Please submit your survey data by January 31, 2017.

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 2016 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.

Response to this survey is estimated to require 8 hours. 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://shortform.herdsurvey.org

Or mail this form to:
ICF
530 Gaither Road, Suite 500
Rockville, MD 20850

Questions?
Technical support:
Support@HERDsurvey.org
(866) 936-9376

General survey questions:
Ronda Britt
National Center for Science and Engineering Statistics
National Science Foundation
rbritt@nsf.gov
(703) 292-7765

Thank you for your participation.
What’s New for FY 2016

Changes to Survey Definitions

- The definition of research and development (R&D) has been updated, but is still consistent with the definitions used in the previous surveys. The updates were made to achieve standardized definitions across all NSF R&D surveys. These definitions mirror the definitions provided in the Frascati Manual 2015, an international document published by the Organisation for Economic Co-operation and Development that provides guidelines for collecting and reporting data on R&D.

Changes to Questions

- **Question 2:** There have been some revisions to the fields of R&D for which you are asked to report expenditures. These changes better reflect the types of R&D currently being conducted at universities and colleges and also make the survey fields more consistent with the taxonomy used by the Department of Education’s Classification of Instructional Programs (CIP).

  Changes to the fields of R&D include the following:
  - The names of some fields have been revised to better reflect the disciplines included in those fields.
  - New disciplines have been added as examples under many fields.
  - Some disciplines have been reclassified under different fields.

  Please see “Reference Materials” on the survey website for additional information about which disciplines have been reclassified under different fields.
Fiscal Year (FY)
Please report data for your institution’s 2016 fiscal year.

Research and Development (R&D)
R&D is creative and systematic work undertaken in order to increase the stock of knowledge — including knowledge of humankind, culture, and society — and to devise new applications of available knowledge. R&D covers three activities defined below — basic research, applied research, and experimental development.

- **Basic research** is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.
- **Applied research** is original investigation undertaken in order to acquire new knowledge. It is directed primarily towards a specific, practical aim or objective.
- **Experimental development** is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or 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 Part 200 Appendix III and expenditures from funds designated for research.

**R&D includes:**
- Sponsored research (federal and nonfederal)
- University research (institutional funds that are separately budgeted for individual R&D projects)
- Startup, bridge, or seed funding provided to researchers within your institution
- Other departmental funds designated for research
- Recovered and unrecovered indirect costs (see definitions in Question 1)
- Equipment purchased from R&D project accounts
- R&D funds passed through to a subrecipient organization, educational or other
- Clinical trials, Phases I, II, or III
- Research training grants funding work on organized research projects
- Tuition remission provided to students working on research

**R&D does not include:**
- Public service grants or outreach programs
- Curriculum development (unless included as part of an overall research project)
- R&D conducted by university faculty or staff at outside institutions that is not accounted for in your financial records
- Estimates of the proportion of time budgeted for instruction that is spent on research
- Capital projects (i.e., construction or renovation of research facilities)
- Non-research training grants
- Unrecovered indirect costs that exceed your institution’s federally negotiated Facilities and Administrative (F&A) rate

Reporting Units
Please **include** these components of your institution:
- All units of your institution included in or with your financial statements, such as:
  - Agricultural experiment stations
  - Branch campuses
  - Medical schools
  - Hospitals or clinics
  - Research centers and facilities
  - A university 501(c)3 foundation

Please do **not** include:
- Federally Funded R&D Centers (FFRDCs). This information is collected separately. See the list of FFRDCs: http://www.nsf.gov/statistics/ffrdc/.
- Other organizations or institutions, such as teaching hospitals or research institutes, with which your institution has an affiliation or relationship, but which are **not** components of your institution.
- Other campuses headed by their own president, chancellor, or equivalent within your university system. Each campus is asked to respond separately.
Question 1. How much of your total expenditures for research and development (R&D) came from the following sources in FY 2016? (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 on pages 9–11.

<table>
<thead>
<tr>
<th>Source of funds</th>
<th>R&amp;D expenditures (Dollars in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(for example, report $25,342 as $25)</td>
</tr>
<tr>
<td>a. U.S. federal government</td>
<td>$______</td>
</tr>
<tr>
<td>Any agency of the United States government. Include federal funds passed through from another institution.</td>
<td></td>
</tr>
<tr>
<td>b. State and local government</td>
<td>$______</td>
</tr>
<tr>
<td>Any state, county, municipality, or other local government entity in the United States, including state health agencies. Include state funds that support R&amp;D at agricultural and other experiment stations. Public institutions should report state appropriations restricted for R&amp;D activities here rather than in row e, Institutional funds.</td>
<td></td>
</tr>
<tr>
<td>c. Business</td>
<td>$______</td>
</tr>
<tr>
<td>Domestic or foreign for-profit organizations. Report funds from a company’s nonprofit foundation in row d.</td>
<td></td>
</tr>
<tr>
<td>d. Nonprofit organizations</td>
<td>$______</td>
</tr>
<tr>
<td>Domestic or foreign nonprofit foundations and organizations, except universities and colleges. Report funds from your institution’s 501(c)3 foundation in row e1. Funds from other universities and colleges should be reported in row f.</td>
<td></td>
</tr>
<tr>
<td>e. Institutional funds</td>
<td>$______</td>
</tr>
<tr>
<td>1. Institutionally financed research</td>
<td>(Confidential$)</td>
</tr>
<tr>
<td>All R&amp;D funded by your institution from accounts that are only used for research.</td>
<td></td>
</tr>
<tr>
<td>2. Cost sharing</td>
<td>(Confidential$)</td>
</tr>
<tr>
<td>Include committed cost sharing other than unrecovered indirect costs.</td>
<td></td>
</tr>
<tr>
<td>3. Unrecovered indirect costs</td>
<td>(Confidential$)</td>
</tr>
<tr>
<td>Calculate this amount as follows for your externally funded R&amp;D only (preferably on a project-specific basis) using the appropriate cost rate—on-campus, off-campus, etc.</td>
<td></td>
</tr>
<tr>
<td>• First, multiply the negotiated rate by the corresponding base.</td>
<td></td>
</tr>
<tr>
<td>• Second, subtract recovered indirect costs.</td>
<td></td>
</tr>
<tr>
<td>4. Total institutional funds</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>f. All other sources</td>
<td>$______</td>
</tr>
<tr>
<td>Other sources not reported above, such as funds from foreign governments, foreign or U.S. universities, and gifts designated by the donors for research.</td>
<td></td>
</tr>
<tr>
<td>g. Total</td>
<td>$ TOTAL</td>
</tr>
</tbody>
</table>

1 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.

2 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 responses to Question 1, row e1?**

<table>
<thead>
<tr>
<th>Type of Funding</th>
<th>Description</th>
<th>Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Competitively awarded internal grants for research</td>
<td>Expenditures for organized research projects, involving a proposal or statement of work with expected research outcomes.</td>
<td>☐</td>
</tr>
<tr>
<td>b. Startup packages/bridge funding/seed funding</td>
<td>Expenditures from funds provided to faculty members to begin or continue their research while seeking external sponsors.</td>
<td>☐</td>
</tr>
<tr>
<td>c. Other departmental funds designated for research</td>
<td>Expenditures for research from other departmental or central accounts which do not match the descriptions provided in rows a or b.</td>
<td>☐</td>
</tr>
<tr>
<td>d. Tuition assistance for student research personnel</td>
<td>University tuition assistance, waivers, or remission provided to students working on organized research. Please check “Included” even if these funds are reported as part of the expenditures included under Question 1 rows a, b, or c.</td>
<td>☐</td>
</tr>
</tbody>
</table>
Question 2. What were your FY 2016 R&D expenditures in the fields below? Please report federally funded expenditures in column (1) and all other expenditures in column (2).

- Examples of the disciplines included under each field are provided on pages 9–11.

<table>
<thead>
<tr>
<th>R&amp;D Fields</th>
<th>(1) Federal</th>
<th>(2) Nonfederal</th>
<th>(3) Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Computer and Information Sciences</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>B. Engineering</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>C. Geosciences, Atmospheric Sciences, and Ocean Sciences</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>D. Life Sciences</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>E. Mathematics and Statistics</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>F. Physical Sciences</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>G. Psychology</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>H. Social Sciences</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>I. Other Sciences</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>J. Non-S&amp;E Fields</td>
<td>$</td>
<td>$</td>
<td>$ TOTAL</td>
</tr>
<tr>
<td>K. Total for All Fields of R&amp;D¹</td>
<td>$ TOTAL</td>
<td>$ TOTAL</td>
<td>$ TOTAL</td>
</tr>
</tbody>
</table>

Total in row k, column (1) should match total reported in Question 1, row a.
Total in row k, column (2) should match total reported in Question 1, rows b–f.

¹ 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 contractor or vendor relationships. A contractor or vendor receives payment for goods and services provided. See 2 CFR Part 200 Subpart D Section 330.

<table>
<thead>
<tr>
<th>Originating source of R&amp;D expenditures (Dollars in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds received from other U.S. higher education institutions</td>
</tr>
<tr>
<td>Include colleges and universities and units owned, operated, and controlled by such institutions.</td>
</tr>
</tbody>
</table>

¹ The row total is automatically generated on the Web survey.

Question 4. How much of your 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).

<table>
<thead>
<tr>
<th>Originating source of R&amp;D expenditures (Dollars in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds passed through to other U.S. higher education institutions</td>
</tr>
<tr>
<td>Include colleges and universities and units owned, operated, and controlled by such institutions.</td>
</tr>
</tbody>
</table>

¹ The row total is 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.

<table>
<thead>
<tr>
<th>Primary contact</th>
<th>Alternate contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>Institution name</td>
<td></td>
</tr>
<tr>
<td>Department/office</td>
<td></td>
</tr>
<tr>
<td>Mailing address (line 1)</td>
<td></td>
</tr>
<tr>
<td>Mailing address (line 2)</td>
<td></td>
</tr>
<tr>
<td>City, state, and ZIP code</td>
<td></td>
</tr>
<tr>
<td>Phone number</td>
<td></td>
</tr>
<tr>
<td>E-mail address</td>
<td></td>
</tr>
</tbody>
</table>

**b. Fiscal year:** In what month did your institution’s 2016 fiscal year end? _______________________

**c. Additional comments:**

_____________________________________________________

_____________________________________________________

_____________________________________________________

_____________________________________________________
### A. Computer and Information Sciences
- Artificial intelligence
- Computer and information technology administration and management
- Computer science
- Computer software and media applications
- Computer systems analysis
- Computer systems networking and telecommunications
- Data processing
- Information sciences, studies
- Information technology

### B. Engineering

#### 1. Aerospace, Aeronautical, and Astronautical Engineering
- Aerodynamics
- Aerospace engineering
- Space technology

#### 2. Bioengineering and Biomedical Engineering
- Biological and biosystems engineering
- Biomaterials engineering
- Biomedical technology
- Medical engineering

#### 3. Chemical Engineering
- Biochemical engineering
- Chemical and biomolecular engineering
- Engineering chemistry
- Paper science
- Petroleum refining process
- Polymer, plastics engineering

#### 4. Civil Engineering
- Architectural engineering
- Construction engineering
- Engineering management, administration
- Environmental, environmental health engineering
- Geotechnical and geoenvironmental engineering
- Sanitary engineering
- Structural engineering
- Surveying engineering
- Transportation and highway engineering
- Water resources engineering

#### 5. Electrical, Electronic, and Communications Engineering
- Communications engineering
- Computer engineering
- Computer hardware engineering
- Computer software engineering
- Electrical and electronics engineering
- Laser and optical engineering
- Power
- Telecommunications engineering

#### 6. Industrial and Manufacturing Engineering
- Industrial engineering
- Manufacturing engineering
- Operations research
- Systems engineering

#### 7. Mechanical Engineering
- Electromechanical engineering
- Mechatronics, robotics, and automation engineering

#### 8. Metallurgical and Materials Engineering
- Ceramic sciences and engineering
- Geophysical, geological engineering
- Materials engineering
- Metallurgical engineering
- Mining and mineral engineering
- Textile sciences and engineering
- Welding

#### 9. Other Engineering
- Agricultural engineering
- Engineering design
- Engineering mechanics, physics, and science
- Engineering physics
- Engineering science
- Forest engineering
- Nanotechnology
- Naval architecture and marine engineering
- Nuclear engineering
- Ocean engineering
- Petroleum engineering
- Other engineering fields that cannot be classified using the fields listed above

### C. Geosciences, Atmospheric Sciences, and Ocean Sciences

#### 1. Atmospheric Science and Meteorology
- Aeronomy
- Atmospheric chemistry and climatology
- Atmospheric physics and dynamics
- Extraterrestrial atmospheres
- Meteorology
- Solar
- Weather modification

#### 2. Geological and Earth Sciences
- Earth and planetary sciences
- Geochemistry
- Geodesy and gravity
- Geology
- Geomagnetism
- Geophysics and seismology
- Hydrology and water resources
- Mineralogy and petrology
- Paleomagnetism
- Paleontology
- Physical geography
- Stratigraphy and sedimentation
- Surveying

#### 3. Ocean Sciences and Marine Sciences
- Biological oceanography
- Geological oceanography
- Marine biology
- Marine oceanography
- Marine sciences
- Oceanography, chemical and physical

#### 4. Other Geosciences, Atmospheric Sciences, and Ocean Sciences
- Other fields that cannot be classified using the fields listed above
D. Life Sciences

1. Agricultural Sciences
   Agricultural business and management
   Agricultural chemistry
   Agricultural economics
   Agricultural engineering—report in Engineering
   Agricultural production operations
   Animal sciences
   Applied horticulture and horticultural business services
   Aquaculture
   Food science and technology
   International agriculture
   Plant sciences
   Soil sciences
   Wood science

2. Biological and Biomedical Sciences
   Allergies and immunology
   Biochemistry, biophysics, and molecular biology
   Biogeography
   Biometry
   Biology and biomedical sciences, general

Biomathematics, bioinformatics, and computational biology
Biototechnology
Botany and plant biology
Cell, cellular biology, and anatomical sciences
Epidemiology, ecology and population biology
Genetics
Microbiological sciences and immunology
Molecular medicine
Neurobiology and neuroscience
Pharmacology and toxicology
Physiology, pathology and related sciences
Zoology, animal biology

3. Health Sciences
   Advanced, graduate dentistry and oral sciences
   Allied health and medical assisting services
   Bioethics, medical ethics
   Clinical medicine research
   Clinical/medical laboratory science/research and allied professions

Communication disorders sciences and services
Dentistry
Dietetics and clinical nutrition services
Health and medical administrative services
Health, medical preparatory programs
Gerontology, health sciences
Kinesiology and exercise science
Medical clinical science, graduate medical studies
Medical illustration and informatics
Medicine
Mental health
Optometry
Osteopathic medicine, osteopathy
Pharmacy, pharmaceutical sciences, and administration
Podiatric medicine, podiatry
Public health
Radiological science
Registered nursing, nursing administration, nursing research and clinical nursing
Rehabilitation and therapeutic professions
Veterinary biomedical and clinical sciences
Veterinary medicine
Zoology

4. Natural Resources and Conservation
   Fishing and fisheries sciences and management
   Forestry
   Natural resources conservation and research
   Natural resources economics
   Natural resources management and policy
   Renewable natural resources
   Wildlife and wildlands science and management

5. Other Life Sciences
   Other life sciences that cannot be classified using the fields listed above

E. Mathematics and Statistics
   Applied mathematics
   Mathematics
   Statistics

F. Physical Sciences

1. Astronomy and Astrophysics
   Astronomy
   Astrophysics
   Planetary astronomy and science

2. Chemistry
   (except Biochemistry—report in Biological and Biomedical Sciences)
   Analytical chemistry
   Chemical physics
   Environmental chemistry
   Forensic chemistry
   Inorganic chemistry
   Organic chemistry
   Organo-metallic chemistry
   Physical chemistry
   Polymer chemistry
   Theoretical chemistry

3. Materials Science
   Materials chemistry
   Materials science

4. Physics
   Acoustics
   Atomic, molecular physics
   Condensed matter and materials physics
   Elementary particle physics
   Mathematical physics
   Nuclear physics
   Optics, optical sciences
   Plasma, high-temperature physics
   Theoretical physics

5. Other Physical Sciences
   Other physical sciences that cannot be classified using the fields listed above

G. Psychology
   Clinical psychology
   Counseling and applied psychology
   Human development
   Research and experimental psychology

Examples of disciplines continue on next page.
H. Social Sciences

1. Anthropology
   Cultural anthropology
   Medical anthropology
   Physical and biological anthropology

2. Economics
   Applied economics
   Business development
   Development economics and international development
   Econometrics and quantitative economics
   Industrial economics
   International economics
   Labor economics
   Managerial economics
   Public finance and fiscal policy

3. Political Science and Government
   Comparative government
   Government
   Legal systems
   Political economy
   Political science
   Political theory

4. Sociology, Demography, and Population Studies
   Comparative and historical sociology
   Complex organizations
   Cultural and social structure
   Demography and population studies
   Group interactions
   Rural sociology
   Social problems and welfare theory
   Sociology

5. Other Social Sciences
   Archeology
   Area, ethnic, cultural, gender, and group studies
   Cartography
   Criminal science and corrections
   Criminology
   Geography
   Gerontology, social sciences
   International relations and national security studies
   Linguistics
   Public policy analysis
   Regional studies
   Urban studies, affairs

I. Other Sciences

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

J. Non-S&E Fields

1. Business
   Management and Business Administration
   Business administration
   Business management
   Business, managerial economics
   Management information systems and services
   Marketing management and research

2. Communication and Communications Technologies
   Communication and media studies
   Communications technologies
   Journalism
   Radio, television, and digital communication

3. Education
   Education administration and supervision
   Education research
   Teacher education, specific levels and methods
   Teaching fields

4. Humanities
   English language and literature, letters
   Foreign languages and literatures
   History, including history and philosophy of science and technology
   Humanities, general
   Liberal arts and sciences
   Philosophy and religious studies
   Theology and religious vocations

5. Law
   Law
   Legal studies

6. Social Work
   (no specific examples)

7. Visual and Performing Arts
   Drama, theatre arts and stagecraft
   Film, video, and photographic arts
   Fine and studio arts
   Music

8. Other Non-S&E Fields
   Architecture
   City, urban, community and regional planning
   Family, consumer sciences and human sciences
   Foods, nutrition, and wellness studies
   Landscape architecture
   Library science
   Military technology and applied science
   Parks, sports, recreation, leisure and fitness
   Public administration and public affairs
   Other non-S&E fields that cannot be classified using the fields listed above

   Also, use this category for R&D that involves multiple non-S&E fields if it is impossible to report multidisciplinary or interdisciplinary R&D expenditures in specific fields.