



**NATIONAL SCIENCE FOUNDATION**  
ALEXANDRIA, VA 22314

**HIGHER EDUCATION RESEARCH AND DEVELOPMENT SURVEY**  
**FY 2022 Short Form**

**Please submit your survey data by January 31, 2023.**

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](mailto:splimpto@nsf.gov).

The Web address for submitting your data:

<http://shortform.hersurvey.org>

Or mail this form to:

ICF  
530 Gaither Road, Suite 500  
Rockville, MD 20850

**Questions?**

Technical support:

[Support@HERDsurvey.org](mailto:Support@HERDsurvey.org)  
(866) 936-9376

General survey questions:

Michael Gibbons  
National Center for Science and Engineering Statistics  
National Science Foundation  
[mgibbons@nsf.gov](mailto:mgibbons@nsf.gov)  
(703) 292-4590

**Thank you for your participation.**

## What's New for FY 2022

### Changes to Questions

There were no changes to the FY 2022 survey.

# Survey Definitions and Instructions

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 **2022** fiscal year.

## Fiscal Year (FY)

Please report data for your institution's 2022 fiscal year.

## Research and Development (R&D)

R&D activity 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 expenditures for R&D activities 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 <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</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>

## 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 2022? (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 10–12.

<b>Source of funds</b>	<b>R&amp;D expenditures (Dollars in thousands) (for example, report \$25,342 as \$25)</b>
<p><b>a. U.S. federal government</b> Any agency of the United States government. Include federal funds passed through from another institution. Funds from FFRDCs should be treated as direct federal funding.</p>	\$ <input style="width: 100px; height: 20px;" type="text"/>
<p><b>b. State and local government</b> 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. <i>Public institutions</i> should report state appropriations restricted for R&amp;D activities here rather than in row e, Institutional funds.</p>	\$ <input style="width: 100px; height: 20px;" type="text"/>
<p><b>c. Business</b> Domestic or foreign for-profit organizations. Report funds from a company's nonprofit foundation in row d.</p>	\$ <input style="width: 100px; height: 20px;" type="text"/>
<p><b>d. Nonprofit organizations</b> 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.</p>	\$ <input style="width: 100px; height: 20px;" type="text"/>
<p><b>e. Institutional funds</b></p>	
<p><b>1. Institutionally financed research</b> All R&amp;D funded by your institution from accounts that are only used for research. Exclude institution research administration and support (e.g., office of sponsored programs).</p>	\$ <input style="width: 100px; height: 20px;" type="text"/> (Confidential <sup>1</sup> )
<p><b>2. Cost sharing</b> Include committed cost sharing other than unrecovered indirect costs.</p>	\$ <input style="width: 100px; height: 20px;" type="text"/> (Confidential <sup>1</sup> )
<p><b>3. Unrecovered indirect costs</b> 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.</p> <ul style="list-style-type: none"> <li>• First, multiply the <u>negotiated</u> rate by the corresponding base.</li> <li>• Second, subtract recovered indirect costs.</li> </ul>	\$ <input style="width: 100px; height: 20px;" type="text"/> (Confidential <sup>1</sup> )
<p><b>4. Total institutional funds<sup>2</sup></b></p>	\$ <u>TOTAL</u>
<p><b>f. All other sources</b> Other sources not reported above, such as funds from foreign governments, foreign or U.S. universities, and gifts designated by the donors for research.</p>	\$ <input style="width: 100px; height: 20px;" type="text"/>
<p><b>g. Total<sup>2</sup></b></p>	\$ <u>TOTAL</u>

<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. Per the Federal Cybersecurity Enhancement Act of 2015, your data are protected from cybersecurity risks through screening of the federal information systems that transmit your data.

<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 responses to Question 1, row e1?**

**Included**

**a. Competitively awarded internal grants for research**

Expenditures for organized research projects, involving a proposal or statement of work with expected research outcomes.

**b. Startup packages/bridge funding/seed funding**

Expenditures from funds provided to faculty members to begin or continue their research while seeking external sponsors.

**c. Other departmental funds designated for research**

Expenditures for research from other departmental or central accounts which do not match the descriptions provided in rows a or b.

**d. Tuition assistance for student research personnel**

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 rows a, b, or c.

**Question 2. What were your FY 2022 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 10–12.

R&D Fields	R&D expenditures (Dollars in thousands)		
	(1) Federal	(2) Nonfederal	(3) Total <sup>1</sup>
A. Computer and Information Sciences	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
B. Engineering	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
C. Geosciences, Atmospheric Sciences, and Ocean Sciences	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
D. Life Sciences	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
E. Mathematics and Statistics	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
F. Physical Sciences	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
G. Psychology	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
H. Social Sciences	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
I. Other Sciences	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
J. Non-S&E Fields	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>
K. Total for All Fields of R&D <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

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.

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

Funds received from other U.S. higher education institutions	Originating source of R&D expenditures (Dollars in thousands)		
	(a) Federal	(b) Nonfederal	(c) Total <sup>1</sup>
Include colleges and universities and units owned, operated, and controlled by such institutions.	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>

<sup>1</sup> 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).

Funds passed through to other U.S. higher education institutions	Originating source of R&D expenditures (Dollars in thousands)		
	(a) Federal	(b) Nonfederal	(c) Total <sup>1</sup>
Include colleges and universities and units owned, operated, and controlled by such institutions.	\$ <input type="text"/>	\$ <input type="text"/>	\$ <u>TOTAL</u>

<sup>1</sup> The row total is automatically generated on the Web survey.

**Question 5. In what month did your institution's 2022 fiscal year end?**



**Primary Contact Information.** Please complete the contact information for the person responsible for the survey.

Name	<input type="text"/>	
Job Title	<input type="text"/>	
Institution name	<input type="text"/>	
Office/Department	<input type="text"/>	
Mailing address (line 1)	<input type="text"/>	
Mailing address (line 2)	<input type="text"/>	
City, state, and ZIP Code	<input type="text"/>	
Phone number	<input type="text"/>	E-mail address <input type="text"/>

**Other Contact Information.** List individuals who should be copied on all e-mails about the survey or can create a login account. Job Title should include information about office/department as appropriate (e.g., VP of Sponsored Programs, Department of Finance Manager, Analyst II in Grants Management).

**Other Contact 1**

Name	<input type="text"/>	
Job Title	<input type="text"/>	
Phone Number	<input type="text"/>	E-mail address <input type="text"/>

**Other Contact 2**

Name	<input type="text"/>	
Job Title	<input type="text"/>	
Phone Number	<input type="text"/>	E-mail address <input type="text"/>

**Other Contact 3**

Name	<input type="text"/>	
Job Title	<input type="text"/>	
Phone Number	<input type="text"/>	E-mail address <input type="text"/>

## EXAMPLES OF DISCIPLINES UNDER EACH R&D FIELD

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### 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

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### 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

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### 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

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Examples of disciplines continue on next page.

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## D. Life Sciences

### 1. Agricultural Sciences

Agricultural business and management  
Agricultural chemistry  
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  
Veterinary biomedical and clinical sciences  
Veterinary medicine  
Wood science

### 2. Biological and Biomedical Sciences

Allergies and immunology  
Biochemistry, biophysics, and molecular biology  
Biogeography  
Biology and biomedical sciences, general

Biomathematics, bioinformatics, and computational biology  
Biotechnology  
Botany and plant biology  
Cell, cellular biology, and anatomical sciences  
Epidemiology, ecology and population biology  
Foods, nutrition, and wellness studies  
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  
Nursing  
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  
Zoology

### 4. Natural Resources and Conservation

Fishing and fisheries sciences and management  
Forestry  
Natural resources conservation and research  
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

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## E. Mathematics and Statistics

Applied mathematics

Mathematics

Statistics

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## 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

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## G. Psychology

Clinical psychology

Counseling and applied psychology

Human development

Research and experimental psychology

Examples of disciplines continue on next page.

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## H. Social Sciences

### 1. Anthropology

Cultural anthropology  
Medical anthropology  
Physical and biological anthropology

### 2. Economics

Agricultural economics  
Applied economics  
Business development  
Development economics and international development  
Econometrics and quantitative economics  
Industrial economics  
International economics  
Labor economics  
Managerial economics  
Natural resources 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  
History and philosophy of science and technology  
International relations and national security studies  
Linguistics  
Public policy analysis  
Regional studies  
Urban studies, affairs

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## 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.

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## 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  
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  
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.