



National Science Foundation
WHERE DISCOVERIES BEGIN

NSF Survey of Federal Funds for Research and Development

FYs 2022–23
(Volume 72)

Standard Form

Due date: July 21, 2023

Questions?

- For questions about your agency's participation, contact NSF Project Manager Christopher Pece by e-mail at cpece@nsf.gov or at 703-292-7788.
- For technical questions, contact the Support Team by e-mail at NCSSES-FedFundsSurvey@nsf.gov or at 703-312-5379.

The survey is authorized by the National Science Foundation Act of 1950 (42 U.S. Code 1862, P.L. 87-835), as amended, and the America COMPETES Reauthorization Act of 2010 §505.

Thank you for your participation.

What's New?

There are no major changes to the survey for this cycle, but the survey website has more functionality.

Specific Change from Volume 71 to Volume 72

- You no longer need to provide data on R&D from pandemic-related stimulus funds received from the Coronavirus, Aid, Relief, and Economic Security Act plus any other pandemic-related supplemental appropriations (i.e., “Stimulus”) separate from regular appropriations (i.e., “Non-Stimulus”).

Website Changes

- You will be able to select the volume 71 survey if you want to view your volume 71 responses or download a spreadsheet with your volume 71 data.
- There are now spaces for five alternate points of contact.
- Questions 18 and 19 on the data collection website will already include the list of institutions you entered for the previous cycle.
- There is now only one method of aggregation: overwrite. This method enters the sum of your immediate suboffice-level data into your survey, replacing any data you may have entered. If you have suboffices and also enter data at your level, you will need to add a new “overlay” suboffice where you can enter your own data. We will be happy to help you with that.

How is the Survey Organized?

The questionnaire starts with a few general questions about your funding totals, followed by more specific breakouts of the data you provide at the beginning. The table below shows the years and type of R&D funding requested within each question.

Question number and topic	FY 2022 R&D conduct	FY 2022 R&D plant	FY 2023 R&D conduct	FY 2023 R&D plant
R&D Totals				
Q1. Outlays (totals)	✓	✓	✓	✓
Q2. Comparison with OMB Circular A-11 Schedule C	✓	✓		
Q3. Obligations (totals)	✓	✓	✓	✓
Q4. Deobligations (totals)	✓	✓		
Breakdowns of R&D Obligations				
Q5. By type of work	✓		✓	
Q6. By type of work and by detailed field of R&D	✓			
Q7. By type of work and by broad field of R&D			✓	
Q8. By type of work and performer	✓	✓		
Q9. By type of work and performer			✓	✓
Q10. Nonfederal R&D by type of agreement	✓	✓		
Q11. R&D agreements with other federal agencies	✓	✓		
Q12. R&D conduct by performer and state	✓			
Q13. R&D plant by performer and state		✓		
Q14. To non-U.S. performers by country	✓	✓		
Q15. To U.S. higher education by type of work and detailed field of R&D	✓			
Q16. To specific FFRDCs by type of work	✓	✓		
Q17. To specific UARCs by type of work	✓	✓		
R&D and S&E Support				
Q18. To specific U.S. higher education institutions	✓	✓		
Q19. To specific U.S. nonprofit organizations	✓	✓		

General Survey Definitions and Instructions

The following section provides general guidance on what should be reported on the survey. These definitions come from OMB Circular A-11, Section 84.2(c). Additional definitions and other instructions are provided throughout the questionnaire as needed.

R&D Conduct

Research and experimental development (R&D) conduct is defined as creative and systematic work undertaken in order to increase the stock of knowledge—including knowledge of people, culture, and society—and to devise new applications using available knowledge.

Basic research: Basic research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts. Basic research may include activities with broad or general applications in mind, such as the study of how plant genomes change, but should exclude research directed towards a specific application or requirement, such as the optimization of the genome of a specific crop species.

Applied research: Applied research is defined as original investigation undertaken in order to acquire new knowledge. Applied research is, however, directed primarily towards a specific practical aim or objective.

Experimental development: Experimental development is defined as creative and systematic work, drawing on knowledge gained from research and practical experience, which is directed at producing new products or processes or improving existing products or processes. Like research, experimental development will result in gaining additional knowledge. (More details about what is included and excluded can be found in question 5.)

Experimental development includes:

- The production of materials, devices, and systems or methods, including the design, construction, and testing of experimental prototypes.
- Technology demonstrations, in cases where a system or component is being demonstrated at scale for the first time, and it is realistic to expect additional refinements to the design (feedback R&D) following the demonstration. However, not all activities that are identified as “technology demonstrations” are R&D.

Experimental development does not include:

- User demonstrations where the cost and benefits of a system are being validated for a specific use case. This includes low-rate initial production activities.
- Pre-production development, which is defined as non-experimental work on a product or system before it goes into full production, including activities such as tooling and development of production facilities. For example, exclude activities and programs that are categorized as “Operational Systems Development” in DOD’s budget activity structure. Activities and programs of this type should generally be reported as investments in other major equipment.

General Survey Definitions and Instructions (continued)

R&D Plant

R&D plant includes spending on both R&D facilities and major equipment as defined in Office of Management and Budget (OMB) Circular A-11 Section 84 (Schedule C) and includes physical assets, such as land, structures, equipment, and intellectual property (e.g., software or applications) that have an estimated useful life of two years or more.

Reporting for R&D plant includes the purchase, construction, manufacture, rehabilitation, or major improvement of physical assets regardless of whether the assets are owned or operated by the Federal Government, States, municipalities, or private individuals. The cost of the asset includes both its purchase price and all other costs incurred to bring it to a form and location suitable for use.

Obligations for foreign R&D plant are limited to federal funds for facilities that are located abroad and used in support of foreign R&D.

R&D Activities Must Be...

(Source: Frascati Manual 2015)

- **Novel:** projects that advance current knowledge or create new knowledge
- **Creative:** projects focused on original concepts and hypotheses
- **Uncertain:** project outcomes are unable to be completely determined at the outset
- **Systematic:** projects are planned and budgeted
- **Transferable/Reproducible:** project methodology and results are transferable/reproducible to other situations and locations

Types of Activities That Are Not Likely To Be R&D

- Program planning and evaluation (unless part of an existing R&D program)
- Commercialization (includes promoting/producing the products/services from R&D projects)
- Economic/policy/feasibility studies
- General patient services
- Information systems
- Management studies
- Marketing of products/services
- Market research or analysis
- Routine data collection/dissemination
- Routine monitoring/testing
- Strategic planning
- Technology transfer

What Types of Funding Should I Include?

R&D Conduct

Include:

- All of your agency's R&D costs, regardless of whether the funding was from direct appropriations, trust funds, special account receipts, or fees and charges.
- Agency R&D costs for non-U.S. performers.
- Costs of performing, planning, and administering R&D conducted by your agency, including laboratory overhead and pay of military personnel.
- For R&D contracts, include all of your agency's administrative costs.
- Minor equipment purchases, such as personal computers, standard microscopes, and simple spectrometers.
- Funds transferred to another agency for R&D.

Do not include:

- **Reimbursable funds provided to your agency by another federal agency. The originating agency will report these.**
- For R&D grants, do not include your agency's administrative costs.

R&D Plant

Include:

- Funding for the construction of facilities that are necessary for the execution of an R&D program. This may include land, major fixed equipment, and supporting infrastructure such as a sewer line, or housing at a remote location. Many laboratory buildings will include a mixture of R&D facilities and office space. The fraction of the building that is considered to be R&D may be calculated based on the percentage of square footage that is used for R&D.
- Acquisition, design, or production of major moveable equipment, such as mass spectrometers, research vessels, DNA sequencers, and other moveable major instrumentation for use in R&D activities.
- Programs of \$1 million or more that are devoted to the purchase or construction of R&D major equipment.
- Agency R&D plant costs for non-U.S. performers.

Do not include:

- Minor equipment purchases, such as personal computers, standard microscopes, and simple spectrometers (if part of an R&D activity, report these costs under R&D conduct, not R&D plant).

How Should I Report My Data?

- Report actual dollars for all amounts.
- Where possible, use enacted appropriation rather than annualized continuing resolution amounts.

- R&D outlays and obligations reported in this survey should be consistent with amounts in the Budget of the United States Government. See OMB Circular A-11, Section 84.3(g). The same definitions are used for both.
- Report all outlays or obligations that occurred in FY 2022, and those estimated for FY 2023.
- Report the fiscal year in which the outlay or obligation was made regardless of when the funds were originally authorized, received, or appropriated.

About the Survey of Federal Funds for Research and Development (R&D)

Who sponsors the survey?

The National Center for Science and Engineering Statistics (NCSES), within the National Science Foundation (NSF), an independent government agency, sponsors the *Survey of Federal Funds for Research and Development* (Federal Funds for R&D). NSF has collected data on federal funding for R&D from this annual census of federal agencies since 1951.

Why is the survey important?

This survey is the primary source of detailed information about federal funding for R&D in the United States.

The Office of Management and Budget (OMB) Circular A-11, Section 84, Schedule C collects some R&D data from federal agencies for the Budget of the U.S. Government, specifically outlays for R&D by type of work and R&D plant. However, the information provided does not provide as much detail on type of work or performers as this survey, and it provides no information on fields of R&D or geographic distribution.

Your survey responses are also used in the federal government's calculation of U.S. Gross Domestic Product (GDP) at the national and state level, for policy analysis and for budget purposes for the Federal Laboratory Consortium for Technology Transfer, Small Business Innovation Research (SBIR), and Small Business Technology Transfer (STTR).

It is also, after the incorporation of questions from the former *Survey of Federal S&E Support to Universities, Colleges, and Nonprofit Institutions* in volume 71, the only source of comprehensive data on federal science and engineering (S&E) funding to individual academic and nonprofit institutions.

Are these data confidential?

No, these data are a matter of public record.

What is the authority for collecting these data?

Legislation makes provision for the collection of this survey data, under the National Science Foundation Act of 1950 (42 U.S. Code. 1862, P.L. 87-835), as amended, and the America COMPETES Reauthorization Act of 2010 §505.

List of R&D Fields and Example Disciplines

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. 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

C. 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
 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
 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
 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

D. Mathematics and statistics

Applied mathematics
 Mathematics
 Statistics

E. 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

F. Psychology

1. Biological aspects

- Animal behavior and ethology
- Clinical psychology
- Comparative psychology
- Experimental psychology

2. Social aspects

- Human development and personality
- Educational psychology
- Industrial and organization psychology
- Personality psychology
- Social psychology
- Counseling psychology

3. Other psychological sciences

Other psychology that cannot be classified using the fields listed above

G. 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

H. 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

I. Other 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 research

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. All other fields

Architecture
City, urban, community and regional planning
Family, consumer sciences and human sciences
Foods, nutrition, and wellness studies
Landscape architecture
Library science
Parks, sports, recreation, leisure and fitness
Public administration and public affairs
Other fields that cannot be classified using the fields listed above

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

1 FYs 2022 and 2023 outlays for R&D and R&D plant

What were your agency’s outlays for R&D conduct and R&D plant in fiscal year (FY) 2022 and what are your agency's estimated outlays for FY 2023?

Definition from OMB Circular A-11, Section 20.3: Outlay means a payment to liquidate an obligation (other than the repayment of debt principal or other disbursements that are "means of financing" transactions). Outlays generally are equal to cash disbursements but also are recorded for cash-equivalent transactions, such as the issuance of debentures to pay insurance claims, and in a few cases are recorded on an accrual basis such as interest on public issues of the public debt.

- Report prior year actuals and current year estimates for outlays.
- Amounts should be reported regardless of whether or not they were originally appropriated, received, or identified in your agency’s budget specifically for R&D conduct or R&D plant.

R&D Outlays
(Round to the nearest dollar)

	(1) FY 2022 Actual	(2) FY 2023 Estimated
a. R&D conduct	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>
b. R&D plant	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>
c. Total	TOTAL	TOTAL

If needed, use the space below to provide clarification for the data reported in this question.

2 FY 2022 comparison of R&D outlays with OMB Circular A-11 Schedule C

What outlays for R&D conduct and R&D plant did your agency report to the Office of Management and Budget (OMB) in response to Circular A-11, section 84 (MAX Schedule C) in FY 2022?

This question is addressed only to the respondents who have access to their agency's report to OMB.

As noted in OMB Circular A-11, Section 84.3(g):

- You should be able to reconcile information reported in schedule C for the conduct of R&D with information reported in the National Science Foundation's *Survey of Federal Funds for Research and Development*, and with information provided in the supplemental R&D data requests described in [84.3](h).
- You should also be able to reconcile the total reported in schedule C for the construction of R&D facilities and major movable equipment with information reported as R&D plant in the National Science Foundation's *Survey of Federal Funds for Research and Development*.

If your agency's report to OMB is not available to you, on the website you can check this box to enter N/A in the data fields.

R&D Outlays (Round to the nearest dollar)

	FY 2022 Actual
a. R&D conduct	
1. Outlays for R&D conduct reported in question 1 row a for FY 2022	Autofill on website
2. Outlays for R&D conduct reported to OMB in response to Circular A-11, section 84 (MAX Schedule C)	\$ <input style="width: 100px;" type="text"/>
3. Difference in outlays for R&D conduct (row a.1 minus row a.2)	Autofill on website

Use the space below to explain any difference between rows a.1 and a.2.

R&D Outlays (Round to the nearest dollar)

	FY 2022 Actual
b. R&D plant	
1. Outlays for R&D plant reported in question 1 row b for FY 2022	Autofill on website
2. Outlays for R&D Facilities plus Major R&D Equipment Reported to OMB in response to Circular A-11, section 84 (MAX Schedule C)	\$ <input style="width: 100px;" type="text"/>
3. Difference in outlays for R&D plant (row b.1 minus row b.2)	Autofill on website

Use the space below to explain any difference between rows b.1 and b.2.

3 FYs 2022 and 2023 total obligations for R&D and R&D plant

What were your agency’s obligations for R&D conduct and R&D plant in all fields in FY 2022 and what are your agency's estimated obligations for FY 2023?

Definition from OMB Circular A-11, Section 20.3: Obligation means a binding agreement that will result in outlays, immediately or in the future. Budgetary resources must be available before obligations can be incurred legally.

- Include all R&D obligated by your agency, regardless of whether the funding was from direct appropriations, trust funds, special account receipts, or fees and charges.
- Exclude reimbursable funds provided to your agency by another federal agency.

**R&D Obligations
(Round to the nearest dollar)**

	(1) FY 2022 Actual	(2) FY 2023 Estimated
a. R&D conduct	\$ _____	\$ _____
b. R&D plant	\$ _____	\$ _____
c. Total R&D conduct and plant	TOTAL	TOTAL

If needed, use the space below to provide clarification for the data reported in this question.

4 FY 2022 R&D deobligations

How much of the R&D funding your agency obligated in prior years was deobligated in FY 2022?

- As examples, deobligations might occur when a contract is cancelled or when not all of the obligated funds are spent, allowing the funds to be reobligated somewhere else or returned to the Department of the Treasury.
- Choose one response per row.
- This is the **only** question where the total level of deobligations should be reported. Do not enter negative numbers in the other questions.

R&D Deobligations (FY 2022 Actual)
(Round to the nearest dollar)

	None or not applicable	Less than \$1 million	\$1,000,000 to \$9,999,999	\$10,000,000 to \$49,999,999	\$50,000,000 or more	Not available
a. R&D conduct	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. R&D plant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If needed, use the space below to provide clarification for the data reported in this question.

5 FYs 2022 and 2023 obligations for R&D conduct by type of work

What were your agency’s obligations for R&D conduct by type of work in FY 2022 and what are your agency's estimated obligations by type of work in FY 2023?

- If you cannot assign a project’s obligations precisely across basic research, applied research, and experimental development, use your best judgment to allocate the obligations.
- The definitions below are from OMB Circular A-11, Section 84.2(c).
- Examples are provided on the next page.

Basic research: Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts. Basic research may include activities with broad or general applications in mind, such as the study of how plant genomes change, but should exclude research directed towards a specific application or requirement, such as the optimization of the genome of a specific crop species.

Applied research: Original investigation undertaken in order to acquire new knowledge. Applied research is, however, directed primarily towards a specific practical aim or objective.

Experimental development: Creative and systematic work, drawing on knowledge gained from research and practical experience, which is directed at producing new products or processes or improving existing products or processes. Like research, experimental development will result in gaining additional knowledge.

Experimental development includes:

- The production of materials, devices, and systems or methods, including the design, construction, and testing of experimental prototypes. Technology demonstrations, in cases where a system or component is being demonstrated at scale for the first time, and it is realistic to expect additional refinements to the design (feedback R&D) following the demonstration. However, not all activities that are identified as “technology demonstrations” are R&D.

Experimental development does not include:

- User demonstrations where the cost and benefits of a system are being validated for a specific use case. This includes low-rate initial production activities.
- Pre-production development, which is defined as non-experimental work on a product or system before it goes into full production, including activities such as tooling and development of production facilities. For example, exclude activities and programs that are categorized as “Operational Systems Development” in DOD’s budget activity structure. Activities and programs of this type should generally be reported as investments in other major equipment.

**R&D Obligations
(Round to the nearest dollar)**

	(1) FY 2022 Actual	(2) FY 2023 Estimated
a. Basic research	\$ _____	\$ _____
b. Applied research	\$ _____	\$ _____
c. Experimental development	\$ _____	\$ _____
d. Total R&D conduct	TOTAL	TOTAL
<i>Cross check: totals in row d above should match the amounts from question 3.a as displayed here.</i>	Q3.a(1) value	Q3.a(2) value

If needed, use the space below to provide clarification for the data reported in this question.

→ Question 5 continues on the next page.

5 FYs 2022 and 2023 obligations for R&D conduct by type of work (continued)

Examples of R&D types

Basic research examples

- A researcher is studying the properties of human blood to determine what affects coagulation.
- A researcher is studying the properties of molecules under various 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.

Applied research examples:

- A researcher is conducting research on how a new chicken pox vaccine affects blood coagulation.
- 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 studying the implementation of a specific math curriculum to determine what teachers needed to know to implement the curriculum successfully.

Experimental development examples:

- A researcher is conducting clinical trials to test a newly developed chicken pox vaccine for young children.
- 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 developing and testing software and support tools, based on fieldwork, to improve mathematics cognition for student special education.

6 FY 2022 obligations for R&D conduct by type of work and detailed field of R&D

What were your agency’s obligations for basic research, applied research, and experimental development in the fields below in FY 2022?

- If an obligation was intended to support R&D in multiple fields (i.e., interdisciplinary research), please prorate the obligation for each field involved when possible. Do not double-count funds across multiple fields.
- Examples of the fields and disciplines are provided in the front section of the survey. “Business management and business administration” for example is for R&D in those topics, not administration of R&D in other fields.

**R&D Obligations (FY 2022 Actual)
(Round to the nearest dollar)**

Field of R&D	(a) Basic research	(b) Applied research	(c) Experimental development	(d) Total R&D conduct
a. Computer and information sciences	\$ _____	\$ _____	\$ _____	TOTAL
b. Geosciences, atmospheric sciences, and ocean sciences				
1. Atmospheric science and meteorology	\$ _____	\$ _____	\$ _____	TOTAL
2. Geological and earth sciences	\$ _____	\$ _____	\$ _____	TOTAL
3. Ocean sciences and marine sciences	\$ _____	\$ _____	\$ _____	TOTAL
4. Other geosciences, atmospheric sciences, and ocean sciences	\$ _____	\$ _____	\$ _____	TOTAL
5. Total geosciences, atmospheric sciences, and ocean sciences	TOTAL	TOTAL	TOTAL	TOTAL
c. Life sciences				
1. Agricultural sciences	\$ _____	\$ _____	\$ _____	TOTAL
2. Biological and biomedical sciences	\$ _____	\$ _____	\$ _____	TOTAL
3. Health sciences	\$ _____	\$ _____	\$ _____	TOTAL
4. Natural resources and conservation	\$ _____	\$ _____	\$ _____	TOTAL
5. Other life sciences	\$ _____	\$ _____	\$ _____	TOTAL
6. Total life sciences	TOTAL	TOTAL	TOTAL	TOTAL
d. Mathematics and statistics	\$ _____	\$ _____	\$ _____	TOTAL

→ Question 6 continues on the next page.

INFORMATION ONLY – DO NOT USE TO REPORT

NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

6 FY 2022 obligations for R&D conduct by type of work and detailed field of R&D
(continued)

R&D Obligations (FY 2022 Actual)
(Round to the nearest dollar)

Field of R&D	(a) Basic research	(b) Applied research	(c) Experimental development	(d) Total R&D conduct
e. Physical sciences				
1. Astronomy and astrophysics	\$ _____	\$ _____	\$ _____	TOTAL
2. Chemistry	\$ _____	\$ _____	\$ _____	TOTAL
3. Materials science	\$ _____	\$ _____	\$ _____	TOTAL
4. Physics	\$ _____	\$ _____	\$ _____	TOTAL
5. Other physical sciences	\$ _____	\$ _____	\$ _____	TOTAL
6. Total physical sciences	TOTAL	TOTAL	TOTAL	TOTAL
f. Psychology				
1. Biological aspects	\$ _____	\$ _____	\$ _____	TOTAL
2. Social aspects	\$ _____	\$ _____	\$ _____	TOTAL
3. Other psychological sciences	\$ _____	\$ _____	\$ _____	TOTAL
4. Total psychology	TOTAL	TOTAL	TOTAL	TOTAL
g. Social sciences				
1. Anthropology	\$ _____	\$ _____	\$ _____	TOTAL
2. Economics	\$ _____	\$ _____	\$ _____	TOTAL
3. Political science and government	\$ _____	\$ _____	\$ _____	TOTAL
4. Sociology, demography, and population studies	\$ _____	\$ _____	\$ _____	TOTAL
5. Other social sciences	\$ _____	\$ _____	\$ _____	TOTAL
6. Total social sciences	TOTAL	TOTAL	TOTAL	TOTAL

→ Question 6 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

6 FY 2022 obligations for R&D conduct by type of work and detailed field of R&D
(continued)

**R&D Obligations (FY 2022 Actual)
(Round to the nearest dollar)**

Field of R&D	(a) Basic research	(b) Applied research	(c) Experimental development	(d) Total R&D conduct
h. Engineering				
1. Aerospace, aeronautical, and astronautical engineering	\$ _____	\$ _____	\$ _____	TOTAL
2. Bioengineering and biomedical engineering	\$ _____	\$ _____	\$ _____	TOTAL
3. Chemical engineering	\$ _____	\$ _____	\$ _____	TOTAL
4. Civil engineering	\$ _____	\$ _____	\$ _____	TOTAL
5. Electrical, electronics, and communications engineering	\$ _____	\$ _____	\$ _____	TOTAL
6. Industrial and manufacturing engineering	\$ _____	\$ _____	\$ _____	TOTAL
7. Mechanical engineering	\$ _____	\$ _____	\$ _____	TOTAL
8. Metallurgical and materials engineering	\$ _____	\$ _____	\$ _____	TOTAL
9. Other engineering	\$ _____	\$ _____	\$ _____	TOTAL
10. Total engineering	TOTAL	TOTAL	TOTAL	TOTAL
i. Other fields				
1. Business management and business administration	\$ _____	\$ _____	\$ _____	TOTAL
2. Communication and communications technologies	\$ _____	\$ _____	\$ _____	TOTAL
3. Education research	\$ _____	\$ _____	\$ _____	TOTAL
4. Humanities	\$ _____	\$ _____	\$ _____	TOTAL
5. Law	\$ _____	\$ _____	\$ _____	TOTAL
6. Social work	\$ _____	\$ _____	\$ _____	TOTAL
7. Visual and performing arts	\$ _____	\$ _____	\$ _____	TOTAL
8. All other fields	\$ _____	\$ _____	\$ _____	TOTAL
9. Total other fields	TOTAL	TOTAL	TOTAL	TOTAL
j. Total, all fields of R&D conduct	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row j above should match the FY 2022 amounts from question 5, rows a, b, and c, and question 3, row a, as displayed here.</i>	<i>Q5.a(1) value</i>	<i>Q5.b(1) value</i>	<i>Q5.c(1) value</i>	<i>Q3.a(1) value</i>

If needed, use the space below to provide clarification for the data reported in this question.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

7 FY 2023 obligations for R&D conduct by type of work and broad field of R&D

What are your agency’s estimated obligations for basic research, applied research, and experimental development in the fields below in FY 2023?

- If an obligation is intended to support R&D in multiple fields (i. e., interdisciplinary research), please prorate the obligation for each field involved when possible. Do not double-count funds across multiple fields.
- Examples of fields and disciplines are provided in a list at the front of the survey.

**R&D Obligations (FY 2023 Estimated)
(Round to the nearest dollar)**

	(1)	(2)	(3)	(4)
Field of R&D	Basic research	Applied research	Experimental development	Total R&D conduct
a. Computer and information sciences	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
b. Geosciences, atmospheric sciences, and ocean sciences	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
c. Life sciences	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
d. Mathematics and statistics	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
e. Physical sciences	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
f. Psychology	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
g. Social sciences	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
h. Engineering	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
i. Other fields	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	TOTAL
j. Total, all fields of R&D conduct	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row j above should match the FY 2023 amounts from question 5, rows a–c, and question 3, row a, as displayed here.</i>	<i>Q5.a(2) value</i>	<i>Q5.b(2) value</i>	<i>Q5.c(2) value</i>	<i>Q3.a(2) value</i>

If needed, use the space below to provide clarification for the data reported in this question.

8 FY 2022 R&D and R&D plant obligations by performer and type of work

For each of the following types of R&D performers, what were your agency's obligations for R&D conduct by type of work and for R&D plant in FY 2022?

- Report obligations in terms of the immediate recipient, even if funds were later passed on to subgrantees or subcontractors.
- Cross check: certain totals should match with totals reported elsewhere in the questionnaire. The values from the corresponding questions are displayed in the bottom row below in the online questionnaire.

Federal: Obligations for R&D conducted by your federal agency or sent to other federal agencies (intragovernmental transfers), and your agency's costs for administering both R&D within the federal government and R&D contracts and cooperative agreements.

- Include, for example, a federal employee's travel.
- Exclude costs for administering R&D grants.
- Exclude military service academies; report these under higher education.

Federally Funded R&D Centers (FFRDCs): FFRDCs are designated by the federal government, must be separately organized units receiving at least 70% of their funds from the federal government, and have an annual budget of at least \$500,000. The FFRDCs are listed in question 16.

Intragovernmental transfers for use of another agency's sponsored FFRDC should be reported as obligations to FFRDCs, also report specific amounts to individual FFRDCs on question 16.

Businesses: Domestic for-profit businesses or industrial firms. Exclude FFRDCs administered by these organizations.

Higher education: Domestic higher education institutions, military service academies, and consortia.

- Higher education institutions are institutions that engage primarily in providing resident and/or accredited instruction for a not less than a 2-year program above the secondary school level that is acceptable for full credit toward a bachelor's degree or that provide not less than a 1-year program of training above the secondary school level that prepares students for gainful employment in a recognized occupation. Included are colleges of liberal arts; schools of arts and sciences; professional schools, as in engineering and medicine, including hospitals, clinics, and research centers that are financial constituents of universities; and agricultural experiment stations.
- Consortia are organizations formed by the membership of a number of institutions from one or more types of performers (i.e., higher education or nonprofit) in order to promote and support efforts to enhance knowledge in one or more disciplines. Consortia that include both higher education institutions and nonprofits have been assigned to one of the two categories by NSF. If your agency funds such consortia, it may be helpful to answer questions 18 and 19 first so you know how they are classified.
- Include fellowships, traineeships, and training grants supporting research; exclude all other awards to individuals and report these under obligations for S&E on question 18.
- Include awards to University Affiliated Research Centers (UARCs). The list of individual UARCs can be found in question 17.
- Exclude FFRDCs administered by higher education organizations.
- Exclude foreign higher education institutions. Report those under non-U.S. performers.

Other nonprofits: Domestic nonprofit organizations other than universities and colleges.

- Nonprofit organizations are businesses granted tax-exempt status by the IRS. Nonprofits pay no income tax on the donations they receive or on any money that they earn through fundraising activities. Nonprofit organizations are sometimes called NPOs or 501(c) organizations, based on the section of the tax code that permits them to operate.
- Include nonprofit hospitals and consortia (see definition of consortia under higher education above).
- Exclude FFRDCs administered by nonprofit organizations.

→ Question 8 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

8 FY 2022 R&D and R&D plant obligations by performer and type of work
(continued)

State and local government: State, county, municipality, public authority, or other local government entity in the United States. Do not include state and local universities and colleges or agricultural experiment stations; report these under higher education.

Non-U.S. performers: R&D performers outside of the United States. Include foreign higher education institutions. Do not include R&D performed by U.S. organizations or U.S. citizens in other nations.

**R&D Obligations (FY 2022 Actual)
(Round to the nearest dollar)**

R&D performer	(1) Basic research	(2) Applied research	(3) Experi- mental develop- ment	(4) R&D plant	(5) Total R&D conduct and plant
a. Federal	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
b. Federally Funded R&D Centers (FFRDCs)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
c. Businesses	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
d. Higher education (U.S. institutions only)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
e. Other nonprofits	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
f. State and local government	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
g. Non-U.S. performers	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
h. Total, non-federal performers (rows c–g)	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
i. Total, all performers	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row i above should match the FY 2022 amounts from question 5, rows a–c, and question 3, rows b–c, displayed here.</i>	<i>Q5.a(1) value</i>	<i>Q5.b(1) value</i>	<i>Q5.c(1) value</i>	<i>Q3.b(1) value</i>	<i>Q3.c(1) value</i>

If needed, use the space below to provide clarification for the data reported in this question.

9 FY 2023 R&D and R&D plant obligations by performer and type of work

For each of the following types of R&D performers, what are your agency’s estimated obligations for R&D conduct by type of work and for R&D plant in FY 2023?

- Report obligations in terms of the immediate recipient, even if funds were later passed on to subgrantees or subcontractors.
- See question 8 for definitions of R&D performers.

**R&D Obligations (FY 2023 Estimated)
(Round to the nearest dollar)**

	(1)	(2)	(3) Experi- mental develop- ment	(4) R&D plant	(5) Total R&D conduct and plant
R&D performer	Basic research	Applied research			
a. Federal	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
b. Federally Funded R&D Centers (FFRDCs)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
c. Businesses	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
d. Higher education (U.S. institutions only)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
e. Other nonprofits	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
f. State and local government	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
g. Non-U.S. performers	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
h. Total, non-federal performers (rows c–g)	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
i. Total, all performers	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row i above should match the FY 2023 amounts from question 5, rows a–c, and question 3, rows b–c, displayed here</i>	Q5.a(2) value	Q5.b(2) value	Q5.c(2) value	Q3.b(2) value	Q3.c(2) value

If needed, use the space below to provide clarification for the data reported in this question.

10 FY 2022 R&D obligations to nonfederal performers by type of agreement

What were your agency’s R&D obligations to nonfederal performers in FY 2022 by the following types of agreement?

Nonfederal performers are defined in question 8. The nonfederal performers include:

- Businesses (question 8 row c)
- Higher education (question 8 row d)
- Other nonprofits (question 8 row e)
- State and local governments (question 8 row f)
- Non-U.S. performers (question 8 row g)

Exclude R&D obligations to:

- Federal performers (question 8 row a)
- FFRDCs (question 8 row b)

Contracts and Other Transactions: Contracts are legal commitments in which a good or service is provided by the external performer that benefits your agency. Your agency specifies the deliverables and gains the rights to results. These should be consistent with OMB Object Class 25.5, research and development contracts. See OMB Circular A-11, Section 83.6, Schedule O. For the purpose of this survey, also include Other Transaction (OT) agreements for R&D.

Grants and Cooperative Agreements: Grants are legal agreements to provide funding by your agency to support a specific purpose, but not to acquire property and services for your agency. Substantial involvement from your agency is not expected. For the purpose of this survey, also include cooperative agreements (e.g., CRADAs).

**R&D Obligations to Nonfederal Performers
(FY 2022 Actual)
(Round to the nearest dollar)**

Type of agreement	(1) R&D conduct	(2) R&D plant	(3) Total R&D conduct and plant
a. Contracts and Other Transactions	\$ _____	\$ _____	TOTAL
b. Grants and Cooperative Agreements	\$ _____	\$ _____	TOTAL
c. Total for nonfederal performers	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row c above should match the totals for nonfederal performers from question 8.h, columns 1–5, displayed here.</i>	<i>Q8.h(1) + Q8.h(2) + Q8.h(3) value</i>	<i>Q8.h(4) value</i>	<i>Q8.h(5) value</i>

If needed, use the space below to provide clarification for the data reported in this question.

11 FY 2022 R&D agreements with other federal agencies

How much of your agency's R&D obligations were provided to other federal agencies outside your department in FY 2022?

- Include all obligations which your agency provided to other federal agencies through interagency agreements or other similar transactions to conduct R&D on behalf of your agency.
- Do not include transfers within your department or agency. For example, the U.S. Census Bureau should not report obligations to any other Department of Commerce agencies, and the National Park Service should not report obligations to any other Department of the Interior agencies.
- Do not include transfers to another agency for use of another agency's sponsored FFRDC. Report those directly as FFRDC amounts in questions 8 and 16.

**R&D Obligations to Other Federal Performers
(FY 2022 Actual)
(Round to the nearest dollar)**

Federal agency to whom funds were provided	(a) R&D conduct	(b) R&D plant	(c) Total R&D conduct and plant
1. Department of Agriculture	\$ _____	\$ _____	TOTAL
2. Department of Commerce	\$ _____	\$ _____	TOTAL
3. Department of Defense			
a. Defense Advanced Research Projects Agency	\$ _____	\$ _____	TOTAL
b. Defense Health Agency	\$ _____	\$ _____	TOTAL
c. Department of the Air Force	\$ _____	\$ _____	TOTAL
d. Department of the Army	\$ _____	\$ _____	TOTAL
e. Department of the Navy	\$ _____	\$ _____	TOTAL
f. Space Force	\$ _____	\$ _____	TOTAL
g. Other DOD	\$ _____	\$ _____	TOTAL
4. Department of Education	\$ _____	\$ _____	TOTAL
5. Department of Energy	\$ _____	\$ _____	TOTAL
6. Department of Health and Human Services	\$ _____	\$ _____	TOTAL
7. Department of Homeland Security	\$ _____	\$ _____	TOTAL
8. Department of the Interior	\$ _____	\$ _____	TOTAL
9. Department of Justice	\$ _____	\$ _____	TOTAL
10. Department of Labor	\$ _____	\$ _____	TOTAL
11. Department of State	\$ _____	\$ _____	TOTAL
12. Department of Transportation	\$ _____	\$ _____	TOTAL
13. Department of the Treasury	\$ _____	\$ _____	TOTAL
14. Department of Veterans Affairs	\$ _____	\$ _____	TOTAL

→ Question 11 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

11 FY 2022 R&D agreements with other federal agencies (continued)

**R&D Obligations to Other Federal Performers
(FY 2022 Actual)
(Round to the nearest dollar)**

Federal agency to whom funds were provided	(a) R&D conduct	(b) R&D plant	(c) Total R&D conduct and plant
15. Agency for Global Media	\$ _____	\$ _____	TOTAL
16. Agency for International Development	\$ _____	\$ _____	TOTAL
17. Appalachian Regional Commission	\$ _____	\$ _____	TOTAL
18. Consumer Product Safety Commission	\$ _____	\$ _____	TOTAL
19. Environmental Protection Agency	\$ _____	\$ _____	TOTAL
20. Federal Trade Commission	\$ _____	\$ _____	TOTAL
21. Library of Congress	\$ _____	\$ _____	TOTAL
22. National Aeronautics and Space Administration	\$ _____	\$ _____	TOTAL
23. National Archives and Records Administration	\$ _____	\$ _____	TOTAL
24. National Science Foundation	\$ _____	\$ _____	TOTAL
25. Nuclear Regulatory Commission	\$ _____	\$ _____	TOTAL
26. Postal Service	\$ _____	\$ _____	TOTAL
27. RESTORE Act Centers of Excellence Research Grants Program	\$ _____	\$ _____	TOTAL
28. Smithsonian Institution	\$ _____	\$ _____	TOTAL
29. Social Security Administration	\$ _____	\$ _____	TOTAL
30. Tennessee Valley Authority	\$ _____	\$ _____	TOTAL
31. Other department/agency (describe in text box below)	\$ _____	\$ _____	TOTAL
32. Total R&D obligations to other federal performers	TOTAL	TOTAL	TOTAL

If needed, use the space below to provide clarification for the data reported in this question.

12 FY 2022 obligations for R&D conduct by performer and state

What were your agency’s obligations for R&D conduct to the following types of performers by state in FY 2022?

- If the location of performance is not available, use the state in which the performing organization’s headquarters is located.

R&D Obligations for R&D Conduct (FY 2022 Actual)
Round to the nearest dollar)

State	(a) Federal	(b) FFRDCs	(c) Businesses	(d) Higher education	(e) Other nonprofits	(f) State and local government	(g) Total R&D conduct in state
1. Alabama	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
2. Alaska	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
3. Arizona	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
4. Arkansas	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
5. California	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
6. Colorado	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
7. Connecticut	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
8. Delaware	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
9. District of Columbia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
10. Florida	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
11. Georgia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
12. Hawaii	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
13. Idaho	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
14. Illinois	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
15. Indiana	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
16. Iowa	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
17. Kansas	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
18. Kentucky	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
19. Louisiana	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL

→ Question 12 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

12 FY 2022 obligations for R&D conduct by performer and state (continued)

R&D Obligations for R&D Conduct (FY 2022 Actual)
Round to the nearest dollar)

State	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Federal	FFRDCs	Businesses	Higher education	Other nonprofits	State and local government	Total R&D conduct in state
20. Maine	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
21. Maryland	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
22. Massachusetts	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
23. Michigan	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
24. Minnesota	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
25. Mississippi	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
26. Missouri	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
27. Montana	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
28. Nebraska	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
29. Nevada	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
30. New Hampshire	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
31. New Jersey	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
32. New Mexico	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
33. New York	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
34. North Carolina	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
35. North Dakota	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
36. Ohio	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
37. Oklahoma	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
38. Oregon	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
39. Pennsylvania	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
40. Rhode Island	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
41. South Carolina	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
42. South Dakota	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL

➔ Question 12 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

12 FY 2022 obligations for R&D conduct by performer and state (continued)

R&D Obligations for R&D Conduct (FY 2022 Actual)
(Round to the nearest dollar)

State	(a) Federal	(b) FFRDCs	(c) Businesses	(d) Higher education	(e) Other nonprofits	(f) State and local government	(g) Total R&D conduct in state
43. Tennessee	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
44. Texas	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
45. Utah	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
46. Vermont	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
47. Virginia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
48. Washington	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
49. West Virginia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
50. Wisconsin	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
51. Wyoming	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
52. Puerto Rico	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
53. Other U.S. territories	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
54. Offices abroad • R&D performed or administered in foreign countries by the U.S. government	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
55. Total	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row 55 above should match the amounts from question 8, rows a–f, sum of columns 1–3 displayed here.</i>	<i>Q8.a(1) + Q8.a(2) + Q8.a(3) value</i>	<i>Q8.b(1) + Q8.b(2) + Q8.b(3) value</i>	<i>Q8.c(1) + Q8.c(2) + Q8.c(3) value</i>	<i>Q8.d(1) + Q8.d(2) + Q8.d(3) value</i>	<i>Q8.e(1) + Q8.e(2) + Q8.e(3) value</i>	<i>Q8.f(1) + Q8.f(2) + Q8.f(3) value</i>	<i>Total of question 8, rows a–f, sum of columns 1–3 values</i>

If needed, use the space below to provide clarification for the data reported in this question.

13 FY 2022 R&D plant obligations by performer and state

What were your agency’s obligations for R&D plant to the following types of performers by state in FY 2022?

- If the location of performance is not available, use the state in which the performing organization’s headquarters is located.

**R&D Plant Obligations (FY 2022 Actual)
(Round to the nearest dollar)**

State	a) Federal	(b) FFRDCs	(c) Businesses	(d) Higher education	(e) Other nonprofits	(f) State and local government	(g) Total R&D plant in state
1. Alabama	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
2. Alaska	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
3. Arizona	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
4. Arkansas	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
5. California	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
6. Colorado	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
7. Connecticut	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
8. Delaware	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
9. District of Columbia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
10. Florida	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
11. Georgia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
12. Hawaii	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
13. Idaho	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
14. Illinois	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
15. Indiana	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
16. Iowa	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
17. Kansas	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
18. Kentucky	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
19. Louisiana	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL

→ Question 13 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

13 FY 2022 R&D plant obligations by performer and state (continued)

R&D Plant Obligations (FY 2022 Actual)
(Round to the nearest dollar)

State	(a) Federal	(b) FFRDCs	(c) Businesses	(d) Higher education	(e) Other nonprofits	(f) State and local governments	(g) Total R&D plant in state
20. Maine	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
21. Maryland	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
22. Massachusetts	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
23. Michigan	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
24. Minnesota	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
25. Mississippi	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
26. Missouri	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
27. Montana	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
28. Nebraska	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
29. Nevada	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
30. New Hampshire	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
31. New Jersey	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
32. New Mexico	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
33. New York	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
34. North Carolina	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
35. North Dakota	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
36. Ohio	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
37. Oklahoma	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
38. Oregon	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
39. Pennsylvania	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
40. Rhode Island	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
41. South Carolina	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
42. South Dakota	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
43. Tennessee	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL

→ Question 13 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

13 FY 2022 R&D plant obligations by performer and state (continued)

R&D Plant Obligations (FY 2022 Actual)
(Round to the nearest dollar)

State	(a) Federal	(b) FFRDCs	(c) Businesses	(d) Higher education	(e) Other nonprofits	(f) State and local government	(g) Total R&D plant in state
44. Texas	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
45. Utah	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
46. Vermont	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
47. Virginia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
48. Washington	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
49. West Virginia	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
50. Wisconsin	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
51. Wyoming	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
52. Puerto Rico	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
53. Other U.S. territories	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
54. Offices abroad • R&D performed or administered in foreign countries by the U.S. government	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
55. Total for R&D plant	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row 55 above should match the totals from question 8, rows a–f, column 4 displayed here.</i>	<i>Q8.a(4) value</i>	<i>Q8.b(4) value</i>	<i>Q8.c(4) value</i>	<i>Q8.d(4) value</i>	<i>Q8.e(4) value</i>	<i>Q8.f(4) value</i>	<i>Total of question 8, rows a–f, column 4 values</i>

If needed, use the space below to provide clarification for the data reported in this question.

14 FY 2022 R&D obligations to non-U.S. performers by country

What were your agency’s obligations for R&D conduct and R&D plant to non-U.S. performers of R&D by country in FY 2022?

- Report based on the country of the R&D performing organization. If an R&D obligation was performed in multiple countries, then prorate the funding based on the countries involved.

**R&D Obligations to Non-U.S. Performers
(FY 2022 Actual)
(Round to the nearest dollar)**

Country	(1) R&D conduct	(2) R&D plant	(3) Total R&D conduct and plant
a. International organizations (such as North Atlantic Treaty Organization (NATO), United Nations Educational, Scientific, and Cultural Organization (UNESCO), and the World Health Organization (WHO)).	\$ _____	\$ _____	TOTAL
b. Report individually for each country, using the drop-down menu on the web questionnaire.	\$ _____	\$ _____	TOTAL
c. Total to non-U.S. performers	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row c above should match the amounts from question 8.g, columns 1–5, displayed here.</i>	<i>Q8.g(1) + Q8.g(2) + Q8.g(3) value</i>	<i>Q8.g(4) value</i>	<i>Q8.g(5) value</i>

If needed, use the space below to provide clarification for the data reported in this question.

15 FY 2022 obligations for R&D conduct to U.S. higher education institutions by type of work and detailed field of R&D

What were your agency’s obligations to U.S. higher education institutions for basic research, applied research, and experimental development in the following fields of R&D in FY 2022?

- If an obligation was intended to support R&D in multiple fields (i.e., interdisciplinary research), please prorate the obligation for each field involved when possible. Do not double-count funds across multiple fields.
- Examples of fields and disciplines are provided in a supplemental list at the front of the survey.

**R&D Obligations to U.S. Higher Education Institutions
(FY 2022 Actual)
(Round to the nearest dollar)**

Field of R&D	(a) Basic research	(b) Applied research	(c) Experimental develop- ment	(d) Total R&D conduct
a. Computer and information sciences	\$ _____	\$ _____	\$ _____	TOTAL
b. Geosciences, atmospheric sciences, and ocean sciences				
1. Atmospheric science and meteorology	\$ _____	\$ _____	\$ _____	TOTAL
2. Geological and earth sciences	\$ _____	\$ _____	\$ _____	TOTAL
3. Ocean sciences and marine sciences	\$ _____	\$ _____	\$ _____	TOTAL
4. Other geosciences, atmospheric sciences, and ocean sciences	\$ _____	\$ _____	\$ _____	TOTAL
5. Total geosciences, atmospheric sciences, and ocean sciences	TOTAL	TOTAL	TOTAL	TOTAL
c. Life sciences				
1. Agricultural sciences	\$ _____	\$ _____	\$ _____	TOTAL
2. Biological and biomedical sciences	\$ _____	\$ _____	\$ _____	TOTAL
3. Health sciences	\$ _____	\$ _____	\$ _____	TOTAL
4. Natural resources and conservation	\$ _____	\$ _____	\$ _____	TOTAL
5. Other life sciences	\$ _____	\$ _____	\$ _____	TOTAL
6. Total life sciences	TOTAL	TOTAL	TOTAL	TOTAL
d. Mathematics and statistics	\$ _____	\$ _____	\$ _____	TOTAL
e. Physical sciences				
1. Astronomy and astrophysics	\$ _____	\$ _____	\$ _____	TOTAL
2. Chemistry	\$ _____	\$ _____	\$ _____	TOTAL
3. Materials science	\$ _____	\$ _____	\$ _____	TOTAL
4. Physics	\$ _____	\$ _____	\$ _____	TOTAL
5. Other physical sciences	\$ _____	\$ _____	\$ _____	TOTAL
6. Total physical sciences	TOTAL	TOTAL	TOTAL	TOTAL

→ Question 15 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

15 FY 2022 obligations for R&D conduct to U.S. higher education institutions by type of work and detailed field of R&D (continued)

**R&D Obligations to U.S. Higher Education Institutions
(FY 2022 Actual)
(Round to the nearest dollar)**

Field of R&D	(a) Basic research	(b) Applied research	(c) Experimental development	(d) Total R&D conduct
f. Psychology				
1. Biological aspects	\$ _____	\$ _____	\$ _____	TOTAL
2. Social aspects	\$ _____	\$ _____	\$ _____	TOTAL
3. Other psychological sciences	\$ _____	\$ _____	\$ _____	TOTAL
4. Total psychology	TOTAL	TOTAL	TOTAL	TOTAL
g. Social sciences				
1. Anthropology	\$ _____	\$ _____	\$ _____	TOTAL
2. Economics	\$ _____	\$ _____	\$ _____	TOTAL
3. Political science and government	\$ _____	\$ _____	\$ _____	TOTAL
4. Sociology, demography, and population studies	\$ _____	\$ _____	\$ _____	TOTAL
5. Other social sciences	\$ _____	\$ _____	\$ _____	TOTAL
6. Total social sciences	TOTAL	TOTAL	TOTAL	TOTAL
h. Engineering				
1. Aerospace, aeronautical, and astronautical engineering	\$ _____	\$ _____	\$ _____	TOTAL
2. Bioengineering and biomedical engineering	\$ _____	\$ _____	\$ _____	TOTAL
3. Chemical engineering	\$ _____	\$ _____	\$ _____	TOTAL
4. Civil engineering	\$ _____	\$ _____	\$ _____	TOTAL
5. Electrical, electronics, and communications engineering	\$ _____	\$ _____	\$ _____	TOTAL
6. Industrial and manufacturing engineering	\$ _____	\$ _____	\$ _____	TOTAL
7. Mechanical engineering	\$ _____	\$ _____	\$ _____	TOTAL
8. Metallurgical and materials engineering	\$ _____	\$ _____	\$ _____	TOTAL
9. Other engineering	\$ _____	\$ _____	\$ _____	TOTAL
10. Total engineering	TOTAL	TOTAL	TOTAL	TOTAL

→ Question 15 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

15 FY 2022 obligations for R&D conduct to U.S. higher education institutions by type of work and detailed field of R&D (continued)

**R&D Obligations to U.S. Higher Education Institutions
(FY 2022 Actual)
(Round to the nearest dollar)**

Field of R&D	(a) Basic research	(b) Applied research	(c) Experimental development	(d) Total R&D conduct
i. Other fields				
1. Business management and business administration	\$ _____	\$ _____	\$ _____	TOTAL
2. Communication and communications technologies	\$ _____	\$ _____	\$ _____	TOTAL
3. Education research	\$ _____	\$ _____	\$ _____	TOTAL
4. Humanities	\$ _____	\$ _____	\$ _____	TOTAL
5. Law	\$ _____	\$ _____	\$ _____	TOTAL
6. Social work	\$ _____	\$ _____	\$ _____	TOTAL
7. Visual and performing arts	\$ _____	\$ _____	\$ _____	TOTAL
8. All other fields	\$ _____	\$ _____	\$ _____	TOTAL
9. Total other fields	TOTAL	TOTAL	TOTAL	TOTAL
j. Total for U.S. higher education institutions, all fields of R&D conduct	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row j above should match the amounts from question 8.d, columns 1–3, displayed here.</i>	<i>Q8.d(1) value</i>	<i>Q8.d(2) value</i>	<i>Q8.d(3) value</i>	<i>Sum of Q8.d(1) + Q8.d(2) + Q8.d(3) values</i>

If needed, use the space below to provide clarification for the data reported in this question.

16 FY 2022 R&D conduct and R&D plant obligations to FFRDCs by type of work

What were your agency’s obligations to all FFRDCs by type of R&D conduct and for R&D plant in FY 2022?

- Include your agency's obligations to all FFRDCs, regardless of whether your agency sponsors the FFRDC.
- Information on sponsoring agency and administering organization for each FFRDC is available on the NSF website at <https://www.nsf.gov/statistics/ffrdclist/>

R&D Obligations to FFRDCs (FY 2022 Actual)
(Round to the nearest dollar)

FFRDC	(a) Basic research	(b) Applied research	(c) Experi- mental develop- ment	(d) R&D plant	(e) Total R&D conduct and plant
1. Aerospace Federally Funded Research and Development Center (El Segundo, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
2. Ames Laboratory (Ames, IA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
3. Argonne National Laboratory (Argonne, IL)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
4. Arroyo Center (Santa Monica, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
5. Brookhaven National Laboratory (Upton, NY)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
6. Center for Advanced Aviation System Development (McLean, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
7. Center for Communications and Computing (Alexandria, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
8. Center for Enterprise Modernization (McLean, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
9. Center for Naval Analyses (Arlington, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
10. Center for Nuclear Waste Regulatory Analyses (San Antonio, TX)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
11. CMS Alliance to Modernize Healthcare (Baltimore, MD)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
12. Fermi National Accelerator Laboratory (Batavia, IL)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
13. Frederick National Laboratory for Cancer Research (Frederick, MD)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL

➔ Question 16 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

16 FY 2022 R&D conduct and R&D plant obligations to FFRDCs by type of work
(continued)

**R&D Obligations to FFRDCs (FY 2022 Actual)
(Round to the nearest dollar)**

FFRDC	(a) Basic research	(b) Applied research	(c) Experi- mental develop- ment	(d) R&D plant	(e) Total R&D conduct and plant
14. Green Bank Observatory (Green Bank, WV)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
15. Homeland Security Operational Analysis Center (Arlington, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
16. Homeland Security Systems Engineering and Development Institute (McLean, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
17. Idaho National Laboratory (Idaho Falls, ID)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
18. Jet Propulsion Laboratory (Pasadena, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
19. Judiciary Engineering and Modernization Center (McLean, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
20. Lawrence Berkeley National Laboratory (Berkeley, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
21. Lawrence Livermore National Laboratory (Livermore, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
22. Lincoln Laboratory (Lexington, MA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
23. Los Alamos National Laboratory (Los Alamos, NM)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
24. National Biodefense Analysis and Countermeasures Center (Frederick, MD)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
25. National Center for Atmospheric Research (Boulder, CO)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
26. National Cybersecurity Center of Excellence (Rockville, MD)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
27. National Defense Research Institute (Santa Monica, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
28. National Radio Astronomy Observatory (Charlottesville, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
29. National Renewable Energy Laboratory (Golden, CO)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL

→ Question 16 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

16 FY 2022 R&D conduct and R&D plant obligations to FFRDCs by type of work
(continued)

R&D Obligations to FFRDCs (FY 2022 Actual)
(Round to the nearest dollar)

FFRDC	(a) Basic research	(b) Applied research	(c) Experi- mental develop- ment	(d) R&D plant	(e) Total R&D conduct and plant
30. National Security Engineering Center -- Bedford, MA Laboratory	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
31. National Security Engineering Center -- McLean, VA Laboratory	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
32. National Solar Observatory (Boulder, CO)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
33. NSF's National Optical-Infrared Astronomy Research Laboratory (Tucson, AZ)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
34. Oak Ridge National Laboratory (Oak Ridge, TN)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
35. Pacific Northwest National Laboratory (Richland, WA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
36. Princeton Plasma Physics Laboratory (Princeton, NJ)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
37. Project Air Force (Santa Monica, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
38. Sandia National Laboratories (Albuquerque, NM)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
39. Savannah River National Laboratory (Aiken, SC)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
40. Science and Technology Policy Institute (Washington, DC)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
41. SLAC National Accelerator Laboratory (Menlo Park, CA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
42. Software Engineering Institute (Pittsburgh, PA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
43. Systems and Analyses Center (Alexandria, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
44. Thomas Jefferson National Accelerator Facility (Newport News, VA)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
45. Total to FFRDCs	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row 45 above should match the amounts from question 8.b, columns 1–5, as displayed here.</i>	<i>Q8.b(1) value</i>	<i>Q8.b(2) value</i>	<i>Q8.b(3) value</i>	<i>Q8.b(4) value</i>	<i>Q8.b(5) value</i>

If needed, use the space below to provide clarification for the data reported in this question.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

17 FY 2022 R&D conduct and R&D plant obligations to University Affiliated Research Centers (UARC) by type of work

What were your agency’s obligations to all UARCs by type of R&D conduct and for R&D plant in FY 2022?

- Include your agency's obligations to all University Affiliated Research Centers (UARCs).

**R&D Obligations to UARCs (FY 2022 Actual)
(Round to the nearest dollar)**

UARC	(a) Basic research	(b) Applied research	(c) Exper- imental develop- ment	(d) R&D plant	(e) Total R&D and plant
1. Georgia Institute of Technology Georgia Tech Research Institute (Organization code 502546)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
2. Johns Hopkins University Applied Physics Laboratory (Organization code 500594)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
3. Massachusetts Institute of Technology Institute for Soldier Nanotechnologies (Organization code 502547)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
4. Pennsylvania State University Applied Research Laboratory (Organization code 502550)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
5. Stevens Institute of Technology Systems Engineering Research Center (Organization code 502555)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
6. University of Alaska Geophysical Detection of Nuclear Proliferation (Organization code 700110)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
7. University of California Santa Barbara Institute for Collaborative Biotechnologies (Organization code 502548)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
8. University of Hawaii Manoa Applied Research Laboratory (Organization code 502551)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
9. University of Maryland College Park Applied Research Laboratory for Intelligence and Security (Organization code 502556)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
10. University of Nebraska National Strategic Research Institute (Organization code 502365)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL

→ Question 17 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

17 FY 2022 R&D obligations to UARCs by type of work (continued)

**R&D Obligations to UARCs (FY 2022 Actual)
(Round to the nearest dollar)**

UARC	(a) Basic research	(b) Applied research	(c) Experi- mental develop- ment	(d) R&D plant	(e) Total R&D and plant
11. University of Southern California Institute for Creative Technologies (Organization code 502549)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
12. University of Texas at Austin Applied Research Laboratories (Organization code 502552)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
13. University of Washington Applied Physics Laboratory (Organization code 502553)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
14. Utah State University Space Dynamics Laboratory (Organization code 502554)	\$ _____	\$ _____	\$ _____	\$ _____	TOTAL
15. Total to UARCs	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
<i>Cross check: totals in row 15 above should be less than or equal to the amounts from question 8.d, columns 1–5, displayed here.</i>	Q8.d(1) value	Q8.d(2) value	Q8.d(3) value	Q8.d(4) value	Q8.d(5) value

If needed, use the space below to provide clarification for the data reported in this question.

18 FY 2022 R&D obligations and science and engineering (S&E) support to individual U.S. higher education institutions and consortia

What were your agency’s obligations for R&D and science and engineering (S&E) support to U.S. higher education institutions in FY 2022?

Report all obligations in terms of the immediate recipient, even if these funds were later passed on to subgrantees or subcontractors.

Make only one entry for each organization code.

Include:

- Awards to individuals. Report these in column 3, R&D conduct, column 6, S&E fellowships, traineeships, and training grants, or column 8, Other general support for S&E. If there is no institution name associated with the awards to individuals, please select "Institution unknown" for column 1.
- Awards to University Affiliated Research Centers (UARCs) can be listed individually or included in the totals to the respective institutions of higher education.

Exclude:

- Obligations to FFRDCs.
- Obligations to foreign higher education institutions. Report those on question 8, row g. non-U.S. performers, and list the obligations by country on question 14.

Higher education institutions: Institutions that engage primarily in providing resident and/or accredited instruction for a not less than a 2-year program above the secondary school level that is acceptable for full credit toward a bachelor’s degree or that provide not less than a 1-year program of training above the secondary school level that prepares students for gainful employment in a recognized occupation. Included are colleges of liberal arts; schools of arts and sciences; professional schools, as in engineering and medicine, including affiliated hospitals and associated research institutes; and agricultural experiment stations.

Consortia: Organizations formed by the membership of a number of institutions from one or more types of performers (i.e., higher education or nonprofit) in order to promote and support efforts to enhance knowledge in one or more disciplines. If a consortium’s members are not primarily academic or nonprofit, but the consortium is legally organized as a nonprofit, NSF classifies that consortium as a nonprofit institution. A list of consortia and their classification as either academic or nonprofit is included in the organization code search tool.

Organization code: This code (previously called the FICE code) can be found in the website’s organization code search tool. *(If you cannot find the organization code, please contact survey support to have one assigned.)*

S&E fellowships, traineeships, and training grants: These types of support are primarily for the development of the scientific or technical workforce. Exclude awards supporting research; these should be reported as R&D conduct.

Facilities and equipment for instruction in S&E: Programs whose principal purpose is to provide support for construction, acquisition, renovation, modification, repair, or rental of facilities, land, works, or equipment, for use in S&E instruction. If the facilities or equipment are used for mixed purposes, report only the amount used for S&E instruction here.

Other general support for S&E: Activities that provide general or nonspecific support related to scientific research and education. These include projects awarded through the NIH Minority Biomedical Research Support for Undergraduate Colleges and NIH Biomedical Support Grants. Also includes S&E activities that cannot be assigned to one of the above categories, including support for scientific conferences, teacher institutes, and S&E activities for precollege and undergraduate students.

→ Question 18 continues on the next page.

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NSF Survey of Federal Funds for Research and Development (Standard Form) – Volume 72 (FYs 2022–23)

18 FY 2022 R&D obligations and science and engineering (S&E) support to individual U.S. higher education institutions and consortia (continued)

**R&D Obligations to Individual U.S. Higher Education Institutions and Consortia (FY 2022 Actual)
(Round to the nearest dollar)**

Institution information (1–2), R&D obligations (3–5), Obligations for S&E (not counting R&D) (6–8)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Institution or consortium name	6-digit organization code	R&D conduct	R&D plant	Total R&D conduct and plant	S&E fellowships, traineeships, and training grants	Facilities and equipment for instruction in S&E	Other general support for S&E
a. _____	\$ _____	\$ _____	\$ _____	TOTAL	\$ _____	\$ _____	\$ _____
b. _____	\$ _____	\$ _____	\$ _____	TOTAL	\$ _____	\$ _____	\$ _____
Total		TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL

<i>Cross check: totals across organizations should match amounts from question 8.d, columns 1–5, displayed here.</i>	Q8.d(1) + Q8.d(2) + Q8.d(3)	Q8.d(4)	Q8.d(5)
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If needed, use the space below to provide clarification for the data reported in this question, including why it may not match your higher education totals from question 8.

19 FY 2022 R&D obligations to individual U.S. nonprofit organizations other than higher education institutions

What were your agency’s obligations for R&D conduct and R&D plant to U.S. nonprofit organizations in FY 2022?

This question applies only if you are reporting R&D conduct or R&D plant obligations to U.S. nonprofit organizations in question 8e.

Report all obligations in terms of the immediate recipient, even if these funds were later passed on to subgrantees or subcontractors.

Make only one entry for each organization code.

Include:

- Obligations to nonprofit consortia. A list of consortia and their classification as either academic or nonprofit can be found in the website’s [organization code search tool](#).

Exclude:

- Support for science and engineering (S&E) other than R&D conduct and R&D plant.
- Funds your agency transferred to other federal agencies, who then obligated the funds to nonprofit organizations.
- Obligations to FFRDCs.
- Obligations to foreign nonprofit institutions. Report those on question 8, row g. non-U.S. performers, and list the obligations by country on question 14.

Nonprofit organization: A business granted tax-exempt status by the IRS. Nonprofits pay no income tax on the donations they receive or on any money that they earn through fundraising activities. Nonprofit organizations are sometimes called NPOs or 501(c) organizations, based on the section of the tax code that permits them to operate.

Organization code: This code (previously called the FICE code) can be found in the website’s organization code search tool. *(If you cannot find the organization code, please contact survey support to have one assigned.)*

R&D Obligations to Other U.S. Nonprofit Institutions and Consortia (FY 2022 Actual)
(Round to the nearest dollar)

(1) Organization or consortium name	(2) 6-digit organization code	(3) R&D conduct	(4) R&D plant	(5) Total R&D conduct and plant
a. <input style="width: 90%;" type="text"/>	\$ <input style="width: 50%;" type="text"/>	\$ <input style="width: 50%;" type="text"/>	\$ <input style="width: 50%;" type="text"/>	TOTAL
b. <input style="width: 90%;" type="text"/>	\$ <input style="width: 50%;" type="text"/>	\$ <input style="width: 50%;" type="text"/>	\$ <input style="width: 50%;" type="text"/>	TOTAL
Total		TOTAL	TOTAL	TOTAL
<i>Cross check: totals across organizations should match amounts from question 8.e, columns 1–5, displayed here.</i>		Q8.e(1) + Q8.e(2) + Q8.e (3)	Q8.e(4)	Q8.e(5)

If needed, use the space below to provide clarification for the data reported in this question, including why it may not match your other nonprofits totals from question 8.