FY 2010 and FY 2011
Survey of State Government R&D

Reference Copy Only

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http://harvester.census.gov/nsf

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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 R&D in conjunction with other data collected by the National Science Foundation from private industry, academic institutions, and the federal government.

The Survey of State Government R&D is conducted by the National Science Foundation with the Department of Commerce, U.S. Census Bureau as the collection agent. Your participation is voluntary.

If you have any questions, please contact:
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Burden Statement Expires 04/30/2013

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid Office of Management and Budget (OMB) control number. The OMB Control number for this survey is displayed at the top right of the survey "Home" page.

The Time required to complete these responses is estimated to be approximately four hours for the state coordinator and one hour and 45 minutes for agency respondents.

The burden on state coordinators includes the initial identification of department and agency contacts, monitoring of department and agency responses, and final review and verification of state data.

The burden on agency respondents includes the initial collection of data and the entry of data into the Web application.

Send comments about this burden estimate or any other aspect of this collection of information, including suggestions for reducing burden to:

Paperwork Project 0607-0933
U.S. Census Bureau
4700 Silver Hill Road, Stop 1500
Washington, DC 20233-1500

You may e-mail comments to Paperwork@census.gov; use "Paperwork Project 0607-0933" as the subject.

R&D Screener Question

Did your department/agency do ANY of the following during FY 2010 or FY2011?
Your answer will determine whether you continue to Question 1.

FY 2010 is your state's fiscal year ending in 2010.
FY 2011 is your state's fiscal year ending in 2011.
For example, if you are on a July - June fiscal year, Fiscal Year 2010 would be your July 1, 2009 to June 30, 2010 fiscal period.

- Had a division, branch or office devoted to research or development
- Performed research or development activities using department/agency staff
- Funded research or development at another state or local government
- Funded universities or other nonprofit organizations to perform research or development activities
- Funded companies or individuals to perform research or development activities
- Performed or funded other research or development activities not specified above

[ ] Yes
[ ] No

If you select "No," your state survey coordinator will be notified that your department or agency does not have qualifying R&D activities for this survey.

You may provide comments for each question on the survey website.

R&D Expenditure Questions

Question 1

What were your department/agency R&D expenditures for FY 2010 and FY 2011 by the following types of performers?

- Include R&D from all sources, and report sources separately when your department/agency performs the R&D internally.
- When reporting R&D projects done by external performers, be sure to separately report the internal administrative expenditures associated with the maintenance of those projects.
- Do NOT report expenditures for construction and acquisition of facilities used primarily for R&D; use Question 5.

See Page 7 for definitions and examples.

Internal Performers

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

Examples of expenditures:

- Salaries
- Benefits
- Supplies
- Travel
- Equipment
- Indirect Costs
- Purchased Services

Expenditures by Internal Performers		Sources of Expenditures	Examples of Sources
FY 2010	FY 2011		
$	$	State Funds	State appropriations, state grants, tobacco settlement funds, lottery proceeds
$	$	Federal Funds	Federal awards
$	$	Other Funds	Funds from all other sources, such as nonprofit organizations, companies, or other state/local governments

External Performers

R&D done for your department/agency by:

- Academic institutions
- Companies and individuals
- Others

Examples of expenditures:

- Grants
- Payment for contracted R&D projects
- Reimbursable costs for R&D projects

Exclude pass-through grants for which you have no administrative oversight or control.

Expenditures by External Performers		
FY 2010	FY 2011	Source of Expenditures
Academic Institutions		
$	$	All funds (federal, state, and other)
Companies and Individuals		
$	$	All funds (federal, state, and other)
Other		
$	$	All funds (federal, state, and other)
$	$	**Total R&D Expenditures**

R&D Expenditure Questions

Question 2 (Subset of Question 1 Total)

How much of your total R&D expenditures reported in Question 1 were for basic research? You may provide an estimate, if necessary.

- **Basic research** is conducted primarily to acquire new knowledge. It can be basic research without a specific product or process in mind, or it can be basic research to produce a broad base of knowledge for future research. (The other two categories of R&D, applied and development, are not reported as separate categories on this survey. Applied research is conducted with a specific, practical objective.)

See Page 11 for examples that compare basic research, applied research, and development.

FY 2010	FY 2011	
$	$	**Basic research expenditures** (if none, enter "0")

*Note: FY 2010 answer should be **less than or equal** to the Total R&D expenditures reported in Question 1.*
*FY 2011 answer should be **less than or equal** to the Total R&D expenditures reported in Question 1.*
(See the totals you reported for Question 1).

You may provide comments for each question on the survey website.

R&D Expenditure Questions

Question 3 (Subset of Question 1 Total)

How much of your total R&D expenditures reported in Question 1 were from federal funds? You may provide an estimate, if necessary.

- Include expenditures for both internal and external performers.
- Federal sources include grants, contracts, and appropriations from the United States government.
- **Exclude** any nonfederal matching amounts.

FY 2010	FY 2011	
$	$	**R&D expenditures from federal funds** (if none, enter "0")

*Note: FY 2010 answer should be **less than or equal** to the Total Internal Performers Federal Funds plus External Performers you reported for Question 1.*
*FY 2011 answer should be **less than or equal** to the Total Internal Performers Federal Funds plus External Performers you reported for Question 1.*
(See the totals you reported for Question 1).

You may provide comments for each question on the survey website.

R&D Expenditure Questions

Question 4 (breakout of Question 1 Total)

How much of your total R&D expenditures reported in Question 1 were for each type of R&D below?

Expenditures FY 2010	Expenditures FY 2011	Type of R&D	Examples
$	$	Agriculture	Animal health Aquaculture Crop management Food and commodities Forestry
$	$	Energy	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)
$	$	Environment and natural resources	Air and water quality Fish, game, and wildlife Geological survey Marine and aquatic environments Parks and preserves Soil and water conservation
$	$	Health	Biomedical research Mental health and addiction Public health
$	$	Transportation	Aviation Highways, roads, and bridges Ports and waterways Public transportation Rail and freight
$	$	Other	R&D in other areas, such as: Corrections Criminal justice Education Forensic science Labor Public safety Social services
$	$	**Total R&D Expenditures**	

*Note: FY 2010 answer should be **less than or equal** to the Total R&D expenditures reported in Question 1. FY 2011 answer should be **less than or equal** to the Total R&D expenditures reported in Question 1. (See the totals you reported for Question 1).*

R&D Expenditure Questions

Question 5 (not included in Question 1 Total)

What were your department/agency R&D expenditures for FY 2010 and FY 2011 for construction and acquisition of facilities used primarily for R&D?

Please include:

- Construction projects
- Major renovations of buildings
- Purchasing land or buildings

See Page 7 for R&D definitions and examples.

FY 2010	FY 2011	
$	$	**Expenditures for construction and acquisition of facilities primarily for R&D** (if none, enter "0")

*Note: The amount you report here **should not be reported in the total in Question 1,** nor in the rest of the questions on this survey. If you have included expenditures for construction and acquisition of facilities used primarily for R&D in any other questions on the survey, please go back and change your answers by removing these expenditures in the other questions.*

You may provide comments for each question on the survey website.

Definitions & Examples

A. What does R&D mean?

B. What should be included/excluded in R&D?

C. What makes it R&D?

D. What are sources of R&D funding (Question 1)?

E. What does R&D performer mean (Question 1)?

F. What expenditures should be included/excluded?

G. What is the definition of Fiscal Year?

H. What is the definition of basic research (Question 2)?

I. What is the definition of “construction and acquisition of facilities" (Question 5)?

A. What does R&D mean?

Research and development (R&D) is creative work conducted systematically to:

1) extend scientific knowledge, or
2) devise new or improved applications.
Applications can include materials, products, devices, processes, systems, or services.

B. What should be included/excluded in R&D?

R&D includes, but is not limited to, activities that produce:	**R&D does NOT include:**
• Ideas that might be patented • New or improved products or applications • Findings that could be published in academic journals	• Program planning and evaluation • Management studies • Strategic planning • Business development services for new companies • Market research or analysis • Economic / policy / feasibility studies • Routine data collection / dissemination • Information systems • Routine monitoring / testing • General patient services • Marketing products of services • Commercialization (includes promoting/producing the products/services from R&D projects)

Examples of classifying R&D in four situations

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 design 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.

C. What makes it R&D?

What makes it R&D	When it is R&D	When it is NOT R&D
R&D is novel. • It increases our knowledge of the subject. • It hasn't 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 creates solutions useful to others. • Others might benefit from the findings. • 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.)
The outcome of R&D is uncertain. • The solution isn't 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.)

D. What are sources of R&D funding (Question 1)?

Sources	Examples
State	State appropriations and grants, tobacco settlement funds, state lottery proceeds
Federal	Grants, contracts, and appropriations from the United States government
All other	Grants and contracts from: • Companies • Nonprofit organizations, including foundations • Other state governments • City, county, regional, or other local governments

E. What does R&D performer mean (Question 1)?

Performers are the people who conduct the R&D.

Internal Performers	Those within your department/agency who perform R&D • R&D performed by your department's/agency's employees • Services performed by others in support of an internal R&D project (e.g., lab testing) • Administration/management of external R&D projects

External Performers	Those outside your department/agency who perform R&D under the administrative oversight or control of your department/agency. This may include projects for your department/agency, as well as your extramural research programs.
Academic institutions	Public or private universities and colleges
Companies and individuals	Companies or individuals under contract for research projects or that received grants for research projects
Others	Nonprofit organizations, including foundations Other departments/agencies within your state Other state governments City, county, regional, or other local governments Federal government

F. What expenditures should be included/excluded?

Expenditures are amounts paid for current operations (Questions 1 through 4) and capital outlays (Question 5).

Respondents to this survey will be asked to report expenditures by performer of R&D. Please refer below for guidance on the types of expenditures to report for internal and external performers.

Expenditures for your Department/Agency as Performer (Internal)

Include:	**Do NOT include:**
• Salaries, wages, and benefits • Supplies • Purchased services (e.g. lab testing) • Travel • Indirect or overhead costs for R&D activities • Equipment	• Agency and other fiduciary fund expenditures • Intra-agency transactions • Non-cash/In-kind payments

Expenditures for Academic Institutions, Companies or Individuals, or Others as Performers (External)

Include:	**Do NOT include:**
• Grants • Payments for contracted R&D projects • Reimbursable costs for R&D projects	• Pass-through grants over which you have no administrative oversight or control • Direct appropriations to state universities that are used for R&D activities over which you have no oversight or control. (That information is reported by universities on NSF's Survey of Higher Education Institutions.)

G. What is the definition of Fiscal Year?

Fiscal Year 2010 is your state's fiscal year ending in 2010.

Fiscal Year 2011 is your state's fiscal year ending in 2011.

For example, if you are on a July - June fiscal year, Fiscal Year 2010 would be your July 1, 2009 to June 30, 2010 fiscal period.

H. What is the definition of basic research (Question 2)?

It may be helpful to compare the three components of R&D — basic research, applied research and development. Report all three types of research for Questions 1, 3, 4 and 5. Report only basic research for Question 2.

Below are definitions and examples.

Basic research (Question 2) is conducted primarily to acquire new knowledge. It can be basic research without a specific product or process in mind, or it can be basic research to product a broad base of knowledge for future research.

Applied research is conducted with a specific practical objective.

Development is the systematic use of the knowledge or understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes.

Examples		
Basic research	Applied research	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.

I. What is the definition of "construction and acquisition of facilities" (Question 5)?

Construction and Acquisition of Facilities Used Primarily for R&D includes major costs for construction and purchase of buildings to be primarily used as R&D facilities. Include new construction, major renovations, and purchase of land or buildings.