



Federally Funded R&D Centers Rebound to \$18.5 Billion in R&D Spending in FY 2015

by Ronda Britt¹

The nation's 42 federally funded research and development centers (FFRDCs) spent \$18.5 billion on R&D in FY 2015, a 4.2% increase from FY 2014. This increase returned the total to just above the level reported in FY 2012 following 2 years of declining or flat expenditures (table 1). In constant 2009 dollars, the total spent on R&D within FFRDCs rose 3.1% from FY 2014 to FY 2015 (figure 1). Since FY 2001, total R&D spending at FFRDCs has increased at an average annual rate of 2.6% in constant dollars. Following 5.0% average annual growth between FY 2001 and FY 2010, FFRDCs reported 4 straight years of constant dollar declines before the increase in FY 2015. These and the other statistics

in this report come from the FY 2015 FFRDC Research and Development Survey, conducted by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF).

R&D by Funding Source

FFRDCs are privately operated R&D organizations that are exclusively or substantially financed by the federal government.² Over 98% of FFRDCs' total FY 2015 R&D expenditures were funded by federal agency sources. The federally funded total grew 4.4%, to \$18.1 billion in FY 2015 (table 1). The remainder of the expenditures were funded by businesses (\$209 million), nonprofit

organizations (\$28 million), state and local government (\$18 million), and all other sources (\$106 million), such as foreign or U.S. universities. FFRDC R&D expenditures funded by businesses, nonprofits, and state and local governments all declined in FY 2015. State and local government-funded expenditures dropped 35.0%, nonprofit funded expenditures dropped 24.7%, and business funding declined 5.4% from FY 2014 to FY 2015. Nonprofit-funded expenditures declined for the third year in a row, falling 39.1% from a high of \$45.9 million in FY 2012. Collectively, however, nonfederal funding sources annually provide a very small share of the FFRDC R&D total.

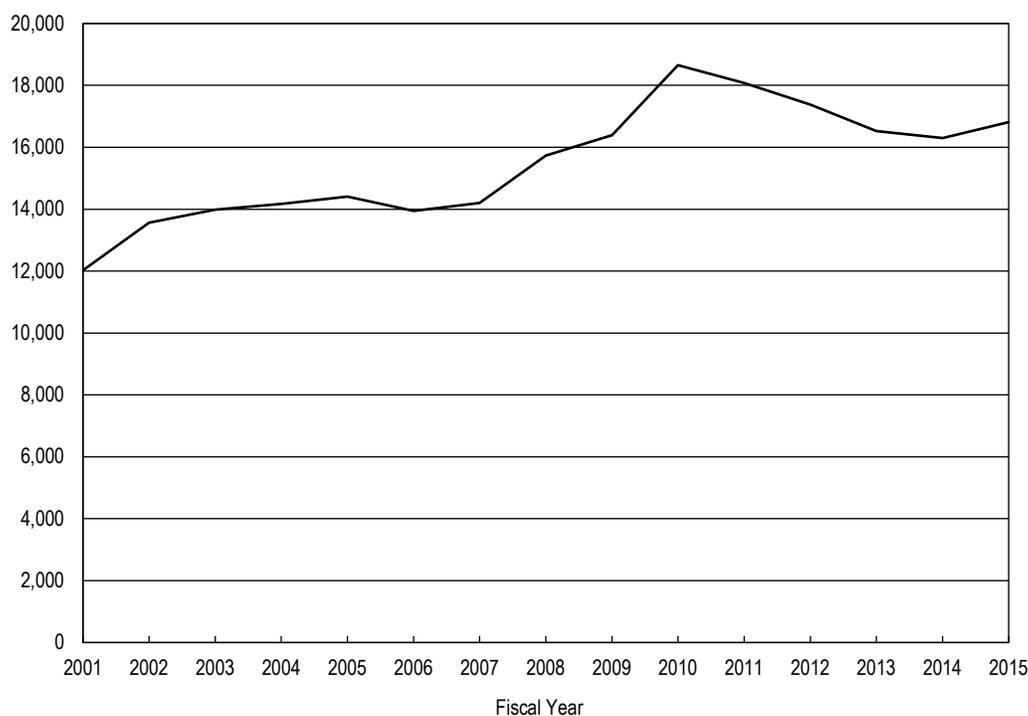
TABLE 1. R&D expenditures at federally funded research and development centers, by detailed source of funds: FYs 2010–15 (Dollars in thousands)

Fiscal year	All R&D expenditures	Federal government	State and local government	Business	Nonprofit organizations	All other sources
2010	18,880,609	18,453,552	52,871	168,561	23,665	181,960
2011	18,671,245	18,276,088	26,744	190,111	38,878	139,424
2012	18,280,943	17,875,012	39,428	184,434	45,926	136,143
2013	17,667,184	17,284,513	50,449	186,911	39,390	105,921
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

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

FIGURE 1. Total R&D expenditures at FFRDCs: FYs 2001–15

Constant 2009 \$millions



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

Type of R&D

Under one-quarter (22%) of the total R&D expenditures reported by FFRDCs in FY 2015 was spent on basic research (figure 2). The remainder was divided almost equally between applied research (39%) and development (38%). These proportions have been stable since FY 2013.

R&D-Performing Laboratories

Six FFRDCs were again responsible for over half of total R&D expenditures (reporting a combined \$9.8 billion in

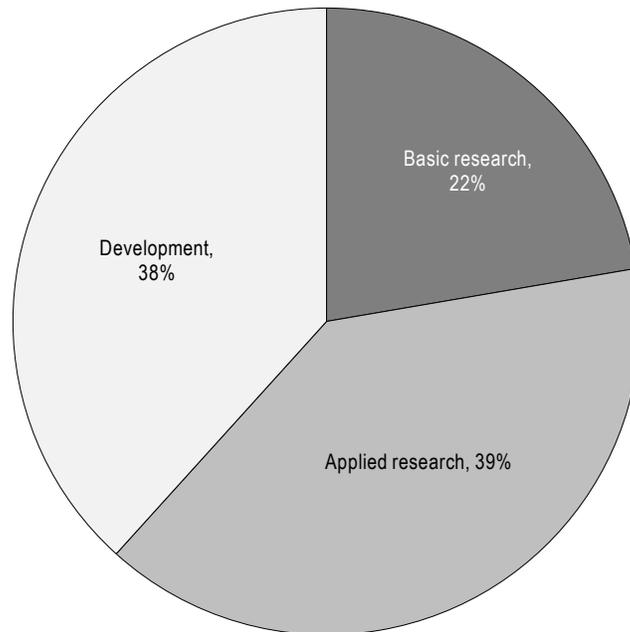
FY 2015)—the National Aeronautics and Space Administration sponsored Jet Propulsion Laboratory, and five Department of Energy sponsored National Laboratories specializing in energy and the environment, national security, and nuclear science: Sandia, Oak Ridge, Los Alamos, Lawrence Livermore, and Pacific Northwest National Lab (table 2). Lawrence Livermore National Laboratory showed the most growth of these six, increasing almost 9% in current dollars between 2014 and 2015 following a decline reported in FY 2014. Pacific North-

west National Laboratory reported a spending decline of 6.9% in FY 2015. Of the remaining FFRDCs, the CMS Alliance to Modernize Healthcare reported a second straight year of rapid growth since the organization's founding in 2012, increasing 138.6% to \$168 million in FY 2015.

Data Sources, Limitations, and Availability

The statistics on FFRDC R&D presented in this report come from the FY 2015 NSF FFRDC R&D Survey. This annual survey is completed by

FIGURE 2. R&D expenditures at federally funded research and development centers, by type of R&D: FY 2015



NOTE: Detail do not sum to 100% because of rounding.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, FFRDC Research and Development Survey, 2015.

FFRDC administrators and collects data from FFRDCs on R&D expenditures by source of funds (federal, state and local, business, nonprofit organizations, or other), type of R&D (basic research, applied research, or development), and type of cost (salaries, software, equipment, subcontracts, or indirect costs). This survey has been a census of the full population of FFRDCs since FY 2001. Reported totals for FY 2010–13 increased by more than \$800 million each year due to revisions reported by the Aerospace FFRDC. See

Technical Notes in *FFRDC Research and Development Survey: Fiscal Year 2015* for more information on this and other historic reporting changes among the population of FFRDCs.

The full set of data tables from this survey are available at <https://ncesdata.nsf.gov/ffrdc/2015/>.

Notes

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2. For a description of the federal guidelines and definitions governing FFRDCs, see the “General Notes” section of the NSF’s Master Government List of FFRDCs at <https://www.nsf.gov/statistics/ffrdclist/#gennotes>. The Master Government List of FFRDCs is accessible at <https://www.nsf.gov/statistics/ffrdclist/>.

TABLE 2. Total R&D expenditures at federally funded research and development centers, by FFRDC: FYs 2011–15
(Current \$thousands)

FFRDC	2011	2012	2013	2014	2015	% change 2014-15
All FFRDCs	18,671,245	18,280,943	17,667,184	17,718,556	18,458,257	4.2
Aerospace Federally Funded Research and Development Center	908,458	874,653	835,068	838,708	888,119	5.9
Ames Laboratory	32,442	33,853	34,234	41,824	45,845	9.6
Argonne National Laboratory	710,435	679,387	708,501	719,459	719,521	0.0
Arroyo Center	32,180	31,278	32,789	33,391	40,594	21.6
Brookhaven National Laboratory	526,571	516,921	529,634	573,364	587,194	2.4
Center for Advanced Aviation System Development	165,645	159,311	146,860	149,054	155,696	4.5
Center for Communications and Computing	72,600	62,600	51,477	63,199	56,478	-10.6
Center for Enterprise Modernization	187,785	226,539	202,319	158,069	145,442	-8.0
Center for Naval Analyses	85,165	91,628	86,132	80,283	80,358	0.1
Center for Nuclear Waste Regulatory Analyses	16,377	13,147	12,331	12,314	12,636	2.6
CMS Alliance to Modernize Healthcare	na	na	17,521	70,458	168,142	138.6
Fermi National Accelerator Laboratory	420,119	412,438	376,472	334,522	319,700	-4.4
Frederick National Laboratory for Cancer Research	431,600	430,100	433,900	448,500	495,300	10.4
Homeland Security Studies and Analysis Institute	36,870	30,213	22,452	20,866	16,965	-18.7
Homeland Security Systems Engineering and Development Institute	85,154	77,159	75,530	94,353	77,176	-18.2
Idaho National Laboratory	425,072	536,399	496,818	479,801	476,376	-0.7
Jet Propulsion Laboratory	1,543,969	1,493,613	1,519,258	1,664,539	1,749,689	5.1
Judiciary Engineering and Modernization Center	4,650	5,309	6,399	2,299	4,318	87.8
Lawrence Berkeley National Laboratory	788,386	767,554	768,563	762,601	792,457	3.9
Lawrence Livermore National Laboratory	1,424,993	1,353,454	1,313,293	1,170,571	1,273,066	8.8
Lincoln Laboratory	822,358	873,104	872,298	830,076	914,071	10.1
Los Alamos National Laboratory	2,307,197	2,056,878	1,708,000	1,767,000	1,865,000	5.5
National Astronomy and Ionosphere Ctr.	14,317	na	na	na	na	
National Biodefense Analysis and Countermeasures Center	41,786	31,201	29,849	30,310	30,716	1.3
National Center for Atmospheric Research	198,231	169,743	172,527	162,259	166,385	2.5
National Cybersecurity Center of Excellence	na	na	na	na	7,843	
National Defense Research Institute	46,330	53,832	59,460	62,073	56,736	-8.6
National Optical Astronomy Observatory	36,165	36,321	30,021	25,161	23,660	-6.0
National Radio Astronomy Observatory	81,305	79,168	93,253	85,327	89,689	5.1
National Renewable Energy Laboratory	386,539	398,873	347,368	359,998	378,436	5.1
National Security Engineering Center	941,187	946,737	928,614	885,382	919,441	3.8
National Solar Observatory	11,724	10,236	10,648	10,039	11,752	17.1
Oak Ridge National Laboratory	1,558,073	1,553,460	1,451,684	1,293,722	1,333,332	3.1
Pacific Northwest National Laboratory	1,095,923	1,033,768	934,491	1,021,912	951,099	-6.9
Princeton Plasma Physics Laboratory	84,863	81,389	85,088	97,768	81,348	-16.8
Project Air Force	44,171	41,031	36,003	39,351	44,393	12.8
Sandia National Laboratories	2,277,166	2,293,307	2,412,476	2,507,099	2,621,891	4.6
Savannah River National Laboratory	134,530	132,357	115,857	121,013	121,675	0.5
Science and Technology Policy Institute	8,700	7,547	5,010	10,949	8,724	-20.3
SLAC National Accelerator Laboratory	327,716	329,747	327,005	316,646	310,167	-2.0
Software Engineering Institute	107,837	113,371	134,973	123,217	131,146	6.4
Systems and Analyses Center	156,200	149,150	142,977	145,211	157,645	8.6
Thomas Jefferson National Accelerator Facility	90,456	94,167	100,031	105,868	128,036	20.9

na = not applicable.

FFRDC = federally funded research and development center.

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

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