Improving the collection of R&D spending data from Federal Agencies

August 11, 2014

Celinda Marsh

Examiner for Federal R&D

Office of Management and Budget

Why do we care about Research and Development (R&D) spending?

- R&D and innovation lead to economic growth and improved quality of life for citizens
- Federal government is the second largest contributor to R&D (following industry) – constitutes nearly 30% of the national R&D portfolio
- Can we answer the question: Where is the money going?

Topics for next hour:

- What are agencies asked to report to OMB about R&D in the Budget process?
- What are agencies asked to report to NSF's National Center for Science and Engineering Statistics about R&D
- What can you do to make the process easier and more meaningful?

Defining Research and Development

- Research and Development are defined in Section 84 of OMB Circular A-11
- They are based on the OECD-published Frascati manual, which sets the international standards for R&D activities
- They've been the same for over four decades.
- Definitions restated in other OMB guidance (2 CFR 200), but same key phrases and many refer to A-11 definitions

Research

- **Basic research** is defined as systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. Basic research, however, may include activities with broad applications in mind.
- **Applied research** is defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.

Development

- **Development** is defined as systematic application of knowledge or understanding, directed toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

- But Exclude: Routine product testing, quality control, experimental production

R&D Construction of Facilities and Major Equipment

- Research and development facilities - Amounts for the construction and rehabilitation of research and development facilities. Includes the acquisition, design, and construction of, or major repairs or alterations to, all physical facilities for use in R&D activities. Facilities include land, buildings, and fixed capital equipment...
- Research and development equipment - Amounts for major equipment for research and development. Includes acquisition or design and production of movable equipment, such as spectrometers, detectors, and other instruments.

A-11 Examples:

- Include: Administrative expenses for R&D, including the operating costs of research facilities and equipment.

- Exclude:
- mapping,
- collection of general-purpose statistics,
- routine monitoring and evaluation of an operational program,
- and the training of scientific and technical personnel.

Circular A-11 reporting requirements

- In Section 84 – which describes Schedule C – character class reporting.

"You should be able to reconcile information reported in this schedule related to the conduct of research and development with information reported in the National Science Foundation (NSF) Survey of Federal Funds for Research and Development ..."

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

September 3, 2013

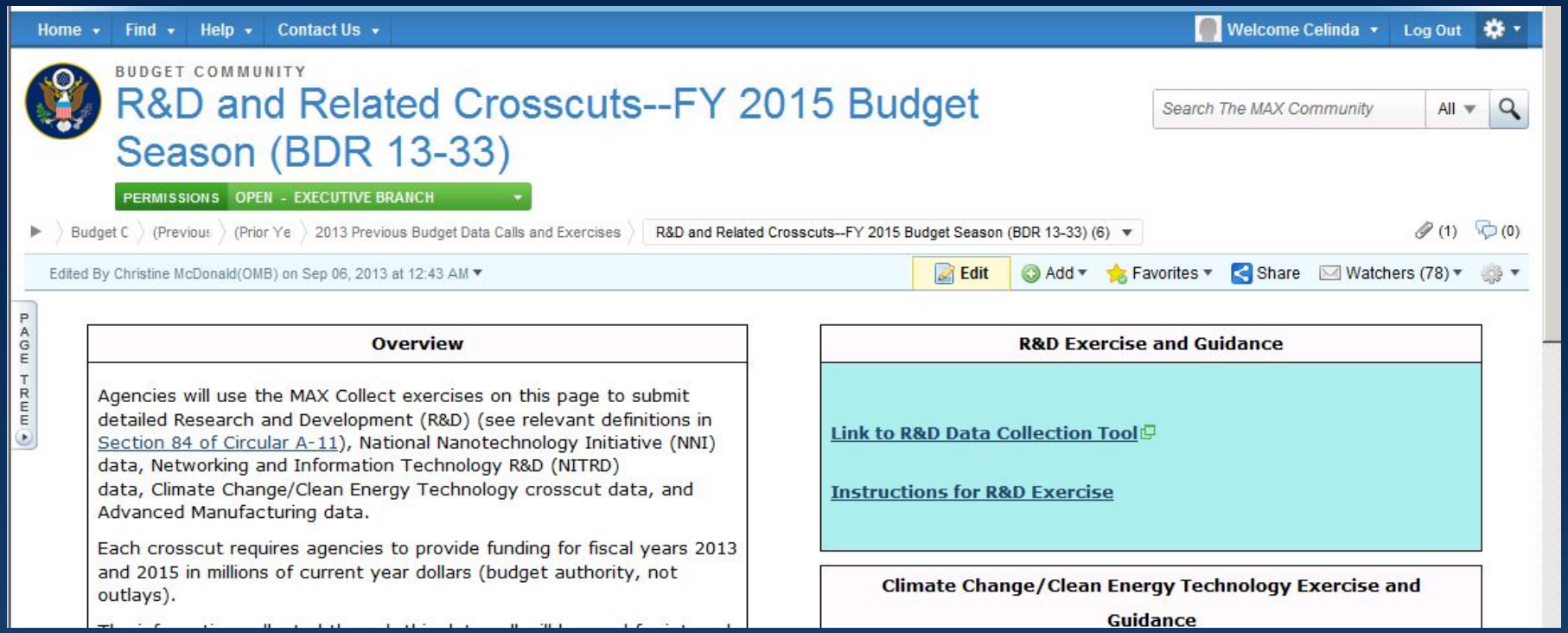
BUDGET DATA REQUEST NO. 13-33

MEMORANDUM FOR: PROGRAM/DEPUTY ASSOCIATE DIRECTORS

FROM: Dave Rowe
Deputy Assistant Director for Budget

SUBJECT: R&D and Related Crosscut Data for the FY 2015 Budget

Annual Budget Data Request (BDR)



MAX Community site for R&D reporting

MAX COLLECT

R & D Data Call Preparing for FY 2015

Status: Active

Exercise Home Contact: Celinda Marsh

Actions Control

Refresh Export Favorites Share Watchers

- R & D Data Call Preparing for FY 2015
  - R&D accounts
    - Department of Commerce
    - Department of Justice
    - Department of Defense
    - Department of Education
    - Department of Energy
    - Department of Health and Human
    - Department of Homeland Security
    - Department of Housing and Urban
    - Department of the Interior
    - Department of Labor
    - Department of State
    - Department of Transportation
      - Federal Aviation Administration
      - Federal Highway Adminsitratior
      - Federal Motor Carrier Safety Ad
      - Federal Railroad Administratior
      - Federal Transit Administration
        - Administrative Expenses
        - Research and University Re
        - Research and University Re
        - Administrative Expenses - T
      - National Highway Traffic Safety
      - Office of the Secretary
      - Pipeline and Hazardous Materi
      - Research and Innovative Techn
    - Department of Veterans Affairs
    - Consumer Product Safety Commis
    - Corps of Engineers-Civil Works
    - Environmental Protection Agency
    - International Assistance Programs
    - National Aeronautics and Space A
    - National Science Foundation
    - Nuclear Regulatory Commission
    - Postal Service
    - Smithsonian Institution
    - Social Security Administration

Edited by: Patrick Sandy on Nov 14 2013 at 06:43 PM

Template: Default Item Template

Phase: Agency Review

Administrative Expenses - Trust Fund

R & D Category Summary Report (Budget Authority, dollars in millions)

Edit | Add Row | Delete Row | Paste Rows at End | Paste Entire Table | Refresh | Export to Excel

Category	2013 Final	2015 Agency Request to OMB
Basic Research		
Applied Research		
Development		
R & D Facility Construction		
R & D Major Equipment		
	Cannot Sum text or blanks	Cannot Sum text or blanks

R&D Comments/Explanation of Major Changes

Include an explanation of any major changes (e.g., new programs, increases for programs, decreases, reprioritization, etc.)

Edit

Local intranet | Protected Mode: Off 100%

MAX Collect exercise for R&D reporting

OMB Account	Treas Acct	Trans	Version	Account Title	PY Er...	CY Er...	BY Er...	BL Er...
465-00-0100	76-0100	0	MASTER	Salaries and Expenses	0	0	0	0
465-00-8187	76-8187	0	MASTER	Christopher Columbus Fellowship Foundation	0	0	0	0
465-00-818730	76-818730	0	MASTER	Gifts and Donations, Christopher Columbus Fellowship Foundation	0	0	0	0
465-00-818750	76-818750	0	MASTER	General Fund Payment, Christopher Columbus Scholarship Fund	0	0	0	0

MAX A-11 database web-based entry

R&D reporting is one of the tasks agencies need to complete as each column locks during Budget Season.

OFFICE OF MANAGEMENT AND BUDGET

Max A-11 Data Entry — Salaries and Expenses (TRDATA 465-00-0100 -0 MASTER)

Sch: X, P, A, S, C, Q, T, #

Transmit 0 — Co

Line	Line Title	2013..	2014..	2015..	2016..	20
	Character Classification (C)					
	INVESTMENT ACTIVITIES:					
	Conduct of education and training:					
	Direct Federal programs:					
1512-01 01	Budget Authority	.....	.....	.....		
1512-02 01	Outlays	.....	.....	.....		

Schedule C

ax A11 Data Entry

MANAGEMENT AND BUDGET

-11 Data Entry — Salaries and Expenses (TRDATA 465-00-0100 -0 MASTER)

Transmit 0 — Collapse All Lines — Expand All

Line	Line Title	2013..	2014..	2015..	2016..	2017...	2018..	2019..
	Character Classification (C)							
	INVESTMENT ACTIVITIES:							
	Conduct of research and development:							
	Basic research:							
	Direct Federal programs:							
1412-01 01	Budget Authority							
	Conduct of education and training:							
	Direct Federal programs:							
1512-01 01	Budget Authority							
1512-02 01	Outlays							

Schedul	Line	Title
C		Basic research
C	141100	Grants to State and local governments
C		Direct Federal programs
C	141201	Budget Authority
C	141202	Outlays
C		Applied research
C	142100	Grants to State and local governments
C		Direct Federal programs
C	142201	Budget Authority
C	142202	Outlays
C		Development
C	143100	Grants to State and local governments

Insert — Cancel

If you don't see a line to report R&D activities in a specific account, you can insert it.

BUDGET COMMUNITY

Budget Season Reports

PERMISSIONS OPEN - EXECUTIVE BRANCH

Search The MAX Community All

Budget C > Home > Budget Reports > Budget Season Reports (4)

(20) (23)

Edited By Arthur Stigile(OMB) on Jul 18, 2014 at 03:05 PM

Edit Add Favorites Share Watchers (94)

The reports below, unless otherwise stated, are from the current budget year MAX database. The excel report icons are links to live reports that will query the database when the file is downloaded. The PDF files are typically static reports that are updated every night.

OMB LINKS - **Only visible to OMB**

Link to OMB Budget Season Dashboard - by Examiner

Link to Budget Season Reports - OMB Team Versions

OMB Issues Report

MAX Data Reports

Receipts, Budget Authority and Outlays

Report	Description
Governmental Receipts	Governmental Receipts by Agency and Account

Want to see what your Department or Agency has reported?

Character Class report has a specialized tab for R&D reporting

PB MAX reports (no MSR versions)

- The Excel icon links to live reports that updates once downloaded.
- The PDF icon links to a report that runs once overnight.
- The orange and green icon links to a live report that can be converted to a pdf file.

Report	Schedule	Description
Unobligated balances, Start and End of Year	X	Start and end of year unexpired unobligated balances based on budget season data
Obligations Stubs	X	Obligations With No User-Entered Stubs.xlsx
FTE - MAX vs. BDR	Q	FTE control total report by agency.
Civilian FTE	Q	Details agency account detail of civilian FTEs
Military FTE	Q	Details agency account detail of military FTEs
Object Class	O	Details the object class PY -BY
Budget Year Appropriations Requests	T	Amounts for Schedule T (in thousands)
Character Class	C	Character class data as entered into the Budget
Civilian Military FTE	Q	Details the civilian and military FTEs by account

Office of Management and Budget
Character Class - Presidential Budget, FY2015 Budget
With filters applied to show only certain R&D BA
(in millions of dollars)
Data refreshed on 08/06/2014 at 09:18 AM

									2013	2014	2015
Ag	Bu	A	Tra	Ch	Ch	Cha	Mea	Line Number	PY Amt	CY Amt	BY Amt
Department of Agriculture											
Agricultural Research Service											
005-18-1400 Salaries and Expenses											
TRANSMIT 0 Enacted/requested											
Conduct of Research and Development											
Applied Research											
								Budget Authority, Gross			
								142201	381	422	415
Basic Research											
								Budget Authority, Gross			
								141201	476	527	518
Development											

Display | R&D BA | Data | Sheet3

More to come…

- I'll be coming back to the issue of what should be reported as R&D later in this presentation

- Colleagues from OMB will be talking about MAX A-11 database in more detail on Wednesday.

Federal R&D Funds Survey Training

Michael Yamaner, NSF

August 11, 2014

National Science Foundation
National Center for Science and Engineering Statistics
www.nsf.gov/statistics

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Table I

Outlays for Research & Development and R&D Plant: FYs 2013, 2014, and 2015

	FY 2013	FY 2014	FY 2015
	NOTE: Please report actual dollars for all amounts.		
R&D and R&D Plant			
Research & Development	4 9302146537	9984746448	10384277968
R&D Plant	4 558635358	5 772290178	5 943962869
TOTAL R&D and R&D Plant (Read Only)	4 9860781895	5 10757036626	11328240837

New for the FY 2014-15 Survey

- Reconciling outlays reported for R&D and R&D Plant on Table one with outlays reported to OMB (Max Schedule C) will no longer be optional.

Table I Definitions

- **Outlays**
  - Represent the amounts for checks issued and cash payments made during a given period, regardless of when the funds were appropriated

Table I Definitions (cont'd)

- **Research & Development**
  - R&D activities comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.

    Include:
    - Administrative expenses for R&D

    Exclude:
    - Physical assets for R&D such as R&D equipment and facilities.
    - Routine product testing, quality control, mapping, collection of general-purpose statistics, experimental production, routine monitoring and evaluation of an operational program, and the training of scientific and technical personnel.

Table I Definitions (cont'd)

- **R&D Plant**
  - R&D facilities and fixed equipment, such as reactors, wind tunnels, and particle accelerators, used for R&D
    Include:
    - Acquisitions of, construction of, major repairs to, or alterations in structures, works, equipment, facilities, or land for use in R&D activities at federal or non-federal installations.

    Exclude:
    - Expendable or movable equipment (e.g., spectrometers, microscopes) and office furniture and equipment, the costs of pre-design studies (e.g., those undertaken before commitment to a specific facility)—These excluded costs are reported under total conduct of research and development.
  - Obligations for foreign R&D plant are limited to federal funds for facilities abroad and are used in support of foreign research and development.

Table II

Summary of Obligations for R&D and R&D Plant: FYs 2013, 2014, and 2015

NOTE: Please report actual dollars for all amounts.

Character of Work	FY 2013	FY 2014	FY 2015
Research			
Basic Research	3851062897	4101783600	4173872388
Applied Research	3482265328	3578583704	[5] 3969661107
Total Research[1] (Read Only)	7333328225	7680367304	8143533495
Development	2507628404	2684230903	2879752501
Total Research & Development (Read Only)	9840956629	10364598207	11023285996
R&D Plant	[4] 556133012	[5] 750060159	[5] 928596527
TOTAL Research & Development and R&D Plant (Read Only)	10397089641	11114658366	11951882523

Table II Definitions

- **Obligations**
  - Represent the amounts for orders placed, contracts awarded, services received, and similar transactions during a given period, regardless of when the funds were appropriated and when future payment of money is required.
- **Basic Research**
  - Defined as systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind.
- **Applied Research**
  - Defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.

Table II Definitions (cont'd)

- **Development**
  - Systematic application of knowledge or understanding, directed toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

Table Group 2

Obligations for Research by Field of Science & Engineering

- **Table III** FY 2013
- **Table IV** FY 2014
- **Table V** FY 2015

Table III

Obligations for Basic, Applied, and Total Research by Field of S&E: FY 2013

	Basic Research FY 2013	Applied Research FY 2013	Total Research[1] FY 2013
	NOTE: Please report actual dollars for all amounts.		
Field of Science and Engineering			
Computer Sciences and Mathematics			Read Only
Computer Sciences	62544939	[4] 552633772	[4] 615178711
Mathematics	362954427	[4] 0	362954427
Other Computer Sciences and Mathematics	[4] 2000737	[4] 7582237	[4] 9582974
Total Computer Sciences and Mathematics (Read Only)	427500103	[4] 560216009	987716112
Engineering			Read Only
Aeronautical Engineering	0	0	0
Astronautical Engineering	[5] 100000	[4] 0	[4] 100000
Chemical Engineering	[6] 329002	[5] 217982494	[5] 218311496

Table III (cont'd)

- **Computer Sciences and Mathematics**
  - Computer Sciences
  - Mathematics
  - Other Computer Sciences and Mathematics
- **Engineering**
  - Aeronautical Engineering
  - Astronautical Engineering
  - Chemical Engineering
  - Civil Engineering
  - Electrical Engineering
  - Mechanical Engineering
  - Metallurgy and Materials Engineering
  - Other Engineering
- **Environmental Sciences**
  - Atmospheric Sciences
  - Geological Sciences
  - Oceanography
  - Other Environmental Sciences
- **Life Sciences**
  - Agricultural Sciences
  - Biological Sciences (excl. Environmental Biol.)
  - Environmental Biology
  - Medical Sciences
  - Other Life Sciences
- **Physical Sciences**
  - Astronomy
  - Chemistry
  - Physics
  - Other Physical Sciences
- **Psychology**
  - Biological Aspects
  - Social Aspects
  - Other Psychological Sciences
- **Social Sciences**
  - Anthropology
  - Economics
  - Political Science
  - Sociology
  - Other Social Sciences
- **Other Sciences not elsewhere classified**

Table IV

Obligations for Basic, Applied, and Total Research by Field of S&E: FY 2014

Field of Science and Engineering	Basic Research FY 2014	Applied Research FY 2014	Total Research[1] FY 2014
	NOTE: Please report actual dollars for all amounts.		
			Read Only
Computer Sciences and Mathematics	[5] 481997938	577160136	1059158074
Engineering	910157460	1845564700	2755722160
Environmental Sciences	298239774	[4] 23500867	321740641
Life Sciences	390153000	23209405	413362405
Physical Sciences	1859227628	[4] 780727595	2639955223
Psychology	0	0	0
Social Sciences	[6] 225000	[4] 225000	[4] 450000
Other Sciences not elsewhere classified	[5] 161782800	[5] 328196001	[5] 489978801
TOTAL All Fields[2] (Read Only)	4101783600	3578583704	7680367304

Table V

Obligations for Basic, Applied, and Total Research by Field of S&E: FY 2015

Field of Science and Engineering	Basic Research FY 2015	Applied Research FY 2015	Total Research[1] FY 2015
	NOTE: Please report actual dollars for all amounts.		
			Read Only
Computer Sciences and Mathematics	[5] 543717938	[5] 638939136	[5] 1182657074
Engineering	943613300	[5] 2157729488	[5] 3101342788
Environmental Sciences	[5] 329922774	23958426	[5] 353881200
Life Sciences	378848000	[4] 5150000	383998000
Physical Sciences	1792642876	817832456	2610475332
Psychology	0	0	0
Social Sciences	225000	225000	450000
Other Sciences not elsewhere classified	[5] 184902500	325826601	510729101
TOTAL All Fields[2] (Read Only)	4173872388	[5] 3969661107	8143533495

Table Group 3

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Table VI

R&D: FY 2013 Obligations by Performer and Character of Work

Performer	Basic Research FY 2013	Applied Research FY 2013	Development FY 2013	Total Research & Development FY 2013
	NOTE: Please report actual dollars for all amounts.			
				Read Only
Federal Intramural[1]	47037614	[4] 348800215	[4] 142581279	[4] 538419108
Portion of Federal Intramural for Personnel Costs[2]	[4] (1757448)	[5] (67311110)	(106508414)	(175576972)
Businesses Excl FFRDCs	[4] 184125192	303893288	1143522606	1631541086
FFRDCs Admin by Industrial Firms	[4] 237412332	2004986942	[5] 797647289	3040046563
Univ and Colleges Excl FFRDCs	662639122	[4] 142537613	[4] 58939697	[4] 864116432
FFRDCs Admin by Univ and Colleges	1598510605	[5] 142578047	[5] 81841045	1822929697
Nonprofit Insts Excl FFRDCs	45052443	[4] 25423328	[4] 29379103	[4] 99854874
FFRDCs Admin by Nonprofit Insts	1073827919	[5] 508219552	[5] 246730970	[5] 1828778441
State and Local Governments	[4] 20749	5826343	6986405	12833497
Total All Domestic Performers (Read Only)	3848625976	3482265328	2507628394	9838519698
Foreign	[5] 2436921	0	10	[5] 2436931
TOTAL All Performers[3] (Read Only)	3851062897	3482265328	2507628404	9840956629

Table VII

R&D: FY 2014 Obligations by Performer and Character of Work

Performer	Basic Research FY 2014	Applied Research FY 2014	Development FY 2014	Total Research & Development FY 2014
	NOTE: Please report actual dollars for all amounts.			
				Read Only
Federal Intramural[1]	5 286570294	5 318317647	5 169043332	5 773931273
Portion of Federal Intramural for Personnel Costs[2]	5 (2009554)	(68034199)	(111933599)	(181977352)
Businesses Excl FFRDCs	5 203072993	5 355398935	5 1260448390	5 1818920318
FFRDCs Admin by Industrial Firms	216061544	2165466539	824728598	3206256681
Univ and Colleges Excl FFRDCs	647084485	5 164503643	5 95510747	907098875
FFRDCs Admin by Univ and Colleges	1624110386	4 128242158	4 71705460	1824058004
Nonprofit Insts Excl FFRDCs	4 19271732	24532462	5 43829855	4 87634049
FFRDCs Admin by Nonprofit Insts	1104468060	4 416340654	4 208524672	1729333386
State and Local Governments	5 35106	5781666	5 10439835	5 16256607
Total All Domestic Performers (Read Only)	4100674600	3578583704	2684230889	10363489193
Foreign	4 1109000	0	14	4 1109014
TOTAL All Performers[3] (Read Only)	4101783600	3578583704	2684230903	10364598207

Table VIII

R&D: FY 2015 Obligations by Performer and Character of Work

Performer	Basic Research FY 2015	Applied Research FY 2015	Development FY 2015	Total Research & Development FY 2015
	NOTE: Please report actual dollars for all amounts.			
				Read Only
Federal Intramural[1]	[4] 120898979	[4] 358515998	[4] 150281676	[4] 629696653
Portion of Federal Intramural for Personnel Costs[2]	[5] (2511972)	(70940364)	(111716170)	(185168506)
Businesses Excl FFRDCs	207866655	332159524	1209048216	1749074395
FFRDCs Admin by Industrial Firms	200399726	[5] 2440425257	[5] 1047678388	[5] 3688503371
Univ and Colleges Excl FFRDCs	678488325	156816117	[4] 73420280	908724722
FFRDCs Admin by Univ and Colleges	1745125969	[5] 187620244	[5] 117886659	[5] 2050632872
Nonprofit Insts Excl FFRDCs	[5] 21424206	[4] 18787626	[4] 31635181	[4] 71847013
FFRDCs Admin by Nonprofit Insts	1199271371	[5] 470841097	[5] 242138262	[5] 1912250730
State and Local Governments	38157	[4] 4495244	[4] 7663828	[4] 12197229
Total All Domestic Performers (Read Only)	4173513388	[5] 3969661107	2879752490	11022926985
Foreign	[4] 359000	0	11	[4] 359011
TOTAL All Performers[3] (Read Only)	4173872388	[5] 3969661107	2879752501	11023285996

Table VI, VII, & VIII Definitions

- **Performer**
  - Either an intramural group or organization carrying out an operational function or an extramural organization or person receiving support or providing services under a contract or grant.

Table VI, VII, & VIII Definitions (cont'd)

- **Intramural performers**
  - Agencies of the federal government. Their work is carried on directly by agency personnel. Obligations reported under this category are for activities performed or to be performed by the reporting agency itself, or represent funds that the agency transfers to another federal agency for performance of work as long as the ultimate performer is that agency or any federal agency. If the ultimate performer is not a federal agency, the funds so transferred are reported by the transferring agency under the appropriate extramural performer category (universities and colleges, other nonprofit institutions, FFRDC, or industrial firms).

    NOTE: Intramural activities cover not only the actual intramural R&D performance, **but also the costs associated with the planning and administration of both intramural and extramural programs by federal personnel.** Intramural activities also include the costs of supplies and equipment, essentially of an "off-the-shelf" nature, that are procured for use in intramural R&D. For example, the purchase from an extramural source of an operational launch vehicle (i.e., one that has gone beyond the development or prototype stage) that is used for intramural performance of R&D is reported as a part of the cost of intramural R&D.

Table VI, VII, & VIII Definitions (cont'd)

- **Extramural performers**
  - Organizations outside the federal sector that perform R&D with federal funds under contract, grant, or cooperative agreement. Only those costs associated with actual R&D performance are reported, but these costs would include costs of materials and supplies to carry out R&D activities. Note, however, that the costs of off-the-shelf supplies and equipment procured from extramural suppliers that are required to support intramural research and development should be considered as part of the costs of intramural performance, and not as part of the costs of extramural performance. Extramural performers are identified as follows:
    - Industrial firms
    - Universities and colleges
    - Other nonprofit institutions
    - Federally Funded Research and Development Centers (FFRDCs)
    - State and local governments
    - Foreign performers

Table VI, VII, & VIII Definitions (cont'd)

- **Industrial firms**
  - Organizations that may legally distribute net earnings to individuals or other organizations. For cases wherein an R&D grant or contract is awarded directly to a private individual, obligations incurred are placed under this category.
- **Universities and colleges**
  - Institutions engaged primarily in providing resident and/or accredited instruction for at least a 2-year program above the secondary school level. Included are colleges of liberal arts; schools of arts and sciences; professional schools, as in engineering and medicine, including affiliated hospitals and associated research institutes; and agricultural experiment stations.

Table VI, VII, & VIII Definitions (cont'd)

- **Other non-profit institutions**
  - 1) Private organizations, other than educational institutions, whose net earnings in no part inure to the benefit of a private stockholder or individual
  - 2) Other private organizations organized for the exclusive purpose of turning over their entire net earnings to such nonprofit organizations

Table VI, VII, & VIII Definitions (cont'd)

- **Federally Funded Research & Development Centers (FFRDCs)**
  - R&D-performing organizations that are exclusively or substantially financed by the federal government and are supported by the federal government either to meet a particular R&D objective or, in some instances, to provide major facilities at universities for research and associated training purposes.
  - Each center is administered either by an industrial firm, a university or college, or another nonprofit institution. To view the list of current FFRDCs, please see the Table IX definitions slide.

Table VI, VII, & VIII Definitions (cont'd)

- **State and local governments**
  - State and local government agencies, excluding state or local universities and colleges, agricultural experiment stations, medical schools, and affiliated hospitals. (Federal R&D funds obligated directly to such state and local institutions excluded in this category are included under the "Universities and colleges" category in this report.)
  - R&D activities under the state and local category are performed either by the state or local agencies themselves or by other organizations under grants or contracts from such agencies. Regardless of the ultimate performer, Federal R&D funds directed to state and local governments are reported under this sector and no other.

Table VI, VII, & VIII Definitions (cont'd)

- **Foreign performers**
  - Foreign citizens, foreign organizations, foreign universities and colleges, or foreign governments, as well as international organizations (such as the North Atlantic Treaty Organization (NATO), United Nations Educational, Scientific, and Cultural Organization (UNESCO), and World Health Organization [WHO]), performing R&D work abroad financed by the federal government. Excluded:
    - U.S. agencies, organizations, or citizens performing R&D abroad for the federal government; the survey does not seek information on "off-shore" payments.
      Exception: "Foreign performers" does include U.S. citizens performing R&D abroad under "special foreign currency funds." (See Public Law 480, sections 104 (a), (k), and (n), the Agricultural Trade Development and Assistance Act of 1954 as amended in 1959.)
  - Foreign scientists performing in the United States should not be considered "foreign performers."

Table Group 4

Obligations for FY 2013

- **Table IX** FFRDCs
- **Table X** Foreign Performers

Table IX

Obligations for R&D and R&D Plant at Individual Federally Funded R&D Centers (FFRDCs): FY 2013

Administered by Industrial Firms	R&D Obligations	R&D Plant Obligations
Frederick National Laboratory for Cancer Research (SAIC-Frederick Inc., a subsidiary of the Science Applications International Corp.) Frederick, MD	0	0
Idaho National Laboratory (Battelle Energy Alliance, LLC) Idaho Falls, ID	216655416	0
Lawrence Livermore National Laboratory (Lawrence Livermore National Security, LLC) Livermore, CA	937545812	0
Los Alamos National Laboratory (Los Alamos National Security, LLC) Los Alamos, NM	919426770	[5] 34191620
Sandia National Laboratories (Sandia Corporation, a subsidiary of Lockheed Martin Corp.) Albuquerque, NM	[5] 944502208	[5] 45319216
Savannah River National Laboratory (Savannah River Nuclear Solutions, LLC) Aiken, SC	21916357	0
TOTAL Industrial-Administered FFRDCs[1,2] (Read Only)	3040046563	[5] 79510836
Administered by Universities and Colleges[3]	**R&D Obligations**	**R&D Plant Obligations**
Ames Laboratory (Iowa State University of Science and Technology) Ames, IA	24806676	[5] 6478169

Table X

Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2013

NORTH AMERICA	Basic Research Only[1]	Total Research & Development[2]
Canada	4 188846	4 188856
NORTH AMERICA, Total (Read Only)	4 188846	4 188856
ASIA	**Basic Research Only[1]**	**Total Research & Development[2]**
Israel	332432	332432
Japan	113000	113000
ASIA, Total (Read Only)	5 445432	5 445432
EUROPE	**Basic Research Only[1]**	**Total Research & Development[2]**

To add a new country, choose its name from the pull-down list and click on **Add New Countries.** Hold down **Ctrl** to choose multiple countries.

Andorra
Angola
Anguilla
Antigua and Barbuda
Argentina
Armenia
Aruba
Asian countries, other
Australia

Add New Countries

Table Group 5

Obligations for R&D Plant by Performer and Character of Work

- **Table XI** **FYs 2013-2015**
  - **Table XI - Narrative I** **(optional)**
  - **Table XI - Narrative II** **(optional)**

Table XI

Obligations for R&D Plant by Performer of R&D: FYs 2013, 2014, and 2015

	FY 2013	FY 2014	FY 2015
	NOTE: Please report actual dollars for all amounts.		
Performer			
Federal Intramural[1]	4 0	3 500000	4 0
Businesses Excl FFRDCs	4 15274948	5 40075400	5 224449300
FFRDCs Admin by Industrial Firms	5 79510836	77041759	80231227
Univ and Colleges Excl FFRDCs	22000000	5 55000000	5 91470000
FFRDCs Admin by Univ and Colleges	232159036	5 299269000	5 326510000
Nonprofit Insts Excl FFRDCs	0	0	0
FFRDCs Admin by Nonprofit Insts	4 207188192	5 278174000	4 205936000
State and Local Governments	0	0	0
Total All Domestic Performers (Read Only)	4 556133012	5 750060159	5 928596527
Foreign	0	0	0
TOTAL All Performers[2] (Read Only)	4 556133012	5 750060159	5 928596527

Table Group 6

Obligations by State for FY 2013

- **Table A** R&D
- **Table B** R&D Plant

Table A

R&D: FY 2013 Obligations by State and Performer

State	Federal Intramural[1]	Businesses Excluding FFRDCs[2]	FFRDCs Admin by Industrial Firms[3]	Univ and Colleges Excluding FFRDCs[4]	FFRDCs Admin by Univ and Colleges[5]	Nonprofit Insts Excluding FFRDCs[6]	FFRDCs Admin by Nonprofit Insts[7]	State and Local Governments[8]
Alabama	[4] 0	14752582	0	[4] 3735021	0	683945	0	0
Alaska	0	141636	0	[5] 2582756	0	0	0	1462812
Arizona	0	[4] 4560849	0	[5] 8648991	0	0	0	0

States selected here are added to all screens with state categories.
Hold down Ctrl to choose multiple states.
"Other areas" includes U.S. territories other than Puerto Rico.
"Offices abroad" includes R&D performed or administered in foreign countries by the U.S. government.

Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida

Add New State(s)

Table B

R&D Plant: FY 2013 Obligations by State and Performer

State	Federal Intramural[1]	Businesses Excluding FFRDCs[2]	FFRDCs Admin by Industrial Firms[3]	Univ and Colleges Excluding FFRDCs[4]	FFRDCs Admin by Univ and Colleges[5]	Nonprofit Insts Excluding FFRDCs[6]	FFRDCs Admin by Nonprofit Insts[7]	State and Local Governments[8]
California	0	[4] 0	[4] 0	0	[5] 63723901	0	0	0
Colorado	0	0	0	0	0	0	[6] 4399000	0
Georgia	0	0	0	0	0	0	0	0

States selected here are added to all screens with state categories.
Hold down Ctrl to choose multiple states.
"Other areas" includes U.S. territories other than Puerto Rico.
"Offices abroad" includes R&D performed or administered in foreign countries by the U.S. government.

Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida

Add New State(s)

Tips

- Don’t enter commas
- Don’t enter decimal point or cents
- Round to the nearest dollar
- Start with detailed tables and work back to summary tables
  1. Get detail right on State tables (A, B)
  2. Get detail right on Performer tables (IX – XI)
  3. Then move to summary tables (II, VI, VII)

Contact Us

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Improving the Quality of Federal Research and Development Funding Data

How much does the Federal Government invest in R&D?

FY 2011 Federal R&D Data			
R&D Classification	Financial Report of the US Government	FY 2013 President's Budget	Survey of Federal Funds for Research and Development
Basic Research	$35.7	$29.7	$29.3
Applied Research	$28.8	$30.8	$28.7
Development	$71.7	$80.2	$77.7
Total R&D	$136.2	$140.7	$135.4

Barriers to Measuring R&D

- Continuity between financial, accounting, and budget systems with project level data
- Agencies will report at the account level, but our decisions are generally made at a program level
- Interpretation of R&D definitions can vary significantly from year to year as staff turn over at agencies (and OMB).
  - i.e., Verifying numbers you don't have much insight into

Proposed Solutions

- Incremental changes through individual agency engagements
  - e.g., OMB-NASA R&D reporting heuristic
- Creating standard data tags for federal R&D reporting
- Accounting and audit standards for federal agency R&D
- Improvement s in electronic reporting of R&D
- Data management platform

Direct engagement between OMB and Federal agencies

- Review alignment between R&D definitions and agency interpretations of definitions from OMB and NSF
- Streamline data reporting processes
- Help agency, OMB, and NSF line-up reporting with A-11 Schedule C, too.

Data Tagging

- Growing interest in data tagging within Federal Government
  - SEC and FDIC
  - Children and Family Services Innovation Improvement Act
  - DATA Act
- Develop data tags for R&D variables for BAD, performer type, place of performance, and field of science
- Capture intramural R&D spending
- Foster consistency in reporting R&D data to OMB and NSF while linking to reporting requirements A-11 and A-136

Accounting and Audit Standards

- Statement of Federal Financial Accounting Standard – 8
  - Required Supplemental Stewardship Investments (RSSI)
  - A-136 financial reporting for basic, applied, and development
- Develop guidance to disaggregate R&D reporting to update A-11 and A-136
  - Develop R&D Community of Interest for an Accounting and Auditing Policy Committee (AAPC) subcommittee to review and revise existing standards
  - Develop Technical Release to provide agencies with additional guidance
- Link standards with data tags for R&D

Facilitate Electronic Reporting

- National Information Exchange Model is a central repository for standard definitions and terms for XML-based exchanges of information to facilitate reporting from disparate agency systems without wholesale system changes
  - Facilitates data sharing from multiple data systems and formats based on set of business rules established by COI
  - Link agency existing systems to standards and XML-R&D taxonomy
- Convene an R&D Community of Interest to adapt standard definitions, guidance, and data tags

Single Data Management Platform

- OMB and NSF currently use separate and unrelated data platforms to collect same R&D data
  - Data collected on different time schedules
  - Different levels of detail, but aggregates should be same
- Single data platform to serve both OMB and NSF data collection needs would allow agencies to report same data to both agencies
  - Increases consistency between reporting to OMB and NSF

Benefits to Potential Collaborators

- Federal Agencies
- Office of Federal Financial Management
- Office of Science and Technology Policy
- Bureau of Economic Analysis

Next Steps

- Outreach with individual agencies to review their R&D reporting
- Establish a Federal-wide R&D Community of Interest
- Develop pilot program to create XBRL R&D taxonomy and test application with several agencies whose core mission includes R&D

Interest in improving R&D reporting process?

The R&D reporting community of practice is forming now!

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