



Survey of FY 2006 State R&D Expenditures



Survey Questions Definitions & Examples

The purpose of the State R&D Expenditures Survey is to measure your state's contributions toward scientific advancement and technological innovation. The survey is conducted in conjunction with ongoing collections of R&D data from private industry, academic institutions, and the Federal government.

This document is available electronically on the survey website at <http://harvester.census.gov/nsf>.

Results of this survey will be published by the National Science Foundation at www.nsf.gov/statistics.

R&D Screener Question

Did your department/agency do any of the following during FY 2006? Your answer will only determine whether you continue to the R&D Expenditure questions and will not be released publicly.

- Had a division, branch, or office devoted to research or development
- Conducted 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
- Conducted 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 the FY 2006 survey.

R&D Expenditure Questions

Question 1

What were your department/agency R&D expenditures for FY 2006 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.
- Do NOT report expenditures for construction and acquisition of facilities used primarily for R&D; use Question 4.

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)

Examples of expenditures:

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

Expenditures by Internal Performers	Source of Expenditures	Examples of Sources
\$ <input type="text"/>	State Funds	State appropriations, state grants, tobacco settlement funds, lottery proceeds
\$ <input type="text"/>	Federal Funds	Federal awards
\$ <input type="text"/>	Other Funds	Funds from all other sources, such as: nonprofit organizations, companies, other state/local governments

External Performers

- R&D done for your department/agency by:
- Academic institutions
 - Companies and individuals
 - Others

Examples of expenditures:

- Grants
- Payments 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	Source of Expenditures
Academic Institutions \$ <input type="text"/>	All Funds (federal, state, other)
Companies and Individuals \$ <input type="text"/>	All Funds (federal, state, other)
Others \$ <input type="text"/>	All Funds (federal, state, other)
\$ <input type="text"/>	Total R&D Expenditures (automatically calculated)

R&D Expenditure Questions

Question 2

How much of your total department/agency 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 without any specific product or process in mind. (The other two categories of R&D, applied and development, are not reported separately on this survey. Applied research is conducted with a specific practical objective.)

\$

Basic research expenditures (if none, enter "0")

R&D Expenditure Questions

Question 3

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

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

\$

R&D expenditures from federal funds (if none, enter "0")

R&D Expenditure Questions

Question 4

What were your department/agency FY 2006 expenditures for construction and acquisition of facilities used primarily for R&D?

Please include:

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

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

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?
 - E. What does R&D performer mean?
 - F. What expenditures should be included/excluded?
 - G. What are some other survey definitions that may be helpful?
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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?

<u>R&D includes, but is not limited to, activities that produce:</u>	<u>R&D does NOT include:</u>
<ul style="list-style-type: none">• Ideas that might be patented• Findings that could be published in academic journals• New or improved products or applications	<ul style="list-style-type: none">• Management information systems• Economic / policy / feasibility studies• Program planning and evaluation• Strategic planning• Market research or analysis• Routine data collection / dissemination• Routine monitoring / testing• Technology transfer• Technical assistance• Consulting services• Commercialization• General patient services

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. <ul style="list-style-type: none">• 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. <ul style="list-style-type: none">• 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. <ul style="list-style-type: none">• 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?

Sources of R&D funding include:

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: <ul style="list-style-type: none">• Companies• Nonprofit organizations• Other state governments• City, county, regional, or other local governments

E. What does R&D performer mean?

Internal Performers:

Within your department/agency	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)
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External Performers:

Academic institutions	R&D performed for your department/agency by public or private universities and colleges
Companies and individuals	R&D performed for your department/agency by companies or individuals under contract for research projects
Others	R&D performed for your department/agency by: <ul style="list-style-type: none">• Nonprofit organizations• 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 and capital outlays.

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:
<ul style="list-style-type: none">• Salaries, wages, and benefits• Supplies• Purchased services (e.g. lab testing)• Travel• Indirect or overhead costs for R&D activities• Equipment	<ul style="list-style-type: none">• Agency and other fiduciary fund expenditures• Intra-governmental transactions• Non-cash payments

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

Include:	Do NOT include:
<ul style="list-style-type: none">• Grants• Payments for contracted R&D projects• Reimbursable costs for R&D projects	<ul style="list-style-type: none">• Pass-through grants over which you have no administrative oversight or control

G. What are some other survey definitions that may be helpful?

Your State should include your state's departments, agencies, boards, and commissions.

Fiscal Year is your state's fiscal year ending in 2006.

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.

Basic Research

In order to understand the definition of basic research, it may be helpful to compare it to the other two components of R&D—applied research and development. Below are definitions and examples.

Basic research is conducted primarily to acquire new knowledge without any specific product or process in mind. (The other two categories of R&D, applied research and development, are not reported separately in this survey. Applied research is conducted with a specific practical objective.)

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.