s):
Because of rounding, detail may not add to total. Geographic distribution of DOD development funding to businesses reflects location of prime contractors and not the numerous subcontractors who perform much of the R&D. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act).

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 58

Federal obligations for research and experimental development, by state or location and performer: FY 2021

(Dollars in thousands)

State or location	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
All locations	189,398,467	71,665,012	14,791,390	50,224,547	39,766,441	11,984,913	966,164
Alabama	3,966,904	1,969,225	0	1,444,178	499,203	40,455	13,844
Alaska	322,626	108,294	0	76,522	115,689	13,675	8,446
Arizona	1,663,321	188,312	0	828,090	549,334	84,104	13,481
Arkansas	300,252	66,170	0	86,351	126,768	11,006	9,956
California	22,618,185	3,031,984	4,922,483	8,004,585	5,260,830	1,327,279	71,024
Colorado	6,229,985	440,675	562,842	3,864,952	857,333	487,681	16,502
Connecticut	2,597,155	122,887	0	1,635,598	782,764	17,317	38,588
Delaware	306,913	3,322	5,271	49,600	238,890	7,805	2,024
District of Columbia	39,038,621	35,151,327	190,261	898,844	274,356	2,514,296	9,536
Florida	4,094,695	869,515	9,988	1,911,274	1,045,856	236,240	21,823
Georgia	1,653,954	262,298	1,227	183,534	1,133,753	42,809	30,334
Hawaii	485,890	202,246	0	97,776	163,835	19,686	2,348
Idaho	672,104	47,872	286,824	262,764	62,150	3,851	8,643
Illinois	3,532,719	227,776	955,130	649,247	1,531,226	160,557	8,783
Indiana	1,080,842	192,813	0	176,898	695,567	1,985	13,579
Iowa	686,259	86,138	30,517	215,567	336,602	1,441	15,995
Kansas	413,888	110,996	0	27,976	269,284	2,751	2,881
Kentucky	542,299	167,701	0	41,637	313,709	7,430	11,822
Louisiana	456,813	65,636	0	91,297	266,781	7,721	25,378
Maine	248,866	16,710	2,040	55,631	58,224	108,068	8,193
Maryland	17,564,594	10,740,753	681,970	3,108,944	2,598,098	395,409	39,419
Massachusetts	9,496,432	550,803	1,872,104	2,950,187	2,002,466	2,110,156	10,716
Michigan	2,070,494	323,683	*	445,953	1,211,927	82,665	6,264
Minnesota	1,144,953	85,358	0	215,833	497,754	317,338	28,671
Mississippi	454,921	234,025	0	37,985	175,437	4,825	2,650
Missouri	2,058,775	160,622	0	953,196	884,718	46,466	13,773
Montana	287,208	77,990	0	29,151	167,255	2,786	10,026
Nebraska	302,638	46,772	0	20,523	213,769	18,757	2,816
Nevada	551,831	50,478	0	391,891	97,367	4,874	7,220
New Hampshire	522,631	19,404	0	279,670	212,380	9,988	1,189
New Jersey	3,398,171	1,057,007	126,515	1,591,296	554,091	47,339	21,924
New Mexico	3,881,144	1,024,942	1,979,499	641,103	199,407	32,440	3,752
New York	6,830,934	222,856	517,967	1,699,512	3,735,477	506,968	148,154
North Carolina	3,620,371	383,630	0	940,096	1,824,120	447,051	25,473
North Dakota	168,097	41,749	0	21,237	94,334	3,349	7,428
Ohio	3,856,489	1,107,733	26,812	1,344,147	1,028,125	328,821	20,850
Oklahoma	1,505,105	1,139,039	0	120,656	198,277	41,334	5,799
Oregon	1,069,952	286,944	1,782	95,666	654,140	23,369	8,051
Pennsylvania	4,544,785	441,516	64,174	1,355,538	2,323,389	341,498	18,671
Rhode Island	866,046	272,948	3,253	189,776	304,079	85,630	10,360
South Carolina	1,434,459	147,877	58,903	627,813	347,098	235,479	17,289
South Dakota	132,148	23,548	0	24,564	37,755	14,181	32,100
Tennessee	3,461,773	1,124,264	1,160,050	337,386	360,163	468,898	11,010
Texas	6,131,234	900,062	65,396	2,563,779	2,364,744	174,043	63,210
Utah	2,439,690	208,741	206,351	1,484,197	523,742	11,761	4,897
Vermont	244,489	14,305	0	58,473	162,040	127	9,543

TABLE 58

Federal obligations for research and experimental development, by state or location and performer: FY 2021

(Dollars in thousands)

State or location	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Virginia	9,740,743	2,066,103	580,235	6,385,232	490,072	208,268	10,833
Washington	3,735,831	365,155	470,081	1,105,503	912,140	828,150	54,801
West Virginia	199,238	43,454	0	43,846	85,262	14,850	11,826
Wisconsin	989,462	63,909	0	122,281	744,515	46,037	12,720
Wyoming	196,837	49,421	5,170	71,013	65,688	2,155	3,390
Outlying areas	228,980	39,463	0	48,315	109,160	24,042	7,999
Puerto Rico	120,136	29,058	0	3,528	84,957	*	2,586
Other areas[c]	108,844	10,405	0	44,788	24,203	24,035	5,413
Offices abroad[d]	179,044	106,203	0	66,029	5,294	1,358	159
Undistributed[e]	5,176,678	4,912,358	4,544	251,431	0	8,344	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, as well as actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

[c] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[d] Includes R&D performed or administered in foreign countries by the U.S. government and federal obligations for R&D plant located in foreign countries.

[e] Department of Defense (DOD) obligations for which the location of performance is not reported.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act).

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 59

Federal obligations for R&D plant, by state or location and performer: FY 2021

(Dollars in thousands)

State or location	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
All locations	4,282,202	882,770	2,019,120	858,176	360,338	155,441	6,358
Alabama	7,174	2,142	0	700	4,331	0	0
Alaska	8,646	7,963	0	*	679	0	0
Arizona	11,455	718	0	0	10,737	0	0
Arkansas	2,714	0	0	0	2,714	0	0
California	656,330	31,506	537,354	17,417	54,586	15,467	0
Colorado	137,025	82,377	41,696	*	12,939	0	0
Connecticut	20,080	0	0	*	20,068	0	0
Delaware	1,012	0	0	0	1,012	0	0
District of Columbia	134,294	57,552	0	9,059	1,455	66,228	0
Florida	73,563	59,517	0	2,491	11,555	0	0
Georgia	22,429	8,099	0	4,048	10,282	0	0
Hawaii	5,963	3,859	0	*	1,965	133	0
Idaho	321,918	0	1,233	311,587	9,097	0	0
Illinois	532,836	11,312	503,830	705	16,831	158	0
Indiana	2,396	0	0	0	2,396	0	0
Iowa	4,544	0	4,250	0	294	0	0
Kansas	12,688	8,569	0	0	4,118	0	0
Kentucky	5,981	0	0	0	5,981	0	0
Louisiana	29,836	15,593	0	4,779	9,464	0	0
Maine	0	0	0	0	0	0	0
Maryland	425,711	409,567	0	15,146	997	0	0
Massachusetts	22,053	*	0	*	16,849	5,154	0
Michigan	14,816	0	0	*	14,775	0	0
Minnesota	1,713	0	0	254	1,459	0	0
Mississippi	11,844	11,627	0	0	217	0	0
Missouri	11,205	0	0	6,338	4,867	0	0
Montana	305	0	0	*	268	0	0
Nebraska	2,255	360	0	0	1,895	0	0
Nevada	195,150	11,660	0	183,490	0	0	0
New Hampshire	7,437	3,859	0	251	3,327	0	0
New Jersey	204,964	0	14,856	186,119	3,989	0	0
New Mexico	202,430	15,544	141,683	802	44,402	0	0
New York	157,399	25,026	119,044	9,635	3,694	0	0
North Carolina	19,111	1,329	0	2,352	15,430	0	0
North Dakota	3,092	0	0	467	2,626	0	0
Ohio	66,737	0	0	1,721	*	65,000	0
Oklahoma	13,124	156	0	659	12,309	0	0
Oregon	27,190	20,117	0	222	6,851	0	0
Pennsylvania	24,616	4,661	0	16,614	3,341	0	0
Rhode Island	16,858	16,353	0	215	290	0	0
South Carolina	14,978	12,849	2,129	0	0	0	0
South Dakota	6,883	0	0	0	525	0	6,358
Tennessee	672,544	55	608,849	54,587	9,052	0	0
Texas	65,834	43,150	0	96	20,592	1,997	0
Utah	802	0	0	0	802	0	0
Vermont	730	0	0	0	730	0	0

TABLE 59

Federal obligations for R&D plant, by state or location and performer: FY 2021

(Dollars in thousands)

State or location	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Virginia	56,910	6,812	14,949	28,232	6,901	*	0
Washington	36,058	4,108	29,247	0	2,703	0	0
West Virginia	1,557	0	0	0	268	1,289	0
Wisconsin	2,085	1,425	0	0	660	0	0
Wyoming	0	0	0	0	0	0	0
Outlying areas	4,927	4,888	0	*	0	0	0
Puerto Rico	325	286	0	*	0	0	0
Other areas[c]	4,602	4,602	0	0	0	0	0
Offices abroad[d]	0	0	0	0	0	0	0
Undistributed[e]	0	0	0	0	0	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, as well as actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

[c] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island..

[d] Includes federal obligations for R&D plant located in foreign countries.

[e] Department of Defense (DOD) obligations for which the location of performance is not reported.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act).

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 60

Federal obligations for research and experimental development, by state or location and agency: FY 2021

(Dollars in thousands)

State or location	Total	DHS	DOC	DOD	DOE	DOI	DOT	EPA	HHS	NASA	NSF	USDA	Other[a]
All locations	189,398,467	521,898	1,811,833	70,410,576	13,451,142	901,226	1,105,375	520,328	76,340,417	11,690,738	6,685,539	2,890,898	3,068,498
Alabama	3,966,904	3,552	4,856	3,176,525	19,572	3,404	8,617	1,485	394,510	248,161	46,386	43,274	16,562
Alaska	322,626	4,301	3,917	120,996	12,431	59,818	4,208	0	26,400	21,555	51,393	13,789	3,819
Arizona	1,663,321	1,591	3,256	907,603	31,859	32,107	12,726	50	334,410	165,309	131,162	30,869	12,379
Arkansas	300,252	2,877	0	102,354	1,649	7,394	3,183	0	96,223	2,256	25,627	43,053	15,634
California	22,618,185	35,280	22,060	10,160,653	2,744,902	74,760	49,187	24,315	5,126,819	3,030,644	842,984	161,799	344,780
Colorado	6,229,985	625	218,890	3,061,893	565,157	76,726	26,776	9,072	893,045	954,149	327,793	61,132	34,728
Connecticut	2,597,155	6,376	11,535	1,534,943	52,651	1,586	12,060	1,338	696,109	166,819	58,317	5,907	49,514
Delaware	306,913	917	95,999	48,096	31,027	1,632	1,706	0	69,359	7,554	40,648	7,679	2,296
District of Columbia	39,038,621	51,251	36,675	2,936,657	709,514	24,984	201,127	53,096	31,685,313	1,914,949	329,398	306,981	788,677
Florida	4,094,695	6,353	24,941	2,574,591	51,406	54,947	34,982	11,611	781,919	187,967	223,761	75,532	66,683
Georgia	1,653,954	1,041	4,078	435,233	89,846	3,365	13,355	11,564	801,120	24,224	135,765	90,103	44,258
Hawaii	485,890	1,440	2,082	304,728	6,986	6,919	1,696	638	58,614	27,148	46,981	26,553	2,102
Idaho	672,104	4,567	0	52,410	508,781	10,127	950	319	23,681	4,201	23,223	33,352	10,495
Illinois	3,532,719	60	733	738,833	1,180,994	6,996	15,026	199	1,126,582	35,848	280,273	71,489	75,688
Indiana	1,080,842	500	5,301	394,631	46,830	8,783	6,100	1,335	360,522	25,831	164,556	33,890	32,565
Iowa	686,259	424	285	201,288	65,279	1,284	10,878	1,375	227,476	12,197	46,065	88,787	30,922
Kansas	413,888	0	1,400	76,716	17,922	5,549	25,570	0	111,953	7,443	34,346	125,506	7,483
Kentucky	542,299	*	0	163,425	34,654	2,222	2,829	638	260,553	6,236	31,005	25,200	15,534
Louisiana	456,813	0	2,572	89,377	12,517	20,658	6,252	7,912	212,571	2,453	47,175	45,412	9,914
Maine	248,866	24,942	3,039	24,985	24,797	2,493	5,027	128	110,019	9,735	23,708	19,700	293
Maryland	17,564,594	19,383	1,163,430	5,188,173	68,236	39,829	43,169	14,497	8,905,780	1,474,702	339,207	204,879	103,308
Massachusetts	9,496,432	4,169	12,927	4,370,252	203,503	14,580	77,293	19,222	3,879,002	191,403	490,701	35,674	197,706
Michigan	2,070,494	388	4,649	731,517	141,900	10,325	16,302	5,489	860,970	35,330	187,511	23,658	52,455
Minnesota	1,144,953	0	1,659	226,938	35,118	9,677	10,363	9,876	684,210	11,432	70,339	52,246	33,095
Mississippi	454,921	1,971	13,643	126,351	6,060	4,084	6,320	0	66,984	79,345	21,452	126,617	2,095
Missouri	2,058,775	5,590	1,599	976,576	71,427	24,489	16,088	1,104	774,776	34,294	54,378	69,317	29,138
Montana	287,208	2,180	200	77,430	13,961	21,084	2,957	*	95,072	10,813	32,305	30,990	178
Nebraska	302,638	7,708	300	42,448	7,029	1,162	5,006	0	134,263	1,081	32,660	54,401	16,580
Nevada	551,831	222	145	209,532	195,367	10,496	2,787	1,884	44,434	51,394	25,296	5,914	4,360
New Hampshire	522,631	319	12,694	272,965	18,027	2,379	823	0	112,832	65,094	25,494	10,249	1,753
New Jersey	3,398,171	4,648	12,261	1,725,542	164,780	2,973	29,355	4,245	1,209,077	41,788	161,698	12,912	28,891
New Mexico	3,881,144	27,722	988	1,665,889	1,893,207	7,030	10,525	0	121,642	55,255	49,078	13,970	35,838
New York	6,830,934	1,273	5,846	1,169,060	1,205,300	11,598	12,002	5,668	3,667,592	167,974	431,943	71,981	80,697
North Carolina	3,620,371	12,610	18,915	345,047	60,497	11,263	14,711	143,524	2,675,524	10,516	186,555	70,191	71,018
North Dakota	168,097	0	0	23,933	21,132	2,781	8,021	742	35,556	350	21,459	54,012	111

TABLE 60

Federal obligations for research and experimental development, by state or location and agency: FY 2021

(Dollars in thousands)

State or location	Total	DHS	DOC	DOD	DOE	DOI	DOT	EPA	HHS	NASA	NSF	USDA	Other[a]
Ohio	3,856,489	16,506	1,977	2,333,320	112,551	9,513	34,870	80,645	970,242	89,083	119,812	40,141	47,827
Oklahoma	1,505,105	1,239	13,823	1,153,268	23,561	57,518	12,695	9,812	131,644	18,306	35,633	38,190	9,416
Oregon	1,069,952	499	6,234	287,381	37,596	19,346	10,257	11,714	430,975	11,128	103,283	85,423	66,116
Pennsylvania	4,544,785	11,475	4,881	1,295,879	483,529	10,817	29,929	7,229	2,115,090	154,459	288,754	75,612	67,131
Rhode Island	866,046	*	20,834	479,218	7,931	*	1,443	9,648	257,603	6,930	55,839	4,225	22,310
South Carolina	1,434,459	3,169	15,233	973,769	63,484	1,575	5,401	281	240,764	3,833	44,279	33,758	48,914
South Dakota	132,148	1,620	0	36,027	23,598	114	2,078	74	29,261	12,800	12,906	12,933	736
Tennessee	3,461,773	4,691	330	847,842	1,304,514	9,256	6,556	23,133	668,456	422,009	65,731	34,754	74,501
Texas	6,131,234	13,562	11,511	2,534,815	127,314	25,587	30,545	2,886	1,728,086	1,055,227	377,760	138,506	85,435
Utah	2,439,690	0	827	1,640,157	259,865	12,347	4,044	*	259,133	32,983	148,282	31,998	50,017
Vermont	244,489	0	811	34,521	21,233	2,109	1,379	721	78,242	359	68,973	28,964	7,177
Virginia	9,740,743	2,415	18,836	7,734,839	84,086	99,214	247,841	35,592	555,748	725,709	9,756	26,478	200,230
Washington	3,735,831	222,280	19,713	1,166,173	453,418	21,316	12,423	5,940	1,487,532	52,393	152,255	69,299	73,090
West Virginia	199,238	396	0	29,565	40,607	5,543	2,088	*	67,786	4,444	12,880	34,213	1,678
Wisconsin	989,462	9,722	1,303	140,754	78,110	14,020	3,048	1,186	560,784	14,892	101,705	63,504	434
Wyoming	196,837	0	428	94,807	14,884	26,644	2,805	0	35,665	0	17,155	4,443	*
Outlying areas	228,980	0	3,918	82,737	545	6,651	0	*	56,319	0	29,895	20,962	27,924
Puerto Rico	120,136	0	3,918	4,768	250	1,455	0	*	51,453	0	17,301	13,038	27,923
Other areas[b]	108,844	0	0	77,969	295	5,196	0	0	4,865	0	12,594	7,924	*
Offices abroad[c]	179,044	0	300	111,237	0	125	0	0	2,173	726	0	477	64,004
Undistributed[d]	5,176,678	NA	NA	5,176,678	NA	NA	NA	NA	NA	NA	NA	NA	NA

* = amount greater than $0 but less than $50,000.

DHS = Department of Homeland Security; DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; DOI = Department of the Interior; DOT = Department of Transportation; EPA = Environmental Protection Agency; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = Department of Agriculture.

[a] Includes data for the Departments of Education, Justice, Labor, State, the Treasury, and Veterans Affairs; the Administrative Office of the U.S. Courts; the Agency for Global Media; the Agency for International Development; the Appalachian Regional Commission; the Consumer Product Safety Commission; the Federal Trade Commission; the Library of Congress; the Nuclear Regulatory Commission; the Patient-Centered Outcomes Research Trust Fund; the Postal Service; the Smithsonian Institution; the Social Security Administration; and the Tennessee Valley Authority.

[b] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[c] Includes R&D performed or administered in foreign countries by the U.S. government.

[d] DOD obligations for which the location of performance is not reported.

Note(s):

Because of rounding, detail may not add to total. Geographic distribution of DOD development funding to businesses reflects location of prime contractors and not the numerous subcontractors who perform much of the R&D. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Alabama	3,966,904	1,969,225	0	1,444,178	499,203	40,455	13,844
Departments							
Department of Agriculture	43,274	8,339	0	455	33,895	0	585
Department of Commerce	4,856	1,255	0	*	3,563	0	0
Department of Defense	3,176,525	1,939,297	0	1,197,377	25,948	13,668	235
Department of Education	691	0	0	0	691	0	0
Department of Energy	19,572	0	0	7,831	11,741	0	0
Department of Health and Human Services	394,510	154	0	6,758	355,859	23,413	8,326
Department of Homeland Security	3,552	0	0	3,552	0	0	0
Department of the Interior	3,404	2,156	0	0	952	0	297
Department of Justice	1,330	0	0	0	1,330	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	8,617	110	0	0	4,107	0	4,400
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	13,224	13,224	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	1,485	0	0	1,374	82	*	0
National Aeronautics and Space Administration	248,161	4,688	0	225,992	15,227	2,255	0
National Science Foundation	46,386	0	0	512	44,784	1,090	0
Nuclear Regulatory Commission	1,000	0	0	0	1,000	0	0
Postal Service	274	0	0	274	0	0	0
Social Security Administration	*	0	0	0	*	0	0
Alaska	322,626	108,294	0	76,522	115,689	13,675	8,446
Departments							
Department of Agriculture	13,789	8,530	0	0	3,171	*	2,048
Department of Commerce	3,917	1,309	0	76	2,109	267	155
Department of Defense	120,996	45,120	0	64,026	9,159	2,691	0
Department of Education	3,800	0	0	0	3,800	0	0
Department of Energy	12,431	0	0	*	12,171	0	240
Department of Health and Human Services	26,400	253	0	2,712	12,978	8,028	2,429
Department of Homeland Security	4,301	0	0	4,301	0	0	0
Department of the Interior	59,818	53,077	0	1,267	2,797	363	2,314
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	4,208	0	0	268	2,680	0	1,260
Department of the Treasury	*	*	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Aeronautics and Space Administration	21,555	0	0	2,748	18,807	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Science Foundation	51,393	0	0	1,090	48,017	2,286	0
Postal Service	*	0	0	*	0	0	0
Arizona	1,663,321	188,312	0	828,090	549,334	84,104	13,481
Departments							
Department of Agriculture	30,869	20,644	0	180	9,425	*	615
Department of Commerce	3,256	0	0	156	3,100	0	0
Department of Defense	907,603	100,703	0	736,032	63,828	761	6,278
Department of Education	3,734	0	0	0	3,734	0	0
Department of Energy	31,859	74	0	11,521	20,257	*	0
Department of Health and Human Services	334,410	7,713	0	18,892	236,317	67,658	3,830
Department of Homeland Security	1,591	0	0	1,591	0	0	0
Department of the Interior	32,107	31,544	0	*	316	*	199
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	12,726	0	0	7,440	2,727	0	2,559
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	7,781	7,781	0	0	0	0	0
Other agencies							
Agency for International Development	750	0	0	0	750	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	50	0	0	50	0	0	0
National Aeronautics and Space Administration	165,309	19,848	0	45,435	85,976	14,050	0
National Science Foundation	131,162	0	0	6,644	122,904	1,614	0
Postal Service	102	0	0	102	0	0	0
Arkansas	300,252	66,170	0	86,351	126,768	11,006	9,956
Departments							
Department of Agriculture	43,053	25,101	0	106	16,352	937	557
Department of Defense	102,354	19,093	0	66,515	15,654	1,092	0
Department of Energy	1,649	0	0	*	1,570	0	79
Department of Health and Human Services	96,223	0	0	14,305	69,764	8,977	3,177
Department of Homeland Security	2,877	0	0	2,877	0	0	0
Department of the Interior	7,394	7,259	0	0	*	0	125
Department of Justice	894	0	0	0	894	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	3,183	0	0	0	1,401	0	1,781
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	14,714	14,714	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Aeronautics and Space Administration	2,256	0	0	931	1,325	0	0
National Science Foundation	25,627	0	0	1,592	19,798	0	4,237
Postal Service	*	0	0	*	0	0	0
California	22,618,185	3,031,984	4,922,483	8,004,585	5,260,830	1,327,279	71,024
Departments							
Department of Agriculture	161,799	93,769	0	4,366	61,961	1,118	586
Department of Commerce	22,060	284	0	2,812	14,234	4,731	0
Department of Defense	10,160,653	2,432,406	682,659	6,336,258	574,215	133,239	1,875
Department of Education	50,464	0	0	6,389	14,376	12,989	16,710
Department of Energy	2,744,902	1,133	2,169,836	355,086	184,476	32,977	1,393
Department of Health and Human Services	5,126,819	0	21,245	521,671	3,506,709	1,045,085	32,109
Department of Homeland Security	35,280	1,142	13,356	16,381	1,949	2,453	0
Department of the Interior	74,760	52,392	250	4,205	15,647	1,266	1,001
Department of Justice	2,258	0	0	0	*	2,218	0
Department of Labor	141	*	0	108	0	0	0
Department of Transportation	49,187	11,236	0	14,674	7,809	1,250	14,217
Department of the Treasury	2,802	*	2,800	0	0	0	0
Department of Veterans Affairs	277,307	277,307	0	0	0	0	0
Other agencies							
Agency for Global Media	250	0	0	250	0	0	0
Agency for International Development	7,000	0	0	0	7,000	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	24,315	0	0	16,694	5,623	1,998	0
National Aeronautics and Space Administration	3,030,644	160,660	2,032,337	659,614	136,389	39,202	2,443
National Science Foundation	842,984	1,054	0	63,417	729,815	48,009	689
Nuclear Regulatory Commission	1,372	562	0	810	0	0	0
Postal Service	1,852	0	0	1,852	0	0	0
Social Security Administration	1,331	0	0	0	586	745	0
Colorado	6,229,985	440,675	562,842	3,864,952	857,333	487,681	16,502
Departments							
Department of Agriculture	61,132	39,700	0	1,400	19,700	155	177
Department of Commerce	218,890	143,831	794	2,167	71,901	197	0
Department of Defense	3,061,893	56,210	4,914	2,934,845	60,918	4,999	*
Department of Education	3,224	0	0	400	1,177	1,646	0
Department of Energy	565,157	423	452,721	60,815	45,551	4,860	787
Department of Health and Human Services	893,045	1,367	0	44,108	409,829	427,272	10,469
Department of Homeland Security	625	218	0	157	250	0	0
Department of the Interior	76,726	68,821	78	1,268	5,673	417	469
Department of Labor	80	*	0	59	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Transportation	26,776	4,201	235	15,113	2,752	0	4,475
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	30,206	30,206	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	9,072	1,265	0	1,579	4,595	1,633	0
National Aeronautics and Space Administration	954,149	93,096	0	791,645	69,409	0	0
National Science Foundation	327,793	1,312	104,100	10,375	165,385	46,502	119
Nuclear Regulatory Commission	89	0	0	0	89	0	0
Postal Service	1,021	0	0	1,021	0	0	0
Social Security Administration	105	0	0	0	105	0	0
Connecticut	2,597,155	122,887	0	1,635,598	782,764	17,317	38,588
Departments							
Department of Agriculture	5,907	1,647	0	0	3,281	0	980
Department of Commerce	11,535	0	0	0	5,940	5,595	0
Department of Defense	1,534,943	73,759	0	1,403,586	54,632	2,965	0
Department of Education	5,233	0	0	*	5,208	0	0
Department of Energy	52,651	0	0	36,598	16,053	0	0
Department of Health and Human Services	696,109	0	0	15,687	635,755	8,248	36,421
Department of Homeland Security	6,376	0	0	6,242	134	0	0
Department of the Interior	1,586	537	0	418	487	0	145
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	12,060	0	0	11,017	0	0	1,043
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	42,005	42,005	0	0	0	0	0
Other agencies							
Agency for International Development	2,000	0	0	0	2,000	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	1,338	0	0	1,301	*	*	0
National Aeronautics and Space Administration	166,819	4,936	0	158,331	3,553	0	0
National Science Foundation	58,317	0	0	2,122	55,695	500	0
Postal Service	257	0	0	257	0	0	0
Delaware	306,913	3,322	5,271	49,600	238,890	7,805	2,024
Departments							
Department of Agriculture	7,679	1,560	0	100	6,019	0	0
Department of Commerce	95,999	0	0	0	95,999	0	0
Department of Defense	48,096	458	5,271	18,013	23,950	403	0
Department of Education	1,624	0	0	0	1,320	0	304

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Energy	31,027	0	0	10,394	20,605	0	*
Department of Health and Human Services	69,359	0	0	15,827	46,669	6,723	139
Department of Homeland Security	917	0	0	917	0	0	0
Department of the Interior	1,632	679	0	0	952	0	0
Department of Justice	625	625	0	0	0	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	1,706	0	0	0	153	0	1,552
Department of the Treasury	*	*	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Aeronautics and Space Administration	7,554	0	0	4,056	3,498	0	0
National Science Foundation	40,648	0	0	256	39,713	679	0
Postal Service	*	0	0	*	0	0	0
Social Security Administration	*	0	0	0	*	0	0
District of Columbia	39,038,621	35,151,327	190,261	898,844	274,356	2,514,296	9,536
Departments							
Department of Agriculture	306,981	302,620	0	127	1,074	2,510	650
Department of Commerce	36,675	29,006	0	6,665	204	802	0
Department of Defense	2,936,657	2,109,668	542	609,602	43,923	172,923	0
Department of Education	7,227	0	0	0	4,020	3,207	0
Department of Energy	709,514	684,835	0	13,916	1,589	8,599	576
Department of Health and Human Services	31,685,313	31,389,685	0	64,057	152,755	73,338	5,478
Department of Homeland Security	51,251	34,582	0	16,115	0	554	0
Department of the Interior	24,984	23,614	0	*	*	1,316	0
Department of Justice	11,313	5,982	0	2,328	195	2,801	*
Department of Labor	1,836	1,817	0	*	0	0	0
Department of Transportation	201,127	86,888	0	88,797	151	22,466	2,825
Department of the Treasury	2,622	2,622	0	0	0	0	0
Department of Veterans Affairs	123,354	123,354	0	0	0	0	0
Other agencies							
Agency for Global Media	3,025	0	0	3,025	0	0	0
Agency for International Development	37,573	4,385	0	14,673	0	18,515	0
Appalachian Regional Commission	56	0	0	0	0	56	0
Consumer Product Safety Commission	169	169	0	0	0	0	0
Environmental Protection Agency	53,096	52,987	109	0	0	0	0
Federal Trade Commission	8,094	8,094	0	0	0	0	0
Library of Congress	2,727	2,727	0	0	0	0	0
National Aeronautics and Space Administration	1,914,949	168,344	0	33,736	26,647	1,686,223	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Science Foundation	329,398	1,795	189,611	34,162	43,543	60,287	0
Nuclear Regulatory Commission	1,552	923	0	628	0	0	0
Patient-Centered Outcomes Research Trust Fund	460,331	0	0	0	0	460,331	0
Postal Service	321	0	0	321	0	0	0
Smithsonian Institution	50,000	50,000	0	0	0	0	0
Social Security Administration	78,479	67,233	0	10,670	207	369	0
Florida	4,094,695	869,515	9,988	1,911,274	1,045,856	236,240	21,823
Departments							
Department of Agriculture	75,532	39,120	0	1,240	30,036	5,135	0
Department of Commerce	24,941	1,633	0	194	20,573	1,192	1,350
Department of Defense	2,574,591	725,989	9,988	1,676,295	115,722	46,347	250
Department of Education	20,556	0	0	200	10,993	0	9,363
Department of Energy	51,406	0	0	8,613	42,791	*	0
Department of Health and Human Services	781,919	234	0	35,450	566,866	179,041	328
Department of Homeland Security	6,353	3,296	0	2,709	348	0	0
Department of the Interior	54,947	45,698	0	1,860	5,534	1,561	294
Department of Justice	2,458	0	0	0	2,458	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	34,982	342	0	18,611	5,791	0	10,238
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	43,157	43,157	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	11,611	9,016	0	716	1,387	493	0
National Aeronautics and Space Administration	187,967	1,021	0	158,324	28,072	550	0
National Science Foundation	223,761	0	0	6,787	215,056	1,917	0
Nuclear Regulatory Commission	205	0	0	0	205	0	0
Postal Service	261	0	0	261	0	0	0
Social Security Administration	*	0	0	0	*	0	0
Georgia	1,653,954	262,298	1,227	183,534	1,133,753	42,809	30,334
Departments							
Department of Agriculture	90,103	51,658	0	99	38,296	0	50
Department of Commerce	4,078	136	0	0	3,942	0	0
Department of Defense	435,233	139,192	1,227	120,598	173,373	844	0
Department of Education	2,480	0	0	0	2,120	246	114
Department of Energy	89,846	0	0	25,148	38,538	26,160	0
Department of Health and Human Services	801,120	22,723	0	19,984	719,953	13,333	25,127
Department of Homeland Security	1,041	*	0	860	140	0	0
Department of the Interior	3,365	2,483	0	*	664	197	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Justice	1,000	0	0	0	1,000	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	13,355	0	0	1,069	7,243	0	5,042
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	38,968	38,968	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	11,564	6,959	0	0	3,398	1,207	0
National Aeronautics and Space Administration	24,224	130	0	5,713	18,381	0	0
National Science Foundation	135,765	0	0	8,667	126,694	404	0
Nuclear Regulatory Commission	418	0	0	0	0	418	0
Postal Service	70	0	0	70	0	0	0
Social Security Administration	1,310	0	0	1,300	*	0	0
Hawaii	485,890	202,246	0	97,776	163,835	19,686	2,348
Departments							
Department of Agriculture	26,553	15,151	0	936	9,669	796	0
Department of Commerce	2,082	1,451	0	84	390	95	62
Department of Defense	304,728	176,409	0	79,829	34,592	13,898	0
Department of Energy	6,986	0	0	5,478	1,508	0	0
Department of Health and Human Services	58,614	0	0	3,129	50,430	4,117	939
Department of Homeland Security	1,440	0	0	1,440	0	0	0
Department of the Interior	6,919	6,863	0	0	0	56	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	1,696	0	0	250	100	0	1,346
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	2,079	2,079	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	638	0	0	638	0	0	0
National Aeronautics and Space Administration	27,148	291	0	4,690	22,167	0	*
National Science Foundation	46,981	0	0	1,280	44,978	724	0
Postal Service	*	0	0	*	0	0	0
Idaho	672,104	47,872	286,824	262,764	62,150	3,851	8,643
Departments							
Department of Agriculture	33,352	21,341	0	0	11,896	0	115
Department of Defense	52,410	15,090	18,737	17,235	1,067	155	125
Department of Education	2,034	0	0	0	0	2,034	0
Department of Energy	508,781	79	258,487	241,627	7,553	240	796

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Health and Human Services	23,681	0	0	1,050	15,141	1,142	6,348
Department of Homeland Security	4,567	0	3,112	1,455	0	0	0
Department of the Interior	10,127	9,428	0	*	665	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	950	0	0	0	0	0	950
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	1,932	1,932	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	319	0	0	319	0	0	0
National Aeronautics and Space Administration	4,201	0	250	756	3,195	0	0
National Science Foundation	23,223	0	0	0	22,633	280	310
Nuclear Regulatory Commission	6,239	0	6,239	0	0	0	0
Postal Service	272	0	0	272	0	0	0
Illinois	3,532,719	227,776	955,130	649,247	1,531,226	160,557	8,783
Departments							
Department of Agriculture	71,489	46,963	0	675	23,675	176	0
Department of Commerce	733	0	0	165	415	153	0
Department of Defense	738,833	118,667	2,241	460,315	150,970	6,640	0
Department of Education	12,290	0	0	400	3,797	7,916	178
Department of Energy	1,180,994	229	945,772	71,757	117,156	46,003	77
Department of Health and Human Services	1,126,582	*	4,228	89,566	946,749	84,354	1,684
Department of Homeland Security	60	0	60	0	0	0	0
Department of the Interior	6,996	6,604	0	277	115	0	0
Department of Justice	6,195	0	0	108	3,878	2,210	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	15,026	*	0	1,452	4,077	2,695	6,795
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	53,327	53,327	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	199	0	0	125	55	*	0
National Aeronautics and Space Administration	35,848	1,969	0	13,060	20,072	746	0
National Science Foundation	280,273	0	0	11,040	259,590	9,593	50
Nuclear Regulatory Commission	3,410	0	2,830	*	503	52	0
Postal Service	210	0	0	210	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Social Security Administration	237	0	0	63	175	0	0
Indiana	1,080,842	192,813	0	176,898	695,567	1,985	13,579
Departments							
Department of Agriculture	33,890	5,836	0	0	27,796	*	211
Department of Commerce	5,301	171	0	0	5,130	0	0
Department of Defense	394,631	151,987	0	136,748	105,012	882	*
Department of Education	1,725	0	0	0	1,725	0	0
Department of Energy	46,830	*	0	13,217	33,606	0	0
Department of Health and Human Services	360,522	0	0	8,313	343,463	706	8,039
Department of Homeland Security	500	0	0	0	500	0	0
Department of the Interior	8,783	7,168	0	0	1,615	0	0
Department of Justice	1,458	0	0	0	1,458	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	6,100	0	0	0	771	0	5,329
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	27,460	27,460	0	0	0	0	0
Other agencies							
Agency for International Development	1,250	0	0	0	1,250	0	0
Appalachian Regional Commission	122	0	0	122	0	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	1,335	0	0	0	985	350	0
National Aeronautics and Space Administration	25,831	180	0	13,154	12,496	0	0
National Science Foundation	164,556	0	0	5,296	159,260	0	0
Nuclear Regulatory Commission	500	0	0	0	500	0	0
Postal Service	*	0	0	*	0	0	0
Iowa	686,259	86,138	30,517	215,567	336,602	1,441	15,995
Departments							
Department of Agriculture	88,787	54,809	0	817	33,061	50	50
Department of Commerce	285	0	0	195	90	0	0
Department of Defense	201,288	1,674	*	179,794	19,651	165	0
Department of Education	858	0	0	0	858	0	0
Department of Energy	65,279	0	30,513	22,291	12,474	0	0
Department of Health and Human Services	227,476	0	0	6,913	209,217	1,226	10,120
Department of Homeland Security	424	0	0	0	424	0	0
Department of the Interior	1,284	984	0	0	300	0	0
Department of Justice	1,456	0	0	0	1,456	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	10,878	0	0	194	4,904	0	5,781
Department of the Treasury	*	*	0	0	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Veterans Affairs	28,551	28,551	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	1,375	0	0	1,375	0	0	0
National Aeronautics and Space Administration	12,197	115	0	951	11,131	0	0
National Science Foundation	46,065	0	0	2,996	43,025	0	*
Postal Service	*	0	0	*	0	0	0
Social Security Administration	*	0	0	0	*	0	0
Kansas	413,888	110,996	0	27,976	269,284	2,751	2,881
Departments							
Department of Agriculture	125,506	103,743	0	1,127	20,471	165	0
Department of Commerce	1,400	0	0	0	1,400	0	0
Department of Defense	76,716	1,978	0	13,565	61,146	*	0
Department of Education	6,053	0	0	0	6,053	0	0
Department of Energy	17,922	0	0	4,204	11,188	1,097	1,432
Department of Health and Human Services	111,953	0	0	1,348	108,851	1,463	290
Department of the Interior	5,549	4,627	0	0	922	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	25,570	*	0	4,442	19,933	0	1,159
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	488	488	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Aeronautics and Space Administration	7,443	117	0	3,071	4,255	0	0
National Science Foundation	34,346	0	0	200	34,146	0	0
Nuclear Regulatory Commission	918	0	0	0	918	0	0
Postal Service	*	0	0	*	0	0	0
Kentucky	542,299	167,701	0	41,637	313,709	7,430	11,822
Departments							
Department of Agriculture	25,200	4,226	0	107	20,539	203	125
Department of Defense	163,425	126,324	0	19,105	16,941	86	969
Department of Education	7,239	0	0	0	483	4,476	2,280
Department of Energy	34,654	28,047	0	2,997	3,491	120	0
Department of Health and Human Services	260,553	0	0	13,405	240,070	1,421	5,656
Department of Homeland Security	*	0	0	*	0	0	0
Department of the Interior	2,222	1,384	0	0	838	0	0
Department of Justice	550	0	0	0	0	550	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	2,829	0	0	*	0	0	2,792

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	7,717	7,717	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	638	0	0	638	0	0	0
National Aeronautics and Space Administration	6,236	0	0	3,340	2,896	0	0
National Science Foundation	31,005	0	0	1,980	28,451	573	0
Postal Service	*	0	0	*	0	0	0
Louisiana	456,813	65,636	0	91,297	266,781	7,721	25,378
Departments							
Department of Agriculture	45,412	32,110	0	100	12,952	0	250
Department of Commerce	2,572	94	0	0	2,263	100	115
Department of Defense	89,377	6,611	0	75,950	5,573	1,243	*
Department of Education	3,956	0	0	0	1,678	2,278	0
Department of Energy	12,517	0	0	3,964	8,424	0	129
Department of Health and Human Services	212,571	2,832	0	2,960	193,048	2,155	11,577
Department of the Interior	20,658	18,050	0	490	862	315	941
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	6,252	0	0	0	2,583	0	3,669
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	5,936	5,936	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	7,912	0	0	6,037	1,383	492	0
National Aeronautics and Space Administration	2,453	0	0	504	1,804	0	145
National Science Foundation	47,175	0	0	1,273	36,211	1,139	8,552
Postal Service	*	0	0	*	0	0	0
Maine	248,866	16,710	2,040	55,631	58,224	108,068	8,193
Departments							
Department of Agriculture	19,700	3,438	0	873	13,808	872	710
Department of Commerce	3,039	0	0	0	2,177	862	0
Department of Defense	24,985	4,196	2,040	15,898	1,885	966	0
Department of Energy	24,797	0	0	9,393	15,276	0	129
Department of Health and Human Services	110,019	0	0	2,070	5,452	97,121	5,377
Department of Homeland Security	24,942	6,966	0	17,664	0	0	312
Department of the Interior	2,493	1,941	0	0	0	0	552
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	5,027	0	0	1,330	2,583	0	1,114
Department of the Treasury	*	*	0	0	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Veterans Affairs	169	169	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	128	0	0	128	0	0	0
National Aeronautics and Space Administration	9,735	0	0	7,365	1,792	578	0
National Science Foundation	23,708	0	0	787	15,252	7,669	0
Nuclear Regulatory Commission	79	0	0	79	0	0	0
Postal Service	*	0	0	*	0	0	0
Maryland	17,564,594	10,740,753	681,970	3,108,944	2,598,098	395,409	39,419
Departments							
Department of Agriculture	204,879	182,061	0	830	21,965	*	0
Department of Commerce	1,163,430	1,101,004	19,914	30,749	11,193	570	0
Department of Defense	5,188,173	2,767,624	5,194	1,335,722	777,786	301,536	310
Department of Education	11,261	0	0	3,470	6,054	1,738	0
Department of Energy	68,236	1,598	0	31,092	15,931	2,211	17,404
Department of Health and Human Services	8,905,780	6,478,470	656,862	540,225	1,131,700	81,767	16,757
Department of Homeland Security	19,383	7,941	0	11,002	440	0	0
Department of the Interior	39,829	37,457	0	1,157	312	523	380
Department of Justice	5,690	4,521	0	1,072	0	0	97
Department of Labor	553	438	0	114	0	0	0
Department of Transportation	43,169	4,827	0	27,214	5,657	1,000	4,471
Department of the Treasury	229	*	0	0	200	0	0
Department of Veterans Affairs	30,393	30,393	0	0	0	0	0
Other agencies							
Agency for International Development	5,125	4,800	0	0	0	325	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	14,497	0	0	10,255	3,130	1,112	0
National Aeronautics and Space Administration	1,474,702	76,515	0	897,962	500,226	0	0
National Science Foundation	339,207	1,932	0	209,549	123,122	4,604	0
Nuclear Regulatory Commission	29,831	28,601	0	847	383	0	0
Postal Service	1,968	0	0	1,968	0	0	0
Smithsonian Institution	12,500	12,500	0	0	0	0	0
Social Security Administration	5,717	0	0	5,717	0	0	0
Massachusetts	9,496,432	550,803	1,872,104	2,950,187	2,002,466	2,110,156	10,716
Departments							
Department of Agriculture	35,674	11,840	0	766	19,777	2,781	510
Department of Commerce	12,927	0	0	1,555	9,146	2,221	*

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Defense	4,370,252	185,663	1,870,776	1,891,852	303,109	118,853	0
Department of Education	16,533	0	0	200	5,440	10,618	275
Department of Energy	203,503	3,756	0	77,962	109,694	9,070	3,021
Department of Health and Human Services	3,879,002	0	0	863,318	1,094,759	1,917,522	3,403
Department of Homeland Security	4,169	0	0	4,169	0	0	0
Department of the Interior	14,580	12,626	0	125	1,472	232	125
Department of Justice	3,413	0	0	1,126	1,287	1,000	0
Department of Labor	88	*	0	68	0	0	0
Department of Transportation	77,293	57,626	1,327	12,351	2,619	0	3,370
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	167,680	167,680	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	19,222	1,265	0	15,259	1,990	707	0
National Aeronautics and Space Administration	191,403	110,325	0	41,897	37,795	1,386	0
National Science Foundation	490,701	0	0	34,323	412,802	43,568	*
Nuclear Regulatory Commission	700	0	0	201	500	0	0
Postal Service	1,175	0	0	1,175	0	0	0
Social Security Administration	8,114	0	0	3,839	2,075	2,200	0
Michigan	2,070,494	323,683	*	445,953	1,211,927	82,665	6,264
Departments							
Department of Agriculture	23,658	2,297	0	769	20,592	0	0
Department of Commerce	4,649	318	0	0	4,331	0	0
Department of Defense	731,517	255,301	*	365,421	89,084	21,709	0
Department of Education	4,338	0	0	200	4,138	0	0
Department of Energy	141,900	0	0	27,467	114,433	0	0
Department of Health and Human Services	860,970	211	0	33,218	766,108	59,927	1,506
Department of Homeland Security	388	0	0	*	375	0	0
Department of the Interior	10,325	10,272	0	0	53	0	0
Department of Justice	1,554	0	0	0	1,554	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	16,302	*	0	6,452	5,055	0	4,759
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	44,731	44,731	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	5,489	0	0	1,562	2,898	1,030	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Aeronautics and Space Administration	35,330	10,512	0	5,097	19,721	0	0
National Science Foundation	187,511	0	0	5,658	181,853	0	0
Nuclear Regulatory Commission	873	0	0	0	873	0	0
Postal Service	89	0	0	89	0	0	0
Social Security Administration	860	0	0	0	860	0	0
Minnesota	1,144,953	85,358	0	215,833	497,754	317,338	28,671
Departments							
Department of Agriculture	52,246	21,861	0	196	29,794	0	396
Department of Commerce	1,659	0	0	81	1,578	0	0
Department of Defense	226,938	18,871	0	140,992	29,822	37,253	0
Department of Education	4,920	0	0	0	3,707	1,213	0
Department of Energy	35,118	0	0	10,736	24,382	0	0
Department of Health and Human Services	684,210	0	0	52,468	335,100	276,181	20,461
Department of the Interior	9,677	5,492	0	0	3,925	0	259
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	10,363	0	0	2,807	0	0	7,555
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	28,073	28,073	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	9,876	9,807	0	*	*	*	0
National Aeronautics and Space Administration	11,432	1,250	0	4,524	5,658	0	0
National Science Foundation	70,339	0	0	3,897	63,760	2,682	0
Nuclear Regulatory Commission	*	0	0	*	0	0	0
Postal Service	83	0	0	83	0	0	0
Mississippi	454,921	234,025	0	37,985	175,437	4,825	2,650
Departments							
Department of Agriculture	126,617	83,371	0	320	37,869	4,575	482
Department of Commerce	13,643	610	0	0	12,856	50	127
Department of Defense	126,351	77,954	0	23,991	24,247	158	0
Department of Education	446	0	0	0	446	0	0
Department of Energy	6,060	320	0	0	5,740	0	0
Department of Health and Human Services	66,984	0	0	0	65,640	*	1,303
Department of Homeland Security	1,971	0	0	1,971	0	0	0
Department of the Interior	4,084	3,245	0	0	714	0	125
Department of Justice	597	0	0	0	597	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	6,320	*	0	0	5,684	0	612
Department of the Treasury	*	*	0	0	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Veterans Affairs	906	906	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Aeronautics and Space Administration	79,345	67,466	0	11,449	430	0	0
National Science Foundation	21,452	0	0	237	21,215	0	0
Nuclear Regulatory Commission	120	120	0	0	0	0	0
Postal Service	*	0	0	*	0	0	0
Missouri	2,058,775	160,622	0	953,196	884,718	46,466	13,773
Departments							
Department of Agriculture	69,317	40,077	0	906	27,151	1,183	0
Department of Commerce	1,599	1,563	0	*	0	0	0
Department of Defense	976,576	71,133	0	835,977	56,289	13,177	0
Department of Education	8,388	0	0	0	8,388	0	0
Department of Energy	71,427	0	0	50,050	16,702	4,675	0
Department of Health and Human Services	774,776	0	0	31,016	717,610	16,900	9,250
Department of Homeland Security	5,590	4,540	0	0	1,050	0	0
Department of the Interior	24,489	22,404	0	270	1,746	69	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	16,088	50	0	9,492	2,023	0	4,522
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	20,608	20,608	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	1,104	0	0	0	814	289	0
National Aeronautics and Space Administration	34,294	242	0	22,849	11,203	0	0
National Science Foundation	54,378	0	0	2,463	41,743	10,172	0
Postal Service	130	0	0	130	0	0	0
Montana	287,208	77,990	0	29,151	167,255	2,786	10,026
Departments							
Department of Agriculture	30,990	14,279	0	*	16,596	90	0
Department of Commerce	200	0	0	0	200	0	0
Department of Defense	77,430	3,309	0	9,587	64,316	219	0
Department of Education	151	0	0	0	0	0	151
Department of Energy	13,961	0	0	8,569	5,392	0	0
Department of Health and Human Services	95,072	40,784	0	6,492	39,979	1,993	5,824
Department of Homeland Security	2,180	0	0	0	0	0	2,180
Department of the Interior	21,084	19,613	0	0	1,033	50	388
Department of Labor	*	*	0	*	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Transportation	2,957	0	0	73	1,401	0	1,484
Department of the Treasury	*	*	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	*	0	0	0	*	*	0
National Aeronautics and Space Administration	10,813	0	0	3,871	6,941	*	0
National Science Foundation	32,305	0	0	511	31,370	424	0
Postal Service	*	0	0	*	0	0	0
Nebraska	302,638	46,772	0	20,523	213,769	18,757	2,816
Departments							
Department of Agriculture	54,401	32,053	0	738	14,580	7,030	0
Department of Commerce	300	0	0	0	300	0	0
Department of Defense	42,448	3,524	0	16,690	20,413	1,820	0
Department of Education	2,713	0	0	0	2,713	0	0
Department of Energy	7,029	0	0	207	6,810	*	0
Department of Health and Human Services	134,263	0	0	1,606	122,219	9,849	590
Department of Homeland Security	7,708	0	0	0	7,708	0	0
Department of the Interior	1,162	500	0	164	498	0	0
Department of Justice	3,171	0	0	0	3,171	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	5,006	0	0	197	2,583	0	2,226
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	10,690	10,690	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Aeronautics and Space Administration	1,081	*	0	918	162	0	0
National Science Foundation	32,660	0	0	0	32,613	*	0
Postal Service	*	0	0	*	0	0	0
Nevada	551,831	50,478	0	391,891	97,367	4,874	7,220
Departments							
Department of Agriculture	5,914	2,717	0	80	3,110	*	0
Department of Commerce	145	0	0	0	145	0	0
Department of Defense	209,532	4,914	0	195,490	9,127	0	0
Department of Energy	195,367	903	0	176,306	18,158	0	0
Department of Health and Human Services	44,434	0	0	2,229	34,323	2,098	5,784
Department of Homeland Security	222	0	0	222	0	0	0
Department of the Interior	10,496	9,688	0	0	758	0	50
Department of Justice	2,568	0	0	0	568	2,000	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	2,787	0	0	0	1,401	0	1,386

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	1,059	1,059	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	1,884	0	0	0	1,390	494	0
National Aeronautics and Space Administration	51,394	31,193	0	17,333	2,867	0	0
National Science Foundation	25,296	0	0	0	25,020	276	0
Nuclear Regulatory Commission	500	0	0	0	500	0	0
Postal Service	218	0	0	218	0	0	0
New Hampshire	522,631	19,404	0	279,670	212,380	9,988	1,189
Departments							
Department of Agriculture	10,249	4,626	0	650	4,924	*	0
Department of Commerce	12,694	581	0	*	11,798	311	0
Department of Defense	272,965	7,224	0	254,749	9,788	1,204	0
Department of Energy	18,027	76	0	1,564	16,251	0	136
Department of Health and Human Services	112,832	0	0	14,877	89,464	8,254	237
Department of Homeland Security	319	0	0	319	0	0	0
Department of the Interior	2,379	2,010	0	*	227	0	118
Department of Justice	1,491	0	0	0	1,491	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	823	*	0	95	0	0	697
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	161	161	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Aeronautics and Space Administration	65,094	4,695	0	6,294	54,106	0	0
National Science Foundation	25,494	0	0	1,064	24,260	171	0
Postal Service	*	0	0	*	0	0	0
Social Security Administration	71	0	0	0	71	0	0
New Jersey	3,398,171	1,057,007	126,515	1,591,296	554,091	47,339	21,924
Departments							
Department of Agriculture	12,912	103	0	849	10,676	1,283	0
Department of Commerce	12,261	120	0	*	12,102	0	*
Department of Defense	1,725,542	1,042,484	0	611,546	65,419	6,094	0
Department of Education	14,836	0	0	9,925	3,698	1,212	0
Department of Energy	164,780	0	126,515	15,616	22,115	535	0
Department of Health and Human Services	1,209,077	0	0	896,725	262,056	33,787	16,510
Department of Homeland Security	4,648	0	0	4,648	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of the Interior	2,973	1,829	0	568	399	0	176
Department of Justice	1,866	0	0	0	1,866	0	0
Department of Labor	64	*	0	63	0	0	0
Department of Transportation	29,355	*	0	20,139	3,979	0	5,228
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	7,299	7,299	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	4,245	2,214	0	1,919	82	*	0
National Aeronautics and Space Administration	41,788	2,947	0	18,634	20,101	106	0
National Science Foundation	161,698	0	0	5,809	151,597	4,292	0
Postal Service	1,087	0	0	1,087	0	0	0
Social Security Administration	3,739	0	0	3,739	0	0	0
New Mexico	3,881,144	1,024,942	1,979,499	641,103	199,407	32,440	3,752
Departments							
Department of Agriculture	13,970	6,056	0	100	6,994	821	0
Department of Commerce	988	895	0	76	0	*	0
Department of Defense	1,665,889	767,357	279,956	572,741	35,220	10,615	0
Department of Energy	1,893,207	196,394	1,669,626	12,600	10,936	2,484	1,167
Department of Health and Human Services	121,642	0	7,116	4,479	95,463	13,940	644
Department of Homeland Security	27,722	19,615	1,420	6,687	0	0	0
Department of the Interior	7,030	4,408	0	413	2,078	131	0
Department of Justice	1,489	0	0	635	854	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	10,525	0	0	8,257	1,452	0	816
Department of the Treasury	2,251	*	2,250	0	0	0	0
Department of Veterans Affairs	25,055	25,055	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Aeronautics and Space Administration	55,255	4,055	12,680	32,250	5,907	110	254
National Science Foundation	49,078	593	0	2,785	40,504	4,323	872
Nuclear Regulatory Commission	6,949	498	6,451	0	0	0	0
Postal Service	75	0	0	75	0	0	0
New York	6,830,934	222,856	517,967	1,699,512	3,735,477	506,968	148,154
Departments							
Department of Agriculture	71,981	26,064	0	778	40,829	4,311	0
Department of Commerce	5,846	0	0	*	5,781	*	0
Department of Defense	1,169,060	123,797	5,210	784,174	186,744	68,832	302
Department of Education	17,796	0	0	2,200	9,306	6,290	0
Department of Energy	1,205,300	*	502,447	607,092	86,127	6,992	2,605

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Health and Human Services	3,667,592	78	3,600	157,869	2,972,576	399,890	133,579
Department of Homeland Security	1,273	0	524	436	313	0	0
Department of the Interior	11,598	9,778	0	*	1,398	0	418
Department of Justice	1,287	0	0	500	632	50	106
Department of Labor	65	*	0	59	0	0	0
Department of Transportation	12,002	*	0	2,223	1,817	0	7,941
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	59,649	59,649	0	0	0	0	0
Other agencies							
Agency for Global Media	725	0	0	725	0	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	5,668	0	0	4,149	1,120	398	0
National Aeronautics and Space Administration	167,974	3,425	6,186	115,456	40,857	1,750	300
National Science Foundation	431,943	0	0	22,802	387,978	18,260	2,904
Nuclear Regulatory Commission	*	0	0	*	0	0	0
Postal Service	1,016	0	0	1,016	0	0	0
Social Security Administration	150	0	0	0	0	150	0
North Carolina	3,620,371	383,630	0	940,096	1,824,120	447,051	25,473
Departments							
Department of Agriculture	70,191	22,881	0	294	46,066	211	739
Department of Commerce	18,915	5,318	0	7,693	3,938	1,967	0
Department of Defense	345,047	21,827	0	179,390	116,165	27,666	0
Department of Education	18,408	0	0	370	16,141	1,897	0
Department of Energy	60,497	215	0	13,398	38,410	8,216	258
Department of Health and Human Services	2,675,524	182,557	0	681,475	1,404,069	389,865	17,557
Department of Homeland Security	12,610	0	0	7,393	5,217	0	0
Department of the Interior	11,263	10,287	0	71	686	0	219
Department of Justice	15,334	0	0	0	452	14,882	0
Department of Labor	69	*	0	*	0	0	0
Department of Transportation	14,711	0	0	180	7,831	0	6,700
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	35,339	35,339	0	0	0	0	0
Other agencies							
Agency for International Development	500	0	0	0	500	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	143,524	105,183	0	32,611	4,228	1,502	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Aeronautics and Space Administration	10,516	0	0	5,987	4,106	423	0
National Science Foundation	186,555	0	0	10,341	175,792	422	0
Nuclear Regulatory Commission	520	0	0	0	520	0	0
Postal Service	846	0	0	846	0	0	0
North Dakota	168,097	41,749	0	21,237	94,334	3,349	7,428
Departments							
Department of Agriculture	54,012	38,976	0	0	14,927	0	110
Department of Defense	23,933	0	0	19,218	4,681	*	0
Department of Energy	21,132	0	0	455	20,677	0	0
Department of Health and Human Services	35,556	0	0	0	26,038	3,121	6,398
Department of the Interior	2,781	2,656	0	0	125	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	8,021	*	0	1,560	5,531	0	920
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	106	106	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	742	0	0	*	546	194	0
National Aeronautics and Space Administration	350	0	0	0	350	0	0
National Science Foundation	21,459	0	0	0	21,459	0	0
Postal Service	*	0	0	*	0	0	0
Ohio	3,856,489	1,107,733	26,812	1,344,147	1,028,125	328,821	20,850
Departments							
Department of Agriculture	40,141	12,199	0	743	26,801	233	165
Department of Commerce	1,977	269	0	100	1,495	114	0
Department of Defense	2,333,320	975,374	22,357	1,085,033	178,302	72,110	144
Department of Education	5,368	0	0	0	4,334	709	324
Department of Energy	112,551	796	4,369	40,426	51,222	15,738	0
Department of Health and Human Services	970,242	10,161	0	75,461	639,470	234,202	10,949
Department of Homeland Security	16,506	1,428	0	15,078	0	0	0
Department of the Interior	9,513	8,476	0	420	320	0	297
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	34,870	738	86	18,026	4,098	2,951	8,971
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	41,115	41,115	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	151	*	0	0	150	0	0
Environmental Protection Agency	80,645	50,140	0	28,875	1,203	427	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Aeronautics and Space Administration	89,083	7,031	0	72,940	8,564	549	0
National Science Foundation	119,812	0	0	6,002	112,022	1,788	0
Nuclear Regulatory Commission	738	0	0	738	0	0	0
Postal Service	289	0	0	289	0	0	0
Social Security Administration	143	0	0	0	143	0	0
Oklahoma	1,505,105	1,139,039	0	120,656	198,277	41,334	5,799
Departments							
Department of Agriculture	38,190	13,901	0	815	23,324	0	150
Department of Commerce	13,823	135	0	*	13,675	0	0
Department of Defense	1,153,268	1,051,272	0	89,888	11,792	315	0
Department of Education	438	0	0	0	438	0	0
Department of Energy	23,561	0	0	7,441	10,420	5,360	339
Department of Health and Human Services	131,644	0	0	7,425	86,440	35,423	2,356
Department of Homeland Security	1,239	0	0	1,239	0	0	0
Department of the Interior	57,518	56,607	0	*	815	0	82
Department of Justice	196	0	0	0	196	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	12,695	2,212	0	7,696	330	0	2,458
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	8,740	8,740	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	9,812	6,010	0	3,622	132	*	0
National Aeronautics and Space Administration	18,306	155	0	1,416	16,547	188	0
National Science Foundation	35,633	0	0	1,050	34,169	0	415
Postal Service	*	0	0	*	0	0	0
Oregon	1,069,952	286,944	1,782	95,666	654,140	23,369	8,051
Departments							
Department of Agriculture	85,423	50,670	0	210	34,240	279	*
Department of Commerce	6,234	51	0	51	6,132	0	0
Department of Defense	287,381	131,182	1,782	37,226	116,828	364	0
Department of Education	11,992	0	0	1,913	6,580	3,132	367
Department of Energy	37,596	0	0	18,157	19,331	*	108
Department of Health and Human Services	430,975	24,741	0	25,776	362,085	17,292	1,081
Department of Homeland Security	499	0	0	0	499	0	0
Department of the Interior	19,346	17,739	0	0	288	*	1,304
Department of Justice	496	0	0	0	496	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	10,257	*	0	449	4,884	0	4,897
Department of the Treasury	*	*	0	0	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Veterans Affairs	52,559	52,559	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	11,714	9,965	0	937	600	213	0
National Aeronautics and Space Administration	11,128	0	0	4,907	6,220	*	0
National Science Foundation	103,283	0	0	5,481	95,457	2,073	272
Nuclear Regulatory Commission	990	0	0	490	500	0	0
Postal Service	65	0	0	65	0	0	0
Pennsylvania	4,544,785	441,516	64,174	1,355,538	2,323,389	341,498	18,671
Departments							
Department of Agriculture	75,612	47,395	0	100	26,285	1,792	*
Department of Commerce	4,881	0	0	288	4,512	81	0
Department of Defense	1,295,879	297,728	64,174	632,386	276,965	24,625	*
Department of Education	11,892	0	0	564	9,141	1,670	516
Department of Energy	483,529	28,165	0	374,125	78,001	3,216	*
Department of Health and Human Services	2,115,090	8,444	0	188,152	1,607,468	304,226	6,799
Department of Homeland Security	11,475	0	0	11,216	259	0	0
Department of the Interior	10,817	8,546	0	400	1,524	144	203
Department of Justice	5,367	0	0	0	3,367	2,000	0
Department of Labor	54	*	0	*	0	0	0
Department of Transportation	29,929	*	0	5,475	11,622	1,712	11,090
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	48,315	48,315	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	7,229	0	0	7,164	*	*	0
National Aeronautics and Space Administration	154,459	2,884	0	128,048	23,486	*	0
National Science Foundation	288,754	0	0	6,205	280,574	1,974	0
Nuclear Regulatory Commission	675	0	0	565	110	0	0
Postal Service	802	0	0	802	0	0	0
Social Security Administration	*	0	0	0	*	0	0
Rhode Island	866,046	272,948	3,253	189,776	304,079	85,630	10,360
Departments							
Department of Agriculture	4,225	*	0	650	3,533	*	0
Department of Commerce	20,834	0	0	0	20,834	0	0
Department of Defense	479,218	242,361	3,253	178,709	53,956	939	0
Department of Education	1,414	0	0	0	1,414	0	0
Department of Energy	7,931	0	0	1,151	5,288	0	1,493

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Health and Human Services	257,603	0	0	5,960	161,031	83,144	7,469
Department of Homeland Security	*	0	0	*	0	0	0
Department of the Interior	*	*	0	0	0	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	1,443	0	0	*	0	0	1,398
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	20,881	20,881	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	9,648	9,648	0	0	0	0	0
National Aeronautics and Space Administration	6,930	0	0	2,933	3,997	0	0
National Science Foundation	55,839	0	0	275	54,027	1,538	0
Postal Service	*	0	0	*	0	0	0
South Carolina	1,434,459	147,877	58,903	627,813	347,098	235,479	17,289
Departments							
Department of Agriculture	33,758	15,062	0	849	14,552	3,295	0
Department of Commerce	15,233	13,106	0	0	1,442	0	684
Department of Defense	973,769	81,262	11,383	595,925	57,119	228,081	0
Department of Education	10,823	0	0	0	4,022	0	6,802
Department of Energy	63,484	459	47,038	5,363	10,495	0	129
Department of Health and Human Services	240,764	0	0	20,413	211,850	2,144	6,357
Department of Homeland Security	3,169	0	482	2,687	0	0	0
Department of the Interior	1,575	842	0	*	573	0	155
Department of Justice	1,250	0	0	0	1,250	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	5,401	0	0	1,121	1,119	0	3,162
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	36,798	36,798	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	281	0	0	281	0	0	0
National Aeronautics and Space Administration	3,833	0	0	347	3,486	0	0
National Science Foundation	44,279	344	0	786	41,190	1,959	0
Postal Service	*	0	0	*	0	0	0
South Dakota	132,148	23,548	0	24,564	37,755	14,181	32,100
Departments							
Department of Agriculture	12,933	3,099	0	200	9,533	0	100
Department of Defense	36,027	9,919	0	18,961	6,418	729	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Energy	23,598	104	0	294	417	0	22,783
Department of Health and Human Services	29,261	0	0	1,386	11,459	9,277	7,139
Department of Homeland Security	1,620	0	0	1,620	0	0	0
Department of the Interior	114	*	0	0	99	0	0
Department of Justice	150	0	0	0	150	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	2,078	0	0	0	0	0	2,078
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	579	579	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	74	0	0	0	55	*	0
National Aeronautics and Space Administration	12,800	9,831	0	1,790	1,179	0	0
National Science Foundation	12,906	0	0	306	8,445	4,155	0
Postal Service	*	0	0	*	0	0	0
Tennessee	3,461,773	1,124,264	1,160,050	337,386	360,163	468,898	11,010
Departments							
Department of Agriculture	34,754	12,737	0	0	21,442	0	574
Department of Commerce	330	0	0	0	330	0	0
Department of Defense	847,842	644,976	30,646	133,238	30,330	8,652	0
Department of Education	9,203	0	0	900	4,241	3,800	262
Department of Energy	1,304,514	12,440	1,123,770	127,883	34,223	1,528	4,670
Department of Health and Human Services	668,456	460	616	20,874	200,165	445,640	702
Department of Homeland Security	4,691	425	685	1,820	1,761	0	0
Department of the Interior	9,256	8,530	80	50	425	0	172
Department of Justice	406	0	0	0	406	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	6,556	0	975	850	100	0	4,631
Department of the Treasury	1,002	*	1,000	0	0	0	0
Department of Veterans Affairs	38,667	38,667	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	23,133	0	0	23,133	0	0	0
National Aeronautics and Space Administration	422,009	399,747	0	15,444	6,818	0	0
National Science Foundation	65,731	750	0	3,295	59,912	1,774	0
Nuclear Regulatory Commission	8,001	5,503	2,279	0	0	219	0
Postal Service	228	0	0	228	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Social Security Administration	*	0	0	0	*	0	0
Tennessee Valley Authority	16,942	0	0	9,657	0	7,285	0
Texas	6,131,234	900,062	65,396	2,563,779	2,364,744	174,043	63,210
Departments							
Department of Agriculture	138,506	49,931	0	1,274	85,539	1,662	100
Department of Commerce	11,511	0	0	154	10,163	1,194	0
Department of Defense	2,534,815	276,770	64,555	1,904,298	249,005	40,188	0
Department of Education	24,646	0	0	67	17,197	2,222	5,160
Department of Energy	127,314	*	0	40,612	83,211	1,954	1,536
Department of Health and Human Services	1,728,086	0	0	153,837	1,483,318	56,393	34,539
Department of Homeland Security	13,562	0	0	11,753	1,809	0	0
Department of the Interior	25,587	13,255	0	3,150	6,364	1,350	1,469
Department of Justice	3,311	0	0	0	3,007	0	303
Department of Labor	77	*	0	*	0	0	0
Department of Transportation	30,545	0	0	3,015	5,107	2,346	20,076
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	54,860	54,860	0	0	0	0	0
Other agencies							
Appalachian Regional Commission	*	0	0	0	*	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	2,886	0	0	2,886	0	0	0
National Aeronautics and Space Administration	1,055,227	505,205	0	436,014	49,565	64,416	*
National Science Foundation	377,760	0	0	5,945	369,498	2,318	0
Nuclear Regulatory Commission	1,791	0	841	0	950	0	0
Postal Service	731	0	0	731	0	0	0
Social Security Administration	*	0	0	0	*	0	0
Utah	2,439,690	208,741	206,351	1,484,197	523,742	11,761	4,897
Departments							
Department of Agriculture	31,998	22,992	0	250	8,656	0	100
Department of Commerce	827	0	0	234	454	0	139
Department of Defense	1,640,157	125,921	0	1,429,880	78,600	5,756	0
Department of Education	900	0	0	900	0	0	0
Department of Energy	259,865	0	206,351	21,659	31,805	50	0
Department of Health and Human Services	259,133	0	0	14,583	240,540	2,876	1,134
Department of the Interior	12,347	10,471	0	*	669	276	907
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	4,044	360	0	1,773	0	0	1,911
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	48,948	48,948	0	0	0	0	0
Other agencies							

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Agency for Global Media	100	0	0	100	0	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	*	0	0	0	*	*	0
National Aeronautics and Space Administration	32,983	*	0	6,169	26,770	0	0
National Science Foundation	148,282	0	0	8,562	136,220	2,793	706
Postal Service	60	0	0	60	0	0	0
Vermont	244,489	14,305	0	58,473	162,040	127	9,543
Departments							
Department of Agriculture	28,964	5,454	0	0	23,509	0	0
Department of Commerce	811	0	0	0	811	0	0
Department of Defense	34,521	621	0	30,877	2,896	127	0
Department of Education	101	0	0	0	101	0	0
Department of Energy	21,233	0	0	14,456	6,777	0	0
Department of Health and Human Services	78,242	0	0	10,886	59,276	0	8,080
Department of the Interior	2,109	1,186	0	0	825	0	98
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	1,379	0	0	0	*	0	1,366
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	7,043	7,043	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	721	0	0	721	0	0	0
National Aeronautics and Space Administration	359	0	0	183	176	0	0
National Science Foundation	68,973	0	0	1,317	67,655	0	0
Postal Service	*	0	0	*	0	0	0
Virginia	9,740,743	2,066,103	580,235	6,385,232	490,072	208,268	10,833
Departments							
Department of Agriculture	26,478	951	0	0	18,901	6,027	600
Department of Commerce	18,836	5,939	0	4,847	7,420	196	433
Department of Defense	7,734,839	1,879,983	385,685	5,331,462	71,506	64,400	1,802
Department of Education	42,486	0	0	311	6,584	35,282	309
Department of Energy	84,086	1,531	0	63,360	16,499	2,696	0
Department of Health and Human Services	555,748	437	13,819	164,006	324,863	52,381	242
Department of Homeland Security	2,415	0	0	2,415	0	0	0
Department of the Interior	99,214	96,710	0	1,560	63	206	675
Department of Justice	4,337	286	0	767	1,150	2,135	0
Department of Labor	78	*	0	68	0	0	0
Department of Transportation	247,841	7,152	84,594	117,306	11,085	20,932	6,772
Department of the Treasury	28,224	*	2,550	25,673	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Veterans Affairs	108,306	19,081	89,225	0	0	0	0
Other agencies							
Administrative Office of the U.S. Courts	4,362	0	4,362	0	0	0	0
Agency for Global Media	497	0	0	497	0	0	0
Agency for International Development	3,550	0	0	0	3,550	0	0
Appalachian Regional Commission	358	0	0	250	0	108	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	35,592	0	0	34,789	592	210	0
National Aeronautics and Space Administration	725,709	53,968	0	631,310	16,928	23,503	0
National Science Foundation	9,756	0	0	275	9,288	192	0
Nuclear Regulatory Commission	3,665	0	0	2,165	1,499	0	0
Postal Service	1,169	0	0	1,169	0	0	0
Social Security Administration	3,196	54	0	3,000	143	0	0
Washington	3,735,831	365,155	470,081	1,105,503	912,140	828,150	54,801
Departments							
Department of Agriculture	69,299	35,371	0	67	32,758	1,090	*
Department of Commerce	19,713	1,293	0	282	18,133	*	0
Department of Defense	1,166,173	143,794	19,342	902,996	63,241	36,800	0
Department of Education	7,847	0	0	1,800	3,082	684	2,280
Department of Energy	453,418	3,760	367,343	46,308	29,965	5,377	666
Department of Health and Human Services	1,487,532	1,644	21,380	61,130	589,885	768,242	45,251
Department of Homeland Security	222,280	101,974	51,464	50,034	12,745	5,491	572
Department of the Interior	21,316	16,985	0	424	3,462	0	445
Department of Justice	919	0	0	0	769	0	150
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	12,423	504	0	259	6,233	0	5,426
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	58,260	58,260	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	5,940	0	0	1,915	2,970	1,055	0
National Aeronautics and Space Administration	52,393	1,405	0	33,336	16,972	679	0
National Science Foundation	152,255	150	4,740	6,714	131,925	8,726	0
Nuclear Regulatory Commission	5,812	0	5,812	0	0	0	0
Postal Service	225	0	0	225	0	0	0
West Virginia	199,238	43,454	0	43,846	85,262	14,850	11,826

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Departments							
Department of Agriculture	34,213	25,807	0	0	8,367	0	*
Department of Defense	29,565	374	0	28,262	835	94	0
Department of Energy	40,607	0	0	12,015	25,030	3,509	54
Department of Health and Human Services	67,786	10,593	0	1,848	46,245	0	9,100
Department of Homeland Security	396	0	0	396	0	0	0
Department of the Interior	5,543	4,825	0	0	453	0	265
Department of Justice	327	0	0	0	327	0	0
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	2,088	0	0	74	400	0	1,614
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	1,093	1,093	0	0	0	0	0
Other agencies							
Appalachian Regional Commission	111	0	0	0	111	0	0
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	*	0	0	0	*	*	0
National Aeronautics and Space Administration	4,444	760	0	831	2,853	0	0
National Science Foundation	12,880	0	0	276	613	11,237	754
Nuclear Regulatory Commission	127	0	0	127	0	0	0
Postal Service	*	0	0	*	0	0	0
Wisconsin	989,462	63,909	0	122,281	744,515	46,037	12,720
Departments							
Department of Agriculture	63,504	39,466	0	0	23,221	817	0
Department of Commerce	1,303	98	0	78	1,127	0	0
Department of Defense	140,754	10,504	0	76,076	52,014	2,160	0
Department of Energy	78,110	*	0	12,008	63,588	1,075	1,406
Department of Health and Human Services	560,784	0	0	21,927	488,765	41,674	8,418
Department of Homeland Security	9,722	0	0	9,222	500	0	0
Department of the Interior	14,020	13,375	0	50	259	0	336
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	3,048	*	0	*	444	0	2,560
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	403	403	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	1,186	0	0	0	875	311	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Aeronautics and Space Administration	14,892	0	0	239	14,653	0	0
National Science Foundation	101,705	0	0	2,635	99,070	0	0
Postal Service	*	0	0	*	0	0	0
Wyoming	196,837	49,421	5,170	71,013	65,688	2,155	3,390
Departments							
Department of Agriculture	4,443	0	0	724	3,597	122	0
Department of Commerce	428	0	0	0	250	0	178
Department of Defense	94,807	2,460	5,170	68,622	18,071	484	0
Department of Energy	14,884	0	0	336	14,548	0	0
Department of Health and Human Services	35,665	21,234	0	233	12,517	1,529	152
Department of the Interior	26,644	25,723	0	89	557	*	255
Department of Labor	*	*	0	*	0	0	0
Department of Transportation	2,805	0	0	0	0	0	2,805
Department of the Treasury	*	*	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
National Science Foundation	17,155	0	0	1,007	16,149	0	0
Postal Service	*	0	0	*	0	0	0
Outlying areas	228,980	39,463	0	48,315	109,160	24,042	7,999
Departments							
Department of Agriculture	20,962	4,994	0	66	15,902	0	0
Department of Commerce	3,918	0	0	253	3,665	0	0
Department of Defense	82,737	9,325	0	45,610	4,014	23,788	0
Department of Education	3,574	0	0	900	2,674	0	0
Department of Energy	545	0	0	275	250	0	*
Department of Health and Human Services	56,319	2,429	0	1,134	50,059	247	2,450
Department of the Interior	6,651	964	0	0	157	0	5,529
Department of Justice	310	0	0	0	310	0	0
Department of Labor	*	*	0	*	0	0	0
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	21,747	21,747	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	*	0	0	0	*	*	0
National Science Foundation	29,895	0	0	50	29,845	0	0
Nuclear Regulatory Commission	625	0	0	0	625	0	0
Postal Service	*	0	0	*	0	0	0
Social Security Administration	1,637	0	0	0	1,637	0	0
Puerto Rico	120,136	29,058	0	3,528	84,957	*	2,586
Departments							
Department of Agriculture	13,038	4,873	0	66	8,099	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Commerce	3,918	0	0	253	3,665	0	0
Department of Defense	4,768	1,473	0	1,098	2,197	0	0
Department of Education	3,574	0	0	900	2,674	0	0
Department of Energy	250	0	0	0	250	0	0
Department of Health and Human Services	51,453	0	0	1,134	48,070	0	2,249
Department of the Interior	1,455	961	0	0	157	0	336
Department of Justice	310	0	0	0	310	0	0
Department of Labor	*	*	0	*	0	0	0
Department of the Treasury	*	*	0	0	0	0	0
Department of Veterans Affairs	21,747	21,747	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0
Environmental Protection Agency	*	0	0	0	*	*	0
National Science Foundation	17,301	0	0	50	17,251	0	0
Nuclear Regulatory Commission	625	0	0	0	625	0	0
Postal Service	*	0	0	*	0	0	0
Social Security Administration	1,637	0	0	0	1,637	0	0
Other areas[c]	108,844	10,405	0	44,788	24,203	24,035	5,413
Departments							
Department of Agriculture	7,924	121	0	0	7,803	0	0
Department of Defense	77,969	7,852	0	44,512	1,817	23,788	0
Department of Energy	295	0	0	275	0	0	*
Department of Health and Human Services	4,865	2,429	0	0	1,989	247	201
Department of the Interior	5,196	*	0	0	0	0	5,193
Department of Labor	*	*	0	*	0	0	0
Other agencies							
National Science Foundation	12,594	0	0	0	12,594	0	0
Postal Service	*	0	0	*	0	0	0
Offices abroad[d]	179,044	106,203	0	66,029	5,294	1,358	159
Departments							
Department of Agriculture	477	352	0	0	*	0	125
Department of Commerce	300	0	0	0	300	0	0
Department of Defense	111,237	41,846	0	65,904	3,242	245	0
Department of Health and Human Services	2,173	0	0	0	1,026	1,113	*
Department of the Interior	125	0	0	0	125	0	0
Department of Labor	*	*	0	*	0	0	0
Department of State	64,000	64,000	0	0	0	0	0
Department of the Treasury	*	*	0	0	0	0	0
Other agencies							
Consumer Product Safety Commission	*	*	0	0	0	0	0

TABLE 61

Federal obligations for research and experimental development, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
				United States and U.S. territories			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
National Aeronautics and Space Administration	726	0	0	125	601	0	0
Postal Service	*	0	0	*	0	0	0
Undistributed[e]	5,176,678	4,912,358	4,544	251,431	0	8,344	0
Departments							
Department of Defense	5,176,678	4,912,358	4,544	251,431	0	8,344	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from non-federal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, as well as actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

[c] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[d] Includes R&D performed or administered in foreign countries by the U.S. government.

[e] Undistributed totals include Department of Defense obligations for which the location of performance is not reported.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 62

Federal obligations for R&D plant, by state or location and agency: FY 2021

(Dollars in thousands)

State or location	Total	DHS	DOC	DOD	DOE	DOI	DOT	EPA	HHS	NASA	NSF	USDA
All locations	4,282,202	19,831	428,949	168,901	2,667,997	12,865	36,907	5,810	398,710	52,056	432,751	57,426
Alabama	7,174	0	0	2,142	0	0	700	0	3,330	0	1,001	0
Alaska	8,646	0	7,952	0	0	0	*	0	0	*	679	0
Arizona	11,455	0	0	0	0	0	0	0	0	0	10,737	718
Arkansas	2,714	0	0	0	0	0	0	0	0	0	2,714	0
California	656,330	837	3,859	22,220	541,337	0	3,376	0	1,997	10,071	68,134	4,499
Colorado	137,025	0	77,928	0	41,696	700	0	0	10,049	*	2,891	3,756
Connecticut	20,080	0	0	0	0	0	*	0	0	0	20,068	0
Delaware	1,012	0	0	0	0	0	0	0	0	0	1,012	0
District of Columbia	134,294	0	0	0	53,451	870	9,196	1,161	6,749	224	62,643	0
Florida	73,563	0	45,951	9,067	0	0	200	201	0	2,086	11,555	4,503
Georgia	22,429	0	0	0	0	0	0	155	0	3,893	10,282	8,099
Hawaii	5,963	0	3,865	0	0	0	0	0	0	0	2,097	0
Idaho	321,918	0	0	0	312,820	0	0	0	0	0	9,097	0
Illinois	532,836	0	0	11,312	503,830	0	705	0	10,049	0	6,940	0
Indiana	2,396	0	0	0	0	0	0	0	0	0	2,396	0
Iowa	4,544	0	0	0	4,250	0	0	0	0	0	294	0
Kansas	12,688	0	0	8,569	0	0	0	0	3,431	0	687	0
Kentucky	5,981	0	0	0	0	0	0	0	3,333	0	2,647	0
Louisiana	29,836	0	0	14,282	0	0	0	0	8,089	4,779	2,686	0
Maryland	425,711	10,880	235,029	31,679	0	0	558	0	140,183	0	5,733	1,650
Massachusetts	22,053	0	0	0	0	0	*	0	3,323	*	18,680	0
Michigan	14,816	0	0	0	5,300	0	*	0	6,721	*	2,754	0
Minnesota	1,713	0	0	0	0	0	*	218	0	0	1,459	0
Mississippi	11,844	0	11,578	0	0	0	0	0	0	*	217	0
Missouri	11,205	0	*	0	6,281	0	0	0	3,327	55	1,540	0
Montana	305	0	0	0	0	0	0	0	0	*	268	0
Nebraska	2,255	0	0	0	0	0	0	0	0	0	1,895	360
Nevada	195,150	0	0	0	183,643	0	0	0	0	307	0	11,200
New Hampshire	7,437	0	3,875	0	0	0	251	0	0	0	3,311	0
New Jersey	204,964	0	0	0	14,890	10,495	15,573	*	163,330	0	626	0
New Mexico	202,430	0	0	2,877	154,352	800	0	0	0	0	44,402	0
New York	157,399	0	0	11,426	124,095	0	0	0	0	844	7,434	13,600
North Carolina	19,111	0	0	0	0	0	*	2,340	14,738	0	692	1,329
North Dakota	3,092	0	0	0	0	0	467	0	0	0	2,626	0
Ohio	66,737	0	0	0	0	0	573	1,116	0	*	65,016	0
Oklahoma	13,124	0	0	0	0	0	525	134	0	0	12,465	0
Oregon	27,190	0	18,210	0	0	0	0	222	0	0	6,851	1,907
Pennsylvania	24,616	0	509	0	14,731	0	2,252	0	3,330	0	*	3,783
Rhode Island	16,858	0	8,469	7,884	0	0	0	215	0	0	290	0
South Carolina	14,978	0	7,723	0	2,138	0	0	0	0	0	5,117	0
South Dakota	6,883	0	0	0	6,358	0	0	0	0	0	525	0
Tennessee	672,544	0	0	0	654,630	0	0	0	6,327	8,815	2,772	0
Texas	65,834	0	0	42,840	0	0	*	0	7,074	64	15,514	310
Utah	802	0	0	0	0	0	0	0	0	0	802	0
Vermont	730	0	0	0	0	0	0	0	0	0	730	0
Virginia	56,910	8,114	3,859	0	14,949	0	2,333	0	3,330	20,754	3,571	0
Washington	36,058	0	139	0	29,247	0	0	0	0	0	6,672	0
West Virginia	1,557	0	0	0	0	0	0	0	0	0	1,557	0
Wisconsin	2,085	0	0	0	0	0	0	0	0	0	660	1,425
Outlying areas	4,927	0	0	4,602	0	0	*	0	0	0	0	286

TABLE 62

Federal obligations for R&D plant, by state or location and agency: FY 2021

(Dollars in thousands)

State or location	Total	DHS	DOC	DOD	DOE	DOI	DOT	EPA	HHS	NASA	NSF	USDA
Puerto Rico	325	0	0	0	0	0	*	0	0	0	0	286
Other areas[a]	4,602	0	0	4,602	0	0	0	0	0	0	0	0

* = amount greater than $0 but less than $50,000.

DHS = Department of Homeland Security; DOC = Department of Commerce; DOD = Department of Defense; DOE = Department of Energy; DOI = Department of the Interior; DOT = Department of Transportation; EPA = Environmental Protection Agency; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = Department of Agriculture.

[a] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

Note(s):
Because of rounding, detail may not add to total. Geographic distribution of DOD development funding to businesses reflects location of prime contractors and not the numerous subcontractors who perform much of the R&D. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 63

Department of Defense obligations for research, development, test, and evaluation, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Alabama							
Department of Defense, RDT&E	3,470,122	2,107,421	0	1,312,154	35,544	14,769	235
Department of Defense, research	3,176,525	1,939,297	0	1,197,377	25,948	13,668	235
Department of Defense, operational systems development[c]	293,598	168,124	0	114,777	9,596	1,101	0
Alaska							
Department of Defense, RDT&E	133,557	45,154	0	76,350	9,362	2,691	0
Department of Defense, research	120,996	45,120	0	64,026	9,159	2,691	0
Department of Defense, operational systems development[c]	12,561	*	0	12,325	203	0	0
Arizona							
Department of Defense, RDT&E	1,285,932	183,528	0	1,031,536	63,828	761	6,278
Department of Defense, research	907,603	100,703	0	736,032	63,828	761	6,278
Department of Defense, operational systems development[c]	378,330	82,826	0	295,504	0	0	0
Arkansas							
Department of Defense, RDT&E	102,776	19,433	0	66,596	15,654	1,092	0
Department of Defense, research	102,354	19,093	0	66,515	15,654	1,092	0
Department of Defense, operational systems development[c]	422	340	0	81	0	0	0
California							
Department of Defense, RDT&E	11,868,717	2,752,290	1,147,219	7,257,881	574,836	134,616	1,875
Department of Defense, research	10,160,653	2,432,406	682,659	6,336,258	574,215	133,239	1,875
Department of Defense, operational systems development[c]	1,708,064	319,884	464,559	921,623	621	1,377	0
Colorado							
Department of Defense, RDT&E	3,653,598	58,931	4,914	3,523,830	60,918	4,999	*
Department of Defense, research	3,061,893	56,210	4,914	2,934,845	60,918	4,999	*
Department of Defense, operational systems development[c]	591,705	2,721	0	588,985	0	0	0
Connecticut							
Department of Defense, RDT&E	1,759,210	74,962	0	1,626,651	54,632	2,965	0
Department of Defense, research	1,534,943	73,759	0	1,403,586	54,632	2,965	0
Department of Defense, operational systems development[c]	224,268	1,202	0	223,066	0	0	0
Delaware							
Department of Defense, RDT&E	48,340	458	5,271	18,257	23,950	403	0
Department of Defense, research	48,096	458	5,271	18,013	23,950	403	0
Department of Defense, operational systems development[c]	244	0	0	244	0	0	0
District of Columbia							
Department of Defense, RDT&E	4,094,774	3,203,859	4,383	664,829	43,923	177,780	0

TABLE 63

Department of Defense obligations for research, development, test, and evaluation, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Defense, research	2,936,657	2,109,668	542	609,602	43,923	172,923	0
Department of Defense, operational systems development[c]	1,158,117	1,094,191	3,841	55,228	0	4,857	0
Florida							
Department of Defense, RDT&E	2,939,985	848,313	9,988	1,905,530	115,730	60,174	250
Department of Defense, research	2,574,591	725,989	9,988	1,676,295	115,722	46,347	250
Department of Defense, operational systems development[c]	365,394	122,323	0	229,236	*	13,827	0
Georgia							
Department of Defense, RDT&E	676,842	247,753	1,227	223,986	201,637	2,239	0
Department of Defense, research	435,233	139,192	1,227	120,598	173,373	844	0
Department of Defense, operational systems development[c]	241,609	108,561	0	103,388	28,264	1,395	0
Hawaii							
Department of Defense, RDT&E	309,197	178,748	0	80,239	36,312	13,898	0
Department of Defense, research	304,728	176,409	0	79,829	34,592	13,898	0
Department of Defense, operational systems development[c]	4,469	2,339	0	410	1,720	0	0
Idaho							
Department of Defense, RDT&E	57,364	15,090	21,337	19,589	1,067	155	125
Department of Defense, research	52,410	15,090	18,737	17,235	1,067	155	125
Department of Defense, operational systems development[c]	4,954	0	2,600	2,354	0	0	0
Illinois							
Department of Defense, RDT&E	827,191	173,436	2,241	493,904	150,970	6,640	0
Department of Defense, research	738,833	118,667	2,241	460,315	150,970	6,640	0
Department of Defense, operational systems development[c]	88,358	54,769	0	33,589	0	0	0
Indiana							
Department of Defense, RDT&E	466,096	208,996	0	150,262	105,955	882	*
Department of Defense, research	394,631	151,987	0	136,748	105,012	882	*
Department of Defense, operational systems development[c]	71,465	57,008	0	13,514	943	0	0
Iowa							
Department of Defense, RDT&E	233,971	2,724	*	211,427	19,651	165	0
Department of Defense, research	201,288	1,674	*	179,794	19,651	165	0
Department of Defense, operational systems development[c]	32,683	1,050	0	31,633	0	0	0
Kansas							
Department of Defense, RDT&E	83,876	1,978	0	20,726	61,146	*	0
Department of Defense, research	76,716	1,978	0	13,565	61,146	*	0

TABLE 63

Department of Defense obligations for research, development, test, and evaluation, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Defense, operational systems development[c]	7,161	0	0	7,161	0	0	0
Kentucky							
Department of Defense, RDT&E	178,990	127,954	0	33,040	16,941	86	969
Department of Defense, research	163,425	126,324	0	19,105	16,941	86	969
Department of Defense, operational systems development[c]	15,565	1,630	0	13,935	0	0	0
Louisiana							
Department of Defense, RDT&E	98,008	6,611	0	84,581	5,573	1,243	*
Department of Defense, research	89,377	6,611	0	75,950	5,573	1,243	*
Department of Defense, operational systems development[c]	8,631	0	0	8,631	0	0	0
Maine							
Department of Defense, RDT&E	40,316	12,141	2,040	23,284	1,885	966	0
Department of Defense, research	24,985	4,196	2,040	15,898	1,885	966	0
Department of Defense, operational systems development[c]	15,330	7,945	0	7,386	0	0	0
Maryland							
Department of Defense, RDT&E	5,944,982	3,243,606	6,527	1,510,220	882,783	301,536	310
Department of Defense, research	5,188,173	2,767,624	5,194	1,335,722	777,786	301,536	310
Department of Defense, operational systems development[c]	756,809	475,982	1,333	174,498	104,996	0	0
Massachusetts							
Department of Defense, RDT&E	5,005,343	347,882	1,923,010	2,282,022	305,965	146,465	0
Department of Defense, research	4,370,252	185,663	1,870,776	1,891,852	303,109	118,853	0
Department of Defense, operational systems development[c]	635,091	162,218	52,233	390,170	2,857	27,613	0
Michigan							
Department of Defense, RDT&E	986,642	404,646	*	470,545	89,084	22,365	0
Department of Defense, research	731,517	255,301	*	365,421	89,084	21,709	0
Department of Defense, operational systems development[c]	255,125	149,345	0	105,124	0	656	0
Minnesota							
Department of Defense, RDT&E	229,510	18,871	0	143,564	29,822	37,253	0
Department of Defense, research	226,938	18,871	0	140,992	29,822	37,253	0
Department of Defense, operational systems development[c]	2,572	0	0	2,572	0	0	0
Mississippi							
Department of Defense, RDT&E	131,560	79,486	0	27,668	24,247	158	0
Department of Defense, research	126,351	77,954	0	23,991	24,247	158	0

TABLE 63

Department of Defense obligations for research, development, test, and evaluation, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Defense, operational systems development[c]	5,209	1,532	0	3,677	0	0	0
Missouri							
Department of Defense, RDT&E	1,277,073	81,275	0	1,126,331	56,289	13,177	0
Department of Defense, research	976,576	71,133	0	835,977	56,289	13,177	0
Department of Defense, operational systems development[c]	300,497	10,143	0	290,355	0	0	0
Montana							
Department of Defense, RDT&E	81,885	3,309	0	11,327	67,031	219	0
Department of Defense, research	77,430	3,309	0	9,587	64,316	219	0
Department of Defense, operational systems development[c]	4,455	0	0	1,740	2,715	0	0
Nebraska							
Department of Defense, RDT&E	103,288	3,524	0	77,410	20,413	1,941	0
Department of Defense, research	42,448	3,524	0	16,690	20,413	1,820	0
Department of Defense, operational systems development[c]	60,840	0	0	60,719	0	121	0
Nevada							
Department of Defense, RDT&E	219,422	6,864	0	203,431	9,127	0	0
Department of Defense, research	209,532	4,914	0	195,490	9,127	0	0
Department of Defense, operational systems development[c]	9,890	1,950	0	7,940	0	0	0
New Hampshire							
Department of Defense, RDT&E	338,284	8,451	0	318,842	9,788	1,204	0
Department of Defense, research	272,965	7,224	0	254,749	9,788	1,204	0
Department of Defense, operational systems development[c]	65,319	1,227	0	64,093	0	0	0
New Jersey							
Department of Defense, RDT&E	2,009,963	1,254,114	0	682,397	67,358	6,094	0
Department of Defense, research	1,725,542	1,042,484	0	611,546	65,419	6,094	0
Department of Defense, operational systems development[c]	284,421	211,630	0	70,851	1,939	0	0
New Mexico							
Department of Defense, RDT&E	1,810,237	836,118	328,270	600,015	35,220	10,615	0
Department of Defense, research	1,665,889	767,357	279,956	572,741	35,220	10,615	0
Department of Defense, operational systems development[c]	144,348	68,761	48,313	27,274	0	0	0
New York							
Department of Defense, RDT&E	1,316,271	167,439	5,210	886,919	186,744	69,657	302
Department of Defense, research	1,169,060	123,797	5,210	784,174	186,744	68,832	302

TABLE 63

Department of Defense obligations for research, development, test, and evaluation, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Defense, operational systems development[c]	147,211	43,642	0	102,745	0	825	0
North Carolina							
Department of Defense, RDT&E	368,677	26,347	0	198,499	116,165	27,666	0
Department of Defense, research	345,047	21,827	0	179,390	116,165	27,666	0
Department of Defense, operational systems development[c]	23,630	4,521	0	19,110	0	0	0
North Dakota							
Department of Defense, RDT&E	24,021	0	0	19,306	4,681	*	0
Department of Defense, research	23,933	0	0	19,218	4,681	*	0
Department of Defense, operational systems development[c]	88	0	0	88	0	0	0
Ohio							
Department of Defense, RDT&E	2,595,042	1,107,486	24,316	1,212,302	178,683	72,110	144
Department of Defense, research	2,333,320	975,374	22,357	1,085,033	178,302	72,110	144
Department of Defense, operational systems development[c]	261,722	132,113	1,960	127,269	381	0	0
Oklahoma							
Department of Defense, RDT&E	1,597,514	1,127,318	0	458,089	11,792	315	0
Department of Defense, research	1,153,268	1,051,272	0	89,888	11,792	315	0
Department of Defense, operational systems development[c]	444,246	76,046	0	368,200	0	0	0
Oregon							
Department of Defense, RDT&E	332,324	131,182	1,782	82,057	116,939	364	0
Department of Defense, research	287,381	131,182	1,782	37,226	116,828	364	0
Department of Defense, operational systems development[c]	44,943	0	0	44,831	111	0	0
Pennsylvania							
Department of Defense, RDT&E	1,462,186	360,325	70,058	710,332	296,669	24,803	*
Department of Defense, research	1,295,879	297,728	64,174	632,386	276,965	24,625	*
Department of Defense, operational systems development[c]	166,307	62,597	5,883	77,946	19,704	177	0
Rhode Island							
Department of Defense, RDT&E	521,386	270,768	3,428	192,295	53,956	939	0
Department of Defense, research	479,218	242,361	3,253	178,709	53,956	939	0
Department of Defense, operational systems development[c]	42,168	28,407	175	13,586	0	0	0
South Carolina							
Department of Defense, RDT&E	1,270,576	156,101	11,383	816,915	57,119	229,058	0
Department of Defense, research	973,769	81,262	11,383	595,925	57,119	228,081	0

TABLE 63

Department of Defense obligations for research, development, test, and evaluation, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Defense, operational systems development[c]	296,807	74,839	0	220,990	0	977	0
South Dakota							
Department of Defense, RDT&E	51,466	9,919	0	32,840	7,977	729	0
Department of Defense, research	36,027	9,919	0	18,961	6,418	729	0
Department of Defense, operational systems development[c]	15,439	0	0	13,879	1,559	0	0
Tennessee							
Department of Defense, RDT&E	907,818	666,035	59,777	143,024	30,330	8,652	0
Department of Defense, research	847,842	644,976	30,646	133,238	30,330	8,652	0
Department of Defense, operational systems development[c]	59,976	21,058	29,131	9,786	0	0	0
Texas							
Department of Defense, RDT&E	4,002,352	300,773	64,905	3,333,438	263,049	40,188	0
Department of Defense, research	2,534,815	276,770	64,555	1,904,298	249,005	40,188	0
Department of Defense, operational systems development[c]	1,467,537	24,003	350	1,429,140	14,044	0	0
Utah							
Department of Defense, RDT&E	1,828,486	192,191	0	1,543,440	87,100	5,756	0
Department of Defense, research	1,640,157	125,921	0	1,429,880	78,600	5,756	0
Department of Defense, operational systems development[c]	188,329	66,269	0	113,559	8,501	0	0
Vermont							
Department of Defense, RDT&E	39,596	621	0	31,924	6,924	127	0
Department of Defense, research	34,521	621	0	30,877	2,896	127	0
Department of Defense, operational systems development[c]	5,076	0	0	1,048	4,028	0	0
Virginia							
Department of Defense, RDT&E	8,498,988	2,104,308	432,068	5,812,532	72,279	75,998	1,802
Department of Defense, research	7,734,839	1,879,983	385,685	5,331,462	71,506	64,400	1,802
Department of Defense, operational systems development[c]	764,149	224,326	46,383	481,070	773	11,598	0
Washington							
Department of Defense, RDT&E	1,233,361	155,019	46,041	932,035	63,466	36,800	0
Department of Defense, research	1,166,173	143,794	19,342	902,996	63,241	36,800	0
Department of Defense, operational systems development[c]	67,189	11,225	26,700	29,039	225	0	0
West Virginia							
Department of Defense, RDT&E	75,181	42,524	0	31,727	835	94	0
Department of Defense, research	29,565	374	0	28,262	835	94	0

TABLE 63

Department of Defense obligations for research, development, test, and evaluation, by state or location, agency, and performer: FY 2021

(Dollars in thousands)

State or location and agency	Total	Intramural		Extramural			
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments
Department of Defense, operational systems development[c]	45,615	42,150	0	3,465	0	0	0
Wisconsin							
Department of Defense, RDT&E	193,414	10,504	0	128,615	52,135	2,160	0
Department of Defense, research	140,754	10,504	0	76,076	52,014	2,160	0
Department of Defense, operational systems development[c]	52,660	0	0	52,539	121	0	0
Wyoming							
Department of Defense, RDT&E	95,589	3,235	5,170	68,628	18,071	484	0
Department of Defense, research	94,807	2,460	5,170	68,622	18,071	484	0
Department of Defense, operational systems development[c]	782	775	0	*	0	0	0
Outlying areas							
Department of Defense, RDT&E	99,710	17,635	0	54,273	4,014	23,788	0
Department of Defense, research	82,737	9,325	0	45,610	4,014	23,788	0
Department of Defense, operational systems development[c]	16,973	8,310	0	8,663	0	0	0
Puerto Rico							
Department of Defense, RDT&E	5,569	1,473	0	1,899	2,197	0	0
Department of Defense, research	4,768	1,473	0	1,098	2,197	0	0
Department of Defense, operational systems development[c]	800	0	0	800	0	0	0
Other areas[d]							
Department of Defense, RDT&E	94,142	16,162	0	52,374	1,817	23,788	0
Department of Defense, research	77,969	7,852	0	44,512	1,817	23,788	0
Department of Defense, operational systems development[c]	16,173	8,310	0	7,863	0	0	0
Offices abroad[e]							
Department of Defense, RDT&E	175,057	42,278	0	128,891	3,643	245	0
Department of Defense, research	111,237	41,846	0	65,904	3,242	245	0
Department of Defense, operational systems development[c]	63,820	432	0	62,987	401	0	0
Undistributed[f]							
Department of Defense, RDT&E	28,557,217	5,221,743	4,544	23,322,586	0	8,344	0
Department of Defense, research	5,176,678	4,912,358	4,544	251,431	0	8,344	0
Department of Defense, operational systems development[c]	23,380,540	309,385	0	23,071,155	0	0	0

* = amount greater than $0 but less than $50,000.

FFRDC = federally funded research and development center; RDT&E = research, development, test, and evaluation.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

[c] Funding for Department of Defense's (DOD's) operational systems development (Budget Activity 7) was first reported as a separate category for volume 66.

[d] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[e] Includes both R&D and RDT&E performed or administered in foreign countries by the U.S. government.

[f] Undistributed totals include DOD obligations for which the location of performance is not reported.

Note(s):
Because of rounding, detail may not add to total. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. Geographic distribution of DOD development funding to businesses reflects location of prime contractors and not the numerous subcontractors who perform much of the R&D. FY 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development, FYs 2021–22.

TABLE 64

Federal outlays for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	92,686	104,337	109,031	121,230	118,909	123,998	125,125	129,679	137,523	135,753	131,030
Departments											
Department of Agriculture	2,026	2,043	2,161	2,281	2,370	2,434	2,402	2,304	2,435	2,420	2,360
Agricultural Marketing Service	5	5	8	9	6	6	4	4	4	4	4
Agricultural Research Service	1,131	1,100	1,193	1,249	1,306	1,294	1,275	1,177	1,256	1,264	1,153
Animal and Plant Health Inspection Service	24	28	24	24	26	26	28	25	26	25	32
Economic Research Service	70	70	66	75	73	91	78	80	86	88	80
Foreign Agricultural Service	1	2	2	2	1	1	*	*	*	1	1
Forest Service	292	321	345	343	355	360	359	368	433	370	365
Grain Inspection, Packers, and Stockyards Administration	6	5	7	7	7	7	7	7	6	7	7
National Agricultural Statistics Service	5	6	6	6	7	7	7	7	7	7	7
National Institute of Food and Agriculture	488	503	507	563	586	622	639	634	612	654	707
Rural Business-Cooperative Service	4	4	4	4	4	21	4	3	4	1	4
Department of Commerce	1,233	1,248	1,157	747	710	1,059	1,166	1,252	1,409	1,590	1,402
Census Bureau	23	20	24	23	22	22	25	29	47	59	102
Economic Development Administration	*	*	*	*	*	1	21	28	34	16	NA
National Institute of Standards and Technology	532	537	558	478	467	457	493	501	637	742	720
National Oceanic and Atmospheric Administration	651	668	550	242	216	574	627	687	685	766	573
National Telecommunications and Information Administration	26	24	24	3	5	5	*	7	7	7	7
Department of Defense	42,032	49,852	53,165	64,522	63,818	68,709	68,862	66,971	67,763	72,659	65,392
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	2,889	2,833
Defense agencies and activities	10,479	11,879	11,141	17,134	14,005	14,723	15,560	15,607	15,210	na	na
Department of the Air Force	14,162	18,153	19,721	20,951	21,446	24,498	24,214	23,569	26,235	25,970	25,178
Department of the Army	6,620	7,092	6,954	9,847	10,662	10,360	11,057	10,125	9,210	8,125	6,688
Department of the Navy	10,576	12,485	15,044	16,270	17,443	18,935	17,851	17,492	16,924	15,362	14,365
Operational Test and Evaluation, Director	195	243	305	320	262	193	180	179	184	NA	NA
Other defense agencies	na	na	na	na	na	na	na	na	na	20,313	16,327
Department of Education	243	316	227	264	255	271	287	312	322	106	102
Department of Energy	8,035	8,424	8,502	8,607	8,213	8,444	8,857	9,771	9,891	10,456	10,314
Advanced Research Projects Agency—Energy	NA	NA	NA	NA	NA	NA	0	0	64	118	142
Bonneville Power Administration	23	23	24	11	11	11	14	8	13	13	14
Civilian Radioactive Waste Management	63	76	74	74	53	11	8	2	0	0	0
Electricity Delivery and Energy Reliability	na	na	na	72	108	54	89	87	83	90	101
Energy Efficiency and Renewable Energy	740	688	604	594	457	648	794	730	969	888	910
Environmental Management	160	69	43	50	34	32	36	13	70	67	46
Fossil Energy	481	643	506	539	386	431	325	359	364	303	298

TABLE 64

Federal outlays for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
National Nuclear Security Administration	3,712	3,895	4,005	3,925	3,858	3,794	3,999	3,661	3,769	4,186	4,013
Defense Programs	2,770	2,997	3,135	3,001	2,865	2,828	2,939	2,576	2,486	2,888	2,701
Fissile Materials Disposition	22	17	1	0	0	0	NA	NA	NA	NA	NA
Naval Nuclear Propulsion Program	654	658	706	778	750	761	761	770	945	974	1,080
Office of Defense Nuclear Nonproliferation	265	224	163	145	243	205	299	315	338	324	231
Nuclear Energy	28	43	79	83	89	81	133	116	368	388	361
Office of Intelligence	5	4	0	NA	NA	NA	NA	NA	NA	NA	NA
Office of Science	2,823	2,983	3,167	3,260	3,217	3,382	3,458	4,796	4,191	4,403	4,428
Department of Health and Human Services	23,892	27,316	28,263	28,862	28,799	29,261	29,268	35,296	36,610	30,459	30,876
Administration for Children and Families	22	19	19	39	13	12	19	14	6	9	8
Administration for Community Living	2	4	3	2	3	3	0	0	0	0	0
Agency for Toxic Substances and Disease Registry	12	14	11	9	9	4	4	5	3	5	1
Centers for Disease Control and Prevention	521	564	540	511	688	679	414	339	343	296	445
Centers for Medicare and Medicaid Services	73	74	89	89	62	86	70	57	54	45	34
Food and Drug Administration	130	158	134	140	140	130	138	164	201	215	337
Health Resources and Services Administration	55	439	48	53	24	24	62	56	67	37	21
National Institutes of Health	22,344	25,965	27,312	27,926	27,778	28,257	28,540	34,641	35,882	29,830	30,010
Office of the Secretary of Health and Human Services	17	22	21	25	27	24	22	20	54	20	19
Office of Public Health and Science	2	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Office of the Assistant Secretary for Planning and Evaluation	15	20	21	25	27	24	22	20	54	20	19
Substance Abuse and Mental Health Services Administration	718	57	87	68	54	42	0	NA	NA	NA	NA
Department of Homeland Security	na	NA	592	1,028	1,714	1,181	1,009	438	976	1,166	828
Coast Guard	na	NA	21	11	24	24	16	21	27	22	22
Science and Technology Directorate	na	NA	432	835	1,677	1,153	993	417	949	1,144	806
Secret Service	na	NA	1	1	1	1	1	NA	NA	NA	NA
Transportation Security Administration	na	NA	138	180	12	4	0	NA	NA	NA	NA
Department of Housing and Urban Development	58	54	43	48	42	32	33	36	51	50	53
Department of the Interior	633	601	612	597	608	626	644	745	726	714	745
Bureau of Ocean Energy Management	32	29	29	30	31	29	34	39	44	50	39
Bureau of Reclamation	10	11	16	17	11	16	15	17	13	15	12
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15
Geological Survey	565	550	552	546	561	574	586	674	661	640	673
National Park Service	26	10	14	4	4	8	9	14	8	9	5

TABLE 64

Federal outlays for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Department of Justice	68	103	69	66	71	124	113	103	119	102	67
Bureau of Prisons	9	10	9	12	12	13	11	10	11	12	11
Federal Bureau of Investigation	34	43	34	33	34	71	26	15	30	18	8
Office of Justice Programs	25	51	25	20	25	40	76	78	78	73	49
Department of Labor	165	176	198	163	94	59	84	72	13	12	20
Bureau of Labor Statistics	21	21	22	23	23	24	24	0	NA	NA	NA
Employee Benefits Security Administration	1	2	1	1	2	1	1	1	5	5	11
Employment and Training Administration	137	148	170	134	64	29	54	64	NA	NA	NA
Occupational Safety and Health Administration	4	3	3	3	4	3	4	4	6	4	6
Office of the Secretary of Labor	1	2	*	*	*	*	0	NA	0	0	NA
Pension Benefit Guaranty Corp.	1	1	1	2	2	2	2	2	3	3	3
Department of State	2	2	2	3	3	3	3	4	3	3	2
Department of Transportation	733	592	569	412	884	775	626	544	781	786	740
Coast Guard	20	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	309	250	262	241	307	282	218	197	258	228	242
Federal Highway Administration	209	230	238	74	400	340	260	215	352	320	311
Federal Motor Carrier Safety Administration	2	3	4	7	4	13	7	7	7	7	7
Federal Railroad Administration	28	28	33	23	59	37	40	42	45	42	47
Federal Transit Administration	2	4	4	4	7	4	7	7	22	42	26
National Highway Traffic Safety Administration	47	51	7	32	75	66	59	44	65	116	83
Office of the Secretary of Transportation	11	16	11	29	16	16	16	20	20	18	14
Pipeline and Hazardous Materials Safety Administration	na	na	10	2	15	16	13	4	8	10	8
Research and Innovative Technology Administration	na	na	0	1	2	2	7	9	4	4	3
Research and Special Programs Administration	9	11	na	na	na	na	na	na	na	na	na
Transportation Security Administration	95	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	71	60	62	66	65	64	65	69	69	78	76
Bureau of Engraving and Printing	7	5	4	6	6	5	5	3	1	6	5
Customs Service	7	na	na	na	na	na	na	na	na	na	na
Internal Revenue Service	56	54	57	58	55	55	60	65	66	71	69
Mint	*	1	1	2	4	4	1	1	1	1	2
Office of Thrift Supervision	*	NA	NA	NA	NA	NA	NA	NA	NA	na	na
Secret Service	1	na	na	na	na	na	na	na	na	na	na
Department of Veterans Affairs	329	366	406	402	412	446	480	510	581	559	615
Other agencies											
Agency for Global Media	*	0	1	*	*	NA	NA	NA	NA	NA	NA
Agency for International Development	202	220	254	260	255	234	124	156	169	119	77

TABLE 64

Federal outlays for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Appalachian Regional Commission	1	1	1	1	1	1	1	1	1	*	1
Consumer Product Safety Commission	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Environmental Protection Agency	561	550	*	*	*	*	532	553	595	582	581
Federal Communications Commission	4	4	9	9	8	8	7	7	4	4	4
Federal Trade Commission	2	2	2	1	2	2	3	2	3	3	3
General Services Administration	*	0	0	0	0	NA	NA	NA	NA	NA	NA
Library of Congress	3	3	1	6	7	12	1	1	1	1	1
National Aeronautics and Space Administration	9,142	8,720	8,746	8,657	6,210	5,930	6,072	5,815	8,881	7,724	10,596
National Archives and Records Administration	*	*	*	*	*	*	5	5	5	3	2
National Science Foundation	3,074	3,507	3,796	4,025	4,102	4,022	4,205	4,370	5,758	5,748	5,740
Nuclear Regulatory Commission	47	38	55	57	59	59	42	74	81	99	81
Patient-Centered Outcomes Research Trust Fund	na	na	na	na	na	na	na	na	na	9	41
Smithsonian Institution	104	101	106	110	139	172	182	200	217	249	245
Social Security Administration	28	37	30	35	68	68	54	68	63	53	65

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had outlays in variables represented by this table appear in the table. FYs 2009 and 2010 outlays include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with agencies listed in this table.

Source(s):
National Science Foundation, National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 65

Federal outlays for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	129,084	130,720	130,495	111,780	113,223	120,916	128,141	149,706	178,334	183,632
Departments										
Department of Agriculture	2,256	2,340	2,339	2,432	2,345	2,347	2,547	2,534	2,704	3,511
Agricultural Marketing Service	5	6	7	7	7	7	8	7	7	8
Agricultural Research Service	1,086	1,035	1,086	1,124	1,155	1,124	1,189	1,330	1,478	1,948
Animal and Plant Health Inspection Service	31	37	34	39	39	39	39	40	42	44
Economic Research Service	79	77	74	94	82	87	82	82	85	91
Foreign Agricultural Service	1	*	1	*	*	0	0	0	0	0
Forest Service	350	337	344	349	343	343	333	326	302	433
Grain Inspection, Packers, and Stockyards Administration	6	8	8	8	*	na	na	na	na	na
National Agricultural Statistics Service	7	9	9	9	9	9	9	9	9	11
National Institute of Food and Agriculture	688	824	772	798	706	735	884	738	779	975
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	1	*
Rural Business-Cooperative Service	3	6	4	4	3	3	3	3	0	0
Department of Commerce	1,262	1,447	1,417	1,542	1,710	1,707	1,908	1,808	1,953	2,152
Census Bureau	131	201	142	170	220	110	96	111	109	149
National Institute of Standards and Technology	576	604	671	706	709	745	836	774	890	1,033
National Oceanic and Atmospheric Administration	547	634	593	655	773	844	967	915	944	958
National Telecommunications and Information Administration	8	8	11	10	8	7	9	8	10	12
Department of Defense	65,107	63,646	62,251	42,868	42,212	45,238	48,489	56,339	63,487	68,574
Defense Advanced Research Projects Agency	2,692	2,808	2,832	2,871	2,877	2,996	3,254	3,466	3,508	3,703
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	2,016	2,427	2,474
Department of the Air Force	24,858	23,316	23,442	7,260	7,600	11,194	12,035	9,243	10,726	10,454
Department of the Army	7,817	7,653	7,306	6,805	7,631	7,011	9,293	10,868	11,440	12,524
Department of the Navy	15,506	15,457	14,693	15,195	14,427	12,561	11,029	15,072	16,298	17,984
Space Force	na	na	na	na	na	na	na	4,338	4,393	4,166
Other defense agencies	14,234	14,413	13,978	10,737	9,676	11,476	12,877	11,337	14,696	17,269
Department of Education	97	345	318	212	246	235	226	227	214	321
Department of Energy	9,861	11,033	12,295	12,853	13,187	16,672	15,164	12,600	14,593	16,056
Advanced Research Projects Agency—Energy	144	187	245	238	269	251	247	270	308	373
Bonneville Power Administration	14	16	16	16	14	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	45	73	108	92	133	104	144	142	146	1,280
Energy Efficiency and Renewable Energy	721	964	1,047	1,145	1,284	1,549	1,461	1,502	1,552	1,648
Environmental Management	9	23	24	23	29	38	29	31	23	20
Fossil Energy	376	442	650	624	636	683	682	608	708	737
National Nuclear Security Administration	3,930	4,394	4,515	4,806	4,926	4,324	5,752	3,987	4,702	4,633
Defense Programs	2,643	2,981	3,063	3,082	3,256	2,726	3,635	2,326	2,881	2,641
Naval Nuclear Propulsion Program	994	1,115	1,239	1,375	1,420	1,282	1,789	1,360	1,471	1,653

TABLE 65

Federal outlays for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Office of Defense Nuclear Nonproliferation	294	297	213	349	249	316	329	301	349	339
Nuclear Energy	263	324	760	833	811	846	1,110	1	455	521
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	36	51	31	53
Office of Science	4,357	4,610	4,930	5,077	5,086	8,878	5,703	6,008	6,669	6,790
Department of Health and Human Services	29,431	30,564	29,624	29,663	31,386	33,219	35,427	54,910	73,019	68,013
Administration for Children and Families	3	3	3	3	2	1	2	2	5	4
Administration for Community Living	0	0	76	83	83	83	83	92	107	111
Agency for Healthcare Research and Quality	365	364	364	334	324	334	338	338	338	350
Agency for Toxic Substances and Disease Registry	1	1	2	2	3	3	7	*	11	11
Biomedical Advanced Research and Development Authority	NA	NA	NA	NA	NA	NA	281	18,737	34,041	26,434
Centers for Disease Control and Prevention	301	198	275	198	208	200	187	218	299	284
Centers for Medicare and Medicaid Services	20	34	24	30	30	231	6	31	36	36
Food and Drug Administration	345	372	359	486	464	456	470	443	563	639
Health Resources and Services Administration	37	38	42	42	46	34	27	25	58	46
National Institutes of Health	28,341	29,536	28,462	28,468	30,209	31,860	34,009	35,008	37,545	40,080
Office of the Secretary of Health and Human Services	19	19	18	18	17	17	17	16	17	18
Office of the Assistant Secretary for Planning and Evaluation	19	19	18	18	17	17	17	16	17	18
Department of Homeland Security	614	856	704	732	1,026	1,077	1,069	936	566	668
Coast Guard	22	25	26	22	22	18	23	5	10	7
Countering Weapons of Mass Destruction Office	NA	74	71	63	69	65	81	85	87	68
Cybersecurity and Infrastructure Security Agency	na	na	na	na	na	7	13	8	13	11
Science and Technology Directorate	592	757	607	646	935	966	929	806	423	539
Secret Service	NA	NA	NA	NA	NA	1	2	10	3	6
Transportation Security Administration	NA	NA	NA	NA	NA	20	21	23	30	36
Department of Housing and Urban Development	64	67	56	75	71	71	63	NA	NA	NA
Department of the Interior	705	745	813	865	864	754	804	827	876	1,146
Bureau of Indian Affairs	NA	NA	NA	NA	NA	5	5	*	5	4
Bureau of Land Management	NA	NA	16	18	18	21	21	21	9	12
Bureau of Ocean Energy Management	31	48	50	73	73	77	73	73	70	78
Bureau of Reclamation	13	14	13	22	29	25	24	29	40	43
Bureau of Safety and Environmental Enforcement	18	18	28	34	23	8	15	11	14	14
Fish and Wildlife Service	NA	NA	32	32	24	24	24	26	23	23

TABLE 65

Federal outlays for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Geological Survey	636	649	666	677	688	593	640	665	691	947
National Park Service	7	15	8	9	10	1	1	1	23	25
Office of Surface Mining Reclamation and Enforcement	NA	NA	NA	NA	NA	1	1	1	0	0
Department of Justice	110	161	57	69	24	20	20	24	11	13
Bureau of Prisons	11	11	11	11	10	6	7	8	*	*
Federal Bureau of Investigation	30	10	13	13	2	3	1	5	4	5
Office of Justice Programs	69	140	33	45	12	11	12	11	8	8
Department of Labor	15	12	13	8	3	3	3	3	3	3
Employee Benefits Security Administration	8	6	5	3	1	1	1	1	1	1
Occupational Safety and Health Administration	4	4	3	1	2	2	2	2	2	2
Pension Benefit Guaranty Corp.	3	3	4	4	0	0	NA	NA	NA	NA
Department of State	1	NA	2	2	2	62	62	40	64	67
Department of Transportation	681	806	719	748	716	661	707	703	670	801
Federal Aviation Administration	214	227	228	250	266	239	247	245	248	368
Federal Highway Administration	281	386	353	353	274	261	287	278	257	245
Federal Motor Carrier Safety Administration	7	8	8	11	12	10	7	7	3	9
Federal Railroad Administration	46	54	44	41	44	35	35	43	39	44
Federal Transit Administration	11	9	17	7	41	36	40	20	29	34
National Highway Traffic Safety Administration	95	93	46	49	55	53	64	67	60	58
Office of the Secretary of Transportation	16	14	11	19	11	16	9	24	13	15
Pipeline and Hazardous Materials Safety Administration	7	16	12	19	13	10	18	18	21	29
Research and Innovative Technology Administration	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Department of the Treasury	74	76	67	85	10	38	49	47	54	65
Bureau of Engraving and Printing	9	9	9	19	9	38	46	46	54	64
Internal Revenue Service	65	64	54	65	0	0	0	0	NA	NA
Mint	*	3	3	2	1	0	2	*	*	1
Department of Veterans Affairs	639	608	612	583	594	644	685	778	1,475	1,628
Other agencies										
Administrative Office of the U.S. Courts	NA	NA	NA	7	8	7	6	5	4	1
Agency for Global Media	NA	NA	NA	NA	NA	NA	6	5	5	8
Agency for International Development	125	60	212	193	192	167	221	194	82	82
Appalachian Regional Commission	*	1	1	*	1	1	1	1	1	*
Consumer Product Safety Commission	1	2	2	2	2	1	1	*	*	*
Environmental Protection Agency	530	538	521	513	498	492	490	493	526	531
Federal Communications Commission	5	7	5	5	7	5	2	2	0	0
Federal Trade Commission	3	3	2	3	6	6	6	6	8	9
Library of Congress	1	1	1	2	2	3	2	3	3	3
National Aeronautics and Space Administration	11,331	11,262	12,360	12,013	10,616	10,852	13,338	10,508	11,133	12,252
National Archives and Records Administration	1	1	1	1	1	1	1	*	NA	NA

TABLE 65

Federal outlays for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
National Science Foundation	5,703	5,666	5,474	5,468	5,650	5,664	5,741	5,793	5,917	6,711
Nuclear Regulatory Commission	85	91	71	86	67	78	75	70	77	79
Patient-Centered Outcomes Research Trust Fund	74	94	244	354	1,345	492	579	470	460	481
Postal Service	NA	NA	28	29	73	53	27	18	15	16
RESTORE Act Centers of Excellence Research Grants Program	na	na	na	na	na	na	na	7	4	3
Smithsonian Institution	251	231	229	237	243	263	269	276	288	297
Social Security Administration	57	60	59	129	110	72	146	70	105	99
Tennessee Valley Authority	NA	NA	NA	NA	6	13	10	8	17	41

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had outlays in variables represented by this table appear in the table. Beginning with FY 2016, the totals reported for development outlays represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) outlays. Those funds, previously included in DOD's development outlay totals, support the development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020 and 2021 outlays include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 66

Federal outlays for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	88,298	100,179	105,175	117,398	116,868	121,875	123,059	126,854	131,388	131,452	128,560
Departments											
Department of Agriculture	1,919	1,966	2,048	2,132	2,185	2,218	2,254	2,229	2,309	2,301	2,290
Agricultural Marketing Service	5	5	8	9	6	6	4	4	4	4	4
Agricultural Research Service	1,039	1,039	1,099	1,117	1,135	1,103	1,149	1,134	1,200	1,162	1,095
Animal and Plant Health Inspection Service	24	28	24	24	26	26	28	25	26	25	32
Economic Research Service	70	70	66	75	73	91	78	80	86	88	80
Foreign Agricultural Service	1	2	2	2	1	1	*	*	*	1	1
Forest Service	277	305	326	325	341	335	338	336	363	353	355
Grain Inspection, Packers, and Stockyards Administration	6	5	7	7	7	7	7	7	6	7	5
National Agricultural Statistics Service	5	6	6	6	7	7	7	7	7	7	7
National Institute of Food and Agriculture	488	503	507	563	586	622	639	634	612	654	707
Rural Business-Cooperative Service	4	4	4	4	4	21	4	3	4	1	4
Department of Commerce	1,114	1,155	1,076	708	664	991	1,052	1,004	1,122	1,267	1,112
Census Bureau	23	20	24	23	22	22	25	29	47	59	102
Economic Development Administration	*	*	*	*	*	1	2	3	7	1	NA
National Institute of Standards and Technology	413	459	509	441	421	422	444	455	535	571	570
National Oceanic and Atmospheric Administration	651	652	519	240	216	541	581	511	525	629	433
National Telecommunications and Information Administration	26	24	24	3	5	5	*	7	7	7	7
Department of Defense	41,663	49,615	52,978	64,311	63,724	68,557	68,731	66,775	67,615	72,527	65,253
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	2,889	2,833
Defense agencies and activities	10,197	11,741	11,074	17,057	13,971	14,687	15,521	15,599	15,210	na	na
Department of the Air Force	14,156	18,146	19,712	20,915	21,407	24,483	24,122	23,458	26,106	25,855	25,043
Department of the Army	6,620	7,092	6,954	9,847	10,662	10,360	11,057	10,048	9,210	8,125	6,688
Department of the Navy	10,495	12,392	14,932	16,172	17,423	18,834	17,851	17,492	16,905	15,345	14,363
Operational Test and Evaluation, Director	195	243	305	320	262	193	180	179	184	NA	NA
Other defense agencies	na	na	na	na	na	na	na	na	na	20,313	16,325
Department of Education	243	316	227	264	255	271	287	312	322	106	102
Department of Energy	7,010	7,373	7,476	7,760	7,433	7,793	8,108	8,546	8,986	9,685	9,599
Advanced Research Projects Agency—Energy	NA	NA	NA	NA	NA	NA	0	0	64	118	142
Bonneville Power Administration	23	23	24	11	11	11	14	8	13	13	14
Civilian Radioactive Waste Management	63	76	74	74	53	11	8	2	0	0	0
Electricity Delivery and Energy Reliability	na	na	na	72	108	54	89	87	83	90	101
Energy Efficiency and Renewable Energy	735	682	584	569	431	646	729	712	915	853	910
Environmental Management	160	69	43	50	34	32	36	13	70	67	46
Fossil Energy	471	640	500	533	366	419	306	344	350	288	286

TABLE 66

Federal outlays for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
National Nuclear Security Administration	3,299	3,448	3,579	3,625	3,548	3,589	3,730	3,489	3,489	4,034	3,920
Defense Programs	2,373	2,577	2,727	2,733	2,594	2,657	2,707	2,444	2,285	2,769	2,648
Fissile Materials Disposition	22	17	1	0	0	0	NA	NA	NA	NA	NA
Naval Nuclear Propulsion Program	639	631	688	747	711	728	724	730	866	942	1,040
Office of Defense Nuclear Nonproliferation	265	224	163	145	243	205	299	315	338	324	231
Nuclear Energy	28	43	79	83	89	81	133	116	368	388	361
Office of Intelligence	5	4	0	NA	NA	NA	NA	NA	NA	NA	NA
Office of Science	2,226	2,387	2,593	2,744	2,794	2,949	3,062	3,775	3,635	3,834	3,819
Department of Health and Human Services	23,648	26,499	27,835	28,432	28,441	29,010	29,121	35,144	34,928	30,379	30,721
Administration for Children and Families	22	19	19	39	13	12	19	14	6	9	8
Administration for Community Living	2	4	3	2	3	3	0	0	0	0	0
Agency for Toxic Substances and Disease Registry	12	14	11	9	9	4	4	5	3	5	1
Centers for Disease Control and Prevention	521	564	540	511	545	544	407	339	343	296	445
Centers for Medicare and Medicaid Services	73	74	89	89	62	86	70	57	54	45	34
Food and Drug Administration	119	150	127	137	138	125	133	159	188	206	316
Health Resources and Services Administration	54	439	47	53	24	23	62	56	66	37	20
National Institutes of Health	22,110	25,156	26,890	27,500	27,566	28,146	28,404	34,494	34,213	29,760	29,877
Office of the Secretary of Health and Human Services	17	22	21	25	27	24	22	20	54	20	19
Office of Public Health and Science	2	2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Office of the Assistant Secretary for Planning and Evaluation	15	20	21	25	27	24	22	20	54	20	19
Substance Abuse and Mental Health Services Administration	718	57	87	68	54	42	0	NA	NA	NA	NA
Department of Homeland Security	na	NA	536	966	1,593	922	799	92	583	471	593
Coast Guard	na	NA	20	10	23	23	15	20	26	21	21
Science and Technology Directorate	na	NA	377	775	1,556	895	783	73	557	451	573
Secret Service	na	NA	1	1	1	1	1	NA	NA	NA	NA
Transportation Security Administration	na	NA	138	180	12	4	0	NA	NA	NA	NA
Department of Housing and Urban Development	58	54	43	48	42	32	33	36	51	50	53
Department of the Interior	631	597	605	590	602	616	635	738	720	705	739
Bureau of Ocean Energy Management	30	27	27	27	28	26	32	37	42	45	39
Bureau of Reclamation	10	9	11	13	9	9	9	13	10	11	10
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12
Geological Survey	565	550	552	546	561	574	586	674	661	640	673
National Park Service	26	10	14	4	4	8	9	14	8	9	5

TABLE 66

Federal outlays for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Department of Justice	68	103	69	66	71	124	112	103	119	102	67
Bureau of Prisons	9	10	9	12	12	13	11	10	11	12	11
Federal Bureau of Investigation	34	43	34	33	34	71	26	15	30	18	8
Office of Justice Programs	25	51	25	20	25	40	75	78	78	73	49
Department of Labor	165	176	198	163	94	59	84	71	12	11	19
Bureau of Labor Statistics	21	21	22	23	23	24	24	0	NA	NA	NA
Employee Benefits Security Administration	1	2	1	1	2	1	1	1	5	5	11
Employment and Training Administration	137	148	170	134	64	29	54	64	NA	NA	NA
Occupational Safety and Health Administration	4	3	3	3	4	3	3	4	5	3	5
Office of the Secretary of Labor	1	2	*	*	*	*	0	NA	0	0	NA
Pension Benefit Guaranty Corp.	1	1	1	2	2	2	2	2	3	3	3
Department of State	2	2	2	3	3	3	3	4	3	3	2
Department of Transportation	682	585	555	396	866	755	607	526	761	768	719
Coast Guard	20	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	295	244	248	226	290	264	201	180	239	211	224
Federal Highway Administration	209	230	238	74	400	340	260	215	352	320	311
Federal Motor Carrier Safety Administration	2	3	4	7	4	13	7	7	7	7	7
Federal Railroad Administration	27	27	32	22	58	35	38	40	44	41	44
Federal Transit Administration	2	4	4	4	7	4	7	7	22	42	26
National Highway Traffic Safety Administration	47	51	7	32	75	66	59	44	65	116	83
Office of the Secretary of Transportation	11	16	11	29	16	16	16	20	20	18	14
Pipeline and Hazardous Materials Safety Administration	na	na	10	2	15	16	13	4	8	10	8
Research and Innovative Technology Administration	na	na	0	1	2	2	7	9	4	4	3
Research and Special Programs Administration	9	11	na	na	na	na	na	na	na	na	na
Transportation Security Administration	59	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	71	60	62	66	65	64	65	69	69	78	76
Bureau of Engraving and Printing	7	5	4	6	6	5	5	3	1	6	5
Customs Service	7	na	na	na	na	na	na	na	na	na	na
Internal Revenue Service	56	54	57	58	55	55	60	65	66	71	69
Mint	*	1	1	2	4	4	1	1	1	1	2
Office of Thrift Supervision	*	NA	NA	NA	NA	NA	NA	NA	NA	na	na
Secret Service	1	na	na	na	na	na	na	na	na	na	na
Department of Veterans Affairs	329	365	405	402	412	446	480	510	581	559	615
Other agencies											
Agency for Global Media	*	0	1	*	*	NA	NA	NA	NA	NA	NA
Agency for International Development	202	220	254	260	255	234	124	156	169	119	77

TABLE 66

Federal outlays for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Appalachian Regional Commission	1	1	1	1	1	1	1	1	1	*	1
Consumer Product Safety Commission	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Environmental Protection Agency	561	550	*	*	*	*	532	553	595	577	576
Federal Communications Commission	4	4	9	9	8	8	7	7	4	4	4
Federal Trade Commission	2	2	2	1	2	2	3	2	3	3	3
Library of Congress	3	3	1	6	7	12	1	1	1	1	1
National Aeronautics and Space Administration	6,945	7,124	7,166	6,959	6,197	5,919	6,000	5,739	7,316	6,145	10,427
National Archives and Records Administration	*	*	*	*	*	*	5	5	5	3	2
National Science Foundation	2,803	3,235	3,439	3,657	3,707	3,569	3,781	3,937	4,809	5,233	5,124
Nuclear Regulatory Commission	47	38	55	57	59	59	42	74	81	99	81
Patient-Centered Outcomes Research Trust Fund	na	na	na	na	na	na	na	na	na	9	41
Smithsonian Institution	101	98	103	104	113	142	140	151	164	192	195
Social Security Administration	28	37	30	35	68	68	54	68	63	53	65

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had outlays in variables represented by this table appear in the table. FYs 2009 and 2010 outlays include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 67

Federal outlays for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	127,225	128,476	128,090	109,552	110,000	117,072	124,854	144,920	174,529	179,316
Departments										
Department of Agriculture	2,232	2,321	2,320	2,411	2,330	2,308	2,498	2,459	2,593	3,258
Agricultural Marketing Service	5	6	7	7	7	7	8	7	7	8
Agricultural Research Service	1,071	1,025	1,077	1,118	1,149	1,101	1,150	1,264	1,378	1,705
Animal and Plant Health Inspection Service	31	37	34	39	39	39	39	40	42	44
Economic Research Service	79	77	74	94	82	87	82	82	85	91
Foreign Agricultural Service	1	*	1	*	*	0	0	0	0	0
Forest Service	342	330	336	336	334	327	323	317	290	423
Grain Inspection, Packers, and Stockyards Administration	5	6	6	6	*	na	na	na	na	na
National Agricultural Statistics Service	7	9	9	9	9	9	9	9	9	11
National Institute of Food and Agriculture	688	824	772	798	706	735	884	738	779	975
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	1	*
Rural Business-Cooperative Service	3	6	4	4	3	3	3	3	0	0
Department of Commerce	1,082	1,267	1,221	1,330	1,526	1,415	1,522	1,546	1,689	1,774
Census Bureau	131	201	142	170	220	110	96	111	109	149
National Institute of Standards and Technology	524	553	607	645	644	670	703	680	769	838
National Oceanic and Atmospheric Administration	419	504	461	505	654	627	714	748	800	776
National Telecommunications and Information Administration	8	8	11	10	8	7	9	8	10	12
Department of Defense	65,020	63,509	62,100	42,700	41,292	44,843	48,135	55,832	63,275	68,408
Defense Advanced Research Projects Agency	2,692	2,808	2,832	2,871	2,877	2,996	3,254	3,466	3,508	3,703
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	2,001	2,427	2,474
Department of the Air Force	24,790	23,205	23,323	7,137	7,439	11,015	11,830	9,050	10,563	10,333
Department of the Army	7,817	7,653	7,306	6,800	6,911	7,011	9,293	10,868	11,440	12,524
Department of the Navy	15,487	15,437	14,669	15,166	14,398	12,523	10,903	14,788	16,260	17,947
Space Force	na	na	na	na	na	na	na	4,338	4,393	4,166
Other defense agencies	14,233	14,407	13,970	10,726	9,667	11,298	12,855	11,323	14,686	17,259
Department of Education	97	345	318	212	246	235	226	227	214	321
Department of Energy	9,302	10,364	11,303	11,855	12,020	14,607	13,657	10,810	12,263	13,669
Advanced Research Projects Agency—Energy	144	187	245	238	269	251	247	270	308	373
Bonneville Power Administration	0	16	16	16	14	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	45	73	108	92	133	104	144	142	146	1,280
Energy Efficiency and Renewable Energy	705	960	1,043	1,142	1,280	1,341	1,451	1,447	1,513	1,598
Environmental Management	9	23	24	23	29	38	29	31	23	20
Fossil Energy	360	426	632	624	620	662	659	584	681	708
National Nuclear Security Administration	3,856	4,312	4,222	4,545	4,636	4,025	5,477	3,475	3,866	3,861
Defense Programs	2,568	2,921	2,926	2,980	3,167	2,537	3,360	2,070	2,384	2,284
Naval Nuclear Propulsion Program	994	1,094	1,083	1,216	1,220	1,173	1,789	1,113	1,140	1,246

TABLE 67

Federal outlays for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Office of Defense Nuclear Nonproliferation	294	297	213	349	249	316	329	292	342	332
Nuclear Energy	263	324	760	833	811	846	1,110	1	455	521
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	36	51	31	53
Office of Science	3,920	4,042	4,253	4,343	4,227	7,340	4,503	4,809	5,241	5,255
Department of Health and Human Services	29,282	30,404	29,497	29,522	31,169	32,997	35,271	53,408	72,664	67,672
Administration for Children and Families	3	3	3	3	2	1	2	2	5	4
Administration for Community Living	0	0	76	83	83	83	83	92	107	111
Agency for Healthcare Research and Quality	365	364	364	334	324	334	338	338	338	350
Agency for Toxic Substances and Disease Registry	1	1	2	2	3	3	7	*	11	11
Biomedical Advanced Research and Development Authority	NA	NA	NA	NA	NA	NA	281	17,441	33,881	26,434
Centers for Disease Control and Prevention	301	198	275	198	208	200	187	218	299	284
Centers for Medicare and Medicaid Services	20	34	24	30	30	231	6	31	36	36
Food and Drug Administration	323	348	336	455	435	428	444	415	528	599
Health Resources and Services Administration	37	38	41	41	46	34	27	25	56	45
National Institutes of Health	28,215	29,400	28,358	28,358	30,021	31,667	33,879	34,830	37,386	39,781
Office of the Secretary of Health and Human Services	19	19	18	18	17	17	17	16	17	18
Office of the Assistant Secretary for Planning and Evaluation	19	19	18	18	17	17	17	16	17	18
Department of Homeland Security	335	448	476	538	841	862	863	867	553	641
Coast Guard	21	24	24	21	21	17	22	5	10	7
Countering Weapons of Mass Destruction Office	NA	74	71	63	69	65	81	85	87	68
Cybersecurity and Infrastructure Security Agency	na	na	na	na	na	7	13	8	13	11
Science and Technology Directorate	314	351	380	454	751	752	724	736	411	513
Secret Service	NA	NA	NA	NA	NA	1	2	10	3	6
Transportation Security Administration	NA	NA	NA	NA	NA	20	21	23	29	35
Department of Housing and Urban Development	64	67	56	75	71	71	63	NA	NA	NA
Department of the Interior	698	739	805	857	861	751	801	822	874	1,145
Bureau of Indian Affairs	NA	NA	NA	NA	NA	5	5	*	5	4
Bureau of Land Management	NA	NA	16	18	18	21	21	21	9	12
Bureau of Ocean Energy Management	31	48	50	73	73	77	73	73	70	78
Bureau of Reclamation	10	12	10	21	27	23	23	27	38	42
Bureau of Safety and Environmental Enforcement	14	15	23	27	21	6	12	8	14	14
Fish and Wildlife Service	NA	NA	32	32	24	24	24	26	23	23

TABLE 67

Federal outlays for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Geological Survey	636	649	666	677	688	593	640	665	691	947
National Park Service	7	15	8	9	10	1	1	1	23	25
Office of Surface Mining Reclamation and Enforcement	NA	NA	NA	NA	NA	1	1	1	0	0
Department of Justice	110	161	57	69	24	20	20	24	11	13
Bureau of Prisons	11	11	11	11	10	6	7	8	*	*
Federal Bureau of Investigation	30	10	13	13	2	3	1	5	4	5
Office of Justice Programs	69	140	33	45	12	11	12	11	8	8
Department of Labor	15	12	13	8	3	3	3	3	3	3
Employee Benefits Security Administration	8	6	5	3	1	1	1	1	1	1
Occupational Safety and Health Administration	4	4	3	1	2	2	2	2	2	2
Pension Benefit Guaranty Corp.	3	3	4	4	0	0	NA	NA	NA	NA
Department of State	1	NA	2	2	2	62	62	40	64	67
Department of Transportation	660	786	697	719	682	630	669	651	642	771
Federal Aviation Administration	198	209	209	223	234	209	211	195	221	340
Federal Highway Administration	281	386	353	353	274	261	287	278	257	245
Federal Motor Carrier Safety Administration	7	8	8	11	12	10	7	7	3	9
Federal Railroad Administration	41	52	41	39	41	33	33	41	38	42
Federal Transit Administration	11	9	17	7	41	36	40	20	29	34
National Highway Traffic Safety Administration	95	93	46	49	55	53	64	67	60	57
Office of the Secretary of Transportation	16	14	11	19	11	16	9	24	13	15
Pipeline and Hazardous Materials Safety Administration	7	16	12	19	13	10	18	18	21	29
Research and Innovative Technology Administration	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Department of the Treasury	74	76	67	85	10	38	45	45	54	65
Bureau of Engraving and Printing	9	9	9	19	9	38	45	45	54	64
Internal Revenue Service	65	64	54	65	0	0	0	0	NA	NA
Mint	*	3	3	2	1	0	*	*	*	1
Department of Veterans Affairs	639	608	612	583	594	644	685	778	1,475	1,628
Other agencies										
Administrative Office of the U.S. Courts	NA	NA	NA	7	8	7	6	5	4	1
Agency for Global Media	NA	NA	NA	NA	NA	NA	6	5	5	8
Agency for International Development	125	60	212	193	192	167	221	194	82	82
Appalachian Regional Commission	*	1	1	*	1	1	1	1	1	*
Consumer Product Safety Commission	1	2	2	2	2	1	1	*	*	*
Environmental Protection Agency	523	531	516	508	494	487	485	489	520	525
Federal Communications Commission	5	7	5	5	7	5	2	2	0	0
Federal Trade Commission	3	3	2	3	6	6	6	6	8	9
Library of Congress	1	1	1	2	2	3	2	3	3	3
National Aeronautics and Space Administration	11,265	11,128	12,150	11,937	10,528	10,765	13,260	10,481	11,089	12,198
National Archives and Records Administration	1	1	1	1	1	1	1	*	NA	NA

TABLE 67

Federal outlays for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
National Science Foundation	5,269	5,198	5,059	5,120	5,279	5,207	5,273	5,370	5,546	6,107
Nuclear Regulatory Commission	85	91	71	86	67	78	75	69	77	79
Patient-Centered Outcomes Research Trust Fund	74	94	244	354	1,345	492	579	470	460	481
Postal Service	NA	NA	28	29	73	53	27	18	15	16
RESTORE Act Centers of Excellence Research Grants Program	na	na	na	na	na	na	na	7	4	3
Smithsonian Institution	204	195	196	208	210	230	236	210	219	228
Social Security Administration	57	60	59	129	110	72	146	70	105	99
Tennessee Valley Authority	NA	NA	NA	NA	6	13	10	8	17	41

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level in that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had outlays in variables represented by this table appear in the table. Beginning with FY 2016, the totals reported for development outlays represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) outlays. Those funds, previously included in DOD's development outlay totals, support the development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020 and 2021 outlays include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 68

Federal outlays for R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	4,388	4,158	3,856	3,832	2,041	2,123	2,066	2,824	6,135	4,301	2,470
Departments											
Department of Agriculture	107	77	113	149	185	216	148	74	126	119	70
Agricultural Research Service	92	61	94	131	171	191	127	43	56	102	58
Forest Service	15	16	19	18	14	25	21	32	70	17	10
Grain Inspection, Packers, and Stockyards Administration	0	0	0	0	0	0	0	0	0	0	2
Department of Commerce	119	93	80	40	46	68	114	248	288	323	290
Economic Development Administration	0	0	0	0	0	0	18	25	26	15	NA
National Institute of Standards and Technology	119	77	49	38	46	35	49	47	102	171	150
National Oceanic and Atmospheric Administration	0	16	31	2	0	33	46	176	159	137	141
Department of Defense	369	237	188	210	93	152	130	196	148	132	139
Defense agencies and activities	282	138	67	77	35	36	38	8	*	na	na
Department of the Air Force	5	7	10	36	39	15	92	111	129	116	136
Department of the Army	*	0	0	0	0	0	0	77	0	0	0
Department of the Navy	82	92	111	97	20	100	0	0	19	16	1
Other defense agencies	na	na	na	na	na	na	na	na	na	0	2
Department of Energy	1,024	1,052	1,026	847	780	651	748	1,225	904	771	714
Energy Efficiency and Renewable Energy	5	6	20	25	26	2	65	17	53	36	0
Fossil Energy	9	3	6	6	21	12	19	15	15	15	12
National Nuclear Security Administration	412	447	426	300	310	205	269	172	280	152	93
Defense Programs	397	420	408	268	272	171	232	132	201	119	53
Naval Nuclear Propulsion Program	15	27	18	32	39	34	37	40	79	33	40
Office of Science	598	596	574	516	423	433	396	1,020	556	569	609
Department of Health and Human Services	244	817	429	429	359	252	147	151	1,682	79	155
Centers for Disease Control and Prevention	0	0	0	0	144	134	6	0	0	0	0
Food and Drug Administration	10	9	7	3	2	6	5	5	13	8	21
Health Resources and Services Administration	1	*	1	1	1	1	1	*	1	1	1
National Institutes of Health	233	808	421	426	213	111	135	146	1,669	70	133
Department of Homeland Security	na	NA	56	61	121	259	210	346	393	694	234
Coast Guard	na	NA	1	1	*	1	*	1	1	1	1
Science and Technology Directorate	na	NA	55	60	121	258	210	345	392	693	233
Department of the Interior	2	4	8	7	5	10	9	7	6	8	6
Bureau of Ocean Energy Management	2	2	2	3	3	3	3	2	2	5	0
Bureau of Reclamation	0	2	5	5	2	7	6	5	4	4	2
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4
Department of Justice	0	0	0	0	0	0	1	0	0	0	0
Office of Justice Programs	0	0	0	0	0	0	1	0	0	0	0
Department of Labor	0	0	0	0	0	1	1	1	1	1	1
Occupational Safety and Health Administration	0	0	0	0	0	1	1	1	1	1	1
Department of Transportation	51	7	15	16	18	20	19	19	20	18	21
Coast Guard	*	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	14	6	14	15	17	18	17	17	19	17	18
Federal Railroad Administration	1	1	1	1	1	2	2	2	1	1	3
Transportation Security Administration	36	na	na	na	na	na	na	na	na	na	na
Department of Veterans Affairs	*	*	*	*	*	*	*	0	0	0	0
Other agencies											
Environmental Protection Agency	0	0	0	0	0	0	0	0	0	5	5
General Services Administration	*	0	0	0	0	NA	NA	NA	NA	NA	NA
National Aeronautics and Space Administration	2,197	1,596	1,581	1,697	12	12	72	76	1,565	1,578	169
National Science Foundation	271	272	357	368	395	453	424	433	949	515	616
Smithsonian Institution	3	3	3	6	26	30	42	49	53	57	50

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had outlays in variables represented by this table appear in the table. FYs 2009 and 2010 outlays include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 69

Federal outlays for R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	1,859	2,244	2,405	2,228	3,223	3,844	3,287	4,786	3,805	4,316
Departments										
Department of Agriculture	25	19	18	20	15	38	49	75	111	253
Agricultural Research Service	15	10	9	5	6	23	39	66	100	243
Forest Service	8	7	8	13	9	16	10	9	12	10
Grain Inspection, Packers, and Stockyards Administration	2	2	2	2	*	na	na	na	na	na
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	*	0
Department of Commerce	180	180	196	211	183	292	386	261	265	377
National Institute of Standards and Technology	52	51	64	61	64	75	133	94	121	195
National Oceanic and Atmospheric Administration	128	129	132	150	119	217	253	167	144	182
Department of Defense	87	137	150	168	920	395	353	507	211	166
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	15	0	0
Department of the Air Force	68	111	119	122	161	179	205	193	163	120
Department of the Army	0	0	0	5	720	0	0	0	0	0
Department of the Navy	18	19	24	29	30	38	126	284	38	36
Other defense agencies	1	7	8	12	9	177	22	14	11	10
Department of Energy	559	669	992	998	1,168	2,065	1,508	1,790	2,330	2,386
Bonneville Power Administration	14	0	0	0	0	NA	NA	NA	NA	NA
Energy Efficiency and Renewable Energy	16	4	4	3	4	208	10	55	38	50
Fossil Energy	16	16	18	0	16	21	23	24	28	29
National Nuclear Security Administration	75	82	293	262	290	299	275	512	836	772
Defense Programs	75	60	138	102	89	189	275	256	498	358
Naval Nuclear Propulsion Program	*	22	155	160	200	109	0	247	331	407
Office of Defense Nuclear Nonproliferation	0	0	0	0	0	0	0	9	8	8
Office of Science	437	568	677	733	859	1,538	1,200	1,200	1,428	1,535
Department of Health and Human Services	148	160	127	141	217	222	156	1,502	355	340
Biomedical Advanced Research and Development Authority	NA	NA	NA	NA	NA	NA	0	1,296	160	*
Centers for Medicare and Medicaid Services	0	0	0	0	0	0	*	0	0	0
Food and Drug Administration	22	23	23	31	29	29	26	28	35	40
Health Resources and Services Administration	1	1	1	1	0	0	0	0	1	1
National Institutes of Health	126	136	104	110	188	193	130	178	158	299
Department of Homeland Security	279	408	228	193	186	215	206	70	13	27
Coast Guard	1	1	1	1	1	1	1	0	0	0
Science and Technology Directorate	278	406	227	192	184	214	205	70	12	26
Transportation Security Administration	NA	NA	NA	NA	NA	0	0	0	1	1
Department of the Interior	7	6	7	8	3	4	4	5	2	2
Bureau of Reclamation	3	2	3	1	1	1	1	2	2	2
Bureau of Safety and Environmental Enforcement	4	3	4	7	2	2	3	3	0	0
Department of Labor	*	0	0	0	0	0	0	0	0	0
Occupational Safety and Health Administration	*	0	0	0	0	0	0	0	0	0
Department of Transportation	22	20	22	29	35	31	38	52	29	31
Federal Aviation Administration	16	18	19	27	32	30	36	50	27	28
Federal Railroad Administration	6	2	3	2	3	1	2	2	1	2
National Highway Traffic Safety Administration	0	0	0	0	0	0	0	0	1	1
Department of the Treasury	0	0	0	0	0	0	4	2	0	*
Bureau of Engraving and Printing	0	0	0	0	0	0	2	2	0	0
Mint	0	0	0	0	0	0	2	*	0	*
Other agencies										
Environmental Protection Agency	7	7	5	5	5	5	5	4	6	6

TABLE 69

Federal outlays for R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
National Aeronautics and Space Administration	65	134	210	76	88	87	78	27	43	54
National Science Foundation	434	468	415	348	371	457	468	423	371	604
Nuclear Regulatory Commission	0	0	0	0	0	0	0	1	0	0
Smithsonian Institution	47	36	33	29	33	33	33	66	69	69

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had outlays in variables represented by this table appear in the table. FYs 2020 and 2021 outlays include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 70

Federal obligations for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	98,013	107,794	116,069	122,620	123,855	129,431	129,050	144,758	146,968	139,703	140,670
Departments											
Department of Agriculture	2,091	2,136	2,282	2,319	2,386	2,372	2,246	2,345	2,615	2,377	2,188
Agricultural Marketing Service	5	5	9	8	6	6	5	4	4	4	4
Agricultural Research Service	1,164	1,143	1,259	1,227	1,294	1,241	1,146	1,187	1,360	1,152	1,095
Animal and Plant Health Inspection Service	24	28	24	24	26	26	28	29	30	29	37
Economic Research Service	67	68	71	74	75	92	78	79	86	81	77
Foreign Agricultural Service	1	2	2	2	1	1	*	*	*	1	1
Forest Service	268	307	315	316	322	345	316	376	426	370	341
Grain Inspection, Packers, and Stockyards Administration	6	5	7	7	7	7	7	7	6	7	7
National Agricultural Statistics Service	5	6	6	6	7	7	7	7	7	7	7
National Institute of Food and Agriculture	547	568	586	652	645	627	655	652	690	724	614
Rural Business-Cooperative Service	4	4	4	4	4	21	4	4	5	2	4
Department of Commerce	1,181	1,267	1,149	1,094	1,016	1,145	1,196	1,533	1,683	1,309	1,231
Census Bureau	29	23	24	23	22	23	25	29	47	59	102
Economic Development Administration	*	1	*	*	*	1	21	28	19	16	NA
National Institute of Standards and Technology	481	525	482	463	429	508	517	606	925	597	548
National Oceanic and Atmospheric Administration	651	695	619	600	558	607	627	863	685	629	573
National Telecommunications and Information Administration	20	24	24	7	7	7	7	7	8	8	8
Department of Defense	45,778	52,149	58,068	63,661	65,934	72,291	71,997	75,974	73,624	75,328	73,974
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	2,846	2,750
Defense agencies and activities	12,360	12,641	13,189	15,407	14,338	15,940	15,947	16,242	16,265	na	na
Department of the Air Force	14,763	18,266	20,338	20,078	21,699	25,292	25,339	28,051	26,649	26,641	27,688
Department of the Army	7,077	7,610	9,223	10,208	11,318	11,629	11,878	11,908	10,853	9,832	9,220
Department of the Navy	11,344	13,397	15,019	17,661	18,399	19,248	18,649	19,586	19,660	17,814	17,753
Operational Test and Evaluation, Director	233	236	298	308	179	182	185	186	197	NA	NA
Other defense agencies	na	na	na	na	na	na	na	na	na	18,195	16,563
Department of Education	286	303	311	316	337	333	328	322	363	346	338
Department of Energy	8,072	8,436	8,561	8,597	8,340	8,630	8,990	11,562	11,645	10,680	10,635
Advanced Research Projects Agency—Energy	NA	NA	NA	NA	NA	NA	0	0	378	175	103
Bonneville Power Administration	23	23	25	11	11	11	14	8	13	13	14
Civilian Radioactive Waste Management	63	76	79	54	53	11	1	*	0	0	0
Electricity Delivery and Energy Reliability	na	na	na	80	133	92	83	87	113	89	101
Energy Efficiency and Renewable Energy	745	689	604	577	457	769	794	1,791	1,998	903	986
Environmental Management	160	69	43	50	34	19	19	30	90	67	46
Fossil Energy	373	644	532	573	455	431	417	505	504	430	383

TABLE 70

Federal obligations for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
National Nuclear Security Administration	3,728	3,923	4,036	3,922	3,862	3,783	3,981	3,716	3,638	4,164	4,127
Defense Programs	2,770	2,997	3,135	3,001	2,865	2,827	2,939	2,608	2,407	2,867	2,815
Fissile Materials Disposition	27	25	1	0	0	0	NA	NA	NA	NA	NA
Naval Nuclear Propulsion Program	665	678	737	775	753	751	743	793	945	974	1,080
Office of Defense Nuclear Nonproliferation	265	224	163	145	243	205	299	315	287	324	231
Nuclear Energy	43	47	74	85	89	81	133	116	368	388	361
Office of Intelligence	5	4	0	NA	NA	NA	NA	NA	NA	NA	NA
Office of Science	2,932	2,961	3,168	3,246	3,246	3,434	3,548	5,309	4,542	4,452	4,514
Department of Health and Human Services	24,259	27,215	28,564	29,173	29,126	29,556	29,701	35,736	37,617	30,928	31,336
Administration for Children and Families	23	21	20	39	14	12	19	14	7	10	8
Administration for Community Living	4	0	3	3	3	0	0	0	0	0	0
Agency for Healthcare Research and Quality	299	309	304	319	319	319	334	378	852	371	366
Agency for Toxic Substances and Disease Registry	12	14	11	10	9	4	4	5	3	5	1
Centers for Disease Control and Prevention	521	564	540	511	688	679	545	420	447	386	512
Centers for Medicare and Medicaid Services	117	74	78	77	62	57	31	30	82	35	21
Food and Drug Administration	150	146	141	143	147	138	143	171	223	234	359
Health Resources and Services Administration	55	43	48	53	24	24	63	57	67	37	38
National Institutes of Health	22,344	25,965	27,312	27,926	27,778	28,257	28,540	34,641	35,882	29,830	30,010
Office of the Secretary of Health and Human Services	17	22	21	25	27	24	22	20	54	20	19
Office of Public Health and Science	2	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Office of the Assistant Secretary for Planning and Evaluation	15	20	21	25	27	24	22	20	54	20	19
Substance Abuse and Mental Health Services Administration	718	57	87	68	54	42	0	NA	NA	NA	NA
Department of Homeland Security	na	NA	1,063	1,454	1,857	1,106	1,057	984	1,132	1,128	832
Coast Guard	na	NA	16	14	22	18	20	22	26	23	40
Science and Technology Directorate	na	NA	908	1,258	1,823	1,084	1,036	962	1,106	1,105	792
Secret Service	na	NA	1	1	1	1	1	NA	NA	NA	NA
Transportation Security Administration	na	NA	138	180	12	4	0	NA	NA	NA	NA
Department of Housing and Urban Development	45	39	47	43	33	40	30	33	62	73	90
Department of the Interior	635	600	613	597	609	625	645	739	728	717	743
Bureau of Ocean Energy Management	33	29	30	30	32	28	35	38	46	52	39
Bureau of Reclamation	10	11	16	17	11	16	15	13	13	15	12
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13

TABLE 70

Federal obligations for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Geological Survey	565	550	552	546	561	574	586	674	661	640	673
National Park Service	26	10	14	4	4	8	9	14	8	9	6
Department of Justice	99	148	105	128	128	184	114	103	125	102	85
Bureau of Prisons	9	10	11	13	12	13	11	10	11	12	11
Federal Bureau of Investigation	34	43	34	33	34	71	26	15	30	18	8
Office of Justice Programs	57	96	61	81	81	101	78	78	85	73	67
Department of Labor	166	189	199	164	95	50	42	31	14	56	21
Bureau of Labor Statistics	21	21	22	23	23	24	24	0	NA	NA	NA
Employee Benefits Security Administration	3	3	3	3	3	2	2	2	6	49	13
Employment and Training Administration	137	160	170	134	64	19	11	22	NA	NA	NA
Occupational Safety and Health Administration	4	3	3	3	4	3	4	4	6	4	6
Office of the Secretary of Labor	1	2	*	1	*	*	0	NA	0	0	NA
Pension Benefit Guaranty Corp.	1	1	1	2	2	2	2	2	3	3	3
Department of State	2	2	3	3	4	4	4	4	3	3	2
Department of Transportation	867	712	647	437	838	811	825	846	929	862	936
Coast Guard	22	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	360	263	234	244	277	260	274	316	409	347	360
Federal Highway Administration	258	305	323	74	400	405	377	348	337	344	403
Federal Motor Carrier Safety Administration	4	7	6	7	5	9	8	7	7	6	7
Federal Railroad Administration	34	33	30	32	49	40	39	42	44	47	46
Federal Transit Administration	6	7	5	4	17	6	9	10	23	24	26
National Highway Traffic Safety Administration	60	65	7	40	58	64	83	82	71	71	69
Office of the Secretary of Transportation	18	21	32	21	15	6	13	20	23	9	9
Pipeline and Hazardous Materials Safety Administration	na	na	10	14	15	18	9	10	10	8	11
Research and Innovative Technology Administration	na	na	0	2	2	3	11	11	6	5	5
Research and Special Programs Administration	10	11	na	na	na	na	na	na	na	na	na
Transportation Security Administration	95	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	74	60	62	66	69	65	65	69	69	78	76
Bureau of Engraving and Printing	7	5	4	6	6	5	5	3	1	6	5
Customs Service	11	na	na	na	na	na	na	na	na	na	na
Internal Revenue Service	56	54	57	58	55	55	60	65	66	71	69
Mint	*	1	1	2	7	5	1	1	1	1	2
Office of Thrift Supervision	*	NA	NA	NA	NA	NA	NA	NA	NA	na	na
Secret Service	1	na	na	na	na	na	na	na	na	na	na
Department of Veterans Affairs	329	366	406	402	412	446	480	510	563	613	615
Other agencies											

TABLE 70

Federal obligations for research, development, and R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Agency for Global Media	*	0	1	*	*	NA	NA	NA	NA	NA	NA
Agency for International Development	270	286	265	257	255	234	124	160	84	119	77
Appalachian Regional Commission	1	1	1	1	1	1	1	1	1	*	1
Consumer Product Safety Commission	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Environmental Protection Agency	415	567	662	641	622	576	532	553	572	582	581
Federal Communications Commission	4	4	9	9	8	8	7	7	4	4	4
Federal Trade Commission	2	2	2	1	2	2	3	2	3	3	3
Library of Congress	3	2	18	9	7	7	1	1	1	2	1
National Aeronautics and Space Administration	9,727	9,158	8,654	8,928	7,250	6,206	5,847	5,958	8,691	8,429	10,758
National Archives and Records Administration	*	*	*	*	*	*	5	5	5	3	2
National Science Foundation	3,501	3,944	4,166	4,098	4,240	4,407	4,506	6,925	6,073	5,537	5,705
Nuclear Regulatory Commission	74	64	72	70	71	77	61	61	85	84	83
Patient-Centered Outcomes Research Trust Fund	na	na	na	na	na	na	na	na	na	41	41
Smithsonian Institution	109	107	111	115	146	186	188	227	213	249	246
Social Security Administration	23	37	30	35	68	68	54	68	63	53	65

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 71

Federal obligations for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	127,626	132,779	131,578	118,274	121,627	133,278	146,801	173,553	194,434	193,551
Departments										
Department of Agriculture	2,031	2,269	2,352	2,380	2,575	2,523	2,666	3,433	2,955	3,285
Agricultural Marketing Service	5	6	7	7	7	7	8	7	13	15
Agricultural Research Service	1,017	1,123	1,133	1,152	1,318	1,229	1,312	2,204	1,556	1,608
Animal and Plant Health Inspection Service	37	40	40	40	39	39	39	40	42	45
Economic Research Service	71	78	85	85	86	86	86	82	85	90
Foreign Agricultural Service	1	*	1	*	*	0	0	0	0	0
Forest Service	337	343	340	354	337	343	337	351	298	355
Grain Inspection, Packers, and Stockyards Administration	6	8	8	8	*	na	na	na	na	na
National Agricultural Statistics Service	7	9	9	9	9	9	9	9	9	11
National Institute of Food and Agriculture	546	657	726	721	774	805	871	738	937	1,148
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	14	13
Rural Business-Cooperative Service	4	6	4	4	3	4	4	3	0	0
Department of Commerce	1,294	1,568	1,519	1,636	1,847	1,832	1,999	1,981	2,242	2,663
Census Bureau	131	259	142	200	220	110	96	111	109	149
National Institute of Standards and Technology	609	666	674	751	807	791	831	878	1,136	1,033
National Oceanic and Atmospheric Administration	547	634	692	675	812	922	1,064	984	990	1,473
National Telecommunications and Information Administration	7	10	12	11	8	9	8	8	7	7
Department of Defense	63,655	65,129	61,683	44,927	45,164	53,444	59,389	67,007	70,876	75,635
Defense Advanced Research Projects Agency	2,372	2,822	2,816	2,933	2,895	3,018	3,321	3,664	3,606	3,809
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	2,886	2,852	2,537
Department of the Air Force	23,600	24,331	22,443	7,441	8,324	11,413	15,269	11,924	12,511	13,362
Department of the Army	7,883	7,332	6,764	6,373	7,531	8,581	10,275	10,786	11,921	12,934
Department of the Navy	15,440	15,591	15,525	16,682	15,285	15,525	15,484	19,159	16,771	18,705
Space Force	na	na	na	na	na	na	na	4,386	5,342	4,593
Other defense agencies	14,360	15,052	14,135	11,497	11,129	14,907	15,040	14,202	17,873	19,695
Department of Education	310	322	251	244	262	266	236	240	364	407
Department of Energy	10,397	11,296	12,343	13,343	13,584	14,894	16,622	15,778	16,121	16,384
Advanced Research Projects Agency—Energy	182	261	242	299	274	160	405	438	315	450
Bonneville Power Administration	14	16	16	16	14	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	83	104	97	112	133	146	138	140	129	127
Energy Efficiency and Renewable Energy	922	870	1,083	1,291	1,445	1,913	2,001	2,150	2,155	2,123
Environmental Management	9	28	25	30	31	38	26	22	30	35
Fossil Energy	358	442	540	609	620	683	682	708	720	765
National Nuclear Security Administration	4,255	4,532	4,528	4,819	4,740	4,531	6,078	4,558	5,180	4,970
Defense Programs	2,968	3,120	3,076	3,198	3,071	2,831	3,998	2,625	3,321	2,930
Naval Nuclear Propulsion Program	994	1,115	1,239	1,375	1,420	1,420	1,789	1,634	1,471	1,653

TABLE 71

Federal obligations for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Office of Defense Nuclear Nonproliferation	294	297	213	245	249	280	292	298	388	387
Nuclear Energy	263	324	728	763	891	1,116	606	573	455	479
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	52	51	2	120
Office of Science	4,310	4,720	5,085	5,405	5,436	6,308	6,634	7,139	7,135	7,315
Department of Health and Human Services	29,513	30,799	30,425	32,367	33,902	37,116	39,434	61,775	77,050	69,393
Administration for Children and Families	2	3	2	3	2	3	2	2	5	4
Administration for Community Living	0	0	76	83	83	83	83	90	107	111
Agency for Healthcare Research and Quality	365	364	364	334	324	334	338	338	338	350
Agency for Toxic Substances and Disease Registry	1	1	2	2	3	3	7	10	11	11
Biomedical Advanced Research and Development Authority	NA	NA	NA	NA	NA	NA	736	16,962	34,041	26,434
Centers for Disease Control and Prevention	363	409	489	521	475	451	419	497	696	661
Centers for Medicare and Medicaid Services	20	34	24	30	29	231	133	224	421	421
Food and Drug Administration	364	395	382	491	380	485	519	484	597	678
Health Resources and Services Administration	37	38	42	41	46	36	33	35	42	39
National Institutes of Health	28,341	29,536	29,026	30,843	32,542	35,473	37,146	43,117	40,775	40,666
Office of the Secretary of Health and Human Services	19	19	18	18	17	17	17	16	17	18
Office of the Assistant Secretary for Planning and Evaluation	19	19	18	18	17	17	17	16	17	18
Department of Homeland Security	719	944	1,645	689	870	913	648	507	549	621
Coast Guard	23	27	21	25	23	23	21	5	10	7
Countering Weapons of Mass Destruction Office	NA	84	71	63	69	30	81	37	32	39
Cybersecurity and Infrastructure Security Agency	na	na	na	na	na	7	13	8	13	11
Science and Technology Directorate	696	832	1,553	601	778	832	511	422	463	525
Secret Service	NA	NA	NA	NA	NA	1	2	13	1	2
Transportation Security Administration	NA	NA	NA	NA	NA	20	21	23	30	36
Department of Housing and Urban Development	67	54	58	67	64	62	61	NA	NA	NA
Department of the Interior	717	762	809	860	868	769	831	844	915	1,172
Bureau of Indian Affairs	NA	NA	NA	NA	NA	5	5	*	5	4
Bureau of Land Management	NA	NA	16	18	18	21	21	21	10	12
Bureau of Ocean Energy Management	40	48	50	72	76	78	86	73	77	84
Bureau of Reclamation	13	14	13	22	29	23	24	29	40	43
Bureau of Safety and Environmental Enforcement	21	36	25	30	16	7	13	13	32	22
Fish and Wildlife Service	NA	NA	30	32	33	33	33	33	33	33

TABLE 71

Federal obligations for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Geological Survey	636	649	666	677	688	593	640	665	691	947
National Park Service	7	15	8	9	10	10	10	10	28	28
Office of Surface Mining Reclamation and Enforcement	NA	NA	NA	NA	NA	0	*	1	0	0
Department of Justice	119	161	150	208	127	107	121	96	85	88
Bureau of Prisons	11	11	11	11	10	6	7	8	*	*
Federal Bureau of Investigation	39	10	13	13	2	3	1	5	4	5
Office of Justice Programs	69	140	126	184	115	98	114	84	81	83
Department of Labor	16	14	14	10	5	5	4	5	3	4
Employee Benefits Security Administration	10	7	7	5	3	3	3	3	1	2
Occupational Safety and Health Administration	4	4	3	1	2	2	2	2	2	2
Pension Benefit Guaranty Corp.	3	3	4	4	0	0	NA	NA	NA	NA
Department of State	1	NA	2	2	2	62	62	40	64	67
Department of Transportation	876	848	884	962	987	1,077	1,052	1,224	1,145	1,134
Federal Aviation Administration	310	297	340	426	435	404	424	470	542	552
Federal Highway Administration	397	398	313	332	352	491	452	512	410	391
Federal Motor Carrier Safety Administration	8	8	8	11	12	9	8	9	13	16
Federal Railroad Administration	53	43	47	44	46	49	41	48	44	53
Federal Transit Administration	16	8	82	35	55	10	3	40	43	33
National Highway Traffic Safety Administration	65	65	63	87	69	76	76	69	66	51
Office of the Secretary of Transportation	11	15	11	18	11	16	20	34	12	15
Pipeline and Hazardous Materials Safety Administration	11	14	22	10	7	22	28	41	16	24
Research and Innovative Technology Administration	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Department of the Treasury	74	74	73	85	8	38	61	61	54	65
Bureau of Engraving and Printing	9	9	9	19	7	38	59	60	54	64
Internal Revenue Service	65	64	64	65	0	0	0	0	NA	NA
Mint	*	1	*	2	1	0	2	*	*	1
Department of Veterans Affairs	639	589	662	695	682	1,349	1,508	1,565	1,698	1,831
Other agencies										
Administrative Office of the U.S. Courts	NA	NA	NA	7	8	7	6	5	4	1
Agency for Global Media	NA	NA	NA	NA	NA	NA	6	5	5	8
Agency for International Development	125	60	212	193	192	167	221	194	82	82
Appalachian Regional Commission	*	1	*	1	*	1	1	1	1	*
Consumer Product Safety Commission	1	2	2	2	2	1	1	*	*	*
Environmental Protection Agency	530	538	521	513	498	492	490	493	526	531
Federal Communications Commission	5	7	5	5	7	5	2	2	0	0
Federal Trade Commission	3	3	2	3	6	6	6	6	8	9
Library of Congress	1	1	1	2	2	3	2	3	3	3
National Aeronautics and Space Administration	10,494	10,881	11,413	12,462	12,638	10,814	13,616	10,574	11,805	11,503
National Archives and Records Administration	1	1	1	1	1	1	1	0	NA	NA

TABLE 71

Federal obligations for research, development, and R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
National Science Foundation	5,328	5,800	5,990	6,022	5,946	6,358	6,648	6,793	7,138	7,843
Nuclear Regulatory Commission	76	85	92	81	67	78	75	69	80	82
Patient-Centered Outcomes Research Trust Fund	334	283	152	115	884	492	578	470	460	481
Postal Service	NA	NA	28	29	73	53	27	18	15	16
RESTORE Act Centers of Excellence Research Grants Program	na	na	na	na	na	na	na	9	0	7
Smithsonian Institution	240	231	229	235	241	261	269	276	63	95
Social Security Administration	57	60	59	129	110	72	146	70	105	99
Tennessee Valley Authority	NA	NA	NA	NA	6	13	10	8	17	41

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. Beginning with FY 2016, the totals reported for development obligations represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) obligations. Those funds, previously included in DOD's development obligation totals, support the development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 72

Federal obligations for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	93,709	103,528	112,074	118,848	121,730	127,263	127,106	141,090	140,355	135,533	138,525
Departments											
Department of Agriculture	1,972	2,040	2,102	2,184	2,214	2,248	2,202	2,267	2,364	2,341	2,171
Agricultural Marketing Service	5	5	9	8	6	6	5	4	4	4	4
Agricultural Research Service	1,060	1,062	1,098	1,108	1,135	1,142	1,123	1,141	1,178	1,133	1,090
Animal and Plant Health Inspection Service	24	28	24	24	26	26	28	29	30	29	37
Economic Research Service	67	68	71	74	75	92	78	79	86	81	77
Foreign Agricultural Service	1	2	2	2	1	1	*	*	*	1	1
Forest Service	253	292	296	301	308	320	295	344	357	353	331
Grain Inspection, Packers, and Stockyards Administration	6	5	7	7	7	7	7	7	6	7	5
National Agricultural Statistics Service	5	6	6	6	7	7	7	7	7	7	7
National Institute of Food and Agriculture	547	568	586	652	645	627	655	652	690	724	614
Rural Business-Cooperative Service	4	4	4	4	4	21	4	4	5	2	4
Department of Commerce	1,151	1,208	1,059	1,033	942	1,028	1,045	1,147	1,274	1,067	1,055
Census Bureau	29	23	24	23	22	23	25	29	47	59	102
Economic Development Administration	*	1	*	*	*	1	2	3	7	1	NA
National Institute of Standards and Technology	451	476	444	419	386	456	430	500	687	507	513
National Oceanic and Atmospheric Administration	651	685	566	584	527	541	581	608	525	492	433
National Telecommunications and Information Administration	20	24	24	7	7	7	7	7	8	8	8
Department of Defense	45,413	51,898	57,793	63,388	65,871	72,211	71,833	75,857	73,471	75,158	73,804
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	2,846	2,750
Defense agencies and activities	12,076	12,503	13,068	15,324	14,304	15,904	15,906	16,241	16,264	na	na
Department of the Air Force	14,740	18,259	20,319	19,971	21,688	25,264	25,232	27,950	26,521	26,500	27,545
Department of the Army	7,077	7,610	9,223	10,208	11,318	11,629	11,878	11,908	10,853	9,832	9,220
Department of the Navy	11,287	13,290	14,885	17,577	18,382	19,233	18,633	19,571	19,635	17,793	17,728
Operational Test and Evaluation, Director	233	236	298	308	179	182	185	186	197	NA	NA
Other defense agencies	na	na	na	na	na	na	na	na	na	18,187	16,561
Department of Education	286	303	311	316	337	333	328	322	363	346	338
Department of Energy	7,044	7,412	7,554	7,733	7,562	7,877	8,239	9,890	10,686	9,946	9,952
Advanced Research Projects Agency—Energy	NA	NA	NA	NA	NA	NA	0	0	378	175	103
Bonneville Power Administration	23	23	25	11	11	11	14	8	13	13	14
Civilian Radioactive Waste Management	63	76	79	54	53	11	1	*	0	0	0
Electricity Delivery and Energy Reliability	na	na	na	80	133	92	83	87	113	89	101
Energy Efficiency and Renewable Energy	740	682	584	557	431	662	729	1,584	1,895	863	986
Environmental Management	160	69	43	50	34	19	19	30	90	67	46
Fossil Energy	363	639	526	566	436	419	404	486	485	411	367

TABLE 72

Federal obligations for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
National Nuclear Security Administration	3,302	3,475	3,600	3,619	3,557	3,591	3,718	3,548	3,448	4,036	4,034
Defense Programs	2,373	2,577	2,727	2,733	2,594	2,656	2,707	2,476	2,247	2,771	2,762
Fissile Materials Disposition	27	25	1	0	0	0	NA	NA	NA	NA	NA
Naval Nuclear Propulsion Program	637	650	709	741	720	730	712	756	914	942	1,040
Office of Defense Nuclear Nonproliferation	265	224	163	145	243	205	299	315	287	324	231
Nuclear Energy	43	47	74	85	89	81	133	116	368	388	361
Office of Intelligence	5	4	0	NA	NA	NA	NA	NA	NA	NA	NA
Office of Science	2,345	2,395	2,623	2,712	2,818	2,993	3,137	4,031	3,895	3,904	3,940
Department of Health and Human Services	24,012	26,399	28,133	28,746	28,766	29,302	29,554	35,584	35,935	30,849	31,196
Administration for Children and Families	23	21	20	39	14	12	19	14	7	10	8
Administration for Community Living	4	0	3	3	3	0	0	0	0	0	0
Agency for Healthcare Research and Quality	299	309	304	319	319	319	334	378	852	371	366
Agency for Toxic Substances and Disease Registry	12	14	11	10	9	4	4	5	3	5	1
Centers for Disease Control and Prevention	521	564	540	511	545	544	539	420	447	386	512
Centers for Medicare and Medicaid Services	117	74	78	77	62	57	31	30	82	35	21
Food and Drug Administration	136	138	132	142	143	129	138	166	211	225	353
Health Resources and Services Administration	54	43	47	53	24	23	62	56	66	37	38
National Institutes of Health	22,110	25,156	26,890	27,500	27,566	28,146	28,404	34,494	34,213	29,760	29,877
Office of the Secretary of Health and Human Services	17	22	21	25	27	24	22	20	54	20	19
Office of Public Health and Science	2	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Office of the Assistant Secretary for Planning and Evaluation	15	20	21	25	27	24	22	20	54	20	19
Substance Abuse and Mental Health Services Administration	718	57	87	68	54	42	0	NA	NA	NA	NA
Department of Homeland Security	na	NA	946	1,362	1,725	863	837	673	674	559	602
Coast Guard	na	NA	15	13	21	17	20	20	25	21	39
Science and Technology Directorate	na	NA	792	1,167	1,692	841	817	652	649	538	563
Secret Service	na	NA	1	1	1	1	1	NA	NA	NA	NA
Transportation Security Administration	na	NA	138	180	12	4	0	NA	NA	NA	NA
Department of Housing and Urban Development	45	39	47	43	33	40	30	33	62	73	90
Department of the Interior	633	597	605	590	603	615	636	732	722	706	738
Bureau of Ocean Energy Management	31	27	27	27	29	25	32	36	43	45	39
Bureau of Reclamation	10	9	11	13	9	9	9	9	10	11	10
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10

TABLE 72

Federal obligations for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Geological Survey	565	550	552	546	561	574	586	674	661	640	673
National Park Service	26	10	14	4	4	8	9	14	8	9	6
Department of Justice	99	148	105	128	128	176	113	103	125	102	85
Bureau of Prisons	9	10	11	13	12	13	11	10	11	12	11
Federal Bureau of Investigation	34	43	34	33	34	71	26	15	30	18	8
Office of Justice Programs	57	96	61	81	81	93	77	78	85	73	67
Department of Labor	166	189	199	164	95	50	42	31	14	56	21
Bureau of Labor Statistics	21	21	22	23	23	24	24	0	NA	NA	NA
Employee Benefits Security Administration	3	3	3	3	3	2	2	2	6	49	13
Employment and Training Administration	137	160	170	134	64	19	11	22	NA	NA	NA
Occupational Safety and Health Administration	4	3	3	3	4	3	4	4	6	4	6
Office of the Secretary of Labor	1	2	*	1	*	*	0	NA	0	0	NA
Pension Benefit Guaranty Corp.	1	1	1	2	2	2	2	2	3	3	3
Department of State	2	2	3	3	4	4	4	4	3	3	2
Department of Transportation	816	693	629	418	819	791	806	826	908	841	898
Coast Guard	22	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	345	245	218	227	260	242	257	298	390	330	329
Federal Highway Administration	258	305	323	74	400	405	377	348	337	344	403
Federal Motor Carrier Safety Administration	4	7	6	7	5	9	8	7	7	6	7
Federal Railroad Administration	33	32	29	31	47	38	38	40	41	44	40
Federal Transit Administration	6	7	5	4	17	6	9	10	23	24	26
National Highway Traffic Safety Administration	60	65	7	40	58	64	83	82	71	71	69
Office of the Secretary of Transportation	18	21	32	21	15	6	13	20	23	9	9
Pipeline and Hazardous Materials Safety Administration	na	na	10	14	15	18	9	10	10	8	11
Research and Innovative Technology Administration	na	na	0	2	2	3	11	11	6	5	5
Research and Special Programs Administration	10	11	na	na	na	na	na	na	na	na	na
Transportation Security Administration	59	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	74	60	62	66	65	64	65	69	69	78	76
Bureau of Engraving and Printing	7	5	4	6	6	5	5	3	1	6	5
Customs Service	11	na	na	na	na	na	na	na	na	na	na
Internal Revenue Service	56	54	57	58	55	55	60	65	66	71	69
Mint	*	1	1	2	4	4	1	1	1	1	2
Office of Thrift Supervision	*	NA	NA	NA	NA	NA	NA	NA	NA	na	na
Secret Service	1	na	na	na	na	na	na	na	na	na	na
Department of Veterans Affairs	329	365	405	402	412	446	480	510	563	613	615
Other agencies											

TABLE 72

Federal obligations for research and development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Agency for Global Media	*	0	1	*	*	NA	NA	NA	NA	NA	NA
Agency for International Development	270	286	265	257	255	234	124	160	84	119	77
Appalachian Regional Commission	1	1	1	1	1	1	1	1	1	*	1
Consumer Product Safety Commission	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Environmental Protection Agency	415	567	662	641	622	576	532	553	572	577	576
Federal Communications Commission	4	4	9	9	8	8	7	7	4	4	4
Federal Trade Commission	2	2	2	1	2	2	3	2	3	3	3
Library of Congress	3	2	18	9	7	7	1	1	1	2	1
National Aeronautics and Space Administration	7,508	7,499	7,182	7,395	7,211	6,126	5,827	5,937	7,121	6,570	10,660
National Archives and Records Administration	*	*	*	*	*	*	5	5	5	3	2
National Science Foundation	3,260	3,609	3,771	3,743	3,791	3,970	4,135	6,095	5,016	5,146	5,170
Nuclear Regulatory Commission	74	64	72	70	71	77	61	61	85	84	83
Patient-Centered Outcomes Research Trust Fund	na	na	na	na	na	na	na	na	na	41	41
Smithsonian Institution	106	104	108	109	119	145	142	152	167	193	197
Social Security Administration	23	37	30	35	68	68	54	68	63	53	65

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See appendix table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 73

Federal obligations for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	125,720	130,561	128,753	115,833	118,975	129,425	142,424	167,403	190,151	189,059
Departments										
Department of Agriculture	2,019	2,258	2,341	2,358	2,418	2,479	2,637	2,644	2,898	3,266
Agricultural Marketing Service	5	6	7	7	7	7	8	7	13	15
Agricultural Research Service	1,014	1,122	1,132	1,144	1,170	1,201	1,292	1,424	1,510	1,599
Animal and Plant Health Inspection Service	37	40	40	40	39	39	39	40	42	45
Economic Research Service	71	78	85	85	86	86	86	82	85	90
Foreign Agricultural Service	1	*	1	*	*	0	0	0	0	0
Forest Service	329	335	332	341	328	327	327	342	286	345
Grain Inspection, Packers, and Stockyards Administration	5	6	6	6	*	na	na	na	na	na
National Agricultural Statistics Service	7	9	9	9	9	9	9	9	9	11
National Institute of Food and Agriculture	546	657	726	721	774	805	871	738	937	1,148
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	13	13
Rural Business-Cooperative Service	4	6	4	4	3	4	4	3	0	0
Department of Commerce	1,092	1,375	1,331	1,351	1,612	1,439	1,535	1,622	1,813	2,043
Census Bureau	131	259	142	200	220	110	96	111	109	149
National Institute of Standards and Technology	535	602	634	629	716	686	712	735	885	891
National Oceanic and Atmospheric Administration	419	504	544	511	668	634	719	768	812	996
National Telecommunications and Information Administration	7	10	12	11	8	9	8	8	7	7
Department of Defense	63,558	64,980	61,514	44,749	44,873	52,973	58,780	66,695	70,707	75,473
Defense Advanced Research Projects Agency	2,372	2,822	2,816	2,933	2,895	3,018	3,321	3,664	3,606	3,809
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	2,870	2,852	2,537
Department of the Air Force	23,524	24,210	22,320	7,322	8,099	11,203	15,077	11,683	12,390	13,245
Department of the Army	7,883	7,332	6,764	6,372	7,531	8,581	10,275	10,786	11,921	12,934
Department of the Navy	15,419	15,567	15,490	16,644	15,236	15,446	15,341	19,114	16,734	18,669
Space Force	na	na	na	na	na	na	na	4,386	5,342	4,593
Other defense agencies	14,359	15,048	14,124	11,477	11,112	14,725	14,766	14,191	17,863	19,686
Department of Education	310	322	251	244	262	266	236	240	364	407
Department of Energy	9,841	10,526	11,391	12,209	12,308	12,832	14,376	13,453	13,453	13,912
Advanced Research Projects Agency—Energy	182	261	242	299	274	160	405	438	315	450
Bonneville Power Administration	14	16	16	16	14	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	83	104	97	112	133	146	138	140	129	127
Energy Efficiency and Renewable Energy	918	866	1,079	1,288	1,441	1,686	1,696	2,096	2,114	2,062
Environmental Management	9	28	25	30	31	38	26	22	30	35
Fossil Energy	342	426	524	609	605	662	659	679	691	736
National Nuclear Security Administration	4,180	4,417	4,271	4,568	4,435	4,057	5,741	3,984	4,213	4,107
Defense Programs	2,893	3,026	2,975	3,107	2,966	2,572	3,660	2,298	2,703	2,492
Naval Nuclear Propulsion Program	994	1,094	1,083	1,216	1,220	1,206	1,789	1,387	1,140	1,246

TABLE 73

Federal obligations for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Office of Defense Nuclear Nonproliferation	294	297	213	245	249	280	292	298	369	368
Nuclear Energy	263	324	728	763	891	1,116	606	573	455	479
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	52	51	2	120
Office of Science	3,848	4,085	4,409	4,524	4,485	4,968	5,054	5,470	5,506	5,795
Department of Health and Human Services	29,382	30,656	30,272	32,216	33,774	36,911	39,191	60,006	76,651	69,153
Administration for Children and Families	2	3	2	3	2	3	2	2	5	4
Administration for Community Living	0	0	76	83	83	83	83	90	107	111
Agency for Healthcare Research and Quality	365	364	364	334	324	334	338	338	338	350
Agency for Toxic Substances and Disease Registry	1	1	2	2	3	3	7	10	11	11
Biomedical Advanced Research and Development Authority	NA	NA	NA	NA	NA	NA	736	15,666	33,881	26,433
Centers for Disease Control and Prevention	363	409	489	521	475	451	419	497	696	661
Centers for Medicare and Medicaid Services	20	34	24	30	29	231	133	224	421	421
Food and Drug Administration	361	389	376	486	375	478	493	464	589	669
Health Resources and Services Administration	37	38	41	41	46	36	33	35	41	38
National Institutes of Health	28,215	29,400	28,880	30,698	32,419	35,276	36,929	42,664	40,546	40,436
Office of the Secretary of Health and Human Services	19	19	18	18	17	17	17	16	17	18
Office of the Assistant Secretary for Planning and Evaluation	19	19	18	18	17	17	17	16	17	18
Department of Homeland Security	391	583	742	572	857	912	647	507	529	601
Coast Guard	22	26	20	23	22	22	20	5	10	7
Countering Weapons of Mass Destruction Office	NA	84	71	63	69	30	81	37	32	39
Cybersecurity and Infrastructure Security Agency	na	na	na	na	na	7	13	8	13	11
Science and Technology Directorate	369	472	651	486	766	832	511	422	444	506
Secret Service	NA	NA	NA	NA	NA	1	2	13	1	2
Transportation Security Administration	NA	NA	NA	NA	NA	20	21	23	29	35
Department of Housing and Urban Development	67	54	58	67	64	62	61	NA	NA	NA
Department of the Interior	709	758	800	857	863	766	827	837	902	1,165
Bureau of Indian Affairs	NA	NA	NA	NA	NA	5	5	*	5	4
Bureau of Land Management	NA	NA	16	18	18	21	21	21	10	12
Bureau of Ocean Energy Management	40	48	50	72	76	78	86	73	77	84
Bureau of Reclamation	10	12	10	21	27	21	23	27	38	42
Bureau of Safety and Environmental Enforcement	16	33	20	27	11	5	9	8	21	16
Fish and Wildlife Service	NA	NA	30	32	33	33	33	33	33	33

TABLE 73

Federal obligations for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Geological Survey	636	649	666	677	688	593	640	665	691	947
National Park Service	7	15	8	9	10	10	10	10	28	28
Office of Surface Mining Reclamation and Enforcement	NA	NA	NA	NA	NA	0	*	1	0	0
Department of Justice	119	161	150	208	127	107	121	96	85	88
Bureau of Prisons	11	11	11	11	10	6	7	8	*	*
Federal Bureau of Investigation	39	10	13	13	2	3	1	5	4	5
Office of Justice Programs	69	140	126	184	115	98	114	84	81	83
Department of Labor	16	14	14	10	5	5	4	5	3	4
Employee Benefits Security Administration	10	7	7	5	3	3	3	3	1	2
Occupational Safety and Health Administration	4	4	3	1	2	2	2	2	2	2
Pension Benefit Guaranty Corp.	3	3	4	4	0	0	NA	NA	NA	NA
Department of State	1	NA	2	2	2	62	62	40	64	67
Department of Transportation	855	828	856	937	949	1,046	1,012	1,184	1,108	1,096
Federal Aviation Administration	292	280	313	403	399	375	387	432	507	516
Federal Highway Administration	397	398	313	332	352	491	452	512	410	391
Federal Motor Carrier Safety Administration	8	8	8	11	12	9	8	9	13	16
Federal Railroad Administration	50	40	44	41	44	47	39	46	42	51
Federal Transit Administration	16	8	82	35	55	10	3	40	43	33
National Highway Traffic Safety Administration	65	65	63	87	69	76	76	69	66	50
Office of the Secretary of Transportation	11	15	11	18	11	16	20	34	12	15
Pipeline and Hazardous Materials Safety Administration	11	14	22	10	7	22	28	41	16	24
Research and Innovative Technology Administration	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Department of the Treasury	74	74	73	85	8	38	57	61	54	65
Bureau of Engraving and Printing	9	9	9	19	7	38	57	60	54	64
Internal Revenue Service	65	64	64	65	0	0	0	0	NA	NA
Mint	*	1	*	2	1	0	*	*	*	1
Department of Veterans Affairs	639	589	662	695	682	1,349	1,508	1,565	1,698	1,831
Other agencies										
Administrative Office of the U.S. Courts	NA	NA	NA	7	8	7	6	5	4	1
Agency for Global Media	NA	NA	NA	NA	NA	NA	6	5	5	8
Agency for International Development	125	60	212	193	192	167	221	194	82	82
Appalachian Regional Commission	*	1	*	1	*	1	1	1	1	*
Consumer Product Safety Commission	1	2	2	2	2	1	1	*	*	*
Environmental Protection Agency	523	531	516	508	494	487	485	489	520	525
Federal Communications Commission	5	7	5	5	7	5	2	2	0	0
Federal Trade Commission	3	3	2	3	6	6	6	6	8	9
Library of Congress	1	1	1	2	2	3	2	3	3	3
National Aeronautics and Space Administration	10,368	10,754	11,361	12,404	12,595	10,717	13,570	10,538	11,753	11,404
National Archives and Records Administration	1	1	1	1	1	1	1	0	NA	NA

TABLE 73

Federal obligations for research and development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
National Science Foundation	4,956	5,403	5,670	5,589	5,518	5,849	5,996	6,351	6,705	7,036
Nuclear Regulatory Commission	76	85	92	81	67	78	75	69	80	82
Patient-Centered Outcomes Research Trust Fund	334	283	152	115	884	492	578	470	460	481
Postal Service	NA	NA	28	29	73	53	27	18	15	16
RESTORE Act Centers of Excellence Research Grants Program	na	na	na	na	na	na	na	9	0	7
Smithsonian Institution	195	195	196	206	208	228	236	210	63	95
Social Security Administration	57	60	59	129	110	72	146	70	105	99
Tennessee Valley Authority	NA	NA	NA	NA	6	13	10	8	17	41

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. Beginning with FY 2016, the totals reported for development obligations represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) obligations. Those funds, previously included in DOD's development obligation totals, support the development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 74

Federal obligations for R&D plant, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	4,305	4,267	3,994	3,771	2,125	2,168	1,944	3,668	6,613	4,171	2,146
Departments											
Department of Agriculture	119	96	179	134	173	124	44	77	251	36	16
Agricultural Research Service	104	81	161	119	159	99	23	46	181	19	5
Forest Service	15	15	19	15	14	25	21	32	70	17	10
Grain Inspection, Packers, and Stockyards Administration	0	0	0	0	0	0	0	0	0	0	2
Department of Commerce	29	59	90	61	75	118	152	386	409	242	176
Economic Development Administration	0	0	0	0	0	0	18	25	12	15	NA
National Institute of Standards and Technology	29	49	37	44	43	51	87	105	237	90	35
National Oceanic and Atmospheric Administration	0	10	52	16	31	66	46	256	159	137	141
Department of Defense	365	251	275	273	63	79	163	117	153	170	170
Defense agencies and activities	284	138	121	82	35	36	41	1	*	na	na
Department of the Air Force	23	7	19	107	11	28	107	101	127	141	143
Department of the Navy	57	107	134	84	17	15	16	15	25	22	25
Other defense agencies	na	na	na	na	na	na	na	na	na	7	2
Department of Energy	1,028	1,024	1,007	863	778	752	752	1,672	959	735	683
Energy Efficiency and Renewable Energy	5	6	20	19	26	107	65	207	103	39	0
Fossil Energy	10	5	6	6	19	12	13	19	19	19	16
National Nuclear Security Administration	426	448	436	303	305	192	263	168	190	128	93
Defense Programs	397	420	408	268	272	171	232	132	159	96	53
Fissile Materials Disposition	*	*	0	0	0	0	NA	NA	NA	NA	NA
Naval Nuclear Propulsion Program	29	28	28	35	33	21	31	36	31	33	40
Office of Science	587	565	545	534	428	442	410	1,278	647	548	574
Department of Health and Human Services	247	816	431	427	361	255	147	152	1,682	79	140
Centers for Disease Control and Prevention	0	0	0	0	144	134	6	0	0	0	0
Food and Drug Administration	13	7	9	1	4	8	5	5	13	8	6
Health Resources and Services Administration	1	*	1	1	1	1	1	1	1	1	1
National Institutes of Health	233	808	421	426	213	111	135	146	1,669	70	133
Department of Homeland Security	na	NA	117	92	132	244	220	311	458	568	230
Coast Guard	na	NA	1	1	*	1	*	1	1	1	1
Science and Technology Directorate	na	NA	116	91	131	243	219	310	457	567	229
Department of the Interior	2	4	8	7	5	10	9	6	6	11	5
Bureau of Ocean Energy Management	2	2	3	3	3	3	3	2	3	7	0
Bureau of Reclamation	0	2	5	5	2	7	6	5	4	4	2
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3
Department of Justice	0	0	0	0	0	8	1	0	0	0	0
Office of Justice Programs	0	0	0	0	0	8	1	0	0	0	0
Department of Transportation	52	19	18	18	19	20	19	20	21	20	38
Coast Guard	*	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	14	18	16	17	17	18	17	18	18	18	31
Federal Railroad Administration	1	1	1	1	2	2	2	2	3	3	6
Transportation Security Administration	36	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	0	0	0	0	4	2	0	0	0	0	0
Mint	0	0	0	0	4	2	0	0	0	0	0
Department of Veterans Affairs	*	*	*	*	*	*	*	0	0	0	0
Other agencies											
Environmental Protection Agency	0	0	0	0	0	0	0	0	0	5	5
National Aeronautics and Space Administration	2,218	1,659	1,472	1,534	39	80	20	21	1,570	1,859	98
National Science Foundation	241	335	395	355	449	437	371	830	1,058	391	536
Smithsonian Institution	3	3	3	6	27	41	46	75	46	56	49

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 75

Federal obligations for R&D plant, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	1,905	2,218	2,825	2,441	2,652	3,853	4,376	6,150	4,282	4,492
Departments										
Department of Agriculture	12	11	11	23	157	44	29	790	57	19
Agricultural Research Service	3	1	1	8	147	28	19	780	46	9
Forest Service	8	7	8	13	9	16	10	9	12	10
Grain Inspection, Packers, and Stockyards Administration	2	2	2	2	*	na	na	na	na	na
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	*	0
Department of Commerce	202	193	188	285	235	394	464	359	429	620
National Institute of Standards and Technology	74	63	40	121	91	105	119	143	251	143
National Oceanic and Atmospheric Administration	128	129	148	164	144	288	345	216	178	478
Department of Defense	97	148	169	178	291	471	610	312	169	162
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	15	0	0
Department of the Air Force	75	121	123	120	225	210	193	241	121	117
Department of the Army	0	0	0	1	0	0	0	0	NA	NA
Department of the Navy	20	24	36	38	49	79	143	45	37	36
Other defense agencies	1	4	11	19	18	182	274	11	10	8
Department of Energy	556	770	952	1,135	1,276	2,062	2,245	2,325	2,668	2,473
Energy Efficiency and Renewable Energy	4	4	4	4	4	227	305	53	42	61
Fossil Energy	15	16	16	0	16	21	23	29	29	29
National Nuclear Security Administration	75	116	256	251	305	474	337	574	967	863
Defense Programs	75	94	101	91	105	259	337	327	617	437
Naval Nuclear Propulsion Program	*	22	155	160	200	214	0	247	331	407
Office of Defense Nuclear Nonproliferation	0	0	0	0	0	0	0	0	19	19
Office of Science	462	635	676	880	951	1,340	1,580	1,669	1,630	1,520
Department of Health and Human Services	130	143	153	151	128	204	243	1,769	399	241
Biomedical Advanced Research and Development Authority	NA	NA	NA	NA	NA	NA	0	1,296	160	*
Food and Drug Administration	4	6	7	5	5	7	26	20	8	9
Health Resources and Services Administration	1	1	1	1	0	0	0	0	1	1
National Institutes of Health	126	136	146	145	123	197	217	453	229	230
Department of Homeland Security	328	361	903	117	13	1	1	0	20	20
Coast Guard	1	1	1	1	1	1	1	0	0	0
Science and Technology Directorate	327	360	902	116	12	0	0	0	19	19
Transportation Security Administration	NA	NA	NA	NA	NA	0	0	0	1	1
Department of the Interior	8	5	9	3	5	3	5	7	13	8
Bureau of Reclamation	3	2	3	1	1	1	1	2	2	2
Bureau of Safety and Environmental Enforcement	5	3	6	2	4	2	3	5	11	6
Department of Transportation	21	20	29	25	38	31	39	40	37	38
Federal Aviation Administration	19	16	26	22	37	28	37	38	35	36
Federal Railroad Administration	2	3	3	2	2	2	2	2	1	2
National Highway Traffic Safety Administration	0	0	0	0	0	0	0	0	1	1
Department of the Treasury	0	0	0	0	0	0	4	0	0	*
Bureau of Engraving and Printing	0	0	0	0	0	0	2	0	0	0
Mint	0	0	0	0	0	0	2	0	0	*
Other agencies										
Environmental Protection Agency	7	7	5	5	5	5	5	4	6	6
National Aeronautics and Space Administration	126	127	52	58	43	97	46	36	52	99
National Science Foundation	373	397	320	433	428	509	652	441	433	807
Smithsonian Institution	45	36	33	29	33	33	33	66	0	0

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 76

Federal obligations for research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	48,007	51,072	53,358	53,738	53,536	54,094	53,894	63,692	63,728	58,065	61,986
Departments											
Department of Agriculture	1,810	1,869	1,919	2,003	2,031	2,068	2,020	2,076	2,141	2,125	1,964
Agricultural Marketing Service	4	4	8	8	6	6	3	2	2	2	2
Agricultural Research Service	964	966	988	997	1,021	1,028	1,010	1,027	1,060	1,020	981
Economic Research Service	67	68	71	74	75	92	78	79	86	81	77
Foreign Agricultural Service	1	2	2	2	1	1	*	*	*	1	1
Forest Service	218	251	255	255	264	280	256	298	283	282	272
Grain Inspection, Packers, and Stockyards Administration	0	0	0	7	7	7	7	7	6	7	5
National Agricultural Statistics Service	5	6	6	6	7	7	7	7	7	7	7
National Institute of Food and Agriculture	547	568	586	652	645	627	655	652	690	724	614
Rural Business-Cooperative Service	4	4	4	4	4	21	4	4	5	2	4
Department of Commerce	994	1,054	888	889	840	929	964	959	1,135	941	989
Census Bureau	6	1	2	4	6	5	5	6	9	11	77
Economic Development Administration	*	1	*	*	*	1	2	3	7	1	NA
National Institute of Standards and Technology	355	381	360	358	355	415	407	479	653	473	507
National Oceanic and Atmospheric Administration	629	666	520	520	472	500	543	464	458	449	396
National Telecommunications and Information Administration	4	6	6	7	7	7	7	7	8	8	8
Department of Defense	6,265	5,816	5,698	5,931	5,752	6,394	6,581	6,792	7,065	6,596	6,662
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	1,384	1,496
Defense agencies and activities	2,653	2,212	1,879	1,752	1,741	1,867	2,031	2,207	2,444	na	na
Department of the Air Force	1,357	1,329	1,211	1,246	1,351	1,540	1,592	1,604	1,678	1,674	1,726
Department of the Army	1,112	1,118	1,471	1,700	1,453	1,721	1,631	1,667	1,675	1,478	1,333
Department of the Navy	1,143	1,157	1,138	1,233	1,208	1,266	1,327	1,314	1,268	1,295	1,414
Other defense agencies	na	na	na	na	na	na	na	na	na	764	693
Department of Education	184	202	211	214	216	212	204	203	225	213	208
Department of Energy	5,062	5,261	5,498	5,704	5,720	5,857	6,100	7,188	7,598	7,350	7,361
Advanced Research Projects Agency—Energy	NA	NA	NA	NA	NA	NA	0	0	205	128	56
Bonneville Power Administration	14	15	15	9	10	9	11	7	12	5	5
Civilian Radioactive Waste Management	63	76	79	54	53	11	1	*	0	0	0
Electricity Delivery and Energy Reliability	na	na	na	66	93	57	27	62	73	62	64
Energy Efficiency and Renewable Energy	294	310	267	272	211	343	429	653	912	468	441
Environmental Management	87	21	13	15	10	2	2	11	31	22	15
Fossil Energy	145	256	231	216	218	217	183	246	218	185	165
National Nuclear Security Administration	2,073	2,158	2,200	2,277	2,219	2,154	2,178	2,061	1,951	2,250	2,339
Defense Programs	1,894	2,010	2,106	2,193	2,076	2,028	1,967	1,796	1,710	1,975	2,143
Office of Defense Nuclear Nonproliferation	179	148	95	84	143	126	211	266	241	276	195
Nuclear Energy	43	29	69	83	87	71	130	116	301	327	336
Office of Science	2,345	2,395	2,623	2,712	2,818	2,993	3,137	4,031	3,895	3,904	3,940
Department of Health and Human Services	23,231	26,288	27,991	28,617	28,680	29,211	29,459	35,490	35,797	30,771	31,124
Administration for Children and Families	23	21	20	39	14	12	19	14	7	10	8
Administration for Community Living	4	0	3	3	3	0	0	0	0	0	0
Agency for Healthcare Research and Quality	275	284	279	293	293	293	308	348	789	341	337
Agency for Toxic Substances and Disease Registry	12	14	11	9	9	4	4	5	3	5	1

TABLE 76

Federal obligations for research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Centers for Disease Control and Prevention	521	564	540	511	545	527	511	389	410	348	481
Centers for Medicare and Medicaid Services	117	74	78	77	62	57	31	30	82	35	21
Food and Drug Administration	136	138	132	142	143	129	138	166	211	225	353
Health Resources and Services Administration	17	16	17	18	17	17	22	23	30	27	27
National Institutes of Health	22,110	25,156	26,890	27,500	27,566	28,146	28,404	34,494	34,213	29,760	29,877
Office of the Secretary of Health and Human Services	15	20	21	25	27	24	22	20	54	20	19
Office of the Assistant Secretary for Planning and Evaluation	15	20	21	25	27	24	22	20	54	20	19
Department of Homeland Security	na	NA	413	597	606	542	325	347	322	248	307
Coast Guard	na	NA	5	5	7	5	7	7	8	7	12
Science and Technology Directorate	na	NA	284	411	596	536	318	340	314	241	294
Secret Service	na	NA	1	1	1	1	1	NA	NA	NA	NA
Transportation Security Administration	na	NA	123	180	3	0	0	NA	NA	NA	NA
Department of Housing and Urban Development	16	14	17	16	12	14	10	12	39	49	63
Department of the Interior	557	533	547	531	551	554	566	658	644	629	624
Bureau of Ocean Energy Management	31	27	27	27	29	25	32	36	43	45	39
Bureau of Reclamation	4	3	4	4	3	3	3	3	7	9	7
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8
Geological Survey	505	497	504	497	515	519	524	608	587	567	565
National Park Service	18	6	11	3	4	7	7	11	6	8	5
Department of Justice	49	57	47	58	53	62	78	81	87	84	75
Bureau of Prisons	4	5	5	4	3	4	3	3	3	3	2
Federal Bureau of Investigation	0	0	0	0	0	0	0	0	0	8	7
Office of Justice Programs	46	52	42	53	50	58	74	78	85	73	67
Department of Labor	46	36	37	36	30	48	41	29	12	53	19
Bureau of Labor Statistics	21	21	22	23	23	24	24	0	NA	NA	NA
Employee Benefits Security Administration	3	3	3	3	3	2	2	2	6	49	13
Employment and Training Administration	18	9	9	7	1	19	11	22	NA	NA	NA
Occupational Safety and Health Administration	4	3	3	3	4	3	4	4	6	4	6
Office of the Secretary of Labor	*	1	*	1	*	*	0	NA	0	0	NA
Pension Benefit Guaranty Corp.	*	*	*	*	*	*	*	*	*	*	*
Department of State	2	2	3	3	4	4	4	4	3	3	2
Department of Transportation	531	433	360	255	535	590	634	587	646	637	698
Coast Guard	6	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	245	136	118	128	137	128	140	163	237	210	216
Federal Highway Administration	139	193	202	52	288	348	347	317	296	300	349
Federal Motor Carrier Safety Administration	*	7	6	7	5	9	8	7	7	6	7
Federal Railroad Administration	30	29	24	26	41	31	38	8	10	20	28
Federal Transit Administration	1	0	*	*	4	3	4	4	20	23	25
National Highway Traffic Safety Administration	60	65	7	40	58	64	83	82	71	71	69
Pipeline and Hazardous Materials Safety Administration	na	na	3	2	2	4	3	2	2	3	2
Research and Innovative Technology Administration	na	na	0	*	1	2	11	4	4	3	3

TABLE 76

Federal obligations for research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Research and Special Programs Administration	4	3	na	na	na	na	na	na	na	na	na
Transportation Security Administration	47	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	62	59	61	63	61	59	65	67	68	77	75
Bureau of Engraving and Printing	5	4	4	6	5	4	5	2	1	5	5
Customs Service	*	na	na	na	na	na	na	na	na	na	na
Internal Revenue Service	56	54	57	58	55	55	60	65	66	71	69
Mint	0	0	0	0	0	0	0	0	1	1	2
Office of Thrift Supervision	*	NA	NA	NA	NA	NA	NA	NA	NA	na	na
Secret Service	1	na	na	na	na	na	na	na	na	na	na
Department of Veterans Affairs	314	350	384	383	392	425	457	477	529	575	577
Other agencies											
Agency for Global Media	*	0	1	*	*	NA	NA	NA	NA	NA	NA
Agency for International Development	248	262	241	217	215	234	124	160	84	119	77
Appalachian Regional Commission	1	1	1	1	1	1	1	1	1	*	1
Consumer Product Safety Commission	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Environmental Protection Agency	324	462	537	525	505	492	450	468	485	491	491
Federal Communications Commission	4	4	4	5	7	6	7	7	4	4	4
Federal Trade Commission	2	2	2	1	2	2	3	2	3	3	3
Library of Congress	2	1	16	2	3	*	*	*	1	1	1
National Aeronautics and Space Administration	4,839	4,553	4,499	3,729	3,272	2,132	1,406	1,703	1,503	1,575	5,100
National Archives and Records Administration	*	*	*	*	*	*	5	5	5	3	2
National Science Foundation	3,260	3,609	3,771	3,743	3,791	3,970	4,135	6,095	5,016	5,146	5,170
Nuclear Regulatory Commission	74	64	72	70	71	77	61	61	85	84	83
Patient-Centered Outcomes Research Trust Fund	na	na	na	na	na	na	na	na	na	41	41
Smithsonian Institution	106	104	108	109	119	145	142	152	167	193	197
Social Security Administration	23	37	30	35	68	68	54	68	63	53	65

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 77

Federal obligations for research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	59,533	63,191	63,825	67,105	69,871	74,588	81,118	85,305	86,244	88,464
Departments										
Department of Agriculture	1,868	2,060	2,128	2,156	2,216	2,257	2,407	2,388	2,661	3,017
Agricultural Marketing Service	2	3	3	3	4	4	4	3	7	7
Agricultural Research Service	913	1,010	1,018	1,030	1,053	1,081	1,163	1,281	1,359	1,439
Animal and Plant Health Inspection Service	18	19	20	20	19	18	19	19	21	23
Economic Research Service	71	78	85	85	86	86	86	82	85	90
Foreign Agricultural Service	1	*	1	*	*	0	0	0	0	0
Forest Service	301	277	260	281	271	254	255	257	233	290
Grain Inspection, Packers, and Stockyards Administration	5	6	6	6	*	na	na	na	na	na
National Agricultural Statistics Service	7	5	5	5	5	5	5	5	5	6
National Institute of Food and Agriculture	546	657	726	721	774	805	871	738	937	1,148
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	12	13
Rural Business-Cooperative Service	4	6	4	4	3	4	4	3	0	0
Department of Commerce	1,023	1,277	1,154	1,153	1,302	1,229	1,282	1,361	1,506	1,760
Census Bureau	115	227	41	90	56	56	29	38	56	110
National Institute of Standards and Technology	526	599	631	625	691	676	703	717	784	817
National Oceanic and Atmospheric Administration	375	442	470	428	547	488	542	598	659	826
National Telecommunications and Information Administration	7	10	12	11	8	9	8	8	7	7
Department of Defense	5,955	6,704	6,691	7,152	7,178	7,653	8,268	8,915	9,735	10,377
Defense Advanced Research Projects Agency	1,268	1,536	1,485	1,536	1,509	1,680	1,743	2,006	1,845	1,997
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	164	133	174
Department of the Air Force	1,502	1,574	1,609	1,762	1,713	1,905	2,107	2,249	2,387	2,422
Department of the Army	1,257	1,418	1,390	1,522	1,684	1,689	1,956	1,907	1,914	2,089
Department of the Navy	1,296	1,483	1,465	1,560	1,540	1,549	1,591	1,698	1,654	2,082
Space Force	na	na	na	na	na	na	na	0	98	76
Other defense agencies	633	693	742	771	732	829	871	892	1,704	1,537
Department of Education	202	208	160	163	174	190	189	189	262	293
Department of Energy	7,333	8,092	8,642	9,465	9,584	10,508	11,370	10,525	10,777	10,470
Advanced Research Projects Agency—Energy	92	150	139	172	151	80	202	219	157	225
Bonneville Power Administration	13	7	7	7	9	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	53	65	63	69	80	94	87	78	62	68
Energy Efficiency and Renewable Energy	530	540	473	576	853	1,285	1,270	1,248	1,395	678
Environmental Management	3	16	8	10	10	13	9	7	10	12
Fossil Energy	154	162	199	231	230	662	659	679	691	736
National Nuclear Security Administration	2,404	2,770	2,705	3,210	3,078	2,645	3,670	2,394	2,608	2,527
Defense Programs	2,148	2,519	2,527	3,010	2,881	2,422	3,434	2,155	2,328	2,258
Office of Defense Nuclear Nonproliferation	256	251	178	199	197	223	236	239	280	269
Nuclear Energy	236	296	639	665	688	763	378	392	346	331
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	40	37	2	99
Office of Science	3,848	4,085	4,409	4,524	4,485	4,968	5,054	5,470	5,506	5,795
Department of Health and Human Services	29,315	30,587	30,197	32,129	33,677	36,802	38,354	44,234	42,718	42,670
Administration for Children and Families	2	3	2	3	2	3	2	2	5	4
Administration for Community Living	0	0	72	66	66	66	66	71	107	111

TABLE 77

Federal obligations for research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Agency for Healthcare Research and Quality	336	335	335	306	300	306	308	308	308	314
Agency for Toxic Substances and Disease Registry	1	1	2	2	3	3	7	10	11	11
Centers for Disease Control and Prevention	334	379	460	494	436	386	366	441	682	649
Centers for Medicare and Medicaid Services	20	34	24	30	29	231	133	224	421	421
Food and Drug Administration	361	389	376	486	375	478	493	464	589	669
Health Resources and Services Administration	27	28	27	26	30	36	33	35	33	38
National Institutes of Health	28,215	29,400	28,880	30,698	32,419	35,276	36,929	42,664	40,546	40,436
Office of the Secretary of Health and Human Services	19	19	18	18	17	17	17	16	17	18
Office of the Assistant Secretary for Planning and Evaluation	19	19	18	18	17	17	17	16	17	18
Department of Homeland Security	141	256	217	208	276	369	280	225	238	316
Coast Guard	7	8	6	7	6	6	6	1	3	2
Countering Weapons of Mass Destruction Office	NA	79	37	38	34	14	31	24	21	31
Cybersecurity and Infrastructure Security Agency	na	na	na	na	na	7	13	7	9	4
Science and Technology Directorate	134	168	173	163	235	342	229	193	204	277
Transportation Security Administration	NA	NA	NA	NA	NA	0	0	0	1	2
Department of Housing and Urban Development	44	36	38	43	41	40	61	NA	NA	NA
Department of the Interior	603	649	680	726	722	650	690	698	754	991
Bureau of Indian Affairs	NA	NA	NA	NA	NA	5	5	*	5	4
Bureau of Land Management	NA	NA	15	17	17	14	14	14	9	11
Bureau of Ocean Energy Management	40	48	44	60	63	66	65	59	63	68
Bureau of Reclamation	8	9	7	19	23	17	17	19	18	22
Bureau of Safety and Environmental Enforcement	15	33	17	24	8	5	8	5	20	16
Fish and Wildlife Service	NA	NA	30	32	33	33	33	33	33	33
Geological Survey	535	546	560	566	569	501	539	558	579	812
National Park Service	6	14	8	8	9	10	10	10	27	27
Office of Surface Mining Reclamation and Enforcement	NA	NA	NA	NA	NA	0	*	1	0	0
Department of Justice	78	142	128	157	87	91	105	85	79	82
Bureau of Prisons	2	2	3	3	2	1	1	2	*	*
Federal Bureau of Investigation	7	0	0	0	0	3	1	5	4	5
Office of Justice Programs	69	140	126	154	85	87	103	78	75	77
Department of Labor	14	11	10	6	5	5	4	5	3	4
Employee Benefits Security Administration	10	7	7	5	3	3	3	3	1	2
Occupational Safety and Health Administration	4	4	3	1	2	2	2	2	2	2
Pension Benefit Guaranty Corp.	*	*	*	*	0	0	NA	NA	NA	NA
Department of State	1	NA	2	2	2	62	62	30	44	47
Department of Transportation	655	653	663	625	696	751	746	900	823	812
Federal Aviation Administration	197	197	207	207	212	195	193	247	267	272
Federal Highway Administration	327	339	273	247	305	420	415	472	373	361
Federal Motor Carrier Safety Administration	7	7	8	10	11	9	8	9	12	15
Federal Railroad Administration	39	30	33	31	34	33	32	35	35	42

TABLE 77

Federal obligations for research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Federal Transit Administration	14	8	72	35	55	10	3	40	42	33
National Highway Traffic Safety Administration	65	65	63	87	69	76	76	69	66	50
Office of the Secretary of Transportation	0	4	2	4	3	3	8	12	12	15
Pipeline and Hazardous Materials Safety Administration	2	2	5	5	5	6	11	17	16	24
Research and Innovative Technology Administration	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Department of the Treasury	73	73	73	82	1	38	46	50	47	50
Bureau of Engraving and Printing	9	9	9	16	0	38	46	49	47	50
Internal Revenue Service	65	64	64	65	0	0	0	0	NA	NA
Mint	*	1	*	2	1	0	*	*	*	*
Department of Veterans Affairs	604	553	643	677	669	1,320	1,478	1,536	1,561	1,673
Other agencies										
Administrative Office of the U.S. Courts	NA	NA	NA	7	8	7	6	5	4	1
Agency for Global Media	NA	NA	NA	NA	NA	NA	6	5	5	8
Agency for International Development	125	60	212	148	192	120	172	135	51	51
Appalachian Regional Commission	*	1	*	1	*	1	1	1	1	*
Consumer Product Safety Commission	1	2	2	2	2	1	1	*	*	*
Environmental Protection Agency	446	453	440	430	417	413	405	412	403	406
Federal Communications Commission	5	7	5	5	6	5	2	2	0	0
Federal Trade Commission	3	3	2	3	6	6	6	6	8	9
Library of Congress	1	1	1	1	1	1	1	1	1	*
National Aeronautics and Space Administration	5,422	5,336	5,539	5,613	5,745	5,293	8,111	6,394	7,127	7,598
National Archives and Records Administration	1	1	1	1	1	1	1	0	NA	NA
National Science Foundation	4,956	5,403	5,670	5,589	5,518	5,849	5,996	6,351	6,705	7,036
Nuclear Regulatory Commission	76	85	92	81	67	78	75	68	77	78
Patient-Centered Outcomes Research Trust Fund	334	283	152	115	884	492	578	470	460	481
Postal Service	NA	NA	28	29	73	53	27	18	15	16
RESTORE Act Centers of Excellence Research Grants Program	na	na	na	na	na	na	na	9	0	7
Smithsonian Institution	195	195	196	206	208	228	236	210	63	95
Social Security Administration	57	60	59	129	110	72	146	70	105	99
Tennessee Valley Authority	NA	NA	NA	NA	3	6	6	6	9	13

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 78

Federal obligations for basic research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	23,668	24,751	26,121	27,140	26,585	26,866	27,154	32,879	31,795	29,314	30,959
Departments											
Department of Agriculture	930	962	920	954	946	937	883	930	982	963	851
Agricultural Research Service	583	584	538	543	556	560	550	571	589	567	545
Economic Research Service	7	7	7	7	8	9	4	8	2	8	7
Foreign Agricultural Service	1	1	*	*	*	*	*	*	*	*	*
Forest Service	104	120	121	121	126	88	83	105	99	90	85
Grain Inspection, Packers, and Stockyards Administration	0	0	0	0	0	7	7	7	6	7	0
National Agricultural Statistics Service	2	2	2	2	2	2	3	3	3	3	3
National Institute of Food and Agriculture	234	248	251	280	254	273	237	237	282	289	211
Department of Commerce	73	66	48	59	73	103	111	138	202	166	174
Census Bureau	3	*	1	0	0	0	0	0	0	0	0
Economic Development Administration	*	0	0	0	0	0	1	2	6	*	NA
National Institute of Standards and Technology	56	66	47	59	73	103	110	137	197	165	174
National Oceanic and Atmospheric Administration	14	0	0	0	0	0	0	0	0	0	0
Department of Defense	1,813	1,396	1,416	1,399	1,304	1,527	1,616	1,730	1,854	1,885	2,036
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	254	345
Defense agencies and activities	899	513	193	157	160	236	311	343	415	na	na
Department of the Air Force	299	238	319	370	351	422	400	432	476	471	503
Department of the Army	225	241	442	397	349	385	392	431	414	415	418
Department of the Navy	390	404	462	476	444	484	513	524	549	547	588
Other defense agencies	na	na	na	na	na	na	na	na	na	198	182
Department of Education	5	6	9	10	3	4	5	4	7	7	7
Department of Energy	2,478	2,447	2,663	2,747	2,835	3,008	3,180	4,061	3,969	3,962	3,957
Bonneville Power Administration	3	3	3	*	0	*	*	1	8	4	5
Electricity Delivery and Energy Reliability	na	na	na	0	0	0	0	0	7	6	6
Energy Efficiency and Renewable Energy	60	31	23	23	1	1	12	2	21	2	7
Environmental Management	38	0	0	0	0	0	0	0	0	0	0
Fossil Energy	8	10	10	9	7	6	4	4	5	4	4
National Nuclear Security Administration	27	11	7	3	8	9	27	22	34	42	46
Office of Defense Nuclear Nonproliferation	27	11	7	3	8	9	27	22	34	42	46
Office of Science	2,342	2,392	2,620	2,712	2,818	2,993	3,137	4,031	3,895	3,904	3,890
Department of Health and Human Services	12,861	14,103	14,767	15,786	15,540	15,772	16,031	18,772	18,650	16,066	15,977
Centers for Disease Control and Prevention	0	0	0	0	0	139	122	109	85	65	74
Health Resources and Services Administration	2	3	2	3	3	2	2	2	2	3	3
National Institutes of Health	12,844	14,100	14,764	15,784	15,537	15,631	15,906	18,661	18,562	15,999	15,901
Office of the Secretary of Health and Human Services	15	0	0	0	0	0	0	0	0	0	0
Office of the Assistant Secretary for Planning and Evaluation	15	0	0	0	0	0	0	0	0	0	0
Department of Homeland Security	na	NA	166	55	80	57	246	101	100	114	84
Science and Technology Directorate	na	NA	85	55	80	57	246	101	100	114	84
Secret Service	na	NA	0	0	0	0	*	NA	NA	NA	NA
Transportation Security Administration	na	NA	81	0	0	0	0	NA	NA	NA	NA
Department of the Interior	46	41	37	36	42	42	43	47	50	49	54
Geological Survey	41	41	37	36	42	42	43	47	50	49	54
National Park Service	5	0	0	0	0	0	0	0	0	0	0

TABLE 78

Federal obligations for basic research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Department of Justice	25	31	14	17	18	24	0	9	13	18	15
Office of Justice Programs	25	31	14	17	18	24	0	9	13	18	15
Department of Labor	30	13	14	14	14	14	14	0	NA	NA	NA
Bureau of Labor Statistics	12	13	14	14	14	14	14	0	NA	NA	NA
Employment and Training Administration	18	0	0	0	0	0	NA	0	NA	NA	NA
Department of Transportation	36	24	20	0	2	3	0	0	5	4	8
Federal Highway Administration	17	24	20	0	2	3	0	0	5	4	8
Transportation Security Administration	19	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	1	*	*	*	*	*	*	*	*	*	*
Bureau of Engraving and Printing	1	*	*	*	*	*	*	*	*	*	*
Department of Veterans Affairs	142	164	175	177	181	196	211	203	232	251	251
Other agencies											
Agency for International Development	*	*	*	18	18	2	3	1	1	0	0
Environmental Protection Agency	64	96	114	109	104	101	78	84	87	88	87
Library of Congress	0	0	2	0	0	0	0	0	0	0	0
National Aeronautics and Space Administration	1,985	1,908	2,143	2,240	1,803	1,313	875	1,022	809	857	2,606
National Science Foundation	3,075	3,391	3,505	3,411	3,504	3,618	3,716	5,624	4,667	4,691	4,652
Smithsonian Institution	106	104	108	109	119	145	142	152	167	193	197

* = amount greater than $0 but less than $500,000; na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 79

Federal obligations for basic research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	29,779	31,588	31,527	32,293	33,271	36,195	40,017	41,547	42,494	43,790
Departments										
Department of Agriculture	844	908	925	935	965	986	1,057	1,164	1,299	1,459
Agricultural Research Service	507	561	566	572	585	600	646	712	755	800
Animal and Plant Health Inspection Service	18	19	20	20	19	18	19	19	21	23
Economic Research Service	7	7	0	0	0	0	0	0	0	0
Foreign Agricultural Service	*	*	*	*	*	0	0	0	0	0
Forest Service	97	90	85	91	89	84	85	85	79	95
National Agricultural Statistics Service	3	0	0	0	0	0	0	0	0	0
National Institute of Food and Agriculture	213	231	254	252	273	283	307	348	432	528
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	11	13
Department of Commerce	191	215	232	247	246	227	253	251	278	287
National Institute of Standards and Technology	191	215	232	247	246	227	253	251	278	287
Department of Defense	1,863	2,074	2,133	2,239	2,110	2,390	2,510	2,499	2,835	2,977
Defense Advanced Research Projects Agency	285	347	360	378	391	458	478	482	510	513
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	11	18	16
Department of the Air Force	448	501	501	522	469	564	559	520	703	725
Department of the Army	398	436	449	462	450	472	495	524	542	586
Department of the Navy	556	611	620	637	569	596	656	641	631	852
Space Force	na	na	na	na	na	na	na	0	98	76
Other defense agencies	177	178	203	240	230	299	322	321	333	209
Department of Education	24	25	22	23	33	55	57	54	30	33
Department of Energy	3,851	4,075	4,460	4,586	4,500	5,001	5,075	5,502	5,500	5,947
Bonneville Power Administration	9	5	4	4	5	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	4	4	6	3	6	13	15	13	13	8
Fossil Energy	3	4	5	6	6	33	33	34	2	0
National Nuclear Security Administration	49	56	68	83	81	88	102	114	123	123
Defense Programs	7	0	0	0	0	0	0	0	0	0
Office of Defense Nuclear Nonproliferation	43	56	68	83	81	88	102	114	123	123
Nuclear Energy	0	0	43	35	0	0	0	0	0	0
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	1	1	2	20
Office of Science	3,786	4,006	4,334	4,455	4,402	4,867	4,924	5,339	5,361	5,795
Department of Health and Human Services	15,288	16,005	15,077	15,645	16,700	18,241	19,100	21,809	21,508	21,412
Agency for Toxic Substances and Disease Registry	0	0	0	0	0	1	0	0	0	0
Centers for Disease Control and Prevention	58	71	95	85	72	64	77	70	89	97
Centers for Medicare and Medicaid Services	0	0	0	0	0	0	0	0	421	421
Health Resources and Services Administration	2	2	3	3	3	3	3	2	3	3
National Institutes of Health	15,228	15,932	14,979	15,558	16,625	18,173	19,020	21,737	20,995	20,891
Department of Homeland Security	0	42	12	13	12	61	46	47	51	68
Countering Weapons of Mass Destruction Office	NA	42	12	13	12	5	5	6	6	7
Science and Technology Directorate	0	0	0	0	0	55	41	41	45	61

TABLE 79

Federal obligations for basic research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Department of Housing and Urban Development	0	0	0	0	0	0	39	NA	NA	NA
Department of the Interior	51	52	53	54	54	80	81	84	86	174
Bureau of Land Management	NA	NA	0	0	0	1	1	0	*	2
Bureau of Safety and Environmental Enforcement	0	0	0	0	0	1	*	1	2	2
Geological Survey	51	52	53	54	54	77	80	82	84	171
National Park Service	0	0	0	0	0	1	1	1	0	0
Department of Justice	21	8	5	13	2	16	21	1	8	8
Federal Bureau of Investigation	4	0	0	0	0	0	0	0	0	0
Office of Justice Programs	16	8	5	13	2	16	21	1	8	8
Department of State	0	NA	0	0	0	0	0	0	4	7
Department of Transportation	7	9	0	0	0	0	0	0	2	9
Federal Highway Administration	7	1	0	0	0	0	0	0	0	0
Federal Motor Carrier Safety Administration	0	0	0	0	0	0	0	0	1	1
Federal Transit Administration	0	8	0	0	0	0	0	0	0	0
Pipeline and Hazardous Materials Safety Administration	0	0	0	0	0	0	0	0	1	8
Department of the Treasury	*	*	*	2	0	11	10	6	5	6
Bureau of Engraving and Printing	*	*	*	2	0	11	10	6	5	6
Mint	0	0	0	0	0	0	*	*	0	0
Department of Veterans Affairs	249	232	227	219	274	528	629	618	625	671
Other agencies										
Agency for International Development	9	1	0	0	1	0	0	*	0	0
Federal Communications Commission	0	0	0	0	*	0	0	0	0	0
National Aeronautics and Space Administration	2,824	3,023	3,210	3,281	3,426	3,282	5,689	3,839	4,429	4,589
National Science Foundation	4,362	4,725	4,974	4,829	4,739	5,089	5,212	5,462	5,771	6,050
Nuclear Regulatory Commission	0	0	0	*	1	1	1	2	0	0
Smithsonian Institution	195	195	196	206	208	228	236	210	63	95

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 80

Federal obligations for applied research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	24,338	26,320	27,237	26,598	26,951	27,228	26,740	30,813	31,933	28,751	31,027
Departments											
Department of Agriculture	880	908	999	1,049	1,085	1,130	1,136	1,145	1,159	1,162	1,113
Agricultural Marketing Service	4	4	8	8	6	6	3	2	2	2	2
Agricultural Research Service	382	382	450	454	465	468	460	456	471	453	436
Economic Research Service	60	62	64	67	68	83	73	71	85	74	70
Foreign Agricultural Service	1	1	1	1	1	*	*	*	*	*	*
Forest Service	114	131	133	133	138	192	173	192	184	192	187
Grain Inspection, Packers, and Stockyards Administration	0	0	0	7	7	0	0	0	0	0	5
National Agricultural Statistics Service	3	4	4	4	5	5	4	4	4	4	4
National Institute of Food and Agriculture	312	320	335	372	391	354	418	415	407	435	403
Rural Business-Cooperative Service	4	4	4	4	4	21	4	4	5	2	4
Department of Commerce	922	988	840	830	767	826	853	821	933	775	814
Census Bureau	3	*	1	4	6	5	5	6	9	11	77
Economic Development Administration	*	1	*	*	*	1	1	1	1	*	NA
National Institute of Standards and Technology	299	315	313	299	283	312	297	343	457	308	333
National Oceanic and Atmospheric Administration	616	666	520	520	472	500	543	464	458	449	396
National Telecommunications and Information Administration	4	6	6	7	7	7	7	7	8	8	8
Department of Defense	4,453	4,420	4,282	4,532	4,448	4,867	4,964	5,062	5,212	4,710	4,627
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	1,130	1,151
Defense agencies and activities	1,754	1,699	1,685	1,595	1,580	1,631	1,720	1,864	2,029	na	na
Department of the Air Force	1,058	1,091	891	877	1,000	1,118	1,192	1,172	1,203	1,203	1,223
Department of the Army	887	877	1,029	1,303	1,104	1,337	1,239	1,236	1,261	1,063	915
Department of the Navy	753	752	676	757	763	781	814	790	720	748	826
Other defense agencies	na	na	na	na	na	na	na	na	na	566	511
Department of Education	178	196	202	204	213	207	200	198	218	206	202
Department of Energy	2,585	2,814	2,835	2,957	2,886	2,849	2,919	3,127	3,629	3,388	3,404
Advanced Research Projects Agency—Energy	NA	NA	NA	NA	NA	NA	0	0	205	128	56
Bonneville Power Administration	11	11	12	9	10	9	11	6	4	1	1
Civilian Radioactive Waste Management	63	76	79	54	53	11	1	*	0	0	0
Electricity Delivery and Energy Reliability	na	na	na	66	93	57	27	62	66	55	58
Energy Efficiency and Renewable Energy	234	280	244	249	210	342	417	651	891	466	434
Environmental Management	49	21	13	15	10	2	2	11	31	22	15
Fossil Energy	137	246	222	207	211	211	179	242	213	181	161
National Nuclear Security Administration	2,046	2,148	2,194	2,274	2,211	2,146	2,151	2,039	1,918	2,208	2,293
Defense Programs	1,894	2,010	2,106	2,193	2,076	2,028	1,967	1,796	1,710	1,975	2,143
Office of Defense Nuclear Nonproliferation	152	138	88	81	135	117	184	244	207	234	150
Nuclear Energy	43	29	69	83	87	71	130	116	301	327	336
Office of Science	3	3	3	0	0	0	0	0	0	0	49
Department of Health and Human Services	10,370	12,185	13,225	12,831	13,140	13,438	13,428	16,718	17,148	14,704	15,147
Administration for Children and Families	23	21	20	39	14	12	19	14	7	10	8
Administration for Community Living	4	0	3	3	3	0	0	0	0	0	0
Agency for Healthcare Research and Quality	275	284	279	293	293	293	308	348	789	341	337
Agency for Toxic Substances and Disease Registry	12	14	11	9	9	4	4	5	3	5	1

TABLE 80

Federal obligations for applied research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Centers for Disease Control and Prevention	521	564	540	511	545	389	389	281	324	283	407
Centers for Medicare and Medicaid Services	117	74	78	77	62	57	31	30	82	35	21
Food and Drug Administration	136	138	132	142	143	129	138	166	211	225	353
Health Resources and Services Administration	15	14	15	15	15	14	19	21	27	24	24
National Institutes of Health	9,266	11,056	12,126	11,717	12,029	12,515	12,498	15,833	15,651	13,761	13,976
Office of the Secretary of Health and Human Services	0	20	21	25	27	24	22	20	54	20	19
Office of the Assistant Secretary for Planning and Evaluation	0	20	21	25	27	24	22	20	54	20	19
Department of Homeland Security	na	NA	247	542	526	485	80	246	221	134	222
Coast Guard	na	NA	5	5	7	5	7	7	8	7	12
Science and Technology Directorate	na	NA	199	356	516	479	73	239	214	127	210
Secret Service	na	NA	1	1	1	1	1	NA	NA	NA	NA
Transportation Security Administration	na	NA	42	180	3	0	0	NA	NA	NA	NA
Department of Housing and Urban Development	16	14	17	16	12	14	10	12	39	49	63
Department of the Interior	512	493	510	496	509	512	523	610	594	581	570
Bureau of Ocean Energy Management	31	27	27	27	29	25	32	36	43	45	39
Bureau of Reclamation	4	3	4	4	3	3	3	3	7	9	7
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8
Geological Survey	464	456	467	461	473	477	481	561	537	518	511
National Park Service	13	6	11	3	4	7	7	11	6	8	5
Department of Justice	24	25	33	40	35	38	78	72	74	67	60
Bureau of Prisons	4	5	5	4	3	4	3	3	3	3	2
Federal Bureau of Investigation	0	0	0	0	0	0	0	0	0	8	7
Office of Justice Programs	20	21	28	36	32	34	74	69	72	55	51
Department of Labor	15	23	24	22	17	34	27	29	12	53	19
Bureau of Labor Statistics	8	8	9	9	9	10	10	0	NA	NA	NA
Employee Benefits Security Administration	3	3	3	3	3	2	2	2	6	49	13
Employment and Training Administration	0	9	9	7	1	19	11	22	NA	NA	NA
Occupational Safety and Health Administration	4	3	3	3	4	3	4	4	6	4	6
Office of the Secretary of Labor	*	1	*	1	*	*	0	NA	0	0	NA
Pension Benefit Guaranty Corp.	*	*	*	*	*	*	*	*	*	*	*
Department of State	2	2	3	3	4	4	4	4	3	3	2
Department of Transportation	495	408	340	255	534	587	634	587	641	633	690
Coast Guard	6	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	245	136	118	128	137	128	140	163	237	210	216
Federal Highway Administration	121	168	182	52	287	346	347	317	291	295	340
Federal Motor Carrier Safety Administration	*	7	6	7	5	9	8	7	7	6	7
Federal Railroad Administration	30	29	24	26	41	31	38	8	10	20	28
Federal Transit Administration	1	0	*	*	4	3	4	4	20	23	25
National Highway Traffic Safety Administration	60	65	7	40	58	64	83	82	71	71	69
Pipeline and Hazardous Materials Safety Administration	na	na	3	2	2	4	3	2	2	3	2
Research and Innovative Technology Administration	na	na	0	*	1	2	11	4	4	3	3

TABLE 80

Federal obligations for applied research, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Research and Special Programs Administration	4	3	na	na	na	na	na	na	na	na	na
Transportation Security Administration	28	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	61	59	61	63	60	59	64	67	68	77	75
Bureau of Engraving and Printing	5	4	4	5	5	4	5	2	1	5	5
Customs Service	*	na	na	na	na	na	na	na	na	na	na
Internal Revenue Service	56	54	57	58	55	55	60	65	66	71	69
Mint	0	0	0	0	0	0	0	0	1	1	2
Office of Thrift Supervision	*	NA	NA	NA	NA	NA	NA	NA	NA	na	na
Secret Service	1	na	na	na	na	na	na	na	na	na	na
Department of Veterans Affairs	173	186	209	206	211	228	246	274	297	325	326
Other agencies											
Agency for Global Media	*	0	1	*	*	NA	NA	NA	NA	NA	NA
Agency for International Development	247	262	241	198	197	233	121	160	83	119	77
Appalachian Regional Commission	1	1	1	1	1	1	1	1	1	*	1
Consumer Product Safety Commission	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Environmental Protection Agency	260	365	423	416	400	392	372	384	398	403	404
Federal Communications Commission	4	4	4	5	7	6	7	7	4	4	4
Federal Trade Commission	2	2	2	1	2	2	3	2	3	3	3
Library of Congress	2	1	14	2	3	*	*	*	1	1	1
National Aeronautics and Space Administration	2,854	2,646	2,356	1,489	1,469	819	531	682	694	718	2,494
National Archives and Records Administration	*	*	*	*	*	*	5	5	5	3	2
National Science Foundation	185	218	266	332	287	352	420	471	348	455	517
Nuclear Regulatory Commission	74	64	72	70	71	77	61	61	85	84	83
Patient-Centered Outcomes Research Trust Fund	na	na	na	na	na	na	na	na	na	41	41
Social Security Administration	23	37	30	35	68	68	54	68	63	53	65

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 81

Federal obligations for applied research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	29,753	31,604	32,298	34,812	36,600	38,392	41,101	43,758	43,750	44,674
Departments										
Department of Agriculture	1,024	1,152	1,204	1,221	1,251	1,270	1,350	1,225	1,362	1,559
Agricultural Marketing Service	2	3	3	3	4	4	4	3	7	7
Agricultural Research Service	406	449	453	458	468	480	517	569	604	640
Economic Research Service	64	71	85	85	86	86	86	82	85	90
Foreign Agricultural Service	*	*	*	*	*	0	0	0	0	0
Forest Service	205	187	176	191	182	169	170	172	154	195
Grain Inspection, Packers, and Stockyards Administration	5	6	6	6	*	na	na	na	na	na
National Agricultural Statistics Service	4	5	5	5	5	5	5	5	5	6
National Institute of Food and Agriculture	333	426	472	469	502	521	564	390	505	620
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	1	1
Rural Business-Cooperative Service	4	6	4	4	3	4	4	3	0	0
Department of Commerce	833	1,063	922	906	1,056	1,001	1,029	1,110	1,228	1,473
Census Bureau	115	227	41	90	56	56	29	38	56	110
National Institute of Standards and Technology	335	385	399	377	445	449	450	466	507	530
National Oceanic and Atmospheric Administration	375	442	470	428	547	488	542	598	659	826
National Telecommunications and Information Administration	7	10	12	11	8	9	8	8	7	7
Department of Defense	4,093	4,631	4,558	4,913	5,068	5,263	5,758	6,416	6,901	7,401
Defense Advanced Research Projects Agency	983	1,189	1,125	1,158	1,118	1,222	1,265	1,524	1,336	1,484
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	153	115	159
Department of the Air Force	1,055	1,072	1,108	1,240	1,244	1,341	1,547	1,729	1,684	1,697
Department of the Army	859	983	942	1,060	1,233	1,217	1,462	1,383	1,372	1,502
Department of the Navy	740	872	845	924	971	953	935	1,057	1,023	1,230
Other defense agencies	455	515	539	531	502	530	549	571	1,371	1,329
Department of Education	178	183	137	140	141	135	131	136	233	260
Department of Energy	3,482	4,017	4,181	4,880	5,084	5,507	6,295	5,024	5,277	4,523
Advanced Research Projects Agency—Energy	92	150	139	172	151	80	202	219	157	225
Bonneville Power Administration	4	3	3	3	4	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	50	61	57	67	74	82	72	65	50	59
Energy Efficiency and Renewable Energy	530	540	473	576	853	1,285	1,270	1,248	1,395	678
Environmental Management	3	16	8	10	10	13	9	7	10	12
Fossil Energy	151	157	194	225	224	629	626	645	689	736
National Nuclear Security Administration	2,355	2,714	2,637	3,127	2,997	2,556	3,568	2,279	2,485	2,404
Defense Programs	2,142	2,519	2,527	3,010	2,881	2,422	3,434	2,155	2,328	2,258
Office of Defense Nuclear Nonproliferation	213	195	111	117	116	135	134	124	157	146
Nuclear Energy	236	296	597	631	688	763	378	392	346	331
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	39	36	0	78
Office of Science	63	79	75	70	83	101	130	131	144	0
Department of Health and Human Services	14,026	14,582	15,120	16,483	16,977	18,561	19,255	22,425	21,210	21,259
Administration for Children and Families	2	3	2	3	2	3	2	2	5	4
Administration for Community Living	0	0	72	66	66	66	66	71	107	111
Agency for Healthcare Research and Quality	336	335	335	306	300	306	308	308	308	314

TABLE 81

Federal obligations for applied research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Agency for Toxic Substances and Disease Registry	1	1	2	2	3	2	7	10	11	11
Centers for Disease Control and Prevention	277	309	365	409	364	322	289	371	592	552
Centers for Medicare and Medicaid Services	20	34	24	30	29	231	133	224	0	0
Food and Drug Administration	361	389	376	486	375	478	493	464	589	669
Health Resources and Services Administration	24	25	25	24	27	34	30	32	30	35
National Institutes of Health	12,987	13,467	13,901	15,140	15,794	17,103	17,909	20,927	19,551	19,545
Office of the Secretary of Health and Human Services	19	19	18	18	17	17	17	16	17	18
Office of the Assistant Secretary for Planning and Evaluation	19	19	18	18	17	17	17	16	17	18
Department of Homeland Security	141	215	205	194	264	309	233	178	187	248
Coast Guard	7	8	6	7	6	6	6	1	3	2
Countering Weapons of Mass Destruction Office	NA	38	26	25	23	9	26	18	15	24
Cybersecurity and Infrastructure Security Agency	na	na	na	na	na	7	13	7	9	4
Science and Technology Directorate	134	168	173	163	235	286	188	152	159	216
Transportation Security Administration	NA	NA	NA	NA	NA	0	0	0	1	2
Department of Housing and Urban Development	44	36	38	43	41	40	22	NA	NA	NA
Department of the Interior	552	597	627	672	668	570	608	614	668	817
Bureau of Indian Affairs	NA	NA	NA	NA	NA	5	5	*	5	4
Bureau of Land Management	NA	NA	15	17	17	13	13	14	9	9
Bureau of Ocean Energy Management	40	48	44	60	63	66	65	59	63	68
Bureau of Reclamation	8	9	7	19	23	17	17	19	18	22
Bureau of Safety and Environmental Enforcement	15	33	17	24	8	4	7	4	19	14
Fish and Wildlife Service	NA	NA	30	32	33	33	33	33	33	33
Geological Survey	483	493	506	512	515	424	459	476	495	641
National Park Service	6	14	8	8	9	9	9	9	27	27
Office of Surface Mining Reclamation and Enforcement	NA	NA	NA	NA	NA	0	*	1	0	0
Department of Justice	57	134	123	144	85	75	84	84	71	74
Bureau of Prisons	2	2	3	3	2	1	1	2	*	*
Federal Bureau of Investigation	2	0	0	0	0	3	1	5	4	5
Office of Justice Programs	52	132	121	141	83	71	82	77	67	69
Department of Labor	14	11	10	6	5	5	4	5	3	4
Employee Benefits Security Administration	10	7	7	5	3	3	3	3	1	2
Occupational Safety and Health Administration	4	4	3	1	2	2	2	2	2	2
Pension Benefit Guaranty Corp.	*	*	*	*	0	0	NA	NA	NA	NA
Department of State	1	NA	2	2	2	62	62	30	40	40
Department of Transportation	647	644	663	625	696	751	746	900	821	803
Federal Aviation Administration	197	197	207	207	212	195	193	247	267	272
Federal Highway Administration	320	338	273	247	305	420	415	472	373	361
Federal Motor Carrier Safety Administration	7	7	8	10	11	9	8	9	11	14
Federal Railroad Administration	39	30	33	31	34	33	32	35	35	42
Federal Transit Administration	14	0	72	35	55	10	3	40	42	33

TABLE 81

Federal obligations for applied research, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
National Highway Traffic Safety Administration	65	65	63	87	69	76	76	69	66	50
Office of the Secretary of Transportation	0	4	2	4	3	3	8	12	12	15
Pipeline and Hazardous Materials Safety Administration	2	2	5	5	5	6	11	17	15	16
Research and Innovative Technology Administration	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Department of the Treasury	73	73	72	81	1	27	36	44	41	44
Bureau of Engraving and Printing	8	9	9	14	0	27	36	44	41	44
Internal Revenue Service	65	64	64	65	0	0	0	0	NA	NA
Mint	*	1	*	2	1	0	*	*	*	*
Department of Veterans Affairs	355	322	416	458	395	792	849	918	936	1,002
Other agencies										
Administrative Office of the U.S. Courts	NA	NA	NA	7	8	7	6	5	4	1
Agency for Global Media	NA	NA	NA	NA	NA	NA	6	5	5	8
Agency for International Development	117	59	212	148	191	120	172	135	51	51
Appalachian Regional Commission	*	1	*	1	*	1	1	1	1	*
Consumer Product Safety Commission	1	2	2	2	2	1	1	*	*	*
Environmental Protection Agency	446	453	440	430	417	413	405	412	403	406
Federal Communications Commission	5	7	5	5	6	5	2	2	0	0
Federal Trade Commission	3	3	2	3	6	6	6	6	8	9
Library of Congress	1	1	1	1	1	1	1	1	1	*
National Aeronautics and Space Administration	2,598	2,313	2,330	2,332	2,319	2,011	2,423	2,555	2,698	3,010
National Archives and Records Administration	1	1	1	1	1	1	1	0	NA	NA
National Science Foundation	594	678	696	760	779	760	784	889	934	986
Nuclear Regulatory Commission	76	85	92	80	66	76	74	66	77	78
Patient-Centered Outcomes Research Trust Fund	334	283	152	115	884	492	578	470	460	481
Postal Service	NA	NA	28	29	73	53	27	18	15	16
RESTORE Act Centers of Excellence Research Grants Program	na	na	na	na	na	na	na	9	0	7
Social Security Administration	57	60	59	129	110	72	146	70	105	99
Tennessee Valley Authority	NA	NA	NA	NA	3	6	6	6	9	13

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 82

Federal obligations for development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All agencies	45,702	52,456	58,717	65,110	68,194	73,169	73,212	77,398	76,627	77,468	76,538
Departments											
Department of Agriculture	161	170	183	181	183	181	183	192	223	216	207
Agricultural Marketing Service	1	1	1	*	0	0	3	2	2	2	2
Agricultural Research Service	95	96	110	111	113	114	112	114	118	113	109
Animal and Plant Health Inspection Service	24	28	24	24	26	26	28	29	30	29	37
Forest Service	35	41	41	46	44	41	39	47	73	72	59
Grain Inspection, Packers, and Stockyards Administration	6	5	7	0	0	0	0	0	0	0	0
Department of Commerce	157	154	171	144	101	99	81	188	139	126	66
Census Bureau	23	22	22	19	16	17	19	23	38	49	24
National Institute of Standards and Technology	97	95	85	61	30	41	23	21	34	34	5
National Oceanic and Atmospheric Administration	22	20	46	63	55	41	38	144	67	44	37
National Telecommunications and Information Administration	15	17	18	0	0	0	0	0	0	0	0
Department of Defense	39,147	46,082	52,095	57,457	60,119	65,817	65,252	69,065	66,406	68,562	67,142
Defense Advanced Research Projects Agency	na	na	na	na	na	na	na	na	na	1,462	1,253
Defense agencies and activities	9,422	10,291	11,189	13,573	12,563	14,037	13,875	14,034	13,821	na	na
Department of the Air Force	13,383	16,930	19,108	18,725	20,337	23,724	23,640	26,346	24,843	24,826	25,819
Department of the Army	5,965	6,492	7,752	8,508	9,866	9,907	10,247	10,241	9,178	8,353	7,887
Department of the Navy	10,144	12,133	13,748	16,344	17,174	17,967	17,306	18,257	18,367	16,497	16,314
Operational Test and Evaluation, Director	233	236	298	308	179	182	185	186	197	NA	NA
Other defense agencies	na	na	na	na	na	na	na	na	na	17,423	15,868
Department of Education	102	101	101	102	121	122	124	120	138	133	130
Department of Energy	1,982	2,151	2,056	2,030	1,842	2,021	2,139	2,702	3,087	2,596	2,591
Advanced Research Projects Agency—Energy	NA	NA	NA	NA	NA	NA	0	0	173	47	46
Bonneville Power Administration	9	9	9	2	1	2	3	1	1	8	9
Electricity Delivery and Energy Reliability	na	na	na	14	40	35	55	25	40	27	37
Energy Efficiency and Renewable Energy	446	372	317	285	219	319	300	930	983	396	545
Environmental Management	73	49	30	35	24	16	17	19	59	45	31
Fossil Energy	218	383	295	350	218	202	221	240	267	226	202
National Nuclear Security Administration	1,230	1,317	1,400	1,341	1,339	1,437	1,540	1,486	1,497	1,786	1,695
Defense Programs	479	567	622	539	517	627	740	680	537	796	619
Fissile Materials Disposition	27	25	1	0	0	0	NA	NA	NA	NA	NA
Naval Nuclear Propulsion Program	637	650	709	741	720	730	712	756	914	942	1,040
Office of Defense Nuclear Nonproliferation	87	75	69	61	101	79	88	50	46	48	36
Nuclear Energy	0	18	5	1	1	10	3	0	67	61	25
Office of Intelligence	5	4	0	NA	NA	NA	NA	NA	NA	NA	NA
Office of Science	0	0	0	0	0	0	0	*	0	0	0
Department of Health and Human Services	781	111	142	128	86	91	95	94	137	78	71
Agency for Healthcare Research and Quality	24	25	24	25	25	26	27	30	63	30	29
Agency for Toxic Substances and Disease Registry	0	0	0	*	0	0	0	0	0	0	0
Centers for Disease Control and Prevention	0	0	0	0	0	17	27	31	37	38	31
Health Resources and Services Administration	37	27	30	35	6	6	40	33	37	10	11

TABLE 82

Federal obligations for development, by agency: FYs 2002–12

(Dollars in millions)

Agency	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Office of the Secretary of Health and Human Services	2	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Office of Public Health and Science	2	3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Substance Abuse and Mental Health Services Administration	718	57	87	68	54	42	0	NA	NA	NA	NA
Department of Homeland Security	na	NA	533	765	1,119	321	512	325	353	311	295
Coast Guard	na	NA	10	9	14	12	13	13	17	14	27
Science and Technology Directorate	na	NA	508	756	1,096	305	499	312	335	297	268
Transportation Security Administration	na	NA	15	0	9	4	0	NA	NA	NA	NA
Department of Housing and Urban Development	29	25	29	27	22	26	19	22	23	24	26
Department of the Interior	75	63	58	58	52	61	70	75	78	76	113
Bureau of Reclamation	7	6	7	8	6	6	6	6	2	3	2
Bureau of Safety and Environmental Enforcement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3
Geological Survey	60	53	48	50	46	55	62	66	74	73	108
National Park Service	9	4	3	*	*	1	2	3	1	1	*
Department of Justice	50	92	58	70	75	114	36	23	38	18	10
Bureau of Prisons	5	5	6	8	9	8	8	8	8	8	9
Federal Bureau of Investigation	34	43	34	33	34	71	26	15	30	10	1
Office of Justice Programs	11	44	18	28	31	34	2	*	0	0	0
Department of Labor	121	153	162	128	65	2	2	2	2	3	3
Employment and Training Administration	119	151	161	127	63	0	NA	0	NA	NA	NA
Office of the Secretary of Labor	1	1	*	0	0	0	0	NA	0	0	NA
Pension Benefit Guaranty Corp.	1	1	1	1	2	2	2	2	2	3	3
Department of Transportation	285	260	269	164	284	202	172	239	262	204	200
Coast Guard	16	na	na	na	na	na	na	na	na	na	na
Federal Aviation Administration	100	109	99	98	123	114	117	135	154	119	113
Federal Highway Administration	120	112	121	22	112	56	30	31	41	44	54
Federal Motor Carrier Safety Administration	4	0	0	0	0	0	0	0	*	1	*
Federal Railroad Administration	3	3	4	5	6	6	0	32	31	24	12
Federal Transit Administration	5	7	5	4	13	3	6	6	3	1	1
Office of the Secretary of Transportation	18	21	32	21	15	6	13	20	23	9	9
Pipeline and Hazardous Materials Safety Administration	na	na	7	12	13	15	6	8	8	5	9
Research and Innovative Technology Administration	na	na	0	1	2	1	0	7	2	2	2
Research and Special Programs Administration	6	7	na	na	na	na	na	na	na	na	na
Transportation Security Administration	12	na	na	na	na	na	na	na	na	na	na
Department of the Treasury	13	1	1	3	4	4	1	2	*	1	*
Bureau of Engraving and Printing	2	1	*	1	1	1	*	1	*	1	*
Customs Service	11	na	na	na	na	na	na	na	na	na	na
Mint	*	1	1	2	4	4	1	1	0	0	0
Department of Veterans Affairs	15	16	21	19	20	21	23	33	34	37	38
Other agencies											
Agency for International Development	22	24	23	41	40	0	0	0	0	0	0
Environmental Protection Agency	92	105	125	116	117	84	82	85	88	86	86
Federal Communications Commission	0	0	4	4	*	2	0	*	0	0	0
Library of Congress	1	1	2	7	4	7	1	*	1	1	1
National Aeronautics and Space Administration	2,670	2,946	2,683	3,666	3,939	3,994	4,422	4,234	5,618	4,996	5,560

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 83

Federal obligations for development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All agencies	66,188	67,370	64,928	48,728	49,103	54,837	61,306	82,098	103,907	100,595
Departments										
Department of Agriculture	151	198	213	202	202	222	230	255	237	249
Agricultural Marketing Service	2	3	3	3	4	4	4	3	7	7
Agricultural Research Service	101	112	113	114	117	120	129	142	151	160
Animal and Plant Health Inspection Service	19	21	21	21	21	21	21	21	21	21
Forest Service	28	59	72	60	57	74	72	85	53	55
National Agricultural Statistics Service	0	4	4	4	4	4	4	4	4	5
Natural Resources Conservation Service	NA	NA	NA	NA	NA	NA	NA	NA	1	0
Department of Commerce	69	98	177	198	310	210	253	261	307	283
Census Bureau	16	32	101	110	164	54	66	73	53	39
National Institute of Standards and Technology	9	3	3	5	25	10	9	17	101	74
National Oceanic and Atmospheric Administration	44	63	74	84	121	146	177	170	153	170
Department of Defense	57,602	58,276	54,822	37,597	37,695	45,321	50,511	57,780	60,971	65,096
Defense Advanced Research Projects Agency	1,104	1,286	1,331	1,397	1,385	1,338	1,578	1,658	1,761	1,812
Defense Health Agency	na	NA	NA	NA	NA	NA	NA	2,706	2,719	2,363
Department of the Air Force	22,022	22,637	20,711	5,559	6,386	9,298	12,970	9,434	10,003	10,823
Department of the Army	6,626	5,914	5,374	4,850	5,847	6,892	8,319	8,880	10,007	10,845
Department of the Navy	14,124	14,084	14,025	15,084	13,696	13,897	13,751	17,416	15,080	16,587
Space Force	na	na	na	na	na	na	na	4,386	5,243	4,517
Other defense agencies	13,727	14,355	13,382	10,706	10,380	13,895	13,894	13,299	16,159	18,149
Department of Education	108	114	92	81	88	76	47	51	101	113
Department of Energy	2,508	2,434	2,749	2,743	2,724	2,324	3,007	2,928	2,676	3,441
Advanced Research Projects Agency—Energy	90	111	103	127	123	80	202	219	157	225
Bonneville Power Administration	2	9	9	9	5	NA	NA	NA	NA	NA
Electricity Delivery and Energy Reliability	29	38	34	43	53	52	51	61	67	59
Energy Efficiency and Renewable Energy	388	326	607	711	588	401	425	848	719	1,384
Environmental Management	6	11	17	20	21	25	18	15	20	23
Fossil Energy	188	264	325	377	375	0	0	0	0	0
National Nuclear Security Administration	1,776	1,647	1,566	1,358	1,357	1,413	2,070	1,590	1,605	1,580
Defense Programs	745	507	449	97	85	150	226	143	375	235
Naval Nuclear Propulsion Program	994	1,094	1,083	1,216	1,220	1,206	1,789	1,387	1,140	1,246
Office of Defense Nuclear Nonproliferation	37	46	34	46	52	56	56	59	90	99
Nuclear Energy	27	28	89	97	203	353	228	181	108	149
Office of Cybersecurity, Energy Security, and Emergency Response	na	na	na	na	na	0	12	14	0	21
Department of Health and Human Services	68	69	75	87	97	110	837	15,772	33,933	26,482
Administration for Community Living	0	0	4	17	17	17	17	20	0	0
Agency for Healthcare Research and Quality	29	29	29	28	24	28	30	30	30	36
Biomedical Advanced Research and Development Authority	NA	NA	NA	NA	NA	NA	736	15,666	33,881	26,433
Centers for Disease Control and Prevention	29	30	29	28	39	65	54	56	14	13
Health Resources and Services Administration	10	10	14	15	17	0	0	0	8	0

TABLE 83

Federal obligations for development, by agency: FYs 2013–22

(Dollars in millions)

Agency	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Department of Homeland Security	250	327	525	365	581	542	368	282	291	285
Coast Guard	15	18	13	16	15	15	14	3	7	5
Countering Weapons of Mass Destruction Office	NA	5	34	25	35	16	50	14	11	8
Cybersecurity and Infrastructure Security Agency	na	na	na	na	na	0	0	1	3	8
Science and Technology Directorate	235	304	478	323	531	490	281	229	240	229
Secret Service	NA	NA	NA	NA	NA	1	2	13	1	2
Transportation Security Administration	NA	NA	NA	NA	NA	20	21	23	28	33
Department of Housing and Urban Development	23	18	20	24	23	22	0	NA	NA	NA
Department of the Interior	106	108	120	131	141	116	137	139	148	174
Bureau of Land Management	NA	NA	1	1	1	7	7	7	1	1
Bureau of Ocean Energy Management	0	0	6	12	12	13	20	14	14	16
Bureau of Reclamation	3	3	2	2	5	5	7	8	20	20
Bureau of Safety and Environmental Enforcement	1	*	3	4	3	*	2	3	*	*
Geological Survey	102	104	106	111	119	91	101	107	112	135
National Park Service	1	1	1	1	1	0	0	0	1	1
Department of Justice	41	18	21	51	40	15	16	12	6	6
Bureau of Prisons	9	9	8	8	8	4	5	6	*	*
Federal Bureau of Investigation	32	10	13	13	2	0	0	0	0	0
Office of Justice Programs	0	*	0	30	30	11	10	6	6	6
Department of Labor	2	3	4	4	0	0	NA	NA	NA	NA
Pension Benefit Guaranty Corp.	2	3	4	4	0	0	NA	NA	NA	NA
Department of State	0	NA	0	0	0	0	0	10	20	20
Department of Transportation	200	175	193	312	253	295	267	284	285	284
Federal Aviation Administration	95	83	106	196	186	181	194	185	240	245
Federal Highway Administration	70	59	40	85	46	71	37	40	37	30
Federal Motor Carrier Safety Administration	1	*	0	1	1	1	0	0	*	1
Federal Railroad Administration	11	10	11	11	10	14	7	12	7	9
Federal Transit Administration	3	0	9	0	0	0	0	0	1	0
Office of the Secretary of Transportation	11	11	10	14	8	13	12	22	0	0
Pipeline and Hazardous Materials Safety Administration	9	12	17	5	2	16	17	25	0	0
Research and Innovative Technology Administration	1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Department of the Treasury	1	1	1	3	7	0	11	11	8	15
Bureau of Engraving and Printing	1	1	1	3	7	0	11	11	7	14
Mint	0	0	0	0	0	0	0	0	*	1
Department of Veterans Affairs	35	35	18	18	13	29	30	29	137	158
Other agencies										
Agency for International Development	0	0	0	44	0	46	49	59	30	30
Environmental Protection Agency	77	77	75	78	76	74	81	77	117	119
Federal Communications Commission	0	0	0	0	1	1	0	0	0	0
Library of Congress	1	1	1	1	1	2	1	2	2	2
National Aeronautics and Space Administration	4,946	5,418	5,821	6,791	6,849	5,424	5,459	4,144	4,625	3,805
Nuclear Regulatory Commission	0	0	0	0	0	0	0	1	3	4
Tennessee Valley Authority	NA	NA	NA	NA	3	7	4	2	8	28

* = amount greater than $0 but less than $500,000. na = not applicable; agency or subagency did not exist as such or in that organization in that year. NA = not available; data were not collected at that level for that fiscal year.

Note(s):
Because of rounding, detail may not add to total. Only those agencies and subdivisions that had obligations in variables represented by this table appear in the table. Beginning with FY 2016, the totals reported for development obligations represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) obligations. Those funds, previously included in DOD's development obligation totals, support the development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Science Foundation, National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 84

Federal obligations for research and development, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
1967	16,529	3,396	1,275	9,878	1,454	400	63	63
1968	15,921	3,493	1,362	9,047	1,487	377	100	54
1969	15,641	3,501	1,390	8,703	1,529	364	102	51
1970	15,339	4,079	1,429	7,770	1,476	445	100	40
1971	15,543	4,228	1,419	7,588	1,645	459	141	63
1972	16,496	4,589	1,506	7,716	1,904	515	207	60
1973	16,800	4,762	1,491	7,731	1,917	578	257	64
1974	17,410	4,911	1,581	7,752	2,214	672	214	65
1975	19,039	5,354	1,859	8,423	2,411	702	228	62
1976	20,780	5,769	2,106	9,340	2,552	709	231	73
1977	23,450	6,012	2,690	10,717	2,905	800	238	88
1978	25,845	6,810	2,870	11,400	3,375	998	268	123
1979	28,145	7,418	3,175	12,172	3,889	1,026	310	155
1980	29,830	7,632	3,383	12,969	4,263	1,106	266	211
1981	33,104	8,426	3,730	14,868	4,466	1,069	222	323
1982	36,433	9,141	4,004	17,192	4,605	1,092	184	214
1983	38,712	10,582	4,476	17,020	4,966	1,242	186	240
1984	42,225	11,572	4,691	18,610	5,547	1,497	131	176
1985	48,360	12,945	5,296	21,705	6,340	1,699	129	245
1986	51,412	13,535	5,016	24,201	6,559	1,677	128	296
1987	55,254	13,413	5,580	26,768	7,337	1,711	148	295
1988	56,769	14,115	5,891	26,719	7,828	1,683	142	392
1989	61,406	15,025	6,075	28,548	8,672	2,000	167	919
1990	63,559	15,849	6,398	29,370	9,138	2,248	214	343
1991	61,295	15,138	6,451	26,421	10,169	2,637	215	264
1992	65,593	15,583	6,718	29,745	10,271	2,804	184	288
1993	67,314	16,663	5,819	30,219	11,208	2,812	320	272
1994	67,235	16,132	5,322	30,455	11,797	2,937	325	267
1995	68,187	17,025	5,588	30,236	11,928	2,834	316	259
1996	67,653	16,540	5,339	30,374	11,978	2,887	247	288
1997	69,827	16,718	5,650	31,419	12,559	2,962	261	258
1998	72,101	17,122	5,682	31,999	13,381	3,171	447	299
1999	75,341	18,085	6,138	31,902	14,959	3,609	357	291
2000	75,910	18,313	6,500	29,409	16,891	4,228	225	344
2001	84,493	22,047	7,825	28,237	20,065	5,390	453	476
2002	93,709	23,357	7,517	34,569	21,620	5,782	454	410
2003	103,528	25,118	7,981	40,695	23,006	5,766	405	557
2004	112,074	24,573	10,374	43,759	24,947	6,481	1,236	706
2005	118,848	25,871	10,375	48,868	25,688	6,705	690	652
2006	121,730	27,675	9,118	52,754	24,670	6,063	625	824
2007	127,263	29,933	9,383	55,342	25,548	5,984	362	711
2008	127,106	29,638	8,192	56,338	26,027	5,965	389	559
2009	141,090	31,544	10,200	59,749	31,558	7,050	392	597
2010	140,355	30,912	10,101	59,868	31,192	7,245	427	610
2011	135,533	35,145	10,786	53,550	27,680	6,678	716	977
2012	138,525	34,366	10,058	58,910	27,509	6,388	453	839
2013	125,720	32,963	10,080	49,538	25,772	6,249	386	732
2014	130,561	34,736	10,565	50,237	27,429	6,418	446	730

TABLE 84

Federal obligations for research and development, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
2015	128,753	34,925	11,119	47,483	27,415	6,288	487	1,036
2016	115,833	32,351	11,423	35,811	28,199	6,682	543	824
2017	118,975	30,990	11,694	37,875	28,963	8,141	553	758
2018	129,425	35,953	12,455	39,754	31,534	8,451	562	715
2019	142,424	39,313	14,691	44,446	34,001	8,450	586	937
2020	167,403	51,472	13,150	51,428	38,541	10,699	720	1,393
2021	190,151	71,665	14,791	50,225	39,766	11,985	966	753
2022 (preliminary)	189,059	69,232	15,162	50,762	40,458	11,753	937	755

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. FFRDC funding over the years may be affected by the creation of new FFRDCs and the phasing out of other FFRDCs. For details, see the notes in the Master Government List of Federally Funded R&D Centers at http://www.nsf.gov/statistics/ffrdclist/#ffrdc. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. Beginning with FY 2016, the totals reported for development obligations represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) obligations. Those funds, previously included in DOD's development obligation totals, support the development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act).

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 85

Federal obligations for research, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
1967	4,631	1,461	472	1,039	1,312	249	53	46
1968	4,781	1,541	484	1,094	1,302	234	82	45
1969	4,645	1,645	453	886	1,322	222	75	42
1970	4,901	1,904	500	876	1,276	230	83	30
1971	5,123	1,888	487	889	1,430	282	96	52
1972	5,548	1,984	534	907	1,643	342	94	45
1973	5,581	2,088	474	887	1,691	316	84	40
1974	6,175	2,270	523	875	1,958	414	91	44
1975	6,730	2,464	626	1,010	2,079	395	112	44
1976	7,619	2,879	782	1,103	2,250	435	119	50
1977	8,514	2,958	918	1,367	2,584	512	115	60
1978	9,607	3,221	1,017	1,651	2,928	591	129	70
1979	10,535	3,481	1,119	1,762	3,333	623	139	77
1980	11,597	3,666	1,234	2,078	3,699	678	151	91
1981	12,213	4,034	1,360	1,958	3,920	705	129	106
1982	13,022	4,194	1,648	2,157	4,045	744	126	108
1983	14,254	4,710	1,858	2,114	4,468	837	137	130
1984	14,979	4,765	1,920	2,137	5,030	923	88	117
1985	16,133	5,056	2,004	2,074	5,726	1,045	89	138
1986	16,502	5,160	1,862	2,280	5,883	1,063	91	162
1987	17,941	5,438	1,994	2,449	6,640	1,207	90	122
1988	18,650	5,338	2,103	2,642	7,023	1,300	103	140
1989	20,766	5,897	2,417	2,875	7,793	1,520	121	142
1990	21,622	5,810	2,543	3,192	8,137	1,660	126	154
1991	23,968	6,454	3,041	3,407	8,868	1,926	129	143
1992	24,491	6,523	3,177	3,451	9,061	2,050	109	120
1993	26,890	7,452	3,272	3,924	9,892	2,041	212	97
1994	27,411	7,481	3,097	4,064	10,292	2,102	231	145
1995	28,434	7,685	3,252	4,699	10,354	2,079	221	145
1996	28,260	7,513	3,277	4,269	10,707	2,179	187	128
1997	29,365	7,667	3,576	4,392	11,173	2,295	144	118
1998	30,922	7,969	3,802	4,633	11,739	2,425	240	115
1999	33,528	8,686	3,903	4,580	13,204	2,807	232	116
2000	38,471	9,450	4,170	4,801	16,022	3,714	163	152
2001	44,714	11,131	4,658	5,262	18,657	4,578	309	119
2002	48,007	11,857	4,906	5,787	20,285	4,723	275	172
2003	51,072	12,420	5,155	6,042	21,676	5,196	306	276
2004	53,358	12,085	5,614	6,783	22,699	5,216	533	427
2005	53,738	12,350	5,733	6,456	23,156	5,296	377	370
2006	53,536	12,262	5,759	6,436	22,809	5,449	418	402
2007	54,094	11,816	6,088	6,074	23,967	5,417	298	433
2008	53,894	11,922	5,758	5,782	24,323	5,397	339	372
2009	63,692	13,319	6,681	6,280	30,169	6,501	344	399
2010	63,728	13,281	6,745	6,625	29,608	6,687	353	429
2011	58,065	12,663	6,656	6,037	26,253	5,802	282	370
2012	61,986	14,293	6,993	7,794	26,290	5,854	352	410
2013	59,533	13,417	7,490	7,366	24,772	5,780	313	395
2014	63,191	14,306	8,034	8,057	26,110	5,931	395	358

TABLE 85

Federal obligations for research, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
2015	63,825	15,007	7,942	8,138	25,962	5,863	420	494
2016	67,105	16,055	8,650	8,370	26,864	6,270	420	476
2017	69,871	15,905	8,976	8,963	27,626	7,576	453	372
2018	74,588	17,818	9,458	8,768	30,089	7,615	430	411
2019	81,118	18,298	10,820	10,739	32,381	7,892	500	488
2020	85,305	19,572	9,892	10,028	35,474	9,191	645	503
2021	86,244	16,764	10,529	10,790	37,027	9,760	887	488
2022 (preliminary)	88,464	18,352	10,789	10,528	37,605	9,839	849	502

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. FFRDC funding over the years may be affected by the creation of new FFRDCs and the phasing out of other FFRDCs. For details, see the notes in the Master Government List of Federally Funded R&D Centers at http://www.nsf.gov/statistics/ffrdclist/#ffrdc. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 86

Federal obligations for basic research, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
1967	1,846	435	242	181	857	105	4	22
1968	1,841	432	258	195	835	93	12	15
1969	1,945	532	253	185	864	85	13	13
1970	1,926	558	270	185	808	80	14	10
1971	1,980	565	259	167	879	85	17	8
1972	2,187	597	294	151	1,021	96	16	11
1973	2,232	608	272	176	1,048	98	16	13
1974	2,388	696	261	124	1,145	127	17	18
1975	2,588	734	319	119	1,261	128	14	14
1976	2,767	786	353	131	1,342	126	13	17
1977	3,259	914	383	208	1,555	163	16	20
1978	3,699	1,029	428	248	1,759	193	17	25
1979	4,193	1,089	467	277	2,080	240	20	20
1980	4,674	1,182	515	325	2,320	280	24	28
1981	5,041	1,302	572	293	2,503	313	27	31
1982	5,482	1,466	613	271	2,727	356	24	25
1983	6,260	1,690	695	293	3,112	410	32	28
1984	7,067	1,861	768	378	3,531	474	28	28
1985	7,819	1,923	859	380	4,039	556	31	31
1986	8,153	2,019	855	512	4,132	572	31	33
1987	8,942	2,046	1,040	467	4,666	658	38	29
1988	9,474	2,050	1,141	597	4,868	729	43	46
1989	10,602	2,313	1,364	773	5,221	839	44	47
1990	11,286	2,295	1,533	887	5,548	924	50	48
1991	12,171	2,392	1,651	950	6,064	1,015	49	49
1992	12,490	2,338	1,707	920	6,332	1,097	42	54
1993	13,399	2,662	1,718	896	6,834	1,165	72	53
1994	13,523	2,498	1,648	1,110	6,992	1,133	75	68
1995	13,877	2,694	1,754	1,214	6,944	1,148	79	45
1996	14,464	2,677	1,870	1,109	7,443	1,235	80	50
1997	14,942	2,688	1,983	1,167	7,696	1,290	68	50
1998	15,613	2,919	2,091	1,119	7,952	1,398	85	50
1999	17,444	3,255	2,234	1,083	9,107	1,650	61	53
2000	19,570	3,622	2,367	1,357	10,057	1,985	76	107
2001	21,958	4,194	2,478	917	11,792	2,442	72	64
2002	23,668	4,460	2,608	1,232	12,668	2,532	72	97
2003	24,751	4,662	2,723	1,280	13,152	2,704	85	146
2004	26,121	4,672	2,905	1,969	13,399	2,746	198	232
2005	27,140	4,773	2,962	2,051	13,990	2,914	236	215
2006	26,585	4,764	3,073	1,859	13,658	2,867	153	211
2007	26,866	4,572	3,214	1,736	14,220	2,794	101	228
2008	27,154	4,768	2,975	1,545	14,646	2,935	76	209
2009	32,879	5,530	3,702	1,632	18,230	3,487	94	205
2010	31,795	5,191	3,602	1,747	17,403	3,530	103	219
2011	29,314	4,870	3,595	1,726	15,771	3,067	76	209
2012	30,959	5,579	4,081	2,155	15,730	3,123	80	210
2013	29,779	5,217	4,302	2,052	14,950	3,000	66	192
2014	31,588	5,669	4,360	2,516	15,655	3,125	78	185

TABLE 86

Federal obligations for basic research, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
2015	31,527	5,814	4,628	2,537	15,296	2,986	61	207
2016	32,293	6,121	4,710	2,447	15,551	3,179	81	204
2017	33,271	6,116	4,994	2,692	15,847	3,359	66	197
2018	36,195	6,689	5,269	2,787	17,503	3,658	87	203
2019	40,017	7,240	6,454	3,637	18,627	3,725	86	250
2020	41,547	7,688	5,923	3,147	20,128	4,326	114	221
2021	42,494	6,199	5,805	3,785	21,441	4,500	533	232
2022 (preliminary)	43,790	6,533	6,632	3,557	21,737	4,557	541	233

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. FFRDC funding over the years may be affected by the creation of new FFRDCs and the phasing out of other FFRDCs. For details, see the notes in the Master Government List of Federally Funded R&D Centers at http://www.nsf.gov/statistics/ffrdclist/#ffrdc. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 87

Federal obligations for applied research, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
1967	2,786	1,026	230	858	455	144	49	24
1968	2,941	1,110	225	899	467	141	70	29
1969	2,700	1,113	200	702	457	136	62	29
1970	2,975	1,345	230	691	468	150	70	20
1971	3,143	1,322	228	722	551	197	79	44
1972	3,361	1,387	240	755	621	246	78	33
1973	3,349	1,480	202	711	643	218	68	27
1974	3,788	1,574	262	751	814	287	74	26
1975	4,141	1,730	307	892	818	266	98	30
1976	4,852	2,093	430	972	908	309	106	34
1977	5,255	2,044	535	1,159	1,028	350	100	40
1978	5,908	2,192	589	1,404	1,169	398	112	45
1979	6,342	2,392	652	1,485	1,253	382	120	58
1980	6,923	2,484	719	1,752	1,379	399	127	63
1981	7,171	2,732	787	1,665	1,417	392	103	75
1982	7,541	2,729	1,035	1,886	1,318	388	101	83
1983	7,993	3,020	1,163	1,821	1,356	427	105	101
1984	7,911	2,904	1,151	1,760	1,499	449	60	89
1985	8,315	3,133	1,145	1,694	1,688	489	59	107
1986	8,349	3,141	1,007	1,769	1,751	491	60	130
1987	8,998	3,392	954	1,982	1,975	550	53	93
1988	9,177	3,288	962	2,046	2,155	571	60	94
1989	10,164	3,584	1,053	2,102	2,572	681	78	95
1990	10,337	3,515	1,010	2,304	2,588	736	76	107
1991	11,798	4,063	1,390	2,457	2,803	910	80	94
1992	12,001	4,186	1,470	2,531	2,729	952	67	66
1993	13,491	4,790	1,555	3,028	3,059	876	140	44
1994	13,888	4,983	1,449	2,954	3,299	969	156	77
1995	14,557	4,991	1,499	3,484	3,410	930	143	100
1996	13,796	4,836	1,407	3,160	3,263	944	107	77
1997	14,423	4,979	1,593	3,225	3,477	1,005	76	68
1998	15,309	5,051	1,711	3,513	3,787	1,028	155	64
1999	16,084	5,431	1,669	3,497	4,097	1,157	171	63
2000	18,901	5,828	1,803	3,444	5,965	1,729	87	45
2001	22,756	6,937	2,180	4,345	6,865	2,136	237	55
2002	24,338	7,397	2,298	4,555	7,617	2,191	204	76
2003	26,320	7,758	2,432	4,763	8,525	2,492	220	130
2004	27,237	7,414	2,710	4,813	9,301	2,470	335	195
2005	26,598	7,577	2,771	4,405	9,166	2,382	141	156
2006	26,951	7,498	2,686	4,577	9,152	2,581	265	191
2007	27,228	7,244	2,875	4,338	9,747	2,623	196	205
2008	26,740	7,154	2,783	4,237	9,678	2,462	263	162
2009	30,813	7,789	2,979	4,649	11,939	3,013	249	194
2010	31,933	8,090	3,144	4,879	12,205	3,157	250	209
2011	28,751	7,794	3,062	4,311	10,482	2,735	206	161
2012	31,027	8,714	2,912	5,639	10,560	2,731	272	200
2013	29,753	8,200	3,189	5,313	9,822	2,780	247	203
2014	31,604	8,636	3,674	5,542	10,455	2,806	317	173

TABLE 87

Federal obligations for applied research, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
2015	32,298	9,193	3,314	5,602	10,667	2,877	359	287
2016	34,812	9,934	3,939	5,924	11,313	3,091	339	272
2017	36,600	9,789	3,982	6,271	11,779	4,217	387	176
2018	38,392	11,129	4,189	5,981	12,585	3,957	343	208
2019	41,101	11,058	4,366	7,102	13,755	4,167	414	238
2020	43,758	11,884	3,969	6,882	15,345	4,865	530	282
2021	43,750	10,565	4,724	7,004	15,586	5,260	354	256
2022 (preliminary)	44,674	11,819	4,157	6,970	15,867	5,283	307	270

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. FFRDC funding over the years may be affected by the creation of new FFRDCs and the phasing out of other FFRDCs. For details, see the notes in the Master Government List of Federally Funded R&D Centers at http://www.nsf.gov/statistics/ffrdclist/#ffrdc. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 88

Federal obligations for development, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
1967	11,898	1,934	803	8,839	142	151	10	17
1968	11,140	1,952	879	7,953	186	143	18	9
1969	10,996	1,856	937	7,817	207	143	27	9
1970	10,438	2,175	929	6,894	199	214	16	10
1971	10,419	2,340	933	6,699	214	177	45	11
1972	10,948	2,605	972	6,809	261	173	113	15
1973	11,219	2,674	1,017	6,844	226	262	173	24
1974	11,235	2,641	1,058	6,878	256	258	123	21
1975	12,309	2,890	1,233	7,413	333	308	116	17
1976	13,160	2,890	1,324	8,237	302	273	112	23
1977	14,936	3,054	1,772	9,350	322	288	123	28
1978	16,238	3,590	1,853	9,749	447	407	140	53
1979	17,610	3,936	2,056	10,410	555	404	171	77
1980	18,233	3,966	2,149	10,892	564	427	115	120
1981	20,891	4,392	2,370	12,910	546	364	93	217
1982	23,410	4,947	2,355	15,036	560	348	58	106
1983	24,458	5,872	2,618	14,906	498	405	49	110
1984	27,246	6,808	2,772	16,473	517	575	43	59
1985	32,226	7,889	3,292	19,630	613	654	40	107
1986	34,910	8,375	3,154	21,921	675	614	37	134
1987	37,313	7,975	3,586	24,320	697	504	58	173
1988	38,119	8,776	3,788	24,077	805	383	39	251
1989	40,641	9,128	3,658	25,673	879	480	46	777
1990	41,937	10,039	3,855	26,178	1,001	588	87	188
1991	37,327	8,684	3,410	23,014	1,301	712	86	121
1992	41,102	9,060	3,542	26,294	1,211	754	75	168
1993	40,424	9,212	2,547	26,295	1,316	771	108	175
1994	39,824	8,651	2,226	26,391	1,505	835	95	122
1995	39,752	9,340	2,336	25,537	1,574	755	95	114
1996	39,393	9,027	2,062	26,105	1,271	708	59	161
1997	40,461	9,051	2,074	27,027	1,386	667	117	139
1998	41,178	9,152	1,880	27,366	1,642	746	207	185
1999	41,813	9,399	2,235	27,322	1,755	802	125	175
2000	37,440	8,864	2,331	24,608	869	513	63	192
2001	39,779	10,916	3,167	22,974	1,408	812	145	357
2002	45,702	11,500	2,611	28,782	1,335	1,059	178	237
2003	52,456	12,699	2,826	34,652	1,329	570	99	281
2004	58,717	12,488	4,759	36,976	2,248	1,264	703	279
2005	65,110	13,521	4,642	42,411	2,532	1,409	313	281
2006	68,194	15,414	3,359	46,318	1,860	614	207	422
2007	73,169	18,116	3,295	49,268	1,581	568	64	277
2008	73,212	17,716	2,433	50,555	1,703	567	50	187
2009	77,398	18,225	3,520	53,469	1,389	549	48	198
2010	76,627	17,631	3,355	53,242	1,584	558	74	181
2011	77,468	22,481	4,129	47,513	1,427	876	434	607
2012	76,538	20,073	3,065	51,116	1,220	534	101	429
2013	66,188	19,546	2,589	42,173	1,000	469	72	338
2014	67,370	20,431	2,531	42,179	1,319	487	52	372

TABLE 88

Federal obligations for development, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
2015	64,928	19,919	3,177	39,345	1,453	426	67	542
2016	48,728	16,296	2,773	27,441	1,336	412	122	349
2017	49,103	15,085	2,718	28,912	1,337	564	100	386
2018	54,837	18,136	2,998	30,986	1,446	836	132	305
2019	61,306	21,015	3,871	33,707	1,619	559	86	450
2020	82,098	31,899	3,258	41,400	3,067	1,508	75	890
2021	103,907	54,901	4,263	39,435	2,740	2,225	79	265
2022 (preliminary)	100,595	50,879	4,373	40,234	2,853	1,914	88	252

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.

[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):

Because of rounding, detail may not add to total. FFRDC funding over the years may be affected by the creation of new FFRDCs and the phasing out of other FFRDCs. For details, see the notes in the Master Government List of Federally Funded R&D Centers at http://www.nsf.gov/statistics/ffrdclist/#ffrdc. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. Beginning with FY 2016, the totals reported for development obligations represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the Department of Defense (DOD) Budget Activity 7 (Operational Systems Development) obligations. Those funds, previously included in DOD's development obligation totals, support the development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 89

Federal obligations for R&D plant, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
1967	620	239	139	NA	112	NA	130	*
1968	604	294	152	41	98	11	7	0
1969	669	260	286	54	62	5	2	1
1970	524	166	254	41	56	5	2	*
1971	611	203	293	54	49	3	1	9
1972	602	247	208	67	45	28	5	3
1973	774	324	310	77	43	16	3	2
1974	766	309	350	64	25	6	12	*
1975	821	347	365	62	36	11	*	*
1976	837	317	400	74	35	11	0	0
1977	1,367	712	500	103	34	7	1	11
1978	1,296	518	642	77	55	4	0	*
1979	1,475	545	656	214	42	9	*	8
1980	1,556	491	707	304	40	9	1	4
1981	1,486	468	632	302	37	41	0	5
1982	1,390	426	813	110	30	7	0	3
1983	1,297	394	527	259	34	82	0	1
1984	1,787	633	564	451	79	56	0	5
1985	1,821	625	651	298	141	70	*	35
1986	1,539	317	646	409	133	12	0	21
1987	1,846	302	619	668	231	21	0	6
1988	2,057	320	746	719	246	24	*	2
1989	2,165	330	711	900	205	14	1	4
1990	2,272	359	758	883	157	113	1	1
1991	2,853	519	923	1,003	253	145	1	9
1992	2,985	506	828	1,014	242	394	*	0
1993	3,101	432	809	1,048	361	416	1	33
1994	2,215	393	801	747	253	21	1	*
1995	2,256	480	702	695	327	26	1	26
1996	1,746	405	608	465	243	23	1	*
1997	1,927	608	673	390	239	17	0	*
1998	1,813	448	721	488	139	11	5	0
1999	2,046	483	859	545	141	12	5	*
2000	4,493	573	835	2,815	214	56	1	*
2001	4,070	520	1,015	2,180	285	28	1	40
2002	4,305	415	1,081	2,525	241	29	2	12
2003	4,267	610	1,058	1,817	687	71	1	23
2004	3,994	961	1,045	1,442	354	164	16	12
2005	3,771	859	902	1,381	423	135	55	16
2006	2,125	663	804	266	262	127	3	*
2007	2,168	593	822	401	266	80	0	6
2008	1,944	494	764	449	210	24	*	3
2009	3,668	805	1,702	396	607	154	1	2
2010	6,613	1,953	1,124	1,751	1,533	246	2	4
2011	4,171	846	852	2,030	286	141	*	15
2012	2,146	481	623	461	373	201	*	8
2013	1,905	673	576	231	237	184	*	4
2014	2,218	642	710	323	326	213	*	3

TABLE 89

Federal obligations for R&D plant, by performer: FYs 1967–2022

(Dollars in millions)

Fiscal year	Total	Intramural		Extramural				
				United States and U.S. territories				Non-U.S. performers
		Federal agencies[a]	FFRDCs	Businesses	Higher education[b]	Nonprofit organizations	State and local governments	
2015	2,825	1,417	689	276	292	151	*	*
2016	2,441	646	865	345	284	290	1	10
2017	2,652	829	956	334	350	158	0	25
2018	3,853	1,252	1,685	311	410	180	0	14
2019	4,376	1,093	2,235	354	514	170	1	10
2020	6,150	3,106	1,884	678	351	125	7	*
2021	4,282	883	2,019	858	360	155	6	*
2022 (preliminary)	4,492	1,025	1,809	782	589	282	5	*

* = amount greater than $0 but less than $500,000. NA = not available; data were not collected at that level for that fiscal year.

FFRDC = federally funded research and development center.

[a] Federal agencies' activities cover costs associated with the administration of federal R&D performance and R&D procurements from nonfederal performers by federal personnel, transfers of funds to other federal agencies for purposes related to R&D, and actual federal performance.
[b] Higher education includes both public and private institutions as well as University Affiliated Research Centers.

Note(s):
Because of rounding, detail may not add to total. FFRDC funding over the years may be affected by the creation of new FFRDCs and the phasing out of other FFRDCs. For details, see the notes in the Master Government List of Federally Funded R&D Centers at http://www.nsf.gov/statistics/ffrdclist/#ffrdc. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), FFRDCs are classified as intramural R&D performers, whereas they were extramural in previous volumes; therefore, data are not directly comparable across volumes. Past years in the trend tables have been adjusted to reflect the current classification of FFRDCs.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 90

Federal obligations for research, by detailed field of science and engineering: FYs 2002–12

(Dollars in millions)

Field	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All fields	48,007	51,072	53,358	53,738	53,536	54,094	53,894	63,692	63,728	58,065	61,986
Computer sciences and mathematics	2,631	2,672	2,949	2,983	2,815	2,946	3,047	3,612	3,412	3,374	3,528
Computer sciences	2,043	2,053	2,145	2,157	1,988	2,078	2,053	2,422	2,362	2,192	2,392
Mathematics	402	453	618	687	669	709	783	928	835	892	925
Other computer sciences and mathematics	185	167	187	140	158	159	211	262	214	291	210
Engineering	8,275	8,405	8,866	8,553	8,679	8,990	8,976	10,285	11,081	10,057	11,403
Aeronautical engineering	2,157	1,732	1,641	1,276	1,229	929	810	908	830	845	1,815
Astronautical engineering	761	702	665	494	476	341	288	370	390	410	690
Chemical engineering	202	328	319	284	295	354	346	447	510	475	350
Civil engineering	303	340	330	279	353	462	488	679	700	617	514
Electrical engineering	809	950	891	1,033	1,035	1,027	1,046	1,254	1,361	1,235	1,325
Mechanical engineering	266	298	302	324	298	337	292	314	364	310	372
Metallurgy and materials engineering	1,001	1,084	1,037	1,184	1,250	1,480	1,624	1,722	1,759	1,621	1,699
Other engineering	2,778	2,971	3,682	3,678	3,742	4,060	4,081	4,591	5,168	4,544	4,639
Environmental sciences	3,418	3,741	3,742	3,503	3,431	3,170	2,985	3,751	3,339	3,207	3,884
Atmospheric sciences	1,164	1,259	1,260	1,185	1,167	965	884	1,018	954	954	1,469
Geological sciences	675	725	704	674	654	638	517	754	530	598	726
Oceanography	785	846	809	772	746	788	789	834	744	724	814
Other environmental sciences	795	910	968	872	864	780	794	1,145	1,111	932	876
Life sciences	25,477	27,772	27,728	28,128	27,928	29,464	28,919	33,267	33,909	29,450	31,006
Agricultural sciences	1,048	1,046	1,087	1,094	1,108	1,139	1,020	1,120	1,132	1,085	943
Biological sciences (excluding environmental biology)	14,499	18,643	13,092	13,352	13,691	14,430	14,443	17,377	17,214	15,178	15,458
Environmental biology	779	718	670	699	687	757	858	964	816	855	797
Medical sciences	6,427	6,160	10,899	10,862	10,592	10,791	10,387	11,393	11,677	10,202	11,078
Other life sciences	2,724	1,205	1,981	2,121	1,850	2,347	2,210	2,414	3,070	2,129	2,730
Physical sciences	4,983	5,022	5,211	5,494	5,351	5,136	5,073	5,821	5,871	5,427	6,408
Astronomy	752	872	921	885	792	656	528	672	560	555	1,099
Chemistry	1,182	1,138	1,191	1,198	1,126	1,150	1,148	1,274	1,311	1,106	1,103
Physics	2,621	2,500	2,599	3,041	3,002	2,939	2,969	3,356	3,470	3,269	3,708
Other physical sciences	429	512	501	370	430	391	427	520	530	496	497
Psychology	906	1,104	1,855	1,892	1,747	1,838	1,741	2,086	2,156	1,887	2,087
Biological aspects	11	23	6	2	3	4	22	2	14	16	14
Social aspects	53	51	52	47	41	37	19	51	75	54	62
Other psychological sciences	843	1,031	1,797	1,843	1,703	1,797	1,700	2,033	2,067	1,816	2,011
Social sciences	983	1,026	1,090	1,097	1,124	1,147	977	1,157	1,197	1,262	1,125
Anthropology	16	15	15	18	15	16	17	29	25	26	30
Economics	227	234	205	216	203	250	212	230	274	399	344
Political science	18	19	19	33	45	41	29	25	14	12	13
Sociology	96	125	120	70	144	218	95	139	132	133	155
Other social sciences	625	634	731	760	717	622	623	734	752	693	583
Other sciences nec	1,334	1,329	1,916	2,089	2,461	1,403	2,177	3,713	2,763	3,401	2,546

nec = not elsewhere classified.

Note(s):
Because of rounding, detail may not add to total. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 91

Federal obligations for research, by detailed field of R&D: FYs 2013–22

(Dollars in millions)

Field	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All fields	59,533	63,191	63,825	67,105	69,871	74,588	81,118	85,305	86,244	88,464
Computer and information sciences	NA	NA	NA	NA	NA	NA	NA	NA	5,350	5,877
Computer sciences and mathematics	3,427	3,883	3,863	4,223	3,894	4,207	4,330	5,912	NA	NA
Computer sciences	2,362	2,613	2,646	2,815	2,735	2,888	2,897	4,280	NA	NA
Mathematics	864	979	1,006	1,160	942	1,055	1,157	681	NA	NA
Other computer sciences and mathematics	201	291	211	247	218	264	276	950	NA	NA
Geosciences, atmospheric sciences, and ocean sciences (formerly Environmental sciences)	4,041	4,366	4,414	4,450	4,470	4,568	5,075	5,039	3,569	6,052
Atmospheric science and meteorology (formerly Atmospheric sciences)	1,542	1,567	1,568	1,597	1,651	796	824	908	888	NA
Geological and earth sciences (formerly Geological sciences)	627	561	643	562	580	227	239	306	602	NA
Ocean sciences and marine sciences (formerly Oceanography)	788	848	726	773	774	778	819	946	1,096	NA
Other geosciences, atmospheric sciences, and ocean sciences (formerly Other environmental sciences)	1,084	1,389	1,477	1,518	1,464	2,766	3,192	2,879	983	NA
Life sciences	29,663	30,951	30,625	32,045	34,090	36,994	38,304	42,525	38,178	38,511
Agricultural sciences	903	1,004	1,320	1,283	1,353	1,325	1,446	1,413	1,073	NA
Biological and biomedical sciences	NA	NA	NA	NA	NA	NA	NA	NA	18,233	NA
Biological sciences (excluding environmental biology)	14,588	15,311	14,840	15,923	16,556	17,829	18,910	20,165	NA	NA
Environmental biology	782	821	819	788	783	922	924	902	NA	NA
Health sciences (formerly Medical sciences)	10,917	11,285	11,087	11,359	12,649	13,564	13,775	16,182	15,008	NA
Natural resources and conservation	NA	NA	NA	NA	NA	NA	NA	NA	227	NA
Other life sciences	2,472	2,530	2,559	2,693	2,748	3,354	3,249	3,863	3,637	NA
Mathematics and statistics	NA	NA	NA	NA	NA	NA	NA	NA	715	733
Physical sciences	6,282	6,483	6,510	6,706	6,581	7,881	9,816	8,420	8,044	11,112
Astronomy and astrophysics (formerly Astronomy)	1,147	1,192	1,230	1,247	1,292	887	1,583	871	308	NA
Chemistry	982	1,013	968	999	969	1,121	1,125	1,144	1,141	NA
Material science	NA	NA	NA	NA	NA	NA	NA	NA	552	NA
Physics	3,482	3,565	3,040	3,732	3,676	3,541	3,446	3,577	3,139	NA
Other physical sciences	671	714	1,272	728	644	2,332	3,661	2,828	2,904	NA
Psychology	1,935	1,968	1,995	2,021	2,081	2,327	2,754	3,276	3,770	3,776
Biological aspects	14	15	19	20	10	20	18	14	14	NA
Social aspects	65	59	59	56	56	48	53	42	50	NA
Other psychological sciences	1,856	1,894	1,917	1,946	2,014	2,259	2,683	3,220	3,706	NA
Social sciences	1,237	1,435	1,136	1,227	1,027	1,039	1,156	1,137	1,370	1,449
Anthropology	26	26	30	32	32	35	35	19	42	NA
Economics	333	344	337	371	294	282	295	203	228	NA
Political science and government (formerly Political science)	11	13	16	15	18	11	14	12	11	NA
Sociology, demography, and population studies (formerly Sociology)	137	158	128	197	178	143	224	152	111	NA
Other social sciences[a]	730	893	625	612	505	568	588	751	978	NA
Engineering	10,948	11,888	11,984	12,972	13,207	13,759	15,279	13,222	13,374	13,861
Aeronautical engineering	1,842	1,833	1,825	1,836	1,892	1,118	1,199	1,093	NA	NA
Aerospace, aeronautical, and astronautical engineering	NA	NA	NA	NA	NA	NA	NA	NA	1,717	NA
Astronautical engineering	737	669	661	651	651	796	830	916	NA	NA
Bioengineering and biomedical engineering	NA	NA	NA	NA	NA	NA	NA	NA	40	NA

TABLE 91

Federal obligations for research, by detailed field of R&D: FYs 2013–22

(Dollars in millions)

Field	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Chemical engineering	419	535	375	373	302	692	454	788	733	NA
Civil engineering	447	445	458	462	606	476	566	476	649	NA
Electrical, electronics, and communications engineering (formerly Electrical engineering)	1,163	1,240	897	1,063	1,103	1,010	971	881	887	NA
Industrial and manufacturing engineering	NA	NA	NA	NA	NA	NA	NA	NA	291	NA
Mechanical engineering	549	503	324	374	450	498	630	523	289	NA
Metallurgical and materials engineering (formerly Metallurgy and materials engineering)	1,729	1,769	1,757	1,975	1,941	1,915	1,843	704	811	NA
Other engineering	4,062	4,894	5,688	6,237	6,262	7,253	8,787	7,841	7,957	NA
Other fields	NA	NA	NA	NA	NA	NA	NA	NA	11,874	7,094
Business management and business administration	NA	NA	NA	NA	NA	NA	NA	NA	120	NA
Communication and communications technologies	NA	NA	NA	NA	NA	NA	NA	NA	12	NA
Education research	NA	NA	NA	NA	NA	NA	NA	NA	987	NA
Humanities, including History	NA	NA	NA	NA	NA	NA	NA	NA	*	NA
Law	NA	NA	NA	NA	NA	NA	NA	NA	7	NA
Social work	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
Visual and performing arts	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
All other fields	NA	NA	NA	NA	NA	NA	NA	NA	10,748	NA
Other sciences nec	1,999	2,218	3,299	3,461	4,521	3,812	4,405	5,773	NA	NA

* = amount greater than $0 but less than $500,000. NA = not available; data were not collected at that level for that fiscal year.

nec = not elsewhere classified.

[a] As of volume 71 (FYs 2021–22), Other social sciences no longer includes Education research or Law; those categories were moved to Other fields.

Note(s):
Because of rounding, detail may not add to total. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 92

Federal obligations for basic research, by detailed field of science and engineering: FYs 2002–12

(Dollars in millions)

Field	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All fields	23,668	24,751	26,121	27,140	26,585	26,866	27,154	32,879	31,795	29,314	30,959
Computer sciences and mathematics	999	1,120	1,239	1,228	1,208	1,294	1,407	1,861	1,663	1,788	1,795
Computer sciences	637	730	712	658	671	708	734	978	874	936	922
Mathematics	326	360	479	543	519	561	645	804	717	741	806
Other computer sciences and mathematics	36	30	48	28	19	24	29	79	73	111	66
Engineering	1,865	1,913	2,272	2,300	2,365	2,630	2,736	3,406	3,491	3,168	3,459
Aeronautical engineering	330	256	304	318	243	195	150	185	151	153	402
Astronautical engineering	68	59	67	73	58	44	32	35	32	33	79
Chemical engineering	62	72	69	67	68	109	112	168	143	183	94
Civil engineering	47	51	56	62	67	124	126	186	155	149	35
Electrical engineering	213	226	200	213	205	246	221	297	295	281	299
Mechanical engineering	89	96	90	77	70	78	66	84	80	82	156
Metallurgy and materials engineering	508	581	592	666	811	960	993	1,113	1,091	1,077	1,186
Other engineering	548	572	895	826	842	875	1,036	1,338	1,544	1,209	1,207
Environmental sciences	1,833	1,900	2,023	1,966	1,849	1,728	1,593	2,143	1,787	1,796	2,259
Atmospheric sciences	684	668	727	744	666	584	523	650	597	612	952
Geological sciences	426	462	482	470	445	427	303	430	333	396	502
Oceanography	427	442	453	431	416	437	434	549	472	483	494
Other environmental sciences	296	327	362	321	322	280	333	514	386	305	310
Life sciences	14,024	14,765	14,490	15,248	14,934	15,643	15,557	17,587	17,748	15,373	16,016
Agricultural sciences	531	528	504	511	514	533	495	531	571	547	480
Biological sciences (excluding environmental biology)	8,380	10,471	7,223	7,608	7,700	8,076	8,259	9,600	9,417	8,277	8,317
Environmental biology	335	324	329	339	344	351	368	467	435	435	407
Medical sciences	3,361	2,919	5,477	5,703	5,454	5,504	5,314	5,748	5,787	5,086	5,528
Other life sciences	1,418	522	957	1,087	922	1,180	1,122	1,241	1,537	1,029	1,283
Physical sciences	3,406	3,454	3,663	3,739	3,516	3,544	3,403	4,121	3,984	3,815	4,557
Astronomy	603	696	765	778	687	593	483	618	504	499	925
Chemistry	749	749	776	764	721	733	726	835	828	774	776
Physics	1,862	1,821	1,905	1,996	1,911	2,012	1,987	2,370	2,377	2,275	2,568
Other physical sciences	192	189	217	200	197	207	208	298	275	267	287
Psychology	465	544	979	1,040	945	979	936	1,100	1,129	979	1,088
Biological aspects	8	11	1	*	1	1	1	2	10	13	13
Social aspects	5	4	5	4	5	5	7	19	18	17	13
Other psychological sciences	452	529	973	1,035	939	972	929	1,080	1,101	949	1,061
Social sciences	362	353	419	391	381	361	330	432	359	371	381
Anthropology	15	13	13	15	14	15	15	28	24	26	27
Economics	45	48	48	51	46	52	44	52	44	54	55
Political science	6	6	7	11	11	9	16	13	10	9	10
Sociology	19	49	49	18	19	41	14	33	30	36	39
Other social sciences	276	237	303	296	290	244	241	306	251	246	251
Other sciences nec	715	703	1,036	1,228	1,386	686	1,191	2,228	1,633	2,023	1,405

* = amount greater than $0 but less than $500,000.

nec = not elsewhere classified.

Note(s):
Because of rounding, detail may not add to total. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 93

Federal obligations for basic research, by detailed field of R&D: FYs 2013–22

(Dollars in millions)

Field	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All fields	29,779	31,588	31,527	32,293	33,271	36,195	40,017	41,547	42,494	43,790
Computer and information sciences	NA	NA	NA	NA	NA	NA	NA	NA	2,264	2,383
Computer sciences and mathematics	1,691	1,918	1,984	2,110	1,877	2,085	2,306	2,524	NA	NA
Computer sciences	860	959	1,025	997	999	1,032	1,151	1,230	NA	NA
Mathematics	757	824	874	1,019	824	943	1,039	504	NA	NA
Other computer sciences and mathematics	73	134	86	93	55	110	116	791	NA	NA
Geosciences, atmospheric sciences, and ocean sciences (formerly Environmental sciences)	2,396	2,753	2,738	2,765	2,687	2,996	3,252	3,167	1,772	3,568
Atmospheric science and meteorology (formerly Atmospheric sciences)	995	1,037	1,051	1,080	1,088	508	514	563	561	NA
Geological and earth sciences (formerly Geological sciences)	411	418	433	433	439	183	200	262	315	NA
Ocean sciences and marine sciences (formerly Oceanography)	457	483	432	442	385	419	432	470	489	NA
Other geosciences, atmospheric sciences, and ocean sciences (formerly Other environmental sciences)	533	816	822	810	776	1,887	2,106	1,872	407	NA
Life sciences	15,317	16,019	15,210	15,577	16,574	18,176	18,881	20,805	19,008	19,188
Agricultural sciences	462	514	554	566	584	597	635	682	587	NA
Biological and biomedical sciences	NA	NA	NA	NA	NA	NA	NA	NA	9,767	NA
Biological sciences (excluding environmental biology)	7,919	8,284	7,758	8,026	8,573	9,159	9,786	10,326	NA	NA
Environmental biology	384	395	399	381	372	514	490	471	NA	NA
Health sciences (formerly Medical sciences)	5,326	5,564	5,270	5,337	5,717	6,415	6,389	7,460	6,832	NA
Natural resources and conservation	NA	NA	NA	NA	NA	NA	NA	NA	32	NA
Other life sciences	1,226	1,263	1,228	1,267	1,327	1,492	1,581	1,866	1,790	NA
Mathematics and statistics	NA	NA	NA	NA	NA	NA	NA	NA	503	536
Physical sciences	4,432	4,637	4,621	4,707	4,717	5,931	7,907	6,513	6,432	8,737
Astronomy and astrophysics (formerly Astronomy)	974	1,036	1,073	1,093	1,139	879	1,577	870	307	NA
Chemistry	715	722	672	688	694	739	691	754	792	NA
Material science	NA	NA	NA	NA	NA	NA	NA	NA	337	NA
Physics	2,469	2,576	2,569	2,593	2,597	2,518	2,571	2,516	2,531	NA
Other physical sciences	275	303	306	333	286	1,795	3,068	2,373	2,465	NA
Psychology	1,016	1,038	1,000	990	1,027	1,147	1,366	1,612	1,934	1,930
Biological aspects	14	14	14	16	10	19	16	13	13	NA
Social aspects	16	13	14	12	13	10	11	12	17	NA
Other psychological sciences	986	1,011	972	962	1,004	1,118	1,339	1,587	1,904	NA
Social sciences	374	386	345	378	359	374	451	440	537	542
Anthropology	24	24	28	29	29	31	33	18	22	NA
Economics	58	58	47	51	56	53	86	39	53	NA
Political science and government (formerly Political science)	9	12	12	14	12	9	10	5	1	NA
Sociology, demography, and population studies (formerly Sociology)	24	31	27	24	23	24	37	20	43	NA
Other social sciences[a]	258	261	230	260	239	258	286	358	418	NA
Engineering	3,408	3,545	3,694	3,658	3,686	3,586	3,618	2,898	3,151	3,231
Aeronautical engineering	409	447	469	479	450	99	71	70	NA	NA
Aerospace, aeronautical, and astronautical engineering	NA	NA	NA	NA	NA	NA	NA	NA	209	NA
Astronautical engineering	85	93	99	99	101	8	9	15	NA	NA
Bioengineering and biomedical engineering	NA	NA	NA	NA	NA	NA	NA	NA	27	NA

TABLE 93

Federal obligations for basic research, by detailed field of R&D: FYs 2013–22

(Dollars in millions)

Field	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Chemical engineering	84	104	60	70	76	72	75	94	121	NA
Civil engineering	28	28	54	38	27	14	12	16	70	NA
Electrical, electronics, and communications engineering (formerly Electrical engineering)	259	248	228	228	225	238	219	205	200	NA
Industrial and manufacturing engineering	NA	NA	NA	NA	NA	NA	NA	NA	41	NA
Mechanical engineering	147	129	126	123	124	111	103	116	114	NA
Metallurgical and materials engineering (formerly Metallurgy and materials engineering)	1,201	1,233	1,290	1,279	1,306	1,364	1,223	281	238	NA
Other engineering	1,194	1,264	1,368	1,342	1,376	1,680	1,906	2,100	2,131	NA
Other fields	NA	NA	NA	NA	NA	NA	NA	NA	6,892	3,675
Business management and business administration	NA	NA	NA	NA	NA	NA	NA	NA	34	NA
Communication and communications technologies	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
Education research	NA	NA	NA	NA	NA	NA	NA	NA	360	NA
Humanities, including History	NA	NA	NA	NA	NA	NA	NA	NA	*	NA
Law	NA	NA	NA	NA	NA	NA	NA	NA	7	NA
Social work	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
Visual and performing arts	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
All other fields	NA	NA	NA	NA	NA	NA	NA	NA	6,491	NA
Other sciences nec	1,146	1,292	1,935	2,108	2,344	1,900	2,237	3,588	NA	NA

* = amount greater than $0 but less than $500,000. NA = not available; data were not collected at that level for that fiscal year.

nec = not elsewhere classified.

[a] As of volume 71 (FYs 2021–22), Other social sciences no longer includes Education research or Law; those categories were moved to Other fields.

Note(s):
Because of rounding, detail may not add to total. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 94

Federal obligations for applied research, by detailed field of science and engineering: FYs 2002–12

(Dollars in millions)

Field	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All fields	24,338	26,320	27,237	26,598	26,951	27,228	26,740	30,813	31,933	28,751	31,027
Computer sciences and mathematics	1,632	1,552	1,710	1,755	1,607	1,652	1,640	1,750	1,749	1,586	1,733
Computer sciences	1,406	1,322	1,433	1,499	1,317	1,369	1,319	1,444	1,488	1,255	1,470
Mathematics	76	93	139	144	151	148	138	124	119	150	119
Other computer sciences and mathematics	149	137	139	112	139	135	183	183	141	180	144
Engineering	6,410	6,492	6,595	6,252	6,314	6,360	6,239	6,879	7,590	6,889	7,944
Aeronautical engineering	1,827	1,476	1,337	959	987	734	661	722	679	692	1,413
Astronautical engineering	693	643	598	421	419	297	256	335	358	377	611
Chemical engineering	139	256	250	217	227	245	234	279	367	292	255
Civil engineering	256	289	275	217	285	338	362	493	545	468	478
Electrical engineering	596	724	691	821	830	781	825	957	1,066	954	1,026
Mechanical engineering	177	202	212	247	228	260	227	230	283	228	216
Metallurgy and materials engineering	493	503	445	518	439	520	631	609	667	544	513
Other engineering	2,230	2,399	2,787	2,853	2,900	3,185	3,045	3,253	3,625	3,334	3,432
Environmental sciences	1,585	1,841	1,719	1,536	1,581	1,443	1,392	1,608	1,551	1,411	1,626
Atmospheric sciences	479	591	533	442	501	381	361	368	357	341	517
Geological sciences	249	263	222	203	209	211	215	324	198	201	224
Oceanography	358	404	356	340	329	351	355	285	272	241	319
Other environmental sciences	499	583	607	551	542	500	461	631	725	627	565
Life sciences	11,453	13,007	13,239	12,880	12,993	13,820	13,361	15,680	16,161	14,076	14,990
Agricultural sciences	517	518	583	583	594	606	526	589	560	538	462
Biological sciences (excluding environmental biology)	6,119	8,172	5,869	5,744	5,991	6,354	6,184	7,777	7,796	6,901	7,141
Environmental biology	444	394	341	360	342	406	490	497	381	420	390
Medical sciences	3,066	3,241	5,422	5,159	5,138	5,287	5,073	5,645	5,890	5,117	5,551
Other life sciences	1,306	682	1,024	1,034	928	1,166	1,089	1,172	1,533	1,100	1,447
Physical sciences	1,577	1,568	1,549	1,755	1,836	1,592	1,669	1,700	1,887	1,612	1,851
Astronomy	148	176	155	107	106	63	45	54	56	57	174
Chemistry	433	389	415	434	406	417	423	439	483	332	327
Physics	760	680	694	1,045	1,091	927	982	986	1,093	994	1,140
Other physical sciences	237	323	284	170	233	184	219	222	255	229	209
Psychology	441	561	876	852	802	859	805	986	1,026	908	999
Biological aspects	3	13	5	2	2	2	21	*	4	3	1
Social aspects	48	46	47	42	36	31	12	32	56	38	48
Other psychological sciences	391	501	824	807	764	825	771	953	967	867	949
Social sciences	621	673	670	706	743	786	647	725	838	891	743
Anthropology	1	2	2	3	1	1	2	2	*	*	3
Economics	182	186	157	165	156	198	169	178	230	344	289
Political science	13	13	12	22	34	33	13	12	5	3	3
Sociology	77	76	72	52	125	177	81	106	103	97	116
Other social sciences	349	397	428	464	427	378	382	428	501	447	332
Other sciences nec	619	627	880	861	1,075	717	986	1,485	1,130	1,378	1,142

* = amount greater than $0 but less than $500,000.

nec = not elsewhere classified.

Note(s):
Because of rounding, detail may not add to total. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 95

Federal obligations for applied research, by detailed field of R&D: FYs 2013–22

(Dollars in millions)

Field	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
All fields	29,753	31,604	32,298	34,812	36,600	38,392	41,101	43,758	43,750	44,674
Computer and information sciences	NA	NA	NA	NA	NA	NA	NA	NA	3,086	3,493
Computer sciences and mathematics	1,736	1,965	1,878	2,113	2,017	2,122	2,024	3,388	NA	NA
Computer sciences	1,502	1,654	1,621	1,818	1,736	1,856	1,746	3,050	NA	NA
Mathematics	107	155	132	141	118	113	118	178	NA	NA
Other computer sciences and mathematics	128	157	125	154	163	154	160	160	NA	NA
Geosciences, atmospheric sciences, and ocean sciences (formerly Environmental sciences)	1,645	1,613	1,675	1,685	1,783	1,571	1,823	1,873	1,797	2,484
Atmospheric science and meteorology (formerly Atmospheric sciences)	548	531	516	517	564	288	310	345	327	NA
Geological and earth sciences (formerly Geological sciences)	215	143	211	129	141	45	39	44	287	NA
Ocean sciences and marine sciences (formerly Oceanography)	331	365	294	331	390	359	387	476	606	NA
Other geosciences, atmospheric sciences, and ocean sciences (formerly Other environmental sciences)	551	573	654	708	688	879	1,086	1,007	576	NA
Life sciences	14,345	14,932	15,415	16,468	17,516	18,818	19,423	21,720	19,169	19,323
Agricultural sciences	441	491	766	717	769	728	811	731	486	NA
Biological and biomedical sciences	NA	NA	NA	NA	NA	NA	NA	NA	8,466	NA
Biological sciences (excluding environmental biology)	6,669	7,027	7,081	7,897	7,982	8,670	9,125	9,839	NA	NA
Environmental biology	398	426	420	408	412	409	434	431	NA	NA
Health sciences (formerly Medical sciences)	5,591	5,721	5,816	6,021	6,931	7,150	7,386	8,722	8,176	NA
Natural resources and conservation	NA	NA	NA	NA	NA	NA	NA	NA	195	NA
Other life sciences	1,246	1,267	1,331	1,426	1,421	1,862	1,668	1,997	1,847	NA
Mathematics and statistics	NA	NA	NA	NA	NA	NA	NA	NA	212	197
Physical sciences	1,850	1,846	1,889	1,999	1,864	1,951	1,909	1,907	1,612	2,375
Astronomy and astrophysics (formerly Astronomy)	173	156	157	154	153	8	6	1	1	NA
Chemistry	267	291	295	311	275	382	434	390	349	NA
Material science	NA	NA	NA	NA	NA	NA	NA	NA	215	NA
Physics	1,013	989	471	1,139	1,079	1,023	875	1,061	609	NA
Other physical sciences	396	410	966	395	358	537	593	455	439	NA
Psychology	919	930	995	1,032	1,054	1,180	1,387	1,664	1,836	1,846
Biological aspects	*	1	5	4	*	1	1	1	*	NA
Social aspects	48	46	45	44	43	38	42	30	34	NA
Other psychological sciences	870	883	945	983	1,011	1,141	1,344	1,634	1,801	NA
Social sciences	863	1,049	792	849	668	665	704	698	832	907
Anthropology	2	2	2	2	3	4	2	1	20	NA
Economics	275	286	290	320	238	230	209	164	175	NA
Political science and government (formerly Political science)	2	1	4	1	5	2	4	8	9	NA
Sociology, demography, and population studies (formerly Sociology)	113	127	102	173	155	119	187	132	68	NA
Other social sciences[a]	472	632	395	352	267	311	302	393	560	NA
Engineering	7,541	8,343	8,290	9,314	9,522	10,173	11,661	10,324	10,223	10,629
Aeronautical engineering	1,433	1,386	1,356	1,357	1,442	1,019	1,128	1,023	NA	NA
Aerospace, aeronautical, and astronautical engineering	NA	NA	NA	NA	NA	NA	NA	NA	1,508	NA
Astronautical engineering	652	576	562	551	550	788	821	901	NA	NA
Bioengineering and biomedical engineering	NA	NA	NA	NA	NA	NA	NA	NA	13	NA

TABLE 95

Federal obligations for applied research, by detailed field of R&D: FYs 2013–22

(Dollars in millions)

Field	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (preliminary)
Chemical engineering	335	432	314	303	226	621	379	694	612	NA
Civil engineering	419	417	403	424	579	462	555	459	579	NA
Electrical, electronics, and communications engineering (formerly Electrical engineering)	904	992	669	835	878	772	751	675	687	NA
Industrial and manufacturing engineering	NA	NA	NA	NA	NA	NA	NA	NA	250	NA
Mechanical engineering	402	374	198	251	326	388	527	407	175	NA
Metallurgical and materials engineering (formerly Metallurgy and materials engineering)	528	536	467	696	635	552	620	423	573	NA
Other engineering	2,868	3,629	4,320	4,895	4,886	5,573	6,881	5,741	5,826	NA
Other fields	NA	NA	NA	NA	NA	NA	NA	NA	4,982	3,419
Business management and business administration	NA	NA	NA	NA	NA	NA	NA	NA	86	NA
Communication and communications technologies	NA	NA	NA	NA	NA	NA	NA	NA	12	NA
Education research	NA	NA	NA	NA	NA	NA	NA	NA	627	NA
Humanities, including History	NA	NA	NA	NA	NA	NA	NA	NA	*	NA
Law	NA	NA	NA	NA	NA	NA	NA	NA	*	NA
Social work	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
Visual and performing arts	NA	NA	NA	NA	NA	NA	NA	NA	0	NA
All other fields	NA	NA	NA	NA	NA	NA	NA	NA	4,256	NA
Other sciences nec	853	925	1,364	1,352	2,176	1,912	2,168	2,185	NA	NA

* = amount greater than $0 but less than $500,000. NA = not available; data were not collected at that level for that fiscal year.

nec = not elsewhere classified.

[a] As of volume 71 (FYs 2021–22), Other social sciences no longer includes Education research or Law; those categories were moved to Other fields.

Note(s):
Because of rounding, detail may not add to total. FYs 2020, 2021, and 2022 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). As of volume 71 (FYs 2021–22), the fields of R&D (formerly, "fields of science and engineering") were revised for consistency with other National Center for Science and Engineering Statistics surveys; some fields were added, merged, or split, and some fields were renamed. Therefore, the data are not directly comparable with totals reported in previous years. See technical table A-3 for additional notes associated with the taxonomy changes to the fields listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 96

Federal obligations for research and development for selected agencies, by state or location: FYs 2002–12

(Dollars in millions)

State or location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All locations	91,816	101,366	109,733	116,586	119,302	124,900	125,092	138,975	138,156	132,794	135,995
Alabama	2,735	3,212	3,036	3,108	2,198	2,248	2,782	3,023	3,477	5,202	5,159
Alaska	300	399	461	495	212	264	222	247	236	196	159
Arizona	2,279	2,385	2,644	2,959	2,460	2,422	2,449	3,142	3,426	2,917	2,405
Arkansas	141	145	147	165	162	178	145	171	182	179	184
California	19,198	20,170	19,259	19,964	26,898	26,987	19,939	26,989	27,227	22,769	18,036
Colorado	1,728	1,735	2,068	2,265	2,189	2,798	2,668	3,862	4,348	3,816	3,745
Connecticut	2,817	2,068	2,123	2,400	1,947	2,117	1,815	2,365	2,193	2,426	2,231
Delaware	81	95	90	94	113	131	144	225	129	115	109
District of Columbia	3,146	2,986	3,329	4,162	4,193	4,278	17,537	4,265	3,890	3,014	3,339
Florida	2,542	2,854	3,265	2,590	3,346	4,078	2,290	3,734	3,142	2,482	2,356
Georgia	2,229	2,133	1,907	2,182	1,751	1,686	1,386	1,958	1,520	1,422	1,133
Hawaii	428	414	488	600	380	379	348	387	389	404	383
Idaho	235	218	289	290	300	287	355	388	479	430	447
Illinois	1,729	1,935	1,880	2,128	2,003	2,145	2,169	2,746	2,631	2,878	2,399
Indiana	538	574	557	567	583	597	672	1,109	989	903	838
Iowa	463	499	538	488	549	662	635	683	909	695	613
Kansas	291	269	287	358	294	318	300	464	348	368	232
Kentucky	322	247	252	296	240	222	252	319	287	242	308
Louisiana	433	453	447	444	323	419	406	406	331	597	314
Maine	256	167	210	292	229	379	168	194	163	180	248
Maryland	7,420	8,027	12,609	12,501	12,747	11,906	13,313	15,971	15,879	15,751	15,598
Massachusetts	4,921	5,492	5,964	6,592	6,876	7,529	6,883	9,047	8,747	7,758	6,279
Michigan	1,254	1,693	1,118	1,177	1,700	1,726	1,866	2,427	2,510	2,153	2,206
Minnesota	1,153	866	831	768	1,242	1,387	1,393	1,551	1,063	949	961
Mississippi	628	1,181	1,599	438	555	434	435	385	422	588	543
Missouri	1,241	1,349	3,059	4,202	1,316	1,221	1,111	1,285	1,151	1,193	1,123
Montana	114	131	189	182	151	654	159	171	139	182	190
Nebraska	154	168	210	193	178	230	205	220	240	262	262
Nevada	343	419	555	593	436	321	313	558	380	478	482
New Hampshire	312	512	422	514	400	340	294	458	350	406	491
New Jersey	2,109	2,088	2,274	2,525	2,173	2,192	2,193	2,492	2,853	2,583	2,167
New Mexico	2,877	3,090	3,363	3,593	3,315	3,478	3,503	3,696	3,338	3,456	3,379
New York	3,821	4,382	4,505	5,320	5,368	5,368	4,651	6,242	5,602	5,042	4,727
North Carolina	1,393	1,617	1,684	1,806	1,771	1,828	1,773	2,022	2,151	2,060	1,922
North Dakota	105	107	109	118	118	116	98	101	120	118	88
Ohio	2,380	2,967	2,794	2,961	2,724	3,661	2,580	4,460	4,099	3,555	3,436
Oklahoma	276	570	498	401	271	253	261	370	430	463	450
Oregon	504	514	505	650	510	506	581	635	675	711	632
Pennsylvania	3,245	3,989	3,731	3,677	3,300	3,360	3,279	4,298	4,963	4,513	3,725
Rhode Island	502	566	642	889	623	628	644	679	670	610	557
South Carolina	371	454	384	493	374	422	453	662	662	497	555
South Dakota	59	55	70	70	76	62	76	79	75	61	63
Tennessee	1,157	1,131	1,382	1,426	1,489	1,908	1,690	2,081	2,105	1,899	2,112
Texas	3,554	5,414	5,507	5,187	5,915	6,693	5,030	6,031	6,896	5,475	5,620
Utah	458	803	1,184	1,058	846	991	700	1,169	1,709	1,756	972
Vermont	136	201	417	263	106	108	121	151	142	124	103
Virginia	6,176	6,709	7,298	8,746	8,994	9,088	9,282	9,381	9,112	8,287	8,130
Washington	2,023	2,442	2,311	2,641	4,087	4,751	4,340	4,157	3,915	4,931	2,757
West Virginia	254	383	316	808	301	219	225	263	313	240	263
Wisconsin	596	658	646	652	636	671	661	886	796	742	734

TABLE 96

Federal obligations for research and development for selected agencies, by state or location: FYs 2002–12

(Dollars in millions)

State or location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Wyoming	40	43	48	38	36	37	47	65	37	37	76
Outlying areas	288	323	135	161	161	178	160	237	263	269	193
Puerto Rico	135	112	101	101	99	86	85	96	95	97	71
Other areas[a]	153	211	34	59	62	93	75	141	168	172	122
Offices abroad[b]	64	61	99	97	138	40	87	68	54	36	92
Undistributed[c]	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,373	20,468

NA = not available; data were not collected at that level for that fiscal year.

[a] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[b] Includes R&D performed or administered in foreign countries by the U.S. government.

[c] Undistributed totals include Department of Defense (DOD) obligations for which the location of performance is not reported. It includes DOD obligations for industry R&D that were included in individual state totals prior to FY 2012 and obligations for other performers that were not reported prior to FY 2011.

Note(s):
Because of rounding, detail may not add to total. Through volume 70 (FYs 2020–21), 11 agencies were required to report data for this section of the survey: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation. Obligations of these 11 agencies represented more than 97% of total federal R&D obligations in FY 2020. Starting with volume 62 (FYs 2012–14), an "undistributed" category was added to the geographic location tables for DOD obligations for which the location of performance is not reported. It includes DOD obligations for industry R&D that were included in individual state totals prior to FY 2012 and DOD obligations for other performers that were not reported prior to FY 2011. This change was applied retroactively to FY 2011 data. Although the nongeographic historical tables incorporate corrections to previously reported data that have been submitted by reporting agencies, corresponding corrections to geographic distributions are rarely obtainable. Geographic distribution of Department of Defense development funding to industry reflects location of prime contractors and not the numerous subcontractors who perform much of the R&D. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 97

Federal obligations for research and development, by state or location: FYs 2013–21

(Dollars in millions)

State or location	2013	2014	2015	2016	2017	2018	2019	2020	2021
All locations	122,985	127,927	125,846	113,002	115,508	125,737	138,170	162,959	189,398
Alabama	4,716	4,484	4,538	4,354	8,663	5,174	5,414	3,070	3,967
Alaska	185	137	208	212	280	300	334	279	323
Arizona	2,369	1,606	1,644	1,549	1,199	1,737	2,001	1,939	1,663
Arkansas	167	191	106	308	170	206	179	501	300
California	16,181	15,799	15,281	15,756	15,887	17,237	19,159	22,464	22,618
Colorado	3,394	3,611	3,506	4,183	3,396	4,917	5,268	5,024	6,230
Connecticut	2,517	2,287	2,293	2,366	2,349	2,568	2,673	2,566	2,597
Delaware	112	130	108	142	169	162	163	222	307
District of Columbia	3,908	3,980	4,222	4,204	4,867	6,158	6,228	16,315	39,039
Florida	2,282	2,448	2,933	2,782	2,880	3,179	3,892	4,061	4,095
Georgia	1,130	1,253	1,182	1,301	1,285	1,350	1,504	1,913	1,654
Hawaii	348	326	305	284	275	441	412	394	486
Idaho	381	598	533	568	679	824	920	840	672
Illinois	2,327	2,369	2,483	3,922	2,553	2,911	2,998	3,209	3,533
Indiana	693	771	678	719	690	781	894	1,104	1,081
Iowa	560	512	567	496	520	525	518	702	686
Kansas	234	187	194	188	212	233	283	352	414
Kentucky	307	297	297	273	289	303	313	354	542
Louisiana	278	285	254	279	397	321	432	437	457
Maine	170	131	138	137	158	188	189	185	249
Maryland	15,606	16,890	16,751	16,640	15,417	17,779	16,992	22,736	17,565
Massachusetts	5,691	6,269	6,055	5,533	5,238	6,036	6,838	8,850	9,496
Michigan	1,826	1,853	1,799	1,796	1,491	1,630	2,054	1,925	2,070
Minnesota	940	947	817	859	986	1,031	1,029	1,448	1,145
Mississippi	568	590	489	448	449	820	505	472	455
Missouri	1,056	1,039	1,296	1,259	1,604	1,492	2,375	2,080	2,059
Montana	135	171	152	170	151	195	191	213	287
Nebraska	201	234	216	205	211	211	244	255	303
Nevada	585	510	394	286	338	400	375	306	552
New Hampshire	296	336	342	374	351	472	669	483	523
New Jersey	1,727	1,968	1,632	1,677	1,963	2,367	2,834	2,885	3,398
New Mexico	3,421	3,714	3,543	3,662	3,383	3,630	3,756	3,502	3,881
New York	4,605	4,581	4,567	4,744	4,955	5,366	6,162	8,148	6,831
North Carolina	1,759	1,881	1,892	1,906	2,005	2,270	2,417	3,271	3,620
North Dakota	90	80	82	104	75	111	73	140	168
Ohio	2,426	2,454	2,639	2,497	2,550	4,207	5,188	5,216	3,856
Oklahoma	262	317	450	349	368	481	506	537	1,505
Oregon	529	602	558	544	573	627	697	814	1,070
Pennsylvania	3,295	3,695	3,710	3,981	3,788	4,148	4,093	5,214	4,545
Rhode Island	486	555	519	627	615	662	723	876	866
South Carolina	397	476	447	461	505	561	646	822	1,434
South Dakota	57	69	73	69	77	81	89	131	132
Tennessee	2,119	2,023	2,313	2,479	2,491	2,564	3,578	3,151	3,462
Texas	5,234	4,678	5,574	5,296	5,319	4,677	5,067	6,135	6,131
Utah	919	1,222	1,144	938	1,058	1,110	1,301	1,141	2,440
Vermont	103	116	82	82	81	97	120	129	244
Virginia	6,488	7,652	7,487	7,384	6,311	7,187	8,029	9,650	9,741
Washington	3,433	3,565	2,362	2,084	2,624	2,746	3,195	3,280	3,736
West Virginia	171	208	239	456	141	281	142	150	199
Wisconsin	654	701	701	723	730	759	840	908	989

TABLE 97

Federal obligations for research and development, by state or location: FYs 2013–21

(Dollars in millions)

State or location	2013	2014	2015	2016	2017	2018	2019	2020	2021
Wyoming	41	46	53	44	46	49	68	87	197
Outlying areas	229	318	347	331	104	496	521	195	229
Puerto Rico	83	71	66	72	68	75	82	88	120
Other areas[a]	146	247	281	259	36	421	439	107	109
Offices abroad[b]	166	38	28	4	2	12	4	48	179
Undistributed[c]	15,211	16,728	15,624	969	2,594	1,666	3,073	1,829	5,177

[a] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[b] Includes R&D performed or administered in foreign countries by the U.S. government.

[c] Undistributed totals include Department of Defense (DOD) obligations for which the location of performance is not reported. It includes DOD obligations for businesses (formerly, "industry") R&D that were included in individual state totals prior to FY 2012 and obligations for other performers that were not reported prior to FY 2011. The undistributed total for FY 2019 also include Department of Health and Human Services' Biomedical Advanced Research and Development Authority obligations for which the location of performance could not be reported.

Note(s):
Because of rounding, detail may not add to total. Through volume 70 (FYs 2020–21), 11 agencies were required to report data for this section of the survey: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation. Obligations of these 11 agencies represented more than 97% of total federal R&D obligations in FY 2020. As of volume 71, all agencies report data for this section of the survey; therefore, the data are not directly comparable with totals reported in previous years. Although the nongeographic historical tables incorporate corrections to previously reported data that have been submitted by reporting agencies, corresponding corrections to geographic distributions are rarely obtainable. Geographic distribution of DOD development funding to businesses reflects location of prime contractors and not the numerous subcontractors who perform much of the R&D. Beginning with FY 2016, the totals reported for development obligations represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the DOD Budget Activity 7 (Operational Systems Development) obligations. Those funds, previously included in DOD's development obligation totals, support the development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years. FYs 2020 and 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 98

Federal obligations for R&D plant for selected agencies, by state or location: FYs 2002–12

(Dollars in millions)

State or location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All locations	4,290	4,240	3,979	3,749	2,093	2,111	1,893	3,591	6,563	4,100	2,089
Alabama	176	92	37	27	6	1	3	4	98	93	3
Alaska	281	134	127	16	5	8	4	174	58	6	7
Arizona	7	38	28	7	4	63	6	21	195	30	3
Arkansas	13	6	8	1	2	9	6	9	28	6	6
California	524	519	988	972	428	405	291	475	1,088	997	118
Colorado	118	97	83	89	98	184	116	279	300	141	108
Connecticut	52	49	47	88	4	2	6	3	123	94	2
Delaware	1	1	1	*	*	*	*	1	13	*	1
District of Columbia	53	19	118	33	106	73	77	180	365	237	135
Florida	196	173	121	107	2	11	13	57	141	90	48
Georgia	18	7	16	99	129	132	36	54	58	45	51
Hawaii	6	2	7	44	6	8	3	25	38	23	15
Idaho	13	7	23	23	7	9	6	17	25	31	41
Illinois	101	122	123	105	85	89	62	234	281	115	245
Indiana	12	12	8	4	3	4	4	7	35	7	2
Iowa	16	30	107	32	62	64	11	11	28	7	8
Kansas	6	2	1	10	*	2	*	3	13	4	6
Kentucky	1	3	7	25	7	1	6	3	22	5	8
Louisiana	36	57	17	15	37	6	3	27	28	15	1
Maine	8	1	5	4	4	2	1	6	1	1	*
Maryland	210	106	473	515	251	157	262	239	1,137	405	235
Massachusetts	24	233	22	90	49	33	14	49	103	31	28
Michigan	5	17	8	3	4	3	1	11	45	4	24
Minnesota	8	4	6	4	1	5	1	8	24	24	2
Mississippi	43	24	11	11	20	19	3	25	78	22	14
Missouri	5	21	5	11	6	1	2	6	31	4	7
Montana	8	7	3	6	7	1	1	2	23	*	0
Nebraska	5	1	2	*	1	1	1	1	22	1	1
Nevada	16	12	8	7	41	32	4	1	2	4	1
New Hampshire	1	3	7	3	4	1	1	2	11	2	2
New Jersey	29	72	51	51	57	90	53	83	74	40	52
New Mexico	128	188	269	183	111	29	185	109	191	97	54
New York	129	89	71	97	101	80	82	326	310	211	186
North Carolina	9	26	21	8	4	3	5	12	37	9	11
North Dakota	2	*	0	4	*	0	1	2	6	*	1
Ohio	56	26	19	26	17	21	17	24	101	55	62
Oklahoma	4	14	18	4	1	3	13	6	19	13	11
Oregon	7	8	7	4	3	4	3	5	36	18	10
Pennsylvania	35	80	27	25	17	13	35	38	127	15	23
Rhode Island	18	*	12	2	1	*	1	5	6	3	6
South Carolina	7	10	9	21	3	7	11	15	25	19	16
South Dakota	3	1	11	2	*	1	*	2	3	1	1
Tennessee	333	310	200	199	112	144	189	330	372	315	248
Texas	1,399	1,370	569	487	42	7	21	40	430	429	35
Utah	8	8	1	4	*	4	2	84	12	1	2
Vermont	*	0	1	1	*	*	1	1	3	1	*
Virginia	100	147	179	170	129	284	269	269	215	345	170
Washington	19	31	32	34	30	30	13	215	89	49	52
West Virginia	9	6	11	10	21	16	13	52	36	21	15
Wisconsin	24	48	56	58	65	47	31	37	33	10	11

TABLE 98

Federal obligations for R&D plant for selected agencies, by state or location: FYs 2002–12

(Dollars in millions)

State or location	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Wyoming	1	*	*	1	*	1	0	*	1	1	*
Outlying areas	4	2	2	1	*	2	8	4	23	2	*
Puerto Rico	4	2	2	1	*	2	4	4	16	2	*
Other areas[a]	0	0	0	0	0	0	4	*	7	0	0
Offices abroad[b]	1	1	0	1	2	0	0	0	0	0	0

* = amount greater than $0 but less than $500,000.

[a] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[b] Includes federal obligations for R&D plant located in foreign countries.

Note(s):

Because of rounding, detail may not add to total. Through volume 70 (FYs 2020–21), 11 agencies were required to report data for this section of the survey: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation. Obligations of these 11 agencies represented more than 98% of federal R&D plant obligations in FY 2020. Although the nongeographic historical tables incorporate corrections to previously reported data that have been submitted by reporting agencies, corresponding corrections to geographic distributions are rarely obtainable. FYs 2009 and 2010 obligations include additional funding provided by the American Recovery and Reinvestment Act of 2009. Starting with volume 62 (FYs 2012–14), an "undistributed" category was added to the geographic location tables for DOD obligations for which the location of performance is not reported. It includes DOD obligations for business R&D (formerly, "industry") that were included in individual state totals prior to FY 2012 and DOD obligations for other performers that were not reported prior to FY 2011. This change was applied retroactively to FY 2011 data. See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):

National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE 99

Federal obligations for R&D plant, by state or location: FYs 2013–21

(Dollars in millions)

State or location	2013	2014	2015	2016	2017	2018	2019	2020	2021
All locations	1,856	2,178	2,792	2,402	2,594	3,806	4,329	6,081	4,282
Alabama	39	12	14	2	9	128	125	58	7
Alaska	8	8	8	10	7	17	7	12	9
Arizona	1	29	86	99	62	16	13	3	11
Arkansas	3	6	5	4	5	3	0	1	3
California	166	247	307	451	480	656	677	669	656
Colorado	151	170	74	113	46	267	365	141	137
Connecticut	2	3	2	1	2	3	1	*	20
Delaware	*	1	*	1	1	2	10	6	1
District of Columbia	168	225	40	50	32	325	151	98	134
Florida	38	104	30	29	18	80	34	128	74
Georgia	92	37	5	12	144	11	7	38	22
Hawaii	13	15	14	15	15	19	24	6	6
Idaho	1	3	81	89	117	0	3	250	322
Illinois	103	109	126	177	207	383	471	578	533
Indiana	3	1	8	8	4	4	9	1	2
Iowa	8	4	2	4	4	18	2	4	5
Kansas	2	1	816	1	14	11	12	13	13
Kentucky	1	1	1	3	*	2	7	64	6
Louisiana	12	2	1	3	17	21	26	24	30
Maine	2	1	1	1	1	1	*	0	0
Maryland	264	203	208	328	259	478	648	1,828	426
Massachusetts	14	27	25	30	30	18	40	19	22
Michigan	24	60	96	108	104	99	85	51	15
Minnesota	2	3	3	3	2	1	3	3	2
Mississippi	15	14	18	19	16	15	14	12	12
Missouri	3	10	5	12	6	5	11	45	11
Montana	1	*	1	4	*	3	*	2	*
Nebraska	1	1	3	*	*	*	1	0	2
Nevada	*	1	*	*	14	27	1	34	195
New Hampshire	1	*	1	2	*	2	1	3	7
New Jersey	56	72	45	46	47	49	81	41	205
New Mexico	83	90	86	66	40	87	257	73	202
New York	94	173	204	154	148	99	130	233	157
North Carolina	7	8	6	8	12	9	23	54	19
North Dakota	0	*	*	*	1	1	*	1	3
Ohio	5	4	8	121	76	83	95	81	67
Oklahoma	8	7	10	1	4	3	11	4	13
Oregon	10	12	14	18	145	104	144	53	27
Pennsylvania	13	10	35	25	25	17	12	214	25
Rhode Island	6	18	20	28	37	19	28	28	17
South Carolina	13	16	16	26	19	20	22	16	15
South Dakota	1	2	*	1	2	1	*	8	7
Tennessee	223	293	264	195	250	431	513	694	673
Texas	15	9	9	30	33	71	65	128	66
Utah	4	1	*	1	1	1	0	1	1
Vermont	*	2	*	*	*	2	1	6	1
Virginia	132	104	31	83	130	122	104	157	57
Washington	41	35	37	13	4	36	56	122	36
West Virginia	*	15	14	*	1	20	1	2	2
Wisconsin	6	7	9	8	2	4	13	68	2

TABLE 99

Federal obligations for R&D plant, by state or location: FYs 2013–21

(Dollars in millions)

State or location	2013	2014	2015	2016	2017	2018	2019	2020	2021
Wyoming	1	1	*	0	0	1	11	6	0
Outlying areas	1	1	1	1	1	9	18	2	5
Puerto Rico	1	1	1	1	1	9	15	1	*
Other areas[a]	0	0	0	0	0	0	3	1	5
Offices abroad[b]	0	0	*	*	1	1	0	0	0
Undistributed[c]	0	0	0	1	0	0	0	0	0

* = amount greater than $0 but less than $500,000.

[a] Includes American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, U.S. Virgin Islands, and Wake Island.

[b] Includes federal obligations for R&D plant located in foreign countries.

[c] Undistributed totals include Department of Defense (DOD) obligations for which the location of performance is not reported.

Note(s):
Because of rounding, detail may not add to total. Through volume 70 (FYs 2020–21), 11 agencies were required to report data for this section of the survey: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation. Obligations of these 11 agencies represented more than 98% of federal R&D plant obligations in FY 2020. As of volume 71, all agencies report data for this section of the survey; therefore, the data are not directly comparable with totals reported in previous years. Although the nongeographic historical tables incorporate corrections to previously reported data that have been submitted by reporting agencies, corresponding corrections to geographic distributions are rarely obtainable. FYs 2020 and 2021 obligations include additional funding provided by supplemental COVID-19 pandemic-related appropriations (e.g., Coronavirus Aid, Relief, and Economic Security [CARES] Act). See technical table A-2 for additional notes associated with the agencies listed in this table.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

Technical Notes

Survey Overview

Purpose. The annual Survey of Federal Funds for Research and Development (Federal Funds for R&D) is the primary source of information about federal funding for R&D in the United States. The results of the survey are also used in the federal government's calculation of U.S. gross domestic product (GDP) at the national and state level, for policy analysis, and for budget purposes for the Federal Laboratory Consortium for Technology Transfer, the Small Business Innovation Research (SBIR), and the Small Business Technology Transfer (STTR). In addition, as of volume 71, the **Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions** was integrated into this survey as a module, making the Federal Funds for R&D Survey the comprehensive data source on federal science and engineering (S&E) funding to individual academic and nonprofit institutions.

Data collection authority. The information is solicited under the authority of the National Science Foundation Act of 1950, as amended, and the America COMPETES Reauthorization Act of 2010.

Survey contractor. Synectics for Management Decisions, Inc. (Synectics).

Survey sponsor. The National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF).

Key Survey Information

Frequency. Annual.

Initial survey year. 1951.

Reference period. FYs 2021–22.

Response unit. Federal agencies.

Sample or census. Census.

Population size. For the FYs 2021–22 cycle, a total of 33 federal agencies reported R&D data. (See section "**Survey Design**" for details.)

Sample size. Not applicable; the survey is a census of all federal agencies that conduct R&D programs, excluding the Central Intelligence Agency (CIA).

Survey Design

Target population. The population consists of the federal agencies that conduct R&D programs, excluding the CIA. For the FYs 2021–22 cycle, a total of 33 federal agencies (14 federal departments and 19 independent agencies) reported R&D data.

Sampling frame. The survey is a census of all federal agencies that conduct R&D programs, excluding the CIA. The agencies are identified from information in the president's budget submitted to Congress. The Analytical Perspectives volume and the "Detailed Budget Estimates by Agency" section of the appendix to the president's budget identify agencies that receive funding for R&D.

Sample design. Not applicable.

Data Collection and Processing Methods

Data collection. Data for FYs 2021–22 (volume 71) were collected by Synectics under contract to NCSES. Data collection began with an e-mail to each agency to verify the name, phone number, and e-mail address of each agency-level survey respondent. A Web-based data collection system is used for the survey. That system was redesigned for the volume 71 survey (for a full list of fiscal years canvassed by survey volume reference see Table A-4); however, due to delays in fully implementing the redesigned website, respondents were originally supplied with spreadsheets, which they could use to collect and compile their data internally. Respondents could then either submit the spreadsheets for entry into the website when it became available or enter data themselves. Because multiple subdivisions of some federal departments completed the survey, there were 74 agency-level respondents: 6 federal departments, 49 agencies within another 8 federal departments, and 19 independent agencies. (Note: The Department of Agriculture's Foreign Agricultural Services and Rural Business-Cooperative Service, the Department of Treasury's Internal Revenue Service [IRS], the Federal Communications Commission, and the National Archives and Records Administration reported no R&D funds for volume 71. The Department of Commerce's Maritime Administration also reported no R&D funds but did report S&E funds in the Federal S&E Support module.) However, lower offices could also be authorized to enter data: in Federal Funds for R&D nomenclature, agency-level offices could authorize program offices, program offices could authorize field offices, and field offices could authorize branch offices. When these suboffices are included, there were 730 total respondents: 74 agencies, 98 program offices, 173 field offices, and 385 branch offices.

The redesigned survey formalized the procedure established in volume 66 to collect information for 2 instead of 3 federal government fiscal years: the fiscal year just completed (FY 2021—i.e., 1 October 2020 through 30 September 2021) and the current fiscal year during the start of the survey collection period (i.e., FY 2022). FY 2021 data are completed transactions. FY 2022 data are estimates of congressional appropriation actions and apportionment and reprogramming decisions. After consultation with data users, it was determined that the budget year projections for obligations based on the president's budget request to Congress were not as useful as the budget authority data presented in the budget request, so data are no longer requested for the president's budget year.

Data collection began on 19 May 2022, and the requested due date for data submissions was 5 August 2022. Data collection was extended until all surveyed agencies provided complete and final survey data in December 2022. Data for six missing Department of Defense (DOD) field offices were known to be estimated in volume 71. DOD estimated data using the FY 2021 preliminary amounts from volume 70 carried forward into volume 71 as FY 2021 data and distributed across categories as needed based on volume 70 responses. The FY 2022 amounts for volume 71 were estimated based on the FYs 2021–22 trend for those offices from the *RDT&E Programs (R-1) Department of Defense Budget Fiscal Year 2023*.

Mode. Federal Funds for R&D uses a Web-based data collection system. The Web-based system consists of a data collection component that allows survey respondents to enter their data online and a monitoring component that allows the data collection contractor to monitor support requests, data entry, and data issues. The Web-based system's two components are password protected so that only authorized respondents and staff can access them. However, some agencies submit their data in alternative formats such as Excel files, which are later imported into the Web-based system. All edit and trend checks are accomplished through the Web-based system. Final submission occurs through the Web-based system after all edit failures and trend checks have been resolved.

Response rate. The unit response rate is 100%.

Data checking. Data errors in Federal Funds for R&D are flagged automatically by the Web-based data collection system: respondents cannot submit their final data to NCSES until all required fields have been completed without errors. Usually, once data are submitted, each agency's narrative statement, 2-year difference report, and $100 million difference report are reviewed. These reports could not be produced for volume 71 because of the differences between the volume 70 database and the database for the redesigned survey, but the agency totals were carefully checked. As always, respondents were contacted to resolve potential reporting errors that cannot be reconciled by the narratives. Explanations of questionable data are noted by the survey respondents for NCSES review.

Imputation. None.

Weighting. None.

Variance estimation. Not applicable.

Survey Quality Measures

Sampling error. Not applicable.

Coverage error. Given the existence of a complete list of all eligible agencies, there is no known coverage error. The CIA is purposely excluded.

Nonresponse error. There is no unit nonresponse. To increase item response, agencies are encouraged to estimate when actual data are unavailable. The survey instrument allows respondents to enter data or skip data fields. There are several possible sources of nonresponse error by respondents, including inadvertently skipping data fields or skipping data fields when data are unavailable.

Measurement error. Some measurement problems are known to exist in the Federal Funds of R&D data. Some agencies cannot report the full costs of R&D, the final performer of R&D, or R&D plant data.

For example, the DOD does not include headquarters' costs of planning and administering R&D programs, which are estimated at a fraction of 1% of its total cost. DOD has stated that identification of amounts at this level is impracticable.

The National Institutes of Health (NIH) in the Department of Health and Human Services (HHS) currently has many of its awards in its financial system without any field of R&D code. Therefore, NIH uses an alternate source to estimate its research dollars by field of R&D. NIH uses scientific class codes (based upon history of grant, content of the title, and the name of the awarding institute or center) as an approximation for field of R&D.

The National Aeronautics and Space Administration (NASA) does not include any field of R&D codes in its financial database. Consequently, NASA must estimate what percentage of the agency's research dollars are allocated into the fields of R&D.

Agencies are asked to report the ultimate performer of R&D. However, through past workshops, NCSES has learned that some agencies do not always track their R&D dollars to the ultimate performer of R&D. This leads to some degree of misclassification of performers of R&D, but NCSES has not determined the extent of the errors in performer misclassification by the reporting agencies.

Through volume 70, only 11 agencies were required to report R&D obligations by state and performer (the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; NASA; and NSF). Obligations of these 11 agencies represented the majority of total federal R&D obligations (98% for FYs 2008–20), but there was some underreporting by state, which may have affected states unevenly. As of volume 71, all agencies are now required to report R&D obligations by state and performer.

In addition, geographic distribution of DOD development funding to businesses (formerly industry) reflects the location of prime contractors and not the numerous subcontractors who perform much of the R&D. DOD experimental development funding to businesses represented 32.0% of total federal obligations for experimental development in FY 2021 ($33.3 billion of $103.9 billion).

R&D plant data are underreported to some extent because of the difficulty some agencies, particularly DOD and NASA, encounter in identifying and reporting these data. DOD's respondents report obligations for R&D plant that are funded under the agency's appropriation for construction, but they are able to identify only a small portion of the R&D plant support that is within R&D contracts funded from DOD's appropriation for research, development, testing, and evaluation (RDT&E). Similarly, NASA respondents cannot separately identify the portions of industrial R&D contracts that apply to R&D plant because these data are subsumed in the R&D data covering industrial performance. NASA R&D plant data for other performing sectors are reported separately.

Data Comparability (Changes)

Data revisions. When completing the current year's survey, agencies naturally revise their estimates for the last year of the previous report—in this case, FY 2021. Sometimes, survey submissions also reflect reappraisals and revisions in classification of various aspects of agencies' R&D programs; in those instances, NCSES requests that agencies provide revised prior year data to maintain consistency and comparability with the most recent R&D concepts.

For trend comparisons, use the historical data from only the most recent publication, which incorporates changes agencies have made in prior year data to reflect program reclassifications or other corrections. Do not use data published earlier.

Changes in survey coverage and population. This cycle (volume 71, FYs 2021–22), one department, the Department of Homeland Security, became the agency respondent instead of continuing to delegate that role to its bureaus; one agency was added as a respondent—the Department of Agriculture's (USDA's) Natural Resources Conservation Service, and one agency, the Department of Transportation's Maritime Administration, resumed reporting.

Changes in questionnaire.

- The survey was redesigned for volume 71 (FYs 2021–22). The Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions was integrated as the final two questions in the Federal Funds for R&D questionnaire. (NCSES will continue to publish these data separately at **https://ncses.nsf.gov/surveys/federal-support-survey/**.) Four other new questions were added to the standard and DOD versions of the questionnaire; the questions covered, for the fiscal year just completed (FY 2021), R&D deobligations (Standard/DOD Question 4), nonfederal R&D obligations by type of agreement (Standard Question 10/DOD Question 11), R&D obligations provided to other federal agencies (Standard Question 11/DOD Question 12), and R&D and R&D plant obligations to University Affiliated Research Centers (Standard Question 17/DOD Question 19). One new question added solely to the DOD questionnaire (DOD Question 6) was about obligations for Small Business Innovation Research and Small Business Technology Transfer for the fiscal year just completed and the current fiscal year at the time of collection (i.e., FYs 2021 and 2022). Many of the other survey questions were reorganized and revised.
- For volume 71, some changes were made within the questions for consistency with other NCSES surveys. Among the performer categories, federally funded R&D centers (FFRDCs), which in previous volumes were included among the extramural performers, became one of the intramural performers. Other changes include retitling of certain performer categories, where "industry" was changed to "businesses" and "universities and colleges" was changed to "higher education."
- For volume 71, "field of R&D" was used instead of the former "field of science and engineering." The survey started collecting field of R&D information for experimental development obligations; previously, field of R&D information was collected only for research obligations.

- For volume 71, federal obligations for research performed at higher education institutions, by detailed field of R&D was asked of all agencies. Previously these data had only been collected from the Departments of Agriculture, Defense, Energy, HHS, and Homeland Security; NASA; and NSF.
- For volume 71, geographic distribution of R&D obligations was asked of all agencies. Previously, these data had only been collected from the Departments of Agriculture, Commerce, Defense, Energy, HHS, Homeland Security; NASA; and NSF. Agencies are asked to provide the principal location (state or outlying area) of the work performed by the primary contractor, grantee, or intramural organization, assign the obligations to the location of the headquarters of the U.S. primary contractor, grantee, or intramural organization, or, for DOD agencies list the funds as undistributed for classified funds.
- For volume 71, collection of data on funding type (stimulus/non-stimulus) was limited to question 5 on type of R&D.
- For volume 70 (FYs 2020–21), agencies were requested to report COVID-19 pandemic-related R&D from the agency's initial appropriations, as well as from any stimulus funds received from the Coronavirus Aid, Relief, and Economic Security (CARES) Act, plus any other pandemic-related supplemental appropriations. Two tables in the questionnaire were modified to collect the stimulus and non-stimulus amounts separately (tables 1 and 2), and seven tables in the questionnaire (tables 6.1, 6.2, 7.1, 11.1, 11.2, 12.1, and 13.1) were added for respondents to specify stimulus and non-stimulus funding by various categories. The data on stimulus funding is reported in volume 70's data table 132. The Biomedical Advanced Research and Development Authority accounted for 66% of all COVID-19 R&D in FY 2020; these obligations primarily include transfers to the other agencies to help facilitate execution of contractual awards under Operation Warp Speed.
- For volume 70 (FYs 2020–21), the optional narrative tables that ask for comparisons of the R&D obligations reported in Federal Funds for R&D with corresponding amounts in the Federal S&E Support Survey (standard questionnaire only) were renumbered from Tables 6B and 6C to Tables 6A and 6B.
- In volumes 68 (FYs 2018–19) and 69 (FYs 2019–20), table 6A, which collected information on federal intramural R&D obligations, was deactivated, and agencies were instructed not to complete it.
- For volumes 66 (FYs 2016–17) and 67 (FYs 2017–18), table 6A (formerly table VI.A) was included, but it was modified so that it no longer collected laboratory names.
- Starting with volume 66 (FYs 2016–17), the survey collects 2 federal government fiscal years—actual data for the fiscal year just completed and estimates for the current fiscal year. Previously, the survey also collected projected obligations for the next fiscal year based on the president's budget request to Congress. For volume 66, data were collected for only 2 fiscal years due to the delayed FY 2018 budget formulation process. However, after consultation with data users, NCSES determined that the projections were not as useful as the budget authority data presented in the budget request.
- In volume 66, the survey table numbering was changed from Roman numerals I–XI and, for selected agencies, the letters A–E, to Arabic numerals 1–16. The order of tables remained the same.
- In the volume 66 DOD version of the questionnaire, the definition of major systems development was changed to represent DOD Budget Activities 4 through 6 instead of Budget Activities 4 through 7, and questions relating to funding for Operational Systems Development (Budget Activity 7) were added to the instrument. The survey's narrative tables 6 and 11 were removed from the DOD version of the questionnaire.
- For volume 65 (FYs 2015–17), the survey reintroduced table VI.A to collect information on federal intramural R&D obligations, including the names and addresses of all federal laboratories that received federal intramural R&D obligations. The table was included in both the standard and DOD questionnaires.

- For volume 62 (FYs 2012–14), the survey added table VI.A to the standard questionnaire for that volume only to collect information on FY 2012 federal intramural R&D obligations, including the names and addresses of all federal laboratories that received federal intramural R&D obligations.
- In volumes 59 (FYs 2009–11) and 60 (FYs 2010–12), questions relating to funding from the American Recovery and Reinvestment Act of 2009 (ARRA) were added to the data collection instruments. The survey collected separate outlays and obligations for ARRA and non-ARRA sources of funding, by performer and geography for FYs 2009 and 2010.
- Starting with volume 59 (FYs 2009–11), federal funding data were requested in actual dollars (instead of rounded in thousands, as was done through volume 58).

Changes in reporting procedures or classification.

- FY 2021. During the volume 71 cycle (FYs 2021–22), NCSES decided to remove "U.S." from names like "U.S. Space Force" to conform with other surveys. For Federal Funds for R&D, this change will first appear in the detailed statistical tables.
- FY 2020. For volume 70 (FYs 2020 and 2021), data include obligations from supplemental COVID-19 pandemic-related appropriations (e.g., CARES Act) plus any other pandemic-related supplemental appropriations.
- FY 2020. The Department of Energy's Naval Reactor Program reclassified some of its R&D obligations from industry-administered FFRDCs to the industry sector.
- FY 2020. The Department of the Air Force (AF) and the Department of Energy's Energy Efficiency and Renewable Energy (EERE) partially revised their FY 2019 data. AF revised its operational system development classified program numbers for businesses excluding FFRDCs, and EERE revised its outlay numbers.
- FY 2019. For volume 69 (FYs 2019–20), FY 2020 preliminary data do not include obligations from supplemental COVID-19 pandemic-related appropriations (e.g., CARES Act).
- FY 2019. The Biomedical Advanced Research and Development Authority began reporting. For volume 69 (FYs 2019–20), it could not submit any geographical data, so its data were reported as undistributed on the state tables.
- FY 2019. The U.S. Agency for Global Media (formerly the Broadcasting Board of Governors), which did not report data between FY 2008 and FY 2018, resumed reporting.
- FY 2018. The HHS Centers for Medicare and Medicaid (CMS) funding was reported by the CMS Office of Financial Management at an agency-wide level instead of by the CMS Center for Medicare and Medicaid Innovation (CMMI) and its R&D group, the Office of Research, Development, and Information (ORDI), which used to report at a component level.
- FY 2018. The Department of State added the Global Health Programs R&D funding.
- FY 2018. The Department of Veterans Affairs added funds for the Medical Services support to the existing R&D funding to fully report the total cost of intramural R&D. Although the Medical Services do not directly fund specific R&D activities, they host intramural research programs that were not previously reported.
- FY 2018. DHS's Countering Weapons of Mass Destruction (CWMD) Office was established on 7 December 2017. CWMD consolidated primarily the Domestic Nuclear Detection Office (DNDO) and a majority of the Office of Health Affairs, as well as other DHS elements. Prior to FY 2018, data reported for the CWMD would have been under the DNDO.
- FY 2018. The Department of Energy (DOE) revised its FYs 2016 and 2017 data after discovering its Office of Fossil Energy reported "in thousands" instead of actual dollars for volumes 66 (FYs 2016–17) and 67 (FYs 2017–18).

- FY 2018. USDA's Economic Research Service (ERS) partially revised its FYs 2009 and 2010 data during the volume 61 (FYs 2011–13) cycle. NCSES discovered a discrepancy that was corrected during the volume 68 cycle, completing the revision.
- FY 2018. DHS's Transportation Security Administration, which did not report data between FY 2010 and FY 2017, resumed reporting for volume 68 (FYs 2018–19).
- FY 2018. DHS's U.S. Secret Service, which did not report data between FY 2009 and FY 2017, resumed reporting for volume 68 (FYs 2018–19).
- FY 2018. NCSES discovered that in some past volumes, the obligations reported for basic research in certain foreign countries were greater than the corresponding obligations reported for R&D; the following data were corrected as a result: DOD and Chemical and Biological Defense FY 2003 data, defense agencies and activities FY 2003 and FY 2011 data, AF FY 2009 data, and Department of the Navy FY 2005, FY 2011, and FY 2013 data; DOE and Office of Science FY 2009 data; HHS and Centers for Disease Control and Prevention (CDC) FY 2008 and FY 2017 data; and NSF FY 2001 data. NCSES also discovered that some obligations reported for academic performers were greater than the corresponding obligations reported for total performers, and DOD and AF FY 2009 data, DOE and Fossil Energy FY 1999 data, and NASA FY 2008 data were corrected. Finally, NCSES discovered a problem with FY 2017 HHS CDC personnel costs data, which were then also corrected.
- FY 2017. The Department of the Treasury's IRS performed a detailed evaluation and assessment of its programs and determined that none of its functions can be defined as R&D activity as defined in Office of Management and Budget (OMB) Circular A-11. The review included discussions with program owners and relevant contractors who perform work on behalf of the IRS. The IRS also provided a negative response to the OMB data call on R&D under Circular A-11 for the same reference period (FYs 2017–18). Despite no longer having any R&D obligations, the IRS still sponsors an FFRDC, the Center for Enterprise Modernization.
- FY 2017. NASA estimated that the revised OMB definition for "experimental development" reduced its reported R&D total by about $2.7 billion in FY 2017 and $2.9 billion in FY 2018 from what would have been reported under the previous definition prior to volume 66 (FYs 2016–17).
- FY 2017. The Patient-Centered Outcomes Research Trust Fund (PCORTF) was established by Congress through the Patient Protection and Affordable Care Act of 2010, signed by the president on 23 March 2010. PCORTF began reporting for volume 67 (FYs 2017–18), but it also submitted data for FYs 2011–16.
- FY 2017. The Tennessee Valley Authority, which did not report data between FY 1999 and FY 2016, resumed reporting for volume 67 (FYs 2017–18).
- FY 2017. The U.S. Postal Service, which did not report data between FY 1999 and FY 2016, resumed reporting for volume 67 (FYs 2017–18) and submitted data for FYs 2015–16.
- FY 2017. During the volume 67 (FYs 2017–18) data collection, DHS's Science and Technology Directorate revised its FY 2016 data.
- FY 2016. The Administrative Office of the U.S. Courts began reporting as of volume 66 (FYs 2016–17).
- Beginning with FY 2016, the totals reported for development obligations and outlays represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the DOD Budget Activity 7 (Operational System Development) obligations and outlays. Those funds, previously included in DOD's development totals, support the development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years.

- Prior to the volume 66 launch, the definitions of basic research, applied research, experimental development, R&D, and R&D plant were revised to match the definitions used by OMB in the July 2016 version of Circular A-11, Section 84 (Schedule C).
- FYs 2016–17. Before the volume 66 survey cycle, NSF updated the list of foreign performers in the Federal Funds Survey to match the list of countries and territories in the Department of State's Bureau of Intelligence and Research fact sheet of Independent States in the World and fact sheet of Dependencies and Areas of Special Sovereignty. Country lists in volume 66 data tables and later may differ from those in previous reports.
- FY 2015. The HHS Administration for Community Living (ACL) began reporting in FY 2015, replacing the Administration on Aging, which was transferred to ACL when ACL was established on 18 April 2012. Several programs that serve older adults and people with disabilities were transferred from other agencies to ACL, including a number of programs from the Department of Education due to the 2014 Workforce Innovation and Opportunities Act.
- FY 2015. The Department of the Interior's Bureau of Land Management and U.S. Fish and Wildlife Service, which did not report data between FY 1999 and FY 2014, resumed reporting.
- In January 2014, all Research and Innovative Technology Administration programs were transferred into the Office of the Assistant Secretary for Research and Technology in the Office of the Secretary of Transportation.
- FY 2014. DHS's Domestic Nuclear Detection Office began reporting for FY 2014.
- FY 2014. The Department of State data for FY 2014 were excluded due to their poor quality.
- FY 2013. NASA revamped its reporting process so that the data for FY 2012 forward are not directly comparable with totals reported in previous years.
- FY 2012. NASA began reporting International Space Station (ISS) obligations as research rather than R&D plant.
- Starting with volume 62 (FYs 2012–14), an "undistributed" category was added to the geographic location tables for DOD obligations for which the location of performance is not reported. It includes DOD obligations for industry R&D that were included in individual state totals prior to FY 2012 and DOD obligations for other performers that were not reported prior to FY 2011. This change was applied retroactively to FY 2011 data.
- Starting with volume 61 (FYs 2011–13), DOD subagencies other than the Defense Advanced Research Projects Agency were reported as an aggregate total under other defense agencies to enable complete reporting of DOD R&D (both unclassified and classified). Consequently, DOD began reporting additional classified R&D not previously reported by its subagencies.
- FY 2011. USDA's ERS partially revised its data for FYs 2009 and 2010 data during the volume 61 (FYs 2011–13) cycle.
- FY 2010. NASA resumed reporting ISS obligations as R&D plant.
- FYs 2000–09. Beginning in FY 2000, AF did not report Budget Activity (BA) 6.7 Operational Systems Development data because the agency misunderstood the reporting requirements. During the volume 57 data collection cycle, AF edited prior year data for FYs 2000–07 to include BA 6.7 Operational Systems Development data. These data revisions were derived from FY 2007 distribution percentages that were then applied backward to revise data for FYs 2000–06.
- FYs 2006–07. NASA's R&D obligations decreased by $1 billion. Of this amount, $850 million was accounted for by obligations for operational projects that NASA excluded in FY 2007 but reported in FY 2006. The remainder was from an overall decrease in obligations between FYs 2006 and 2007.
- FY 2006. NASA reclassified funding for the following items as operational costs: Space Operations, the Hubble Space Telescope, the Stratospheric Observatory for Infrared Astronomy, and the James Webb Space Telescope. This funding was previously reported as R&D plant.

- FYs 2005–07. Before the volume 55 survey cycle, NSF updated the list of foreign performers in the Federal Funds Survey to match the list of countries and territories in the Department of State's Bureau of Intelligence and Research fact sheet of Independent States in the World and fact sheet of Dependencies and Areas of Special Sovereignty. Area and country lists in volume 55 data tables and later may differ from those in previous reports.
- FYs 2004–06. NASA implemented a full-cost budget approach, which includes all of the direct and indirect costs for procurement, personnel, travel, and other infrastructure-related expenses relative to a particular program and project. NASA's data for FY 2004 and later years may not be directly comparable with its data for FY 2003 and earlier years.
- FY 2004. NIH revised its financial database; beginning with FY 2004, NIH records no longer contain information on the field of S&E. Data for FY 2004 and later years are not directly comparable with data for FY 2003 and earlier years.
- Data for FYs 2003–06 from the Substance Abuse and Mental Health Services Administration (SAMHSA) are estimates based on SAMHSA's obligations by program activity budget and previously reported funding for development.
- FY 2003. SAMHSA reclassified some of its funding categories as non-R&D that had been considered R&D in prior years.
- On 25 November 2002, the president signed the Homeland Security Act of 2002, establishing DHS. DHS includes the R&D activities previously reported by the Federal Emergency Management Agency, the Science and Technology Directorate, the Transportation Security Administration, the U.S. Coast Guard, and the U.S. Secret Service.
- FY 2000. NASA reclassified the ISS as a physical asset, reclassified ISS Research as equipment, and transferred funding for the program from R&D to R&D plant.
- FY 2000. NIH reclassified as research the activities that it had previously classified as development. NIH data for FY 2000 forward reflect this change. For more information on the classification changes at NASA and NIH, refer to *Classification Revisions Reduce Reported Federal Development Obligations* (InfoBrief NSF 02-309), February 2002, available at https://www.nsf.gov/statistics/nsf02309.
- FYs 1996–98. The lines on the survey instrument for the special foreign currency program and for detailed field of S&E were eliminated beginning with the volume 46 survey cycle. Two tables depicting data on foreign performers by region, country, and agency that were removed before publication of volume 43 were reinstated with volume 46.
- FYs 1994–96. During the volume 44 survey cycle, the Director for Defense Research and Engineering (DDR&E) at DOD requested that NSF further clarify the true character of DOD's R&D program, particularly as it compares with other federal agencies, by adding more detail to development obligations reported by DOD respondents. Specifically, DOD requested that NSF allow DOD agencies to report development obligations in two separate categories: advanced technology development and major systems development.

  An excerpt from a letter written by Robert V. Tuohy, Chief, Program Analysis and Integration at DDR&E, to John E. Jankowski, Program Director, Research and Development Statistics Program, Division of Science Resources Statistics, NSF, explains the reasoning behind the DDR&E request:

  "The DOD's R&D program is divided into two major pieces, Science and Technology (S&T) and Major Systems Development. The other federal agencies' entire R&D programs are equivalent in nature to DOD's S&T program, with the exception of the Department of Energy and possibly NASA. Comparing those other agency programs to DOD's program, including the development of weapons systems such as F-22 Fighter and the New Attack Submarine, is misleading."

- FYs 1990–92. Since volume 40, DOD has reported research obligations and development obligations separately. Tables reporting obligations for research, by state and performer, and obligations for development, by state and performer, were specifically created for DOD. Circumstances specific to DOD are (1) DOD funds the preponderance of federal development and (2) DOD development funded at institutions of higher education is typically performed at university-affiliated nonacademic laboratories, which are separate from universities' academic departments, where university research is typically performed.

Definitions

Agency and subdivision. An agency is an organization of the federal government whose principal executive officer reports to the president. The Library of Congress and the Administrative Office of the U.S. Courts are also included in the survey, even though the chief officer of the Library of Congress reports to Congress and the U.S. Courts are part of the judicial branch. Subdivision refers to any organizational unit of a reporting agency, such as a bureau, division, office, or service.

Development. See R&D and R&D plant.

Fields of R&D (formerly fields of science and engineering). A list of the 41 fields of R&D reported on can be found on the survey questionnaire. In the data tables, the fields are grouped into 9 major areas: computer and information sciences; geosciences, atmospheric sciences, and ocean sciences; life sciences; mathematics and statistics; physical sciences; psychology; social sciences; engineering; and other fields. Table A-3 provides a crosswalk of the fields of science and engineering used in volume 70 and earlier surveys to the revised fields of R&D collected under volume 71.

Federal obligations for research performed at higher education institutions, by detailed field of R&D. As of volume 71, all respondents were required to report these obligations. Previously, this information was reported by seven agencies (the Departments of Agriculture, Defense, Energy, Health and Human Services, and Homeland Security; NASA; and NSF).

Geographic distribution of R&D obligations. As of volume 71, all respondents were required to respond to this portion of the survey. Previously, the 11 largest R&D funding agencies responded to this portion (the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; NASA; and NSF). Respondents are asked to provide the principal location (state or outlying area) of the work performed by the primary contractor, grantee, or intramural organization, assign the obligations to the location of the headquarters of the U.S. primary contractor, grantee, or intramural organization, or list the funds as undistributed.

Obligations and outlays. Obligations represent the amounts for orders placed, contracts awarded, services received, and similar transactions during a given period, regardless of when funds were appropriated and when future payment of money is required. Outlays represent the amounts for checks issued and cash payments made during a given period, regardless of when funds were appropriated.

Performer. A group or organization carrying out an operational function or an extramural organization or a person receiving support or providing services under a contract or grant.

- *Intramural performers* are agencies of the federal government, including federal employees who work on R&D both onsite and offsite and, as of volume 71, FFRDCs.
  - *Federal.* The work of agencies of the federal government is carried out directly by agency personnel. Obligations reported under this category are for activities performed or to be performed by the reporting agency itself or are for funds that the agency transfers to another federal agency for performance of work, as long as the ultimate performer is that agency or any federal agency. If the ultimate performer is not a federal agency, funds transferred are reported by the transferring agency under the appropriate extramural performer category (businesses, universities and colleges, other nonprofit institutions, FFRDCs, nonfederal government, and foreign).

Federal activities cover not only actual intramural R&D performance but also the costs associated with administration of intramural R&D programs and extramural R&D procurements by federal personnel. Intramural activities also include the costs of supplies and off-the-shelf equipment (equipment that has gone beyond the development or prototype stage) procured for use in intramural R&D. For example, an operational launch vehicle purchased from an extramural source by NASA and used for intramural performance of R&D is reported as a part of the cost of intramural R&D.

- *Federally funded research and development centers (FFRDCs)*—R&D-performing organizations that are exclusively or substantially financed by the federal government and are supported by the federal government either to meet a particular R&D objective or in some instances to provide major facilities at universities for research and associated training purposes. Each center is administered by an industrial firm, a university, or another nonprofit institution (see **https://www.nsf.gov/statistics/ffrdclist/** for the Master Government List of FFRDCs maintained by NSF).

- *Extramural performers* are organizations outside the federal sector that perform R&D with federal funds under contract, grant, or cooperative agreement. Only costs associated with actual R&D performance are reported. Types of extramural performers:
  - *Businesses (previously "Industry or industrial firms")*—Organizations that may legally distribute net earnings to individuals or to other organizations.
  - *Higher education institutions (previously "Universities and colleges")*—Institutions of higher education in the United States that engage primarily in providing resident or accredited instruction for a not less than a 2-year program above the secondary school level that is acceptable for full credit toward a bachelor's degree or that provide not less than a 1-year program of training above the secondary school level that prepares students for gainful employment in a recognized occupation. Included are colleges of liberal arts; schools of arts and sciences; professional schools, as in engineering and medicine, including affiliated hospitals and associated research institutes; and agricultural experiment stations. Other examples of universities and colleges include community colleges, 4-year colleges, universities, and freestanding professional schools (medical schools, law schools, etc.).
  - *Other nonprofit institutions*—Private organizations other than educational institutions whose net earnings do not benefit either private stockholders or individuals and other private organizations organized for the exclusive purpose of turning over their entire net earnings to such nonprofit organizations. Examples of nonprofit institutions include foundations, trade associations, charities, and research organizations.
  - *State and local governments*—State and local government agencies, excluding state or local universities and colleges, agricultural experiment stations, medical schools, and affiliated hospitals. (Federal R&D funds obligated directly to such state and local institutions are excluded in this category. However, they are included under the universities and colleges category in this report.) R&D activities under the state and local governments category are performed either by the state or local agencies themselves or by other organizations under grants or contracts from such agencies. Regardless of the ultimate performer, federal R&D funds directed to state and local governments are reported only under this sector.
  - *Non-U.S. performers (previously "Foreign performers")*—Other nations' citizens, organizations, universities and colleges, governments, as well as international organizations located outside the United States, that perform R&D. In most cases, foreigners performing R&D in the United States are not reported here. Excluded from this category are U.S. agencies, U.S. organizations, or U.S. citizens performing R&D abroad for the federal government. Examples of foreign performers include the North Atlantic Treaty Organization (NATO), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and the World Health Organization (WHO). An exception in the past was made in the case of U.S. citizens performing R&D abroad under special foreign-currency funds; these activities were included under the foreign performers category but have not been collected since the mid-1990s.
  - *Private individuals*—When an R&D grant or contract is awarded directly to a private individual, obligations incurred are placed under the category businesses.

R&D and R&D plant. Amounts for R&D and R&D plant include all direct, incidental, or related costs resulting from, or necessary to, performance of R&D and costs of R&D plant as defined below, regardless of whether R&D is performed by a federal agency (intramurally) or by private individuals and organizations under grant or contract (extramurally). R&D excludes routine product testing, quality control, mapping and surveys, collection of general-purpose statistics, experimental production, and the training of scientific personnel.

- *Research* is defined as systematic study directed toward fuller scientific knowledge or understanding of the subject studied. Research is classified as either basic or applied, according to the objectives of the sponsoring agency.
- *Basic research* is defined as experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts. Basic research may include activities with broad or general applications in mind, such as the study of how plant genomes change, but should exclude research directed towards a specific application or requirement, such as the optimization of the genome of a specific crop species.
- *Applied research* is defined as original investigation undertaken in order to acquire new knowledge. Applied research is, however, directed primarily towards a specific practical aim or objective.
- *Development,* also known as experimental development, is defined as creative and systematic work, drawing on knowledge gained from research and practical experience, which is directed at producing new products or processes or improving existing products or processes. Like research, experimental development will result in gaining additional knowledge.

  For reporting experimental development activities, the following are included:

  The production of materials, devices, and systems or methods, including the design, construction, and testing of experimental prototypes.

  Technology demonstrations, in cases where a system or component is being demonstrated at scale for the first time, and it is realistic to expect additional refinements to the design (feedback R&D) following the demonstration. However, not all activities that are identified as “technology demonstrations” are R&D.

  However, experimental development excludes the following:

  User demonstrations where the cost and benefits of a system are being validated for a specific use case. This includes low-rate initial production activities.

  Pre-production development, which is defined as non-experimental work on a product or system before it goes into full production, including activities such as tooling and development of production facilities.

  To better differentiate between the part of the federal R&D budget that supports science and key enabling technologies (including technologies for military and nondefense applications) and the part that primarily supports testing and evaluation (mostly of defense-related systems), NSF collects development dollars from DOD in two categories: advanced technology development and major systems development.

DOD uses RDT&E Budget Activities 1–7 to classify data into the survey categories. Within DOD's research categories, basic research is classified as Budget Activity 1, and applied research is classified as Budget Activity 2. Within DOD's development categories, advanced technology development is classified as Budget Activity 3. Starting in volume 66, major systems development is classified as Budget Activities 4–6 instead of Budget Activities 4–7 and includes advanced component development and prototypes, system development and demonstration, and RDT&E management support; data on Budget Activity 7, operational systems development, is collected separately. (Note: As a historical artifact from previous DOD budget authority terminology, funds for Budget Activity categories 1 through 7 are sometimes referred to as 6.1 through 6.7 monies.)

- *Demonstration* includes amounts for activities that are part of R&D (i.e., that are intended to prove or to test whether a technology or method does in fact work). Demonstrations intended primarily to make information available about new technologies or methods are excluded.
- *R&D plant* is defined as spending on both R&D facilities and major equipment as defined in OMB Circular A-11 Section 84 (Schedule C) and includes physical assets, such as land, structures, equipment, and intellectual property (e.g., software or applications) that have an estimated useful life of 2 years or more. Reporting for R&D plant includes the purchase, construction, manufacture, rehabilitation, or major improvement of physical assets regardless of whether the assets are owned or operated by the federal government, states, municipalities, or private individuals. The cost of the asset includes both its purchase price and all other costs incurred to bring it to a form and location suitable for use.
- For reporting construction of R&D facilities and major moveable R&D equipment, include the following:

  Construction of facilities that are necessary for the execution of an R&D program. This may include land, major fixed equipment, and supporting infrastructure such as a sewer line, or housing at a remote location. Many laboratory buildings will include a mixture of R&D facilities and office space. The fraction of the building that is considered R&D may be calculated based on the percentage of square footage that is used for R&D.

  Acquisition, design, or production of major moveable equipment, such as mass spectrometers, research vessels, DNA sequencers, and other moveable major instrumentation for use in R&D activities.

  Programs of $1 million or more that are devoted to the purchase or construction of R&D major equipment.

  Exclude the following:

  Construction of other non-R&D facilities.

  Minor equipment purchases, such as personal computers, standard microscopes, and simple spectrometers (report these costs under total R&D, not R&D Plant).

  Obligations for foreign R&D plant are limited to federal funds for facilities that are located abroad and used in support of foreign R&D.

Technical Tables

Table	Title
A-1	Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70
A-2	Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71
A-3	Crosswalk for the Survey of Federal Funds for Research and Development: Volume 70 and volume 71
A-4	Survey of Federal Funds for Research and Development, by volume number and federal fiscal years surveyed

TABLE A-1

Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Department																																											
Department of Agriculture	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Agricultural Cooperative Service	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Agricultural Marketing Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Agricultural Research Service	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Animal and Plant Health Inspection Service	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Economic Research Service	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Economics and Statistics Service	N	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Economics, Statistics, and Cooperative Service	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Economic Research Service	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Farmer Cooperative Service	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Statistical Reporting Service	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Food Safety and Inspection Service	N	N	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	Z	Z	Z	Z	Z	Z	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Foreign Agricultural Service	N	N	N	N	N	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Forest Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Grain Inspection, Packers, and Stockyards Administration	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N
Human Nutrition Information Service	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
National Agricultural Statistics Service	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
National Institute of Food and Agriculture (formerly Cooperative State Research, Education, and Extension Service)	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Natural Resources Conservation Service (formerly Soil Conservation Service)	N	N	N	N	N	N	N	N	N	N	N	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	X
Office of International Cooperation and Development	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Transportation	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Rural Business-Cooperative Service	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Science and Education Administration	T	T	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Agricultural Research Service	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Cooperative State Research Service	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
National Agricultural Library	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Department of Commerce	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Census Bureau	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TABLE A-1

Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Economic Development Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O
Environmental Science Services Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Maritime Administration	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X
Minority Business Development Agency	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
National Fire Prevention and Control Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
National Institute of Standards and Technology	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
National Oceanic and Atmospheric Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
National Technical Information Service	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
National Telecommunications and Information Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of the Secretary of Commerce	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Office of Telecommunications	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Patent and Trademark Office	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
U.S. Travel and Tourism Administration	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Department of Defense	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Defense Agencies	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Chemical and Biological Defense	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Defense Advanced Research Projects Agency	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Defense Business Transformation Agency	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	N	T	T	T	T	T	T	T	T	T	T	T
Defense Contract Management Agency	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Defense Information Systems Agency	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Defense Logistics Agency	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Defense Nuclear Agency	O	O	O	O	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Defense Security Service	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Defense Special Weapons Agency	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Defense Technical Information Center	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Defense Threat Reduction Agency	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Joint Staff	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T

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Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Missile Defense Agency	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
National Imagery and Mapping Agency (formerly Defense Mapping Agency)	X	X	X	X	O	X	X	O	O	O	O	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Special Operations Command	O	O	O	O	X	X	X	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Uniformed Services University of the Health Sciences	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of the Secretary of Defense (formerly Washington Headquarters Service)	X	X	X	X	X	X	X	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Defense Civil Preparedness Agency	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Defense Health Agency	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	T	T	T	X	X
Department of the Air Force	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X
DT&E Support From Operations and Maintenance	N	N	N	N	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
DT&E Support From Procurement Appropriations	N	N	N	N	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Housing for Military Personnel in R&D	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Materiel Command	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T
Military Construction	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Pay and Allowances of Military Personnel in R&D	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
RDT&E Appropriation	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Space Command	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N
Special Foreign Currency Program	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Department of the Army	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Civil Functions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Housing for Military Personnel in R&D	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Military Construction	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Military Functions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Pay and Allowances of Military Personnel in R&D	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
RDT&E Appropriation	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Special Foreign Currency Program	O	O	O	O	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Support From Procurement Appropriations	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Department of the Navy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
DT&E Support From Operations and Maintenance	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
DT&E Support From Procurement Appropriations	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Housing for Military Personnel in R&D	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Military Construction	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Pay and Allowances of Military Personnel in R&D	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
RDT&E Appropriation	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Special Foreign Currency Program	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Health Affairs, Assistant Secretary of Defense for	N	N	N	N	N	N	N	N	N	N	N	N	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Operational Test and Evaluation, Director	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T
Space Force	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X
Test and Evaluation, Deputy Under Secretary of Defense	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Department of Education	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Department of Energy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Advanced Research Projects Agency-Energy (formerly Energy Transformation Acceleration Fund)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bonneville Power Administration	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O
Civilian Radioactive Waste Management	N	N	N	N	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	T	T
Electricity Delivery and Energy Reliability	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Energy Efficiency and Renewable Energy	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Environmental Management	N	N	N	N	N	N	N	N	N	N	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fossil Energy	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
National Nuclear Security Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Defense Programs	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fissile Materials Disposition	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Naval Reactors	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nuclear Nonproliferation	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nuclear Energy	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Office of Cybersecurity, Energy Security, and Emergency Response	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X
Office of Intelligence	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Office of Science	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Department of Health and Human Services	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Administration for Children and Families	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Administration for Community Living	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	X	X	X	X	X	X	X
Administration on Aging	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	T	T	T	T	T	T	T
Agency for Healthcare Research and Quality (formerly Agency for Health Care Policy and Research)	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Agency for Toxic Substances and Disease Registry	N	N	N	N	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Alcohol, Drug Abuse, and Mental Health Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Biomedical Advanced Research and Development Authority	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X
Centers for Disease Control and Prevention	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Centers for Medicare & Medicaid Services (formerly Health Care Financing Administration)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Food and Drug Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Health Resources Administration	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Health Resources and Services Administration	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Health Services Administration	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Human Development Services	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
National Institutes of Health	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of the Assistant Secretary for Health	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of the Secretary of Health and Human Services	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Office of the Assistant Secretary for Planning and Evaluation	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Office of the Assistant Secretary for Health (formerly Office of Public Health and Science)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Social Security Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Substance Abuse and Mental Health Services Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	O	O	T	T	T	T	T	T	T	T	T	T	T	T
Department of Homeland Security	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	Z	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X
Coast Guard	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Countering Weapons of Mass Destruction Office	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	T	T	T	T	T	T	T	X	X	X	X	X	X	X	X
Cybersecurity and Infrastructure Security Agency	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X
Science and Technology Directorate	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Z	Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Secret Service	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	X	X	X	X
Transportation Security Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Z	X	X	X	X	O	O	T	T	T	T	T	T	T	T	X	X	X	X
Department of Housing and Urban Development	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O
Department of the Interior	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X
Bonneville Power Administration	O	O	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bureau of Indian Affairs	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X
Bureau of Land Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	X	X	X	X	X	X	X
Bureau of Mines	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bureau of Ocean Energy Management	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X
Bureau of Ocean Energy Management, Regulation, and Enforcement (formerly Minerals Management Service)	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N
Bureau of Reclamation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bureau of Safety and Environmental Enforcement	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X
Federal Water Pollution Control Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Fish and Wildlife Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	X	X	X	X	X	X	X
Bureau of Commercial Fisheries	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bureau of Sport Fisheries and Wildlife	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Geological Survey	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Heritage Conservation and Recreation Service	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
National Biological Service	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

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Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
National Park Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of Coal Research	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Surface Mining Reclamation and Enforcement	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	X	X	X	X
Office of the Secretary of the Interior	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Office of Water Research and Technology	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Saline Water	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Water Resources Research	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Department of Justice	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Bureau of Prisons	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Drug Enforcement Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Federal Bureau of Investigation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Immigration and Naturalization Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Justice Programs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of Legal Policy	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Department of Labor	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Bureau of Apprenticeship and Training	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bureau of Employment Security	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bureau of Labor Statistics	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T	T
Employee Benefits Security Administration	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Employment and Training Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T	T	T	T	T	T	T	T	T	T
Employment Standards Administration	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	N	N	N	N	N	N	N	N	N	N	N	N	N
Labor-Management Relations and Cooperative Programs	N	N	N	N	N	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Labor-Management Services Administration	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Occupational Safety and Health Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of the Secretary of Labor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	T	T	T	T	T	T	T	T	T	T
Pension Benefit Guaranty Corporation	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	T	T	T
Wage and Hour Division	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Department of State	T	T	T	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Agency for International Development	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bureau of Intelligence and Research	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Departmental Funds	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T

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(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Peace Corps	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Department of Transportation	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Coast Guard	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Federal Aviation Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Federal Highway Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Federal Motor Carrier Safety Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Federal Railroad Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Federal Transit Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Maritime Administration	N	N	X	X	X	X	X	X	X	X	O	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	X
Materials Transportation Bureau	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
National Highway Traffic Safety Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of the Secretary of Transportation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pipeline and Hazardous Materials Safety Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Research and Innovative Technology Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N
Research and Special Programs Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Transportation Security Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Department of the Treasury	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Bureau of Alcohol, Tobacco, and Firearms	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bureau of Engraving and Printing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Customs Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Financial Crimes Enforcement Network	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Internal Revenue Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mint	O	O	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of Thrift Supervision	N	N	N	N	N	N	N	N	N	N	N	O	X	X	X	X	X	X	X	X	X	X	X	X	Z	Z	Z	Z	Z	T	T	T	N	N	N	N	N	N	N	N	N	N	N
Secret Service	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Department of Veterans Affairs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Other agencies																																											
ACTION	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Administrative Office of the U.S. Courts	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	X	X	X	X	X	X
Advisory Commission on Intergovernmental Relations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

TABLE A-1

Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Agency for Global Media (formerly Broadcasting Board of Governors)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	O	T	T	T	T	T	T	T	T	T	T	T	X	X	X
Agency for International Development	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Appalachian Regional Commission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Arms Control and Disarmament Agency	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Atomic Energy Commission	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Civil Aeronautics Board	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Civil Service Commission	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Commission on Civil Rights	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Community Services Administration	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Consumer Product Safety Commission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	T	T	T	T	X	X	X	X	X	X	X	X	X	X
Energy Research and Development Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Environmental Protection Agency	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Federal Communications Commission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Federal Emergency Management Agency	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Federal Energy Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Federal Trade Commission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Foundation for Educational Assistance	N	N	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
General Services Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Information Agency	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
International Development Cooperation Agency	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Agency for International Development	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Institute for Scientific and Technological Cooperation	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
International Trade Commission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Interstate Commerce Commission	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Library of Congress	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
National Aeronautics and Space Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
National Archives and Records Administration	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
National Science Foundation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nuclear Regulatory Commission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Office of Economic Opportunity	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Emergency Preparedness	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

TABLE A-1

Agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–70

(Agency key)

Agency	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Office of Personnel Management	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Office of Science and Technology	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Telecommunications Policy	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Office of Thrift Supervision	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Patient-Centered Outcomes Research Trust Fund	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X
Postal Service	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	X	X	X	X	X	X	X
RESTORE Act Centers of Excellence Research Grants Program	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X
Small Business Administration	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Smithsonian Institution	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Social Security Administration	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Special Action Office for Drug Abuse Prevention	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Tennessee Valley Authority	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	O	O	O	O	O	T	T	T	T	T	T	T	T	T	X	X	X	X	X

N = the agency did not exist as such; therefore, no data are available. O = the agency existed but had no R&D to report. T = the agency existed, but data were not collected at this level. X = the agency existed, and data were collected and submitted by the agency. Z = the agency existed but was unable to report.

DT&E = developmental test and evaluation. RDT&E = research and development, testing, and evaluation.

Note(s):
This table summarizes which agencies have reported to the Survey of Federal Funds for Research and Development (Federal Funds for R&D) and have been included in Federal Funds for R&D reports for volume 29 (FYs 1979–81) through volume 71 (FYs 2021–22). For volume 71, actual data were collected for FY 2021, and estimates were collected for FY 2022.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE A-2

Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71

(Notes)

Department	Explanatory information
Department of Agriculture	
Agricultural Marketing Service	Although the Agricultural Marketing Service (AMS) was established in April 1972, FY 1979 was the first year in which Congress appropriated funds to this agency.
	Data reported for AMS include funds for the Office of Transportation beginning in 1989.
	The Grain Inspection, Packers, and Stockyards Administration (GIPSA) was re-organized and absorbed in AMS in September 2017. Because GIPSA R&D projects were closed out, the transfer did not have much effect on the FY 2018 funding reported by AMS.
Agricultural Research Service	The Human Nutrition Information Service merged with the Agricultural Research Service on 20 February 1994.
Agricultural Stabilization and Conservation Service	The Agricultural Stabilization and Conservation Service was abolished as of 20 October 1994.
Cooperative State Research, Education, and Extension Service	The Cooperative State Research Service merged with the Extension Service on 19 October 1994 to become the Cooperative State Research, Education, and Extension Service (CSREES) due to reorganization of the Department of Agriculture.
	CSREES changed its name to the National Institute of Food and Agriculture in FY 2008.
Economic Research Service	Data reported for the Economics, Statistics, and Cooperative Service include programs of the Economic Research Service (ERS), the Statistical Reporting Service (SRS), and the Farmer Cooperative Service for FYs 1977–79.
	Data reported for the Economics and Statistics Service include programs of ERS and SRS for FY 1980.
Economics and Statistics Service	Data reported for the Economics and Statistics Service include programs of the Economic Research Service and the Statistical Reporting Service for FY 1980.
Economics, Statistics, and Cooperative Service	Data reported for the Economics, Statistics, and Cooperative Service include programs of the Economic Research Service, the Statistical Reporting Service, and the Farmer Cooperative Service for FYs 1977–79.
Federal Grain Inspection Service	The Federal Grain Inspection Service was abolished on 20 October 1994, and the Grain Inspection, Packers, and Stockyards Administration assumed its functions.
Foreign Agricultural Service	The Office of International Cooperation and Development became part of the Foreign Agricultural Service (FAS) in June 1994. Data reported for FAS include funds appropriated to International Cooperation and Development programs within FAS as of FY 1994.
Grain Inspection, Packers, and Stockyards Administration	The Federal Grain Inspection Service was abolished on 20 October 1994, and the Grain Inspection, Packers, and Stockyards Administration (GIPSA) assumed its functions.
	GIPSA was reorganized and absorbed in the Agricultural Marketing Service in September 2017; GIPSA funding for FY 2017 declined because GIPSA R&D projects were closed out. GIPSA was eliminated as a standalone agency as of 14 November 2017, so no funding was reported for FY 2018.
Human Nutrition Information Service	The Human Nutrition Information Service merged with the Agricultural Research Service on 20 February 1994.
National Institute of Food and Agriculture	The National Institute of Food and Agriculture was created through the Food, Conservation, and Energy Act of 2008 and replaced the former Cooperative State Research, Education, and Extension Service.
Natural Resources Conservation Service	The Soil Conservation Service became part of the Department of Agriculture in 1990; it was renamed the Natural Resources Conservation Service (NRCS) in 1994. NRCS started reporting for volume 71 (FYs 2021–22) because the Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (Federal S&E Support Survey) was integrated as a module in volume 71 of the Survey of Federal Funds for R&D. NRCS continued to have no R&D data to report but did have S&E obligations to report in the module of the Federal S&E Support Survey module.
Office of International Cooperation and Development	The Office of International Cooperation and Development became part of the Foreign Agricultural Service (FAS) in June 1994. Data reported for FAS include funds appropriated to International Cooperation and Development programs within FAS as of FY 1994.
Office of Transportation	Data reported for the Agricultural Marketing Service include funds for the Office of Transportation beginning in 1989.
Rural Business-Cooperative Service	This agency's name changed from the Rural Business and Cooperative Development Service to the Rural Business-Cooperative Service on 30 January 1996.

TABLE A-2

Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71

(Notes)

Department	Explanatory information
Department of Commerce	
Maritime Administration	In 1981, the Maritime Administration moved from the Department of Commerce to the Department of Transportation.
	The Maritime Administration resumed reporting for volume 71 (FYs 2021–22). It had last reported for volume 30 (FYs 1980–82).
National Fire Prevention and Control Administration	Functions for the National Fire Prevention and Control Administration transferred from the Department of Commerce to the Federal Emergency Management Agency as of 1 April 1979.
Department of Defense	Since volume 40, the Department of Defense (DOD) has reported research obligations and development obligations separately. Tables reporting obligations for research, by state and performer, and obligations for development, by state and performer, were specifically created for DOD. Circumstances specific to DOD are (1) DOD funds the preponderance of federal development and (2) DOD development funded at institutions of higher education is typically performed at university-affiliated nonacademic laboratories, which are separate from universities' academic departments, where university research is typically performed.
	During the volume 44 survey cycle, the Director for Defense Research and Engineering (DDR&E) at DOD requested that the National Science Foundation (NSF) further clarify the true character of DOD's R&D program, particularly as it compares with other federal agencies, by adding more detail to development obligations reported by DOD respondents. Specifically, DOD requested that NSF allow DOD agencies to report development obligations in two separate categories: advanced technology development and major systems development. An excerpt from a letter written by Robert V. Tuohy, Chief, Program Analysis and Integration at DDR&E, to John E. Jankowski, Program Director, Research and Development Statistics Program, Division of Science Resources Statistics, NSF, explains the reasoning behind the DDR&E request: "The DOD's R&D program is divided into two major pieces, Science and Technology (S&T) and Major Systems Development. The other federal agencies' entire R&D programs are equivalent in nature to DOD's S&T program, with the exception of the Department of Energy and possibly the National Aeronautics and Space Administration. Comparing those other agency programs to DOD's program, including the development of weapons systems such as F-22 Fighter and the New Attack Submarine, is misleading."
	Not all DOD agencies with development obligations are able to categorize them according to the advanced technology and major systems development breakdown. Therefore, in the volume 46 (FYs 1996–98) survey cycle, total DOD development does not equal the sum of total DOD advanced technology development and total DOD major systems development.
	Beginning with volume 54 (FYs 2004–06), DOD now requires its reporting agencies to adhere to DOD control numbers when providing data to the Survey of Federal Funds for Research and Development.
	Starting with volume 61 (FYs 2011–13), DOD subagencies other than the Defense Advanced Research Projects Agency were reported as an aggregate total under other defense agencies to enable complete reporting of DOD R&D (both unclassified and classified). Consequently, DOD began reporting additional classified R&D not previously reported by its subagencies.
	Starting with volume 62 (FYs 2012–14), an "undistributed" category was added to the geographic location tables for DOD obligations for which the location of performance is not reported. It includes DOD obligations for industry R&D that were included in individual state totals prior to FY 2012 and DOD obligations for other performers that were not reported prior to FY 2011. This change was applied retroactively to FY 2011 data.
	Beginning with FY 2016, the totals reported for development outlays represent a refinement to this category by more narrowly defining it to be "experimental development." Most notably, totals for development do not include the DOD Budget Activity 7 (Operational Systems Development) outlays. Those funds, previously included in DOD's development outlay totals, support the development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year. Therefore, the data are not directly comparable with totals reported in previous years.
	As of volume 66 (FYs 2016–17), the definition of major systems development was changed to represent DOD Budget Activities 4 through 6 instead of Budget Activities 4 through 7.
	Funding for DOD's Operational Systems Development (Budget Activity 7) was first reported as a separate category for volume 66 (FYs 2016–17).
Defense Agencies	
Chemical and Biological Defense	Before FY 2000, R&D of Chemical and Biological Defense was reported with the Washington Headquarters Services.
	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Defense Advanced Research Projects Agency	This agency's name changed to the Advanced Research Projects Agency on 13 July 1993, and it was changed back to Defense Advanced Research Projects Agency in February 1996.

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Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71

(Notes)

Department	Explanatory information
Defense Business Transformation Agency	The Defense Business Transformation Agency was established on 7 October 2005.
	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Defense Contract Management Agency	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Defense Health Agency	Beginning with volume 70 (FYs 2020–21), Defense Health Agency began reporting as a separate agency under the Department of Defense.
Defense Information Systems Agency	Data reported for the Defense Information Systems Agency included data for the Defense Technical Information Center (DTIC) until FY 2006, when DTIC became a separate field activity.
	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Defense Logistics Agency	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Defense Security Cooperation Agency	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Defense Special Weapons Agency	The Defense Nuclear Agency was renamed the Defense Special Weapons Agency (DSWA) in 1996 as a result of a new charter and an expanded mission.
	The Defense Threat Reduction Agency (DTRA) was established on 1 October 1998. DTRA was formed through a merger of elements of the Office of the Secretary of Defense staff, the Defense Technology Security Administration, DSWA, and the On-Site Inspection Agency.
Defense Technical Information Center	In FY 2006, the Defense Technical Information Center became a separate field activity; in prior years, these data were reported as part of the Defense Information Systems Agency.
	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Defense Threat Reduction Agency	The Defense Threat Reduction Agency (DTRA) was established on 1 October 1998. DTRA was formed through a merger of elements of the Office of the Secretary of Defense staff, the Defense Technology Security Administration, the Defense Special Weapons Agency, and the On-Site Inspection Agency.
	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Joint Staff	The name of this agency changed from Joint Chiefs of Staff to Joint Staff in FY 1986.
	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Missile Defense Agency	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
National Imagery and Mapping Agency	The Defense Mapping Agency merged with the newly created National Imagery and Mapping Agency on 1 October 1996.
Office of the Secretary of Defense	In FY 2006, the Washington Headquarters Service was renamed the Office of the Secretary of Defense (OSD).
	Beginning with volume 61 (FYs 2011–13), excepting the Defense Advanced Research Projects Agency, OSD began reporting for the agencies that had been presented under Department of Defense agencies and activities and Operational Test and Evaluation, Director. These are now reported under Other defense agencies.
Other defense agencies	Beginning in FY 2011, Other defense agencies displays aggregated data of Department of Defense subagencies engaged in classified R&D projects.
Special Operations Command	Beginning with volume 61 (FYs 2011–13), agency totals are included in the category Other defense agencies.
Uniformed Services University of the Health Sciences	Data for the Uniformed Services University of the Health Sciences are included with the Washington Headquarters Services' submission as of volume 45 (FYs 1995–97).
Washington Headquarters Services	Data for the Uniformed Services University of the Health Sciences are included with the Washington Headquarters Services' (WHS's) submission as of volume 45 (FYs 1995–97).
	Public Law No. 103-160, Section 1703, made the Office of the Secretary of Defense (OSD) responsible for the Chemical and Biological Defense Program (CBDP). Section 1701 required the creation of CBDP research, development, test, and evaluation program elements be established in the President's Budget for FYs 1996–97. Data for these new program elements are included in the Survey of Federal Funds for Research and Development as of volume 46 (FYs 1996–98). Since FY 2000, R&D of Chemical and Biological Defense has been reported separately from the WHS.
	WHS's basic research data were revised in volume 47 (FYs 1997–99) to reflect changes that were not incorporated in volume 46 (FYs 1996–98).

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Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71

(Notes)

Department	Explanatory information
	In FY 2006, WHS was renamed OSD.
Defense Civil Preparedness Agency	Functions for the Defense Civil Preparedness Agency transferred from the Department of Defense to the Federal Emergency Management Agency on 20 July 1979.
Department of the Air Force	Beginning in FY 2000, Air Force did not report Budget Activity 6.7 Operational Systems Development data because the agency misunderstood the reporting requirements. During the volume 57 data collection cycle, Air Force edited prior-year data for FYs 2000–07 to include Budget Activity 6.7 Operational Systems Development data. These data revisions were derived from FY 2007 distribution percentages that were then applied backward to revise data for FYs 2000–06.
	Beginning in FY 2011, the Air Force stopped reporting classified R&D projects by location and started reporting them as undistributed.
	Space Command stopped reporting as part of the Department of the Air Force after volume 69 (FYs 2019–20); it was replaced by the Space Force, which is now an independent service within the Department of Defense.
Department of the Army	
Civil Functions	The Department of the Army (DA), Civil Functions (Corps of Engineers), development activities are appropriated by the Energy and Water Development and Related Agencies Appropriations Act and therefore cannot be categorized according to the advanced technology and major systems development breakdown. For accounting purposes, the funds are shown in the advanced technology total for DA.
Operational Test and Evaluation, Director	On 7 June 1999, the Secretary of Defense approved the disestablishment of the Office of the Director, Test, Systems Engineering and Evaluation. As a result of the restructure, the Director, Operational Test and Evaluation, assumed management responsibility for the Central Test and Evaluation Investment Program and the Test and Evaluation Program, excluding the Joint Test and Evaluation Program.
Other defense agencies	Beginning with volume 61 (FYs 2011–13), Other defense agencies displays aggregated data of Department of Defense (DOD) subagencies engaged in classified R&D projects. DOD does not report the location of performance for these projects; rather they report these obligations as undistributed.
Space Force	Founded 20 December 2019 as an independent service, the Space Force began reporting for volume 70 (FYs 2020–21).
Test and Evaluation, Deputy under Secretary of Defense	On 7 June 1999, the Secretary of Defense approved the disestablishment of the Office of the Director, Test, Systems Engineering and Evaluation. As a result of the restructure, the Director, Operational Test and Evaluation, assumed management responsibility for the Central Test and Evaluation Investment Program and the Test and Evaluation Program, excluding the Joint Test and Evaluation Program.
	Beginning with volume 61 (FYs 2011–13), agency totals are included in Other defense agencies.
Department of Education	Several programs that serve older adults and people with disabilities were transferred from other agencies to the Department of Health and Human Services' Administration for Community Living, including a number of programs from the Department of Education due to the 2014 Workforce Innovation and Opportunities Act.
Department of Energy	In January 1996, the Bureau of Mines was abolished, and some of its activities were transferred to the Bureau of Land Management, the Geological Survey, and the Department of Energy.
Advanced Research Projects Agency-Energy	In FY 2007, the president signed the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act (America COMPETES), which authorized the creation of the Advanced Research Projects Agency-Energy. In FY 2009, Congress appropriated $400 million to fund the agency's first projects.
Bonneville Power Administration	In FY 1982, the Bonneville Power Administration (BPA) became part of the Department of Energy.
	BPA ceased to be a respondent as of the volume 68 (FYs 2018–19) data collection cycle.
Energy Delivery and Energy Reliability	In March 2003, the Department of Energy (DOE) created the Office of Electric Transmission and Distribution and the Office of Energy Assurance. In 2005, both offices and elements of the DOE Office of Fossil Energy were merged into the new Office of Electricity Delivery and Energy Reliability.
Office of Cybersecurity, Energy Security, and Emergency Response	In March 2018, the Department of Energy (DOE) created the Office of Cybersecurity, Energy Security, and Emergency Response. Data were first collected on vol. 68 with estimated R&D obligations for FY 2019.
Department of Health and Human Services	
Administration on Aging	In FY 1991, Human Development Services was replaced by the Administration for Children and Families (ACF) and by the Administration on Aging (AOA). Since FY 1992, data shown for ACF have been separate from obligations for AOA.
	In FY 2012, AOA was transferred to the Administration for Community Living.

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Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71

(Notes)

Department	Explanatory information
Administration for Children and Families	Obligations reported for the Administration for Children and Families (ACF) may be incomplete for FY 1992 due to unavailability of data.
	In FY 1991, Human Development Services was replaced by ACF and by the Administration on Aging (AOA). Since FY 1992, data shown for ACF have been separate from obligations for AOA.
Administration for Community Living	The Administration for Community Living (ACL) began reporting in FY 2015, replacing the Administration on Aging, which was transferred to ACL when ACL was established on 18 April 2012. Several programs that serve older adults and people with disabilities were transferred from other agencies to ACL, including a number of programs from the Department of Education due to the 2014 Workforce Innovation and Opportunities Act.
	Prior to FY 2012, data reported for the ACL was for the Administration on Aging.
Agency for Healthcare Research and Quality	In FY 1991, the Agency for Health Care Policy and Research (AHCPR) became separate from the Office of the Assistant Secretary for Health.
	AHCPR was renamed the Agency for Healthcare Research and Quality as stated in the Healthcare Research and Quality Act of 1999, signed by the president on 6 December 1999.
Agency for Toxic Substances and Disease Registry	Prior to FY 2000, data reported for the Environmental Protection Agency include R&D data for the Agency for Toxic Substances and Disease Registry.
Alcohol, Drug Abuse, and Mental Health Administration	Due to reorganization within the Department of Health and Human Services, the Alcohol, Drug Abuse, and Mental Health Administration ceased to exist as of October 1992, and its R&D functions are reported with National Institutes of Health data beginning with FY 1992. However, research support for some fields (such as psychology) in FY 1992 seems to be underreported.
Biomedical Advanced Research and Development Authority	The Biomedical Advanced Research and Development Authority began reporting for volume 69 (FYs 2019–20). It could not submit any geographical data for FY 2019, so its data were reported as undistributed on the state tables.
Centers for Medicare and Medicaid Services	The Health Care Financing Administration became the Centers for Medicare and Medicaid Services (CMS) as of 1 July 2001.
	Starting with volume 68 (FYs 2018–19), CMS funding was reported by the CMS Office of Financial Management at an agency-wide level instead of by the CMS Center for Medicare and Medicaid Innovation and its R&D group, the Office of Research, Development, and Information, which used to report at a component level.
Health Care Financing Administration	The Health Care Financing Administration became the Centers for Medicare and Medicaid Services as of 1 July 2001.
Human Development Services	In FY 1991, Human Development Services was replaced by the Administration for Children and Families (ACF) and by the Administration on Aging (AOA). Since FY 1992, data shown for ACF have been separate from obligations for AOA.
National Institutes of Health	Due to reorganization within the Department of Health and Human Services, the Alcohol, Drug Abuse, and Mental Health Administration ceased to exist as of October 1992, and its R&D functions have been reported with National Institutes of Health (NIH) data since FY 1992. However, research support for some fields (such as psychology) in FY 1992 seems to be underreported.
	In FY 2000, NIH reclassified as research the activities that it had previously classified as development; NIH data for FY 2000 forward reflect this change. For more information on the classification changes at the National Aeronautics and Space Administration and NIH, refer to Classification Revisions Reduce Reported Federal Development Obligations (InfoBrief NSF 02-309), February 2002, available at https://www.nsf.gov/statistics/nsf02309/.
	NIH revised its financial database; beginning with FY 2004, NIH records no longer contain information on the field of science and engineering. Data for FY 2004 and later years are not directly comparable with data for FY 2003 and earlier years.
Office of the Assistant Secretary for Health	In FY 1991, the Agency for Health Care Policy and Research became separate from the Office of the Assistant Secretary for Health (ASH).
	ASH merged with the Office of the Secretary of Health and Human Services (OS) as of FY 1996. The merger created a new role for the Assistant Secretary for Health who became head of the Office of Public Health and Science, a new division within OS.
Office of the Secretary of Health and Human Services	The Office of the Assistant Secretary for Health merged with the Office of the Secretary of Health and Human Services (OS) as of FY 1996. The merger created a new role for the Assistant Secretary for Health who became head of the Office of Public Health and Science, a new division within OS.

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Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71

(Notes)

Department	Explanatory information
Office of Public Health and Science	The Office of the Assistant Secretary for Health merged with the Office of the Secretary of Health and Human Services (OS) as of FY 1996. The merger created a new role for the Assistant Secretary for Health who became head of the Office of Public Health and Science, a new division within OS.
Social Security Administration	Effective 31 March 1995, the Social Security Administration became an independent agency; it is no longer part of the Department of Health and Human Services.
Substance Abuse and Mental Health Services Administration	In FY 2003, the Substance Abuse and Mental Health Services Administration (SAMHSA) reclassified some of its funding categories as non-R&D that were considered R&D in prior years.
	Data for FYs 2003–06 from SAMHSA are estimates based on SAMHSA's obligations by program activity budget and previously reported funding for development.
Department of Homeland Security	On 25 November 2002, the president signed the Homeland Security Act of 2002, establishing the Department of Homeland Security (DHS). DHS includes the R&D activities previously reported by the Coast Guard, the Federal Emergency Management Agency, the Science and Technology Directorate, the Secret Service, and the Transportation Security Administration.
Countering Weapons of Mass Destruction Office	The Countering Weapons of Mass Destruction (CWMD) Office was established on 7 December 2017. CWMD consolidated primarily the Domestic Nuclear Detection Office (DNDO) and a majority of the Office of Health Affairs, as well as other DHS elements. Prior to FY 2018, data reported for the CWMD would have been under the DNDO.
Domestic Nuclear Detection Office	The Domestic Nuclear Detection Office (DNDO) began reporting for FY 2014. It was consolidated under the Countering Weapons of Mass Destruction (CWMD) Office in December 2017. All of its funding is reported under the CWMD.
Science and Technology Directorate	The Transportation Security Laboratory (TSL) initially existed under the Transportation Security Administration (TSA) of the Department of Homeland Security (DHS), but in the 2005 DHS reorganization, TSL was moved from TSA to the Science and Technology Directorate.
	During the volume 67 (FYs 2017–18) data collection, the Science and Technology Directorate revised its FY 2016 data.
Secret Service	The Secret Service, which did not report data between FY 2009 and FY 2017, resumed reporting for volume 68 (FYs 2018–19).
Transportation Security Administration	The Transportation Security Administration, which did not report data between FY 2010 and FY 2017, resumed reporting for volume 68 (FYs 2018–19).
Department of the Interior	
Bonneville Power Administration	In FY 1982, the Bonneville Power Administration became part of the Department of Energy.
Bureau of Land Management	In January 1996, the Bureau of Mines was abolished, and some of its activities were transferred to the Bureau of Land Management (BLM), the Geological Survey, and the Department of Energy.
	BLM, which did not report data between FY 1999 and FY 2014, resumed reporting for volume 65 (FYs 2015–17).
Bureau of Mines	In January 1996, the Bureau of Mines was abolished, and some of its activities were transferred to the Bureau of Land Management, the Geological Survey, and the Department of Energy.
Bureau of Ocean Energy Management	The Bureau of Ocean Energy Management, Regulation and Enforcement was split into the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement in FY 2012.
Bureau of Ocean Energy Management, Regulation, and Enforcement	On 19 May 2010, the Minerals Management Service was renamed the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE).
	BOEMRE was split into the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement in FY 2012.
Bureau of Safety and Environmental Enforcement	The Bureau of Ocean Energy Management, Regulation and Enforcement was split into the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement in FY 2012.
Fish and Wildlife Service	The name of the National Biological Survey changed to the National Biological Service (NBS) on 5 January 1995. Since FY 1994, the NBS has performed all biological research activities formerly funded by the Fish and Wildlife Service (FWS) and the National Park Service.
	FWS, which did not report data between FY 1999 and FY 2014, resumed reporting for volume 65 (FYs 2015–17).
Geological Survey	The Office of Water Research and Technology has been combined with the Geological Survey (USGS) since 1985.
	Funding for the National Biological Service (NBS) comes from the USGS congressional appropriation. Since FY 1996, data for NBS have been included with the USGS submission.

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Notes associated with agencies included in the Survey of Federal Funds for Research and Development: Volumes 29–71

(Notes)

Department	Explanatory information
	In January 1996, the Bureau of Mines was abolished, and some of its activities were transferred to the Bureau of Land Management, the USGS, and the Department of Energy.
Minerals Management Service	On 19 May 2010, the Minerals Management Service was renamed the Bureau of Ocean Energy Management, Regulation, and Enforcement.
National Biological Service	The name of the National Biological Survey changed to the National Biological Service (NBS) on 5 January 1995. Since FY 1994, NBS has performed all biological research activities formerly funded by the Fish and Wildlife Service and the National Park Service.
	Funding for NBS comes from the Geological Survey's congressional appropriation. Since FY 1996, data for the NBS have been included with the Geological Survey submission.
National Park Service	The name of the National Biological Survey changed to the National Biological Service (NBS) on 5 January 1995. Since FY 1994, NBS has performed all biological research activities formerly funded by the Fish and Wildlife Service and the National Park Service (NPS).
	Obligations for FYs 2003–08 are for the NPS natural resources program; data for the cultural resources program were not available.
Office of the Secretary of the Interior	The Department of the Interior's Office of the Secretary has not funded any R&D activities since FY 1995.
Office of Water Research and Technology	The Office of Water Research and Technology has been combined with the Geological Survey since 1985.
Department of Justice	
Drug Enforcement Administration	Large differences exist between the Drug Enforcement Administration's R&D funding amounts for FYs 1996 and 1997 due to changes in the agency's R&D programs.
Immigration and Naturalization Service	On 1 March 2003, service and benefit functions of Immigration and Naturalization Service were transferred to the Department of Homeland Security as the Citizenship and Immigration Services.
Department of Labor	
Labor-Management Relations and Cooperative Programs	In 1984, Labor-Management Relations and Cooperative Programs replaced the Labor-Management Services Administration.
Labor-Management Services Administration	In 1984, the Labor-Management Services Administration was replaced by the Labor-Management Relations and Cooperative Programs.
Department of State	The Agency for International Development (AID) transferred from the Department of State (DOS) to the International Development Cooperation Agency on 1 October 1979.
	Increases in outlays and obligations reported by DOS during the volume 44 (FYs 1994–96) survey cycle reflect reporting of moneys received through interagency agreements with AID. DOS transfers these outlays and obligations to other R&D performers.
	Effective 1 April 1999, all functions and authorities of the Arms Control and Disarmament Agency were transferred to DOS.
	On 1 October 1999, the Information Agency was integrated into DOS.
	DOS data for FY 2014 were excluded due to their poor quality.
	As of volume 68 (FYs 2018–19), DOS added the Global Health Programs R&D funding.
Agency for International Development	The Agency for International Development (AID) transferred from the Department of State (DOS) to the International Development Cooperation Agency on 1 October 1979.
	Increases in outlays and obligations reported by DOS during the volume 44 (FYs 1994–96) survey cycle reflect reporting of moneys received through interagency agreements with AID. DOS transfers these outlays and obligations to other R&D performers.
Department of Transportation	The Department of Transportation (DOT) did not become operational until 1967. Prior to 1966, similar obligations appear under DOT's organizational predecessors: the Bureau of Public Roads, the Coast Guard (formerly part of the Department of the Treasury and transferred to the Department of Homeland Security in 2003), the Federal Aviation Agency, the Office of Transportation Research and Development, and other components of the Department of Commerce vested with transportation functions.
Coast Guard	On 25 November 2002, the president signed the Homeland Security Act of 2002, establishing the Department of Homeland Security (DHS). DHS includes the R&D activities previously reported by the Coast Guard.

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(Notes)

Department	Explanatory information
Federal Highway Administration	The Federal Motor Carrier Safety Administration, formerly a part of the Federal Highway Administration, was established within the Department of Transportation on 1 January 2000, as stated in the Motor Carrier Safety Improvement Act of 1999 (Public Law No. 106-159, 113 Stat. 1748 [9 December 1999]).
Federal Motor Carrier Safety Administration	The Federal Motor Carrier Safety Administration, formerly a part of the Federal Highway Administration, was established within the Department of Transportation on 1 January 2000, as stated in the Motor Carrier Safety Improvement Act of 1999 (Public Law No. 106-159, 113 Stat. 1748 [9 December 1999]).
Federal Transit Administration	The name of this agency changed from the Urban Mass Transit Administration to the Federal Transit Administration on 18 December 1991.
Maritime Administration	In 1981, the Maritime Administration moved from the Department of Commerce to the Department of Transportation.
Research and Innovative Technology Administration	In January 2014, all Research and Innovative Technology Administration programs were transferred into the Office of the Assistant Secretary for Research and Technology in the Office of the Secretary of Transportation.
Department of the Treasury	
Customs Service	Beginning in FY 2003, the Customs Service Research and Development program was transferred to other subagencies of the Department of Homeland Security.
Internal Revenue Service	Due to the reorganization of the Internal Revenue Service (IRS) and subsequent unavailability of data, FY 1992 figures were taken from estimates made in the volume 41 (FYs 1991–93) submission.
	Large changes in obligations reported by IRS for volume 44 (FYs 1994–96) are due to shifts in research funding.
	The IRS performed a detailed evaluation and assessment of its programs and determined that none of its functions can be defined as an R&D activity as defined in Office of Management and Budget Circular A-11. Despite not having any R&D obligations, the IRS still sponsors a Federally Funded Research and Development Center, the Center for Enterprise Modernization.
Office of Thrift Supervision	In 1989, the Federal Home Loan Bank Board was replaced by the Office of Thrift Supervision (OTS). In 1990, OTS became part of the Department of the Treasury.
	As of 21 July 2011, OTS merged with the Office of the Comptroller of the Currency; it ceased to exist on 19 October 2011.
Secret Service	On 25 November 2002, the president signed the Homeland Security Act of 2002, establishing the Department of Homeland Security (DHS). DHS includes the R&D activities previously reported by the Secret Service.
Department of Veterans Affairs	During volume 68 (FYs 2018–19), the Department of Veterans Affairs added funds for the Medical Services Support to the existing R&D funding to fully report the total cost of intramural R&D. Although the Medical Services Support do not directly fund specific R&D activities, they do cover the additional expense of hosting intramural research programs that were not previously reported.
Other agencies	
Administrative Office of the U.S. Courts	The Administrative Office of the U.S. Courts began reporting as of volume 66 (FYs 2016–17).
Agency for Global Media	On 22 August 2018, as part of a modernization effort, the Broadcasting Board of Governors changed its name to the Agency for Global Media (AGM).
	AGM did not submit data from FY 2008 through FY 2018 but began reporting again for volume 69 (FYs 2019–20).
Agency for International Development	Increases in outlays and obligations reported by the Department of State (DOS) during the volume 44 (FYs 1994–96) survey cycle reflect reporting of moneys received through interagency agreements with the Agency for International Development (AID). DOS transfers these outlays and obligations to other R&D performers.
	AID's new integrated system for budget and accounting records used to report data for volume 48 (FYs 1998–2000) did not contain codes for determining either fields of science and engineering or performer data. The National Science Foundation estimated these data based on AID's Budget Authority (FYs 2000–02) and AID's Survey of Federal Funds for Research and Development submission to volume 44 (FYs 1994–96).
	AID transferred from DOS to the International Development Cooperation Agency on 1 October 1979.
Arms Control and Disarmament Agency	FY 1994 figures for the Arms Control and Disarmament Agency (ACDA) are based on the agency's volume 43 submission for FY 1993.
	Effective 1 April 1999, all functions and authorities of ACDA were transferred to the Department of State.
Broadcasting Board of Governors	The Broadcasting Board of Governors (BBG) became an independent federal entity on 1 October 1999, as mandated by the Foreign Affairs Reform and Restructuring Act (Public Law 105-277), signed by the president on 21 October 1998.
	On 22 August 2018, as part of a modernization effort, the BBG changed its name to the Agency for Global Media.
Consumer Product Safety Commission	The Consumer Product Safety Commission did not submit data from FY 2004 through FY 2011 but began reporting again for volume 62 (FYs 2012–14).

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(Notes)

Department	Explanatory information
Environmental Protection Agency	Before FY 2000, data reported for the Environmental Protection Agency (EPA) included R&D data for the Agency for Toxic Substances and Disease Registry.
	In FY 2010, the EPA was unable to report R&D or R&D plant by performer or by location. Percentage distributions calculated from EPA's data submission for FY 2009 were used to estimate its FY 2010 R&D by performer and its location.
Federal Emergency Management Agency	The Federal Emergency Management Agency (FEMA) was activated 1 April 1979, by Executive Order 12127. FEMA merged many of the separate disaster-related responsibilities, including the National Fire Prevention and Control Administration, whose 1978 funds are reported under FEMA.
	Functions for the Defense Civil Preparedness Agency transferred from the Department of Defense to FEMA on 20 July 1979.
	Functions for the National Fire Prevention and Control Administration transferred from the Department of Commerce to FEMA on 1 April 1979.
	Functions were transferred to the Department of Homeland Security (DHS) by act of 25 Nov. 2002 (116 Stat. 2213) and absorbed into DHS effective 1 March 2003.
General Services Administration	Since 1985, the National Archives and Records Administration has been separate from the General Services Administration.
Information Agency	Data reported for the Information Agency include funds for the former International Communication Agency for FYs 1977–81.
	On 1 October 1999, the Information Agency was integrated into the Department of State.
International Development Cooperation Agency	The Agency for International Development transferred from the Department of State to the International Development Cooperation Agency on 1 October 1979.
International Trade Commission	In 2000, the International Trade Commission stopped classifying any of its activities as R&D.
National Aeronautics and Space Administration	During the volume 45 (FYs 1995–97) survey cycle, the National Aeronautics and Space Administration (NASA) made a statistical adjustment to the 1994 and 1995 field of science and engineering values to diminish a computational error introduced by its software.
	In FY 2000, NASA reclassified the International Space Station (ISS) as a physical asset, reclassified ISS Research as equipment, and transferred funding for the program from R&D to R&D plant.
	In FYs 2004–06, NASA implemented a full-cost budget approach, which includes all of the direct and indirect costs for procurement, personnel, travel, and other infrastructure-related expenses relative to a particular program and project. NASA’s data for FY 2004 and later years may not be directly comparable with its data for FY 2003 and earlier years.
	In FY 2006, NASA reclassified funding for the following items as operational costs: Space Operations, the Hubble Space Telescope, the Stratospheric Observatory for Infrared Astronomy, and the James Webb Space Telescope. This funding was previously reported as R&D plant.
	Between FYs 2006 and 2007, NASA's R&D obligations decreased by $1 billion. Of this amount, $850 million was accounted for by obligations for operational projects that NASA excluded in FY 2007 but reported in FY 2006. The remainder was from an overall decrease in obligations between FYs 2006 and 2007.
	In FY 2010, NASA resumed reporting ISS obligations as R&D plant.
	In FY 2012, NASA began reporting ISS obligations as research rather than R&D plant.
	In FY 2013, NASA revamped its reporting process so that the data for FY 2012 forward are not directly comparable with totals reported in previous years.
	NASA estimated that the revised Office of Management and Budget definition for "experimental development" reduced its reported R&D total by about $2.7 billion in FY 2017 and $2.9 billion in FY 2018 from what would have been reported under the previous definition prior to volume 66 (FYs 2016–17).
National Archives and Records Administration	Since 1985, the National Archives and Records Administration has been separate from the General Services Administration.
National Science Foundation	The National Science Foundation made changes to its field of science and engineering coding system, producing changes to some of the FY 1996 field of science data (such as mechanical engineering). These changes are reflected in the historical data tables.
Patient-Centered Outcomes Research Trust Fund	The Patient-Centered Outcomes Research Trust Fund (PCORTF) was established by Congress through the Patient Protection and Affordable Care Act of 2010, signed by the president on 23 March 2010. PCORTF began reporting for volume 67 (FYs 2017–18), but it also submitted data for FYs 2011–16.
Postal Service	The Postal Service, which did not report data between FY 1999 and FY 2016, resumed reporting for volume 67 (FYs 2017–18) and submitted data for FYs 2015–16.

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(Notes)

Department	Explanatory information
Office of Thrift Supervision	In 1989, the Federal Home Loan Bank Board was replaced by the Office of Thrift Supervision (OTS). In 1990, OTS became part of the Department of the Treasury.
Social Security Administration	Effective 31 March 1995, the Social Security Administration became an independent agency; it is no longer part of the Department of Health and Human Services.
Tennessee Valley Authority	During the volume 47 (FYs 1997–99) survey cycle, the Tennessee Valley Authority (TVA) made adjustments to its FY 1996 R&D values to correct reporting errors. TVA reported that in recent years, most of the funds TVA had reported had been those invested by TVA's Office of Power rather than congressionally appropriated funds. In addition, a substantial amount of congressionally appropriated funds earmarked for environmental compliance and site restoration was erroneously reported as R&D in past years. TVA determined that these funds did not meet the criteria for classification as R&D spending. Some trend shifts are related to these adjustments because TVA could only make revisions as far back as 1996.
	TVA, which did not report data between FY 1999 and FY 2016, resumed reporting for volume 67 (FYs 2017–18).

Note(s):
These notes include explanatory information on federal agencies' reports for volume 29 (FYs 1979–81) through volume 71 (FYs 2021–22) of the Survey of Federal Funds for Research and Development (Federal Funds for R&D). For volume 71, actual data were collected for FY 2021, and estimates were collected for FY 2022.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE A-3

Crosswalk for the Survey of Federal Funds for Research and Development: Volume 70 and volume 71

(Notes)

Volume 70 (field of science and engineering)	Change	Volume 71 (field of R&D)
Computer sciences and mathematics; Computer sciences	Separated	Computer and information sciences
Mathematics; Other computer sciences and mathematics	Separated	Mathematics and statistics
Environmental sciences	New wording	Geosciences, atmospheric sciences, and ocean sciences
Atmospheric sciences	New wording	Atmospheric science and meteorology
Geological sciences	New wording	Geological and earth sciences
Oceanography	New wording	Ocean sciences and marine sciences
Other environmental sciences	New wording	Other geosciences, atmospheric sciences, and ocean sciences
Life sciences		Life sciences
Agricultural sciences		Agricultural sciences
Biological sciences (excluding environmental) Environmental biology	Combined	Biological and biomedical sciences
Medical sciences	New wording	Health sciences
	New item	Natural resources and conservation
Other life sciences		Other life sciences
Physical sciences		Physical sciences
Astronomy	New wording	Astronomy and astrophysics
Chemistry		Chemistry
	New item	Materials science
Physics		Physics
Other physical sciences		Other physical sciences
Psychology		Psychology
Biological aspects		Biological aspects
Social aspects		Social aspects
Other psychological sciences		Other psychological sciences
Social sciences		Social sciences
Anthropology		Anthropology
Economics		Economics
Political science	New wording	Political science and government
Sociology	New wording	Sociology, demography, and population studies
Other social sciences		Other social sciences (Education research and Law moved to Other fields)
Engineering		Engineering
Aeronautical engineering; Astronautical engineering	Combined	Aerospace, aeronautical, and astronautical engineering
	New item	Bioengineering and biomedical engineering
Chemical engineering		Chemical engineering
Civil engineering		Civil engineering
Electrical engineering	New wording	Electrical, electronics, and communications engineering
	New item	Industrial and manufacturing engineering
Mechanical engineering		Mechanical engineering
Metallurgy and materials engineering	New wording	Metallurgical and materials engineering
Other engineering		Other engineering
-	New section	Other fields

TABLE A-3

Crosswalk for the Survey of Federal Funds for Research and Development: Volume 70 and volume 71

(Notes)

Volume 70 (field of science and engineering)	Change	Volume 71 (field of R&D)
-		Business management and business administration
-		Communication and communications technologies
-	Separated	Education research (separated from Other social sciences)
-		Humanities, including History
-	Separated	Law (separated from Other social sciences)
-		Social work
-		Visual and performing arts
-		All other fields

Note(s):
This table summarizes changes in the taxonomy from volume 70 (FYs 2020–21; fields of science and engineering) to volume 71 (FYs 2021–22; fields of research and development).

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

TABLE A-4

Survey of Federal Funds for Research and Development, by volume number and federal fiscal years surveyed

(Survey volume number, and fiscal year)

Volume number	Prior year actual	Current year estimate	Budget year projection
Volume 1	1951	1952	na
Volume 2	1952	1953	1954
Volume 3	1953	1954	1955
Volume 4	1954	1955	1956
Volume 5	1955	1956	1957
Volume 6	1956	1957	1958
Volume 7	1957	1958	1959
Volume 8	1958	1959	1960
Volume 9	1959	1960	1961
Volume 10	1960	1961	1962
Volume 11	1961	1962	1963
Volume 12	1962	1963	1964
Volume 13	1963	1964	1965
Volume 14	1964	1965	1966
Volume 15	1965	1966	1967
Volume 16	1966	1967	1968
Volume 17	1967	1968	1969
Volume 18	1968	1969	1970
Volume 19	1969	1970	1971
Volume 20	1970	1971	1972
Volume 21	1971	1972	1973
Volume 22	1972	1973	1974
Volume 23	1973	1974	1975
Volume 24	1974	1975	1976
Volume 25	1975	1976	1977
Volume 26	1976	1977	1978
Volume 27	1977	1978	1979
Volume 28	1978	1979	1980
Volume 29	1979	1980	1981
Volume 30	1980	1981	1982
Volume 31	1981	1982	1983
Volume 32	1982	1983	1984
Volume 33	1983	1984	1985
Volume 34	1984	1985	1986
Volume 35	1985	1986	1987
Volume 36	1986	1987	1988
Volume 37	1987	1988	1989
Volume 38	1988	1989	1990
Volume 39	1989	1990	1991
Volume 40	1990	1991	1992
Volume 41	1991	1992	1993
Volume 42	1992	1993	1994
Volume 43	1993	1994	1995
Volume 44	1994	1995	1996
Volume 45	1995	1996	1997
Volume 46	1996	1997	1998
Volume 47	1997	1998	1999
Volume 48	1998	1999	2000
Volume 49	1999	2000	2001
Volume 50	2000	2001	2002
Volume 51	2001	2002	2003

TABLE A-4

Survey of Federal Funds for Research and Development, by volume number and federal fiscal years surveyed

(Survey volume number, and fiscal year)

Volume number	Prior year actual	Current year estimate	Budget year projection
Volume 52	2002	2003	2004
Volume 53	2003	2004	2005
Volume 54	2004	2005	2006
Volume 55	2005	2006	2007
Volume 56	2006	2007	2008
Volume 57	2007	2008	2009
Volume 58	2008	2009	2010
Volume 59	2009	2010	2011
Volume 60	2010	2011	2012
Volume 61	2011	2012	2013
Volume 62	2012	2013	2014
Volume 63	2013	2014	2015
Volume 64	2014	2015	2016
Volume 65	2015	2016	2017
Volume 66	2016	2017	na
Volume 67	2017	2018	na
Volume 68	2018	2019	na
Volume 69	2019	2020	na
Volume 70	2020	2021	na
Volume 71	2021	2022	na

na = not applicable; data not collected.

Note(s):
Prior year actuals refer to the final obligations for the given fiscal year. Current year estimates refer to the fiscal year that was still open while the survey was conducted; for current year estimates, preliminary obligations have been made for the given fiscal year but final obligations are not yet available. Budget year projections refer to the fiscal year that has not yet started and thus no obligations have yet been made. The Congressional Budget and Impoundment Act of 1974 (Section 501 of P.L. 93-344, codified at 31 U.S.C. 1102) changed the federal fiscal year from 1 July to 30 June to the current cycle of 1 October to 30 September effective with FY 1977. A 3-month transition period from 1 July 1976 to 30 September 1976 was provided for under the Fiscal Year Transition Act (P.L. 94-274). The National Center for Science and Engineering Statistics discontinued the collection of the budget year projections for R&D effective with volume 66.

Source(s):
National Center for Science and Engineering Statistics, Survey of Federal Funds for Research and Development.

Acknowledgments and Suggested Citation

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