

Department of Commerce
United States Census Bureau
OMB Information Collection Request
Survey of State Government Research and Development
OMB Control Number 0607-0933

A. Justification

1. Necessity of the Information Collection

The Census Bureau is requesting clearance to conduct the Survey of State Government Research and Development (SGRD) for the 2016-2018 survey years with the revisions outlined in this document. The Census Bureau conducts this survey on behalf of the National Science Foundation's (NSF) National Center for Science and Engineering Statistics (NCSES). The NSF Act of 1950 includes a statutory charge to "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 in the Federal Government." Under the aegis of this legislative mandate, NCSES and its predecessors have sponsored surveys of research and development (R&D) since 1953, including the SGRD since 2006. This survey has helped to expand the scope of R&D collections to include state governments, where previously there had been no regularly established collection efforts, and thus a gap in the national portfolio of R&D statistics.

NCSES sponsors surveys of R&D activities of Federal agencies, higher education institutions, and private industries. The results of these surveys provide a consistent information base for both federal and state government officials, industry professionals, and researchers to use in formulating public policy and planning in science and technology. These surveys allow for the analysis of current and historical trends of R&D in the U.S. and in international comparisons of R&D with other countries. The data collected from the SGRD fills a void that previously existed for collection of R&D activities. Although NCSES conducted periodic data collections of state government R&D in 1995, 1988 and 1987, more frequent collection was necessary to account for the changing dynamic of state governments' role in performing and funding R&D and their role as fiduciary intermediaries of federal funds for R&D. The survey is a census of state government departments, agencies, commissions, public authorities, and other dependent entities as defined by the Census Bureau's Census of Governments program, that performed or funded R&D activities in a given fiscal year.

The Census Bureau, serving as collection agent, employs a methodology similar to the one used to collect information from state and local governments on other established censuses and surveys. This methodology involves identifying a central coordinator in each state who will assist Census Bureau staff in identifying

appropriate state agencies to be surveyed. Since not all state agencies have the budget authority or operational capacity to perform or fund R&D, NCSES and Census Bureau staffs have identified those agencies most likely to perform or fund R&D based on state session laws, authorizing legislation, budget authority, previous R&D activities, and reports issued by state government agencies. The state coordinators, based on their knowledge of the state government's own activities and priorities, are asked to confirm which of the selected agencies identified should be sent the survey for a given fiscal year or to add additional agencies to the survey frame. These state coordinators also verify the final responses at the end of the data collection cycle and may assist with nonresponse follow-up with individual state agencies. The collection approach using a central state coordinator is used successfully at the Census Bureau in surveys of local school districts, as well as the annual surveys of state and local government finance.

As part of the President's FY 2014 Budget Request to Congress, the Office of Management and Budget (OMB) recommended NCSES receive an additional "\$500,000 to increase the frequency of the Survey of State Government Research and Development." Starting with the FY 2016 survey cycle, NCSES will collect data on an annual basis instead of a biennial format that was used for state government fiscal years 2010 and 2011, 2012 and 2013, and 2014 and 2015. This change from biennial to annual collection will increase the frequency and timeliness of survey results; thus increasing the utility of the statistics for data users, including the Bureau of Economic Analysis and the state governments themselves, while also allowing for the annual inclusion of these data in NCSES's own National Patterns of R&D report. Currently, NCSES must develop estimates for the non-Federal government component of the National Patterns data during the survey's off-year. Increasing the frequency by changing to an annual data collection cycle will allow for more accurate National Patterns of R&D. Results from the National Patterns are used by OMB during the budget formulation process, as well as by the Office of Science and Technology Policy (OSTP), and others interested in science and technology investments, and international competitiveness of R&D.

The 2016 survey will follow the same content that was collected during the FY 2014 and FY 2015 Survey of State Government R&D.

The survey announcements and forms used in the SGRD are:

Survey Announcement. The Governor's letter is mailed to the Governor's Office to announce the survey collection and to solicit assignment of a State Coordinator. The State Coordinator's Announcement is sent electronically at the beginning of each survey period to solicit assistance in identifying state agencies which may perform or fund R&D activities. Later, state coordinators are asked to review final data submitted by state agencies.

Form SRD-1. This form contains item descriptions and definitions of the research and development items collected by the Census Bureau on behalf of the NSF. It is used primarily as a worksheet and instruction guide by the state agencies. All state agencies supply their data by electronic means.

Final survey results produced by NCSES contain state and national estimates and are useful to a variety of data users interested in R&D performance, including: the National Science Board; the OMB; the Office of Science and Technology Policy (OSTP) and other science policy makers; institutional researchers; and private organizations; and many state governments.

This survey is conducted under the authority of Title 13, United States Code, Sections 8(b) and Title 42, United States Code, Sections 1861-76 (National Science Foundation Act of 1950, as amended).

2. Need and Uses

Legislators, policy officials, and researchers rely on statistics to make informed decisions about R&D investment at the Federal, state, and local level. These statistics are derived from the existing NCSES sponsored surveys of Federal agencies, higher education institutions, and private industry. The total picture of R&D expenditures, however, had been incomplete due to the lack of data from state governments prior to this implementation of the SGRD in 2006, which now fills that void.

State government officials and policy makers garner the most benefit from the results of this survey. Governors and legislatures need a reliable, comprehensive source of data to help in evaluating how best to attract the high-tech R&D industries to their state. Officials are able to evaluate their investment in R&D based on comparisons with other states. These comparisons include the sources of funding, the type of R&D being conducted, and the type of R&D performer.

State governments serve a unique role within the national portfolio of R&D. Not only are they both performers and funders of R&D like other sectors such as the Federal Government, higher education, or industry, but they also serve as fiduciary intermediaries between the Federal Government and other R&D performers while also providing state specific funds for R&D. The information collected from the SGRD provides data users with perspective on this complex flow of funds. Survey results are used at the Federal level to assess and direct investment in technology and economic issues. Congressional committees and the Congressional Research Service use results of the R&D surveys. The BEA uses these data to estimate the contribution of state agency-funded R&D to the overall impact of treating R&D as an investment in BEA's statistics of gross domestic product by state-area.

NSF also uses data from this survey in various publications produced about the state of R&D in the U.S. The *Science and Engineering Indicators*, for example, is a biennial report mandated by Congress and describes quantitatively the condition of the country's R&D efforts, and includes data from the SGRD. Survey results are also included in the *National Patterns of Research and Development* report's tabulations.

The availability of state R&D survey results are posted to NSF's web page allowing for public access from a variety of other data users as well. Media, university researchers, nonprofit organizations, and foreign government officials are also consumers of state R&D statistics. All users are able to utilize this information in an attempt to better understand the Nation's R&D resources.

Information quality is an integral part of the pre-dissemination review of the information disseminated by the Census Bureau (fully described in Census Bureau Information Quality Guidelines). Information quality is also integral to the information collections conducted by the Census Bureau and is incorporated into the clearance process required by the Paperwork Reduction Act.

3. Use of Information Technology

The Census Bureau notifies state coordinators and agency respondents by e-mail to introduce the survey (Attachments E & F). Many state coordinators will also e-mail individual agency respondents to alert them to the survey and to the importance of representing their state's R&D investments accurately. Respondents are instructed to submit data electronically through the Census Bureau's *Centurion* Internet application (Attachment B). Use of *Centurion* for survey responses reduces the time and expense to report through: 1) the use of skip patterns; 2) improved data quality through automated data checks; 3) the ability to exit the instrument and resume at a later time without losing the data already entered; and 4) the ability to save an electronic version (pdf) of the completed survey results for respondents' own records. Through debriefing consultations with respondents, survey staff determined the Internet-only option was preferred by state government officials.

State agency respondents will be provided a secure password and clear instructions for utilizing the Website and submitting data. Respondents enter data directly into the Web form and are not required to download any software. Upon completion of the Web form, respondents submit their data, which are then uploaded to Census Bureau secure servers. In some cases, respondents may contact Census Bureau or NCSES staff directly via telephone or e-mail to provide some response data. In these instances, data are entered into the system on behalf of the respondent by Census Bureau or NCSES staff, generating a pdf version of the completed survey, which is then sent back to the respondent by e-mail as

confirmation of their submission.

Respondents will also be able to use the Business Help Site (Attachment G) to access detailed information about the survey, a PDF version of the questionnaire with instructions, a graphical representation of R&D funding structures, as well as additional resources by linking to the NCSES survey specific web pages.

4. Efforts to Identify Duplication

The Census Bureau and NCSES maintain close liaison and share information with other government agencies that have an interest in R&D statistics to ensure duplication of data collection does not occur. Some of these agencies include, but are not limited to OMB, OSTP, and the BEA. Although some states produce reports or conduct small surveys targeted at specific activities or components of R&D, the SGRD is the only comprehensive source of R&D data on state governments collected on a nationwide scale using uniform definitions, concepts, and procedures.

5. Minimizing Burden

To minimize total burden for the survey, the project staff coordinates with central state contacts to pre-select departments and agencies that likely conduct R&D activities. This phase of the survey helps to eliminate burden from most state government entities that do not have R&D data to report.

Items on the form have been reviewed by state government experts through several iterations of cognitive and usability testing that took place between January and August 2015, and are consistent with common recordkeeping practices of respondents. Through the development of skip patterns, depending on how respondents report data on their source of funds, they may not have to answer a number of more detailed questions. For example, state agencies that do not have intramural R&D activities, but instead utilize extramural performers of R&D through grants and contracts, will not need to complete the question on Type of R&D (i.e., amounts for basic research, applied research, and experimental development).

6. Consequences of Less Frequent Collection

NCSES currently sponsors R&D surveys of federal government agencies, academic institutions, and private industry. Data from these organizations are collected on an annual basis and the results are vital to policy makers at all levels of government, to the business community, and to those in the science and technology research community. Less frequent collection of state government R&D data would result in inconsistent comparisons and compilations with these other surveys.

7. Special Circumstances

This information collection is conducted in a manner consistent with OMB guidelines and there are no special circumstances.

8. Consultations Outside the Agency

The published *Federal Register* of September 30, 2015, Volume 80, Number 189, Page. 58703-58704, contained a pre-submission notice inviting comments about the plans to submit this request.

We received one comment from an individual generally opposed to any data collection effort by the Federal government (Attachment H-1).

The BEA submitted a letter (Attachment H-2) dated November 24, 2015 that strongly supported this data collection. We thank the BEA for its continued support of this program.

Project staff conducted individual usability testing and debriefing interviews with state government budget officials, comptrollers, analysts, research coordinators, and national organizations in order to determine the scope of items on the survey and the methodology to collect the data. See Attachment I for a complete list of individual usability testing and debriefing interview consultations.

The content for the 2014 and 2015 survey collection had minor changes from the previous survey cycle. The changes instituted for the 2014 and 2015 survey collection were necessary to align data elements with that of similar NCSES surveys of R&D so that these data can be properly incorporated into national R&D totals (the National Patterns of Research and Development). The specific changes included:

- Source of funds for extramural performers of R&D (see Question 5). Previously, source of funds was only surveyed for intramural R&D. However, in order to better identify the flow of funds through states for R&D it was necessary to ask for source of funds on extramural performance as well. During cognitive testing respondents noted that they already have this information and it was of little to no additional burden to provide this data.
- Funds Received from Federal Agencies for R&D (see Question 8). In order to better identify the states' role in the flow of funds for R&D and to reconcile survey results on federal funds received for R&D with NCSSES's Survey of Federal Funds for Research and Development and OMB's own collection of R&D from federal agencies for R&D grants to state and local governments under entry code 1311-XX as described in Circular A-11, Schedule C, the SGRD is no longer asking agencies to provide their total R&D supported by Federal Funds, but has replaced this with a question asking agencies how much they received for R&D from a list of specific federal departments and independent agencies. This information will allow for reconciliation and greater consistency in R&D reporting across these three data calls and is consistent with OMB's efforts to develop a Federal-wide R&D reporting standard. During cognitive testing respondents noted that they already have this information readily available as part of their Single Audit reporting requirements and other federal reporting guidance and it was of little to no additional burden to provide these data. These data will also enhance the regional analysis for federal contributions of gross domestic product for the U.S. Bureau of Economic Analysis (BEA).
- Expenditures for R&D Performed Internally by Type of R&D (see Question 9). Previously respondents were asked to provide the amount of their total R&D that was classified as basic research. This question has been changed to ask respondents to provide information on how much of their own intramural R&D activities are classified as basic research, applied research, or experimental development. Agencies that do not conduct any intramural R&D would skip this question entirely. We anticipate this question would affect approximately half of all agencies surveyed. For example, during the FY 2012 and FY 2013 survey cycle, 189 of 365 agencies (51.8 percent of respondents) reported some intramural R&D. Those without any intramural R&D activities will no longer need to provide data. Respondents noted that in order to complete these questions, they would often need to ask the project managers to identify the correct categories which they had to do before; now only half of respondents will need to do so. This question is critical to the inclusion data in the National Patterns of R&D report, and will be consistent with all other NCSSES R&D data collections, and OMB's own R&D collection as described in Circular A-11 Schedule C (see entry codes 1411-xx, 1421-xx, and 1431-xx).

These changes in survey content have been reviewed by state government experts through several iterations of cognitive and usability testing that took place between January and August 2015, and are consistent with common recordkeeping practices of respondents. Early responses received from the FY 2014 and FY 2015 Survey of State Government R&D suggest that agency respondents are not having difficulties answering the new questions.

9. Paying Respondents

No payments or gifts are given to respondents of the survey.

10. Assurance of Confidentiality

The data collected in this survey are from public records and do not require confidentiality. Each participant in the survey is informed of this and that this is a voluntary survey through the initial Governors Letter (Attachment D); initial State Coordinator Email (Attachment E); and initial Agency Respondent email (Attachment F). Similar statements are included on the Survey Frame-Review Module (Attachment A), Centurion Collection Instrument (Attachment B), and the FY 2016 Survey of State Government R&D Reference Copy Questionnaire (Attachment C).

11. Justification for Sensitive Questions

There are no questions in the survey that are commonly considered sensitive.

12. Estimate of Hour Burden

The total annual burden estimate we are requesting for this collection is 1,056 hours.

For the 2016-2018 SGRD, 52 respondents will receive the Governor's Letter (Attachment D). This letter asks respondents to nominate a state coordinator. We estimate this process to take five minutes. Based on interviews with state officials, the estimated burden on each state coordinator is 1 hour. The state coordinators are asked to complete a Visual Basic MS Excel Spreadsheet (Attachment A) that includes the identification of department and agency contacts. The department and agency respondents are asked to complete a web form (Attachment B) which requires approximately two hours to complete.

RESPONDENT TYPE	NUMBER OF RESPONDENTS	BURDEN ESTIMATE	TOTAL BURDEN HRS.
Governor	52	5 Minutes	4
State Coordinator	52	1 Hour	52
Department/Agency	500	2 Hours	1,000
Total	604		1,056

13. Estimated Cost to Respondents

We do not expect respondents to incur any cost other than their time to respond. The information requested is of the type and scope normally carried in agency records and no special hardware or software is necessary to provide answers to this information collection. Therefore, respondents are not expected to incur any capital and startup costs, or systems maintenance costs in responding. Further, purchasing of outside information collection services, if performed by the respondent, is part of usual and customary business practices and not specifically required for this information collection.

14. Cost to the Federal Government

We expect the total annual cost to the Federal government to be approximately \$310,000 with the cost to be born by the National Science Foundation. This cost is expected to be relatively constant for 2016-2018.

15. Reason for Change in Burden

The predominant reason for increase in burden is the change from a biennial collection to an annual collection. As part of the President’s FY 2014 Budget Request to Congress, the Office of Management and Budget (OMB) recommended NCSES receive an additional “\$500,000 to increase the frequency of the Survey of State Government Research and Development.”

During cognitive interviews and usability testing, potential respondents were asked to provide an estimated time to complete the survey. State coordinators generally agreed that their time to identify agencies in their state that are likely to have R&D activity and to review final data submitted by those agencies should take them about an hour. Therefore, the burden estimate has been revised from 4 hours to 1 hour for state coordinators. State agency respondents noted that time to read the instructions, compile the data, and enter the information into Centurion

varied from 10 minutes to several hours with an average of approximately 2 hours. Therefore, the burden estimate has been revised from 1 hour and forty-five minutes to two hours for state agencies.

16. Project Schedule

The survey launch is carefully timed for November following the Fiscal Year close-out on June 30 to avoid conflicts with state government staffs' responsibilities for the next fiscal year initialization and preparations of the state's Comprehensive Annual Financial Reports (CAFRs) which usually takes place between July 1 and November 1. The Census Bureau will request data from states for fiscal year end 2016 starting in November 2016. In succeeding months, project staff will work with state coordinators to conduct non-response efforts with agencies that fail to respond to the initial request. Closeout of all data collection operations is scheduled for August 2017. Data will be reviewed by Census Bureau analysts for accuracy and completeness.

Census Bureau staff will produce and deliver final tabulations for NCSES in September 2017. Methodological documentation and technical notes will accompany the final tables.

This is an annual collection and future surveys will follow the same data submission, review, and final tabulation schedule.

17. Request to Not Display the Expiration Date

The expiration date of OMB approval is displayed in the upper right corner on the survey Website and in the Burden Statement section on the downloaded paper instrument.

18. Exceptions to the Certification

The collection of information for the survey complies with 5 CFR 1320.9 without exception.