



## Federally Funded R&D Centers Report Declines in R&D Spending in FY 2012

by Ronda Britt<sup>1</sup>

The nation's 39 federally funded research and development centers (FFRDCs) spent \$17.4 billion on research and development in FY 2012, according to data from the National Science Foundation (NSF).<sup>2</sup> This was a slight decline from the \$17.8 billion spent in FY 2011 (table 1).

FFRDCs are privately operated R&D organizations that are exclusively or substantially financed by the federal government.<sup>3</sup> FFRDCs provide the sponsoring federal agencies with capabilities to meet special long-term R&D needs that cannot be met as effectively by existing in-house or contractor resources. They enable agencies to use private sector resources to accomplish tasks that are integral to the mission and operation of the sponsoring agency. FFRDC organization ranges from traditional contractor-owned/contractor-operated or government-owned/contractor-operated structures to various degrees of contractor-government control and ownership. Each FFRDC is operated, managed, or administered by a university or university consortium, a nonprofit organization, or an industrial firm, either as an autonomous organization or as a separate operating unit of a parent organization. FFRDCs perform R&D for both

defense and civilian applications and across a broad range of science and engineering fields.

Federal funding accounted for 97.5% (\$17.0 billion) of the FFRDC's total expenditures in FY 2012 (table 2). Between FY 2010 and FY 2012, FFRDC's R&D expenditures were boosted by \$2.2 billion in funding provided by the one-time American Recovery and Reinvestment Act of 2009 (ARRA).

In addition to federal funding, many FFRDCs receive funding and perform work for nonfederal sponsors. However, nonfederal sources accounted for just 2.5% (\$440 million) of the FFRDC total expenditures (table 2). In FY 2012, FFRDCs reported \$184 million in R&D expenditures funded by businesses, \$77 million funded by nonprofit organizations, \$39 million funded by state and local governments, and an additional \$139 million funded by all other nonfederal sources.

The type of work performed across the FFRDCs was fairly evenly distributed between basic research (35.2% of total expenditures), applied research (30.7%), and development (34.1%) in FY 2012 (table 3). However, there was much greater variation in these

proportions when looking at individual FFRDCs. Ten FFRDCs (8 of them university administered) reported that basic research expenditures comprised 70% or more of their total spending, 13 FFRDCs reported that over 70% of their spending was on applied research, and 8 FFRDCs classified at least 70% of their spending as development.

### Data Sources, Limitations, and Availability

The statistics on FFRDC R&D presented in this report come from the FY 2012 NSF FFRDC Research and Development Survey. This annual survey is completed by FFRDC staff and administrators and collects data from FFRDCs on 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.

The full set of detailed tables from this survey will be available at <http://www.nsf.gov/statistics/ffrdc/>. Individual detailed tables from the FY 2012 survey may be available in advance of

TABLE 1. Total and ARRA-funded R&D expenditures at federally funded research and development centers, by FFRDC: FYs 2010–12  
(Dollars in thousands)

FFRDC	2010			2011 <sup>a</sup>			2012		
	Total	Funded by ARRA		Total	Funded by ARRA		Total	Funded by ARRA	
		Amount	Percent		Amount	Percent		Amount	Percent
All FFRDCs	18,044,105	1,048,028	5.8	17,808,614	771,602	4.3	17,446,036	352,251	2.0
Aerospace FFRDC	44,149	0	0.0	45,827	0	0.0	39,746	0	0.0
Ames Lab.	30,836	30	0.1	32,442	311	1.0	33,853	257	0.8
Argonne National Lab.	650,504	77,017	11.8	710,435	70,627	9.9	679,387	27,426	4.0
Arroyo Ctr.	28,647	0	0.0	32,180	0	0.0	31,278	0	0.0
Brookhaven National Lab.	535,546	49,712	9.3	526,571	98,108	18.6	516,921	5,656	1.1
Ctr. for Advanced Aviation System Development	149,686	0	0.0	165,645	0	0.0	159,311	0	0.0
Ctr. for Communications and Computing	71,927	0	0.0	72,600	0	0.0	62,600	0	0.0
Ctr. for Enterprise Modernization	170,460	401	0.2	187,785	2,783	1.5	226,539	928	0.4
Ctr. for Naval Analyses	109,068	0	0.0	85,165	0	0.0	91,628	0	0.0
Ctr. for Nuclear Waste Regulatory Analyses	15,346	0	0.0	16,377	0	0.0	13,147	0	0.0
Fermi National Accelerator Lab.	402,658	19,474	4.8	420,119	26,042	6.2	412,438	23,982	5.8
Frederick National Lab. for Cancer Research	643,935	183,335	28.5	431,600	0	0.0	430,100	0	0.0
Homeland Security Studies and Analysis Institute	33,402	0	0.0	36,870	0	0.0	30,213	0	0.0
Homeland Security Systems Engineering and Development Institute	58,715	0	0.0	85,154	0	0.0	77,159	0	0.0
ID National Lab.	478,356	3,536	0.7	425,072	4,363	1.0	536,399	5,653	1.1
Jet Propulsion Lab.	1,640,341	101,205	6.2	1,543,969	24,543	1.6	1,493,613	3,746	0.3
Judiciary Engineering and Modernization Ctr. <sup>b</sup>	na	na	na	4,650	0	0.0	5,309	0	0.0
Lawrence Berkeley National Lab.	759,381	80,399	10.6	788,386	89,212	11.3	767,554	55,262	7.2
Lawrence Livermore National Lab.	1,370,747	3,624	0.3	1,424,993	6,237	0.4	1,353,454	6,170	0.5
Lincoln Lab.	789,502	NA	NA	822,358	0	0.0	873,104	272	0.0
Los Alamos National Lab.	2,505,913	139,376	5.6	2,307,197	101,814	4.4	2,056,878	13,663	0.7
National Astronomy and Ionosphere Ctr. <sup>c</sup>	13,203	0	0.0	14,317	0	0.0	na	na	na
National Biodefense Analysis and Countermeasures Ctr.	50,058	0	0.0	41,786	0	0.0	31,201	0	0.0
National Ctr. for Atmospheric Research	220,328	464	0.2	198,231	143	0.1	169,743	132	0.1
National Defense Research Institute	51,652	0	0.0	46,330	0	0.0	53,832	0	0.0
National Optical Astronomy Observatories	57,145	9,125	16.0	47,889	56	0.1	46,557	2,216	4.8
National Radio Astronomy Observatory	137,607	2,539	1.8	81,305	2,461	3.0	79,168	886	1.1
National Renewable Energy Lab.	326,652	36,383	11.1	386,539	44,063	11.4	398,873	26,984	6.8
National Security Engineering Ctr.	925,027	0	0.0	941,187	0	0.0	946,737	0	0.0
Oak Ridge National Lab.	1,538,412	134,856	8.8	1,558,073	88,611	5.7	1,553,460	95,600	6.2
Pacific Northwest National Lab.	1,116,648	112,870	10.1	1,095,923	115,508	10.5	1,033,768	59,750	5.8
Princeton Plasma Physics Lab.	83,932	6,132	7.3	84,863	4,711	5.6	81,389	778	1.0
Project Air Force	43,957	0	0.0	44,171	0	0.0	41,031	0	0.0
Sandia National Labs.	2,157,022	14,073	0.7	2,277,166	12,008	0.5	2,293,307	5,056	0.2
Savannah River National Lab.	127,160	17,175	13.5	134,530	9,961	7.4	132,357	2,158	1.6
Science and Technology Policy Institute	6,000	0	0.0	8,700	0	0.0	7,547	0	0.0
SLAC National Accelerator Lab.	354,393	32,796	9.3	327,716	46,520	14.2	329,747	8,564	2.6
Software Engineering Institute	99,334	12	0.0	107,837	26	0.0	113,371	65	0.1
Studies and Analyses Ctr.	156,000	0	0.0	156,200	0	0.0	149,150	0	0.0
Thomas Jefferson National Accelerator Facility	90,456	23,494	26.0	90,456	23,494	26.0	94,167	7,047	7.5

na = not applicable; NA = not available.

ARRA = American Recovery and Reinvestment Act of 2009; FFRDC = federally funded research and development center.

<sup>a</sup> R&D expenditures decreased in FY 2011 due to removal of expenditures for capital projects. Beginning with the FY 2011 survey, R&D expenditures do not include capital projects. In previous years, some FFRDCs included capital expenditures in their R&D totals. Previous years include an unknown amount of capital expenditures, estimated to be less than \$500 million per year.

<sup>b</sup> On 2 September 2010, the Judiciary Engineering and Modernization Center was created.

<sup>c</sup> On 1 October 2011, the National Astronomy and Ionosphere Center was decertified as an FFRDC.

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

TABLE 2. R&D expenditures at federally funded research and development centers, by source of funds: FY 2012

(Dollars in thousands)

Source of funds	All FFRDCs
All R&D expenditures	17,446,036
Federal government	17,006,331
State and local government	39,428
Business	184,244
Nonprofit organizations	77,120
All other sources	138,913

FFRDC = federally funded research and development center.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, FFRDC Research and Development Survey, FY 2012.

publication of the full report. For further information, please contact the author.

### Notes

1. Ronda Britt, Research and Development Statistics Program, National Center for Science and Engineering Statistics, National Science Foundation, 4201 Wilson Boulevard, Suite 965, Arlington, VA 22230 (rbritt@nsf.gov; 703-292-7765).

2. The number of FFRDCs decreased from 40 to 39 in FY 2012 due to the decertification of the National Astronomy and Ionosphere Center

located in Arecibo Puerto Rico on 1 October 2011.

3. 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.cfm>. Current and previous Master Government Lists of FFRDCs are accessible at <http://www.nsf.gov/statistics/ffrdclist/>. The FFRDCs surveyed here include those in existence prior to October 2011, the beginning of fiscal year 2012.

TABLE 3. Total R&amp;D expenditures at federally funded research and development centers, by character of work and FFRDC: FY 2012

FFRDC	Sponsor	Location	All R&D expenditures (US\$thousands)	Basic research (%)	Applied research (%)	Development (%)
All FFRDCs			17,446,036	35.2	30.7	34.1
University administered			5,174,091	41.7	26.8	31.5
Ames Lab.	DOE	Ames, IA	33,853	70.6	25.6	3.7
Argonne National Lab.	DOE	Argonne, IL	679,387	44.9	27.1	28.0
Fermi National Accelerator Lab.	DOE	Batavia, IL	412,438	100.0	0.0	0.0
Jet Propulsion Lab.	NASA	Pasadena, CA	1,493,613	10.0	10.0	80.0
Lawrence Berkeley National Lab.	DOE	Berkeley, CA	767,554	73.3	26.6	0.1
Lincoln Lab.	DOD, OSD	Lexington, MA	873,104	0.0	90.7	9.3
National Ctr. for Atmospheric Research	NSF	Boulder, CO	169,743	49.1	16.4	34.5
National Optical Astronomy Observatories	NSF	Tucson, AZ	46,557	100.0	0.0	0.0
National Radio Astronomy Observatory	NSF	Charlottesville, VA	79,168	90.3	6.4	3.4
Princeton Plasma Physics Lab.	DOE	Princeton, NJ	81,389	100.0	0.0	0.0
SLAC National Accelerator Lab.	DOE	Stanford, CA	329,747	100.0	0.0	0.0
Software Engineering Institute	DOD, OSD	Pittsburgh, PA	113,371	0.0	13.2	86.8
Thomas Jefferson National Accelerator Facility	DOE	Newport News, VA	94,167	100.0	0.0	0.0
Nonprofit administered			5,464,141	28.1	29.1	42.9
Aerospace FFRDC	DOD, Air Force	El Segundo, CA	39,746	6.7	76.5	16.9
Arroyo Ctr.	DOD, Army	Santa Monica, CA	31,278	0.0	100.0	0.0
Brookhaven National Lab.	DOE	Upton, NY	516,921	77.8	10.0	12.2
Ctr. for Advanced Aviation System Development	DOT, FAA	McLean, VA	159,311	0.0	5.1	94.9
Ctr. for Communications and Computing	DOD, NSA/CSS	Alexandria, VA	62,600	25.0	50.0	25.0
Ctr. for Enterprise Modernization	Treasury (IRS), VA	McLean, VA	226,539	0.0	5.5	94.5
Ctr. for Naval Analyses	DOD, Navy	Alexandria, VA	91,628	0.0	100.0	0.0
Ctr. for Nuclear Waste Regulatory Analyses	NRC	San Antonio, TX	13,147	0.0	100.0	0.0
Homeland Security Studies and Analysis Institute	DHS	Arlington, VA	30,213	0.0	100.0	0.0
Homeland Security Systems Engineering and Development Institute	DHS	McLean, VA	77,159	0.0	2.4	97.6
National Biodefense Analysis and Countermeasures Ctr.	DHS	Frederick, MD	31,201	0.0	100.0	0.0
National Defense Research Institute	DOD, OSD	Santa Monica, CA	53,832	0.0	100.0	0.0
National Renewable Energy Lab.	DOE	Golden, CO	398,873	4.3	19.4	76.3
National Security Engineering Ctr.	DOD, OSD	Bedford, MA; McLean, VA	946,737	0.0	5.2	94.8
Oak Ridge National Lab.	DOE	Oak Ridge, TN	1,553,460	55.6	44.4	0.0
Pacific Northwest National Lab.	DOE	Richland, WA	1,033,768	22.4	18.2	59.5
Project Air Force	DOD, Air Force	Santa Monica, CA	41,031	0.0	100.0	0.0
Science and Technology Policy Institute	NSF	Washington, DC	7,547	0.0	100.0	0.0
Studies and Analyses Ctr.	DOD, OSD	Alexandria, VA	149,150	0.0	100.0	0.0
Industry administered			6,807,804	35.9	35.1	29.0
Frederick National Lab. for Cancer Research	NIH	Frederick, MD	430,100	11.1	88.9	0.0
ID National Lab.	DOE	Idaho Falls, ID	536,399	6.0	51.0	43.0
Judiciary Engineering and Modernization Ctr.	U.S. Courts	McLean, VA	5,309	0.0	5.6	94.4
Lawrence Livermore National Lab.	DOE	Livermore, CA	1,353,454	12.3	74.3	13.4
Los Alamos National Lab.	DOE	Los Alamos, NM	2,056,878	100.0	0.0	0.0
Sandia National Labs.	DOE	Albuquerque, NM	2,293,307	5.9	28.7	65.4
Savannah River National Lab.	DOE	Aiken, SC	132,357	5.0	50.0	45.0

DOD = Department of Defense; DOE = Department of Energy; DHS = Department of Homeland Security; DOT = Department of Transportation; FAA = Federal Aviation Administration; FFRDC = federally funded research and development center; IRS = Internal Revenue Service; NASA = National Aeronautics and Space Administration; NIH = National Institutes of Health; NRC = Nuclear Regulatory Commission; NSA/CSS = National Security Agency/Central Security Service; NSF = National Science Foundation; OSD = Office of the Secretary of Defense; VA = Department of Veterans Affairs.

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, FFRDC Research and Development Survey, FY 2012.



RETURN THIS COVER SHEET TO ROOM P35 IF YOU  
DO NOT WISH TO RECEIVE THIS MATERIAL  OR  
IF CHANGE OF ADDRESS IS NEEDED  INDICATE  
CHANGE INCLUDING ZIP CODE ON THE LABEL (DO  
NOT REMOVE LABEL).

**National Science Foundation**  
ARLINGTON, VA 22230  
OFFICIAL BUSINESS

NSF 14-308