



FORM APPROVED  
OMB No. 3145-0100  
Expiration Date: 10/31/13

**NATIONAL SCIENCE FOUNDATION**  
ARLINGTON, VA 22230  
**HIGHER EDUCATION RESEARCH AND DEVELOPMENT SURVEY**  
**FY 2012 Short Form**

**Please submit your survey data by January 31, 2013.**

This survey collects data on research and development (R&D) activities at higher education institutions. Please report R&D activities and expenditures for your institution's **2012** fiscal year.

Your participation in this survey provides important information on the national level of R&D activity. The National Science Foundation (NSF) is authorized to collect this information under the National Science Foundation Act of 1950, as amended. Your institution's response is entirely voluntary.

**Questions?**

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**INFORMATION COPY  
DO NOT USE TO REPORT**

Response to this survey is estimated to require 14 hours. Please report your actual completion time at the end of the questionnaire. If you wish to comment on the time required to complete this survey, please contact Suzanne H. Plimpton of NSF at (703) 292-7556, or e-mail splimpto@nsf.gov.

The Web address for submitting your data:

<http://www.herdsurvey.org>

Or mail this form to:

ICF International  
530 Gaither Road, Suite 500  
Rockville, MD 20850

**Thank you for your participation.**

# What's New for FY 2012

## Reduction in questions

NSF received many inquiries from institutions during the FY 2011 survey regarding the possibility of completing a subset of questions for the survey. We recognize that for institutions with small amounts of R&D expenditures, completing the full survey is burdensome and not directly relevant to their institution's primary mission. Therefore, we have instituted a short form version of the survey that includes only a few core questions for institutions below a designated threshold of R&D expenditures.

## Changes to survey definitions and instructions

In order to continue to provide greater clarity regarding what types of institutionally funded activities should be included, we have modified the instructions in several places on page 3. These revisions are not meant to be changes to the survey definitions; however, we recognize that some institutions will need to revise their reporting as a result of these modified instructions. A new question was added (see below) in order to account for the changes made this year.

- The definition of R&D expenditures has been revised to include all expenditures for R&D from your institution's current operating funds that can be separately accounted for. This includes projects that are separately budgeted and fall under OMB's A-21 definition of organized research, as well as expenditures of other funds designated for research.
- In the box labeled "R&D includes", three additional bullets were added: startup, bridge, or seed funding provided to researchers within your institution; other departmental funds designated for research; and tuition remission provided to students working on research.
- In the box labeled "R&D does not include", one bullet was revised to reduce ambiguity. It was changed from "departmental research that is not separately budgeted" to "estimates of the proportion of time budgeted for instruction that is spent on research."
- In the box labeled "Please include these components of your institution", the "university 501(c)3 foundation" bullet has been revised to include all university 501(c)3 foundations, not just those established to handle R&D awards.

## Changes to questions

- **Question 1.** Row d, Nonprofit organizations. An instruction has been added to specify that funds from your institution's 501(c)3 foundation be reported in row e1 (institutionally financed research).
- **Question 1.** Row e1, Institutionally financed research, has been clarified to include both organized research and separately accounted for departmental research.
- **Question 1.** Row e3, Unrecovered indirect costs. The wording has been modified to emphasize that *only* your externally funded R&D should be used to calculate these costs.

## New question

- **Question 1.1.** This question asks if four different types of institutionally financed R&D expenditures were included in Question 1, row e1, both on the current FY 2012 survey and on the FY 2011 survey.

## Survey Definitions and Instructions

### Fiscal year (FY)

Please report data for your institution's 2012 fiscal year.

**Research and development (R&D)** is creative work conducted systematically to increase the stock of knowledge (research) and to use this stock of knowledge to devise new applications (development). R&D covers three activities defined below—basic research, applied research, and development.

- **Basic research** is undertaken primarily to acquire new knowledge without any particular application or use in mind.
- **Applied research** is conducted to gain the knowledge or understanding to meet a specific, recognized need.
- **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.

### R&D expenditures

Include all R&D expenditures from your institution's current operating funds that are separately accounted for. For purposes of this survey, R&D includes expenditures for organized research as defined by 2 CFR 220 (OMB Circular A-21) and expenditures from funds designated for research.

R&D <i>includes</i> :	R&D does <i>not</i> include:
<ul style="list-style-type: none"> <li>• Sponsored research (federal and nonfederal)</li> <li>• University research (institutional funds that are separately budgeted for individual R&amp;D projects)</li> <li>• Startup, bridge, or seed funding provided to researchers within your institution</li> <li>• Other departmental funds designated for research</li> <li>• Recovered and unrecovered indirect costs (see definitions in Question 1)</li> <li>• Equipment purchased from R&amp;D project accounts</li> <li>• R&amp;D funds passed through to a subrecipient organization, educational or other</li> <li>• Clinical trials, Phases I, II, or III (see definition in Question 5)</li> <li>• Research training grants funding work on organized research projects</li> <li>• Tuition remission provided to students working on research</li> </ul>	<ul style="list-style-type: none"> <li>• Public service grants or outreach programs</li> <li>• Curriculum development (unless included as part of an overall research project)</li> <li>• R&amp;D conducted by university faculty or staff at outside institutions that is not accounted for in your financial records</li> <li>• Estimates of the proportion of time budgeted for instruction that is spent on research</li> <li>• Capital projects (i.e., construction or renovation of research facilities)</li> <li>• Non-research training grants</li> <li>• Unrecovered indirect costs that exceed your institution's federally negotiated Facilities and Administrative (F&amp;A) rate</li> </ul>

Please <i>include</i> these components of your institution:	Please do <i>not</i> include:
<ul style="list-style-type: none"> <li>• All units of your institution included in or with your financial statements, such as:               <ul style="list-style-type: none"> <li>• Agricultural experiment stations</li> <li>• Branch campuses</li> <li>• Medical schools</li> <li>• Hospitals or clinics</li> <li>• Research centers and facilities</li> <li>• A university 501(c)3 foundation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Federally Funded R&amp;D Centers (FFRDCs). This information is collected separately. See the list of FFRDCs: <a href="http://www.nsf.gov/statistics/ffrdc/">http://www.nsf.gov/statistics/ffrdc/</a>.</li> <li>• Other organizations or institutions, such as teaching hospitals or research institutes, with which your institution has an affiliation or relationship, but which are <i>not</i> components of your institution.</li> <li>• Other campuses headed by their own presidents or chancellors within your university system. Each campus is asked to respond separately.</li> </ul>

**Question 1. How much of your total expenditures for research and development (R&D) came from the following sources in FY 2012? (See definition of R&D on the previous page.)**

- In rows a, b, c, d, and f: Include both **direct** and **recovered indirect costs** (reimbursement of F&A costs from external sponsors).
- Report the **original source** of funds, when possible.
- Include **all** fields of R&D (e.g., sciences, engineering, humanities, education, law, arts). See full listing in Question 9.

**R&D expenditures**  
(Dollars in thousands)  
(for example, report \$25,342 as \$25)

**Source of funds**

**a. U.S. federal government**

Any agency of the United States government.  
Include federal funds passed through from another institution.

\$ \_\_\_\_\_

**b. State and local government**

Any state, county, municipality, or other local government entity in the United States, including state health agencies. Include state funds that support R&D at agricultural and other experiment stations.  
*Public institutions* should report state appropriations restricted for R&D activities here rather than in row e, Institutional funds.

\$ \_\_\_\_\_

**c. Business**

Domestic or foreign for-profit organizations. Report funds from a company's nonprofit foundation in row d.

\$ \_\_\_\_\_

**d. Nonprofit organizations**

Domestic or foreign nonprofit foundations and organizations. Report funds from your institution's 501(c)3 foundation in row e1.

\$ \_\_\_\_\_

**e. Institutional funds**

1. Institutionally financed research

All R&D funded by your institution, including both organized research and separately accounted for departmental research.

\$ \_\_\_\_\_  
(Confidential<sup>1</sup>)

2. Cost sharing

Include committed cost sharing other than unrecovered indirect costs. Report unrecovered indirect costs in row e3.

\$ \_\_\_\_\_  
(Confidential<sup>1</sup>)

3. Unrecovered indirect costs

Calculate this amount as follows for your externally funded R&D only (preferably on a project-specific basis) using the appropriate cost rate—on-campus, off-campus, etc.

\$ \_\_\_\_\_  
(Confidential<sup>1</sup>)

- First, multiply the negotiated rate by the corresponding base.
- Second, subtract recovered indirect costs.

4. Total institutional funds<sup>2</sup>

\$ TOTAL

**f. All other sources**

Other sources not reported above, such as funds from foreign governments.

\$ \_\_\_\_\_

**g. Total<sup>2</sup>**

\$ TOTAL

<sup>1</sup> Information from confidential items is not published or released for individual institutions; only aggregate totals will appear in publications. 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.

<sup>2</sup> Totals for rows e4 and g are automatically generated on the Web survey.

**Question 1.1. Did you include the following types of funding in your response to Question 1, row e1?**

	<b>Included in Question 1e1 this year (FY 2012)</b>	<b>Included in Question 1e1 in previous year (FY 2011)</b>
<b>a. Competitively awarded internal grants for research</b> Expenditures for organized research projects, involving a proposal or statement of work with expected research outcomes.	<input type="checkbox"/>	<input type="checkbox"/>
<b>b. Startup packages/bridge funding/seed funding</b> Expenditures from funds provided to faculty members to begin or continue their research while seeking external sponsors.	<input type="checkbox"/>	<input type="checkbox"/>
<b>c. Other departmental funds designated for research</b> Expenditures for research from other departmental or central accounts which do not match the descriptions provided in rows a or b.	<input type="checkbox"/>	<input type="checkbox"/>
<b>d. Tuition assistance for student research personnel</b> University tuition assistance, waivers, or remission provided to students working on organized research. Please check "included in Question 1e1" even if these funds are reported as part of the expenditures included under rows a, b, or c.	<input type="checkbox"/>	<input type="checkbox"/>

**Question 2. What were your FY 2012 R&D expenditures in the fields below? Please report federally funded expenditures in column (a) and all other expenditures in column (b).**

- Examples of the disciplines included under each field are provided on pages 7–9.

**R&D expenditures  
(Dollars in thousands)**

R&D Fields	R&D expenditures (Dollars in thousands)		(c) Total <sup>1</sup>
	(a) Federal	(b) Nonfederal	
1. Computer Sciences	\$ _____	\$ _____	\$ TOTAL
2. Engineering	\$ _____	\$ _____	\$ TOTAL
3. Environmental Sciences	\$ _____	\$ _____	\$ TOTAL
4. Life Sciences	\$ _____	\$ _____	\$ TOTAL
5. Mathematical Sciences	\$ _____	\$ _____	\$ TOTAL
6. Physical Sciences	\$ _____	\$ _____	\$ TOTAL
7. Psychology	\$ _____	\$ _____	\$ TOTAL
8. Social Sciences	\$ _____	\$ _____	\$ TOTAL
9. Other Sciences	\$ _____	\$ _____	\$ TOTAL
10. Non-S&E fields	\$ _____	\$ _____	\$ TOTAL
11. <b>Total for All Fields of R&amp;D<sup>1</sup></b>	\$ TOTAL	\$ TOTAL	\$ TOTAL

Total in row 11, column (a) should match total reported in Question 1, row a.

Total in row 11, column (b) should match total reported in Question 1, rows b–f.

<sup>1</sup> Row and column totals are automatically generated on the Web survey.

**Question 3. How much of your R&D expenditures reported in Question 1 did your institution receive as a subrecipient from another U.S. university or college?**

Please report the original source of funds in columns (a) and (b).

The **subrecipient** for an award carries out the work but receives the funds from a pass-through entity rather than directly from the original funding source. Subrecipients tend to be the co-authors of publications, writers of technical reports discussing findings, inventors, etc. Do **not** include vendor relationships. A vendor receives payment for goods and services provided. See OMB Circular A-133, Section 210.

**Originating source of R&D expenditures  
(Dollars in thousands)**

	(a) Federal	(b) Nonfederal	(c) Total <sup>1</sup>
<b>Funds received from other U.S. higher education institutions</b>			
Include colleges and universities and units owned, operated, and controlled by such institutions.	\$ _____	\$ _____	\$ <u>TOTAL</u>

**Question 4. How much of the R&D expenditures reported in Question 1 did your institution pass through to subrecipients at other U.S. universities or colleges?**

Please report the original source of funds in columns (a) and (b).

**Originating source of R&D expenditures  
(Dollars in thousands)**

	(a) Federal	(b) Nonfederal	(c) Total <sup>1</sup>
<b>Funds passed through to other U.S. higher education institutions</b>			
Include colleges and universities and units owned, operated, and controlled by such institutions.	\$ _____	\$ _____	\$ <u>TOTAL</u>

<sup>1</sup> Row and column totals are automatically generated on the Web survey.

**Question 5.**

**A. Contact information:** Please complete the contact information for the person responsible for the survey and an alternate contact.

	Primary contact	Alternate contact
Name	<input type="text"/>	<input type="text"/>
Title	<input type="text"/>	<input type="text"/>
Institution name	<input type="text"/>	<input type="text"/>
Building/department	<input type="text"/>	<input type="text"/>
Street address (line 1)	<input type="text"/>	<input type="text"/>
Street address (line 2)	<input type="text"/>	<input type="text"/>
City, state, and ZIP code	<input type="text"/>	<input type="text"/>
Phone number	<input type="text"/>	<input type="text"/>
Fax number	<input type="text"/>	<input type="text"/>
E-mail address	<input type="text"/>	<input type="text"/>

**B. Fiscal year:** In what month did your institution's 2012 fiscal year end?

**C. Survey completion time:** Considering all offices involved, approximately how long did it take to complete this survey?  hours

**D. Additional comments:**

## EXAMPLES OF DISCIPLINES UNDER EACH R&D FIELD

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### 1. Computer Sciences

Computer systems analysis  
Data processing

Information sciences  
Information technology

Management information  
systems

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### 2. Engineering

#### **Aeronautical/ Astronautical**

Aerodynamics  
Aerospace engineering  
Space technology

#### **Bioengineering/ Biomedical engineering**

Biomaterials  
Medical engineering

#### **Chemical**

Petroleum  
Petroleum refining process  
Plastics  
Polymer  
Wood science

#### **Civil**

Architectural  
Architecture  
Environmental  
Environmental health  
Geotechnical  
Hydraulic  
Hydrologic  
Sanitary  
Structural  
Transportation

#### **Electrical**

Communications  
Computer  
Electronics  
Power

#### **Mechanical**

Engineering mechanics

#### **Metallurgical/Materials**

Ceramic  
Materials science  
Metallurgy  
Mining and mineral  
Textile  
Welding

#### **Other engineering**

Agricultural  
Engineering design  
Engineering physics  
Engineering science  
Marine  
Naval architecture  
Nuclear  
Ocean  
Systems

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### 3. Environmental Sciences

#### **Atmospheric sciences**

Aeronomy  
Extraterrestrial atmospheres  
Meteorology  
Solar  
Weather modification

#### **Earth sciences**

Cartography  
Earth and planetary sciences  
Geochemistry  
Geodesy and gravity  
Geology  
Geomagnetism  
Geophysics  
Hydrology  
Paleomagnetism  
Paleontology  
Physical geography  
Seismology  
Surveying

#### **Oceanography**

Biological oceanography  
Chemical oceanography  
Geological oceanography  
Marine biology  
Marine oceanography  
Physical oceanography

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Examples of disciplines continue on next page.

## 4. Life Sciences

### Agricultural sciences

Agricultural chemistry  
Agricultural economics—  
report in Social sciences,  
Economics  
Agricultural engineering—  
report in Engineering  
Agricultural production  
Agronomy  
Animal science  
Aquaculture  
Conservation  
Fish and wildlife  
Forestry  
Horticulture  
International agriculture  
Landscape architecture  
Plant sciences  
Renewable natural resources  
Soil sciences

### Biological sciences

Allergies and immunology  
Anatomy  
Bacteriology  
Biochemistry  
Biogeography  
Biology, general  
Biometrics  
Biophysics  
Biostatistics  
Biotechnology

### Biological sciences (continued)

Botany  
Cellular biology  
Ecology  
Entomology  
Epidemiology  
Foods and nutrition studies  
Genetics, plant and animal  
Immunology  
Medical microbiology  
Microbiology  
Molecular biology  
Nutritional sciences  
Parasitology  
Pathology, human and animal  
Pharmacology, human and  
animal  
Physical anthropology  
Physiology, human and  
animal  
Toxicology  
Virology  
Zoology

### Medical sciences

Anesthesiology  
Cardiology  
Colon and rectal surgery  
Dental surgery  
Dentistry

### Medical sciences (continued)

Dermatology  
Family medicine  
Gastroenterology  
General surgery  
Geriatric medicine  
Gynecology  
Hematology  
Internal medicine  
Mental health  
Neonatal-perinatal medicine  
Neurological surgery  
Neurology  
Neurosciences  
Nuclear medicine  
Nuclear radiology  
Obstetrics  
Oncology  
Ophthalmology  
Optometry  
Oral surgery  
Orthopedic surgery  
Orthopedics  
Osteopathic medicine  
Otorhinolaryngology  
Pediatrics  
Pharmacology  
Pharmacy  
Physical and rehabilitative  
medicine  
Plastic surgery  
Podiatry

### Medical sciences (continued)

Preventive medicine  
Psychiatric nursing  
Psychiatry  
Public health  
Radiation biology/  
Radiobiology  
Thoracic surgery  
Urology  
Veterinary medicine

### Other life sciences

Clinical/medical laboratory  
technologies  
Communication disorders  
sciences and services  
Gerontology  
Health and medical  
administrative services  
Health professions and  
related services, other  
Nursing  
Occupational therapy  
Physical therapy  
Rehabilitation services  
Therapeutic services

## 5. Mathematical Sciences

Algebra  
Analysis  
Applied mathematics

Foundations and logic  
Geometry  
Numerical analysis

Operations research  
Statistics  
Topology

## 6. Physical Sciences

### Astronomy

Astrophysics  
Gamma-ray astronomy  
Neutrino astronomy  
Optical astronomy  
Radio astronomy  
X-ray astronomy

### Chemistry

(except biochemistry—report  
in Biological sciences)  
Analytical chemistry  
Inorganic chemistry  
Organic chemistry  
Organo-metallic chemistry  
Pharmaceutical chemistry  
Physical chemistry  
Polymer sciences

### Physics

Acoustics  
Atomic physics  
Chemical physics  
Condensed matter physics  
Elementary particle physics  
Mathematical physics  
Molecular physics  
Nuclear structure  
Optics  
Plasma physics  
Theoretical physics

## 7. Psychology

Animal behavior  
Art therapy  
Clinical psychology

Educational psychology  
Experimental psychology

Human development and  
personality

School psychology  
Social psychology

Examples of disciplines continue on next page.

## 8. Social Sciences

### Economics

Agricultural economics  
Applied economics  
Business development  
Econometrics  
Industrial economics  
International economics  
Labor economics  
Managerial economics  
Public finance and fiscal policy  
Quantitative economics  
Resource economics

### Political science

Comparative government  
Government  
International relations and affairs  
Legal systems  
Political theory  
Public administration  
Public policy analysis  
Regional studies

### Sociology

Anthropology, cultural and social  
Anthropology, physical—report in Life Sciences  
Comparative and historical sociology  
Complex organizations  
Cultural and social structure  
Demography  
Group interactions  
Population studies  
Social problems and welfare theory

### Other social sciences

Archaeology  
Area and ethnic studies  
City and community planning  
Community services  
Corrections  
Criminal justice  
Geography  
History of science  
Linguistics  
Urban affairs  
Urban and regional planning  
Urban studies

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## 9. Other Sciences

Use this category for R&D that involves at least one S&E field (fields 1–8) if it is impossible to report multidisciplinary or interdisciplinary R&D expenditures in specific fields.

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## 10. Non-S&E Fields

### Business and management

Business management and administrative services  
Marketing distribution  
Marketing operations

### Communication, journalism, and library science

Communication  
Communications technologies  
Library science

### Education

### Humanities

English language and literature  
Foreign languages and literature  
General studies and humanities  
History (except history of science—report in Social sciences)  
Letters  
Liberal arts and sciences  
Philosophy and religion  
Theological studies and religious vocations

### Law

Legal studies

### Social work

### Visual and performing arts

### Other non-S&E fields

Military technologies  
Parks, recreation, leisure and fitness studies  
Other non-S&E fields that cannot be classified using the fields listed above