



Federally Funded R&D Centers Report Little Growth in R&D Spending in FY 2014

by Ronda Britt¹

The nation's 41 federally funded research and development centers (FFRDCs) spent \$17.7 billion on R&D in FY 2014.² This was a 0.3% increase over the FY 2013 total. Eighteen of the FFRDCs reported declines from FY 2013 (table 1). These and the other statistics in this report come from the 2014 FFRDC Research and Development Survey, conducted by the National Center for Science and Engineering Statistics (NCSES) at the National Science Foundation (NSF).

FFRDCs are privately operated R&D organizations that are exclusively or substantially financed by the federal government.³ Over the past 14 years, federally funded R&D spending within FFRDCs increased annually by an average 2.5% in constant dollars (figure 1). Between FYs 2001 and 2010, the average rate of increase was 5.2%. But after the peak of spending in FY 2010—which owed to one-time funding from the American Recovery and Reinvestment Act of 2009 (ARRA)—FFRDCs have reported an annual average decrease of 3.2%.

Six FFRDCs were responsible for more than half of the FY 2014 total (reporting a combined \$9.4 billion): 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 1). The Jet Propulsion and Pacific Northwest National Labs showed higher than average growth, each increasing more than 9% in current dollars between 2013 and 2014. Sandia and Los Alamos National Labs reported more modest but still greater than average growth of 3.9% and 3.5% respectively. Oak Ridge and Lawrence Livermore National Labs each reported spending declines of 10.9% between 2013 and 2014.

FY 2014 was the final year for spending on ARRA awards, and FFRDCs reported \$75.6 million in expenditures on these awards (table 2). The bulk of the spending (74.7%) on these awards occurred in FYs 2010 and 2011. ARRA provided an additional \$2.4 billion over 5 years for R&D activities within FFRDCs.

Federal agencies funded the vast majority (97.8%) of FFRDC R&D expenditures in FY 2014, with several nonfederal sources covering the rest. Businesses were the largest nonfederal source, funding \$220.7 million of FFRDC R&D. Universities and foreign

governments supplied another \$100.9 million. Nonprofits provided \$37.2 million, and state and local governments funded \$28.3 million.

Just less than one-quarter (23.7%) of total FFRDC expenditures reported in FY 2014 was spent on basic research (\$4.2 billion). The remainder was divided roughly equally between applied research (\$6.8 billion, 38.6%) and development (\$6.7 billion, 37.7%). These proportions were unchanged from FY 2013.

Data Sources, Limitations, and Availability

NCSES's annual FFRDC R&D survey is answered by FFRDC administrators and collects data on FFRDC R&D expenditures by source of funds (federal, state and local, business, nonprofit organizations, or other), character of work (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. Totals for FYs 2010–13 increased by more than \$800 million each year because of revisions reported by the Aerospace FFRDC. See Technical Notes to the full set of data tables for more information on this and other

TABLE 1. Total R&D expenditures at federally funded research and development centers, by FFRDC: FYs 2010–14
(Current \$thousands)

| FFRDC | 2010 | 2011 | 2012 | 2013 | 2014 | % change 2013–14 |
|-----------------------------------------------------------------|------------|------------|------------|------------|------------|---------------------|
| All FFRDCs | 18,880,609 | 18,671,245 | 18,280,943 | 17,667,184 | 17,718,556 | 0.3 |
| Aerospace Federally Funded Research and Development Center | 880,653 | 908,458 | 874,653 | 835,068 | 838,708 | 0.4 |
| Ames Laboratory | 30,836 | 32,442 | 33,853 | 34,234 | 41,824 | 22.2 |
| Argonne National Laboratory | 650,504 | 710,435 | 679,387 | 708,501 | 719,459 | 1.5 |
| Arroyo Center | 28,647 | 32,180 | 31,278 | 32,789 | 33,391 | 1.8 |
| Brookhaven National Laboratory | 535,546 | 526,571 | 516,921 | 529,634 | 573,364 | 8.3 |
| Center for Advanced Aviation System Development | 149,686 | 165,645 | 159,311 | 146,860 | 149,054 | 1.5 |
| Center for Communications and Computing | 71,927 | 72,600 | 62,600 | 51,477 | 63,199 | 22.8 |
| Center for Enterprise Modernization | 170,460 | 187,785 | 226,539 | 202,319 | 158,069 | -21.9 |
| Center for Naval Analyses | 109,068 | 85,165 | 91,628 | 86,132 | 80,283 | -6.8 |
| Center for Nuclear Waste Regulatory Analyses | 15,346 | 16,377 | 13,147 | 12,331 | 12,314 | -0.1 |
| CMS Alliance to Modernize Healthcare | na | na | na | 17,521 | 70,458 | 302.1 |
| Fermi National Accelerator Laboratory | 402,658 | 420,119 | 412,438 | 376,472 | 334,522 | -11.1 |
| Frederick National Laboratory for Cancer Research | 643,935 | 431,600 | 430,100 | 433,900 | 448,500 | 3.4 |
| Homeland Security Studies and Analysis Institute | 33,402 | 36,870 | 30,213 | 22,452 | 20,866 | -7.1 |
| Homeland Security Systems Engineering and Development Institute | 58,715 | 85,154 | 77,159 | 75,530 | 94,353 | 24.9 |
| Idaho National Laboratory | 478,356 | 425,072 | 536,399 | 496,818 | 479,801 | -3.4 |
| Jet Propulsion Laboratory | 1,640,341 | 1,543,969 | 1,493,613 | 1,519,258 | 1,664,539 | 9.6 |
| Judiciary Engineering and Modernization Center | na | 4,650 | 5,309 | 6,399 | 2,299 | -64.1 |
| Lawrence Berkeley National Laboratory | 759,381 | 788,386 | 767,554 | 768,563 | 762,601 | -0.8 |
| Lawrence Livermore National Laboratory | 1,370,747 | 1,424,993 | 1,353,454 | 1,313,293 | 1,170,571 | -10.9 |
| Lincoln Laboratory | 789,502 | 822,358 | 873,104 | 872,298 | 830,076 | -4.8 |
| Los Alamos National Laboratory | 2,505,913 | 2,307,197 | 2,056,878 | 1,708,000 | 1,767,000 | 3.5 |
| National Astronomy and Ionosphere Center | 13,203 | 14,317 | na | na | na | na |
| National Biodefense Analysis and Countermeasures Center | 50,058 | 41,786 | 31,201 | 29,849 | 30,310 | 1.5 |
| National Center for Atmospheric Research | 220,328 | 198,231 | 169,743 | 172,527 | 162,259 | -6.0 |
| National Defense Research Institute | 51,652 | 46,330 | 53,832 | 59,460 | 62,073 | 4.4 |
| National Optical Astronomy Observatory | 45,596 | 36,165 | 36,321 | 30,021 | 25,161 | -16.2 |
| National Radio Astronomy Observatory | 137,607 | 81,305 | 79,168 | 93,253 | 85,327 | -8.5 |
| National Renewable Energy Laboratory | 326,652 | 386,539 | 398,873 | 347,368 | 359,998 | 3.6 |
| National Security Engineering Center | 925,027 | 941,187 | 946,737 | 928,614 | 885,382 | -4.7 |
| National Solar Observatory | 11,549 | 11,724 | 10,236 | 10,648 | 10,039 | -5.7 |
| Oak Ridge National Laboratory | 1,538,412 | 1,558,073 | 1,553,460 | 1,451,684 | 1,293,722 | -10.9 |
| Pacific Northwest National Laboratory | 1,116,648 | 1,095,923 | 1,033,768 | 934,491 | 1,021,912 | 9.4 |
| Princeton Plasma Physics Laboratory | 83,932 | 84,863 | 81,389 | 85,088 | 97,768 | 14.9 |
| Project Air Force | 43,957 | 44,171 | 41,031 | 36,003 | 39,351 | 9.3 |
| SLAC National Accelerator Laboratory | 354,393 | 327,716 | 329,747 | 327,005 | 316,646 | -3.2 |
| Sandia National Labs. | 2,157,022 | 2,277,166 | 2,293,307 | 2,412,476 | 2,507,099 | 3.9 |
| Savannah River National Laboratory | 127,160 | 134,530 | 132,357 | 115,857 | 121,013 | 4.5 |
| Science and Technology Policy Institute | 6,000 | 8,700 | 7,547 | 5,010 | 10,949 | 118.5 |
| Software Engineering Institute | 99,334 | 107,837 | 113,371 | 134,973 | 123,217 | -8.7 |
| Systems and Analyses Center | 156,000 | 156,200 | 149,150 | 142,977 | 145,211 | 1.6 |
| Thomas Jefferson National Accelerator Facility | 90,456 | 90,456 | 94,167 | 100,031 | 105,868 | 5.8 |

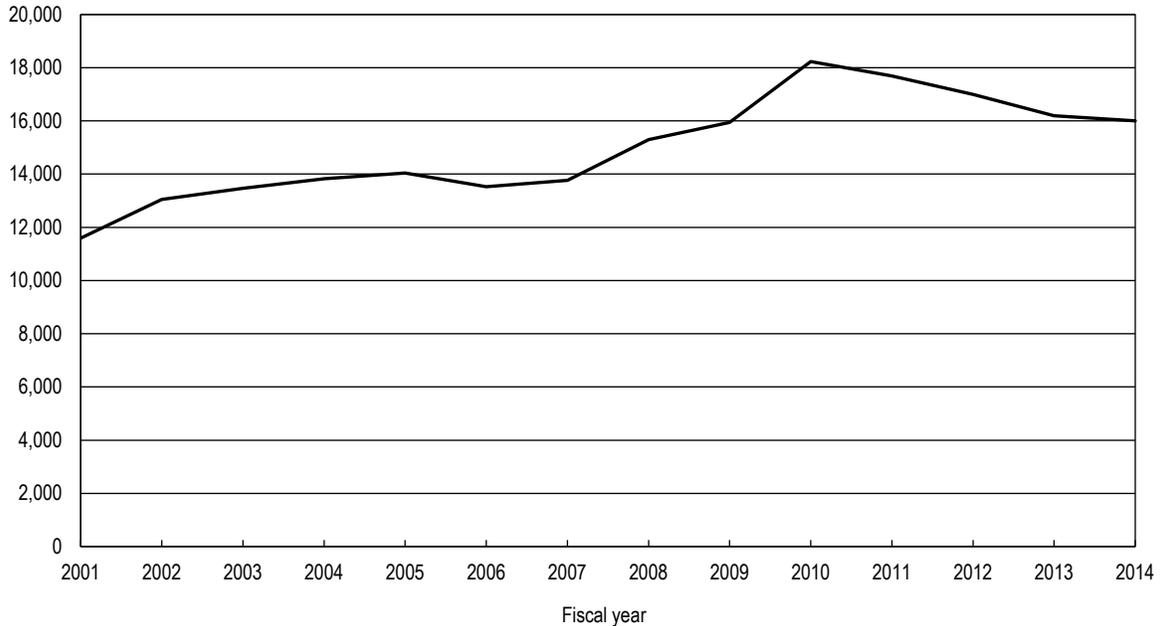
na = not applicable.

FFRDC = federally funded research and development center.

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

FIGURE 1. Federally funded R&D expenditures at FFRDCs: FYs 2001–14

Constant 2009 \$millions



FFRDC = federally funded research and development center.

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

historic reporting changes among the population of FFRDCs.

The full set of data tables from this survey are available in the data section

TABLE 2. Total and ARRA-funded R&D expenditures at federally funded research and development centers: FYs 2010–14 (Current \$millions)

| Fiscal year | All federal R&D expenditures | ARRA-funded R&D expenditures |
|-------------|------------------------------|------------------------------|
| 2010 | 18,453,552 | 1,025,891 |
| 2011 | 18,276,088 | 749,382 |
| 2012 | 17,875,012 | 345,826 |
| 2013 | 17,284,513 | 179,900 |
| 2014 | 17,331,396 | 75,637 |

ARRA = American Recovery and Reinvestment Act of 2009.

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

of the survey homepage at www.nsf.gov/statistics/srvyffrdc.

Notes

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2. The number of FFRDCs increased from 40 to 41 in FY 2014 with the addition of the National Solar Observatory. During the FY 2014 survey, the National Science Foundation determined that the National Solar Observatory had been missing from the Master Government List of FFRDCs since FY 2010. The R&D data for the National Solar Observatory had been included

with the National Optical Astronomy Observatory between FY 2010 and FY 2013. The National Solar Observatory was added to the population, and data for FYs 2010–13 were provided along with the FY 2014 data. The National Optical Astronomy Observatory also provided revised data for FY 2010–13.

3. Several FFRDCs are prohibited from accepting nonfederal R&D funding. 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 <http://www.nsf.gov/statistics/ffrdclist/#gennotes>. The Master Government List of FFRDCs is accessible at <http://www.nsf.gov/statistics/ffrdclist/>.

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