



Federally Funded R&D Centers Spend \$17.8 Billion on R&D in FY 2011

by Ronda Britt ¹

The nation's 40 federally funded R&D centers (FFRDCs) spent \$17.8 billion on research and development in FY 2011, according to data from the National Science Foundation (NSF).² Just over \$850 million of the total was supplied by funds from the American Recovery and Reinvestment Act (ARRA) of 2009 (table 1).

FFRDCs are privately operated R&D organizations that are exclusively or substantially financed by the federal government.³ Federal funding (non-ARRA and ARRA) accounted for 97.6% (\$17.4 billion) of the FFRDCs' total expenditures in FY 2011. The remaining expenditures were funded by businesses (\$190 million), nonprofit organizations (\$61 million), state and local government (\$27 million), and other sources (\$146 million).

Basic research activities accounted for 37% of total FFRDC R&D expenditures in FY 2011; applied research, 29%; and development, 34%.

With the exception of the Jet Propulsion Laboratory, sponsored by the National Aeronautics and Space

Administration, the FFRDCs spending \$1 billion or more on R&D in FY 2011 were all national laboratories sponsored by the Department of Energy (DOE). The FFRDC reporting the largest amount of ARRA-funded expenditures (\$125 million) was DOE's National Renewable Energy Laboratory. ARRA funds supported 32% of its total expenditures in FY 2011 (table 1).

R&D expenditures within FFRDCs have grown by over \$2 billion (14%) from FY 2008 to FY 2011. Industry-administered FFRDCs have consistently outspent those managed by universities or nonprofit organizations (figure 1).

Data Sources, Limitations, and Availability

The statistics on FFRDC R&D presented in this report come from the FY 2011 NSF FFRDC R&D Survey. This annual survey is completed by FFRDC 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.

Between FY 2010 and FY 2011, five FFRDCs managed by the MITRE Corporation reevaluated their reporting methodology and submitted revisions to their previous-year data. Prior to the FY 2011 survey they had only reported internally funded R&D expenditures. After discussions with NSF, these five FFRDCs agreed to report all FY 2011 operating expenditures for R&D and to revise FY 2008–2010 data. The revisions contributed an additional \$1.16 billion to the total R&D expenditures for FY 2008, \$1.19 billion to FY 2009, and \$1.24 billion to FY 2010.

Reporting corrections from several FFRDCs between FY 2010 and FY 2011 led to a slight decrease in total reported expenditures in FY 2011. The survey is intended to capture only current operating expenditures; however, prior to FY 2011 several FFRDCs had been including capital

TABLE 1. R&D expenditures at federally funded research and development centers, by source of funds, FFRDCs ranked by total R&D expenditures: FY 2011
(Dollars in thousands)

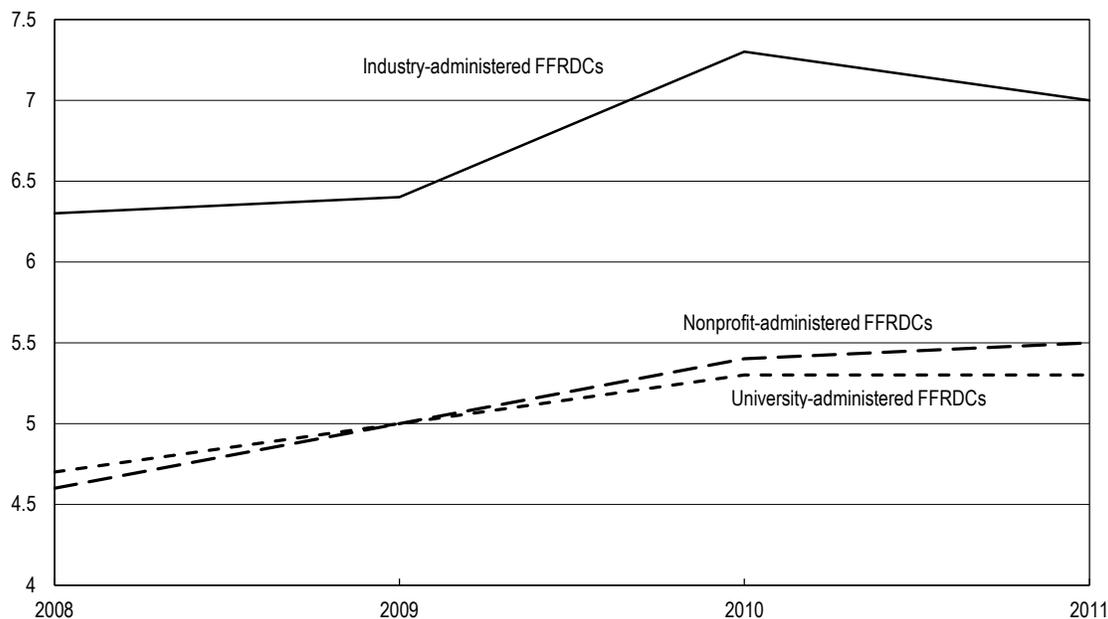
Rank	FFRDC	All R&D expenditures	Federal government		State and local government		Nonprofit organizations	All other sources
			Non-ARRA	ARRA	government	Business		
	All FFRDCs	17,808,443	16,532,748	852,547	26,744	189,951	60,506	145,947
1	Los Alamos National Lab.	2,307,197	2,164,725	101,814	0	40,658	0	0
2	Sandia National Labs.	2,277,166	2,225,028	12,008	185	26,216	2,175	11,554
3	Oak Ridge National Lab.	1,558,073	1,425,347	88,611	630	25,495	14,517	3,473
4	Jet Propulsion Lab.	1,543,969	1,519,426	24,543	0	0	0	0
5	Lawrence Livermore National Lab.	1,424,993	1,373,940	6,237	1,781	7,786	159	35,090
6	Pacific Northwest National Lab.	1,095,923	956,869	115,508	6,474	12,969	0	4,103
7	National Security Engineering Ctr.	941,187	941,187	0	0	0	0	0
8	Lincoln Lab.	822,358	819,664	0	0	259	0	2,435
9	Lawrence Berkeley National Lab.	788,386	643,708	89,212	8,410	13,113	11,692	22,251
10	Argonne National Lab.	710,435	592,567	70,627	3,772	20,642	2,000	20,827
11	Brookhaven National Lab.	526,571	406,383	98,108	1,826	7,326	0	12,928
12	National Cancer Institute at Frederick	431,600	431,600	0	0	0	0	0
13	Idaho National Lab.	425,072	410,657	4,363	553	7,355	489	1,655
14	Fermi National Accelerator Lab.	420,119	393,541	26,042	0	165	371	0
15	National Renewable Energy Lab.	386,539	245,530	125,008	548	15,447	0	6
16	SLAC National Accelerator Lab.	327,716	274,421	46,520	0	0	0	6,775
17	National Ctr. for Atmospheric Research	198,231	182,167	143	693	7,975	7,231	22
18	Ctr. for Enterprise Modernization	187,785	185,002	2,783	0	0	0	0
19	Ctr. for Advanced Aviation System Development	165,645	155,254	0	0	0	0	10,391
20	Studies and Analyses Ctr.	156,200	156,200	0	0	0	0	0
21	Savannah River National Lab.	134,530	124,569	9,961	0	0	0	0
22	Software Engineering Institute	107,837	107,322	26	0	489	0	0
23	Thomas Jefferson National Accelerator Facility	90,456	66,377	23,494	585	0	0	0
24	Ctr. for Naval Analyses	85,165	84,562	0	603	0	0	0
25	Homeland Security Systems Engineering and Development Institute	85,154	85,154	0	0	0	0	0
26	Princeton Plasma Physics Lab.	84,863	79,641	4,711	0	0	0	511
27	National Radio Astronomy Observatory	81,305	77,940	2,461	0	0	0	904
28	Ctr. for Communications and Computing	72,600	72,600	0	0	0	0	0
29	National Optical Astronomy Observatories	47,889	42,674	56	0	0	0	5,159
30	National Defense Research Institute	46,330	46,330	0	0	0	0	0
31	Aerospace FFRDC	45,827	13,511	0	0	3,593	21,628	7,095
32	Project Air Force	44,171	44,171	0	0	0	0	0
33	National Biodefense Analysis and Countermeasures Ctr.	41,786	41,786	0	0	0	0	0
34	Homeland Security Studies and Analysis Institute	36,699	36,699	0	0	0	0	0
35	Ames Lab.	32,442	31,160	311	671	214	0	86
36	Arroyo Ctr.	32,180	32,180	0	0	0	0	0
37	Ctr. for Nuclear Waste Regulatory Analyses	16,377	15,871	0	13	249	244	0
38	National Astronomy and Ionosphere Ctr.	14,317	13,635	0	0	0	0	682
39	Science and Technology Policy Institute	8,700	8,700	0	0	0	0	0
40	Judiciary Engineering and Modernization Ctr.	4,650	4,650	0	0	0	0	0

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

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, FFRDC Research and Development Survey: FY 2011.

FIGURE 1. R&D expenditures at federally financed research and development centers, by type of FFRDC: FY 2008–11

Dollars (billions)



FFRDC = federally funded research and development center.

NOTES: R&D expenditures decreased slightly in FY 2011 due to removal of expenditures for capital projects. For the purposes of this survey, capital projects are not included in the definition of R&D expenditures. In previous years some FFRDCs included capital expenditures in their R&D totals. Corrections were made for FY 2011 that lowered total expenditures by \$468 million. Previous years include an unknown amount of capital expenditures, estimated to be less than \$500 million per year.

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

project costs in their R&D totals. Corrections were made for FY 2011 that lowered total expenditures by \$468 million. The amount of capital expenditures included in previous years is unknown but is estimated to be less than \$500 million per year.

The full set of detailed tables from this survey will be available in the report *FFRDC Research and Development Expenditures: Fiscal Year 2011* at <http://www.nsf.gov/statistics/ffrdc/>. Individual detailed tables from the FY 2011 survey may be available in advance of publica-

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

Notes

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2. The number of FFRDCs increased from 39 in FY 2010 to 40 in FY 2011 due to the addition of the Judiciary

Engineering and Modernization Center, established as an FFRDC at the end of FY 2010.

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.cfm>. The Master Government List of FFRDCs is accessible at <http://www.nsf.gov/statistics/ffrdclist/>.

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