U.S. DEPARTMENT OF COMMERCE
U.S. CENSUS BUREAU

FORM
**SRD-1**

OMB No. 0607-0933 Approval Expires 07/31/2023

# FY 2022 SURVEY OF STATE GOVERNMENT RESEARCH AND DEVELOPMENT

**Due Date: February 10, 2023**

**Need help or have questions about filling out the form?**

**Call** toll-free 1-888-340-7525, between 8:00a.m. and 5:00p.m. Eastern time, Monday through Friday.

**Email** erd.sgrd@census.gov

or **Visit** https://www.census.gov/programs-surveys/sgrd/information.html

**The purpose** of this survey is to measure your state's contributions toward scientific and technological advances. The results of this survey will be used to estimate national totals for Research and Development (R&D) in conjunction with other data collected by the National Science Foundation from private industry, academic institutions, nonprofit organizations, and the federal government.

Title 13 United States Code (U.S.C.), Section 8(b) and Title 42 U.S.C., Sections 1861-76 (National Science Foundation Act of 1950, as amended), and the America COMPETES Reauthorization Act of 2010 authorize the U.S. Census Bureau to conduct this collection on behalf of the National Science Foundation. These data are subject to provisions of Title 13 U.S.C., Section 9(b), exempting data that are customarily provided in public records from rules of confidentiality.

**This collection has been approved** by the Office of Management and Budget (OMB). The eight-digit OMB approval number is 0607-0933 and appears at the upper right of this page. Without this approval, we could not conduct this survey.

**Thank you – Your response is important.** Accurate and timely statistical information could not be produced without your cooperation and goodwill. Thank you.

We estimate this survey will take an average of 2 hours to complete, including in the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Email comments regarding this burden estimate or any other aspect of this voluntary collection of information, including suggestions for reducing this burden, to erd.survey@cenus.gov; use "ERD Survey Comments 0607-0933" as the subject.

# What's New for FY 2022

We have modified two questions to collect additional detail:

- Other expenditures for R&D performed externally, in Question 9, was split into the following categories: non-profit organizations, other governments, and other performers not elsewhere classified.

- Question 13 was split to ask about internal vs external expenditures for R&D plant.

# Contact Information

1. **Please complete the contact information below.** (*required fields)

**Primary Respondent**

Contact Name:*

Title:

Agency Name:*

Address:

City:

State:*

Zip:

Telephone including Extension:

Email:*

**Additional Contact Information (if applicable)**

Contact Name:*

Title:

Agency Name:*

Address:

City:

State:*

Zip:

Telephone including Extension:

Email:*

# Reporting Period

2. **When did your agency's Fiscal Year 2021-22 end?**

**Enter Date**

**Note: For the rest of this survey, we will refer to this Fiscal Year as FY 2022.**

# R&D Activities

**Please read through the following definitions of Research and Development (R&D) and answer the Screener Question below.**

## What is (R&D)?

**Research and experimental development (R&D)** comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge.

- R&D is aimed 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?**

- Construction and acquisition of land and facilities used primarily for R&D (this is reported separately in Question 13)
- Fixed equipment used primarily for R&D (this is reported separately in Question 13)
- 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
- 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

# Examples of R&D

| What makes it R&D | When it is R&D | When it is NOT R&D |
|---|---|---|
| **R&D is novel.**<br>• Aimed at new findings<br>• It increases our knowledge of the subject.<br>• It has not been done before. | You are testing blood samples as part of a research project to find out the side effects of a new cancer treatment. | You are collecting information from samples of patients to estimate the incidence of chicken pox in the state's population. (You are using a standard approach to estimate the spread of chicken pox.) |
| **R&D is creative.**<br>• Improves on existing knowledge. | You are developing a new methodology to assess reading comprehension for students enrolled in special education curriculum. | You are collecting reading comprehension scores for trend analysis. |
| **The outcome of R&D is uncertain.**<br>• The solution is not obvious to an expert in that field. | Your research involves monitoring streams to determine whether a new program is increasing the population of a particular type of fish. | You are monitoring streams as part of plan to implement long-term monitoring for a particular type of fish. (The monitoring plan has already been tested and you are certain of the quality of the plan.) |
| **R&D is systematic.**<br>• Projects are planned.<br>• Records are kept regarding process and outcomes. | Research project has a plan, funding source, staff, and other resources available. | Agency staff are interested in solving a particular problem and pursues answers as time permits. |
| **R&D solutions and results could be useful to others.**<br>• Others might benefit from the findings.<br>• The findings can be generalized to other situations and locations. | You are testing a pavement on your highways that is currently used only at airports. Other states will want the results. | You are testing pavement on your state's highways to estimate how much you need to budget for pavement replacement over the next five years. (Other states will not benefit from your specific state information.) |

## Examples of classifying R&D from four activities

| Activity | It IS R&D | It is NOT R&D |
|---|---|---|
| Technical assistance | You hire a technical consultant to test the disease resistance for the new fish species you are developing. (The assistance addresses the uncertainty of the science/technology aspects of the product or service.) | You hire a technical consultant to help you develop the graphic design for the package to ship your new fish species when you begin offering it for sale to other states. (The assistance addresses the uncertainty of the marketing/production aspects of the product or service.) |
| Help for new businesses | You provide funding to new businesses to help them with the costs of building prototypes of products they are developing. | You provide funding for new technology companies to help them acquire basic skills to market their new products. |
| Consulting | You use a consultant to plan testing of a highway pavement material that your transportation research center is trying to develop. | You use a consultant to help you secure health and safety approval for your new pavement material. |
| Developing a product from your research | You hire a university research center to test a new type of grass you developed to test whether it will survive actual conditions along the coastline. | You hire a law firm to help you with the process for patenting the new grass that you developed. |

**Reporting unit**
The reporting unit is your department, agency, commission, public authority (herein referred to as agency) including all divisions and offices regardless of location that either perform or fund R&D.

**Estimates are acceptable**
Please report all items to the best of your ability.

## R&D Activities

**3. Did your agency do any of the following during FY 2022**

**a. Had a division, branch, or office devoted to research and development**

**Yes** ☐

**No** ☐

**b. Performed research and development activities using agency staff**

**Yes** ☐

**No** ☐

**c. Funded research and development at another state or local government**

**Yes** ☐

**No** ☐

**d. Funded universities or other nonprofit organizations to perform research and development activities**

**Yes** ☐

**No** ☐

**e. Funded companies or individuals to perform research and development activities**

**Yes** ☐

**No** ☐

**f. Performed or funded other research and development activities not specified above**

**Yes** ☐

**No** ☐

**If yes, please specify:**

**If you answered no to all parts above, SKIP to question 13**

# Expenditures for R&D Performed Internally (Internal R&D)

**4. During FY 2022, what were the total expenditures for internal R&D performance from federal funds, state funds, or other funds?**

**Include**

Type of Activities:

- R&D performed by your agency's employees
- Services performed by others in support of an agency R&D project (e.g., lab testing)
- Administration and management of internal R&D performed by your agency

Type of Costs:

- Salaries and Benefits
- Supplies and movable equipment for R&D
- Travel
- Indirect costs
- Purchased Services

**Exclude**

- R&D performed by higher education institutions, or businesses and individuals or non-profits and organizations, or other governments (report in Question 8)
- Construction and acquisitions of land or facilities used primarily for R&D (report in Question 13)
- Fixed equipment used primarily for R&D (report in Question 13)
- Administration and management of external R&D-related grants
- Funds provided to another agency within your state (the receiving agency should report these)

**a. Federal funds used for internal R&D**.....$ [ ]

For example:

- Grants
- Contracts
- Awards
- Appropriations from the United States Government

**b. State funds used for internal R&D**.....$ [ ]

For example:

- Appropriations from the state legislature
- Agricultural commodity assessments/"check-offs"
- Bond funds
- General funds
- Restricted funds
- Revenue funds
- State grants
- Tobacco settlement funds
- Lottery proceeds
- Funds received from other agencies within your state
- Revenue from charges, fees, or fines

**c. Other non-federal government funds used for internal R&D**.....$ [ ]

- Funding from other state governments
- Funding from state/regional partnership agreements
- Funding from local or tribal governments

**d. Funding from nonprofit organizations for internal R&D**.....$ [ ]

**e. Funding from businesses for internal R&D**.....$ [ ]

**f. Funding from higher education institutions for internal R&D**.....$ [ ]

**g. These are your total expenditures for internal R&D:** (sum of 4a through 4f).....$ [ 0 ]

# Expenditures for R&D Performed Internally by Type of R&D

**Examples of Basic, Applied and Experimental Development**

| Basic Research | Applied Research | Experimental Development |
|---|---|---|
| You are studying the properties of blood to determine what affects coagulation | You are conducting research on how a new chicken pox vaccine affects blood coagulation. | You are testing a newly developed chicken pox vaccine with various ages of school children before implementing it statewide. |
| You are studying the properties of molecules under various heat and cold conditions. | You are conducting research on the properties of particular substances under various heat and cold conditions with the objective of finding longer lasting components for pavement | You are testing a newly developed pavement under various types of heat and cold conditions prior to using it on your state's highways. |
| You are studying the heart chambers of various fish species. | You are examining various levels of a toxic substance to determine the maximum safe level for fish in a stream. | You are designing a new system for monitoring a stream that will try out the results of your recent research in a real-world situation. |
| You are studying the effects of various strategies for teaching math in order to understand which is the most effective. | You are studying the implementation of a specific math curriculum to determine what factors lead to successful implementation for teachers. | You are using research in the field to develop education software and support tools for math curriculum. |

5. **What amount of your $ 0 reported FY 2022 federal internal R&D expenditures and $ 0 reported FY 2022 non-federal internal R&D expenditures in Question 4 were for basic research, applied research, and experimental development from federal and non-federal funds?** (Please use your best estimate.)

| | Federal | Non-Federal |
|---|---|---|
| **a. Basic Research**..... | $ | $ |
| Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view. | | |
| **b. Applied Research**..... | $ | $ |
| Original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific, practical aim or objective. | | |
| **c. Experimental Development**..... | $ | $ |
| Systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes. | | |
| **d. Total** (sum of 5a through 5c)..... | $ 0 | $ 0 |

# Internal R&D Employees

**6. As of the last pay period of your agency's fiscal year on __, how many employees with the R&D functions listed below worked on the internal R&D activities reported in Question 4.g. (total R&D performed internally to your agency)?**

R&D employees include all staff who work on R&D, or who provide direct support to R&D, such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups. Exclude employees who provide only indirect support to R&D such as security guards.

**Estimates are acceptable.**

| | Number of employees |
|---|---|
| a. Researchers (For example, biologists, psychologists, research scientists and engineers, primary investigators, R&D managers)..... | |
| b. R&D technicians and equivalent staff (For example, wildlife technicians, lab technicians, field staff)..... | |
| c. R&D support staff assigned to the division, branch, or office devoted to R&D (For example, accountants, facilities management, grant specialists, clerical staff)... | |
| d. **Total R&D employees**. (sum of 6a through 6c)..... | **0** |

# Full-Time-Equivalent Internal R&D Personnel

**7. As of the last pay period of your agency's fiscal year on __, what was the number of full-time equivalents (FTEs) staff working on internal research and development activities?**

Full-Time-Equivalent (FTE) R&D personnel are calculated as the total working hours spent working on R&D during your state government's fiscal year divided by the number of hours representing a full-time schedule within the same period. The following examples of FTE calculations assume a 40 hour work week and a 52 week year. However, you should use the hours per week and weeks per year that typically represent a full-time employee at your agency.

- 2 researchers who each work on research full-time all year: 2 * (52/52 weeks) = 2.0 FTE.
- 2 support staff who each work on research half (50%) of their time all year: 2 * (50% * 52/52 weeks) = 1.0 FTE
- 1 researcher who works on research 25% of the time for 20 weeks and 50% of the time for 32 weeks: (25% * 20/52 weeks) + (50% * 32/52 weeks) = 0.4 FTE
- 10 full-time technicians who each work on research 30% of the time for 26 weeks: 10 * (30% * 26/52 weeks) = 1.5 FTE
- 5 part-time technicians who each work on research for 15 hours a week for 39 weeks: 5 * ((15/40 hours) * 39/52 weeks)) = 1.4 FTE

**Estimates are acceptable.**

| | Number of FTEs |
|---|---|
| a. Researchers (For example, biologists, psychologists, research scientists and engineers, primary investigators, R&D managers)..... | |
| b. R&D technicians and equivalent staff (For example, wildlife technicians, lab technicians, field staff)..... | |
| c. R&D support staff assigned to the division, branch, or office devoted to R&D (For example, accountants, facilities management, grant specialists, clerical staff)..... | |
| d. **Total R&D Full-Time-Equivalent** (sum of 7a through 7c)..... | **0.0** |

# Expenditures for R&D Performed Externally (External R&D)

**8. During FY 2022, what were the total expenditures for external R&D performance from federal funds, state funds, or other funds?**

**Include**

R&D funded by your agency and performed by,

- Higher-education institutions
- Agricultural experiment stations
- Businesses and individuals
- Non-profit organizations
- Other state or local governments
- Matching grants to others for R&D-related programs and projects

**Exclude**

- Construction and acquisitions of land or facilities used primarily for R&D (report in Question 13)
- Fixed equipment used primarily for R&D (report in Question 13)
- Funds to other agencies within your state (these should be reported by the receiving agency)
- Pass-through funding for which you have no administrative oversight or control
- Administrative and management costs for all R&D-related activities
- R&D Tax Credit issued by your agency

**a. Federal funds used for external R&D**.....$ [ ]

For example:

- Grants
- Contracts
- Awards
- Appropriations from the United States Government

**b. State funds used for external R&D**.....$ [ ]

For example:

- Appropriations from the state legislature
- Agricultural commodity assessments/"check-offs"
- Bond funds
- General funds
- Restricted funds
- Revenue funds
- State grants
- Tobacco settlement funds
- Lottery proceeds
- Funds received from other agencies within your state
- Revenue from charges, fees, or fines

**c. Other sources used for external R&D**.....$ [ ]

For example:

- Funding from other state governments
- Funding from state/regional partnership agreements
- Funding from local or tribal governments
- Funding from nonprofit organizations
- Funding from business

Please specify:

[ ]

**d. These are your total expenditures for external R&D:**

(sum of 8a through 8c).....$ [0]

## Expenditures for R&D Performed Externally by Type of Entity

9. **Of the $ 0 reported external R&D performance for FY 2022 reported expenditures in Question 8, how much was to:**

   a. **Higher education institutions?**.....$

   b. **Businesses or individuals?**..... $

   c. **Non-profit organizations?**..... $

   d. **Other governments**..... $

   For example:

   - Federal government agencies
   - Federally Funded Research and Development Centers (FFRDCs)
   - Other state governments
   - Local governments

   e. **Other performers not elsewhere classified?**.... $

   **Please specify:**

   f. **Total** (sum of 9a through 9f) ..... $ 0

# Total R&D Expenditures

**10. The following matrix shows the answers reported in Question 4 and Question 8. These are your total R&D-related expenditures. To revise them, please return to the appropriate question and enter new data. The remaining questions will ask for information about these amounts.**

**FY 2022**

| | | Internal | | External | | Total by Source |
|---|---|---|---|---|---|---|
| Federal | $ | | $ | | $ | **0** |
| State | $ | | $ | | $ | **0** |
| Other | $ | **0** | $ | | $ | **0** |
| TOTAL | $ | **0** | $ | **0** | $ | **0** |

| | | | | Internal | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Non-Federal Government | | Nonprofit Organizations | | Businesses | | Higher Education Institutions |
| Internal Other | $ | **0** | = | | + | | + | | + | |

# Total R&D Expenditures by Function

**11. Of the $ 0 reported for FY 2022 reported expenditures, how much was for:**

**a. Agriculture**..... $
For example:
- Animal husbandry
- Aquaculture
- Crop management
- Food and commodities

**b. Energy**.....$
For example:
- Alternative fuels (e.g., ethanol, biofuels)
- Energy conservation/efficiency
- Oil and gas
- Other fossil fuels (e.g., coal, clean-coal, lignite)
- Renewable energy (e.g., wind, solar)

**c. Environment and Natural Resources** .....$
For example:
- Air and water quality
- Fish, game, and wildlife
- Forestry
- Geological studies
- Marine and aquatic environments
- Parks and preserves
- Soil and water conservation

**d. Health**.....$
For example:
- Biomedical research
- Mental health and addiction
- Pharmaceuticals
- Public Health

**e. Transportation**.....$
For example:
- Aviation
- Highways, roads, and bridges
- Ports and waterways
- Public transportation
- Rail and freight

**f. Other functions**..... $
For example:
- Corrections and criminal justice
- Education
- Labor
- Public Safety
- Social Services

Please specify:

**g. Total** (sum of 11a through 11f).....$ 0

# Funds Received from Federal Agencies for R&D

**12. Of the $ 0 reported for FY 2022 reported expenditures from federal funds, what amount came from the following agencies? Please add any agencies not already listed. If none, please report $0.**

**Federal Agency**

Department of Agriculture.....$

Department of Commerce.....$

Department of Defense.....$

Department of Education.....$

Department of Energy.....$

Department of Health and Human Services.....$

Department of Homeland Security.....$

Department of Housing and Urban Development.....$

Department of the Interior.....$

Department of Justice.....$

Department of Labor.....$

Department of Transportation.....$

Department of the Treasury.....$

Department of Veterans Affairs.....$

Environmental Protection Agency.....$

National Aeronautics and Space Administration.....$

National Science Foundation.....$

Other, please specify: (Dept of State would be reported here).....$

please specify: .....$

Total (sum of all above).....$ 0

# R&D Expenditures for Land and Facilities

**13. During FY 2022, what were your agency's expenditures for construction and acquisition of land and facilities (including fixed equipment) used primarily for R&D?**

This question asks about R&D land and facilities (including fixed equipment, such as shake tables or wind tunnels) used primarily for R&D. It includes the acquisition of, construction of, and major repairs or alterations to structures, works, equipment, facilities, or land for use in R&D activities. Construction and acquisition of land and facilities used primarily for R&D includes major costs for construction and purchase of buildings to be primarily used as R&D facilities.

**Exclude:**
- Expendable or movable equipment (e.g., spectrometers, microscopes).
- Office furniture and equipment.
- Costs of pre-design studies (e.g., those undertaken before commitment to a specific facility).

**NOTE:** The expenditures reported on this question are separate from the R&D expenditures asked throughout the rest of the survey and should not be included in the expenditures on any other question in the survey.

**a.** Expenditures for construction and acquisition of land and facilities used for your agency's own internal R&D.....$ [ ]

**b.** Expenditures for construction and acquisition of land and facilities used for external performers (e.g., business, higher education, nonprofit organizations) of R&D.....$ [ ]

**c.** **Total** (sum of 13a through 13b).....$ [ **0** ]

**14. Approximately how long did it take to complete this survey?**

**Note: Time should be in minutes**

## Remarks

**15. Please use the space below for any explanations that may be essential in understanding your reported data.**