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Report to Congressional Committees

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SMALL BUSINESS RESEARCH PROGRAMS

Agencies Have Improved Compliance with Spending and Reporting Requirements, but Challenges Remain

Accessible Version

GAO-16-492

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GAO Highlights

Highlights of GAO-16-492, a report to congressional committees

Why GAO Did This Study

Federal agencies have awarded contracts and grants totaling more than $40 billion through the SBIR and STTR programs to small businesses to develop and commercialize innovative technologies. The Small Business Act requires agencies with extramural R&D obligations that meet certain thresholds—$100 million for SBIR and $1 billion for STTR—to spend a percentage of these funds on the programs. The agencies are to report on their activities to SBA, and in turn, SBA is to report to Congress.

The 2011 reauthorization of the programs includes a provision for GAO to review compliance with spending and reporting requirements and other program aspects. This report examines, for fiscal year 2014, (1) the extent to which participating agencies complied with spending requirements, (2) the extent to which agencies and SBA complied with certain reporting requirements, (3) the potential effects of basing spending requirements on total R&D budget authority, and (4) what is known about the amounts spent to administer the programs. GAO reviewed agency spending data and reports and interviewed program officials from SBA and the 11 participating agencies.

What GAO Recommends

GAO recommends that SBA clarify guidance for when an agency is to start up an STTR program, restore guidance about dollar amounts of exclusions in the methodology report, and complete the required report to Congress for fiscal year 2014.

SBA generally agreed with GAO's findings and recommendations.

View GAO-16-492. For more information, contact John Neumann at (202) 512-3841 or neumannj@gao.gov.

What GAO Found

Agency data indicate that 9 of the 11 agencies participating in the Small Business Innovation Research (SBIR) program and 4 of the 5 agencies participating in the Small Business Technology Transfer (STTR) program complied with spending requirements in fiscal year 2014. One agency—the Department of Agriculture (USDA)—had extramural R&D obligations greater than $1 billion, but did not implement an STTR program, as required in the Small Business Act. This is, in part, because the Small Business Administration's (SBA) guidance does not address when an agency should establish a new STTR program. As a result, in fiscal year 2014, less money was available for awards to small businesses through this program.

Most participating agencies did not fully comply with certain reporting requirements. For example, while all participating agencies submitted the required methodology reports for fiscal year 2014, 6 of the 11 did not fully itemize the specific programs they excluded from their extramural R&D, did not fully explain the reasons why they excluded the programs, or both. Additionally, 2 agencies did not submit complete information on the dollar amounts of exclusions in fiscal year 2014 because of a change in SBA's fiscal year 2014 guidance. Restoring this guidance could provide information to help SBA assess the accuracy of agency methodology reports.

GAO's analysis shows that basing SBIR and STTR spending requirements on an agency's total R&D budget authority instead of its extramural R&D obligations could increase the amount each agency has to spend on the programs and increase the number of agencies required to participate in the programs. Some agency officials identified benefits of this potential change, such as more funding to make awards to small businesses, but some agencies identified drawbacks, such as limiting resources for other R&D programs.

Total administrative spending on the SBIR and STTR programs in fiscal year 2014 is unknown, but agencies participating in the administrative pilot program spent about $19 million on new activities. Agencies do not and are not required to track total administrative costs, and therefore total spending could not be calculated for fiscal year 2014. Seven agencies participated in the administrative pilot program and tracked the amounts of program funds they spent on new administrative and oversight activities in fiscal year 2014. While these 7 agencies spent more on the program in fiscal year 2014 than in the previous year, some of these agencies identified constraints that limited their participation. For example, agency officials pointed to guidance that requires agencies to only spend money on new initiatives and the limited length of the pilot. Agency officials told GAO these constraints kept them from achieving program goals by preventing them from undertaking some initiatives and hiring individuals for administrative purposes. SBA plans to include its required evaluation of the pilot program in its annual report to Congress, which could include an evaluation of such constraints and the steps needed to address them, but it has not yet submitted its fiscal year 2014 report to Congress. Until SBA submits its evaluation of the pilot program, SBA and Congress will not have needed information about the pilot for fiscal year 2014 or potential constraints for participants.

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Abbreviations

Commerce	Department of Commerce
DHS	Department of Homeland Security
DOD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
Education	Department of Education
EPA	Environmental Protection Agency
HHS	Department of Health and Human Services
NASA	National Aeronautics and Space Administration
NSF	National Science Foundation
R&D	research or research and development
SBA	Small Business Administration
SBIR	Small Business Innovation Research

STTR	Small Business Technology Transfer
USDA	U.S. Department of Agriculture
VA	Department of Veterans Affairs

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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Congressional Committees

Federal agencies support research or research and development (R&D) projects at small businesses through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. Federal agencies have awarded more than 150,000 contracts and grants, totaling more than $40 billion, through these programs since their inception in 1982 and 1992, respectively. These awards have supported development and commercialization of innovative technologies. For example, one company, Sanaria, received multiple SBIR awards totaling approximately $10.8 million to develop a vaccine aimed at preventing malaria infection and disease among individuals living in severely affected areas. Another company, HandHold Adaptive, received $950,000 in SBIR awards to develop applications that rapidly incorporate images from smartphone or tablet cameras and the Internet into individualized visual supports for students with autism spectrum disorders. The SBIR and STTR programs are similar in that participating agencies identify topics for R&D projects and support small businesses. For the SBIR program, a small business performs the work associated with the award, while the STTR program requires the small business to partner with a nonprofit research institution—such as a nonprofit college or university or federally funded research and development center—to perform the work.[1]

[1] Federally funded research and development centers are government-funded entities operated by nongovernmental organizations to meet long-term research or development needs that cannot be met as effectively by existing governmental or contractor resources. These entities typically assist government agencies with scientific research and analysis, systems development, and system acquisition.

Federal agencies with obligations of $100 million or more for extramural R&D are required to establish and administer an SBIR program,[2] and federal agencies with obligations of $1 billion or more for extramural R&D are also required to establish and administer an STTR program.[3] Currently, 11 agencies participate in the SBIR program, and 5 of these agencies also participate in the STTR program, as shown in table 1.

Table 1: Agencies Participating in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs

	Program	
Agency	**SBIR**	**STTR**
Department of Agriculture	Yes	No
Department of Commerce	Yes	No
Department of Defense	Yes	Yes
Department of Education	Yes	No
Department of Energy	Yes	Yes
Department of Health and Human Services	Yes	Yes
Department of Homeland Security	Yes	No
Department of Transportation	Yes	No
Environmental Protection Agency	Yes	No
National Aeronautics and Space Administration	Yes	Yes
National Science Foundation	Yes	Yes

Source: SBA. | GAO-16-492

[2]The Small Business Act requires a minimum percentage of an agency's extramural R&D "budget" to be spent on the programs annually, but it defines the extramural R&D budget in terms of obligations. More specifically, the act defines an agency's extramural R&D budget as the sum of an agency's total R&D obligations minus amounts obligated for research conducted by employees of the agency in or through government-owned and government-operated facilities. In 2014, the Small Business Administration (SBA), which oversees the program, changed the terminology it uses from "extramural R&D budget" to "extramural R&D obligations" to clarify how agencies are required to calculate their spending requirements for the programs. In this report, we generally use the term extramural R&D obligations to be consistent with SBA's terminology. Additionally, in this report, we refer to the amounts resulting from applying the mandated percentages to extramural R&D obligations as "spending requirements."

[3]Agencies' R&D programs generally include funding for two types of R&D: intramural and extramural. Intramural R&D is conducted by employees of a federal agency in or through government-owned, government-operated facilities. Extramural R&D is generally conducted by nonfederal employees outside of federal facilities.

The Small Business Act, which authorizes the programs, establishes the minimum percentage of an agency's extramural R&D obligations that must be spent on the programs annually. In fiscal year 2014, agencies participating in the SBIR program were required to spend at least 2.8 percent of their extramural R&D obligations on the program and agencies participating in the STTR program were required to spend at least 0.40 percent of their extramural R&D obligations on the program.[4] The SBIR and STTR policy directives, which provide direction to the participating agencies for the general operation of the programs, require participating agencies to submit data to the Small Business Administration (SBA) each year on the amount of their extramural R&D obligations and the amount obligated for awards, among other information.[5] The Small Business Act also establishes certain reporting requirements for participating agencies and SBA. Among other things, agencies must, within 4 months of the enactment of their annual appropriations, report to SBA on their methodologies for calculating their extramural R&D obligations. Furthermore, SBA must annually report to Congress on the participating agencies' SBIR and STTR programs.

The 2011 reauthorization of the programs directed SBA to allow agencies to participate in a pilot program that permits the funding of administrative, oversight, and contract processing costs in fiscal years 2013 through 2015.[6] In November 2015, the National Defense Authorization Act for Fiscal Year 2016 extended the program through September 30, 2017.[7] This administrative pilot program, as outlined in the reauthorization and policy directives, allows agencies to use not more than 3 percent of the funding allocated to the SBIR program for new activities, including program administration; outreach; commercialization; standardization and

[4]We used agencies' data on total program obligations to represent spending for the programs, in part because obligations data were readily available from each of the agencies for program purposes, and because obligations provided a reasonable measure of the spending for the programs in each year.

[5]SBA's Office of Investment and Innovation is responsible for overseeing and coordinating the participating agencies' efforts for the SBIR and STTR programs by setting overarching policy and issuing policy directives, collecting program data, reviewing agency progress, and reporting annually to Congress, among other responsibilities.

[6]National Defense Authorization Act for Fiscal Year 2012, Pub. L. No. 112-81, § 5141, 125 Stat. 1298, 1852 (2011).

[7]National Defense Authorization Act for Fiscal Year 2016, Pub. L. No. 114-92, § 873(e) (2015) (codified at 15 U.S.C. § 638(mm)(1) (2015)).

simplification of program procedures; prevention of waste, fraud, and abuse; and reporting. The SBIR and STTR policy directives specifically note that funding under the pilot program may not replace current agency administrative funding support for SBIR or STTR activities. Instead, the administrative pilot program is intended to supplement the agency's existing administrative efforts.

The 2011 reauthorization includes a provision for us to annually review the participating agencies' compliance with spending and reporting requirements for the programs, as well as other aspects of the programs. We have issued three reports in response to this provision. The first report, issued in November 2013, covered fiscal years 2006 through 2011; the second report, issued in June 2014, covered fiscal year 2012; and the third report, issued in April 2015, covered fiscal year 2013.[8] This report covers fiscal year 2014 and addresses (1) the extent to which agencies met SBIR and STTR program spending requirements, (2) the extent to which agencies and SBA complied with certain program reporting requirements, (3) the potential effects of basing the spending requirements for the programs on an agency's total R&D budget authority instead of its extramural R&D obligations, and (4) what is known about how much agencies spent to administer the programs.

To address these objectives, we generally followed the methodology that we used for our previous three reports on these issues. Specifically, to examine the extent to which participating agencies met the programs' spending requirements in fiscal year 2014, we used the data that agencies submitted to SBA and calculated each agency's spending requirement by applying the mandated percentages to the agency's reported extramural R&D obligations for fiscal year 2014. We then compared the spending requirements we calculated with the total program obligations data the agency submitted to SBA for fiscal year 2014. We reported that an agency complied with its spending requirement if the agency's spending for these programs was greater than or equal to the spending requirement we calculated. To assess the reliability of these

[8]GAO, *Small Business Research Programs: Actions Needed to Improve Compliance with Spending and Reporting Requirements,* GAO-13-421 (Washington, D.C.: Sept. 9, 2013), *Small Business Research Programs: More Guidance and Oversight Needed to Comply with Spending and Reporting Requirements,* GAO-14-431 (Washington, D.C.: June 6, 2014); and *Small Business Research Programs: Challenges Remain in Meeting Spending and Reporting Requirements*, GAO-15-358 (Washington, D.C.: Apr. 15, 2015).

data, we interviewed agency officials about the source and quality control procedures for the data; examined the integrity of the data, which included looking for outliers and obvious errors; and reviewed relevant documentation. We discussed any discrepancies with program officials and made corrections as needed. We found these data to be sufficiently reliable for the purposes of assessing whether agencies met their spending requirements. We discussed agencies' compliance with the spending requirements, including reasons agencies did not meet the spending requirements, with program managers at each of the participating agencies. We also discussed agencies' efforts to follow guidance issued by SBA to report total extramural R&D obligations rather than their proposed program budgets.

To examine the extent to which participating agencies and SBA complied with certain reporting requirements for fiscal year 2014, we compared information in the reports that agencies submit to SBA to describe the methodology for calculating their extramural R&D obligations, referred to as their methodology reports, with requirements in the Small Business Act and program policy directives. Additionally, we requested SBA's report to Congress for fiscal year 2014 and discussed the status of that report with SBA program officials. We reported that a participating agency complied with its reporting requirements if the agency submitted a methodology report to SBA, submitted the report on time (within 4 months of receiving appropriations), itemized exclusions from its extramural R&D obligations, and explained those exclusions.

To examine the potential effects of basing spending requirements for the SBIR and STTR programs on agencies' total R&D budget authority instead of their extramural R&D obligations, we used fiscal year 2014 data on total R&D budget authority from the President's budget to calculate potential spending requirements for each federal agency under alternate scenarios, assuming that the same spending percentages currently required by the Small Business Act would apply to total R&D budget authority.[9] We also assumed that current spending thresholds that

[9]Office of Management and Budget, *Fiscal Year 2016 Analytical Perspectives of the U.S Government* (Washington, D.C.: 2015). Because agencies did not include information on their total R&D budget authority in their data submitted to SBA, and we were seeking information across all government agencies, we relied on the amount of budget authority reported in the *Analytical Perspectives* volume for calculation of the spending requirements for the alternative scenarios.

require agencies to participate in SBIR and STTR programs when applied to extramural R&D obligations would apply to the total R&D budget authority. As in our previous reports, we compared the spending requirements from the alternate scenarios with those under current law to determine the potential effects that changing this methodology would have had in fiscal year 2014. We also analyzed additional scenarios using smaller percentages than those currently required by the Small Business Act to determine if they would lead to different outcomes. We spoke to program managers at all participating agencies about how potential changes to the methodology for calculating the spending requirements could affect their programs.

To examine what is known about how much agencies spent to administer the programs, we collected administrative cost data and data associated with the administrative pilot program from the 7 agencies that participated in the pilot and discussed the data with program officials. We determined that the administrative cost data for all 11 participating agencies were incomplete and from such varied sources that we could not calculate the total amount spent to administer their programs. We also reviewed the total amounts the 7 agencies estimated they would spend on the administrative pilot program in fiscal year 2014 as described in their proposals for the program, calculated the total amount that these agencies spent on the administrative pilot program in fiscal year 2014, and compared these numbers. We also reviewed the actions that agencies took using administrative pilot program funds to meet program goals. To ensure the reliability of the data associated with the administrative pilot program, we discussed the completeness and accuracy of the data with officials from the 7 agencies that participated in the program. We determined that the data were sufficiently reliable for the purposes of evaluating the amounts that agencies spent on the administrative pilot program.

We conducted this performance audit from July 2015 to May 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The SBIR program was initiated in 1982 and, as described on the SBIR website, has four main purposes: (1) use small businesses to meet federal R&D needs, (2) stimulate technological innovation, (3) increase commercialization of innovations derived from federal R&D efforts, and (4) encourage participation in technological innovation by small businesses owned by women and disadvantaged individuals. The STTR program was initiated about a decade later in 1992 and, as described on the SBIR website, has three main purposes: (1) to stimulate technological innovation, (2) foster technology transfer through cooperative R&D between small businesses and research institutions, and (3) increase private sector commercialization of innovations derived from federal R&D. Legislation enacted in 2011 reauthorized the programs from fiscal year 2012 through fiscal year 2017.[10]

The spending requirements for SBIR and STTR are to be calculated as a percentage of each agency's extramural R&D obligations, provided their extramural obligations exceed the participation thresholds of $100 million for SBIR and $1 billion for STTR. Under the 2011 reauthorization, the SBIR extramural spending requirement was set at 2.8 percent for fiscal year 2014 and will increase incrementally to 3.2 percent of the extramural R&D obligations in fiscal year 2017. The STTR allocation was set at 0.40 percent in fiscal year 2014 and will increase to 0.45 percent in fiscal year 2016.

The SBIR and STTR programs each include the following three phases:

- In phase I, agencies make awards to small businesses to determine the scientific and technical merit and feasibility of ideas that appear to have commercial potential. Phase I awards normally do not exceed $150,000. For SBIR, phase I awards generally last up to 6 months. For STTR, these awards generally last 1 year.
- In phase II, small businesses with phase I projects that demonstrate scientific and technical merit and feasibility, in addition to commercial potential, may compete for awards of up to $1 million to continue the R&D for an additional period, normally not to exceed 2 years.
- Phase III is for small businesses to pursue commercialization of technology developed in prior phases. Phase III work derives from, extends, or completes an effort made under prior phases, but it is funded by sources other than the SBIR or STTR programs. In this

[10]National Defense Authorization Act for Fiscal Year 2012, §§ 5001-5168.

phase, small businesses are expected to raise additional funds from private investors, the capital markets, or funding sources within the agency that made the initial award other than its SBIR or STTR program. While SBIR or STTR funding cannot be used for phase III, agencies can participate in phase III by, for example, purchasing the technology developed in prior phases.[11]

SBA's Office of Investment and Innovation is responsible for overseeing and coordinating the participating agencies' efforts for the SBIR and STTR programs. As part of SBA's oversight and coordination role, the agency issued SBIR and STTR policy directives to explain and outline requirements for agencies' implementation of these programs. The policy directives include a list of the data that agencies must submit to SBA annually—such as their extramural R&D obligation amounts and the amount obligated for awards for the programs.

Each participating agency must manage its SBIR and STTR programs in accordance with program laws and regulations and the policy directives issued by SBA.[12] In general, the programs are similar across participating agencies. All of the participating agencies follow the same general process to obtain proposals from and make awards to small businesses for both the SBIR and STTR programs. However, each participating agency has considerable flexibility in designing and managing the specifics of these programs, such as determining research topics, selecting award recipients, and administering funding agreements. At least annually, each participating agency issues a solicitation requesting proposals for projects in topic areas determined by the agency. Each participating agency uses its own process to review proposals and determine which proposals should receive awards. For those agencies that have both SBIR and STTR programs, agencies usually use the same process for both programs. Also, each participating agency determines whether the funding for awards will be provided as grants or contracts. According to a SBIR/STTR program manager at one of the participating

[11]For examples of how one agency has used phase III awards, see GAO, *Small Business Innovation Research: DOD's Program Supports Weapon Systems, but Lacks Comprehensive Data on Technology Transition Outcomes*, GAO-14-96 (Washington, D.C.: Dec. 20, 2013).

[12]Small Business Administration, *Small Business Innovation Research (SBIR) Program Policy Directive* (Washington, D.C.: Feb. 24, 2014), and *Small Business Technology Transfer (STTR) Program Policy Directive* (Washington, D.C.: Feb. 24, 2014).

agencies, agencies such as the Department of Defense (DOD), the Department of Homeland Security (DHS), and the National Aeronautics and Space Administration (NASA) typically issue contracts that address topic areas and include a number of requirements that small business must comply with, while agencies like the Department of Energy (DOE) and the National Science Foundation (NSF) often issue grants for less specified topic areas that allow for more flexibility.

Agency Data Indicate Most Met Spending Requirements, but Not All Submitted Correct Data and One Agency Did Not Establish a Required STTR Program

Agency data indicate that most participating agencies complied with their SBIR and STTR spending requirements for fiscal year 2014. The accuracy of these data remains an issue,[13] but more agencies submitted correct data to SBA in fiscal year 2014 than in past years, providing extramural R&D obligations instead of their proposed budgets. However, one agency's total extramural R&D obligations reached the $1 billion threshold for an STTR program, but it did not establish an STTR program as required by law.

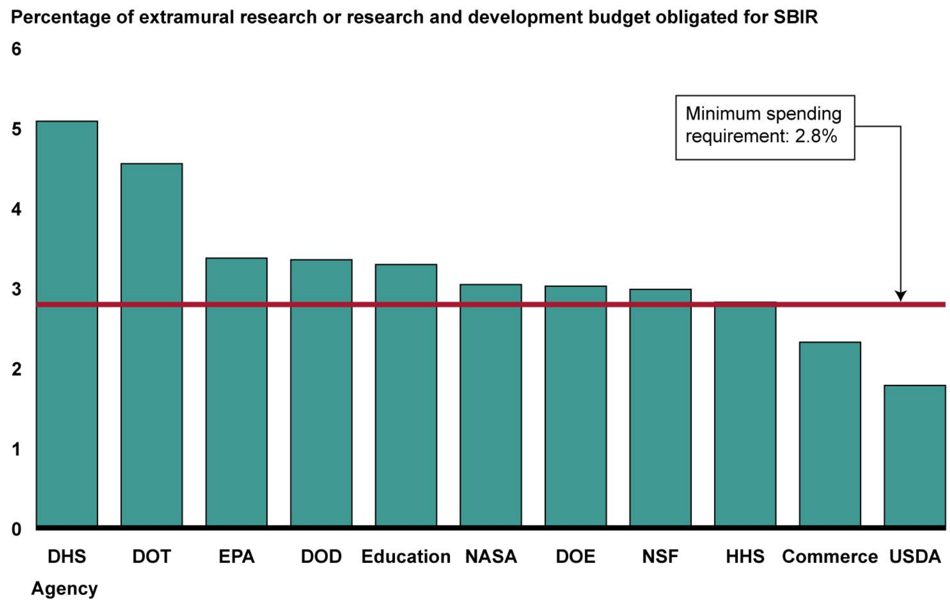
Agency Data Indicate Most Agencies Met SBIR and STTR Spending Requirements, and More Agencies Submitted Correct Data

Agency data indicate that 9 of the 11 agencies participating in the SBIR program met or exceeded their fiscal year 2014 spending requirements, while the remaining 2 agencies did not (see fig. 1). According to the agencies' data, the 9 agencies that appeared to meet or exceed SBIR spending requirements spent from 2.8 percent to 5.1 percent of their extramural R&D obligations for the program, and the remaining 2 agencies spent from 1.8 to 2.3 percent—less than the required 2.8 percent. As we previously found, the number of agencies that have complied with SBIR spending requirements—according to their data—has varied since fiscal year 2011, with 9 of the 11 agencies meeting these

[13] In our April 2015 report, we found that SBA's ability to determine compliance is limited by incorrect data because agencies submitted proposed budgets rather than obligations data. In that report, we recommended that SBA notify Congress in its annual report if it cannot determine compliance when agencies that participate in the SBIR and STTR programs do not report extramural R&D obligations data. SBA generally agreed with our recommendation and included information in its fiscal year 2013 report to Congress that SBA could not accurately determine compliance with program spending requirements for agencies that reported budget figures instead of obligations. SBA officials are working with agencies to ensure that they provide correct data in the future.

requirements in fiscal year 2013, 8 of the 11 agencies meeting them in fiscal year 2012, and 10 of the 11 agencies meeting them in fiscal year 2011.[14] None of the agencies participating in the SBIR program were out of compliance for all 4 fiscal years.

Figure 1: Percentage of Extramural R&D Obligations Participating Agencies Reported Spending on the Small Business Innovation Research (SBIR) Program in Fiscal Year 2014



DHS	Department of Homeland Security
DOT	Department of Transportation
EPA	Environmental Protection Agency
DOD	Department of Defense
Education	Department of Education
NASA	National Aeronautics and Space Administration
DOE	Department of Energy
NSF	National Science Foundation
HHS	Department of Health and Human Services
Commerce	Department of Commerce
USDA	Department of Agriculture

Source: GAO analysis of agencies' data submitted to SBA. | GAO-16-492

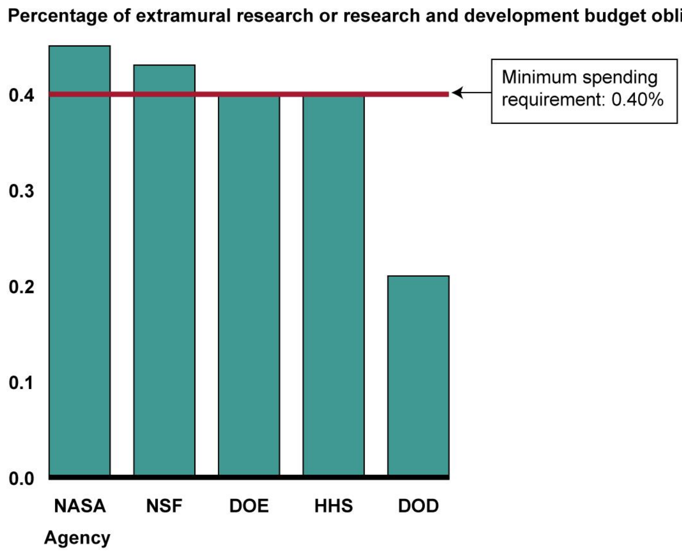
Note: For the purposes of this report, we defined compliance as spending at least 2.8 percent of an agency's reported extramural R&D obligations on the SBIR program in fiscal year 2014, as required by the Small Business Act. This method is consistent with SBA's approach for calculating spending requirements in its reports to Congress on the program. SBA officials told us that they have not completed verification of the data submitted by the agencies.

[14] GAO-13-421, GAO-14-431, and GAO-15-358.

Agency data indicate that 4 of the 5 agencies participating in the STTR program met or exceeded their fiscal year 2014 spending requirements, while 1 agency did not (see fig. 2). According to the agencies' data, DOE, the Department of Health and Human Services (HHS), NASA, and NSF appeared to meet or exceed STTR spending requirements, spending from the required 0.40 percent to 0.45 percent of their extramural R&D obligations on their STTR programs, while DOD did not comply, spending 0.21 percent. As we previously found, the number of agencies that have complied with STTR spending requirements—according to their data—has increased since fiscal year 2011. For example, data that agencies submitted to SBA indicated that 4 of the 5 agencies complied with spending requirements in fiscal year 2013, as compared to 2 of 5 agencies that complied with spending requirements in fiscal years 2011 and 2012.[15] HHS is the only agency to comply with STTR spending requirements in each of the past 4 fiscal years.

[15]GAO-13-421, GAO-14-431, and GAO-15-358.

Figure 2: Percentage of Extramural R&D Obligations That Participating Agencies Reported Spending on the Small Business Technology Transfer (STTR) Program in Fiscal Year 2014



NASA National Aeronautics and Space Administration
NSF National Science Foundation
DOE Department of Energy
HHS Department of Health and Human Services
DOD Department of Defense

Source: GAO analysis of agencies' data submitted to SBA. | GAO-16-492

Notes: We defined compliance as spending at least 0.40 percent of an agency's reported extramural R&D obligations on the STTR program in fiscal year 2014, as required by the Small Business Act. This method is consistent with SBA's approach for calculating spending requirements in its reports to Congress on the program.

Officials at those agencies that did not meet the spending requirement for the SBIR and STTR programs said that they were unable to do so because of multi-year funding and extenuating circumstances. Specifically, program managers at DOD told us that their agency did not comply with STTR spending requirements in fiscal year 2014 because their 2-year funding cycles enable them to spend funds across 2 years. This is consistent with the findings from our previous reports, when program managers said that their agency did not meet spending requirements in certain years because of multi-year funding, but they would spend the funding on the programs before it expires.[16] As we have

[16]GAO-15-358 and GAO-14-431

also found in previous reports, while some agencies receive multi-year appropriations, which may, generally, be carried forward from one year to the next, the Small Business Act nevertheless requires agencies to spend the required amount on the programs in each fiscal year. Officials at the Department of Commerce (Commerce) told us that they were unable to meet their SBIR spending requirement in fiscal year 2014 because they received more funding for their SBIR program than they had planned for, in addition to SBIR funding that they carried over from fiscal year 2013 from supplemental appropriations for Superstorm Sandy, and they did not include enough topics in their solicitation for applications to allow them to make enough awards to meet the spending requirement. This is consistent with what Commerce officials told us in fiscal year 2013.[17] U.S. Department of Agriculture (USDA) officials said that they did not comply with SBIR spending requirements because their extramural R&D obligations—a key figure in calculating the spending requirement—nearly doubled from what they planned based on their proposed budget. In addition, the officials told us that they have multi-year funding, which enables them to spend funds in years other than when they were appropriated.[18] Commerce and USDA officials said that they plan to spend all of their SBIR funds on the program before the funding expires.

In fiscal year 2014, 8 of the 11 participating agencies correctly submitted data on their actual extramural R&D obligations as opposed to their proposed budgets. The Small Business Act requires agencies to calculate their spending requirements based on their actual obligations over the course of the year, and SBA has requested that agencies submit obligations rather than proposed budget data. As we found in fiscal year 2013, 2 agencies reported their extramural R&D obligations, and the other 9 agencies provided the amount that they proposed to spend on extramural R&D to SBA, rather than the amount they actually obligated. Officials at the 2 agencies that submitted extramural R&D obligations for the first time cited our previous reports as leading to the change in the data they submitted to SBA. Three agencies did not submit data on extramural R&D obligations to SBA for fiscal year 2014—DOD, NSF, and the Environmental Protection Agency (EPA). Instead, these agencies continued to submit their proposed extramural R&D budgets. Agency

[17] GAO-15-358.

[18] However, as noted above, the Small Business Act requires agencies to spend the required amount on the SBIR and STTR programs in each fiscal year.

officials from NSF and EPA said the requirement to use extramural R&D obligations rather than proposed extramural R&D budgets is a challenge for agencies trying to comply with spending requirements because extramural R&D obligations are not known until the end of the fiscal year. Several program managers told us that they believe it is unfair or impractical to hold their agencies to a requirement that is not known until the end of the year, when it is not possible to obligate additional money. In addition, DOD officials told us that they do not have systems in place to easily calculate extramural R&D obligations. For example, DOD officials said they are unsure if all their comptrollers track extramural R&D obligations. In contrast, the 8 agencies that reported obligations in fiscal year 2014 told us that they faced no challenges in reporting obligations. SBA officials told us that they were continuing to work with agencies to obtain extramural R&D obligations data for fiscal year 2014.

One Agency's Obligations Exceeded the STTR Threshold, but It Did Not Establish a Program

In fiscal year 2014, USDA reported extramural R&D obligations of $1.1 billion but did not establish an STTR program as required. The Small Business Act and the STTR policy directive state that each federal agency with extramural obligations for R&D in excess of $1 billion must participate in the STTR program.[19] USDA officials told us that they did not establish an STTR program because they did not expect their extramural R&D obligations to exceed $1 billion in fiscal year 2014. Specifically, USDA's proposed extramural R&D budget for fiscal year 2014 was $682 million and the department was unaware of its actual obligations until after the end of the fiscal year, when it was too late to retroactively begin an STTR program. The officials said that they believe the agency's obligations in fiscal year 2014 were an anomaly, and they did not expect them to reach this level in subsequent years. They told us that some of their agency's subunits that have multi-year funding obligated funds in fiscal year 2014 that were appropriated in prior years. Additionally, they said that the agency received $1.3 million in additional R&D funds in fiscal year 2014, as well as increased appropriations for the Agriculture and Food Research Initiative. Agency officials said that setting up an STTR program at this point would not make sense, as they expected that USDA would be under the $1 billion threshold in fiscal year 2015. The preliminary data that USDA submitted to SBA in April 2016 indicated that

[19]Fiscal year 2014 was the first year USDA reported actual obligations instead of its proposed budget, and therefore, it is not known whether the agency reached the threshold for participating in STTR in the past.

its extramural R&D obligations for fiscal year 2015 totaled $904 million, which is below the threshold for participating in the STTR program.

Although the legislation is clear about the dollar threshold for starting an SBIR or STTR program, neither the law nor SBA's guidance specifies when an agency should establish a program, such as whether the agency should begin its program at the beginning of the year, partway through the year, or at the end of the year. SBA's policy directive provides guidance on when an agency may exit the programs, as required by the Small Business Act, but does not provide specific guidance on when it should set up a program beyond the requirement to do so when the agency's extramural R&D obligations are above the thresholds for participating. Specifically, the policy directives state that an agency may be considered by SBA for a phased withdrawal from participation in the SBIR or STTR program over a period of time sufficient to minimize any adverse impact on small businesses, and any withdrawal will be accomplished in a standardized and orderly manner. This could potentially be a model for SBA to follow in updating guidance for starting up a program.

One potential challenge identified by officials is that in setting up a new program, total extramural R&D obligations may be difficult to calculate until after the end of the fiscal year, as agencies can obligate extramural R&D funding through the end of the fiscal year. Therefore, according to USDA and SBA officials, USDA would not have been in a position to know that it needed to start an STTR program in fiscal year 2014, in accordance with the law and program policy directive. Moreover, SBA officials said they did not urge USDA to implement an STTR program because it was unclear if the department's extramural R&D obligations in fiscal year 2014 would be maintained in future years. The officials told us that it takes approximately 2 years to establish and implement a robust STTR program. SBA officials agreed with USDA that it would not be worthwhile for the department to begin an STTR program one year and close it the following year, as it would negatively affect the small businesses involved with the program. The purpose of the policy directives is to provide guidance on how to conduct the programs, and agencies are required to comply with both the law and the additional details in the policy directives. If SBA provided more information on the timing of starting an SBIR or STTR program, agencies may have more certainty about when to establish a program.

Some Agencies Have Taken Steps to Meet Certain Reporting Requirements, but Most Agencies Are Still Not Fully Compliant

All of the agencies participating in the SBIR and STTR programs submitted methodology reports to SBA for fiscal year 2014, and some agencies provided more detail than they did in fiscal year 2013. However, many agencies did not provide all the required information and most were late in submitting their reports. Additionally, SBA has not issued its required report to Congress on the programs for fiscal year 2014.

All Agencies Submitted Methodology Reports, but Most Did Not Provide All of the Required Information and Continued to Submit Reports Late

Each participating agency submitted a methodology report to SBA for fiscal year 2014, and some agencies submitted additional information about their exclusions in their methodology reports, as compared to fiscal year 2013. As discussed in the policy directive, agencies are required to submit reports to SBA each year that itemize the programs excluded from their extramural R&D calculations and the reasons for the exclusions.[20] For fiscal year 2014, 10 of the 11 participating agencies submitted at least partially itemized exclusions from their calculations of extramural R&D, and 9 of the 11 agencies at least partially explained these exclusions (see table 2). In addition, 5 agencies provided additional information in fiscal year 2014 that they did not provide in fiscal year 2013.[21]

[20]Under the Small Business Act, certain subunits or programs must or can be excluded in calculating agencies' extramural R&D obligations. For example, agencies are not required to include subunits in the intelligence community when calculating their extramural R&D obligations and the Department of Transportation is required to exclude the Federal Highway Administration's State Planning & Research Program from its extramural R&D obligations.

[21]Commerce, the Department of Education, and USDA provided additional itemizations and amounts of exclusions, and provided additional information explaining exclusions. EPA and DOD provided additional information on itemizations. Three agencies provided less information than in fiscal year 2013. DHS provided less information explaining exclusions. The Department of Transportation did not provide exclusion amounts. NASA did not provide itemizations or explanations of its exclusions.

Table 2: Agencies Reporting Exclusions in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Fiscal Year 2014 Methodology Reports

Agency	Submitted methodology report to the Small Business Administration (SBA)	Submitted report on time	Itemized exclusions	Explained exclusions	Provided dollar amount of exclusions[a]
Department of Agriculture	Yes	No	Yes	Yes [b]	Yes [b]
Department of Commerce	Yes	No	Yes	Yes	Yes
Department of Defense	Yes	Yes	Yes	No	No
Department of Education	Yes	No	Yes	Yes	Yes
Department of Energy	Yes	No	Yes	Yes	No
Department of Health and Human Services	Yes	Yes	Yes [b]	Yes [b]	No
Department of Homeland Security	Yes	No	Yes	Yes [b]	Yes
Department of Transportation	Yes	No	Yes	Yes	
Environmental Protection Agency	Yes	No	Yes	Yes	Yes
National Aeronautics and Space Administration	Yes	No	Yes	No	No
National Science Foundation	Yes	No	Yes	Yes [b]	No

Source: GAO analysis of agency data. | GAO-16-492

Note: We determined that agencies that explicitly stated that they had no excluded programs were in compliance with the requirement to itemize and explain their exclusions.

[a]This information is not required by law or by the policy directives, but has been requested by SBA.

[b]This agency partially complied with the spending requirement. We credited agencies with partial compliance with the requirements if some of an agency's subunits provided information but others did not.

Most agencies did not provide dollar amounts for their exclusions in fiscal year 2014.[22] Five agencies—USDA, HHS, NSF, DOD, and DHS—provided partial information on their exclusions but did not fully itemize or explain them. For example, USDA's report listed exclusion information for four of its seven sub-units. In addition, 1 agency, NASA, did not list whether it had exclusions. Agencies are not explicitly required to state that they have no exclusions. However, without such information SBA cannot determine whether agencies are accurately reporting whether they

[22]As discussed below, SBA did not explicitly require agencies to provide dollar amounts for exclusions in fiscal year 2014.

have exclusions to their extramural R&D calculations. Officials at SBA told us that they are developing written guidance in their policy directive on how agencies should complete the methodology report.

In fiscal year 2014, 5 of the 11 participating agencies—Commerce, DHS, the Department of Education (Education), EPA, and USDA—provided some or all of the dollar amounts associated with each of their exclusions. As we reported in June 2014, SBA officials told us that they would like agencies to include more information about exclusions in their methodology reports.[23] SBA has requested dollar amounts of exclusions in the past, but it is not explicitly required by statute or in the policy directive. However, in fiscal year 2014, the guidance requesting agencies to provide dollar amounts for their exclusions was removed from the annual report template, leading some agencies to omit information that they provided in the past, according to officials at 2 of the participating agencies. Specifically, in fiscal year 2013, the Department of Transportation (DOT) provided an itemized description of its exclusions, including dollar amounts. However, in fiscal year 2014, DOT itemized exclusions but did not report the dollar amounts excluded. DOT officials told us that these amounts were not provided because SBA removed language requesting that agencies list the programs excluded from the extramural R&D obligations calculation from the guidance for their fiscal year 2014 methodology reports. In addition, USDA officials told us that they did not provide dollar amounts for all exclusions in fiscal year 2014 because SBA did not request this information in its guidance for submitting the annual report.

The annual report template requested that agencies provide their accounting procedure used to determine their obligations, but did not explicitly require agencies to provide dollar amounts of exclusions. According to SBA officials, SBA and several of the participating agencies interpreted "accounting procedure" to include reporting the dollar amount associated with exclusions. SBA officials told us that they planned to contact the agencies that did not provide information on exclusions for fiscal year 2014 and planned to update the guidance to request dollar amounts for exclusions in future reports in the future.[24] Inclusion of this

[23]GAO-14-431.

[24]Officials at DOE told us that the size of extramural R&D budgets for programs excluded by statute is immaterial and requiring agencies to provide dollar amounts for such programs represents an unnecessary burden when the programs are excluded by statute.

instruction could have reminded agency officials to provide the information, which may have helped SBA fully evaluate and report to Congress on the accuracy of DOT or USDA's methodologies. Federal standards for internal control state that management should communicate with, and obtain quality information from, external parties using established reporting lines so that external parties can help the entity achieve its objectives and address related risks.[25]

Additionally, 9 of the 11 agencies submitted their methodology reports for calculating extramural R&D to SBA later than the date required by the Small Business Act, as shown in table 2. According to the Small Business Act, agencies must submit their methodology reports to SBA within 4 months of enactment of their annual appropriations. Agency appropriations for fiscal year 2014 were enacted in January 2014, so the methodology reports were due by May 2014.[26] For fiscal year 2014, 2 agencies—HHS and DOD—complied with the reporting requirement by submitting their methodology reports to SBA in May 2014. Several of the agencies provided their methodology reports to SBA as a part of their annual data submissions to SBA, which were generally submitted to SBA from January through April 2015. Most agency officials told us that they submitted their methodology reports late because SBA did not request the reports at an earlier date.[27] Officials from 5 of the 9 agencies that submitted their reports late said that they could have provided the reports to SBA within 4 months of appropriations if SBA had requested them. SBA is not required to request the reports from agencies. In contrast, officials at 2 agencies told us that they submitted their methodology reports late because each of their agencies requires an approved spend plan before officials can calculate extramural R&D obligations and provide them in the methodology report, and those plans were not approved in enough time to submit the methodology reports on time.

As we found in our September 2013 report, the late submission of the methodology reports makes it difficult for SBA to promptly analyze these

[25]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: September 2014).

[26]Consolidated Appropriations Act, 2014, Pub. L. No. 113-76, 128 Stat. 5 (enacted Jan. 17, 2014).

[27]Agencies are required to submit their methodology reports to SBA within 4 months of appropriations, and SBA is not required to request the reports from the agencies.

methodologies and provide agencies with timely feedback to assist them in accurately calculating their spending requirements.[28] Without such review and feedback, agencies may be calculating their extramural R&D obligations incorrectly, which could lead to agencies spending less than the required amounts on the programs. In that report, we recommended that SBA request that the agencies submit their methodology reports within 4 months of the enactment of appropriations, and SBA agreed with the recommendation. When we followed up on SBA's response to the recommendation, we were told that SBA officials sent an e-mail to participating agencies in February 2016 requesting that they submit their fiscal year 2015 methodology reports to SBA in a time frame that meets the 4 month requirement. We will continue to monitor the extent to which agencies submitted their methodology reports within the required 4-month time frame in fiscal year 2015 as part of our next mandated review.

SBA Has Not Submitted Its Required Report to Congress for Fiscal Year 2014

The Small Business Act requires SBA to report to certain congressional committees on the SBIR and STTR programs—including an analysis of the agencies' methodology reports—not less than annually, but the act does not specify a date that the report is due. SBA issued its required report to Congress on the SBIR and STTR programs for fiscal year 2013 in March 2016, but it has not issued its report for fiscal year 2014.

In our September 2013 report, we concluded that without more rigorous oversight by SBA and more timely and detailed reporting on the part of both SBA and participating agencies, it would be difficult for SBA to ensure that intended benefits of the SBIR and STTR programs are being attained and that Congress was receiving critical information to oversee these programs. In that report, we recommended that SBA provide Congress with a timely annual report that includes a comprehensive analysis of the methodology each agency used for calculating the SBIR and STTR spending requirements. SBA agreed and stated that it planned to implement the recommendation. However, SBA has not yet done so, and as we found in this review, it continues to lag in its submissions to Congress. Specifically, each year agencies are required to report their data to SBA by March following the end of the fiscal year. SBA's fiscal year 2012 report to Congress, issued in November 2014, was submitted 19 months after the agencies' data were due to SBA. Similarly, SBA

[28]GAO-13-421.

submitted its fiscal year 2013 report to Congress in March 2016, two years after the agencies' data were due to SBA. At the time of our review, SBA officials said that they had not set a date for submitting the fiscal year 2014 report. SBA officials told us that they have undertaken steps to address developing the required reports to Congress, including reporting improvements to the SBIR website that they expected would expedite the verification of agencies' data and lead to faster reporting. In addition, the officials said that fiscal years 2013 and 2014 were transitional periods for reporting due to changes in reporting requirements and the creation of new databases.

Changing the Calculation Methodology Could Increase Spending Requirements and Participation with Potential Benefits and Drawbacks

Changing the methodology for determining SBIR and STTR spending requirements could increase agencies' spending requirements and increase the number of agencies required to participate in the programs. Agency officials identified several benefits and drawbacks that changing the calculation methodology could have on their agencies' SBIR and STTR programs.

Changing the Calculation Methodology Could Increase Spending Requirements and Participation in the Programs

Changing the methodology for determining SBIR and STTR spending requirements to use an agency's total R&D budget authority rather than its extramural R&D obligations could increase spending requirements. For example, if the spending requirements were calculated based on an agency's total R&D budget authority rather than its extramural R&D obligations using the same percentages and participation thresholds defined in current law, we estimate that total spending requirements in fiscal year 2014 for the SBIR and STTR programs would have increased from $2.3 billion to $4.2 billion, an increase of roughly $1.9 billion, or 83 percent, based on our analysis of budget authority data and data submitted to SBA. This increase would have occurred for two reasons: (1) an agency's total R&D budget authority is larger than its extramural R&D obligations therefore agencies that currently participate would have been required to spend more on the programs and (2) additional agencies would have been required to participate. Figure 3 shows the effects of changing spending requirements at each agency from current law, which is based on a percentage of extramural R&D obligations, to an alternative scenario that applies the same percentages to total R&D budget authority. These effects are consistent with our findings in previous reports.[29]

Figure 3: Fiscal Year 2014 Spending Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs Compared to an Alternative Scenario Using Current Percentages

Agency (Dollars in millions)	Agency's budget: Total research and development budget authority[a]	Agency's budget: Extramural research and development obligations[b]	SBIR Program: SBIR spending requirement under current law[c]	SBIR Program: SBIR spending requirement under alternative scenario[d]	SBIR Program: Percentage difference between current law and alternative scenario	STTR Program: STTR spending requirement under current law[e]	STTR Program: STTR spending requirement under alternative scenario[f]	STTR Program: Percentage difference between current law and alternative scenario
Department of Agriculture	2,261	1,097	31	63	106	[g]	9	[g]
Department of Commerce	1,343	298	8	38	351	[g]	5	[g]
Department of Defense	65,762	31,557	884	1,841	108	126	263	108
Department of Education	315	310	9	9	2	[h]	[h]	[h]
Department of Energy	11,204	6,055	170	314	85	24	45	85
Department of Health and Human Services	30,513	24,097	675	854	27	96	122	27
Department of Homeland Security	599	364	10	17	65	[h]	[h]	[h]
Department of the Interior	827	[g]	[g]	23	[g]	[h]	[h]	[h]
Department of Transportation	833	259	7	23	221	[h]	[h]	[h]
Department of Veterans Affairs	1,101	[g]	[g]	31	[g]	[g]	4	[g]
Environmental Protection Agency	534	149	4	15	260	[h]	[h]	[h]
National Aeronautics and Space Administration	11,733	4,742	133	329	147	19	47	147
National Science Foundation	5,430	4,688	131	152	16	19	22	16
Total	**$132,455**	**$73,616**	**$2,062**	**$3,709**	**80%**	**$284**	**$517**	**82%**

Agency did not participate in the program in fiscal year 2014, but it would be required to do so if participation was based on the total research and development budget and the thresholds for participating in the programs remained the same.

Sources: GAO analysis of agency data. | GAO-16-492

Note: Calculations may be affected by rounding

[a]Agencies' total research and development (R&D) budget authority is derived from the *Analytical Perspectives* volume of the President's budget for fiscal year 2016. We excluded the "facilities and equipment" category that is included in the *Analytical Perspectives* volume from the total R&D amount because agencies do not include this information in their calculations.

[b]Agencies' extramural R&D obligations are derived from data that the agencies submit to the Small Business Administration.

[29] GAO-13-421, GAO-14-431, and GAO-15-358

[c]Agencies' spending requirements for the SBIR program are calculated as 2.8 percent of the amounts reported by agencies as their extramural R&D obligations, as required by the Small Business Act.

[d]This alternate scenario calculates agencies' SBIR spending requirements as 2.8 percent of their total R&D budget authority, which is the percentage required by the Small Business Act under the current law and assumes no reductions for excluded programs.

[e]Agencies' spending requirements for the STTR program are calculated as 0.4 percent of the amount reported by agencies as their extramural R&D obligations, as required by the Small Business Act.

[f]This alternate scenario calculates agencies' STTR spending requirements as 0.4 percent of total R&D budget authority, which is the percentage required by the Small Business Act under the current law and assumes no reductions for excluded programs.

[g]Agency did not participate in the program in fiscal year 2014.

[h]Agency's total R&D budget authority did not meet the threshold for participating in the STTR program under the alternative scenario.

As shown in figure 3, some agencies' spending requirements would have increased more than others under the alternative scenario. This variation is due primarily to differences in the relative proportions of the agencies' extramural and intramural R&D obligations, but is also affected by how many programs are excluded by statute. Agencies that fund primarily extramural research would have seen smaller increases to their spending requirements for the SBIR and STTR programs under the alternative scenario, while agencies that fund more intramural research would have seen larger increases in their spending requirements, a finding consistent with those of our previous reports. Examples are as follows:

- NSF used 86.3 percent of its total R&D budget authority to fund extramural research in fiscal year 2014 and was required, based on data it submitted to SBA, to spend $131 million on its SBIR program that year. Under the alternative scenario, NSF's SBIR spending requirement would have been $152 million, an increase of about 16 percent.

- Commerce, on the other hand, used 22.2 percent of its total R&D budget authority to fund extramural research in fiscal year 2014 and was required to spend about $8 million on its SBIR program in that year. Under the alternative scenario, Commerce's spending requirement would have more than quadrupled to $38 million. Furthermore, assuming that the thresholds for participating in the program did not change, this scenario would have required Commerce to spend approximately $5 million on a new STTR program in fiscal year 2014. The alternative scenario would have required Commerce to spend an additional $34.6 million on the SBIR and STTR programs in fiscal year 2014, an increase of more than 400 percent.

As noted above, changing the calculation methodology from basing the spending requirement on extramural R&D obligations to total R&D budget authority would also require additional agencies to participate in the SBIR and STTR programs, assuming that the dollar thresholds for participation remain the same. Two additional agencies—the Departments of Veterans Affairs (VA) and the Interior—would have been required to participate in SBIR during fiscal year 2014 under the alternative scenario.[30] Adding these agencies to the SBIR program would have increased total federal SBIR spending requirements by $54 million, in addition to the $1.6 billion increase in spending requirements at the 11 agencies that currently participate in the SBIR program. Likewise, three additional agencies—USDA, Commerce, and VA—would have been required to participate in STTR under the alternative scenario.[31] Adding these three agencies to the STTR program would have increased total federal STTR spending requirements by $18.8 million, in addition to the spending requirement increases of $214 million at the five agencies that currently participate in STTR.

Alternatively, basing the SBIR and STTR spending requirements on an agency's total R&D budget authority and applying a lower percentage than under current law could result in a total federal commitment to the programs that is similar to what would result under current law. However, our analysis shows that such a scenario would lower spending requirements at some agencies and raise them at others. As shown in figure 4, if the percentage applied to an agency's total R&D budget authority had been 1.6 percent for the SBIR program and 0.2 percent for the STTR program in fiscal year 2014, and the thresholds for participating had remained the same, total required federal spending on the programs would be similar to required federal spending under current law. Using these lower percentages, spending requirements would have increased at agencies that primarily fund intramural research, such as EPA and Commerce. In contrast, spending requirements would decrease at

[30]Based on the data in the President's budget, both agencies had total R&D budget authority in excess of $100 million. Under current law, a federal agency with more than $100 million in extramural R&D obligations is required to establish and operate an SBIR program.

[31]Based on the data in the President's budget, these three agencies had a total R&D budget authority in excess of $1 billion. Under current law, a federal agency with more than $1 billion in extramural R&D obligations is required to establish and operate an STTR program

agencies, such as HHS and NSF, which primarily fund extramural research. In this scenario, the spending requirement reductions, including $230.7 million at HHS and $53.9 million at NSF, were large enough to offset increases in spending requirements at other agencies.[32]

Figure 4: Fiscal Year 2014 Spending Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs Compared to an Alternative Scenario Using Lower Percentages

Agency (Dollars in millions)	Agency's budget: Total research and development budget authority[a]	Agency's budget: Extramural research and development obligations[b]	SBIR Program: SBIR spending requirement under current law[c]	SBIR Program: Fiscal year 2014 SBIR spending requirement under alternative scenario[d]	SBIR Program: Percentage difference between current law and alternative scenario	STTR Program: STTR spending requirement under current law[e]	STTR Program: Fiscal year 2014 STTR spending requirement under alternative scenario[f]	STTR Program: Percentage difference between current law and alternative scenario
Department of Agriculture	2,261	1,097	31	35	15	[g]	5	[g]
Department of Commerce	1,343	298	8	21	156	[g]	3	[g]
Department of Defense	65,762	31,557	884	1,023	16	126	141	12
Department of Education	315	310	9	5	-45	[h]	[h]	[h]
Department of Energy	11,204	6,055	170	174	3	24	24	-1
Department of Health and Human Services	30,513	24,097	675	475	-32	96	66	-38
Department of Homeland Security	599	364	10	9	-9	[h]	[h]	[h]
Department of the Interior	827	[g]	[g]	13	[g]	[h]	[h]	[h]
Department of Transportation	833	259	7	13	81	[h]	[h]	[h]
Department of Veterans Affairs	1,101	[g]	[g]	17	[g]	[g]	2	[g]
Environmental Protection Agency	534	149	4	8	104	[h]	[h]	[h]
National Aeronautics and Space Administration	11,733	4,742	133	183	39	19	25	38
National Science Foundation	5,430	4,688	131	84	-37	19	12	-43
Total	**$132,455**	**$73,616**	**$2,062**	**$2,060**	**0%**	**$284**	**$278**	**-3%**

(Shaded cell) Agency did not participate in the program in fiscal year 2014, but it would be required to do so if participation was based on the total research and development budget and the thresholds for participating in the programs remained the same.

Sources: GAO analysis of agency data. | GAO-16-492

Note: Calculations may be affected by rounding

[a]Agencies' total research and development (R&D) budget authority is derived from the *Analytical Perspectives* volume of the President's budget for fiscal year 2016. We excluded the "facilities and

[32]In this scenario, spending requirements would also be reduced at Education ($3.8 million) and DHS ($871,000).

equipment" category that is included in the *Analytical Perspectives* volume from the total R&D amount because agencies do not include this information in their calculation.

[b]Agencies' extramural R&D obligations are derived from data that agencies submit to the Small Business Administration.

[c]Agencies' spending requirements for the SBIR program are calculated as 2.8 percent of the amounts reported by agencies as their extramural R&D obligations , as required by the Small Business Act.

[d]This alternate scenario calculates agencies' SBIR spending requirements as 1.6 percent of their total R&D budget authority and assumes no reductions for excluded programs.

[e]Agencies' spending requirements for the STTR program is calculated as 0.4 percent of the amounts reported by agencies as their extramural R&D obligations, as required by the Small Business Act.

[f]This alternate scenario calculates agencies' STTR spending requirements as 0.2 percent of total R&D budget authority and assumes no reductions for excluded programs.

[g]Agency did not participate in the program in fiscal year 2014.

[h]Agency's total R&D budget authority did not meet the threshold for participating in the STTR program under the alternative scenario.

Program Managers Identified Potential Benefits and Drawbacks to Changing the Calculation Methodology

As we found in our previous review on these programs, agencies identified potential benefits and drawbacks to changing the calculation methodology for their SBIR and STTR spending requirements from extramural R&D obligations to total R&D budget authority.[33] For example, officials at DOD told us in the past that changing the calculation method would simplify administration of their program. As we found in previous reports, officials said that it can take months for DOD's program managers to receive funding for the SBIR and STTR programs from the comptrollers of all three military departments and approximately 21 other components that conduct R&D.[34] However, in technical comments on a draft of this report, a DOD official told us that, based on additional analysis, the Office of Small Business Programs believes that changing the calculation methodology would complicate the administration of the programs because services and components would still need to calculate their extramural R&D budgets and DOD would need to apply different percentages to the services and components to compensate for the wide variation in extramural budgets within the department. In addition, program managers at one agency told us that basing the spending requirement on total R&D would result in more SBIR program awards, and officials at another agency said that the change would allow the agency to set up an STTR program. If spending requirements were based on total R&D budget authority, DOD officials told us that the percentages

[33]GAO-14-431 and GAO-15-358.

[34]GAO-15-358.

for the SBIR and STTR spending requirements should be lowered to offset using total R&D.

Agency officials also identified potential drawbacks to changing the methodology, which is also consistent with our findings in previous reports. In particular, some program managers said that increasing the amount of money that goes to the SBIR and STTR programs could reduce the amount of resources available for other R&D conducted by the agency. Furthermore, program managers from one agency told us that basing the SBIR and STTR spending requirements on total R&D would not substantially reduce the time required to calculate their spending requirements. For example, officials at one agency said that they would still have to request data from all of their line offices during the year, as total R&D obligations can fluctuate. Some program managers also said that basing the spending requirement on total R&D would put an unsustainable strain on their programs and make it difficult to find high-quality awardees in the near term.

Total Administrative Spending in Fiscal Year 2014 Is Unknown, but Seven Agencies Spent $19.1 Million on the Administrative Pilot Program

Little is known about total administrative spending for fiscal year 2014 because the agencies that participate in the SBIR and STTR programs do not—and are not required to—fully track these costs.[35] The seven agencies that participated in the administrative pilot program reported spending $19.1 million to address the six program goals in fiscal year 2014, but this amount does not represent total administrative spending. Furthermore, officials at some agencies identified constraints to participation in the administrative pilot program.

Little Is Known about Total Administrative Spending

Little is known about the total amount that the 11 participating agencies spent to administer their SBIR and STTR programs for fiscal year 2014 because the agencies do not—and are not required to—fully track these costs. For example, as we reported in the past, officials told us that it is challenging to accurately estimate total administrative costs because many staff and contractors help administer the program part time.[36]

[35]Prior to the implementation of the administrative pilot program, agencies were generally prohibited from spending program funds on program administration.

[36]GAO-15-358.

Program managers also told us that many of their staff and contractors spend time on different programs, and they do not have systems in place to track their time specifically to the SBIR and STTR programs.

In response to our requests for data on their fiscal year 2014 administrative costs, 9 of the 11 participating agencies provided information on some categories of administrative costs and partial estimates of costs.[37] These estimates ranged from about $8,500 to $2,200,000. As with the cost data for fiscal years 2011, 2012, and 2013 provided for our previous reports, these data were incomplete and unverifiable.

Seven Agencies Participated in the Administrative Pilot Project in Fiscal Year 2014 and Spent $19.1 Million

Seven agencies—DOD, DOE, HHS, NSF, USDA, Commerce, and DOT—participated in the administrative pilot program in fiscal year 2014, and these agencies reported spending $19.1 million on administrative and oversight activities as part of the program.[38] The 2011 reauthorization of the SBIR and STTR programs directed SBA to allow agencies to spend up to 3 percent of SBIR funds on program administration and similar costs in fiscal years 2013 through 2015.[39] In November 2015, the National Defense Authorization Act for Fiscal Year 2016 extended the program through September 30, 2017.[40]

According to the programs' policy directives, funding for the pilot program cannot replace current agency administrative funding.[41] SBA's policy directives require each agency to submit a work plan to SBA that includes, among other information, a prioritized list of initiatives, the

[37]We did not receive estimates from DOD and HHS.

[38]The administrative pilot program provided agencies with new flexibility to undertake activities they otherwise would not have been able to take. Four agencies chose not to participate in the program in fiscal year 2014: DHS, Education, EPA, and NASA.

[39]National Defense Authorization Act for Fiscal Year 2012, Pub. L. No. 112-81, § 5141, 125 Stat. 1298, 1852 (2011).

[40]National Defense Authorization Act for Fiscal Year 2016, Pub. L. No. 114-92, § 873(e) (2015) (codified at 15 U.S.C. § 638(mm)(1).

[41]The policy directives state that the purpose of the pilot program is to assist with the substantial expansion in commercialization activities, prevention of fraud/waste/abuse, expansion of reporting requirements by agencies, and other agency activities required for the programs.

estimated amounts to be spent on each initiative, and the expected results to be achieved. The policy directives require SBA to evaluate the work plan and provide initial comments within 15 calendar days of receipt of the plan. If SBA does not provide initial comments within 30 calendar days of receipt of the plan, the work plan is deemed approved. In our April 2015 report, we found that SBA requested that agencies submit data on the total amount spent on the administrative pilot program, but did not request that agencies submit information on how they used the funds. In that report, we recommended that SBA request that agencies participating in the administrative pilot program provide data on the use of the funds, rather than a total cost for all the activities under the pilot. SBA generally agreed with our recommendation and, in fiscal year 2014, requested that agencies provide additional information on how they spent administrative pilot program funds. SBA is required to use the information from the agencies to report on the pilot program to Congress.

Agencies participating in the administrative pilot program used funds towards six goals developed by SBA in consultation with agency officials, as shown in table 3.[42]

Table 3: Summary of Agencies' Spending on the Six Program Goals Outlined in the Administrative Pilot Program

Agency	Outreach	Commercialization	Streamlining and Simplification	Prevention and Detection of Fraud, Waste, and Abuse	Reporting - Administrative, Congressional, and Inter-Agency	Administration and Implementation of Reauthorization
Department of Agriculture	Yes	Yes	No	No	No	Yes
Department of Commerce	Yes	No	No	No	No	No
Department of Defense	Yes	Yes	Yes	Yes	Yes	Yes
Department of Energy	Yes	No	No	Yes	No	Yes
Department of Health and Human Services	Yes	Yes	Yes	Yes	Yes	Yes

[42]Agency officials told us that they sometimes use in-kind support in addition to obligated funds to meet the goals of the administrative pilot program.

Agency	Outreach	Commercialization	Streamlining and Simplification	Prevention and Detection of Fraud, Waste, and Abuse	Reporting - Administrative, Congressional, and Inter-Agency	Administration and Implementation of Reauthorization
Department of Transportation	Yes	Yes	Yes	Yes	No	Yes
National Science Foundation	Yes	Yes	Yes	No	No	No

Source: GAO analysis of agency data. | GAO-16-492

Under the administrative pilot program, some goals received more attention than others based on our review of the funds spent on each goal.[43] In particular, all seven of the agencies that participated in the administrative pilot program spent funds to increase outreach to underserved communities. For example, officials at one agency told us that they spent approximately $1 million under the administrative pilot program to expand assistance, through budget support and proposal review, among other assistance, to women-owned small businesses, minority-owned small businesses, and small businesses from states that are underrepresented in the SBIR and STTR programs. According to agency officials, their efforts resulted in 43 applications from companies that received such assistance. Other agencies also took steps to improve outreach, including traveling to underserved states, launching websites, enhancing social media platforms, or attending trade shows. On the other hand, only two agencies used funds for congressional and inter-agency reporting. Officials at one agency told us that it is not clear from the law or SBA guidance if all six goals require equal attention.

In fiscal year 2014, agencies proposed that they would spend $55.5 million on the administrative pilot program, but our analysis of the agencies' work plans and data submitted to SBA shows that agencies obligated $19.1 million, or 34 percent of the proposed amount (see table 4). This compares with obligations of $12.3 million in fiscal year 2013, or 21 percent of the proposed amount.[44] Of the seven agencies that participated in the administrative pilot program, DOE obligated most of

[43]The six goals are: Outreach; Commercialization; Streamlining and Simplification; Prevention and Detection of Fraud, Waste, and Abuse; Reporting - Administrative, Congressional, and Inter-Agency; Administration; and Implementation of the SBIR and STTR Reauthorization.

[44]GAO-15-358.

what it estimated it would spend, and Commerce obligated the lowest percentage of what it planned to spend. Program managers at Commerce told us that they originally planned to spend money on a joint SBA database, but agencies faced difficulties in getting permission to use the money for the database and the project was completed with other funds. In addition, they said that the agency received appropriations late in fiscal year 2014,[45] requiring them to reserve money they planned to spend for outreach efforts in fiscal year 2014.

Table 4: Proposed Spending and Actual Amounts Obligated by the Seven Agencies That Participated in the Fiscal Year 2014 Administrative Pilot

Agency	Proposed spending for fiscal year 2014 administrative pilot program	Obligations for fiscal year 2014 administrative pilot program	Percentage of proposed spending obligated in fiscal year 2014
Department of Agriculture	$570,000	$122,201	21
Department of Commerce	52,000	683	1
Department of Defense	29,600,000	10,653,722	36
Department of Energy	2,250,000	1,575,700	70
Department of Health and Human Services	19,200,000	5,970,544	31
Department of Transportation	86,000	25,045	29
National Science Foundation	3,750,000	748,646	20
Total	**$55,508,000**	**$19,096,541**	**34**

Source: GAO analysis of agency data. | GAO-16-492

SBA Has Not Evaluated Potential Constraints in the Administrative Pilot Program

More agencies participated in the administrative pilot program in fiscal year 2014 than in the previous year, but some agencies identified potential constraints that limited their participation, including the temporary nature of the program and the requirement to expend funds only on new activities. First, officials at 2 agencies told us that the temporary nature of the administrative pilot program constrained them from using the funds to make new hires.[46] For example, officials at one

[45]As noted previously, all participants in the SBIR and STTR programs for fiscal year 2014 received their appropriations at the same time.

[46]As originally implemented, the administrative pilot program was scheduled to last from fiscal year 2013 through fiscal year 2015. However, on November 25, 2015, the program was extended until September 30, 2017 under the National Defense Authorization Act for Fiscal Year 2016.

agency said that they could have used the funds to hire a new contract specialist but were concerned that they would not have funding to pay the employee after the end of the pilot program. Program officials at another agency, which did not participate in the administrative pilot program, told us that if they hired additional contractors, they could not continue to pay them after the administrative pilot ended. Program managers at 10 of the 11 agencies supported making the administrative pilot program permanent, including 3 of the 4 agencies that did not participate in the pilot program. For example, officials at one agency told us that the administrative pilot program gives them opportunities to experiment with different approaches to promote their programs. While NSF officials said that the agency already has substantial programs in place, administrative funds enabled them to start new ones, particularly around social media. SBA officials told us that administrative pilot program funding is necessary to increase staff levels. Officials at the 1 agency that did not support making the administrative pilot program permanent at this time said that it is too early to tell whether the pilot program is successful and that more information is needed to decide whether the administrative pilot program should be made permanent.

Second, program officials at 2 agencies told us that the requirement to expend funds on only new activities constrained their ability to participate in the program. Officials at one of the agencies that did not participate in the administrative pilot program told us that the requirement to spend money on only new initiatives restricted them from using funds for existing administrative activities, whereas agencies that do not already have these types of activities are not constrained from using their funds for the same activities. The officials also told us that the requirement puts a heavy burden on offices with smaller budgets, as they must start up new activities as well as continue existing activities with limited budgets.

As we discussed previously, SBA is required to provide Congress with an annual report each fiscal year. In addition to addressing issues in the annual report such as agencies' methodologies to calculate extramural R&D obligations, SBA is also required to collect data and report on the funds used to achieve the objectives of the administrative pilot program. Such a report could include an evaluation of the constraints that have hindered agencies' participation in the program. As outlined in GAO's guide for designing evaluations, an evaluation gives an agency the opportunity to refine the design of a program and provides a useful tool for determining whether program operations have resulted in the desired benefits for participants.[47] In its fiscal year 2013 report to Congress on the programs, SBA identified some potential constraints to the amounts that agencies spent on the program, including the amount of time available for making obligations after the necessary budget information was received.

SBA officials told us that they plan to include information on the administrative pilot program in their annual report to Congress.[48] However, as we previously noted, SBA submitted its fiscal year 2013 report 2 years after agencies' data were due and has not submitted its fiscal year 2014 annual report to Congress in a timely manner. Until SBA submits its fiscal year 2014 report and includes information on the administrative pilot program, SBA and Congress will not have the information they need to know whether the administrative pilot program has met its goals or whether there are constraints to participating, such as those that we identified. Further, an assessment of the effect of potential constraints on agencies' abilities to participate in the pilot program and the steps needed to address these constraints may help to eliminate inconsistencies in the activities that agencies can currently consider new and help address agencies' views that they are limited in their ability to hire individuals for administrative purposes.

Conclusions

Federal agencies have spent billions of dollars with small businesses under the SBIR and STTR programs to develop and commercialize innovative technologies. In our previous reports on these issues, we identified some areas where SBA could take actions to better ensure agencies' compliance with spending and reporting requirements, as well as management of the administrative pilot program. SBA has taken actions to address some of these recommendations and SBA officials have told us of their plans to address others. As SBA takes steps to address issues we previously identified, we found three additional issues that could continue to affect compliance with spending and reporting

[47]GAO, *Designing Evaluations: 2012 Revision*, GAO-12-208G (Washington, D.C.: January 2012).

[48]Similarly, in September 2013, we found that SBA had not evaluated the performance of the Patriot Express program, a pilot loan initiative under SBA's 7(a) loan guarantee program, or its effect on eligible borrowers. See GAO, *Patriot Express: SBA Should Evaluate the Program and Enhance Eligibility Controls*, GAO-13-727 (Washington, D.C.: Sept. 12, 2013).

requirements in the future. First, because SBA's guidance does not address the timing for when an agency should start up programs, agencies may not know when to start a program. Such information may help ensure that agencies will establish programs when required and ensure that the required amount of money is available for small businesses participating in the programs. Second, because SBA removed language requesting agencies to list the dollar amounts of exclusions from the guidance for submitting data for fiscal year 2014, some agencies did not provide this information. Restoring this guidance could help SBA fully evaluate and report to Congress on the accuracy of agencies' methodology reports. Third, because SBA has not submitted a report on the administrative pilot program to Congress for fiscal year 2014, it has not evaluated the effects of potential constraints on agencies' ability to participate in the pilot program for that year and the steps needed to address these constraints. As a result, some agencies may not have implemented the administrative pilot program to the fullest extent. Performing such an analysis and notifying Congress of constraints may help to eliminate inconsistencies in the activities that agencies can currently consider new and help address agencies' views that they are limited in their ability to hire individuals for administrative purposes.

Recommendations for Executive Action

To ensure full compliance with SBIR and STTR spending and reporting requirements and improve participation in the administrative pilot program, we recommend that the SBA Administrator take the following three actions:

- Review SBA guidance regarding when an agency is required to start up an SBIR or STTR program, and if necessary, update the guidance to provide greater clarity to agencies with R&D obligations greater than the thresholds for participating.
- Restore guidance requesting that agencies provide dollar amounts for exclusions in agency methodology reports to SBA.
- Complete the required reporting on the administrative pilot program for fiscal year 2014, which could include an evaluation of the potential constraints that may hinder agencies' participation and any steps to address these constraints.

Agency Comments and Our Evaluation

We provided a draft of this report to SBA and the 11 participating agencies for review and comment. In an e-mail response, SBA generally agreed with our recommendations. SBA also provided technical comments, as did DHS, DOD, DOE, HHS, and NASA, which we incorporated, as appropriate. As part of its technical comments, SBA provided additional information on steps it has taken to identify why its annual reports to Congress have taken so long to complete and corrective actions it has taken to address the delays. Based on this information, we deleted a proposed recommendation on this issue. Five of the agencies—Commerce, DOT, Education, EPA, and NSF—had no technical or written comments. The remaining agency, USDA, provided written comments, which we reproduced in appendix III.

In written comments, the Chief Scientist for USDA raised three issues. First, USDA raised issues with how we determine compliance with spending requirements in the report. USDA explained that it uses a two-step process to determine its annual spending requirement—first, USDA determines a "set aside" based on appropriations, and second, USDA calculates end-of-year total obligations. USDA said that we focused only on the end of year obligations process in determining whether agencies met the spending requirements and omitted the calculations that show compliance at the front-end of the process. The Small Business Act defines extramural R&D budget in terms of obligations, however. As we found in our April 2015 report, nothing in the Act indicates that "obligations" should be construed as "planned obligations."[49] Because extramural R&D budget is defined as actual obligations over the course of the year, we therefore use end-of-year obligations to determine whether an agency has met its annual spending requirement. Further, in its comments, USDA states that the spending compliance calculation needs further review and it appears that neither we nor SBA have recommended a change to the calculation methodology. However, in our April 2015 report, we recommended that SBA notify Congress in its annual report if it cannot determine agency compliance with program spending requirements when agencies that participate in the SBIR and/or STTR programs do not report extramural R&D obligations data, or develop a proposal to Congress that would change the requirement. In response to this recommendation, SBA reported to Congress in its fiscal year 2013

[49] GAO-15-358.

report that it could not determine compliance with spending requirements and has worked with the agencies to collect obligations data.

Second, in its written comments, USDA states that it was not possible to initiate an STTR program in fiscal year 2014 based on end of year obligations. We recognize in this report that one potential challenge for agencies setting up a new STTR program is that total extramural R&D obligations may be difficult to calculate until after the end of the fiscal year, as agencies can obligate extramural R&D funding through the end of the fiscal year. To address this potential challenge, we recommend in this report that SBA review guidance regarding when an agency is required to start up an SBIR or STTR program and, if necessary, update the guidance to provide greater clarity to agencies with R&D obligations greater than the thresholds for participating.

Third, in its written comments, USDA stated that it can spend multi-year or no-year funds in years other than when they were appropriated, which can have a negative effect on the ability of the SBIR program to comply with spending requirements under the current calculation. USDA raised concerns that footnote 18 in the report, which restates the spending requirements, could lead to a misinterpretation of USDA's authority. We agree with USDA that the Small Business Act does not supersede the authority USDA has to use multi-year or no-year funds in general. However, the Small Business Act imposes more specific yearly spending requirements for the SBIR and STTR programs. We clarified the cited footnote to make clear that the referenced spending requirements only pertain to the SBIR and STTR programs.

We are sending copies of this report to the appropriate congressional committees; the Secretaries of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, and Transportation; the Administrators of the Small Business Administration, the Environmental Protection Agency, and the National Aeronautics and Space Administration; the Director of the National Science Foundation; and other interested parties. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff members have any questions about this report, please contact me at (202) 512-3841 or neumannj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

John Neumann
Director, Natural Resources and Environment

List of Committees

The Honorable David Vitter
Chairman
The Honorable Jeanne Shaheen
Ranking Member
Committee on Small Business & Entrepreneurship
United States Senate

The Honorable Lamar Smith
Chairman
The Honorable Eddie Bernice Johnson
Ranking Member
Committee on Science, Space, and Technology
House of Representatives

The Honorable Steve Chabot
Chairman
The Honorable Nydia M. Velázquez
Ranking Member
Committee on Small Business
House of Representatives

Appendix I: Agencies' Compliance with Spending Requirements for the Small Business Innovation Research Program for Fiscal Year 2014, according to Agency Data

The data that the agencies submitted to the Small Business Administration (SBA) indicate that 9 of the 11 participating agencies spent amounts for the Small Business Innovation Research (SBIR) program that met or exceeded their fiscal year 2014 spending requirements, while spending for the remaining 2 agencies did not meet the requirements. For the purposes of this report, we defined compliance as spending at least 2.8 percent of an agency's reported extramural research or research and development obligations on the SBIR program in fiscal year 2014, as required by the Small Business Act. This method is consistent with SBA's approach for calculating spending requirements in its reports to Congress on the program (see table 5).

Table 5: Agency Compliance with Small Business Innovation Research (SBIR) Program Spending Requirements for Fiscal Year 2014, according to Agency Data

Dollars in millions

Agency	Extramural research or research and development (R&D) obligations	Amount spent[a]	Calculated spending requirement[b]	Difference between amount spent and spending requirement	Percentage of extramural R&D obligations spent for SBIR
Department of Defense	$31,557	$1,056.8	$883.6	$173.1	3.35%
Department of Health and Human Services	24,097	680.7	674.7	6.0	2.82%
Department of Energy	6,055	182.6	169.5	13.0	3.02%
National Science Foundation	4,688	139.8	131.3	8.5	2.98%
National Aeronautics and Space Administration	4,742	144.3	132.8	11.5	3.04%
Department of Agriculture	1,097	19.5	30.7	(11.2)	1.78%
Department of Homeland Security	364	18.5	10.2	8.3	5.08%
Department of Education	310	10.2	8.7	1.5	3.29%
Department of Commerce	298	6.9	8.3	(1.4)	2.32%
Department of Transportation	259	11.8	7.3	4.5	4.55%
Environmental Protection Agency	149	5.0	4.2	0.8	3.37%
Total	**$73,615**	**$2,276.0**	**$1.987.6**	**$288.5**	**3.09%**

Source: GAO analysis of agencies' data submitted to the Small Business Administration (SBA). | GAO-16-492

Notes: Calculations may be affected by rounding. Cells shaded gray indicate that the agency did not meet its spending requirement in fiscal year 2014, according to data that the agency submitted.

[a]The amount spent is the total obligations that the agency submitted to SBA.

[b]We calculated the spending requirement as 2.8 percent of the agency's extramural R&D obligations, as required by the Small Business Act.

Appendix II: Agencies' Compliance with Spending Requirements for the Small Business Technology Transfer Program for Fiscal Year 2014, according to Agency Data

The data that the agencies submitted to the Small Business Administration (SBA) indicate that four of the five participating agencies spent amounts for the Small Business Technology Transfer (STTR) program that met or exceeded their fiscal year 2014 spending requirements, while 1 agency did not. For the purposes of this report, we defined compliance as spending at least 0.4 percent of an agency's reported extramural research or research and development obligations on the STTR program in fiscal year 2014, as required by the Small Business Act. This method is consistent with SBA's approach for calculating spending requirements in its reports to Congress on the program. (See table 6.)

Table 6: Agency Compliance with Small Business Technology Transfer (STTR) Program Spending Requirements for Fiscal Year 2014, according to Agency Data

Dollars in millions

Agency	Extramural research or research and development (R&D) obligations	Amount spent[a]	Calculated spending requirement[b]	Difference between amount spent and spending requirement	Percentage of extramural R&D obligations spent for STTR
Department of Defense	$31,557	$67.0	$126.2	$(59.3)	0.21%
Department of Health and Human Services	24,097	96.6	96.4	0.2	0.40%
Department of Energy	6,055	24.1	24.2	(0.1)	0.40%[c]
National Space and Aeronautics Administration	4,742	21.2	19.0	2.2	0.45%
National Science Foundation	4,688	20.2	18.7	1.5	0.43%
Total	**$71,138**	**$229.1**	**$256.2**	**$(55.5)**	**0.40%[c]**

Source: GAO analysis of agencies' data submitted to the Small Business Administration (SBA). | GAO-16-492

Notes: Calculations may be affected by rounding. Cells shaded gray indicate that the agency did not meet its spending requirement in fiscal year 2014, according to data the agency submitted to SBA.

[a]The amount spent is the total obligation that the agency submitted to SBA.

[b]We calculated the spending requirement as 0.4 percent of the agency's extramural R&D obligations, as required by the Small Business Act.

[c]If an agency's spending for the STTR program as a percentage of its extramural R&D obligations was within a rounding error of the required level, we considered that agency to be in compliance with the spending requirement. This was the case with the Department of Energy.

Appendix III: Comments from the U.S. Department of Agriculture

USDA REE

United States Department of Agriculture

Research Education Economics

Office of the Under Secretary

Room 216W
Jamie L. Whitten Building
Washington, DC 20250-0110

MAY 13 2016

Mr. John Neumann
Director, Natural Resources and Environment
Government Accountability Office
441 G Street NW
Washington, D.C. 20548

Dear Mr. Neumann:

The U.S. Department of Agriculture's (USDA) National Institute of Food and Agriculture (NIFA) appreciates the opportunity to respond to the U.S. Government Accountability Office (GAO) draft report, *Small Business Research Programs: Agencies Have Improved Compliance with Spending and Reporting Requirements, but Challenges Remain*, GAO-16-492, (job code 100149), dated April 7, 2016.

The draft report outlines specific recommendations for the Small Business Administration (SBA) to implement in its role of overseeing the Federal-wide Small Business Innovation Research (SBIR) program. Within the draft report GAO cited USDA SBIR program examples within several of the recommendations. USDA-NIFA would like to provide the following comments.

General Comments

USDA-NIFA appreciates the GAO conducting this audit as a means to improve the Federal-wide SBIR program. USDA-NIFA agrees that there are areas that can be strengthened within the SBIR program; however, USDA-NIFA urges the GAO to include a narrative in the draft report to describe how the fiscal process works at USDA and other Federal Agencies. USDA-NIFA manages its SBIR program via a two-step process: first, a set-aside is established based on program appropriations; and second, the end of year total obligation process takes place. Through this two-step approach, USDA-NIFA calculates a fixed level for the extramural program obligations total based on the appropriations. Throughout this draft report, GAO has focused on end of year total obligations when determining how an Agency/Department met the requirement of the SBIR act and has omitted the calculations that show USDA compliance at the front end of the appropriations process. The report does not indicate how the appropriation budget process can provide a positive direction for an agency including USDA to make programmatic decisions on its SBIR program. Over time, based on appropriations and period of availability of appropriated funds, USDA does meet the required set-aside percentages.

Because the report does not describe the full budget process at USDA, the report has raised issues that are not achievable by the USDA. As an example the report indicates that USDA was to initiate a new STTR program in FY 14, however, the scenario described in the report is not possible under normal federal business practices. The report indicates an expenditure compliance calculation for SBIR programs using total R&D end of year obligations across all non-SBIR programs at USDA.

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This calculation automatically places an Agency/Department with multi-year/no-year funds, including USDA, out of compliance due to prior year funds being taxed for the required set-aside under the appropriations budget process.

The report does not accurately describe the link between the early year appropriations process to the end of year total obligations process and cites non-compliance of Agencies/Departments that could be in compliance if the full funding process was used to calculate obligations over time, rather than focusing on only one year. The report could include more specific recommendations regarding the manner in which multi-year appropriations can be deemed meeting the SBIR statutory requirements. USDA-NIFA recommends that GAO coordinates with SBA to develop a plan to document the complexity of the entire budget process for each Federal Agency/Department and work with SBA to determine methodologies that show compliance with the SBIR Act.

Below are specific comments on the report.

GAO Recommendation and Statement

The SBA is directed to: Review SBA guidance regarding when an agency is required to start-up a SBIR or STTR program, and if necessary, update the guidance to provide greater clarity to agencies with R&D obligations greater than the thresholds for participating.

Page 12, states "In fiscal year 2014, USDA reported extramural R&D obligations of $1.1 billion, but did not establish an STTR program as required. The Small Business Act and the STTR policy directive state that each federal agency with extramural obligations for R&D in excess of $1 billion must participate in the STTR program."

USDA Response

In FY 14, the USDA R/R&D appropriated budget did not exceed the threshold as stated in the SBIR Act or the STTR Policy Directive. The report states that the USDA was required to start a STTR program based on end of year obligations, but does not explain how this requirement is possible given that end of year obligations are not normally known until several months after the fiscal year ends. Normal business processes within the Federal Government typically requires any new federal program be based on Congressional appropriations and this best practice aligns with the SBIR Act and STTR Policy Directive and how the Federal wide SBIR program has been managed since its inception. Disregarding early year appropriations budget process and only focusing on end of year obligations creates a scenario where an agency will never be able to start a STTR program in the same fiscal year. USDA requests the GAO to update this section and explain why the USDA is in violation of the current SBIR Act and STTR Policy Directive and provide a recommendation how an Agency would retroactively implement a SBIR/STTR program using only end of year total obligations as the metric.

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GAO Statement

Page 6: The spending requirement for SBIR and STTR are to be calculated as a percentage of each agency's extramural R&D obligations, provided their extramural obligations exceed the participation thresholds of $100 million for SBIR and $1 billion of STTR. Under the 2011 reauthorization, the SBIR extramural spending requirement was set at 2.8% percent for fiscal year 2014 and will increase incrementally to 3.2 percent of the extramural R&D obligations in fiscal year 2017.

USDA Response

The report does not indicate that using end of year total obligations at the agency level will automatically place some Agencies/Departments out of compliance for SBIR expenditure compliance. Many Agencies/Departments obligate prior year multi-year/no-year funds on non-SBIR programs as allowed by statute for those programs. The concern is that the total obligation number for the Agency/Department used in the calculation often will include multi-year/no-year obligations from earlier years **plus** the total obligations for the current year and when the current year SBIR set-aside percentage is applied to this number, an Agency/Department is automatically out of compliance. At the time a fiscal year funds are appropriated, NIFA sets aside the required amount for the SBIR program based on total appropriations available for program obligations. This amount is calculated at the beginning of the process, and the amount does not change as the fiscal year moves forward.

As an example, if the USDA obligated $250M of no-year extramural R&D funds (i.e., funds from earlier years such as FY11, FY12 and FY13) on non-SBIR programs. In FY14 the SBIR set-aside was 2.8% but the obligated no-year funds from earlier years already contributed the required set-aside percentage to the SBIR program in the year the funds were appropriated (i.e., FY11 at 2.5%, FY12 at 2.6% and FY13 at 2.7%). Under the current calculation methodology to determine expenditure compliance, the USDA SBIR program in FY14 would need an additional $7.2M (2.8% of the $250M no-year funds from FY11, FY12 and FY13) for the calculation to work and show the SBIR program in compliance. The SBIR program cannot acquire the $7.2M because the SBIR program already received the taxed set-aside in FY11, FY12 and FY13 at the percentages stated above. The USDA SBIR program could obligate 100% of its SBIR set-aside for a reporting year, but when earlier no-year funds of non-SBIR USDA programs are added into the total obligation calculation, USDA automatically falls below the required percentage for expenditure compliance unless additional taxed set-aside funds are provided. The current SBIR statute does not allow for a second set-aside to be applied (once at the time NIFA determines available program funds and once after obligations are known) and USDA agrees that this practice would be inappropriate and would have a negative impact on non-SBIR programs at USDA.

The report should indicate that the SBIR expenditure compliance calculation needs further review to understand the negative impacts of the calculation on complex federal fiscal systems used by many of the Agencies/Departments that manage SBIR programs. USDA-NIFA has communicated with GAO on several occasions about this problem; however, the calculation methodology has not

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changed. USDA-NIFA has discussed this issue with SBA and SBA understands the problem, but it appears that neither GAO nor SBA have recommended a change to the calculation methodology. Conducting an additional review of the calculation methodology would strengthen the Federal-wide SBIR programs and foster SBA's development of new recommendations to allow Agencies/Departments to achieve SBIR Program compliance.

GAO Statement

Page 11: USDA officials said that they did not comply with SBIR spending requirements because their extramural R&D obligations – a key figure in calculating the spending requirement – nearly doubled from what they planned based on their proposed budget. In addition the officials told us that they have multi-year funding, which enables them to spend funds in years other than when it was appropriated. [18] Commerce and USDA officials said that they plan to spend all of their SBIR funds on the program before the funding expires.

[18] As noted above, however, the Small Business Act requires agencies to spend the required amount of the programs in each fiscal year.

USDA-NIFA Response

USDA-NIFA officials stated to GAO that USDA non-SBIR programs have multi-year/no-year funding, which enables USDA non-SBIR programs to spend funds in years other than when the funds were appropriated. USDA-NIFA officials explained that multi-year/no-year non-SBIR funds are allowed by the statutes that govern those non-SBIR programs. USDA-NIFA also indicated that these prior year funds used on non-SBIR programs have a negative impact on the ability of the SBIR program to achieve expenditure compliance under the current calculation. USDA-NIFA recommends that the report provide a statement describing the issues with non-SBIR programs in relation to expenditure compliance of SBIR programs.

Footnote 18 may lead to misinterpretation of USDA authority. The SBIR Act does not supersede the statutes or authority of non-SBIR programs to use multi-year/no-year funds at USDA. USDA-NIFA requests the report clarify the intent of footnote 18 as it relates to USDA non-SBIR programs.

Thank you again for the opportunity to review and respond to the GAO draft report.

Sincerely,

Catherine E Woteki

Catherine E. Woteki, Ph.D.
Under Secretary
Chief Scientist, USDA

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

John Neumann, (202) 512-3841 or neumannj@gao.gov

Staff Acknowledgments

In addition to the contact named above, Hilary Benedict (Assistant Director), Jeffrey Barron, Lisa Brown, Antoinette Capaccio, Cindy Gilbert, Jordan Kudrna, Alison O'Neill, and Sara Sullivan made key contributions to this report.

Appendix V: Accessible Data

Agency Comment Letter

Text of Appendix III: Comments from the U.S. Department of Agriculture

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United States Department of Agriculture

Research Education Economics

Office of the Under Secretary

Room 216W

Jamie L. Whitten Building

Washington, DC 20250-0110

MAY 13 2016

Mr. John Neumann

Director, Natural Resources and Environment

Government Accountability Office

441 G Street NW

Washington, D.C. 20548

Dear Mr. Neumann:

The U.S. Department of Agriculture's (USDA) National Institute of Food and Agriculture (NIFA) appreciates the opportunity to respond to the U.S. Government Accountability Office (GAO) draft report, Small Business Research Programs: Agencies Have Improved Compliance with Spending and Reporting Requirements, but Challenges Remain, GA0-16-492, job code 100149), dated April 7, 2016.

The draft report outlines specific recommendations for the Small Business Administration (SBA) to implement in its role of overseeing the Federal-wide Small Business Innovation Research (SBIR) program. Within the draft report GAO cited USDA SBIR program examples within several of the recommendations. USDA-NIFA would like to provide the following comments.

General Comments

USDA-NIFA appreciates the GAO conducting this audit as a means to improve the Federal-wide SBIR program. USDA-NIFA agrees that there are areas that can be strengthened within the SBIR program; however, USDA-NIFA urges the GAO to include a narrative in the draft report to describe how the fiscal process works at USDA and other Federal Agencies. USDA-NIFA manages its SBIR program via a two-step process: first, a set-aside is established based on program appropriations; and second, the end of year total obligation process takes place. Through this two-step approach, USDA-NIFA calculates a fixed level for the extramural program obligations total based on the appropriations. Throughout this draft report, GAO has focused on end of year total obligations when determining how an Agency/Department met the requirement of the SBIR act and has omitted the calculations that show USDA compliance at the front end of the appropriations process. The report does not indicate how the appropriation budget process can provide a positive direction for an agency including USDA to make programmatic decisions on its SBIR program. Over time, based on appropriations and period of availability of appropriated funds, USDA does meet the required set-aside percentages.

Because the report does not describe the full budget process at USDA, the report has raised issues that are not achievable by the USDA. As an example the report indicates that USDA was to initiate a new STIR program in FY 14, however, the scenario described in the report is not possible under normal federal business practices. The report indicates an expenditure compliance calculation for SBIR programs using total R&D end of year obligations across all non-SBIR programs at USDA.

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This calculation automatically places an Agency/Department with multi-year/no-year funds, including USDA, out of compliance due to prior year funds being taxed for the required set-aside under the appropriations budget process.

The report does not accurately describe the link between the early year appropriations process to the end of year total obligations process and cites non-compliance of Agencies/Departments that could be in compliance if the full funding process was used to calculate obligations over time, rather than focusing on only one year. The report could include more specific recommendations regarding the manner in which multi-year appropriations can be deemed meeting the SBIR statutory requirements. USDA-NIFA recommends that GAO coordinates with SBA to develop a plan to document the complexity of the entire budget process for each Federal Agency/Department and work with SBA to determine methodologies that show compliance with the SBIR Act.

Below are specific comments on the report.

GAO Recommendation and Statement

The SBA is directed to: Review SBA guidance regarding when an agency is required to start-up a SBIR or STIR program, and if necessary, update the guidance to provide greater clarity to agencies with R&D obligations greater than the thresholds for participating.

Page 12, states "In fiscal year 2014, USDA reported extramural R&D obligations of $1.1 billion, but did not establish an STIR program as required. The Small Business Act and the STIR policy directive state that each federal agency with extramural obligations for R&D in excess of $1 billion must participate in the STTR program."

USDA Response

In FY 14, the USDA RIR&D appropriated budget did not exceed the threshold as stated in the SBIR Act or the STIR Policy Directive. The report states that the USDA was required to start a STIR program based on end of year obligations, but does not explain how this requirement is possible given that end of year obligations are not normally known until several months after the fiscal year ends. Normal business processes within the Federal Government typically requires any new federal program be based on Congressional appropriations and this best practice aligns with the SBIR Act and STIR Policy Directive and how the Federal wide SBIR program has been managed since its inception. Disregarding early year appropriations budget process and only focusing on end of year obligations creates a scenario where an agency will never be able to start a STIR program in the same fiscal year. USDA requests the GAO to update this section and explain why the USDA is in violation of the current

SBIR Act and STIR Policy Directive and provide a recommendation how an Agency would retroactively implement a SBIR/STIR program using only end of year total obligations as the metric.

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GAO Statement

Page 6: The spending requirement for SBIR and STIR are to be calculated as a percentage of each agency's extramural R&D obligations, provided their extramural obligations exceed the participation thresholds of $100 million for SBIR and $1 billion of STTR. Under the 2011 reauthorization, the SBIR extramural spending requirement was set at 2.8% percent for fiscal year 2014 and will increase incrementally to 3.2 percent of the extramural R&D obligations in fiscal year 2017.

USDA Response

The report does not indicate that using end of year total obligations at the agency level will automatically place some Agencies/Departments out of compliance for SBIR expenditure compliance. Many Agencies/Departments obligate prior year multi-year/no-year funds on non- SBIR programs as allowed by statute for those programs. The concern is that the total obligation number for the Agency/Department used in the calculation often will include multi-year/no-year obligations from earlier years plus the total obligations for the current year and when the current year SBIR set-aside percentage is applied to this number, an Agency/Department is automatically out of compliance. At the time a fiscal year funds are appropriated, NIFA sets aside the required amount for the SBIR program based on total appropriations available for program obligations. This amount is calculated at the beginning of the process, and the amount does not change as the fiscal year moves forward.

As an example, if the USDA obligated $250M of no-year extramural R&D funds (i.e., funds from earlier years such as FY11, FYI 2 and FYI 3) on non-SBIR programs. In FYI 4 the SBIR set-aside was 2.8% but the obligated no-year funds from earlier years already contributed the required set- aside percentage to the SBIR program in the year the funds were appropriated (i.e., FYI I at 2.5%, FYI 2 at 2.6% and FYI 3 at 2.7%). Under the current calculation methodology to dete1mine expenditure compliance, the USDA SBIR program in FY14 would need an additional $7.2M (2.8% of the $250M no-year funds from FY11, FY12 and FY13) for the calculation to work and show the SBIR program in compliance. The SBIR program cannot acquire the $7.2M because the SBIR program already received the taxed set-aside in FY11, FY12 and FY13 at the percentages stated above. The USDA SBIR program could obligate 100% of its SBIR set-aside for a reporting year, but when earlier no-year funds of non-SBIR USDA programs are added into the total obligation calculation, USDA automatically falls below the required percentage for expenditure compliance unless additional taxed set-aside funds are provided. The current SBIR statute does not allow for a second set-aside to be applied (once at the time NIFA determines available program funds and once after obligations are known) and USDA agrees that this practice would be inappropriate and would have a negative impact on non-SBIR programs at USDA.

The report should indicate that the SBIR expenditure compliance calculation needs further review to understand the negative impacts of the calculation on complex federal fiscal systems used by many of the Agencies/Departments that manage SBIR programs. USDA-NIPA has communicated with GAO on several occasions about this problem; however, the calculation methodology has not

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changed. USDA-NIFA has discussed this issue with SBA and SBA understands the problem, but it appears that neither GAO nor SBA have recommended a change to the calculation methodology. Conducting an additional review of the calculation methodology would strengthen the Federal- wide SBIR programs and foster SBA's development of new recommendations to allow Agencies/Departments to achieve SBIR Program compliance.

GAO Statement

Page 11: USDA officials said that they did not comply with SBIR spending requirements because their extramural R&D obligations - a key figure in calculating the spending requirement -nearly doubled from what they planned based on their proposed budget. In addition the officials told us that they have multi-year funding, which enables them to spend funds in years other than when it was appropriated. [18] Commerce and USDA officials said that they plan to spend all of their SBIR funds on the program before the funding expires.

[18] As noted above, however, the Small Business Act requires agencies to spend the required amount of the programs in each fiscal year.

USDA-NIFA Response

USDA-NIFA officials stated to GAO that USDA non-SBIR programs have multi-year/no-year funding, which enables USDA non-SBIR programs to spend funds in years other than when the funds were appropriated. USDA-NIFA officials explained that multi-year/no-year non-SBIR funds are allowed by the statutes that govern those non-SBIR programs. USDA-NIFA also indicated that these prior year funds used on non-SBIR programs have a negative impact on the ability of the SBIR program to achieve expenditure compliance under the current calculation. USDA-NIFA recommends that the report provide a statement describing the issues with non-SBIR programs in relation to expenditure compliance of SBIR programs.

Footnote 18 may lead to misinterpretation of USDA authority. The SBIR Act does not supersede the statutes or authority of non-SBIR programs to use multi-year/no-year funds at USDA. USDA- NIFA requests the report clarify the intent of footnote 18 as it relates to USDA non-SBIR programs.

Thank you again for the opportunity to review and respond to the GAO draft report.

Sincerely,

Catherine E. Woteki, Ph.D.

Under Secretary

Chief Scientist, USDA

Data Tables

Data Table for Figure 1: Percentage of Extramural R&D Obligations Participating Agencies Reported Spending on the Small Business Innovation Research (SBIR) Program in Fiscal Year 2014

Agencies	Percentage of extramural R&D budget obligated for SBIR	Minimum Spending Requirement 2.8%
DHS	5.08	0.028
DOT	4.55	0.028
EPA	3.37	0.028
DOD	3.35	0.028
Education	3.29	0.028
NASA	3.04	0.028
DOE	3.02	0.028
NSF	2.98	0.028

Agencies	Percentage of extramural R&D budget obligated for SBIR	Minimum Spending Requirement 2.8%
HHS	2.82	0.028
Commerce	2.32	0.028
USDA	1.78	0.028

Data Table for Figure 2: Percentage of Extramural R&D Obligations That Participating Agencies Reported Spending on the Small Business Technology Transfer (STTR) Program in Fiscal Year 2014

Agencies	Percentage of extramural R&D budget obligated for STTR	Minimum Spending Requirement 0.40%
NASA	0.45	0.0040
NSF	0.43	0.0040
DOE	0.4	0.0040
HHS	0.4	0.0040
DOD	0.21	0.0040

Data Table for Figure 3: Fiscal Year 2014 Spending Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs Compared to an Alternative Scenario Using Current Percentages

	Total R&D Budget Authority [a]	Extramural R&D Obligations [b]	SBIR Spending requirement under current law [c]	SBIR Spending requirement under alternate scenario [d]	Percentage Difference between current law and alternate scenario	STTR Spending requirement under current law [e]	STTR Spending requirement under alternate scenario [f]	Percentage Difference between current law and alternate scenario
USDA	2,261	1,097	31	63	106	[g]	9	[g]
DOD	65,762	31,557	884	1,841	108	126	263	108
Commerce	1,343	298	8	38	351	[g]	5	[g]
DHS	599	364	10	17	65	[h]	[h]	[h]
DOE	11,204	6,055	170	314	85	24	45	85
DOI	827	[g]	[g]	23	[g]	[h]	[h]	[h]
DOT	833	259	7	23	221	[h]	[h]	[h]
Education	315	310	9	9	2	[h]	[h]	[h]
EPA	534	149	4	15	260	[h]	[h]	[h]
HHS	30,513	24,097	675	854	27	96	122	27
NASA	11,733	4,742	133	329	147	19	47	147
NSF	5,430	4,688	131	152	16	19	22	16
VA	1,101	[g]	[g]	31	[g]	[g]	4	[g]

	Total R&D Budget Authority [a]	Extramural R&D Obligations [b]	SBIR Spending requirement under current law [c]	SBIR Spending requirement under alternate scenario [d]	Percentage Difference between current law and alternate scenario	STTR Spending requirement under current law [e]	STTR Spending requirement under alternate scenario [f]	Percentage Difference between current law and alternate scenario
Total	$132,455	$73,616	$2,062	$3,709	80%	$284	$517	82%

Data Table for Figure 4: Fiscal Year 2014 Spending Requirements for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs Compared to an Alternative Scenario Using Lower Percentages

Agency	Total research and development budget a	Extramural research and development Obligations b	SBIR spending requirement under current law c	FY14 SBIR spending requirement in alternate scenario d	Percentage difference between current law and alternate scenario	STTR spending requirement under current law e	FY14 STTR spending requirements in alternate scenario f	Percentage difference between current law and alternate scenario
USDA	2,261	1,097	31	35	15	g	5	g
DOD	65,762	31,557	884	1,023	16	126	141	12
COMMERCE	1,343	298	8	21	156	g	3	g
DHS	599	364	10	9	-9	h	h	h
DOE	11,204	6,055	170	174	3	24	24	-1
DOI	827	g	g	13	g	h	h	h
DOT	833	259	7	13	81	h	h	h
EDUCATION	315	310	9	5	-45	h	h	h
EPA	534	149	4	8	104	h	h	h
HHS	30,513	24,097	675	475	-32	96	66	-38
NASA	11,733	4,742	133	183	39	19	25	38
NSF	5,430	4,688	131	84	-37	19	12	-43
VA	1,101	g	g	17	g	g	2	g
TOTAL	$132,455	$73,616	$2,062	$2,060	0%	$284	$278	-3%

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