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# Congress of the United States
## U.S. House of Representatives
## Committee on Small Business

2361 Rayburn House Office Building
Washington, DC 20515-6315

**Memorandum**

To: Members, Committee on Small Business
From: Chairman Sam Graves
Date: May 19, 2014
Re: Hearing: "Oversight of the Small Business Innovation Research and Small Business Technology Transfer Programs"

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## I. Introduction

On Wednesday, May 21, 2014 at 1:00 pm, the Committee on Small Business will conduct a hearing titled, "Oversight of the Small Business Innovation Research and Small Business Technology Transfer Programs." This will be the first of two oversight hearings in the coming months examining the programmatic changes to both the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs made in Titles L and LI of the National Defense Authorization Act (NDAA) for Fiscal Year 2012 (P.L. 112-81).[1] This hearing will focus on private sector impressions of the programs and the real world effect of numerous changes made by Congress to the SBIR and STTR Programs.

## II. Small Business Innovation Research Program

Congressional support for the SBIR initiative was predicated upon the belief that while technology-based companies under 500 employees tended to be highly innovative, and innovation being essential to the economic well-being of the United States, these businesses were underrepresented in the award of government research and development (R&D) contracts. In order to increase participation of such entities in federal R&D efforts, Congress passed the Small Business Innovation Development Act in 1982,[2] which established the SBIR program. The purpose of the Act was to increase government funding of small businesses that conduct R&D with a particular focus on technology that has high commercial potential. Prior to the most recent reauthorization, the SBIR program had been reauthorized and extended several times. Each reauthorization made significant changes to the SBIR program, including increasing award sizes for inflation, codifying agency independence within a framework established by the Small Business Administration (SBA), increasing the

[1] Pub. L. No. 112-81, Div. E. 125 Stat. 1298, 1822-62 (2011). The short title of Division E is the SBIR/STTR Reauthorization Act of 2011.
[2] Pub. L. No. 97-219, 96 Stat. 217 (1982) (codified at 18 U.S.C. §638).

percentage participating agencies must set aside for the program, and increasing the general focus of the program on the commercialization of the technologies developed.

The objectives of the SBIR program include expansion of commercialization of federally funded R&D, stimulation of technological innovation in the small business sector, increased use of this community to meet the government's diverse R&D needs, and additional involvement of minority and disadvantaged individuals in the process. The program requires federal departments with an extramural research budget of $100 million or more to set aside a small percentage of their agency's overall research budget and award technology development contracts to small firms. The percentage of research and development activities to be conducted by small firms originally was set at 1.25 percent but has increased incrementally to 2.8 percent where it now stands.

Currently, eleven agencies have research budgets large enough to require participation in the SBIR program: the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; and the National Science Foundation. Each agency's SBIR activity reflects that organization's management style. Individual departments select R&D interests, administer program operations, and control financial support. Funding may be disbursed in the form of contracts, grants, or cooperative agreements. Separate agencies issue solicitations for R&D at specific times and small businesses submit competing proposals to do the work.

Congress delegated to the SBA the authority for creating broad policy and guidelines under which qualifying agencies operate their SBIR programs. The SBA monitors and reports to Congress on the conduct of the separate departmental SBIR activities. While the SBA provides direction and monitors the program, it does not provide funding for the awards, select the award winners, or distribute the award dollars.

Criteria for eligibility in the SBIR program include companies that are: independently owned and operated; not dominant in the field of research proposed; for profit; the employer of 500 or fewer people; and at least 51 percent owned by one or more United States citizens or lawfully admitted permanent resident aliens. In 2003, an SBA administrative law judge issued a decision that venture capital firms could not be considered as 'individuals' for the purpose of satisfying the ownership criteria of the SBIR program. As a result, a number of firms that were majority-owned by venture capital firms that had once been eligible to participate in the SBIR program before the 2003 ruling were no longer eligible. The ruling created confusion among program participants and has led some firms to steer away from the program. Many of the small research companies that were rendered ineligible by the SBA's 2003 ruling have fewer than 100 employees and--in the case of small biotechnology companies--no revenue. This issue, as well as the Congressional response, will be discussed later in this memorandum.

The SBIR program is designed to award grants via a three-phase process. In the first phase, awards up to $150,000 are provided to evaluate a concept's scientific or technical merit and feasibility. The project must be of interest to and coincide with the mission of the supporting organization. Projects that demonstrate potential after the initial endeavor may compete for Phase II awards of up to $1 million to perform the principal R&D. Phase III funding, directed at the commercialization of the product or process, is expected to be generated in the private sector. Federal dollars, but not SBIR funds, may be used if the government perceives that the final technology or technique will meet public needs.

**III. Small Business Technology Transfer Program**

STTR is an important small business program that also expands funding opportunities in the federal innovation R&D arena. Central to the program is expansion of the public/private sector partnership to include joint venture opportunities for small businesses and the nation's network of nonprofit research institutions. Much like SBIR, STTR is a highly competitive program that reserves a specific percentage of federal R&D funding for award to small businesses and nonprofit research institution partners.

Often, the risk and expense of conducting serious R&D efforts can be beyond the means of many small businesses, especially those who have just initiated their businesses. Conversely, nonprofit research laboratories are instrumental in developing high-tech innovations. But frequently, innovation is confined to the theoretical, not the practical. STTR combines the strengths of both entities by introducing entrepreneurial skills to high-tech research efforts. The technologies and products are then transferred from the laboratory to the marketplace.

Eligibility criteria for businesses in STTR mirror those of SBIR; they must be American-owned and independently operated, for-profit, and employ no more than 500 workers. The nonprofit research institution must also meet certain eligibility criteria, such as being located the United States, and meet one of the three following definitions; it must be a nonprofit college or university, a domestic nonprofit research organization, or a federally funded R&D center.[3]

Each year, five federal departments and agencies are required by STTR to reserve a portion (currently 0.4 percent) of their R&D funds for award to small business/nonprofit research institution partnerships. Those are the Department of Defense, the Department of Energy, the Department of Health and Human Services, the National Aeronautics and Space Administration, and the National Science Foundation.[4] As with SBIR, SBA develops broad guidelines but the agencies designate R&D topics, accept proposals, and award funds.

Similar to the SBIR program, agencies make STTR awards based on small business/nonprofit research institution qualification, degree of innovation, and future market potential. Small businesses that receive awards then begin a three-phase program. Phase I

[3] Examples of each of these could be a major research university such as the University of Pittsburgh, a non-profit research organization such as the Cystic Fibrosis Foundation, or a federally funded R&D center such as the Los Alamos National Laboratory.

[4] Federal agencies with extramural R&D budgets that exceed $1 billion are required to participate in the STTR program.

and II awards are capped at the same levels as SBIR. The Phase III (commercialization) portion of the project is designed to encourage private sector investment or non-STTR or SBIR federal agency funding, which is also similar to SBIR.

## IV. P.L. 112-81, the National Defense Authorization Act for FY2012

Aside from extending and modernizing the SBIR and STTR program,[5] the SBIR/STTR Reauthorization Act contained in the FY 2012 NDAA was primarily designed to increase commercialization of SBIR-funded research. The legislation encouraged commercialization in three major respects. First, prior to the enactment of the SBIR/STTR Reauthorization Act, only the SBIR program at the Department of Defense was authorized to conduct a formal commercialization effort in Phase III of the program. The SBIR/STTR Reauthorization Act extended that authority to all agencies required to operate a SBIR program.

Second, the legislation promotes greater participation from a wider array of small businesses by reducing the concentration of companies that receive Phase I and Phase II awards that do not move toward commercialization. Congress determined that the SBIR program had morphed into a contract research set-aside program exploited by a number of companies with expertise in writing grant proposals.[6] To counter this situation, Congress imposed constraints on the ability of firms to receive SBIR funds from *any agency* if they have not achieved a certain level of commercialization success, i.e., moved to Phase III or a commercial equivalent thereof.[7]

Finally, the SBIR/STTR Reauthorization Act of 2011 permits companies that are majority-owned by qualifying venture capital, private equity and hedge funds to participate in the programs. Section 5107 of the legislation statutorily overturns a 2003 determination by the Office of Hearings and Appeals of the SBA that dramatically limited the ability of small firms with significant investments from venture capital companies from participating in the SBIR program.[8] This change eliminates the Hobson's choice that was imposed on small firms after the 2003 ruling – take funds from venture capital firms and lose the ability to participate in SBIR or lose important capital infusions and participate in SBIR. In short, Section 5107 ensures that small businesses will have the maximum available capital to move on toward commercialization – a key goal of the original 1982 legislation.[9]

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[5] Among the "basic" changes: extending the authorization of the program to 2017; increasing award sizes to reflect the modern cost of doing business; allowing a small portion of the set-aside to be used by agencies for administrative funds; and increasing data collection and dissemination to allow for better evaluation of the programs' successes and/or failures going forward.
[6] For example, the Committee on Small Business in the House found instances in which SBIR awardees received hundreds of Phase I and Phase II grants but little or no effort was made in the commercialization of such research.
[7] SBIR/STTR Reauthorization Act of 2011, §5165, 125 Stat. at 1859 (codified at 15 U.S.C. § 638 (qq)).
[8] Id. at §5107, 125 Stat. at 1827 (codified at 15 U.S.C. § 638 (dd)).
[9] Despite what some views may be of the original progenitors of the SBIR program at the National Science Foundation in the late 1970s, the program instituted by Congress in 1982 made it clear that SBIR grants should, all else being equal in consideration of two grant applications, go to the applicant that secured additional private funding including funds from venture capital firms. Section 5107 simply returns the program to the intent of the original congressional authors of the program.

## V. Independent Evaluation of SBIR and STTR Programs

The law significantly improves oversight of the programs by requiring agencies to provide more detailed periodic reports to Congress. Since the SBIR program's inception in 1982, only one comprehensive independent study had been done. In 2007, after more than three years of research and analysis, the National Research Council (NRC) of the National Academies of Science released its assessment of the SBIR program as administered by the five federal agencies (Department of Defense, National Institutes of Health, the National Aeronautics and Space Administration, the Department of Energy, and the National Science Foundation) that together made up approximately 96 percent of SBIR program expenditures at that time. The core finding of the study is that the SBIR program is sound in concept and effective in practice.[10] In support of the report's core finding, the NRC concluded that the SBIR program is: (1) stimulating technological innovations; (2) increasing private sector commercialization of research; (3) using small businesses to meet federal research and development needs; and (4) providing widely distributed support for innovation activity.[11]

To expand on this research and to provide greater information to policymakers in the future, Congress directed the NRC to continue its examination of the SBIR program as well as expand its review to include the STTR program. The law also directs the Comptroller General of the United States and the Inspector Generals of each of the participating agencies to conduct investigations into various segments of the SBIR and STTR programs in areas such as waste, fraud, and abuse protections, agency compliance spending and reporting requirements, commercialization success rates, and data protections for small firms participating in the programs.

## VI. Conclusion

The SBIR and STTR programs offer competition-based awards to stimulate technological innovation among small private-sector businesses while providing government agencies new, cost-effective, technical and scientific solutions to meet their diverse mission needs. The development of this program is not only critical to the unique needs of each of the participating federal agencies, but also to our national economy. Small businesses renew the economy by introducing new products and finding lower cost ways of doing business, sometimes with substantial economic benefits and job growth. They play a key role in introducing technologies to the market, often responding quickly to new market opportunities.

Numerous programmatic changes were made to both the SBIR and STTR programs in 2012. This hearing represents an opportunity for members to learn more about these programs, gain perspective from private sector witnesses about how these programs are functioning, and determine if federal agencies are complying with various aspects of the reauthorization law.

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[10] NATIONAL RESEARCH COUNCIL, NATIONAL ACADEMIES OF SCIENCE, AN ASSESSMENT OF THE SMALL BUSINESS INNOVATION RESEARCH PROGRAM 3 (2007).
[11] *Id.* at 3-6.