

Congress of the United States
U.S. House of Representatives
Committee on Small Business
2361 Rayburn House Office Building
Washington, DC 20515-0515

MEMORANDUM

TO: Members, Committee on Small Business
FROM: Nydia M. Velázquez, Chairwoman
DATE: March 8, 2022
RE: Full Committee Hybrid Hearing: “Overview of the Small Business Innovation Research and Small Business Technology Transfer Programs”

The Committee on Small Business will meet for a hybrid hearing titled “Overview of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.” **The hearing is scheduled to begin at 10:00 A.M. on March 8, 2022, in person in 2360 Rayburn House Office Building, and virtually via the Zoom platform.**

This is the third hearing in a series on the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, which are authorized through September 30, 2022. The SBIR and STTR programs foster partnerships between small businesses and the federal government by making competitive awards to develop technologies that are important to our country and later have commercial application. The Small Business Administration (SBA) is responsible for coordinating policy across the 11 participating agencies, monitoring implementation of the programs, maintaining policy directives, and developing annual reports to Congress. SBA also serves as the central repository for SBIR and STTR data. Members will have an opportunity to hear directly from SBA on issues related to the reauthorization of the programs.

Panel

- Mr. John Williams, Director of Innovation and Technology, Office of Investment and Innovation, U.S. Small Business Administration, Washington, D.C.

Background

In the 1970s and 1980s there were rising concerns that the U.S. was losing its long-time competitiveness on the international stage. The National Science Foundation (NSF) recognized the vital role that small businesses play in domestic innovation and job creation and established the NSF SBIR program in 1977.¹ Due to the success of the NSF SBIR program, Congress enacted the Small Business Innovation Development Act of 1982, which expanded the SBIR program to all agencies with extramural research and development (R&D) budgets.² Modeled after the SBIR

¹ TUTORIAL 5: THE HISTORY OF THE SBIR AND STTR PROGRAMS, SBIR STTR AMERICA’S SEED FUND, <https://www.sbir.gov/tutorials/program-basics/tutorial-5>.

² Small Business Innovation Development Act of 1982, Pub. L. No. 97-219, 96 Stat. 217.

program, the STTR program was established as a pilot program by the Small Business Research and Development Enhancement Act of 1992.³ The STTR program is administered by government R&D agencies with an extramural budget of \$1 billion or more and requires participation of research institutions.⁴ The programs have been reauthorized several times. The most recent comprehensive reauthorization was the SBIR/STTR Reauthorization Act of 2011, which reauthorized the programs through September 30, 2017.⁵ The programs were later extended through 2022 in the FY 2017 NDAA.⁶

SBIR/STTR Program Basics

The SBIR and STTR programs are divided into 3 phases:

- Phase I is the pre-prototype phase used to explore the technical merit or feasibility of an idea, concept, or technology.
- Phase II is the prototype phase to expand on Phase I results. During this phase, R&D work is implemented, and commercialization potential is evaluated.
- Phase III is the commercialization phase to move the technology from the laboratory into the marketplace or into federal procurement.

The SBIR and STTR programs share four goals, which are: (1) stimulate innovation; (2) use small businesses to meet federal R&D needs; (3) foster and encourage the participation of minority and disadvantaged persons in technological innovation; and (4) increase private sector commercialization of innovations derived from federally funded R&D.⁷

The STTR program has an additional statutory purpose to stimulate partnerships between small businesses and non-profit research institutions.⁸ The Small Business Administration (SBA) emphasizes three principal differences between the SBIR and STTR programs, for STTR:

- The small business and its partnering research institution must establish an intellectual property agreement detailing the allocation of intellectual property rights and rights to carry out follow-on research, development, or commercialization activities;
- The small business partner must perform at least 40 percent of the R&D and the research institution partner must perform at least 30 percent of the R&D; and
- The principal investigator may be primarily employed by the partner research institution; in SBIR, the principal investigator must be primarily employed by the small business.⁹

³ Small Business Research and Development Enhancement Act of 1992, Pub. L. No. 102-564, 106 Stat. 4256.

⁴ Marcy E. Gallo, CONG. RESEARCH SERV., R43695 SMALL BUSINESS INNOVATION RESEARCH AND SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAMS 12(May 5, 2020) [hereinafter CRS].

⁵ Pub. L. No. 112-81 [hereinafter FY 2012 NDAA].

⁶ Pub. L. No. 114-328 [hereinafter FY 2017 NDAA].

⁷ About, SBIR STTR AMERICA'S SEED FUND, [hereinafter About], <https://www.sbir.gov/about>.

⁸ U.S. SMALL BUS. ADMIN, SMALL BUSINESS INNOVATION RESEARCH (SBIR) AND SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) POLICY DIRECTIVE (Effective: October 1, 2020), [hereinafter "Policy Directive"], available at https://www.sbir.gov/sites/default/files/SBA_SBIR_STTR_POLICY_DIRECTIVE_OCT_2020_0.pdf.

⁹ About, *supra* note 7.

SBIR/STTR Participants

SBA

As the lead coordinating agency, the SBA is responsible for establishing policy, procedures, and regulations; conducting outreach, which includes maintaining sbir.gov; collecting and publishing program-wide data; monitoring program implementation, including annual reports to Congress.¹⁰ Due to the similarities between the programs, the SBA Policy Directive sets guidelines for both SBIR and STTR as one program, unless one is specifically mentioned.¹¹

While the SBA does not directly fund any SBIR/STTR projects, it offers a variety of supporting programs and resources. The SBA offers grants to support organizations through the Federal and State Technology (FAST) Partnership program which aims to increase geographic and demographic diversity in the SBIR/STTR pipeline.¹² The program is authorized at \$10 million but usually only receives appropriations between \$2 million and \$4 million. In 2021, 33 organizations were awarded \$125,000 to fund technical and business assistance, outreach, and financial support for SBIR/STTR firms¹³ The SBA also funds the Growth Accelerator Fund Competition (GAFC) for the nation's most innovative small business accelerators and incubators. Like FAST, GAFC aims to fill resource gaps by supporting the development of accelerators and their startups in communities where there are fewer sources of capital. In 2021, the SBA added a new component to GAFC, the SBIR Catalyst competition, to support collaborative partnerships that fund technology-based economic development initiatives. The SBA awarded \$150,000 grants to 8 partnerships through SBIR Catalyst and \$50,000 grants to 84 awardees through GAFC.¹⁴

The SBA also offers resources to help firms interested in SBIR/STTR. From 2015-2019, the SBIR road tour hosted events in every state and Puerto Rico learn firms to learn about the programs and to connect with participating agencies and technical assistance providers.¹⁵ In 2020 and 2021, SBA held virtual SBIR Weeks. On sbir.gov, SBA provides 18 online tutorial courses¹⁶ and shares agency solicitations and trainings.

Research Agencies

Each participating agency operates its own SBIR/STTR programs under the provisions of the law and regulations. The regulations are issued by the SBA in the SBIR/STTR Policy Directive. According to some analysts, this approach allows for general consistency across the SBIR and STTR programs, while allowing each agency a substantial degree of control and flexibility in the execution of its program in alignment with its overall mission and priorities.

Since 2017, federal agencies with an extramural R&D budget over \$100 million are required to allocate at least 3.2 percent of that budget for SBIR awards to small businesses. There are 11 agencies participating in the SBIR program: the Departments of Agriculture (USDA), Commerce

¹⁰ Policy Directive *supra* note 8, at 100-101.

¹¹ Policy Directive *supra* note 8, at 1.

¹² Federal and State Technology (FAST) Partnership Program, SBIR STTR AMERICA'S SEED FUND, <https://www.sbir.gov/about-fast>.

¹³ *Id.*

¹⁴ Growth Accelerator Fund Competition (GAFC), SBIR STTR AMERICA'S SEED FUND, <https://www.sbir.gov/accelerators>.

¹⁵ SBIR Road Tour, SBIR STTR AMERICA'S SEED FUND, <https://www.sbir.gov/sbir-road-tour>.

¹⁶ <https://www.sbir.gov/tutorials>.

(DOC), Defense (DOD), Education (ED), Energy (DOE), Health and Human Services (HHS), Homeland Security (DHS), and Transportation (DOT); the Environmental Protection Agency (EPA); the National Aeronautics and Space Administration (NASA); and the National Science Foundation (NSF). Total agency obligation for FY 2020 was \$3.3 billion for 5,976 awards to 3,547 small businesses.¹⁷

Federal agencies with an extramural R&D budget over \$1 billion must allocate at least 0.45 percent of the extramural research budget for STTR awards to small businesses. Currently, five agencies participate in the STTR program: DOD, DOE, HHS, NASA, and NSF. Total agency obligation for FY 2020 was \$454 million for 1,030 awards to 744 small businesses.¹⁸

Small Businesses

A small business' eligibility for the SBIR/STTR programs is contingent on its location, number of employees, ownership characteristics, and other factors. Eligibility to participate in the STTR program is limited to for-profit U.S. businesses with a location in the United States. Eligible companies must have 500 or fewer employees, including employees of affiliates. Agencies are restricted on how much of their SBIR funds they can make available for awards to small businesses that are more than 50% owned by multiple venture capital operating companies, hedge funds, or private equity firms.¹⁹ STTR does not have authority to make awards to small businesses that are more than 50% owned by multiple venture capital operating companies, hedge funds, private equity firms, or any combination of these.²⁰

SBIR/STTR's effect on job growth in small firms is critically important. These grants supply the seed capital required to create jobs. For thousands of small firms, the SBIR/STTR awards create jobs related to completing the requirements of a program contract and future jobs associated with R&D outcomes. SBIR/STTR awards, especially the larger Phase II awards, help researchers transition into research and development companies. Phase II grants include training resources and access to experts who help awardees expand the operation and function of their firm. While the firm prepares its product for the market, their expansion becomes job creation.

Research Institutions

To participate in STTR, the partnering research institution must be located in the United States, and be either a nonprofit college or university, a domestic nonprofit research organization, or a federally funded R&D center. The small business and partner research institution must have a written agreement allocating Intellectual Property rights before receiving the award.²¹ For STTR Phase I and II projects, the partner research institution must perform at least 30 percent of the work.²² Regardless of the portion of work completed, the small business has primary responsibility for the performance of the project.²³ Although partner institutions are identified in STTR

¹⁷ Award Data, SBIR STTR AMERICA'S SEED FUND, <https://www.sbir.gov/sbirsearch/award/all>.

¹⁸ *Id.*

¹⁹ Policy Directive *supra* note 8, at 35. The NIH, DOE, and NSF may award no more than 25% of the agency's SBIR funds to such small businesses; all other SBIR agency programs are limited to using 15% of their SBIR funds for such awards.

²⁰ *Id.*, at 8.

²¹ *Id.*, at 57.

²² *Id.*, at 33.

²³ *Id.*, at 50.

applications and reports, they are not independently tracked. The SBA reporting system is searchable by small business awardees.

Technical Assistance Providers

SBIR/STTR support organizations include universities, accelerators, incubators, and economic development offices, as well as SBA local assistance providers including Small Business Development Centers (SBDCs), Procurement Technical Assistance Centers (PTACs), Women's Business Centers (WBCs), and Regional Innovation Clusters (RICs).²⁴

Awarding agencies may award additional funding to SBIR/STTR participants for Technical and Business Assistance (TABAs) provided by a vendor chosen by the agency. To select their own vendor the small business must request the authority from the agency, but all awardees have flexibility in the type of assistance they need. Agencies may provide up to \$6,500 for Phase I, in addition to the award amount, and \$50,000 for Phase II, either as part of the award or in addition to the award.²⁵ TABA is meant to assist awardees with making technical decisions and solving problems, minimizing risks, and commercialization efforts.²⁶

Reauthorization Issues

Reauthorization of Programs

SBIR and STTR are an essential part of America's innovative high-tech ecosystem. The authorization is set to expire on September 30, 2022. Even the possibility of a short-term disruption of these programs could have a severe effect on R&D focused small businesses. Federal agencies could see their research and technology development stalled by a disruption in these programs. Both small businesses and the agencies need certainty, stability, and predictability to budget and plan for the future. Making these programs permanent and codifying the main tenets of the program will preserve Congressional intent and federal commitment to small business innovators.

Diversification Initiatives

A primary goal of the SBIR and STTR program is fostering inclusion and diversification technological innovation by encouraging the participation of women and socially and economically disadvantaged firms. Unfortunately, program statistics show that these businesses make up approximately the same share of SBIR and STTR awards as they did nearly a decade ago. According to personal testimonies and formal research, low program awareness and high barriers to entry prevent systemic demographic and geographic diversification. Improving the reach and effectiveness of SBIR and STTR support mechanisms will advance larger goals to make the STEM field more accessible and ensure that all Americans benefit from our nation's technological development.

Commercialization Improvements

Over the past 40 years, the SBIR and STTR programs have played a role in firms like the iRobot, 23&Me, Sonicare electric toothbrush, and Qualcomm wireless communications. SBIR and STTR

²⁴ Support Organizations, SBIR STTR AMERICA'S SEED FUND, <https://www.sbir.gov/support-organizations>.

²⁵ Policy Directive *supra* note 8, at 64.

²⁶ *Id.*

firms are behind the technology that made the condensation trail of the B-2 bomber invisible, the second generation of LASIK eye surgery, bio-degradable packaging material made from mushrooms to reduce Styrofoam that piles up in landfills, and rapid innovations used to fight COVID-19. Enhanced support for commercialization will create more successful small businesses and better technologies for Americans.

Pilot Programs

Pilot programs have kept SBIR and STTR program administration on pace with rapid technological change over the past 40 years. They are fundamental to the spirit of experimentation. Six pilots will lapse or terminate at the end of FY 2022.

Oversight and Simplification Initiatives

The Small Business Administration (SBA) is responsible for coordinating policy across the 11 participating agencies, monitoring implementation of the programs, maintaining policy directives and developing annual reports to Congress. The SBA also serves as the central repository for SBIR and STTR data submitted by each agency. Strengthening SBA oversight of agency administration will improve accountability and increase transparency for Congressional review.

Technical Changes

Clear and precise guidance is critical for program administration across SBIR and STTR agencies. These changes will ensure uniform interpretation by all agencies, which will significantly reduce confusion.

Conclusion

Similar to the sentiment of the 1970s and 1980s, there is bipartisan support for increased investment in national R&D to reclaim America's dominance in the global technology race. The SBIR/STTR program has decades of demonstrated positive returns on investment, and the Committee looks forward to the continued success of SBIR and STTR as a permanently authorized program. At this hearing, members will review the programs and discuss the proposed legislation directly with the SBA.