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NATIONAL SCIENCE FOUNDATION

ALEXANDRIA, VA 22314

HIGHER EDUCATION RESEARCH AND DEVELOPMENT SURVEY FY 2023

Please submit your survey data by January 31, 2024.

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 64 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 entering your data:

http://www.herdsurvey.org/

Or send completed form to Support@HERDsurvey.org

Questions?

Technical support:

Support@HERDsurvey.org (866) 936-9376

General survey questions:

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

Thank you for your participation.

What's New for FY 2023

Changes to Questions

- Question 1 instructions were updated to clarify that:
 - Funds coming through your institution's 501(c)3 should be reported based on the original funding source. For example, a grant sponsored by a business coming through your research foundation should be reported in Business (row c), a gift from a donor restricted to research should be reported in All Other Sources (row f), and funding from unrestricted gifts should be reported as institutionally financed research (row e1).
 - Institutionally financed expenditures should not be based on estimated research time. Time or expenditures should be separately accounted for in financial or audited effort reporting records.
- Question 2 now specifies that only expenditures where the original funding source was foreign should be included.

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 **2023** fiscal year.

Fiscal Year (FY)

Please report data for your institution's 2023 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 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 (see definition in Question 5)
- 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 <i>include</i> these components of your institution:	Please do <i>not</i> include:										
 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 	 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 2023? (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.
- Funds coming through your institution's 501(c)3 should be reported based on the original funding source (e.g., restricted gifts in row f; unrestricted gifts in row e1).
- Include all fields of R&D (e.g., sciences, engineering, humanities, education, law, arts).
 See full listing in Question 9.

Source of funds

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

a. U.S. federal government

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. 108724

b. State and local government

Any state, county, municipality, or other local government entity in the United States, including state health agencies.

4464

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.

1727

d. Nonprofit organizations

Domestic or foreign nonprofit foundations and organizations, except universities and colleges. Funds from other universities and colleges should be reported in row f.

8475

e. Institutional funds

1. Institutionally financed research

Separately accounted for R&D funded by your institution. Do **not** include estimated research time. Exclude institution research administration and support (e.g., office of sponsored programs) or other indirect costs.

\$ 28820 (Confidential¹)

2. Cost sharing

Include committed cost sharing other than unrecovered indirect costs.

\$ 5768 (Confidential¹)

3. Unrecovered indirect costs

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

\$ 8808 (Confidential¹)

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

4. Total institutional funds²

43396

f. All other sources

Other sources not reported above, such as funds from foreign governments, foreign or U.S. universities, and gifts designated by the donors for research.

_{\$} 2797

g. Total²

169583

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.

² Totals for rows e4 and g are automatically generated on the Web survey.

Ques	tion 1.1. Did you include the following types of funding in your responses to C	uestion 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. How much of the total R&D expenditures reported in Question 1, row g, originated from the following foreign sources?

• Expenditures funded by domestic sources that passed through a foreign source should **no**t be reported on this question.

So	urce of funds	R&D expenditures (Dollars in thousands)
a.	Foreign government All levels of foreign government, including national, regional, municipality, or other local government.	\$0
b.	Business Foreign for-profit organizations. Projects sponsored by a U.S. location of a foreign company are not considered foreign. Report funds from a company's nonprofit foundation in row c.	\$839
C.	Nonprofit organizations Foreign nonprofit foundations and organizations, except higher education institutions. Funds from foreign universities should be reported in row d.	<u>\$</u> 778
d.	Higher education Foreign colleges and universities and units owned, operated, and controlled by such institutions.	_{\$195}
e.	All other sources Include international governmental organizations located in the U.S., such as the United Nations, the World Bank, and the International Monetary Fund and all other entities sending funds to the U.S. from a location outside the U.S. and its territories.	<u>\$0</u>
f. ¹ The	Total ¹ column total is automatically generated on the Web survey.	\$1812

Question 3. Of the total R&D expenditures that were externally funded (all sources other than the institutional funds reported in Question 1, row e4), how much was received under each of the following types of agreements?

		R&D expenditures (Dollars in thousands)
a.	Contracts (including direct or prime contracts and subcontracts)	¢ 24914
	Contracts are legal commitments in which a good or service is provided by your institution that benefits the sponsor. The sponsor specifies the deliverables and gains the rights to results.	<u> </u>
).	Grants, reimbursements, and all other agreements	s 101273
	Include all other agreements in which payments are received but no good or service other than periodic reporting is required in exchange.	<u> </u>
٥.	Total ¹	
	(Total should match Question 1, row g minus Question 1, row e4)	\$ <u>126187</u>

Question 4. Go to Question 4B. A. Did your institution have a medical school (that is, a school that awards the MD or DO degree) in FY 2023? Go to Question 5. B. Of the total R&D expenditures reported in Question 1, row g, how much was expended for R&D projects in your medical school? Include projects that are assigned to the medical school or to research centers that are organizationally part of the medical school. R&D expenditures (Dollars in thousands) 42349 Total R&D expenditures in the university's medical school Question 5. Go to Question 5B. A. Did your institution conduct any clinical trials in FY 2023? Go to Question 6. Clinical trials are research studies designed to answer specific questions about the effects of drugs, vaccines, medical devices, tests, treatments, and other therapies for patients. Clinical trials are used to determine safety and effectiveness. For reference, the National Institutes of Health (NIH) categorizes human clinical trials into the following four phases. Please include:

- Phase I uses a small group of human patients (20–80) to evaluate safety and identify side effects.
- Phase II uses a larger group (100–300) to test effectiveness and further evaluate safety.
- Phase III uses a large group (1,000–3,000) to confirm effectiveness, monitor side effects, compare to commonly used treatments, and collect safety information.

Please exclude:

- Phase IV is a post-market study that collects more information on risks, benefits, and optimal use.
- B. Of the total R&D expenditures reported in Question 1, row g, how much was expended for Phase I, Phase II, and Phase III clinical trials with human patients?

R&D expenditures (Dollars in thousands)

	(1) Federal	(2) Nonfederal	(3) Total¹
Human clinical trials	s 147	s 593	_{\$} 740
T 2 - 1 - 20 - 1	Ψ	Ψ	Ψ

Trials with human patients

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

Question 6. What amounts of your FY 2023 R&D expenditures were for basic research, applied research, and experimental development?

• If possible, these categories defining the type of R&D should be coded at the individual project level by the principal investigator. Estimates are acceptable if necessary.

R&D expenditures

• See the table below this question for examples.

Row and column totals are automatically generated on the Web survey.

a. Basic research		(1) Federal	(Dollars in thousand (2) Nonfederal	
Experimental or the primarily to acquire underlying foundation	oretical work undertaken new knowledge of the ons of phenomena and thout any particular application	<u>\$107143</u>	\$58024	_{\$165167}
acquire new knowle	n undertaken in order to dge. It is directed primarily oractical aim or objective.	<u>\$1439</u>	\$2010	\$3449
from research and producing additiona to producing new pro	awing on knowledge gained bractical experience and I knowledge, which is directed roducts or processes or to products or processes.	§142	<u>\$</u> 825	§ 967
	uld match Question 1, row a. uld match Question 1, row g.	_{\$} 108724	\$60859	_{\$} 169583

	Examples							
Basic research	Applied research	Experimental development						
A researcher is studying the properties of human blood to determine what affects coagulation.	A researcher is conducting research on how a new chicken pox vaccine affects blood coagulation.	A researcher is conducting clinical trials to test a newly developed chicken pox vaccine for young children.						
A researcher is studying the properties of molecules under various heat and cold conditions.	A researcher is investigating the properties of particular substances under various heat and cold conditions with the objective of finding longer-lasting components for highway pavement.	A researcher is working with state transportation officials to conduct tests of a newly developed highway pavement under various types of heat and cold conditions.						
A researcher is investigating the effect of different types of manipulatives on the way first graders learn mathematical strategy by changing manipulatives and then measuring what students have learned through standardized instruments.	A researcher is studying the implementation of a specific math curriculum to determine what teachers needed to know to implement the curriculum successfully.	A researcher is developing and testing software and support tools, based on fieldwork, to improve mathematics cognition for student special education.						

Question 7. How much of your R&D expenditures reported in Question 1 did your institution receive as a subrecipient?

- The **subrecipient** for an award carries out the work but receives the funds from a passthrough 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.
- Please report the original source of funds in columns (1) and (2) and the pass-through source in rows a–d. **Examples**:
 - Your university receives federal funds from another university as a subaward (row a, column 1).
 - Your university receives federal funds from a company as a subaward (row b, column 1).
- Funds received directly from an FFRDC should be treated as direct federal funding and not included on this question.

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

Entity passing funds to your institution	(1) Federal	(2) Nonfederal	(3) Total¹
 U.S. higher education institutions Colleges and universities and units owned, operated, and controlled by such institutions 	§9161	§ 1320	\$ <u>10481</u>
b. BusinessesFor-profit organizations	§5322	\$39	\$5361
 Nonprofit organizations Nonprofit foundations and organizations 	<u>\$</u> 1918	§675	§ 2593
 d. Other State and local governments, foreign institutions including foreign universities/colleges, and others 	_{\$} 1280	\$351	§1631
e. Total ¹	_{\$} 17681	§ 2385	\$ 20066

¹ Row and column totals are automatically generated on the Web survey.

Question 8. How much of the R&D expenditures reported in Question 1 did your institution pass through to subrecipients?

- 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.
- Please report the original source of funds in columns (1) and (2) and the entity receiving the funds in rows a–d. **Examples:**
 - Your institution passed through federal funds to another university (row a, column 1).
 - Your institution passed through funds from a company to another university (row a, column 2).

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

Entity receiving funds from your institution	(1) Federal	(2) Nonfederal	(3) Total¹			
 U.S. higher education institutions Colleges and universities and units owned, operated, and controlled by such institutions 	<u>\$</u> 15079	§517	_{\$} 15596			
b. Businesses For-profit organizations	\$678	\$798	\$ <u>1476</u>			
c. Nonprofit organizations Nonprofit foundations and organizations	_{\$2389}	\$120	_{\$2509}			
 d. Other State and local governments, foreign institutions including foreign universities/colleges, and others 	<u>\$</u> 1742	\$59	§ <u>1801</u>			
e. Total ¹	\$19888	\$ <u>1494</u>	§ 21382			

¹ Row and column totals are automatically generated on the Web survey.

Question 9A–B. What were your FY 2023 R&D expenditures in the computer and information sciences and engineering funded by the federal agency sources below? (R&D expenditures from nonfederal sources will be reported in Question 11.)

- Question 9 total (page 18, row K, column h) should match Question 1, row a.
- A list of federal departments, agencies and subagencies is included as a link on the web survey question.
- If an individual project involves more than one of the 40 fields of R&D, please prorate expenditures when possible and report the amount for each field involved.
- For subrecipient funding, report the agency that sponsored the original award.
- Funding from FFRDCs should be reported under the primary sponsoring agency for that center.

R&D expenditures from federal sources¹ (Dollars in thousands)

	(Donars in thousands)												
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)					
R&D Fields (Examples listed below)	USDA	DoD	Energy	HHS, includes NIH	NASA	NSF	Other	Total ²					
A. Computer and	005/1	202	Lilolgy	moludes Mill	117 107 1	1101	Othion						
Information	\$ 0	_{\$} 1226	\$ 68	_{\$} 520	\$ 0	\$ 2876	\$ 574	_{\$} 5264					
Sciences													
B. Engineering													
Aerospace, Aeronautical,			•										
and Astronautical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0					
Engineering													
Bioengineering and Biomedical	_{\$} 97	s 685	s 0	_{\$} 4713	s 0	_{\$} 613	s 324	_{\$} 6432					
Engineering	\$	\$	\$	\$	\$	\$	5	\$					
3. Chemical	_{\$} 35	_{\$} 1056	_{\$} 103	_{\$} 140	_{\$} 13	_{\$} 2027	s 244	_{\$} 3618					
Engineering	·	· 		·	· 	·	·——	· 					
4. Civil Engineering	\$0	_{\$} 861	\$ 656	\$ <u> </u>	\$ 28	_{\$} 731	\$ 925	_{\$} 3201					
5. Electrical,													
Electronic, and Communications	§ 0	_{\$} 1004	_{\$} 170	_{\$} 192	§ 0	_{\$} 1121	\$ 926	_{\$} 3413					
Engineering													
6. Industrial and													
Manufacturing Engineering	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0					
7. Mechanical													
Engineering	\$0	\$ 5314	\$ 0	\$ 75	_{\$} 12	\$ 1613	\$ 348	\$ 7362					
8. Metallurgical and													
Materials Engineering	\$0	_{\$} 3234	§ 674	_{\$} 92	§ 1	_{\$} 1638	_{\$} 519	_{\$} 6158					
9. Other	. 71	. 1	. 0	. 0	. 274	400	. 225	1100					
Engineering	\$ <u>71</u>	\$ <u> </u>	\$0	\$ <u> </u>	\$ 374	\$499	_{\$} 235	_{\$} _1180					
	s 203	_{\$} 12155	s 1603	s 5212	s 428	_{\$} 8242	_{\$} 3521	_{\$} 31364					
10. Total ²	\$ 203	\$ 12 100	2 1000	\$ 0212	_{\$} 428	\$ 02-72	3 0021	201004					

¹ Key: USDA, Department of Agriculture; DoD, Department of Defense; Energy, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NIH, National Institutes of Health; NSF, National Science Foundation. "Other" includes all other federal agencies.

² Row and column totals are automatically generated on the Web survey.

Examples of Disciplines: Computer and Information Sciences and Engineering Fields of R&D

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

Question 9C. What were your FY 2023 R&D expenditures in the geosciences, atmospheric sciences, and ocean sciences funded by the federal agency sources below? (R&D expenditures from nonfederal sources will be reported in Question 11.)

R&D expenditures from federal sources¹ (Dollars in thousands)

R&D Fields		(a)	(1	(b) (c) DoD Energy		C)		d) IS,	(e)		(†)		(g)		(h)	
(Exam	ples listed below)	US	ISDA				Energy		includes NIH		NASA		NSF		Other		Total ²
C. G	eosciences, Atm	osphe	ric Sc	iences	, and	Ocean	Scien	ces									
1.	Atmospheric Science and Meteorology	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0
2.	Geological and Earth Sciences	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0
3.	Ocean Sciences and Marine Sciences	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0
4.	Other Geosciences, Atmospheric Sciences, and Ocean Sciences	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0
5.	Total ²	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0

¹ **Key:** USDA, Department of Agriculture; DoD, Department of Defense; Energy, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NIH, National Institutes of Health; NSF, National Science Foundation. "Other" includes all other federal agencies.

Examples of Disciplines: Geosciences, Atmospheric Sciences, and Ocean Sciences Fields of R&D

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

Minerology and petrology

Paleomagnetism

Paleontology

Physical geography

Stratigraphy and sedimentation

Surveying

3. Ocean Sciences and Marine Sciences

Biological oceanography
Geological oceanography
Marina biology

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

² Row and column totals are automatically generated on the Web survey.

Question 9D. What were your FY 2023 R&D expenditures in the life sciences funded by the federal agency sources below? (R&D expenditures from nonfederal sources will be reported in Question 11.)

R&D expenditures from federal sources¹ (Dollars in thousands)

R&D Fields			(b)	(0		(c HH		(€			(f)		(g)	(h)		
(Examples listed below)	U	SDA)oD	Ene	ergy	include	s NIH	NA	SA	NSF		Other		Total ²	
D. Life Sciences																
Agricultural Sciences	\$	0	\$_	0	\$	0	\$	0	\$	0	\$	0	\$_	0	\$	0
Biological and Biomedical Sciences	\$	0	\$	1040	\$	0	§ <u>27</u>	176	\$	0	\$_ 1	130	\$_	162	<u>\$</u> 2	9508
3. Health Sciences	\$	12	\$_	247	\$	0	_{\$} 26	817	\$	0	\$	127	\$_	1937	<u>\$</u> 2	9140
Natural Resources and Conservation	\$	0	\$	117	\$	0	\$	0	\$	0	\$	23	\$_	115	\$	255
5. Other Life Sciences	\$	0	\$_	0	\$	0	\$	0	\$	0	\$	0	\$_	0	\$	0
6. Total ²	\$	12	\$	1404	\$	0	§ 53	993	\$	0	\$_ 1	280	\$	2214	\$ 5	8903

Key: USDA, Department of Agriculture; DoD, Department of Defense; Energy, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NIH, National Institutes of Health; NSF, National Science Foundation. "Other" includes all other federal agencies.

Examples of Disciplines: Life Sciences Fields of R&D

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

2. Biological and Biomedical **Sciences**

Veterinary biomedical and

clinical sciences

Wood science

Veterinary medicine

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

Food, 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 Nursina

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

² Row and column totals are automatically generated on the Web survey.

Question 9E–G. What were your FY 2023 R&D expenditures in mathematics and statistics, the physical sciences, and psychology funded by the federal agency sources below? (R&D expenditures from nonfederal sources will be reported in Question 11.)

R&D expenditures from federal sources¹ (Dollars in thousands)

DOD FILLS	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
R&D Fields (Examples listed below)	USDA	DoD	Energy	HHS, includes NIH	NASA	NSF	Other	Total ²
E. Mathematics and Statistics	\$0	<u>\$22</u>	<u>\$0</u>	\$0	<u>\$0</u>	_{\$} 445	<u>\$0</u>	_{\$} 467
F. Physical Sciences	;							
Astronomy and Astrophysics	<u>\$0</u>	<u>\$0</u>	\$0	\$ <u> </u>	\$0	\$0	\$0	<u>\$0</u>
2. Chemistry	<u>\$0</u>	<u>\$0</u>	\$0	\$ <u>95</u>	<u>\$0</u>	\$323	\$ <u>15</u>	§ 433
Materials Science	<u>\$0</u>	§0	\$0	\$O	<u>\$0</u>	\$0	\$0	<u>\$0</u>
4. Physics	\$0	\$0	\$568	\$ <u> 2 </u>	\$6	\$606	\$0	§ 1182
5. Other Physical Sciences	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6. Total ²	\$0	\$0	\$ 568	\$97	\$6	\$929	§ 15	\$_1615
G. Psychology	§0	_{\$79}	s0	_{\$} _2307	§0	\$111	_{\$} 209	_{\$} 2706

¹ Key: USDA, Department of Agriculture; DoD, Department of Defense; Energy, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NIH, National Institutes of Health; NSF, National Science Foundation. "Other" includes all other federal agencies.

Examples of Disciplines: Mathematics and Statistics, Physical Sciences, and Psychology Fields of R&D

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

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

Theoretical chemistry

Human development

Research and experimental psychology

² Row and column totals are automatically generated on the Web survey.

Question 9H–I. What were your FY 2023 R&D expenditures in the social sciences and other sciences funded by the federal agency sources below? (R&D expenditures from nonfederal sources will be reported in Question 11.)

R&D expenditures from federal sources¹ (Dollars in thousands)

R&D Fields	(a	a)	(I	b)	(c)	-	d)	(e)		(f)	(g)		(h)
(Examples listed below)	US	DA	De	οD	Ene	ergy		IS, es NIH	NA	SA	N	ISF	Ot	her	T	otal ²
H. Social Sciences																
1. Anthropology	\$	0	\$	0	\$	0	\$	0	\$	0	\$_	0	\$	0	\$_	0
2. Economics	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0
3. Political Science and Government4. Sociology,	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$_	0
Demography, and Population Studies	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$	0	\$_	0
Other Social Sciences	\$	0	\$	0	\$	0	\$	0	\$	0	\$	665	\$	0	\$	665
6. Total²	\$	0	\$	0	\$	0	\$	0	\$	0	\$	665	\$	0	\$	665
I. Other Sciences	\$	0	\$	0	\$	0	\$	0	\$	0	\$	43	\$	0	\$	43

¹ **Key:** USDA, Department of Agriculture; DoD, Department of Defense; Energy, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NIH, National Institutes of Health; NSF, National Science Foundation. "Other" includes all other federal agencies.

Examples of Disciplines: Social Sciences and Other Sciences Fields of R&D

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

Managerial economics Natural resource 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

I. Other Sciences

Labor economics

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.

² Row and column totals are automatically generated on the Web survey.

Question 9J–K. What were your FY 2023 R&D expenditures in the non-science and engineering (non-S&E) fields funded by the federal agency sources below? (R&D expenditures from nonfederal sources will be reported in Question 11.)

R&D expenditures from federal sources ¹	
(Dollars in thousands)	

R&D Fields	(a)	(b)	(c)	(d) HHS,	(e)	(f)	(g)	(h)	
(Examples listed below)	USDA	DoD	DoD Energy		NASA	NSF	Other	Total ²	
J. Non-S&E Fields									
Business Management and Business Administration	<u>\$0</u>	<u>\$24</u>	\$0	<u>\$0</u>	\$0	\$0	<u>\$0</u>	\$24	
Communication and Communications Technologies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3. Education	\$ <u> </u>	\$0	\$ <u> </u>	\$ 302	\$0	_{\$} 1787	_{\$} 192	§ 2281	
4. Humanities	s0	<u>\$0</u>	§0	<u>\$0</u>	<u>\$0</u>	\$59	_{\$191}	\$ 250	
5. Law	§0	§0	§0	\$0	\$0	\$0	§0	\$ <u> </u>	
6. Social Work	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Visual and Performing Arts	\$0	\$0	\$0	\$0	\$0	\$20	\$0	<u>\$20</u>	
8. Other Non-S&E Fields	§ 16	\$98	§0	\$ 4424	\$ <u> </u>	\$ <u>418</u>	§ 166	§ 5122	
9. Total ²	<u>\$16</u>	§ 122	<u>\$0</u>	<u>\$ 4726</u>	\$0	\$ <u>2284</u>	\$549	\$ <u>7697</u>	
K. Total for All Fields of R&D ²	§ <u>231</u>	<u>\$ 15008</u>	\$_2239	§ 66855	\$ <u>434</u>	_{\$} 16875	_{\$} 7082	\$ <u>108724</u>	

Total for row K, column h should equal Total for Question 1, row a.

¹ **Key:** USDA, Department of Agriculture; DoD, Department of Defense; Energy, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NIH, National Institutes of Health; NSF, National Science Foundation. "Other" includes all other federal agencies.

² Row and column totals are automatically generated on the Web survey.

Examples of Disciplines: Non-S&E Fields of R&D

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.

Question 10. Of the amount reported for Other federal sources in Question 9 (row K, column g), which agencies funded this R&D, and how much of the reported amount was from each agency?

If your institution reported \$0 in Question 9, row K, column g, skip this question and go to Question 11.

- Use rows a–j to list up to 10 agencies that funded the largest R&D expenditures.
- Use row k to report any remaining amount.
- For subrecipient funding in this question, list the sponsor of the original award.
- A list of federal departments, agencies and subagencies is included as a link on the web survey question.

Feder	ral agencies (list up to 10)	R&D expenditures (Dollars in thousands)
a.	Department of Transportation (DOT)	§1684
b.	Federal Emergency Management Agency (FEMA)	§1076
C.	National Endowment for the Humanities (NEH)	§904
d.	Department of Education (ED)	<u>\$</u> 840
e.	Department of Justice (DOJ)	§ 642
f.	Department of Commerce	§422
g.	Environmental Protection Agency (EPA)	§ <u>392</u>
h.	Department of Veterans Affairs (VA)	§310
i.	Department of State (DOS)	§ <u>258</u>
j.	Department of the Interior	<u>\$147</u>
k.	Other agencies included in Question 9, column g, but not listed above	<u>\$407</u>
I.	Total (should match Question 9, row K, column g) ¹	§7082
The colu	umn total is automatically generated on the Web survey.	

Question 11A–B. What were your FY 2023 R&D expenditures in the computer and information sciences and engineering fields funded by the nonfederal sources below?

- The totals in row K, page 24 should match the corresponding sources in Question 1, rows b–f.
- If an individual project involves more than one of the 40 fields of R&D, please prorate expenditures when possible and report the amount for each field involved.

R&D expenditures from nonfederal sources (Dollars in thousands)

			(2011410)	,			
D0D 5::44	(a) State and	(b)	(c)	(d)	(e) Other	(f)	
R&D Fields (See Question 9, p. 13)	local government	Business	Nonprofit organizations	Institutional funds	nonfederal sources	Total ¹	
A. Computer and Information Sciences	<u>\$0</u>	<u>\$0</u>	§ <u>32</u>	_{\$} 1288	§ <u>37</u>	_{\$} 1357	
B. Engineering							
Aerospace, Aeronautical, and Astronautical Engineering	<u>\$0</u>	\$0	\$0	<u>\$0</u>	<u>\$0</u>	\$0	
Bioengineering and Biomedical Engineering	<u>\$60</u>	\$_420	\$ <u>492</u>	\$_2368	<u>\$27</u>	\$ 3367	
3. Chemical Engineering	<u>\$12</u>	\$ <u>55</u>	<u>\$119</u>	\$ <u>819</u>	§31	_{\$} _1036	
4. Civil Engineering	§ 136	\$ <u>152</u>	§ 680	§ 675	\$3	_{\$} _1646	
Electrical, Electronic, and Communications Engineering	<u>\$0</u>	\$ <u> </u>	<u>\$21</u>	\$388	\$89	\$ 498	
Industrial and Manufacturing Engineering	<u>\$0</u>	\$ <u> </u>	\$0	<u>\$0</u>	<u>\$0</u>	\$0	
7. Mechanical Engineering	§ 67	\$ 69	\$38	\$_1765	\$0	_{\$} 1939	
Metallurgical and Materials Engineering	_{\$145}	<u>\$91</u>	\$ <u>79</u>	\$ 2229	\$ <u>421</u>	\$ 2965	
9. Other Engineering	<u>\$0</u>	\$ <u> </u>	\$3	\$ <u>1184</u>	\$0	_{\$} _1187	
10. Total¹	_{\$420}	_{\$} 787	_{\$} 1432	\$_9428	_{\$} 571	_{\$} 12638	
¹ Row and column totals are automatically generated on the Web survey.							

Examples of disciplines for the above fields of R&D are listed on page 13.

Question 11C-D. What were your FY 2023 R&D expenditures in the R&D fields listed below funded by the nonfederal sources below? R&D expenditures from nonfederal sources (Dollars in thousands) (b) (d) (f) (a) (c) (e) Other State and Institutional local Nonprofit nonfederal **R&D Fields** government **Business** organizations **funds** sources Total¹ (See Question 9, pp. 14-15) C. Geosciences, Atmospheric Sciences, and Ocean Sciences 1. Atmospheric Science and 0 0 0 0 0 0 \$ \$ \$ \$ \$ \$ Meteorology 2. Geological and Earth Sciences 0 0 0 0 0 0 \$ \$ \$ \$ 3. Ocean Sciences and Marine 0 0 0 0 0 0 \$ \$ Sciences 4. Other Geosciences, 0 0 0 0 0 0 \$ \$ Atmospheric Sciences, and \$ Ocean Sciences 0 0 0 0 0 0 \$ \$ \$ \$ \$ \$ 5. Total1 D. Life Sciences 1. Agricultural Sciences 0 0 0 0 0 \$ 2. Biological and Biomedical s 1503 s 10748 1147 68 467 _{\$} 13933 Sciences § 19012 3. Health Sciences s 2862 s 12200 1966 737 1247 4. Natural Resources and

55

0

860

949

s 5314

883

ς 23831

Examples of disciplines for the above fields of R&D are listed on pages 14-15.

¹ Row and column totals are automatically generated on the Web survey.

Conservation

6. Total1

5. Other Life Sciences

481

s 3594

0

s 2384

s 35329

0

16

0

s 1730

Question 11E–I. What were your FY 2023 R&D expenditures in the R&D fields listed below funded by the nonfederal sources below?

R&D expenditures from nonfederal sources (Dollars in thousands)

R&D Fields (See Question 9, pp. 16–17)	(a) State and Iocal government	(b) Business	(c) Nonprofit organizations	(d) Institutional funds	(e) Other nonfederal sources	(f) Total ¹
E. Mathematics and Statistics	<u>\$0</u>	<u>\$0</u>	\$8	\$ <u>142</u>	s0	\$ <u>150</u>
F. Physical Sciences						
Astronomy and Astrophysics	\$ <u> </u>	\$O	s0	s0	\$0	\$ <u> </u>
2. Chemistry	§91	\$ <u> </u>	\$0	_{\$_} 1003	\$0	_{\$} _1094
3. Materials Science	s0	\$0	\$0	\$0	<u>\$0</u>	s0
4. Physics	s0	\$0	_{\$60}	\$333	<u>\$0</u>	\$393
5. Other Physical Sciences	s0	\$ <u> </u>	\$0	\$0	\$ <u> </u>	<u>\$0</u>
6. Total¹	§ 91	\$0	<u>\$</u> 60	\$ <u>1336</u>	\$0	\$ <u>1487</u>
G. Psychology	§ <u>33</u>	<u>\$0</u>	<u>\$</u> 473	<u>\$</u> 840	\$ 284	\$_1630
H. Social Sciences 1. Anthropology	. 0	. 0	. 0	. 0	. 0	. 0
1. Antinopology	\$ <u> </u>	\$0	\$0	\$ <u> </u>	\$0	\$0
2. Economics	\$0	\$0	\$0	\$ <u> </u>	\$0	\$O
Political Science and Government	\$0	\$0	\$86	\$ <u>72</u>	\$0	_{\$} 158
Sociology, Demography, and Population Studies	s0	<u>\$0</u>	\$0	_{\$51}	<u>\$0</u>	§51
5. Other Social Sciences	§ <u>31</u>	\$0	\$ <u>464</u>	\$370	\$0	_{\$} 865
6. Total¹	§31	<u>\$0</u>	§ 550	§ 493	<u>\$0</u>	\$ <u>1074</u>
I. Other Sciences	\$ <u>69</u>	\$ <u>14</u>	<u>\$269</u>	_{\$1267}	<u>\$0</u>	\$ <u>1619</u>
¹ Row and column totals are automaticall	y generated on the	vveb survey.				

Examples of disciplines for the above fields of R&D are listed on pages 16–17.

Question 11J–K. What were your FY 2023 R&D expenditures in the non-science and engineering (non-S&E) fields funded by the nonfederal sources below?

R&D expenditures from nonfederal sources (Dollars in thousands)

	(a) State and	(b)	(c)	(d)	(e) Other	(f)
R&D Fields (See Question 9, p. 19)	local government	Business	Nonprofit organizations	Institutional funds	nonfederal sources	Total ¹
J. Non-S&E Fields						
Business Management and Business Administration	\$ <u> </u>	<u>\$10</u>	<u>\$0</u>	<u>\$</u> 97	\$ <u> </u>	\$ <u>107</u>
Communication and Communications Technologies	<u>\$0</u>	\$0	<u>\$0</u>	§51	\$1	\$52
3. Education	<u>\$85</u>	<u>\$41</u>	\$ <u>77</u>	\$683	\$ <u>0</u>	\$886
4. Humanities	\$9	\$ <u>15</u>	_{\$159}	\$280	\$56	\$519
5. Law	<u>\$0</u>	\$0	\$0	<u>\$21</u>	\$O	<u>\$21</u>
6. Social Work	\$ <u>0</u>	<u>\$0</u>	\$0	\$ <u>0</u>	\$ <u>0</u>	\$0
7. Visual and Performing Arts	\$30	\$0	<u>\$28</u>	§ 314	\$5	\$377
8. Other Non-S&E Fields	<u>\$ 102</u>	\$ <u> </u>	§73	\$ 3325	_{\$} 113	\$ 3613
9. Total ¹	<u>\$</u> 226	\$66	§ <u>337</u>	\$ <u>4771</u>	_{\$175}	\$ 5575
K. Total for All Fields of R&D ¹	\$_4464	_{\$} _1727	_{\$} _8475	_{\$} 43396	_{\$} 2797	§ 60859

Totals in row K, columns a-e should match corresponding sources in Question 1, rows b-f.

Examples of disciplines for non-S&E fields of R&D are listed on page 19.

¹ Row and column totals are automatically generated on the Web survey.

Question 12. Of the total amount of R&D expenditures reported in Question 1, row g, what were the amounts for the following types of costs?

- Please report only direct costs (including cost sharing) in rows a—e.
- Recovered and unrecovered indirect costs should be reported in rows f1 and f2.

R&D expenditures (Dollars in thousands)

a. Salaries, wages, and fringe benefits

Include compensation for all R&D personnel whether full-time or part-time, temporary or permanent. Include salaries, wages, and fringe benefits paid from your institution's funds and from external support.

78407

b. Software purchases

All payments for software. Include both purchases of software packages and license fees for systems.

1. Noncapitalized software

0

2. Capitalized software (If you are unable to distinguish capitalized software from capitalized equipment, report both in row c.)

417

c. Capitalized equipment

Payments for movable equipment exceeding your institution's capitalization threshold. Include ancillary costs such as delivery and setup.

5469

d. Pass-throughs to other universities or organizations

(should match the total in Question 8, row e, column 3)

21382

e. Other direct costs

Other costs that do not fit into one of the above categories, including (but not limited to) travel, tuition waivers, services such as consulting, computer usage fees, and supplies.

26912

f. Indirect costs

1. Recovered indirect costs

Reimbursement of Facilities and Administrative (F&A) costs from external sponsors

28188 (Confidential¹)

2. Unrecovered indirect costs

(should equal Question 1, row e3)

S 8808 (Confidential¹)

3. Total indirect costs²

36996

g. Total²

(should match total from Question 1, row g)

_{\$} 169583

Question 13. At the end of FY 2023, what were your institution's capitalization thresholds for software and equipment?

(Dollars in thousands)

(1) tware	(2 Equip	
\$ 5.0	\$	5.0

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.

² Totals are automatically generated on the Web survey.

Question 14A–C. For the R&D fields below, what portion of your FY 2023 R&D expenditures went for the purchase of capitalized R&D equipment?

Question 14 total (row K, column c) should match Question 12, row c (Capitalized equipment).

R&D equipment expenditures (Dollars in thousands)

			(Bollaro I	iii tiioaoaiia	,	
R&D Fields (See Question 9, pp. 13–14)	Fe	(a) ederal		(b) federal	Т	(c) otal ¹
A. Computer and Information Sciences	\$	0	\$	0	\$	0
B. Engineering						
Aerospace, Aeronautical, and Astronautical Engineering	\$	0	\$	0	\$	0
2. Bioengineering and Biomedical Engineering	\$	72	\$	350	\$	422
3. Chemical Engineering	\$	154	\$	159	\$	313
4. Civil Engineering	\$	228	\$	32	\$	260
5. Electrical, Electronic, and Communications Engineering	\$	82	\$	63	\$	145
6. Industrial and Manufacturing Engineering	\$	0	\$	0	\$	0
7. Mechanical Engineering	\$	1341	\$	931	\$	2272
8. Metallurgical and Materials Engineering	\$	504	\$	180	\$	684
9. Other Engineering	\$	0	\$	0	\$	0
10. Total ¹	\$	2381	\$	1715	\$	4096
C. Geosciences, Atmospheric Sciences, and Ocean Science	es					
Atmospheric Science and Meteorology	\$	0	\$	0	\$	0
2. Geological and Earth Sciences	\$	0	\$	0	\$	0
Ocean Sciences and Marine Sciences	\$	0	\$	0	\$	0
Other Geosciences, Atmospheric Sciences, and Ocean Sciences	\$	0	\$	0	\$	0
5. Total ¹	\$	0	\$	0	\$	0
¹ Row and column totals are automatically generated on the Web surve	ey.					

Examples of disciplines for the above fields of R&D are listed on pages 13–14.

Question 14D–I. For the R&D fields below, what portion of your FY 2023 R&D expenditures went for the purchase of capitalized R&D equipment?

R&D equipment expenditures (Dollars in thousands)

		(Dollars in thousands)						
	&D Fields	_	(a)		(b)	_	(c)	
	ee Question 9, pp. 15–17) Life Sciences	Fe	ederal	Noni	federal	10	otal ¹	
J.	Agricultural Sciences	\$	0	\$	0	\$	0	
	2. Biological and Biomedical Sciences	\$ \$	243	\$ \$	222	\$ \$	465	
	3. Health Sciences	\$	0	\$	115	\$	115	
	4. Natural Resources and Conservation	\$	0	\$	13	\$	13	
	5. Other Life Sciences	\$	0	\$	0	\$	0	
	6. Total ¹	\$	243	\$	350	\$	593	
E.	Mathematics and Statistics	\$	0	\$	0	\$	0	
F.	Physical Sciences							
	Astronomy and Astrophysics	\$	0	\$	0	\$	0	
	2. Chemistry	\$	28	\$	643	\$	671	
	3. Materials Science	\$	0	\$	0	\$	0	
	4. Physics	\$	0	\$	2	\$	2	
	5. Other Physical Sciences	\$	0	\$	0	\$	0	
	6. Total ¹	\$	28	\$	645	\$	673	
G.	Psychology	\$	0	\$	85	\$	85	
Н.	Social Sciences							
	1. Anthropology	\$	0	\$	0	\$	0	
	2. Economics	\$	0	\$	0	\$	0	
	3. Political Science and Government	\$	0	\$	0	\$	0	
	4. Sociology, Demography, and Population Studies	\$	0	\$	0	\$	0	
	5. Other Social Sciences	\$	0	\$	0	\$	0	
	6. Total ¹	\$	0	\$	0	\$	0	
ı.	Other Sciences	\$	0	\$	8	\$	8	
1	Row and column totals are automatically generated on the Web survey	·						

Examples of disciplines for the above fields of R&D are listed on pages 15–17.

Question 14J–K. For the non-science and engineering (non-S&E) R&D fields below, what portion of your FY 2023 R&D expenditures went for the purchase of capitalized R&D equipment?

R&D	equipment expenditures
((Dollars in thousands)

R&D Fields (See Question 9, p. 19)	(a) Federal	(b) Nonfederal	(c) Total¹
J. Non-S&E Fields			
Business Management and Business Administration	\$0	\$0	\$0
Communication and Communications Technologies	<u>\$0</u>	\$0	\$0
3. Education	<u>\$</u> 0	\$0	<u>\$</u>
4. Humanities	<u>\$0</u>	\$O	<u> </u>
5. Law	<u>\$0</u>	\$O	\$0
6. Social Work	\$0	\$0	\$O
7. Visual and Performing Arts	\$0	\$14	\$14
8. Other Non-S&E Fields	\$0	\$0	\$0
9. Total ¹	\$0	\$14	\$14
K. Total for All Fields of R&D ¹	§ 2652	\$2817	_{\$} 5469

Total for row K, column c, should match Question 12, row c (Capitalized equipment).

Examples of disciplines for non-S&E fields of R&D are listed on page 19.

¹ Row and column totals are automatically generated on the Web survey.

Question 15. How many personnel (headcount) worked in the functions listed below in FY 2023, and in which demographic and educational categories would these personnel be placed?

- Headcount by sex, citizenship, and highest level of education is confidential¹. Total headcount by research function (row A) will be published by institution.
- Include each person only once in headcount. If they performed work in two roles (e.g., researcher and technician), include them in the headcount for their predominant role.
- Include all personnel and students paid from R&D accounts regardless of how much they were paid. Pay could be a salary, a stipend, or tuition remission.
- Exclude personnel that would be considered indirect research support such as research administration and other personnel not paid for work on specific research projects.
- **Functions** are defined primarily by the nature of the employee's work, not the employee's level of education. Depending on the nature of their work, a student could be placed in any functional category. **See page 30 for a description of each R&D function.**

	(a) Researchers	(b) R&D technicians	(c) R&D support staff	(d) Total ²
A. Total R&D personnel	1422	477	612	2511
B. Sex ¹				
1. Female	746	313	387	1446
2. Male	673	160	223	1056
3. Sex unknown or not stated	3	4	2	9
C. Citizenship ¹				
 U.S. citizens and permanent residents (non-U.S. citizens holding Green Cards) 	1069	440	508	2017
2. Foreign nationals holding temporary visas	0	0	0	0
3. Citizenship or residency status unknown or not stated	353	37	104	494
D. Highest level of education completed ¹	Researchers only			
1. Doctorate (e.g., PhD, DSc, EdD)	Unavailable			
2. Professional degree (e.g., JD, LLB, MD, DDS, DVM)	Unavailable		Do not include	
3. Master's degree (e.g., MS, MA, MBA)	Unavailable	highest level of education for R&D technicians or R&D support staff.		
4. Less than Master's	Unavailable			
5. Education level unknown or not stated	Unavailable			

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. 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.

² Totals are automatically generated on the Web survey.

Description of R&D Functions			
Researchers	R&D technicians	R&D support staff	
Professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned. Include R&D managers in this category.	Persons whose main tasks require technical knowledge and experience in one or more fields of science or engineering, but who contribute to R&D by performing technical tasks such as computer programming, data analysis, ensuring accurate testing, operating lab equipment, and preparing and processing samples under the supervision of researchers.	Not directly involved with the conduct of a research project but support the researchers and technicians. These employees might include clerical staff, financial and personnel administrators, report writers, patent agents, safety trainers, equipment specialists, and other related employees.	

Researcher versus R&D technician

Researchers contribute more to the creative aspects of R&D whereas technicians provide technical support. For example, a researcher would design an experiment, and a technician would run the experiment and assist in analyzing results.

Question 16. How many full-time equivalents (FTEs) worked in the functions listed below in FY 2023?

- All personnel counted in Question 15 should be included in FTE calculations; however, we would expect FTEs to be less than headcounts.
- FTEs for this question are calculated as the total working effort **spent on research** during your fiscal year divided by the total effort representing one full-time schedule within the same period. See table below this question for examples of FTE calculations.
- An individual cannot be more than 1.0 FTE. An individual counted as 1.0 FTE for this question, would spend 100% of their working effort on research. If an individual exceeds 1.0 research FTE based on your standard calculations, adjust down to 1.0.
- See Question 15 for descriptions of each function.

	FTEs
(round to	1 decimal place)

	1	on a to a document plan
a.	Researchers	1259.1
b.	R&D technicians	353.0
c.	R&D support staff	582.5
d.	Total ¹	2194.6

¹ Total is automatically generated on the Web survey.

Examples of FTE Calculations

Using labor hours:

The following examples assume a 40-hour work week during a 49-week work year (1,960 hours), which excludes 3 weeks for vacation, holidays, etc. However, you should use the hours per week and weeks per year that typically represent a full-time employee at your organization.

- 10 researchers who spent a combined 13,720 hours on research: 13,720/1,960 = 7.0 FTE
- 1 researcher who works on research 20% of the time for 20 weeks, 50% of the time for another 20 weeks, and full-time for 9 weeks: ((20% * 20) + (60% * 20) + 9)/ 49 = 0.5 FTE
- 2 research technicians who worked exclusively on research but only for 32 weeks: (2 * (32 * 40))/1,960 =1.3 FTE
- 10 student employees during the summer who each worked on research full-time time for 10 weeks: 10 * (10/49) = 2.0 FTE

Using salary:

FTE must be calculated for each individual and then summed for institution reporting.

- 1 researcher with a \$150,000 salary who was employed the entire year and \$120,000 of salary came from R&D accounts: 120,000/150,000 = 0.8 FTE
- 1 research support staff member with a \$60,000 salary for a 9-month appointment, of which \$40,000 came from R&D accounts: (40,000/60,000) * (9/12) = 0.5 FTE

Evgeniya Belokon

June

Name	 Please complete the contact information for the person responsible for the survey. Patricia Dalessandro 			
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