



NSF Survey of Federal Funds for Research and Development

Volume 68 (FYs 2018–19)

Non-DOD version



National Science Foundation
WHERE DISCOVERIES BEGIN



Instructions

Data Collection Authority and Uses

The legislation that established the National Science Foundation Act of 1950 (42 U.S. Code, 1862, P.L. 87-835) requires that NSF “...provide a central clearinghouse for the collection, interpretation, and analysis of data on scientific and engineering resources, and to provide a source of information for policy formulation by other agencies of the Federal Government...”

This mandate was further codified in the America COMPETES Reauthorization Act of 2010 §505, which requires NSF’s National Center for Science & Engineering Statistics to “collect, acquire, analyze, report, and disseminate... statistical data on (A) research and development trends...”

The annual Survey of Federal Funds for Research and Development (Federal Funds Survey) is the primary source of information about federal funding for R&D in the United States. The results of the survey are also used in the calculation of Gross Domestic Product, for analysis in public policy and science policy, and for budget purposes of four federal programs: Federal Laboratory Consortium for Technology Transfer, Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR), and Established Program to Stimulate Competitive Research (EPSCOR). The survey is sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF).

Before You Start

The Volume 68 survey is similar to the previous year’s Volume 67 survey: it collects only 2 years of data. Estimates for FY 2020 are not requested, so tables and columns which have traditionally asked for the third-year budget estimates have been grayed out.

Please give special attention to the following items when completing the survey:

1. Complete your submission prior to the May 3, 2019 deadline.
2. Report actual dollars for all amounts. Wherever possible please use enacted appropriation rather than annualized Continuing Resolution amounts.
3. The data that you submit to the survey should be consistent with the data that your agency submitted to the Office of Management and Budget (OMB) for FY 2018 and FY 2019. Do not wait for later markups or revisions. In Tables 1A and 1B, explain any differences between outlays reported in this survey and those reported to OMB.
4. Verify that all research and development activities are included in your Federal Funds Survey data submission, whether they are represented by a specific R&D appropriation or as parts of other appropriations. Include all federal funds available to an agency that the agency received or expects to receive from direct appropriations, trust funds, special account receipts, corporate income, fees and charges, funds appropriated by the Congress, and other federal sources.
5. If you report any extramural funds on Tables 6 or 7, then you may also have some federal intramural funds to report on these tables if your agency spends funds, at least for staff time, to administer the extramural R&D contract programs. The



management and distribution of funds for R&D grants to extramural performers should not be included as R&D.

6. In Tables 6B, 6C, 11A, and 11B, explain ANY differences between FY 2018 data reported in this survey and in the NSF Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (Federal S&E Support Survey) for four categories:
 - a. R&D obligations to universities and colleges excluding FFRDCs (Table 6B);
 - b. R&D obligations to nonprofit institutions excluding FFRDCs (Table 6C);
 - c. R&D plant obligations to universities and colleges excluding FFRDCs (Table 11A); and
 - d. R&D plant obligations to nonprofit institutions excluding FFRDCs (Table 11B).

If you do not know your agency’s respondent to the Federal S&E Support Survey, please e-mail us at NSFFedFunds@smdi.com.

7. In the comment boxes for the appropriate tables, provide the reasons for ANY changes in your obligation levels from those reported in the previous cycle’s survey for type of R&D (basic research, applied research, and development), R&D plant, fields of science and engineering, or performers.
8. If your agency sponsors a Federally Funded Research and Development Center (FFRDC), report data on Table 9. If no R&D funds were obligated for your FFRDC for FY 2018, please explain why not in the comment box.
9. If your agency is required to provide obligations by state and performer (Tables 12 and 13), you will be asked to break out obligations reported to “outlying areas” into “Puerto Rico” and “other areas.” The sum of these two items must equal the total reported for “outlying areas.”

Tables to Complete:

Table	Completed by
1, 1A, 1B, 2, 3, 4, 5, 6, 6A, 7, 8, 9, 10, and 11	All agencies
12 and 13 (Geographic data)	Subset of 11 agencies: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation
14, 15, and 16 (Obligations to universities and colleges)	Subset of 7 agencies: the Departments of Agriculture, Defense, Energy, Health and Human Services, and Homeland Security; the National Aeronautics and Space Administration; and the National Science Foundation
6B, 6C, 11A, and 11B	All agencies except the Department of Defense, but these tables are optional



What is Research and Development

Research and experimental development (R&D) comprise 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.

R&D aims at new findings (novel)

- It has not been done before
- It may produce findings that could be published in academic journals
- It includes ideas that could be patented

R&D focuses on original concepts or ideas (creative)

- Increases our knowledge of the subject
- Helps create new products or applications

R&D outcomes are uncertain (because it has not been done before)

- Solutions are not always obvious or expected
- Uncertain about, cost, time, or ability to achieve results

R&D is planned and budgeted (systematic)

- Projects, processes, and outcomes are documented
- Projects are planned and managed

R&D results in solutions that others may find useful (transferable)

- Findings can be generalized to other situations and locations
- Findings are reproducible

What is NOT R&D?

- Administrative costs for extramural R&D grant programs
- Investments in physical assets such as major equipment and facilities that support R&D programs (These investments should be reported under R&D plant.)
- Program planning and evaluation
- Business development services for new companies
- Commercialization (includes promoting/producing the products/services from R&D projects)
- Economic/policy/feasibility studies
- Information systems
- Management studies
- Marketing of products/services
- Market research or analysis
- Routine data collection/dissemination
- Routine monitoring/testing
- Strategic planning
- Technology transfer

Contact Information

Please provide complete contact information for both the survey respondent and associated supervisor. You can also enter contact information for an alternate respondent.



Completing the Tables

Table 1 is for reporting outlays only.

- Outlays reported in this survey should be consistent with amounts in The Budget of the United States Government. The same definitions are used for both.

Outlays represent the amounts for checks issued, cash payments, and electronic transfer of funds made to liquidate a federal obligation during a given period, regardless of when the funds were appropriated.

The amounts shown for each year reflect outlays for that year regardless of when the funds were originally authorized or received and regardless of whether or not they were originally appropriated, received, or identified in the agency's budget specifically for research, development, or R&D plant.

- Outlays cover all transactions that occurred in a given fiscal year, and those estimated for the next fiscal year.
- Include all federal funds available to an agency that the agency received or expects to receive from direct appropriations, trust funds, and special account receipts, corporate income, fees and charges, funds appropriated by the Congress, and other federal sources.
- Include the full costs of R&D, both specific project costs and overhead costs. Include for both intramural and extramural R&D programs: costs of planning and administering of R&D, laboratory overhead, pay of military personnel, and departmental administration, **and include funds your agency transferred to other agencies for R&D.**
- Outlays for R&D performed for an agency in foreign countries include all funds available to the agency for this purpose.
- **Do not include funds your agency received from another federal agency.** The transferring agency will report those funds. Similarly, a subdivision of an agency reports the funds it transfers to another subdivision within that agency as its own.
- **R&D:** Research and experimental development (R&D) activities are 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.

For reporting R&D activities, include the following:

- Administrative expenses for R&D, such as the operating costs of research facilities and equipment and other overhead costs.

Exclude:

- Investments in physical assets such as major equipment and facilities that support R&D programs. These investments should generally be reported under R&D plant (see Tables 1, 1B, 2, 9, 11, 11A, 11B, and 13).



- Routine product testing, quality control, collection of general-purpose statistics, routine monitoring, and evaluation of an operational program (when that program is not R&D).
- Training of scientific and technical personnel (these are considered conduct of education and training, not R&D).

■ **R&D plant:** R&D plant is defined as 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.

For reporting construction of R&D facilities and major moveable R&D equipment, include the following:

- 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.

Exclude the following:

- Construction of other non-R&D facilities.
- Minor equipment purchases, such as personal computers, standard microscopes, and simple spectrometers (report these costs under total R&D, not R&D Plant).

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.

Tables 1A and 1B—Narratives for Reconciliation of R&D Outlays and R&D Plant Outlays with Amounts Reported to OMB

Office of Management and Budget (OMB) Circular A-11, Section 84, also called MAX Schedule C, is a mandatory report that collects data from federal agencies for the Budget of the U.S. Government. In this report, federal agencies provide OMB with data on their outlays for R&D by type of R&D and R&D plant. However, the information provided does not provide as much detail on type of R&D or performers as the Federal Funds Survey, and it provides no information on fields of science and engineering or geographic distribution. Because the



Federal Funds Survey and the OMB report use the same definitions and guidelines, certain items, such as Total Outlays for R&D and Total Outlays for R&D Plant or Facilities, should be the same.

<https://www.whitehouse.gov/wp-content/uploads/2018/06/s84.pdf>

As noted in OMB Circular A-11, Section 84.3(g): You should be able to reconcile information reported in this schedule for the conduct of R&D with information reported in the National Science Foundation’s Survey of Federal Funds for R&D. R&D spending reported in Schedule C should also be consistent with financial reporting on R&D as required by A-136, Section II.4.10 and the Statement of Federal Financial Accounting Standards 8, Chapter 7.

If there are differences between the R&D data submitted for the Federal Funds Survey and for the OMB report, each reporting agency or subdivision should provide an explanation for differences in total R&D and total R&D plant outlays.

Table 2 is for reporting obligations only.

■ **R&D, by Type of R&D:** Type of R&D has three components: basic research, applied research, and experimental development. If you cannot assign a project’s obligations precisely across the three categories, please use your best judgment to allocate the obligations. Or, assign the obligations to the category most appropriate to the type of work you are funding.

- **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.

For reporting experimental development activities, include the following:

- 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.



Exclude:

- 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.

- Obligations reported in this survey should be consistent with amounts in The Budget of the United States Government. The same definitions are used for both.

Obligations represent the amounts for orders placed, contracts awarded, services received, and similar transactions during a given period, regardless of when the funds were appropriated and when future payment of money is required.

- Include direct appropriations, trust funds, special account receipts, corporate income, fees and charges, funds appropriated by the Congress, and other federal sources.
- Report the year of the obligation regardless of when the funds were originally authorized, received, appropriated, or identified as research, development, or R&D plant.
- Include the full costs of R&D, both specific project costs and overhead costs. Include for both intramural and extramural R&D programs: costs of planning and administering R&D, laboratory overhead, pay of military personnel, departmental administration, **and include funds your agency transferred to other agencies for R&D.**
- Obligations for R&D performed for an agency in foreign countries include all funds available to the agency for this purpose.
- **Do not include funds your agency received from another federal agency.** The transferring agency will report those funds. Similarly, a subdivision of an agency reports the funds it transfers to another subdivision within that agency as its own.

- See other definitions under Table 1.

Tables 3, 4, and 5 are for reporting obligations for research by fields of science and engineering. Please do not complete Table 5 for Volume 68.

Please make every effort to allocate obligations to a specific discipline rather than use the “other” category. If specific allocation is not feasible, however, obligations reported under the other category should be identified in an explanatory note. In reporting obligations for activities concerned with interdisciplinary studies, funds must not be double-counted.



- **Fields of Science and Engineering** in this survey consist of eight broad field categories, each consisting of a number of detailed fields. The broad fields are computer sciences and mathematics, engineering, environmental sciences, life sciences, physical sciences, psychology, social sciences, and other sciences not elsewhere classified. The following list presents the detailed fields grouped under each of the broad fields, together with illustrative disciplines of detailed fields.

“Other” includes

- projects within a broad field
- single-discipline projects for which a separate field has not been assigned

The illustrative disciplines are intended to be guidelines, not sharp definitions. Research in biochemistry, for example, might be reported as biological, agricultural, or medical, depending on the focus of the project. Human biochemistry would be classified under biological, but animal biochemistry or plant biochemistry would fall under agricultural.

Do not report research under more than one field. No double counting is intended or allowed.

■ **Computer sciences and mathematics**

- **Computer sciences:** Computer sciences, data manipulation, data storage, design or development of computer capabilities, information sciences, information systems, programming languages, systems analysis
- **Mathematics:** Algebra, analysis, applied mathematics, foundations, geometry, logic, numerical analysis, statistics, topology
- **Other computer sciences and mathematics**

■ **Engineering**

- **Aeronautical engineering:** Aerodynamics
- **Astronautical engineering:** Aerospace, space technology
- **Chemical engineering:** Petroleum, petroleum refining process
- **Civil engineering:** Architectural engineering, environmental engineering, hydraulic engineering, hydrologic engineering, marine engineering, sanitary engineering, structural engineering, transportation
- **Electrical engineering:** Communications engineering, electronic engineering, power engineering
- **Mechanical engineering:** Engineering mechanics
- **Metallurgy and materials engineering:** Ceramic engineering, mining, textile engineering, welding
- **Other engineering:** Agricultural engineering, bioengineering, biomedical engineering, industrial engineering, management engineering, nuclear engineering, ocean engineering, systems engineering



■ Environmental sciences

- **Atmospheric sciences:** Aeronomy, extraterrestrial atmospheres, meteorology, solar science, terrestrial atmospheres, weather modification
- **Geological sciences:** Cartography, engineering geophysics, general geology, geodesy, geomagnetism, gravity, hydrology, inorganic geochemistry, isotopic geochemistry, laboratory geophysics, organic geochemistry, paleomagnetism, paleontology, physical geography, seismology
- **Oceanography:** Biological oceanography, chemical oceanography, marine geophysics, physical oceanography
- **Other environmental sciences**

■ Life sciences

Report under oceanography if study is about life in the sea or other bodies of water.

- **Agricultural sciences:** Agronomy, animal sciences, fish and wildlife, food science and technology, forestry, general agriculture, horticulture, phytopathology, phytroduction, plant sciences, soils and soil science
- **Biological sciences (excluding environmental biology):** Anatomy, biochemistry, biology, biometry, biophysics, biostatistics, botany, cell biology, entomology, genetics, microbiology, neuroscience (biological), nutrition, parasitology, physiology, zoology
- **Environmental biology:** Biotic community, ecosystem sciences, evolutionary biology, limnology, physiological ecology, population biology, population ecology, systematic biology
- **Medical sciences:** Dentistry, internal medicine, neurology, obstetrics and gynecology, ophthalmology, otolaryngology, pathology, pediatrics, pharmacology, pharmacy, preventive medicine, psychiatry, radiology, surgery, veterinary medicine
- **Other life sciences**

■ Physical sciences

- **Astronomy:** Gamma-ray astronomy, laboratory astrophysics, neutrino astronomy, optical astronomy, radio astronomy, theoretical astrophysics, X-ray astronomy
- **Chemistry:** Inorganic chemistry, organic chemistry, organometallic chemistry, physical chemistry
- **Physics:** Acoustics, atomic physics, condensed-matter physics, elementary particle physics, molecular physics, nuclear structure, optics, plasma physics
- **Other physical sciences**

- **Psychology** deals with behavior, mental processes, and individual and group characteristics and abilities. Psychology in this survey is divided into three categories: biological aspects, social aspects, and other psychological sciences. Examples of the disciplines under each of these fields are as follows:



- **Biological aspects:** Animal behavior, clinical psychology, comparative psychology, ethology, experimental psychology
- **Social aspects:** Development, educational, engineering psychology, industrial psychology, personality, personnel, social psychology, testing, vocational psychology
- **Other psychological sciences**

■ **Social sciences**

- **Anthropology:** Applied anthropology, archaeology, cultural anthropology, ethnology, personality, social anthropology
- **Economics:** Agricultural economics, econometrics, economic statistics, economic systems and development, economic theory, history of economic thought, industrial economics, international economics, labor economics, macroeconomics, microeconomics, public finance and fiscal policy
- **Political science:** Area studies, regional studies, comparative government, history of political ideas, international law, international relations, national political and legal systems, political theory, public administration
- **Sociology:** Comparative sociology, complex organizations, culture and social structure, demography, group interactions, historical sociology, social problems, social welfare, sociological theory
- **Other social sciences:** Linguistics, research in education, research in history, research in law (e.g., how legal systems and practices impact society), socioeconomic geography

- **Other sciences not elsewhere classified:** Interdisciplinary studies, multidisciplinary studies, studies that cannot be classified in one of the fields of science above

Tables 6, 7, and 8 cover reporting obligations by performer and type of R&D. Please do not complete Table 8 for Volume 68.

(NOTE: The instructions for Table 6A follow this instruction. The instructions for Tables 6B and 6C follow the instructions for Table 11.)

Personnel costs are a subset of Federal Intramural costs. Personnel costs are for identification of obligations for intramural personnel services and related allowances. Such obligations cover salaries for scientists, engineers, and other intramural support personnel, including dedicated planning and administrative personnel.

Report obligations to business or industrial firms, universities and colleges, and nonprofit institutions separately from the obligations to FFRDCs administered by those performers.

Definitions for these tables include:

- **Businesses or industrial firms:** This category of performer includes business (for-profit).
- **Federally Funded Research and Development Centers (FFRDCs)** are R&D-performing organizations that are exclusively or substantially financed by the federal



government. Your department or agency may sponsor or otherwise support an FFRDC in support of R&D that furthers your mission. The survey requests that you report FFRDC obligations separately for the type of organization that administers the FFRDC—industrial firm, university or college, or nonprofit institution. To view the list of current FFRDCs, please see the Master Government List of Federally Funded R&D Centers at <https://www.nsf.gov/statistics/ffrdclist/>, and for more information, the FFRDC general notes at <https://www.nsf.gov/statistics/ffrdclist/#gennotes>. (Additional information concerning FFRDCs is found in the reporting guidelines for Table 9.)

- **Foreign performers:** This category includes citizens, organizations, universities and colleges, governments of other nations, and international organizations located outside the United States who are performing R&D with support of federal funds. In most cases, foreign-owned organizations performing R&D in the United States are not reported here.

Excluded from this category are U.S. agencies, U.S. organizations, or U.S. citizens performing R&D abroad for the federal government. Examples of foreign performers include: North Atlantic Treaty Organization (NATO), United Nations Educational, Scientific, and Cultural Organization (UNESCO), World Health Organization (WHO).

Care should be taken to report foreign performance only once. For example, if a foreign performer is an educational institution, obligations to that institution should be reported only under foreign performance and not also under universities and colleges.

- **Intramural performers:** This category includes obligations for R&D performed by federal employees either in your federal department or agency or elsewhere. This category also includes costs associated with your department's or agency's planning and administration of R&D for your intramural programs and extramural contract programs (i.e., programs conducted by nonfederal R&D performers).

The management and distribution of funds for R&D grants should not be considered in the cost of intramural R&D.

For the R&D funds transferred to another federal agency, try to report the funds where they will ultimately be performed—inside or outside the federal government. Use this category if the other federal agency's employees are expected to perform the R&D. If the R&D will eventually be conducted at universities and colleges, nonprofit institutions, or businesses, use the appropriate category for these extramural R&D performers. This category also includes the costs of supplies and equipment for the intramural R&D.

- **Nonprofit institution performers:** This category includes private organizations, other than educational institutions, whose net earnings do not benefit either private stockholders or individuals and other private organizations organized for the exclusive purpose of turning over their entire net earnings to such nonprofit organizations. Examples of nonprofit institutions include foundations, trade associations, charities, and research organizations.
- **Performer:** An intramural group or organization carrying out an operational function or an extramural organization or a person receiving support or providing services under a contract or grant.



- **Personnel costs:** The survey items on performers ask you to break out the portion of federal intramural obligations for personnel costs. Personnel costs include salaries of both federal employees who perform R&D as well as federal employees who monitor or oversee R&D projects, both intramural and extramural R&D contracts.

If your budget does not include personnel costs as a line item, please estimate these R&D personnel costs and include them in your federal intramural R&D obligations.

Examples of R&D personnel include the following: scientists, engineers, lab technicians, computer programmers, and dedicated planning and administrative personnel.

- **State and local government:** This category of performer includes R&D obligations to state and local government agencies regardless of who actually performs the R&D. That is, use this category to report both R&D performed by state and local agencies and R&D subcontracted by a state or local agency to another organization. Exceptions:

- Report state and local universities and colleges under Universities and colleges.
- Report agricultural experiment stations under Universities and colleges.

- **Universities and colleges:** This category of performer includes 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. Other examples of universities and colleges include community colleges, four-year colleges, universities, and freestanding professional schools (medical schools, law schools, etc.).

Table 6A provides for reporting additional information on the obligations to federal intramural performers for R&D during FY 2018. This table is not required for volume 68; do not report.

- **Planning and Administration of Intramural and Extramural R&D Programs:** Do not report.
- **Interagency Transfers:** Do not report.
- **Federal Laboratories:** Do not report.

Tables 6B and 6C—The instructions for Tables 6B and 6C follow the instructions for Table 11.

Table 9 provides for reporting additional information on FY 2018 R&D and R&D plant obligations to FFRDCs. This table requires the breakdown of obligations for R&D (Table 6) and R&D Plant (Table 11) reported to individual FFRDCs administered by industrial firms or businesses, universities and colleges, or nonprofit institutions, by each FFRDC listed. Each agency should report obligations to each FFRDC it supports, even if the FFRDC is sponsored by another agency. Agencies may not unilaterally delete organizations classified as FFRDCs from the list or add organizations to it.



Table 10 provides for reporting obligations for basic research and R&D to foreign performers by geographic area and country.

Table 11 provides for reporting obligations for R&D plant by the performer of R&D that the R&D plant supports, regardless of the plant’s ownership or location. Definitions that were provided earlier in these instructions for R&D plant and performers apply to these tables.

The performer of R&D determines the classification of R&D plant obligations. Report obligations to business or industrial firms, universities and colleges, and nonprofit institutions separately from the obligations to FFRDCs administered by those performers.

Tables 6B, 6C, 11A, and 11B—Narratives for Reconciliation of R&D Obligations and R&D Plant Obligations with the NSF Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (Federal S&E Support Survey)

- Table 6B—Universities and Colleges excluding FFRDCs R&D Obligations
- Table 6C—Nonprofit Institutions excluding FFRDCs R&D Obligations
- Table 11A—Universities and Colleges excluding FFRDCs R&D Plant Obligations
- Table 11B—Nonprofit Institutions excluding FFRDCs R&D Plant Obligations

Completion of Tables 6B, 6C, 11A, and 11B is optional.

The following agencies have been requested to provide data to the Federal S&E Support Survey (formerly known as the CASE survey): the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, the Interior, Justice, Labor, and Transportation; the Agency for International Development; the Appalachian Regional Commission; the Environmental Protection Agency; the National Aeronautics and Space Administration; the National Archives and Records Administration; the National Science Foundation; the Nuclear Regulatory Commission; the Patient-Centered Outcomes Research Trust Fund; and the Social Security Administration.

These agencies have been requested to provide specific obligations data to NSF in response to the reporting system established in 1965 by the Committee on Academic Science and Engineering (CASE) of the Federal Council for Science and Technology; this survey is referred to in these instructions as the Federal S&E Support Survey. The requested data cover obligations for R&D and R&D plant to universities, colleges, and nonprofit institutions, as well as data on other activities. In general, the concepts and definitions used in the Federal S&E Support Survey conform to the general guidelines in the Federal Funds Survey. Thus, for agencies participating in both surveys, overall totals for R&D and R&D plant to universities, colleges, and nonprofit institutions should be essentially the same. Where differences appear in data reported for the two surveys, each reporting agency or subdivision should provide an explanation.

Different totals can sometimes result from the fact that reporting for the Federal Funds Survey and for the Federal S&E Support Survey is accomplished in different ways. For the Federal Funds Survey, each agency includes in its reporting the amounts transferred to other agencies for furtherance of its own purposes; the receiving agencies do not report funds transferred to them. In the Federal S&E Support Survey, however, the data are reported by the agencies in terms of individual performing institutions, and because of this requirement, only the agency that makes the final distribution of the funds can readily determine where the transferred or reimbursable funds are obligated. For this reason, agencies reporting to the Federal S&E



Support Survey include funds received from other agencies and exclude funds transferred to other agencies, the reverse of the procedure for the Federal Funds Survey.

Tables 12 and 13: Definitions that were provided earlier in these instructions for R&D, R&D plant, and performers apply to these tables.

General instructions include:

- State locations are requested only for the 11 largest R&D departments or agencies: the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation. Report the principal location where the work is performed by the primary contractor, grantee, or intramural organization. If location information is not available, assign the obligations to the state, other area, or office abroad where the headquarters of the U.S. primary contractor, grantee, or intramural organization is located.
- Both intramural and extramural obligations are required. The extramural obligations are to be reported in terms of prime contracts or grants.
- The amounts reported in these tables for each performer should add to the totals reported for Tables 6 and 11.
- R&D obligations to foreign performers or R&D plant obligations in support of foreign performers should not be reported here. See Table 10.

Specific instructions include:

- In Table 12, the obligations for R&D should be provided as a combined amount.
- Table 13 is to be used to report the geographic distribution of FY 2018 obligations for R&D plant by state or other area and performer.

Tables 14, 15, and 16: Definitions for basic research, applied research, total research, universities and colleges, and fields of science and engineering that were provided for Tables 3, 4, and 5 in these instructions apply to these tables also. Please do not complete Table 16 for Volume 68.

- Obligations for basic, applied, and total research performed at universities and colleges (excluding FFRDCs) by field of science and engineering are requested only for seven departments or agencies: the Departments of Agriculture, Defense, Energy, Health and Human Services, and Homeland Security; the National Aeronautics and Space Administration; and the National Science Foundation.
- The total obligations reported in Tables 14 and 15 must equal obligations for basic research, applied research, and the combined obligations for basic and applied research reported for universities and colleges, excluding FFRDCs, of Tables 6 and 7.

■ To Get Help

Contact us by e-mail at NSFFedFunds@smdi.com or at 703-312-5379 for additional help.



Contact Information

NOTE: If you enter alternate point of contact information, first name, last name, telephone, and e-mail are required.

* Required

Primary Point of Contact		
First name:*		Middle initial:
Last name:*		
Title:		
Telephone:*		Ext.:
Fax:		
E-mail address:*		
Street address 1:		
Street address 2:		
City:		State:
Zip:		
Alternate Point of Contact (Optional)		
First name:		Middle initial:
Last name:		
Title:		
Telephone:		Ext.:
Fax:		
E-mail address:		
Supervisor Information		
First name:*		Middle initial:
Last name:*		
Title:		
Telephone:*		Ext.:
E-mail address*		



Table 1 - Outlays for R&D and R&D Plant: FYs 2018 and 2019

Agency Code:

Agency Name:

NOTE: Please DO NOT report for FY 2020.

Please report actual dollar amounts.

R&D and R&D Plant	FY 2018	FY 2019	FY 2020
R&D			
R&D Plant			
TOTAL R&D and R&D Plant (Read Only)			

Please use the space below to add explanations for data reported in this table.



Table 1A - Comparison with OMB MAX Schedule C for Federal R&D Programs: FYs 2018 and 2019

Agency Code:

Agency Name:

This is the 1st of 2 narratives for Table 1.

NOTE: Please DO NOT report for FY 2020.

Please report actual dollar amounts.

Total R&D Outlays	FY 2018	FY 2019	FY 2020
Outlays for Total R&D Reported in Table 1 (Read Only)			
Outlays for Total R&D Reported to OMB in Response to Circular A-11 (Max Schedule C)			
Difference in Outlays Reported in Table 1 and Outlays Reported to OMB (Read Only)			

Please explain any differences in Outlays between the two reports.



Table 1B - Comparison with OMB MAX Schedule C for R&D Facilities plus Major Moveable R&D Equipment (R&D Plant): FYs 2018 and 2019

Agency Code:

Agency Name:

This is the 2nd of 2 narratives for Table 1.

NOTE: Please DO NOT report for FY 2020.

Please report actual dollar amounts.

Total R&D Plant Outlays	FY 2018	FY 2019	FY 2020
Outlays for Total R&D Plant Reported in Table 1 (Read Only)			
Outlays for Total R&D Facilities plus Major Moveable R&D Equipment Reported to OMB in Response to Circular A-11 (Max Schedule C)			
Difference in Outlays Reported in Table 1 and Outlays Reported to OMB (Read Only)			

Please explain any differences in Outlays between the two reports.



Table 2 - Summary of Obligations for R&D and R&D Plant: FYs 2018 and 2019

Agency Code:

Agency Name:

NOTE: Please DO NOT report for FY 2020.

Please report actual dollar amounts.

R&D	FY 2018	FY 2019	FY 2020
Research			
Basic Research			
Applied Research			
Total Research ¹ (Read Only)			
Development			
Total R&D (Read Only)			
R&D Plant			
R&D Plant			
TOTAL R&D and R&D Plant (Read Only)			

Please use the space below to add explanations for data reported in this table.

Footnotes:
 1 Basic Research + Applied Research = Total Research.



Table 3 - Obligations for Basic, Applied, and Total Research by Detailed Field of Science and Engineering: FY 2018

Agency Code:

Agency Name:

Please report actual dollar amounts.

Field of Science and Engineering	Basic Research	Applied Research	Total Research ¹ (Read Only)
	FY 2018	FY 2018	FY 2018
Computer Sciences and Mathematics			
Computer Sciences			
Mathematics			
Other Computer Sciences and Mathematics			
Total Computer Sciences and Mathematics (Read Only)			
Engineering			
Aeronautical Engineering			
Astronautical Engineering			
Chemical Engineering			
Civil Engineering			
Electrical Engineering			
Mechanical Engineering			
Metallurgy and Materials Engineering			
Other Engineering			
Total Engineering (Read Only)			
Environmental Sciences			
Atmospheric Sciences			
Geological Sciences			
Oceanography			
Other Environmental Sciences			
Total Environmental Sciences (Read Only)			
Life Sciences			
Agricultural Sciences			
Biological Sciences (excluding Environmental Biology)			
Environmental Biology			
Medical Sciences			
Other Life Sciences			



Table 3 - Obligations for Basic, Applied, and Total Research by Detailed Field of Science and Engineering: FY 2018

Field of Science and Engineering	Basic Research	Applied Research	Total Research ¹ (Read Only)
	FY 2018	FY 2018	FY 2018
Total Life Sciences (Read Only)			
Physical Sciences			
Astronomy			
Chemistry			
Physics			
Other Physical Sciences			
Total Physical Sciences (Read Only)			
Psychology			
Biological Aspects			
Social Aspects			
Other Psychological Sciences			
Total Psychology (Read Only)			
Social Sciences			
Anthropology			
Economics			
Political Science			
Sociology			
Other Social Sciences			
Total Social Sciences (Read Only)			
Other Sciences not elsewhere classified			
TOTAL All Fields ² (Read Only)			

Please use the space below to add explanations for data reported in this table.

Footnotes:

- 1 Basic Research + Applied Research = Total Research.
- 2 The TOTAL All Fields amount for Basic Research FY 2018 (column 1) should equal the amount reported for FY 2018 Basic Research in Table 2. The TOTAL All Fields amount for Applied Research FY 2018 (column 2) should equal the amount reported for FY 2018 Applied Research in Table 2.



Table 4 - Obligations for Basic, Applied, and Total Research by Broad Field of Science and Engineering: FY 2019

Agency Code:

Agency Name:

Please report actual dollar amounts.

Field of Science and Engineering	Basic Research	Applied Research	Total Research ¹ (Read Only)
	FY 2019	FY 2019	FY 2019
Computer Sciences and Mathematics			
Engineering			
Environmental Sciences			
Life Sciences			
Physical Sciences			
Psychology			
Social Sciences			
Other Sciences not elsewhere classified			
TOTAL All Fields ² (Read Only)			

Please use the space below to add explanations for data reported in this table.

Footnotes:

- 1 Basic Research + Applied Research = Total Research.
- 2 The TOTAL All Fields amount for Basic Research FY 2019 (column 1) should equal the amount reported for FY 2019 Basic Research in Table 2. The TOTAL All Fields amount for Applied Research FY 2019 (column 2) should equal the amount reported for FY 2019 Applied Research in Table 2.



Table 5 - Obligations for Basic, Applied, and Total Research by Broad Field of Science and Engineering: FY 2020

Agency Code:

Agency Name:

NOTE: Please DO NOT report for FY 2020.

Field of Science and Engineering	Basic Research	Applied Research	Total Research ¹ (Read Only)
	FY 2020	FY 2020	FY 2020
Computer Sciences and Mathematics			
Engineering			
Environmental Sciences			
Life Sciences			
Physical Sciences			
Psychology			
Social Sciences			
Other Sciences not elsewhere classified			
TOTAL All Fields ² (Read Only)			

Please use the space below to add explanations for data reported in this table.

Footnotes:

- 1 Basic Research + Applied Research = Total Research.
- 2 The TOTAL All Fields amount for Basic Research FY 2020 (column 1) should equal the amount reported for FY 2020 Basic Research in Table 2. The TOTAL All Fields amount for Applied Research FY 2020 (column 2) should equal the amount reported for FY 2020 Applied Research in Table 2.



Table 6 - R&D Obligations by Performer and Type of R&D: FY 2018

Agency Code:

Agency Name:

Please report actual dollar amounts.

Performer	Basic Research	Applied Research	Development	Total R&D (Read Only)
	FY 2018	FY 2018	FY 2018	FY 2018
Federal Intramural ¹				
Portion of Federal Intramural for Personnel Costs ²	()	()	()	()
Businesses Excluding FFRDCs				
FFRDCs Administered by Industrial Firms				
Universities and Colleges Excluding FFRDCs				
FFRDCs Administered by Universities and Colleges				
Nonprofit Institutions Excluding FFRDCs				
FFRDCs Administered by Nonprofit Institutions				
State and Local Governments				
Total All Domestic Performers (Read Only)				
Foreign				
TOTAL All Performers ³ (Read Only)				

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

Footnotes:	
1	Include (1) R&D conducted by federal agencies and (2) your agency's costs for monitoring R&D contracts, grants, and cooperative agreements.
2	Include the portion of federal intramural costs (reported above) associated with (1) personnel costs for performing federal intramural research projects and (2) costs of dedicated personnel for the planning and administration of extramural R&D contracts.
3	The TOTAL All Performers amounts for Basic Research, Applied Research, and Development should equal the amounts reported for Basic Research, Applied Research, and Development in Table 2 for FY 2018.



Table 6A - Federal Intramural R&D Obligations: FY 2018

Agency Code:

Agency Name:

NOTE: Please DO NOT report for FY 2018

Type of Obligation	Federal Intramural R&D Obligations ¹ FY 2018
Planning and administration of intramural and extramural R&D programs	
Interagency transfers	
Total Federal laboratories	
TOTAL Federal Intramural R&D³	

Please use the space below to explain any difficulty you experienced categorizing any of the obligations in Table 6A, or if you would like to provide additional information about your responses:

Footnotes:

- 1 Include (1) R&D conducted by federal agencies and (2) your agency’s costs for monitoring R&D contracts, grants, and cooperative agreements.
- 2 Include all of your agency’s federal laboratories to which your agency obligated R&D funds in FY 2018.
- 3 The TOTAL Federal Intramural R&D amount should equal the amount reported for Federal Intramural TOTAL R&D in Table 6.



Table 6B - Comparison of R&D with Federal S&E Support Survey, Universities and Colleges Excluding FFRDCs: FY 2018

Agency Code:

Agency Name:

This is the 1st of 2 narratives for Table 6.

Please report actual dollar amounts.

R&D	Total R&D
	FY 2018
Amount reported in Table 6, row total for R&D performed by Universities and Colleges Excluding FFRDCs (Read Only)	
Amount reported for R&D to Universities and Colleges (total for all Institutions) in the Federal S&E Support Survey	
DIFFERENCE (Read Only)	

Key: FFRDCs = Federally funded research and development centers.

Your agency's total for NSF's Federal Funds and Federal S&E Support Survey can differ if you transfer R&D funding to other federal agencies or receive R&D funding from other agencies.

	Federal Funds Survey	Federal S&E Support Survey
Focus of the survey questions	R&D obligations funded by your agency	Obligations for R&D performing institutions (Note: Only the federal agency directly providing R&D funding knows which institutions are performing the R&D)
How amounts are treated for R&D funds transferred to other federal agencies	Included	Excluded
How amounts are treated for R&D funds transferred from other federal agencies	Excluded	Included

Please enter an explanation of any differences in the R&D Obligations between the two reports.



Table 6C - Comparison of R&D with Federal S&E Support Survey, Nonprofit Institutions Excluding FFRDCs: FY 2018

Agency Code:

Agency Name:

This is the 2nd of 2 narratives for Table 6.

Please report actual dollar amounts.

R&D	Total R&D
	FY 2018
Amount reported in Table 6, row total for R&D performed by Nonprofit Institutions Excluding FFRDCs (Read Only)	
Amount reported for R&D to Nonprofit Institutions (total for all Institutions) in the Federal Support S&E Survey	
DIFFERENCE (Read Only)	

Key: FFRDCs = Federally funded research and development centers.

Your agency's total for NSF's Federal Funds and Federal S&E Support Survey can differ if you transfer R&D funding to other federal agencies or receive R&D funding from other agencies.

	Federal Funds Survey	Federal S&E Support Survey
Focus of the survey questions	R&D obligations funded by your agency	Obligations for R&D performing institutions (Note: Only the federal agency directly providing R&D funding knows which institutions are performing the R&D)
How amounts are treated for R&D funds transferred to other federal agencies	Included	Excluded
How amounts are treated for R&D funds transferred from other federal agencies	Excluded	Included

Please enter an explanation of any differences in the R&D Obligations between the two reports.



Table 7 - R&D Obligations by Performer and Type of R&D: FY 2019

Agency Code:

Agency Name:

Please report actual dollar amounts.

Performer	Basic Research	Applied Research	Development	Total R&D (Read Only)
	FY 2019	FY 2019	FY 2019	FY 2019
Federal Intramural ¹				
Portion of Federal Intramural for Personnel Costs ²	()	()	()	()
Businesses Excluding FFRDCs				
FFRDCs Administered by Industrial Firms				
Universities and Colleges Excluding FFRDCs				
FFRDCs Administered by Universities and Colleges				
Nonprofit Institutions Excluding FFRDCs				
FFRDCs Administered by Nonprofit Institutions				
State and Local Governments				
Total All Domestic Performers (Read Only)				
Foreign				
TOTAL All Performers ³ (Read Only)				

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

Footnotes:	
1	Include (1) R&D conducted by federal agencies and (2) your agency's costs for monitoring R&D contracts, grants, and cooperative agreements.
2	Include the portion of federal intramural costs (reported above) associated with (1) personnel costs for performing federal intramural research projects and (2) costs of dedicated personnel for the planning and administration of extramural R&D contracts.
3	The TOTAL All Performers amounts for Basic Research, Applied Research, and Development should equal the amounts reported for Basic Research, Applied Research, and Development in Table 2 for FY 2019.



Table 8 - R&D Obligations by Performer and Type of R&D: FY 2020

Agency Code:

Agency Name:

NOTE: Please DO NOT report for FY 2020.

Performer	Basic Research	Applied Research	Development	Total R&D (Read Only)
	FY 2020	FY 2020	FY 2020	FY 2020
Federal Intramural ¹				
Portion of Federal Intramural for Personnel Costs ²	()	()	()	()
Businesses Excluding FFRDCs				
FFRDCs Administered by Industrial Firms				
Universities and Colleges Excluding FFRDCs				
FFRDCs Administered by Universities and Colleges				
Nonprofit Institutions Excluding FFRDCs				
FFRDCs Administered by Nonprofit Institutions				
State and Local Governments				
Total All Domestic Performers (Read Only)				
Foreign				
TOTAL All Performers ³ (Read Only)				

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

Footnotes:	
1	Include (1) R&D conducted by federal agencies and (2) your agency's costs for monitoring R&D contracts, grants, and cooperative agreements.
2	Include the portion of federal intramural costs (reported above) associated with (1) personnel costs for performing federal intramural research projects and (2) costs of dedicated personnel for the planning and administration of extramural R&D contracts.
3	The TOTAL All Performers amounts for Basic Research, Applied Research, and Development should equal the amounts reported for Basic Research, Applied Research, and Development in Table 2 for FY 2020.



Table 9 - Obligations for R&D and R&D Plant at Individual Federally Funded Research and Development Centers (FFRDCs): FY 2018

Agency Code:

Agency Name:

Please report actual dollar amounts.

Administered by Industrial Firms	R&D Obligations	R&D Plant Obligations
Frederick National Laboratory for Cancer Research (Leidos Biomedical Research, Inc. [formerly known as SAIC-Frederick Inc.]) Frederick, MD		
Idaho National Laboratory (Battelle Energy Alliance, LLC) Idaho Falls, ID		
Lawrence Livermore National Laboratory (Lawrence Livermore National Security, LLC) Livermore, CA		
Los Alamos National Laboratory (Los Alamos National Security, LLC) Los Alamos, NM		
Sandia National Laboratories (National Technology and Engineering Solutions of Sandia, LLC) Albuquerque, NM		
Savannah River National Laboratory (Savannah River Nuclear Solutions, LLC) Aiken, SC		
TOTAL Industrial-Administered FFRDCs ^{1, 2} (Read Only)		
Administered by Universities and Colleges ³	R&D Obligations	R&D Plant Obligations
Ames Laboratory (Iowa State University) Ames, IA		
Argonne National Laboratory (UChicago Argonne, LLC) Argonne, IL		
Fermi National Accelerator Laboratory (Fermi Research Alliance, LLC) Batavia, IL		
Jet Propulsion Laboratory (California Institute of Technology) Pasadena, CA		
Lawrence Berkeley National Laboratory (University of California) Berkeley, CA		
Lincoln Laboratory (Massachusetts Institute of Technology) Lexington, MA		
National Center for Atmospheric Research (University Corp. for Atmospheric Research) Boulder, CO		
National Optical Astronomy Observatory (Association of Universities for Research in Astronomy, Inc.) Tucson, AZ		
National Radio Astronomy Observatory (Associated Universities, Inc.) Charlottesville, VA		
National Solar Observatory (Association of Universities for Research in Astronomy, Inc.) Sunspot, NM		



Table 9 - Obligations for R&D and R&D Plant at Individual Federally Funded Research and Development Centers (FFRDCs): FY 2018

Administered by Universities and Colleges ³	R&D Obligations	R&D Plant Obligations
Princeton Plasma Physics Laboratory (Princeton University) Princeton, NJ		
SLAC National Accelerator Laboratory (Stanford University) Menlo Park, CA		
Software Engineering Institute (Carnegie Mellon University) Pittsburgh, PA		
Thomas Jefferson National Accelerator Facility (Jefferson Science Associates, LLC) Newport News, VA		
TOTAL University and College-Administered FFRDCs ^{4, 5} (Read Only)		
Administered by Nonprofit Institutions ⁶	R&D Obligations	R&D Plant Obligations
Aerospace Federally Funded Research and Development Center (The Aerospace Corp.) El Segundo, CA		
Arroyo Center (RAND Corp.) Santa Monica, CA		
Brookhaven National Laboratory (Brookhaven Science Associates, LLC) Upton, NY		
Center for Advanced Aviation System Development (MITRE Corp.) McLean, VA		
Center for Communications and Computing (Institute for Defense Analyses) Alexandria, VA		
Center for Enterprise Modernization (MITRE Corp.) McLean, VA		
Center for Naval Analyses (The CNA Corporation) Alexandria, VA		
Center for Nuclear Waste Regulatory Analyses (Southwest Research Institute) San Antonio, TX		
CMS Alliance to Modernize Healthcare (MITRE Corp.) Baltimore, MD		
Homeland Security Operational Analysis Center (RAND Corp.) Arlington, VA		
Homeland Security Systems Engineering and Development Institute (MITRE Corp.) McLean, VA		
Judiciary Engineering and Modernization Center (MITRE Corp.) McLean, VA		
National Biodefense Analysis and Countermeasures Center (Battelle National Biodefense Institute) Frederick, MD		
National Cybersecurity Center of Excellence (MITRE Corp.) Rockville, MD		



Table 9 - Obligations for R&D and R&D Plant at Individual Federally Funded Research and Development Centers (FFRDCs): FY 2018

Administered by Nonprofit Institutions ⁶	R&D Obligations	R&D Plant Obligations
National Defense Research Institute (RAND Corp.) Santa Monica, CA		
National Renewable Energy Laboratory (Alliance for Sustainable Energy, LLC) Golden, CO		
National Security Engineering Center (MITRE Corp.) Bedford, MA, and McLean, VA (Read Only)		
NSEC -- Bedford, MA Laboratory Bedford, MA		
NSEC -- McLean, VA Laboratory McLean, VA		
Oak Ridge National Laboratory (UT-Battelle, LLC) Oak Ridge, TN		
Pacific Northwest National Laboratory (Battelle Memorial Institute) Richland, WA		
Project Air Force (RAND Corp.) Santa Monica, CA		
Science and Technology Policy Institute (Institute for Defense Analyses) Washington, DC		
Systems and Analyses Center (Institute for Defense Analyses) Alexandria, VA		
TOTAL Nonprofit-Administered FFRDCs ^{7, 8} (Read Only)		

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

NOTES: Each supporting agency should report obligations to each FFRDC it uses even though the FFRDC may be under the sponsorship of another agency. See NSF's website for a list of FFRDCs shown by sponsoring agency and administering organization.

Footnotes:	
1	The TOTAL Industry-Administered FFRDCs amount for R&D Obligations (column 1) should equal the Total R&D amount for FFRDCs Administered by Industrial Firms in Table 6.
2	The TOTAL Industry-Administered FFRDCs amount for R&D Plant Obligations (column 2) should equal the amount reported for FFRDCs Administered by Industrial Firms in Table 11 for FY 2018.
3	Includes university consortia.
4	The TOTAL University and College-Administered FFRDCs amount for R&D Obligations (column 1) should equal the TOTAL R&D amount for FFRDCs Administered by Universities and Colleges in Table 6.
5	The TOTAL University and College-Administered FFRDCs amount for R&D Plant Obligations (column 2) should equal the amount reported for FFRDCs Administered by Universities and Colleges in Table 11 for FY 2018.
6	Other than universities and colleges.

INFORMATION ONLY – DO NOT USE TO REPORT



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- 7 The TOTAL Nonprofit-Administered FFRDCs amount for R&D Obligations (column 1) should equal the Total R&D amount for FFRDCs Administered by Nonprofit Institutions in Table 6.
- 8 The TOTAL Nonprofit-Administered FFRDCs amount for R&D Plant Obligations (column 2) should equal the amount reported for FFRDCs Administered by Nonprofit Institutions in Table 11 for FY 2018.



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Agency Code:

Agency Name:

Please report actual dollar amounts.

Geographic Area and Country	Basic Research Only	Total R&D
Africa		
Algeria		
Angola		
Benin		
Botswana		
Burkina Faso		
Burundi		
Cabo Verde		
Cameroon		
Central African Republic		
Chad		
Comoros		
Congo, Democratic Republic of the		
Congo, Republic of the		
Côte d'Ivoire		
Djibouti		
Egypt		
Equatorial Guinea		
Eritrea		
Eswatini (formerly Swaziland)		
Ethiopia		
Gabon		
Gambia, The		
Ghana		
Guinea		
Guinea-Bissau		
Kenya		
Lesotho		
Liberia		
Libya		
Madagascar		
Malawi		



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Geographic Area and Country	Basic Research Only	Total R&D
Africa		
Mali		
Mauritania		
Mauritius		
Morocco		
Mozambique		
Namibia		
Niger		
Nigeria		
Reunion		
Rwanda		
Saint Helena		
Sao Tome and Principe		
Senegal		
Seychelles		
Sierra Leone		
Somalia		
South Africa		
South Sudan		
Sudan		
Tanzania		
Togo		
Tunisia		
Uganda		
Western Sahara		
Zambia		
Zimbabwe		
African countries, other		
Africa, Total (Read Only)		
Asia		
Afghanistan		
Armenia		
Azerbaijan		



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Geographic Area and Country	Basic Research Only	Total R&D
Bahrain		
Bangladesh		
Bhutan		
Brunei		
Cambodia		
China		
Cyprus		
Gaza Strip		
Georgia		
Hong Kong		
India		
Indonesia		
Iran		
Iraq		
Israel		
Japan		
Jordan		
Kazakhstan		
Korea, North		
Korea, South		
Kuwait		
Kyrgyzstan		
Laos		
Lebanon		
Macau		
Malaysia		
Maldives		
Mongolia		
Myanmar/Burma		
Nepal		
Oman		
Pakistan		
Palestine		
Philippines		
Qatar		



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Geographic Area and Country	Basic Research Only	Total R&D
Saudi Arabia		
Singapore		
Sri Lanka		
Syria		
Taiwan		
Tajikistan		
Thailand		
Timor-Leste		
Turkey		
Turkmenistan		
United Arab Emirates		
Uzbekistan		
Vietnam		
West Bank		
Yemen		
Asian countries, other		
Asia, Total (Read Only)		
Europe		
Albania		
Andorra		
Austria		
Belarus		
Belgium		
Bosnia and Herzegovina		
Bulgaria		
Croatia		
Czechia		
Denmark		
Estonia		
Faroe Islands		
Finland		
France		
Germany		
Gibraltar		



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Geographic Area and Country	Basic Research Only	Total R&D
Greece		
Holy See		
Hungary		
Iceland		
Ireland		
Italy		
Kosovo		
Latvia		
Liechtenstein		
Lithuania		
Luxembourg		
Macedonia		
Malta		
Moldova		
Monaco		
Montenegro		
Netherlands		
Norway		
Poland		
Portugal		
Romania		
Russia		
San Marino		
Serbia		
Slovakia		
Slovenia		
Spain		
Sweden		
Switzerland		
Ukraine		
United Kingdom		
European countries, other		
Europe, Total (Read Only)		



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Geographic Area and Country	Basic Research Only	Total R&D
North America		
Anguilla		
Antigua and Barbuda		
Aruba		
Bahamas, The		
Barbados		
Belize		
Bermuda		
Canada		
Cayman Islands		
Costa Rica		
Cuba		
Curaçao		
Dominica		
Dominican Republic		
El Salvador		
Greenland		
Grenada		
Guadeloupe		
Guatemala		
Haiti		
Honduras		
Jamaica		
Martinique		
Mexico		
Montserrat		
Nicaragua		
Panama		
Saint Kitts and Nevis		
Saint Lucia		
Saint Pierre and Miquelon		
Saint Vincent and the Grenadines		
Sint Maarten		
Trinidad and Tobago		
Turks and Caicos Islands		



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Geographic Area and Country	Basic Research Only	Total R&D
Virgin Islands, British		
North American countries, other		
North America, Total (Read Only)		
Oceania		
Australia		
Cook Islands		
Fiji		
French Polynesia		
Kiribati		
Marshall Islands		
Micronesia, Federated States of		
Nauru		
New Caledonia		
New Zealand		
Niue		
Palau		
Papua New Guinea		
Samoa		
Solomon Islands		
Tokelau		
Tonga		
Tuvalu		
Vanuatu		
Oceanic countries, other		
Oceania, Total (Read Only)		
South America		
Argentina		
Bolivia		
Brazil		
Chile		
Colombia		
Ecuador		
Falkland Islands (Islas Malvinas)		



Table 10 - Obligations to Foreign Performers by Country for Basic Research and Total R&D: FY 2018

Geographic Area and Country	Basic Research Only	Total R&D
French Guiana		
Guyana		
Paraguay		
Peru		
Suriname		
Uruguay		
Venezuela		
South American countries, other		
South America, Total (Read Only)		
Other		
International Organizations		
Total		
TOTAL, all foreign performers ^{1,2} (Read Only)		

Please use the space below to add explanations for data reported in this table.

Footnotes:

- 1 The TOTAL, all foreign performers amount for Basic Research Only (column 1) should equal the amount reported for Basic Research in the "Foreign" category of Table 6.
- 2 The TOTAL, all foreign performers amount for Total R&D (column 2) should equal the Total R&D amount in the "Foreign" category of Table 6.



Table 11 - Obligations for R&D Plant by Performer: FYs 2018 and 2019

Agency Code:

Agency Name:

NOTE: Please DO NOT report for FY 2020.

Please report actual dollar amounts.

Performer	FY 2018	FY 2019	FY 2020
Federal Intramural			
Businesses Excluding FFRDCs			
FFRDCs Administered by Industrial Firms			
Universities and Colleges Excluding FFRDCs			
FFRDCs Administered by Universities and Colleges			
Nonprofit Institutions Excluding FFRDCs			
FFRDCs Administered by Nonprofit Institutions			
State and Local Governments			
Total All Domestic Performers (Read Only)			
Foreign			
TOTAL All Performers ¹ (Read Only)			

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

Footnotes:	
1	The TOTAL All Performers amounts should equal the Total R&D Plant amounts in Table 2 for the corresponding years.



Table 11A - Comparison of R&D Plant Obligations to Universities and Colleges Excluding FFRDCs with Federal S&E Support Survey R&D Plant Obligations to Universities and Colleges: FY 2018

Agency Code:

Agency Name:

This is the 1st of 2 narratives for Table 11.

Please report actual dollar amounts.

R&D Plant	FY 2018
Amount reported in Table 11 for Universities and Colleges Excluding FFRDCs (Read Only)	
Amount reported for R&D Plant to Universities and Colleges (total for all Institutions) in the Federal S&E Support Survey	
DIFFERENCE (Read Only)	

Key: FFRDCs = Federally funded research and development centers.

Your agency's total for NSF's Federal Funds and Federal S&E Support Survey can differ if you transfer R&D plant funding to other federal agencies or receive R&D plant funding from other agencies.

	Federal Funds Survey	Federal S&E Support Survey
Focus of the survey questions	R&D plant obligations funded by your agency	Obligations for R&D performing institutions (Note: Only the federal agency directly providing R&D plant funding knows which institutions are performing the R&D)
How amounts are treated for R&D plant funds transferred to other federal agencies	Included	Excluded
How amounts are treated for R&D plant funds transferred from other federal agencies	Excluded	Included

Please enter an explanation of any R&D Plant Obligations differences between the two reports.



Table 11B - Comparison of R&D Plant Obligations to Nonprofit Institutions Excluding FFRDCs with Federal S&E Support Survey R&D Plant Obligations to Nonprofit Institutions: FY 2018

Agency Code:

Agency Name:

This is the 2nd of 2 narratives for Table 11.

Please report actual dollar amounts.

R&D Plant	FY 2018
Amount reported in Table 11 for Nonprofit Institutions Excluding FFRDCs (Read Only)	
Amount reported for R&D Plant to Nonprofit Institutions (total for all Institutions) in the Federal S&E Support Survey	
DIFFERENCE (Read Only)	

Key: FFRDCs = Federally funded research and development centers.

Your agency's total for NSF's Federal Funds and Federal S&E Support Survey can differ if you transfer R&D plant funding to other federal agencies or receive R&D plant funding from other agencies.

	Federal Funds Survey	Federal S&E Support Survey
Focus of the survey questions	R&D plant obligations funded by your agency	Obligations for R&D performing institutions (Note: Only the federal agency directly providing R&D plant funding knows which institutions are performing the R&D)
How amounts are treated for R&D plant funds transferred to other federal agencies	Included	Excluded
How amounts are treated for R&D plant funds transferred from other federal agencies	Excluded	Included

Please enter an explanation of any R&D Plant Obligations differences between the two reports.



Table 12 - R&D Obligations by State and Performer: FY 2018

Agency Code:

Agency Name:

Please report actual dollar amounts.

State	Federal Intra-mural ¹	Businesses Excluding FFRDCs ²	FFRDCs Administered by Industrial Firms ³	Universities and Colleges Excluding FFRDCs ⁴	FFRDCs Administered by Universities and Colleges ⁵	Nonprofit Institutions Excluding FFRDCs ⁶	FFRDCs Administered by Nonprofit Institutions ⁷	State and Local Governments ⁸
Alabama								
Alaska								
Arizona								
Arkansas								
California								
Colorado								
Connecticut								
Delaware								
District of Columbia								
Florida								
Georgia								
Hawaii								
Idaho								
Illinois								
Indiana								
Iowa								
Kansas								
Kentucky								
Louisiana								
Maine								
Maryland								
Massachusetts								
Michigan								
Minnesota								
Mississippi								
Missouri								
Montana								
Nebraska								
Nevada								



Table 12 - R&D Obligations by State and Performer: FY 2018

State	Federal Intra-mural ¹	Busi-nesses Excluding FFRDCs ²	FFRDCs Admin-istered by Industrial Firms ³	Univer-sities and Colleges Excluding FFRDCs ⁴	FFRDCs Admin-istered by Univer-sities and Colleges ⁵	Nonprofit Institu-tions Excluding FFRDCs ⁶	FFRDCs Admin-istered by Nonprofit Institu-tions ⁷	State and Local Govern-ments ⁸
New Hampshire								
New Jersey								
New Mexico								
New York								
North Carolina								
North Dakota								
Ohio								
Oklahoma								
Oregon								
Pennsylvania								
Rhode Island								
South Carolina								
South Dakota								
Tennessee								
Texas								
Utah								
Vermont								
Virginia								
Washington								
West Virginia								
Wisconsin								
Wyoming								
Offices abroad								
Puerto Rico								
Other areas								
TOTAL								

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

"Other areas" includes U.S. territories other than Puerto Rico.

"Offices abroad" includes R&D performed or administered in foreign countries by the U.S. government.



Footnotes:

- 1 The Federal Intramural column total should equal the Total R&D amount for Federal Intramural in Table 6.
- 2 The Businesses Excluding FFRDCs column total should equal the Total R&D amount for Businesses Excluding FFRDCs in Table 6.
- 3 The FFRDCs Administered by Industrial Firm column total should equal the Total R&D amount for FFRDCs Administered by Industrial Firms in Table 6.
- 4 The Universities and Colleges Excluding FFRDCs column total should equal the Total R&D amount for Universities and Colleges Excluding FFRDCs in Table 6.
- 5 The FFRDCs Administered by Universities and Colleges column total should equal the Total R&D amount for FFRDCs Administered by Universities and Colleges in Table 6.
- 6 The Nonprofit Institutions Excluding FFRDCs column total should equal the Total R&D amount for Nonprofit Institutions Excluding FFRDCs in Table 6.
- 7 The FFRDCs Administered by Nonprofit Institutions column total should equal the Total R&D amount for FFRDCs Administered by Nonprofit Institutions in Table 6.
- 8 The State and Local Governments column total should equal the Total R&D amount for State and Local Governments in Table 6.



Table 13 - R&D Plant Obligations by State and Performer: FY 2018

Agency Code:

Agency Name:

Please report actual dollar amounts.

State	Federal Intra-mural ¹	Busi-nesses Excluding FFRDCs ²	FFRDCs Admin-istered by Industrial Firms ³	Univer-sities and Colleges Excluding FFRDCs ⁴	FFRDCs Admin-istered by Univer-sities and Colleges ⁵	Nonprofit Institu-tions Excluding FFRDCs ⁶	FFRDCs Admin-istered by Nonprofit Institu-tions ⁷	State and Local Govern-ments ⁸
Alabama								
Alaska								
Arizona								
Arkansas								
California								
Colorado								
Connecticut								
Delaware								
District of Columbia								
Florida								
Georgia								
Hawaii								
Idaho								
Illinois								
Indiana								
Iowa								
Kansas								
Kentucky								
Louisiana								
Maine								
Maryland								
Massachusetts								
Michigan								
Minnesota								
Mississippi								
Missouri								
Montana								
Nebraska								
Nevada								



Table 13 - R&D Plant Obligations by State and Performer: FY 2018

State	Federal Intra-mural ¹	Busi-nesses Excluding FFRDCs ²	FFRDCs Admin-istered by Industrial Firms ³	Univer-sities and Colleges Excluding FFRDCs ⁴	FFRDCs Admin-istered by Univer-sities and Colleges ⁵	Nonprofit Institu-tions Excluding FFRDCs ⁶	FFRDCs Admin-istered by Nonprofit Institu-tions ⁷	State and Local Govern-ments ⁸
New Hampshire								
New Jersey								
New Mexico								
New York								
North Carolina								
North Dakota								
Ohio								
Oklahoma								
Oregon								
Pennsylvania								
Rhode Island								
South Carolina								
South Dakota								
Tennessee								
Texas								
Utah								
Vermont								
Virginia								
Washington								
West Virginia								
Wisconsin								
Wyoming								
Offices abroad								
Puerto Rico								
Other areas								
TOTAL (Read Only)								

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

"Other areas" includes U.S. territories other than Puerto Rico.

"Offices abroad" includes R&D performed or administered in foreign countries by the U.S. government.



Footnotes:

- 1 The Federal Intramural column total should equal the amount reported for Federal Intramural for FY 2018 in Table 11.
- 2 The Businesses Excluding FFRDCs column total should equal the amount reported for Businesses Excluding FFRDCs for FY 2018 in Table 11.
- 3 The FFRDCs Administered by Industrial Firms column total should equal the amount reported for FFRDCs Administered by Industrial Firms for FY 2018 in Table 11.
- 4 The Universities and Colleges Excluding FFRDCs column total should equal the amount reported for Universities and Colleges Excluding FFRDCs for FY 2018 in Table 11.
- 5 The FFRDCs Administered by Universities and Colleges column total should equal the amount reported for FFRDCs Administered by Universities and Colleges for FY 2018 in Table 11.
- 6 The Nonprofit Institutions Excluding FFRDCs column total should equal the amount reported for Nonprofit Institutions Excluding FFRDCs for FY 2018 in Table 11.
- 7 The FFRDCs Administered by Nonprofit Institutions column total should equal the amount reported for FFRDCs Administered by Nonprofit Institutions for FY 2018 in Table 11.
- 8 The State and Local Governments column total should equal the amount reported for State and Local Governments for FY 2018 in Table 11.



Table 14 - Obligations for Basic, Applied, and Total Research Performed at Universities and Colleges Excluding FFRDCs, by Detailed Field of Science and Engineering: FY 2018

Agency Code:

Agency Name:

Please report actual dollar amounts.

	Basic Research	Applied Research	Total Research ¹ (Read Only)
Field of Science and Engineering	FY 2018	FY 2018	FY 2018
Computer Sciences and Mathematics			
Computer Sciences			
Mathematics			
Other Computer Sciences and Mathematics			
Total Computer Sciences and Mathematics (Read Only)			
Engineering			
Aeronautical Engineering			
Astronautical Engineering			
Chemical Engineering			
Civil Engineering			
Electrical Engineering			
Mechanical Engineering			
Metallurgy and Materials Engineering			
Other Engineering			
Total Engineering (Read Only)			
Environmental Sciences			
Atmospheric Sciences			
Geological Sciences			
Oceanography			
Other Environmental Sciences			
Total Environmental Sciences (Read Only)			
Life Sciences			
Agricultural Sciences			
Biological Sciences (excluding Environmental Biology)			
Environmental Biology			
Medical Sciences			



Table 14 - Obligations for Basic, Applied, and Total Research Performed at Universities and Colleges Excluding FFRDCs, by Detailed Field of Science and Engineering: FY 2018

Field of Science and Engineering	Basic Research	Applied Research	Total Research ¹ (Read Only)
	FY 2018	FY 2018	FY 2018
Other Life Sciences			
Total Life Sciences (Read Only)			
Physical Sciences			
Astronomy			
Chemistry			
Physics			
Other Physical Sciences			
Total Physical Sciences (Read Only)			
Psychology			
Biological Aspects			
Social Aspects			
Other Psychological Sciences			
Total Psychology (Read Only)			
Social Sciences			
Anthropology			
Economics			
Political Science			
Sociology			
Other Social Sciences			
Total Social Sciences (Read Only)			
Other Sciences not elsewhere classified			
TOTAL All Fields ² (Read Only)			

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.



Footnotes:

- 1 Basic Research + Applied Research = Total Research.
- 2 The TOTAL All Fields amounts for Basic Research and Applied Research should equal the amounts reported for Basic Research and Applied Research in Universities and Colleges Excluding FFRDCs in Table 6.



Table 15 - Obligations for Basic, Applied, and Total Research Performed at Universities and Colleges Excluding FFRDCs, by Broad Field of Science and Engineering: FY 2019

Agency Code:

Agency Name:

Please report actual dollar amounts.

Field of Science and Engineering	Basic Research	Applied Research	Total Research ¹ (Read Only)
	FY 2019	FY 2019	FY 2019
Computer Sciences and Mathematics			
Engineering			
Environmental Sciences			
Life Sciences			
Physical Sciences			
Psychology			
Social Sciences			
Other Sciences not elsewhere classified			
TOTAL All Fields ² (Read Only)			

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

<p>Footnotes:</p> <p>1 Basic Research + Applied Research = Total Research.</p> <p>2 The TOTAL All Fields amounts for Basic Research and Applied Research should equal the amounts reported for Basic Research and Applied Research in Universities and Colleges Excluding FFRDCs in Table 7.</p>
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Table 16 - Obligations for Basic, Applied, and Total Research Performed at Universities and Colleges Excluding FFRDCs, by Broad Field of Science and Engineering: FY 2020

Agency Code:

Agency Name:

NOTE: Please DO NOT report for FY 2019.

Field of Science and Engineering	Basic Research	Applied Research	Total Research ¹ (Read Only)
	FY 2020	FY 2020	FY 2020
Computer Sciences and Mathematics			
Engineering			
Environmental Sciences			
Life Sciences			
Physical Sciences			
Psychology			
Social Sciences			
Other Sciences not elsewhere classified			
TOTAL All Fields ² (Read Only)			

Please use the space below to add explanations for data reported in this table.

Key: FFRDCs = Federally funded research and development centers.

<p>Footnotes:</p> <p>1 Basic Research + Applied Research = Total Research.</p> <p>2 The TOTAL All Fields amounts for Basic Research and Applied Research should equal the amounts reported for Basic Research and Applied Research in Universities and Colleges Excluding FFRDCs in Table 8.</p>
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Final Question for All Respondents

Do the obligations reported on this survey include appropriated funds only?

Yes, includes appropriated funds only.

No, includes appropriated funds, reimbursable obligations, fees and charges, or other sources.