

FFRDC Research and Development Expenditures: Fiscal Year 2009

Detailed Statistical Tables | NSF 11-314 | May 2011

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General Notes

During the production of this report, the America COMPETES Reauthorization Act of 2010 was signed into law. Section 505 of the bill renames the Division of Science Resources Statistics as the National Center for Science and Engineering Statistics (NCSES). The Center retains its reporting line to the Directorate for Social, Behavioral and Economic Sciences within the National Science Foundation. The new name signals the central role of NCSES in the collection, interpretation, analysis, and dissemination of objective data on the science and engineering enterprise.

The data presented in this report were compiled from the National Science Foundation (NSF) FY 2009 Survey of Research and Development Expenditures at Federally Funded Research and Development Centers (FFRDCs). ICF Macro currently conducts the survey under contract to NSF.

The reference period of this annual survey is the fiscal year of the surveyed FFRDC. The survey collects the separately budgeted R&D expenditures by source of funding reported by FFRDCs. The FFRDC survey is administered in conjunction with the Survey of Research and Development Expenditures at Universities and Colleges (Academic R&D Expenditures Survey), and the resulting FFRDC data have historically been published in the Academic R&D Expenditures series of detailed statistical tables. The FY 2008 FFRDC data were published both in the Academic R&D Expenditures report and separately in a FY 2008 report, establishing a new detailed statistical tables series solely for FFRDC data. The FFRDC data from the Survey of Research and Development Expenditures at Federally Funded Research and Development Centers are no longer published in the Academic R&D Expenditures report, and the results of all future FFRDC data collections will be published separately in this series.

Terms used in organizational accounting procedures, incorporated throughout the tables, are defined below.

- *Separately budgeted R&D expenditures.* All funds expended for activities specifically organized to produce research outcomes. These activities are either commissioned by external sponsors or are separately budgeted by the organization using internal funds.
- *Expenditures.* Funds actually spent by an organization during its fiscal year.
- *Federally Funded Research and Development Centers.* R&D-performing organizations that range in organizational structure from traditional contractor-owned/contractor-operated or government-owned/contractor-operated to structures

in which degrees of contractor/government control and ownership vary. FFRDCs are formed to achieve particular federal R&D objectives that cannot be met as effectively by existing organizations.

Data presented in trend tables were compiled from the most recently completed survey cycle. Prior-year data have been reviewed for consistency with current-year responses and, when necessary, revised in consultation with respondents. FFRDCs revise data from previous years when important changes occur in reporting practices and program classifications, and only the latest tables incorporate such changes. For accurate historical data, use only the most recently published detailed statistical tables.

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by FFRDC

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TABLE 1. Total and federally financed R&D expenditures at federally funded research and development centers, by character of work and type of FFRDC: FY 2008–09

(Dollars in thousands)

Type of FFRDC	2008				2009			
	All R&D expenditures	Basic research	Applied research	Development	All R&D expenditures	Basic research	Applied research	Development
Total R&D, all FFRDCs	14,707,088	5,437,583	4,026,522	5,242,983	15,220,621	5,854,464	4,649,566	4,716,591
University-administered FFRDCs	4,701,645	1,628,296	710,837	2,362,512	4,958,944	1,804,117	1,286,651	1,868,176
Nonprofit-administered FFRDCs	3,689,108	1,427,316	1,324,070	937,722	3,827,802	1,505,486	1,437,022	885,294
Industry-administered FFRDCs	6,316,335	2,381,971	1,991,615	1,942,749	6,433,875	2,544,861	1,925,893	1,963,121
Federally financed R&D, all FFRDCs	14,262,947	5,265,096	3,857,757	5,140,094	14,784,361	5,698,146	4,450,423	4,635,792
University-administered FFRDCs	4,550,332	1,533,700	684,220	2,332,412	4,811,485	1,704,266	1,255,448	1,851,771
Nonprofit-administered FFRDCs	3,536,795	1,383,261	1,242,309	911,225	3,687,331	1,484,100	1,342,767	860,464
Industry-administered FFRDCs	6,175,820	2,348,135	1,931,228	1,896,457	6,285,545	2,509,780	1,852,208	1,923,557

FFRDC = federally funded research and development center.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Survey of Research and Development Expenditures at FFRDCs, FY 2009.

TABLE 2. R&D expenditures at university-administered federally funded research and development centers, by character of work: FY 1953–2009

(Dollars in millions)

Fiscal year	All R&D expenditures	Basic research		Applied research and development	
		Amount	Percent	Amount	Percent
1953	121	33	27.3	88	72.7
1954	141	39	27.7	102	72.3
1955	180	49	27.2	131	72.8
1956	194	51	26.3	143	73.7
1957	240	65	27.1	175	72.9
1958	293	78	26.6	215	73.4
1959	338	92	27.2	246	72.8
1960	360	97	26.9	263	73.1
1961	410	115	28.0	295	72.0
1962	470	136	28.9	334	71.1
1963	530	159	30.0	371	70.0
1964	629	191	30.4	438	69.6
1965	629	208	33.1	421	66.9
1966	630	227	36.0	403	64.0
1967	673	250	37.1	423	62.9
1968	719	276	38.4	443	61.6
1969	725	275	37.9	450	62.1
1970	737	269	36.5	468	63.5
1971	716	260	36.3	456	63.7
1972	753	244	32.4	509	67.6
1973	817	296	36.2	521	63.8
1974	865	390	45.1	475	54.9
1975	987	439	44.5	548	55.5
1976	1,147	512	44.6	635	55.4
1977	1,384	600	43.4	784	56.6
1978	1,717	na	na	na	na
1979	1,935	1,022	52.8	913	47.2
1980	2,246	1,132	50.4	1,114	49.6
1981	2,486	1,270	51.1	1,216	48.9
1982	2,479	1,327	53.5	1,152	46.5
1983	2,737	1,484	54.2	1,253	45.8
1984	3,150	1,690	53.6	1,461	46.4
1985	3,523	1,765	50.1	1,758	49.9
1986	3,895	1,876	48.2	2,018	51.8
1987	4,206	2,033	48.3	2,173	51.7
1988	4,531	2,245	49.6	2,285	50.4
1989	4,730	2,352	49.7	2,377	50.3
1990	4,832	2,428	50.2	2,404	49.8
1991	5,078	2,595	51.1	2,484	48.9
1992	5,247	2,843	54.2	2,404	45.8
1993	5,295	2,938	55.5	2,357	44.5
1994	5,271	2,998	56.9	2,273	43.1
1995	5,363	2,742	51.1	2,622	48.9
1996	5,380	2,580	48.0	2,800	52.0
1997	5,440	2,683	49.3	2,757	50.7
1998	5,531	2,636	47.7	2,895	52.3
1999	5,644	2,732	48.4	2,912	51.6
2000	5,675	2,863	50.5	2,812	49.5
2001	5,944	2,906	48.9	3,038	51.1
2002	7,069	3,698	52.3	3,371	47.7

TABLE 2. R&D expenditures at university-administered federally funded research and development centers, by character of work: FY 1953–2009

(Dollars in millions)

Fiscal year	All R&D expenditures	Basic research		Applied research and development	
		Amount	Percent	Amount	Percent
2003	7,200	3,760	52.2	3,441	47.8
2004	7,603	3,706	48.7	3,898	51.3
2005	7,826	3,802	48.6	4,024	51.4
2006	7,790	3,873	49.7	3,918	50.3
2007 ^a	5,855	1,756	30.0	4,099	70.0
2008 ^b	4,702	1,628	34.6	3,073	65.4
2009	4,959	1,804	36.4	3,155	63.6

na = not applicable; separate data for basic research and applied research and development were not collected for FY 1978.

^a On 1 June 2006 administration of Los Alamos National Laboratory was transferred from University of California to an industrial firm administrator.

^b On 1 October 2007 administration of Lawrence Livermore National Laboratory was transferred from University of California to an industrial firm administrator.

NOTE: Because of rounding, detail may not add to total.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Survey of Research and Development Expenditures at FFRDCs, FY 2009.

TABLE 3. R&D expenditures at nonprofit-administered federally funded research and development centers, by character of work: FY 2001–09

(Dollars in millions)

Fiscal year	All R&D expenditures	Basic research		Applied research and development	
		Amount	Percent	Amount	Percent
2001	2,165	899	41.5	1,266	58.5
2002	2,271	963	42.4	1,307	57.6
2003	2,463	1,027	41.7	1,437	58.3
2004	2,586	1,037	40.1	1,548	59.9
2005	2,817	1,170	41.5	1,647	58.5
2006	2,860	1,194	41.7	1,666	58.3
2007	3,189	1,324	41.5	1,865	58.5
2008	3,689	1,427	38.7	2,262	61.3
2009	3,828	1,505	39.3	2,322	60.7

NOTE: Because of rounding, detail may not add to total.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Survey of Research and Development Expenditures at FFRDCs, FY 2009.

TABLE 4. R&D expenditures at industry-administered federally funded research and development centers, by character of work: FY 2001–09

(Dollars in millions)

Fiscal year	All R&D expenditures	Basic research		Applied research and development	
		Amount	Percent	Amount	Percent
2001	1,962	70	3.6	1,892	96.4
2002	2,197	83	3.8	2,114	96.2
2003	2,463	336	13.6	2,128	86.4
2004	2,443	188	7.7	2,255	92.3
2005	2,612	137	5.3	2,474	94.7
2006	2,569	131	5.1	2,438	94.9
2007 ^a	4,781	2,217	46.4	2,564	53.6
2008 ^b	6,316	2,382	37.7	3,934	62.3
2009	6,434	2,545	39.6	3,889	60.4

^a On 1 June 2006 administration of Los Alamos National Laboratory was transferred from University of California to an industrial firm administrator.

^b On 1 October 2007 administration of Lawrence Livermore National Laboratory was transferred from University of California to an industrial firm administrator.

NOTE: Because of rounding, detail may not add to total.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Survey of Research and Development Expenditures at FFRDCs, FY 2009.

TABLE 5. R&D expenditures at federally funded research and development centers, by source of funds and FFRDC: FY 2009
(Dollars in thousands)

FFRDC	All R&D expenditures	Federal government	State and local government	Industry	Institution funds	All other sources
All FFRDCs	15,220,621	14,784,361	30,921	190,097	45,906	169,336
University-administered FFRDCs	4,958,944	4,811,485	9,975	29,644	13,657	94,183
Ames Lab.	29,012	29,012	0	0	0	0
Argonne National Lab.	543,169	498,847	1,677	0	0	42,645
Fermi National Accelerator Lab.	376,791	374,668	220	286	1,617	0
Jet Propulsion Lab.	1,711,528	1,711,528	0	0	0	0
Lawrence Berkeley National Lab.	611,711	555,842	5,919	11,288	0	38,662
Lincoln Lab.	706,555	704,050	0	1,023	0	1,482
National Astronomy and Ionosphere Ctr.	14,738	14,032	524	43	3	136
National Ctr. for Atmospheric Research	203,627	177,877	357	8,427	6,871	10,095
National Optical Astronomy Observatory	56,972	52,089	0	0	4,883	0
National Radio Astronomy Observatory	151,396	149,960	0	0	283	1,153
Princeton Plasma Physics Lab.	81,113	80,985	0	118	0	10
SLAC National Accelerator Lab.	294,421	294,421	0	0	0	0
Software Engineering Institute	89,077	80,618	0	8,459	0	0
Thomas Jefferson National Accelerator Facility	88,834	87,556	1,278	0	0	0
Nonprofit-administered FFRDCs	3,827,802	3,687,331	15,169	63,067	32,249	29,986
Aerospace FFRDC	41,470	14,386	0	2,811	16,753	7,520
Arroyo Ctr.	27,692	27,692	0	0	0	0
Brookhaven National Lab.	569,240	545,267	1,524	7,203	0	15,246
C3I FFRDC	46,790	46,790	0	0	0	0
Ctr. for Advanced Aviation System Development	10,575	10,575	0	0	0	0
Ctr. for Communications and Computing	66,293	66,293	0	0	0	0
Ctr. for Enterprise Modernization ^a	7,458	7,458	0	0	0	0
Ctr. for Naval Analyses	109,694	95,128	9,867	0	4,699	0
Ctr. for Nuclear Waste Regulatory Analyses	16,614	15,715	34	454	254	157
Homeland Security Studies and Analysis Institute ^b	32,173	32,173	0	0	0	0
Homeland Security Systems Engineering and Development Institute ^b	1,559	1,559	0	0	0	0
National Biodefense Analysis and Countermeasures Ctr.	19,934	19,934	0	0	0	0
National Defense Research Institute	42,265	42,265	0	0	0	0
National Renewable Energy Lab.	273,640	264,828	0	8,812	0	0
Oak Ridge National Lab.	1,259,259	1,217,301	598	27,630	10,543	3,187
Pacific Northwest National Lab.	1,086,884	1,063,705	3,146	16,157	0	3,876
Project Air Force	45,162	45,162	0	0	0	0
Science and Technology Policy Institute	5,100	5,100	0	0	0	0
Studies and Analyses Ctr.	166,000	166,000	0	0	0	0
Industry-administered FFRDCs	6,433,875	6,285,545	5,777	97,386	0	45,167
ID National Lab.	388,062	372,502	723	14,837	0	0
Lawrence Livermore National Lab.	1,321,633	1,261,769	4,722	9,975	0	45,167
Los Alamos National Lab.	2,172,179	2,141,950	0	30,229	0	0
National Cancer Institute at Frederick	378,200	378,200	0	0	0	0
Sandia National Labs.	2,043,509	2,000,832	332	42,345	0	0
Savannah River National Lab.	130,292	130,292	0	0	0	0

FFRDC = federally funded research and development center.

^a In prior year tables the Center for Enterprise Modernization was listed as the Internal Revenue Service (IRS) FFRDC.

^b On 5 March 2009 the Homeland Security Studies and Analysis Institute and the Homeland Security Systems Engineering and Development Institute were created. These new FFRDCs replaced the Homeland Security Institute.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Survey of Research and Development Expenditures at FFRDCs, FY 2009.

TABLE 6. Total and federally financed R&D expenditures at federally funded research and development centers, by FFRDC: FY 2006–09
(Dollars in thousands)

FFRDC	Total				Federally financed			
	2006	2007	2008	2009	2006	2007	2008	2009
All FFRDCs	13,218,497	13,824,987	14,707,088	15,220,621	12,824,552	13,401,081	14,262,947	14,784,361
University-administered FFRDCs	7,790,137	5,855,193	4,701,645	4,958,944	7,600,335	5,654,952	4,550,332	4,811,485
Ames Lab.	26,460	25,254	27,306	29,012	26,460	25,254	27,306	29,012
Argonne National Lab.	472,961	489,684	533,530	543,169	423,867	445,096	487,641	498,847
Fermi National Accelerator Lab.	330,980	337,306	340,486	376,791	330,980	336,927	336,123	374,668
Jet Propulsion Lab.	1,548,019	1,717,203	1,733,597	1,711,528	1,548,019	1,717,203	1,733,597	1,711,528
Lawrence Berkeley National Lab.	485,626	503,775	573,917	611,711	419,455	443,273	519,756	555,842
Lawrence Livermore National Lab. ^a	1,431,019	1,353,980	na	na	1,401,931	1,298,044	na	na
Lincoln Lab.	622,993	618,011	641,386	706,555	618,011	613,858	637,879	704,050
Los Alamos National Lab. ^b	2,145,200	na	na	na	2,128,787	na	na	na
National Astronomy and Ionosphere Ctr.	14,108	13,591	12,586	14,738	13,043	13,375	12,418	14,032
National Ctr. for Atmospheric Research	153,343	144,293	161,130	203,627	147,319	132,375	139,667	177,877
National Optical Astronomy Observatory	54,616	53,608	55,922	56,972	48,432	46,624	50,165	52,089
National Radio Astronomy Observatory	40,771	129,000	146,098	151,396	39,780	128,158	145,953	149,960
Princeton Plasma Physics Lab.	78,151	75,720	78,154	81,113	77,679	75,488	78,039	80,985
SLAC National Accelerator Lab.	214,026	231,960	234,316	294,421	214,026	231,960	234,316	294,421
Software Engineering Institute	75,636	80,566	80,963	89,077	67,400	67,657	66,721	80,618
Thomas Jefferson National Accelerator Facility	96,228	81,242	82,254	88,834	95,146	79,660	80,751	87,556
Nonprofit-administered FFRDCs	2,859,751	3,189,208	3,689,108	3,827,802	2,729,011	3,052,730	3,536,795	3,687,331
Aerospace FFRDC	34,200	36,490	38,940	41,470	14,700	16,930	16,349	14,386
Arroyo Ctr.	24,518	25,195	23,852	27,692	24,518	25,195	23,852	27,692
Brookhaven National Lab.	490,686	510,212	480,455	569,240	461,747	491,138	459,348	545,267
C3I FFRDC	37,073	46,368	52,053	46,790	37,073	46,368	52,053	46,790
Ctr. for Advanced Aviation System Development	6,601	7,290	7,470	10,575	6,601	7,290	7,470	10,575
Ctr. for Communications and Computing	51,500	57,400	59,500	66,293	51,500	57,400	59,500	66,293
Ctr. for Enterprise Modernization ^c	6,342	7,101	9,679	7,458	6,342	7,101	9,679	7,458
Ctr. for Naval Analyses	87,499	99,993	106,967	109,694	80,474	89,721	94,552	95,128
Ctr. for Nuclear Waste Regulatory Analyses	16,397	17,007	17,960	16,614	15,842	16,519	17,169	15,715
Homeland Security Institute ^d	20,521	25,370	27,400	na	20,521	25,370	27,400	na
Homeland Security Studies and Analysis Institute ^d	na	na	na	32,173	na	na	na	32,173
Homeland Security Systems Engineering and Development Institute ^d	na	na	na	1,559	na	na	na	1,559
National Biodefense Analysis and Countermeasures Ctr. ^e	na	6,320	12,979	19,934	na	6,320	12,979	19,934
National Defense Research Institute	34,203	38,152	40,051	42,265	34,203	38,152	40,051	42,265
National Renewable Energy Lab.	196,449	190,874	229,399	273,640	189,167	183,812	219,296	264,828
Oak Ridge National Lab.	928,090	1,083,509	1,251,336	1,259,259	889,530	1,031,919	1,205,784	1,217,301
Pacific Northwest National Lab.	749,365	851,512	1,136,773	1,086,884	720,486	823,080	1,097,019	1,063,705
Project Air Force	39,107	39,315	41,794	45,162	39,107	39,315	41,794	45,162
Science and Technology Policy Institute	6,800	5,600	6,000	5,100	6,800	5,600	6,000	5,100
Studies and Analyses Ctr.	130,400	141,500	146,500	166,000	130,400	141,500	146,500	166,000
Industry-administered FFRDCs	2,568,609	4,780,586	6,316,335	6,433,875	2,495,206	4,693,399	6,175,820	6,285,545
ID National Lab.	163,074	248,322	236,037	388,062	153,041	235,506	224,273	372,502
Lawrence Livermore National Lab. ^a	na	na	1,301,874	1,321,633	na	na	1,248,594	1,261,769
Los Alamos National Lab. ^b	na	2,046,260	2,073,538	2,172,179	na	2,029,056	2,051,550	2,141,950

TABLE 6. Total and federally financed R&D expenditures at federally funded research and development centers, by FFRDC: FY 2006–09
(Dollars in thousands)

FFRDC	Total				Federally financed			
	2006	2007	2008	2009	2006	2007	2008	2009
National Cancer Institute at Frederick	334,500	339,800	509,700	378,200	334,500	339,800	509,700	378,200
Sandia National Labs.	1,968,488	2,031,309	2,076,786	2,043,509	1,905,118	1,974,142	2,023,303	2,000,832
Savannah River National Lab.	102,547	114,895	118,400	130,292	102,547	114,895	118,400	130,292

na = not applicable.

FFRDC = federally funded research and development center.

^a Prior to FY 2008 Lawrence Livermore National Laboratory was administered by University of California. On 1 October 2007 administration was transferred to Lawrence Livermore National Security LLC.

^b Prior to FY 2007 Los Alamos National Laboratory was administered by University of California. On 1 June 2006 administration was transferred to Los Alamos National Security LLC.

^c In prior year tables the Center for Enterprise Modernization was listed as the Internal Revenue Service (IRS) FFRDC.

^d On 5 March 2009 the Homeland Security Studies and Analysis Institute and the Homeland Security Systems Engineering and Development Institute were created. These new FFRDCs replaced the Homeland Security Institute.

^e The National Biodefense Analysis and Countermeasures Center was established as an FFRDC by Department of Homeland Security on 20 December 2006.

SOURCE: National Science Foundation/National Center for Science and Engineering Statistics, Survey of Research and Development Expenditures at FFRDCs, FY 2009.

Appendix A. Technical Notes

During the production of this report, the America COMPETES Reauthorization Act of 2010 was signed into law. Section 505 of the bill renames the Division of Science Resources Statistics as the National Center for Science and Engineering Statistics (NCSES). The Center retains its reporting line to the Directorate for Social, Behavioral and Economic Sciences within the National Science Foundation. The new name signals the central role of NCSES in the collection, interpretation, analysis, and dissemination of objective data on the science and engineering enterprise.

The National Science Foundation (NSF) Survey of Research and Development Expenditures at Federally Funded Research and Development Centers (FFRDC R&D Expenditures Survey) is the primary source of information on separately budgeted R&D expenditures within FFRDCs in the United States. Conducted annually for all FFRDCs since FY 2001, the survey collects information on R&D expenditures by source of funds.

Scope of the Survey

The FY 2009 FFRDC R&D Expenditures Survey was sent to each of the nation's 39 FFRDCs. Of the 39 FFRDCs, 14 are administered by academic institutions, 19 are administered by nonprofit organizations, and 6 are administered by industrial organizations.

FFRDCs are engaged in basic research, applied research, development, or management of R&D activities, either upon direct request of the government or under a broad charter from the government, but in either case under the broad monitorship of the government. FFRDCs are operated, managed, and administered as separate organizational units within a parent organization or as separately incorporated organizations. They receive their major financial support (70% or more) from the federal government, usually from one agency, and are expected to have a long-term relationship with their sponsoring agency.

FFRDCs are asked to provide R&D expenditures by source of funding and character of work. In FY 2007 NSF expanded the character-of-work question, which previously had requested total and federally funded basic research expenditures. The question now asks for the amount of total expenditures and federally financed expenditures by three categories: basic research, applied research, and development.

FY 2009 Survey Frame Design

The FFRDC R&D Expenditures Survey has been an annual census of the full population of eligible FFRDCs since FY 2001. Prior to FY 2001 only FFRDCs administered by academic institutions were included in this survey. FFRDCs are identified through the NSF master list of FFRDCs. NSF is responsible for maintaining the master list and queries all federal agencies annually to determine changes, additions, or deletions to the list.

Survey Instrument

Item 1 is a request for total current expenditures for separately budgeted science and engineering R&D expenditures by source of funds.

Item 2 is a request for the amount of total expenditures and federally financed expenditures that are considered basic research, applied research, and/or development.

Data Collection

Most FFRDCs have incorporated the data that are needed to complete this survey into their record-keeping systems, thereby ensuring a consistent format from one year to the next. Such consistency yields the most useful statistics for time series. As a rule, information to complete this survey is found in the FFRDC's year-end accounting records.

The FY 2009 survey questionnaires were sent by e-mail in November 2009. Respondents could choose to submit an Adobe Portable Document Format questionnaire downloaded from

the Web or use a Web-based data collection system to respond to the survey. Every effort was made to maintain close contact with respondents to preserve both the consistency and continuity of the resulting data. Questionnaires were carefully examined for completeness upon receipt. Computerized facsimiles of the survey data were then prepared for each FFRDC; these compared the current and 2 prior years of data and noted any substantive disparities. Respondents were sent personalized e-mail messages asking them to provide any necessary revisions before the final processing and tabulation of data. These e-mail messages included a link to the FFRDC R&D Expenditures Survey Web-based data collection system, allowing respondents to view and correct their data online.

Respondents were asked to explain significant differences between current-year reporting and established patterns of reporting verified for prior years. They were encouraged to correct prior-year data if needed. When respondents updated or amended figures from past years, NSF made corresponding changes to trend data in this report and to the underlying microdata database.

Response Rate

Forms were received from all of the 39 FFRDCs on the current NSF master list by March of 2010.

Data Availability

Data for FY 2008 and FY 2009 of the FFRDC R&D Expenditures Survey are available at <http://www.nsf.gov/statistics/ffrdc/>. Data from FY 2008 and prior years of the FFRDC R&D Expenditures Survey are included in the Academic R&D Expenditures series of detailed statistical tables, available by fiscal year at <http://www.nsf.gov/statistics/rdexpenditures/>. Information from the survey is also included in the series *Science and Engineering Indicators and National Patterns of R&D Resources*, both available at <http://www.nsf.gov/statistics/>.

For more information about FFRDCs see NSF's Federally Funded R&D Centers Master Government List. Data on federal obligations to FFRDCs are available in NSF's Survey of Federal Funds for Research and Development. NSF's Survey of Graduate Students and Postdoctorates in Science and Engineering collects information about postdoctorates working in FFRDCs.

Appendix B. Federally Funded Research and Development Centers (FFRDCs): FY 2009

Department of Defense

Administered by universities and colleges

- Lincoln Laboratory
(Massachusetts Institute of Technology)
- Software Engineering Institute
(Carnegie Mellon University)

Administered by other nonprofit organizations

- Aerospace FFRDC
(The Aerospace Corporation)
- Arroyo Center
(RAND Corporation)
- C3I FFRDC
(MITRE Corporation)
- Center for Communications and Computing
(Institute for Defense Analyses)
- Center for Naval Analyses
(The CNA Corporation)
- National Defense Research Institute
(RAND Corporation)
- Project Air Force
(RAND Corporation)
- Studies and Analyses Center
(Institute for Defense Analyses)

Department of Energy

Administered by universities and colleges

- Ames Laboratory
(Iowa State University of Science and Technology)
- Argonne National Laboratory
(University of Chicago)
- Fermi National Accelerator Laboratory
(Fermi Research Alliance, LLC)
- Lawrence Berkeley National Laboratory
(University of California)
- Princeton Plasma Physics Laboratory
(Princeton University)
- SLAC National Accelerator Laboratory
(Leland Stanford, Jr., University)
- Thomas Jefferson National Accelerator Facility
(Jefferson Science Associates, LLC)

Administered by industrial firms

- Idaho National Laboratory
(Battelle Energy Alliance, LLC)

- Lawrence Livermore National Laboratory[1]
(Lawrence Livermore National Security, LLC)
- Los Alamos National Laboratory[2]
(Los Alamos National Security, LLC)
- Sandia National Laboratories
(Sandia Corporation, a subsidiary of Lockheed Martin Corporation)
- Savannah River National Laboratory
(Savannah River Nuclear Solutions, LLC)

Administered by other nonprofit organizations

- Brookhaven National Laboratory
(Brookhaven Science Associates, Inc.)
- National Renewable Energy Laboratory
(Alliance for Sustainable Energy, LLC)
- Oak Ridge National Laboratory
(UT-Battelle, LLC)
- Pacific Northwest National Laboratory
(Battelle Memorial Institute)

Department of Health and Human Services

Administered by industrial firms

- National Cancer Institute at Frederick
(Science Applications International Corporation–Frederick, Inc.)

Department of Homeland Security

Administered by other nonprofit institutions

- Homeland Security Studies and Analysis Institute[3]
(Analytic Services, Inc.)
- Homeland Security Systems Engineering and Development Institute[3]
(MITRE Corporation)
- National Biodefense Analysis and Countermeasures Center
(Battelle National Biodefense Institute)

Department of Transportation

Administered by other nonprofit institutions

- Center for Advanced Aviation System Development
(MITRE Corporation)

Department of the Treasury and Department of Veterans Affairs

Administered by other nonprofit institutions

- Center for Enterprise Modernization[4]
(MITRE Corporation)

National Aeronautics and Space Administration

Administered by universities and colleges

- Jet Propulsion Laboratory
(California Institute of Technology)

National Science Foundation

Administered by universities and colleges

- National Astronomy and Ionosphere Center
(Cornell University)
- National Center for Atmospheric Research
(University Corporation for Atmospheric Research)
- National Optical Astronomy Observatory
(Association of Universities for Research in Astronomy, Inc.)
- National Radio Astronomy Observatory
(Associated Universities, Inc.)

Administered by other nonprofit institutions

- Science and Technology Policy Institute
(Institute for Defense Analyses)

Nuclear Regulatory Commission

Administered by other nonprofit institutions

- Center for Nuclear Waste Regulatory Analyses
(Southwest Research Institute)

[1] On 1 October 2007 administration of Lawrence Livermore National Laboratory was transferred from University of California to an industrial firm administrator, Lawrence Livermore National Security, LLC.

[2] On 1 June 2006 administration of Los Alamos National Laboratory was transferred from University of California to an industrial firm administrator, Los Alamos National Security, LLC.

[3] On 5 March 2009 the Homeland Security Studies and Analysis Institute and the Homeland Security Systems Engineering and Development Institute were created. Together these new FFRDCs replaced the Homeland Security Institute.

[4] In October 1998 the contract expired for the Tax System Modernization Institute (IIT Research Institute) in Lanham, MD. TSMI was replaced with the Center for Enterprise Modernization, administered by the MITRE Corp. in McLean, VA. On 1 October 2008 the Department of Veterans Affairs was designated a co-sponsor of the Center for Enterprise Modernization.

Appendix C. Survey Instrument



NATIONAL SCIENCE FOUNDATION
ARLINGTON, VA 22230
SURVEY OF RESEARCH AND DEVELOPMENT EXPENDITURES AT FFRDCS
FY 2009

Please submit your survey data by February 5, 2010.

The Web address for submitting your data:

<http://www.nsfrcsurvey.org/ffrdc>

Or, mail this form to:

ICF Macro
7315 Wisconsin Avenue, Suite 400W
Bethesda, MD 20814-3202

Or, e-mail your response to:

support@nsfrsurvey.org

The Web password and user ID were e-mailed to each institution. If you have any questions about this or any other issue, please call: Survey Support at ICF Macro, 1-866-349-8626. For general survey questions, you may also contact Ronda Britt of NSF at rbritt@nsf.gov or (703) 292-7765.

Your cooperation in returning the survey questionnaire promptly is very important. This information is solicited under the authority of the National Science Foundation Act of 1950, as amended. Your response is entirely voluntary; your failure to provide some or all of the information will in no way adversely affect your institution.

Report data for your institution's 2009 fiscal year. All financial data requested on this form should be reported in thousands of dollars; for example, an expenditure of \$25,342 should be rounded to the nearest thousand dollars and reported as \$25.

Where exact data are not available, estimates are acceptable. Your estimates will be better than ours.

It is estimated that response to this survey will require 4 hours. If you wish to comment on this burden, please contact Suzanne H. Plimpton of NSF at (703) 292-7556, or e-mail splimpto@nsf.gov.

Scope:

This survey contains two question which requests data on *current fund expenditures* by source of funds for separately budgeted research and development (R&D). Definitions used are compatible with OMB Circular A-21, revised May 10, 2004.

Definitions:

Research and Development (R&D). R&D for purposes of this survey is the same as "organized research" as defined in Section B.1.b. of OMB Circular A-21 (revised). It includes all R&D activities that are separately budgeted and accounted for.

Research is systematic study directed toward fuller knowledge or understanding of the subject studied. Research is classified as either basic or applied, according to the objectives of the investigator.

Development is the systematic use of the knowledge or understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes.

Current fund expenditures. These are expenditures of funds available for current operations. Such expenditures include all unrestricted gifts and restricted current funds to the extent that such funds were expended for current operating purposes.

Please circle the month in which your institution's fiscal year begins:

Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec

Primary Contact—Person who is responsible for your institution's survey answers:

Name (Mr., Mrs., Ms., Dr. (circle one)):	
Title:E-mail:	
Telephone number:Fax:	
Address:Date submitted:	

Alternate Contact—Person to contact if the Primary Contact is unavailable. This person should know that you are the Primary Contact for the survey. Examples include your supervisor, the data preparer, or another coworker:

Name (Mr., Mrs., Ms., Dr. (circle one)):	
Title:E-mail:	
Telephone number:Fax:	

Instructions for Items 1 and 2

Separately budgeted research and development (R&D) includes all funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. *Include* research equipment purchased under research project awards from "current fund" accounts. Also *include* research funds for which an outside organization is a subrecipient. *Exclude* training grants, public service grants, demonstration projects, clinical trials, and research expenditures that are not separately budgeted. For item 1, allocate funding to the original sources whenever possible, as specified below. If this information is unknown, report the proximate funding source.

- a. Federal Government.** Report awards for R&D (including direct and reimbursed indirect costs) by all agencies of the Federal Government.
- b. State and local governments.** Include funds for R&D (including direct and reimbursed indirect costs) from State, county, municipal, or other local governments and their agencies.
- c. Industry.** Include all awards for R&D (including direct and reimbursed indirect costs) from profit-making organizations, whether engaged in production, distribution, research, service, or other activities. Do not include awards from nonprofit foundations financed by industry; these should be included under "All other sources."
- d. Institution funds.** Report funds, *including* related indirect costs, that your institution spent for R&D activities from the following unrestricted sources: general-purpose awards from industry, foundations, or other outside sources, and other institutional funds. In addition, estimate your institution's unreimbursed indirect costs associated with externally funded R&D projects, including mandatory and voluntary cost sharing. To estimate unreimbursed indirect costs, preferably on a project-by-project basis, use your appropriate *negotiated research indirect cost rate(s)* multiplied by the corresponding base(s) minus actual indirect cost recovery.
- e. All other sources.** Include awards for R&D (including direct and reimbursed indirect costs) from nonprofit foundations and voluntary health agencies as well as from all other sources not elsewhere classified. Also include gifts from individuals that are restricted by the donor to research. Funds from foundations that are affiliated with, or granted solely to your institution, should be included under "Institution funds." Funds for R&D received from a health agency that is a unit of a State or local government should be included under "State and local governments."

For item 2, allocate all the funds reported for Federal Government and Total in item 1 by character of work, as specified below

- a. Basic Research.** Report expenditures from research directed toward an increase of knowledge; it is research where the primary aim of the investigator is a fuller knowledge or understanding of the subject under study rather than a specific application thereof.
- b. Applied Research.** Report expenditures from research conducted to gain the knowledge or understanding to meet a specific, recognized need.
- c. Development.** Report expenditures for the systematic use of the knowledge or understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes.

Item 1. How much of your current fund expenditures for separately budgeted research and development in the sciences and engineering (including indirect costs) came from the following sources in FY 2009?

Source of Funds	Total (Dollars in thousands)
a. Federal Government	
b. State and local governments	
c. Industry	
d. Institution funds (sum of lines (1) and (2))	
(1) Institutionally financed organized research	
(2) Unreimbursed indirect costs and related sponsored research	
e. All other sources	
f. TOTAL (sum of a through e)	

Item 2. How much of the FY 2009 Federal and total R&D expenditures you reported in item 1 were for (a) basic research, (b) applied research, and (c) development?

Character of Work	(1) Total	(2) Federal
	(Dollars in thousands)	
a. Basic research		
b. Applied research		
c. Development		
d. Total expenditures (sum of a through c)		

CONFIDENTIALITY

Information received from individual institutions in Item 1 lines d(1) and d(2), or Item 2, will NOT be published or released; only aggregate totals will appear in tabulations. In accordance with the National Science Foundation Act of 1950, as amended, and other applicable federal laws, your responses will not be disclosed in identifiable form to anyone other than agency employees or authorized persons.

Suggested Citation, Acknowledgments

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