



InfoBrief

# R&D Spending at Federally Funded R&D Centers Surpassed \$31 Billion in FY 2024

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Federally funded research and development centers (FFRDCs) in the United States enable federal agencies to meet their research and development (R&D) needs through government-owned, contractor-operated research centers. These centers provide capabilities that cannot be met as effectively through other resources.<sup>1</sup> The nation’s 42 FFRDCs spent \$31.7 billion on R&D in FY 2024, an increase of \$2.4 billion from the total reported in FY 2023 (table 1). A portion of this increase is due to the revised reporting methodology undertaken by the Idaho National Laboratory that was adopted to align with reporting practices of other Department of Energy laboratories.<sup>2</sup> This revision contributed to a \$963.9 million increase in reported R&D at the laboratory between FY 2023 and FY 2024. Total FY 2024 R&D expenditures at Idaho National Laboratory were \$1.6 billion.

Table 1. R&D expenditures at federally funded research and development centers, by source of funds: FYs 2014–24

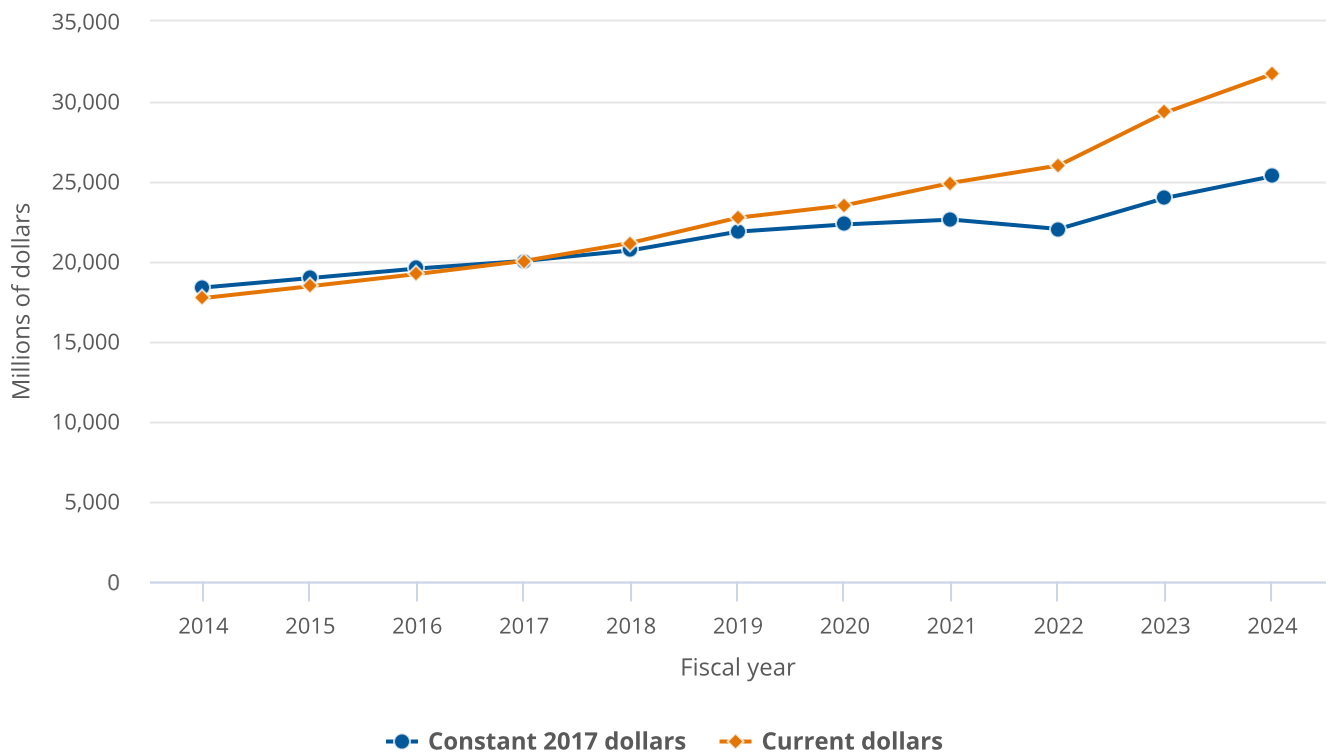
(Thousands of current dollars)

Fiscal year	All R&D expenditures	Federal government	State and local government	Business	Nonprofit organizations	All other sources
2014	17,718,556	17,331,396	28,337	220,735	37,182	100,906
2015	18,458,257	18,097,189	18,427	208,780	27,984	105,877
2016	19,219,702	18,855,593	21,556	192,239	40,195	110,119
2017	20,038,307	19,667,804	29,029	192,107	46,526	102,841
2018	21,171,529	20,770,388	43,458	197,975	43,630	116,078
2019	22,737,500	22,338,855	51,167	180,583	48,238	118,657
2020	23,514,241	23,133,501	43,995	172,866	47,056	116,823
2021	24,921,476	24,509,691	43,774	195,954	49,016	123,041
2022	26,006,971	25,605,479	38,591	207,483	49,169	106,249
2023	29,316,897	28,880,018	35,407	224,361	42,429	134,682
2024	31,724,628	31,246,822	34,691	239,738	52,739	150,638

Source(s):

National Center for Science and Engineering Statistics, FFRDC Research and Development Survey.

Total reported R&D expenditures at FFRDCs increased from \$17.7 billion in FY 2014 to \$31.7 billion in FY 2024. In constant dollars, total FFRDC R&D expenditures rose an average of 3.3% annually from FY 2014 to FY 2024, which includes the Idaho National Laboratory FY 2024 adjustment (figure 1). (All amounts and calculations are reported in current dollars unless otherwise noted.) These and the other statistics in this report come from the FY 2024 FFRDC Research and Development Survey, conducted by the National Center for Science and Engineering Statistics (NCSES) within the U.S. National Science Foundation.

**Figure 1. Total R&D expenditures at federally funded research and development centers: FYs 2014–24****Note(s):**

In FY 2024, Idaho National Laboratory (INL) revised reporting methodology to align with reporting practices of other Department of Energy laboratories. INL now categorizes all work as research and development, except for manufacturing and for security and protection projects.

**Source(s):**

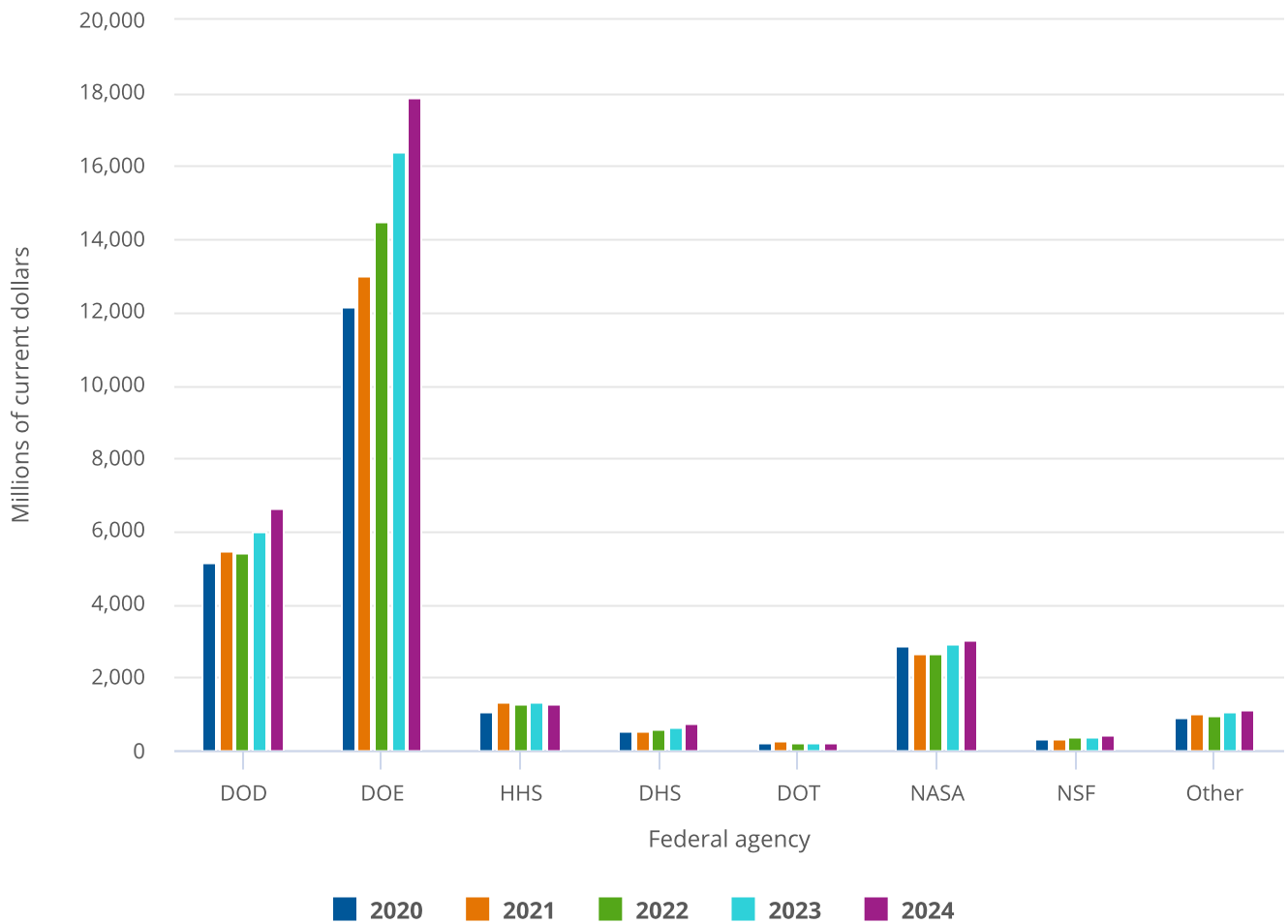
National Center for Science and Engineering Statistics, FFRDC Research and Development Survey.

## R&D by Funding Source

Federal funding sources accounted for 98.5% (\$31.2 billion) of FFRDC R&D expenditures in FY 2024. This level of support is typical for FFRDCs, which are privately operated R&D organizations that are exclusively or substantially financed by the federal government. Nonfederal sources funded the remaining R&D, which totaled \$477.8 million: businesses (\$239.7 million); nonprofit organizations (\$52.7 million); state and local governments (\$34.7 million); and all other sources (\$150.6 million), such as funds from foreign governments and foreign or U.S. universities.

## Federal Agency Sources of R&D Funding

Four agencies accounted for 92.0% of federally funded R&D expenditures at FFRDCs, which is typical: the Department of Energy (DOE), Department of Defense (DOD), National Aeronautics and Space Administration (NASA), and Department of Health and Human Services (HHS) (figure 2). DOE accounted for 57.3% (\$17.9 billion) of federally funded R&D spending; DOD, \$6.6 billion (21.1%); NASA, \$3.0 billion (9.6%); and HHS, which includes the National Institutes of Health, \$1.2 billion (4.0%). These four agencies were the only agencies with funding expenditures greater than \$1 billion in FY 2024. FFRDCs identified 26 other agencies as sources of federal funding in FY 2024 (table 2).

**Figure 2. Federally financed R&D expenditures at federally funded research and development centers, by federal agency: FYs 2020–24**

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

**Source(s):**

National Center for Science and Engineering Statistics, FFRDC Research and Development Survey.

**Table 2. Federally financed R&D expenditures at federally funded research and development centers, by federal agency: FY 2024**

(Thousands of current dollars)

Federal agency	All federal R&D expenditures
All federal agencies	31,246,822
Agency for International Development	9,255
Central Intelligence Agency	1,058
Consumer Product Safety Commission	207
Department of Agriculture	8,184
Department of Commerce	120,221
Department of Defense	6,608,294
Department of Energy	17,893,583
Department of Health and Human Services	1,247,315
Department of Homeland Security	732,365
Department of Justice	27,708
Department of Labor	428
Department of State	100,850

**Table 2. Federally financed R&D expenditures at federally funded research and development centers, by federal agency: FY 2024**

(Thousands of current dollars)

Federal agency	All federal R&D expenditures
Department of the Interior	17,263
Department of the Treasury	204,649
Department of Transportation	214,419
Department of Veterans Affairs	106,322
Environmental Protection Agency	7,720
Executive Office of the President	812
General Services Administration	4,296
National Aeronautics and Space Administration	3,003,252
National Credit Union Administration	247
National Science Foundation	407,416
Nuclear Regulatory Commission	34,601
Office of the Director of National Intelligence	10,724
Peace Corps	23
Tennessee Valley Authority	782
Other agencies not listed <sup>a</sup>	484,828

<sup>a</sup> Some funding sources were not identified for security reasons or because the original source was not known.**Source(s):**

National Center for Science and Engineering Statistics, FFRDC Research and Development Survey, FY 2024.

DOD funded R&D at more FFRDCs than any other federal agency (29 centers), followed by DOE (25 centers) and NASA (23 centers) (table 3). DOD-funded R&D surpassed \$1 billion at four FFRDCs in FY 2024, whereas DOE-funded R&D surpassed \$1 billion at seven FFRDCs. Three FFRDCs accounted for at least 70% of their sponsoring agency's total funding to FFRDCs in FY 2022:

- Jet Propulsion Laboratory accounted for 88.2% (\$2.6 billion) of NASA-funded expenditures at FFRDCs (\$3.0 billion).
- Center for Advanced Aviation System Development accounted for 76.4% (\$163.8 million) of the Department of Transportation's funding of FFRDC expenditures (\$214.4 million).
- Frederick National Laboratory for Cancer Research accounted for 71.6% (\$893.4 million) of HHS-funded FFRDC expenditures (\$1.2 billion).

**Table 3. Federally financed R&D expenditures at federally funded research and development centers, by federal agency and FFRDC: FY 2024**

(Thousands of current dollars)

FFRDC	All federal R&D expenditures	DOD	DOE	HHS	DHS	DOT	NASA	NSF	Other
All FFRDCs	31,246,822	6,608,294	17,893,583	1,247,315	732,365	214,419	3,003,252	407,416	1,140,178
Aerospace Federally Funded Research and Development Center	1,309,782	1,114,890	33,033	0	938	5,221	110,508	747	44,445
Ames Laboratory	38,720	808	37,693	0	0	0	0	219	0
Argonne National Laboratory	1,075,816	29,282	977,557	10,660	24,945	5,780	2,454	3	25,135
Arroyo Center	37,714	37,714	0	0	0	0	0	0	0
Brookhaven National Laboratory	747,451	3,451	715,644	4,235	435	0	7,349	0	16,337
Center for Advanced Aviation System Development	163,783	0	0	0	0	163,783	0	0	0
Center for Communications and Computing	85,168	85,168	0	0	0	0	0	0	0
Center for Enterprise Modernization	281,230	0	0	0	0	0	761	0	280,469

**Table 3. Federally financed R&D expenditures at federally funded research and development centers, by federal agency and FFRDC: FY 2024**

(Thousands of current dollars)

FFRDC	All federal R&D expenditures	DOD	DOE	HHS	DHS	DOT	NASA	NSF	Other
Center for Naval Analyses	100,011	100,011	0	0	0	0	0	0	0
Center for Nuclear Waste Regulatory Analyses	4,407	0	84	0	0	38	0	0	4,285
CMS Alliance to Modernize Healthcare	248,842	0	0	248,842	0	0	0	0	0
Fermi National Accelerator Laboratory	423,663	2,235	421,417	0	0	0	11	0	0
Frederick National Laboratory for Cancer Research	893,491	135	0	893,351	0	0	0	0	5
Green Bank Observatory	13,376	0	0	0	0	0	10	13,366	0
Homeland Security Operational Analysis Center	77,563	0	0	0	77,563	0	0	0	0
Homeland Security Systems Engineering and Development Institute	250,334	0	0	0	222,755	0	0	0	27,579
Idaho National Laboratory	1,594,132	234,520	1,152,611	0	94,831	2,638	86,887	0	22,645
Jet Propulsion Laboratory	2,647,837	0	0	0	0	0	2,647,837	0	0
Lawrence Berkeley National Laboratory	1,140,346	28,714	1,083,045	22,199	1,790	395	2,327	0	1,876
Lawrence Livermore National Laboratory	2,188,825	391,229	1,754,316	5,858	24,680	269	5,601	0	6,872
Lincoln Laboratory	1,360,550	1,268,415	11,405	7,511	18,396	22,082	18,889	493	13,359
Los Alamos National Laboratory	3,918,269	89,174	3,639,320	9,527	6,384	0	63,101	433	110,330
National Biodefense Analysis and Countermeasures Center	50,470	0	0	421	36,582	0	0	0	13,467
National Center for Atmospheric Research	176,986	3,599	1,830	0	0	4,893	12,530	142,280	11,854
National Cybersecurity Center of Excellence	23,557	0	0	0	0	0	0	0	23,557
National Defense Research Institute	71,499	65,894	0	0	0	0	0	0	5,605
National Radio Astronomy Observatory	104,211	989	0	0	0	0	238	102,984	0
National Renewable Energy Laboratory	847,755	18,578	796,388	0	4,582	1,307	854	0	26,046
National Security Engineering Center	1,431,657	1,236,051	398	0	0	0	0	0	195,208
National Solar Observatory	38,503	0	0	0	0	0	1,103	37,400	0
NSF's National Optical-Infrared Astronomy Research Laboratory (NSF's NOIRLab)	103,034	0	4,069	0	0	0	572	98,393	0
Oak Ridge National Laboratory	2,091,191	73,743	1,799,069	4,673	8,914	4,246	38,157	11	162,378
Pacific Northwest National Laboratory	1,585,695	214,805	1,208,579	27,134	100,985	354	1,780	344	31,714
Princeton Plasma Physics Laboratory	135,705	179	134,644	0	0	0	857	25	0
Project Air Force	47,810	47,810	0	0	0	0	0	0	0
Sandia National Laboratories	4,584,044	1,168,607	3,226,329	1,350	81,027	3,412	1,128	0	102,191
Savannah River National Laboratory	250,382	32,001	215,607	0	1,257	0	0	0	1,517
Science and Technology Policy Institute	11,952	43	92	1,406	0	0	0	9,356	1,055
SLAC National Accelerator Laboratory	527,402	17,512	498,037	9,732	297	0	132	1,362	330
Software Engineering Institute	147,400	127,948	525	412	12,492	1	166	0	5,856

**Table 3. Federally financed R&D expenditures at federally funded research and development centers, by federal agency and FFRDC: FY 2024**

(Thousands of current dollars)

FFRDC	All federal R&D expenditures	DOD	DOE	HHS	DHS	DOT	NASA	NSF	Other
Systems and Analyses Center	234,557	214,789	193	0	13,512	0	0	0	6,063
Thomas Jefferson National Accelerator Facility	181,702	0	181,698	4	0	0	0	0	0

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

**Source(s):**

National Center for Science and Engineering Statistics, FFRDC Research and Development Survey, FY 2024.

## Expenditure Trends at Specific FFRDCs

The majority of FFRDCs (33 centers) increased R&D spending in FY 2024 compared with FY 2023; nine FFRDCs reported lower R&D totals in FY 2024 (table 4). Twelve FFRDCs reported more than \$1 billion each (a combined \$25.3 billion) in R&D expenditures for FY 2024—the NASA-sponsored Jet Propulsion Laboratory; eight DOE-sponsored national laboratories specializing in energy and the environment, national security, and nuclear science (Argonne, Idaho, Lawrence Berkeley, Lawrence Livermore, Los Alamos, Oak Ridge, Pacific Northwest, and Sandia National Laboratories); the DOD-sponsored National Security Engineering Center, Lincoln Laboratory, and Aerospace FFRDC.<sup>3</sup> Sandia National Laboratories and Los Alamos National Laboratory were the two largest performers with \$4.6 billion and \$4.0 billion in total R&D, respectively. Between FY 2023 and FY 2024, Sandia National Laboratory increased its R&D expenditures by \$359.5 million. Five other FFRDCs each increased their R&D expenditures between \$112.0 million and \$190.0 million: Los Alamos National Laboratory (\$190.0 million), National Renewable Energy Laboratory (\$180.0 million), Pacific Northwest National Laboratory (\$159.6 million), Lawrence Livermore National Laboratory (\$119.1 million), and Lincoln Laboratory (\$112.0 million). As noted above, Idaho National Laboratory reported a significant increase in FY 2024 R&D expenditures (\$963.9 million) due in part to a change in reporting methodology.

**Table 4. R&D expenditures at federally funded research and development centers, by FFRDC: FYs 2020–24**

(Thousands of current dollars and percent change)

FFRDC	2020	2021	2022	2023	2024	% change 2023–24
All FFRDCs	23,514,241	24,921,476	26,006,971	29,316,897	31,724,628	7.6
Aerospace Federally Funded Research and Development Center	1,114,741	1,128,241	1,152,833	1,259,428	1,318,429	4.5
Ames Laboratory	32,844	34,214	38,520	40,638	39,563	-2.7
Argonne National Laboratory	859,658	856,568	962,973	1,234,635	1,106,000	-11.6
Arroyo Center	35,248	38,304	40,856	42,433	37,714	-12.5
Brookhaven National Laboratory	595,466	637,658	655,988	691,417	760,512	9.1
Center for Advanced Aviation System Development	180,634	230,484	189,490	186,163	186,463	0.2
Center for Communications and Computing	67,072	65,255	74,759	77,391	85,168	9.1
Center for Enterprise Modernization	190,408	263,661	235,436	258,155	281,401	8.3
Center for Naval Analyses	95,874	96,391	93,567	96,103	100,011	3.9
Center for Nuclear Waste Regulatory Analyses	6,762	5,630	4,323	4,405	5,031	12.4
CMS Alliance to Modernize Healthcare	228,162	348,269	286,693	281,709	248,842	-13.2
Fermi National Accelerator Laboratory	300,002	319,051	330,294	402,122	425,393	5.5
Frederick National Laboratory for Cancer Research	745,726	861,605	904,182	929,754	893,491	-4.1

**Table 4. R&D expenditures at federally funded research and development centers, by FFRDC: FYs 2020–24**

(Thousands of current dollars and percent change)

FFRDC	2020	2021	2022	2023	2024	% change 2023–24
Green Bank Observatory <sup>a</sup>	NA	8,629	10,752	12,326	13,582	9.2
Homeland Security Operational Analysis Center	44,736	34,888	52,984	66,264	77,563	14.6
Homeland Security Systems Engineering and Development Institute	136,874	183,588	183,261	217,908	255,498	14.7
Idaho National Laboratory <sup>b</sup>	494,094	516,691	637,579	653,100	1,617,015	59.6
Jet Propulsion Laboratory	2,638,412	2,388,355	2,417,556	2,671,305	2,647,837	-0.9
Judiciary Engineering and Modernization Center <sup>c</sup>	6,765	5,493	na	na	na	na
Lawrence Berkeley National Laboratory	916,082	966,972	1,031,716	1,190,504	1,206,851	1.4
Lawrence Livermore National Laboratory	1,558,071	1,613,673	1,659,808	2,110,938	2,230,018	5.3
Lincoln Laboratory	1,115,927	1,136,133	1,142,615	1,265,060	1,377,063	8.1
Los Alamos National Laboratory	2,722,375	2,974,164	3,294,559	3,768,323	3,958,302	4.8
National Biodefense Analysis and Countermeasures Center	42,330	44,968	45,870	41,321	50,470	18.1
National Center for Atmospheric Research	188,484	181,010	188,238	210,233	201,507	-4.3
National Cybersecurity Center of Excellence	23,557	33,671	27,955	23,010	23,557	2.3
National Defense Research Institute	64,134	66,170	61,097	67,157	71,499	6.1
National Radio Astronomy Observatory	100,078	94,202	92,476	102,863	105,183	2.2
National Renewable Energy Laboratory	511,585	559,151	603,356	718,852	898,498	20.0
National Security Engineering Center	1,143,701	1,468,298	1,286,520	1,370,949	1,442,573	5.0
National Solar Observatory	16,892	17,684	33,849	39,856	38,632	-3.2
NSF's National Optical-Infrared Astronomy Research Laboratory (NSF's NOIRLab)	72,686	75,251	81,505	94,257	104,871	10.1
Oak Ridge National Laboratory	1,632,684	1,760,578	1,803,543	2,019,259	2,113,418	4.5
Pacific Northwest National Laboratory	1,071,249	1,168,268	1,294,614	1,449,496	1,609,117	9.9
Princeton Plasma Physics Laboratory	107,662	115,505	120,347	131,042	140,958	7.0
Project Air Force	46,936	47,966	46,517	48,729	47,810	-1.9
Sandia National Laboratories	3,395,241	3,542,756	3,811,529	4,275,484	4,634,973	7.8
Savannah River National Laboratory	176,093	191,803	182,654	244,736	253,483	3.5
Science and Technology Policy Institute	9,256	9,784	10,593	9,977	11,952	16.5
SLAC National Accelerator Laboratory	382,264	396,780	432,078	483,193	539,118	10.4
Software Engineering Institute	141,291	120,443	129,316	130,141	147,400	11.7
Systems and Analyses Center	171,335	173,792	201,338	224,574	234,871	4.4
Thomas Jefferson National Accelerator Facility	130,850	139,479	152,832	171,687	182,991	6.2

na = not applicable.

FFRDC = federally funded research and development center; NSF = National Science Foundation.

<sup>a</sup> Prior to the FY 2021 collection, the National Center for Science and Engineering Statistics discovered that the Green Bank Observatory had split from the National Radio Astronomy Observatory on 1 October 2016; both retained FFRDC status. For FY 2020, R&D expenditures reported for the National Radio Astronomy Observatory include the expenditures for the Green Bank Observatory. The Green Bank Observatory began reporting separately on the FY 2021 survey.

<sup>b</sup> In FY 2024, Idaho National Laboratory (INL) revised reporting methodology to align with reporting practices of other Department of Energy laboratories. INL now categorizes all work as research and development, except for manufacturing and for security and protection projects.

<sup>c</sup> The Judiciary Modernization Engineering Center was decertified as an FFRDC on 31 January 2021.

**Source(s):**

National Center for Science and Engineering Statistics, FFRDC Research and Development Survey.

## Data Sources, Limitations, and Availability

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The statistics on FFRDC R&D expenditures presented in this report come from the FY 2024 FFRDC Research and Development Survey. This annual survey is completed by FFRDC administrators and collects data from FFRDCs on R&D expenditures by source of funds (federal government, state and local governments, businesses, nonprofit organizations, or other); federal agency source; type of R&D (basic research, applied research, or experimental development); type of cost (salaries, software, equipment, subcontracts, other direct costs, and indirect costs); R&D personnel headcounts and full-time equivalents; and total operating budget. This survey has been a census of the full population of FFRDCs since FY 2001. For a list of criteria used to define the set of FFRDCs, see the general guidelines of the Master Government List of FFRDCs at <https://nces.nsf.gov/resource/master-gov-lists-ffrdc/general-notes>.

The full set of data tables from this survey and more information on the survey methodology are available at <https://nces.nsf.gov/surveys/ffrdc-research-development/2024>.

NCSES has reviewed this product for unauthorized disclosure of confidential information and approved its release (NCSES-DRN25-030).

## Notes

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**1** The [Master Government List of FFRDCs](#) provides details on sponsoring agencies, administrator types, locations, and general and historical notes. See also Congressional Research Service. 2021. *Federally Funded Research and Development Centers (FFRDCs): Background and Issues for Congress*. Available at <https://www.congress.gov/crs-product/R44629>. Accessed 2025 June 27. And Cunningham JA and Link AN. 2022. The Returns to Publicly Funded R&D: A Study of U.S. Federally Funded Research and Development Centers. *Annals of Science and Technology Policy*: 6(3):228–314. Available at <http://dx.doi.org/10.1561/110.00000023>.

**2** Idaho National Laboratory discovered that its project tracking logic was outdated because it was based on a discontinued Department of Energy Office of Scientific and Technical Information report. Idaho National Laboratory reassessed its methodology to classify non-R&D projects and report the remaining projects as R&D. This brought its reporting in line with other Department of Energy laboratories.

**3** For FFRDC sponsoring agencies and locations, see table 6 in the [full set of data tables](#).

## Suggested Citation

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National Center for Science and Engineering Statistics (NCSES). 2025. *R&D Spending at Federally Funded R&D Centers Surpassed \$31 Billion in FY 2024*. NSF 25-351. Alexandria, VA: U.S. National Science Foundation. Available at <https://nces.nsf.gov/pubs/nsf25351>.

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