

Congress of the United States  
U.S. House of Representatives  
Committee on Small Business  
2361 Rayburn House Office Building  
Washington, DC 20515-6515

**MEMORANDUM**

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TO: Members, Subcommittee on Innovation and Workforce Development  
FROM: Rep. Jason Crow, Chairman  
DATE: September 19, 2019  
RE: Subcommittee hearing entitled, “SBA Programs Spurring Innovation” on Thursday, September 19, 2019 at 10:30 a.m. in Room 2360 of the Rayburn House Office Building.

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The Committee on Small Business Subcommittee on Innovation and Workforce Development will meet for a hearing titled, “SBA Programs Spurring Innovation.” The hearing is scheduled to begin at 10:30 AM on Thursday, September 19, 2019 in Room 2360 of the Rayburn House Office Building.

In the 1970’s and 1980’s there were rising concerns that the U.S. was losing its long-time competitiveness on the international stage. In response, the National Science Foundation (NSF) recognized the vital role that small businesses play in domestic innovation and job creation, created the NSF Small Business Innovation Research (SBIR) Program in 1977 to ensure that the U.S. would remain competitive.<sup>1</sup> 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 R&D Budgets. Today, there are 11 agencies, with the Small Business Administration (SBA) as a Leading Agency, participating in the SBIR program, and 5 that participate in the Small Business Technology Transfer (STTR) program. Modeled after the SBIR program, the STTR program is administered by government R&D agencies with an extramural budget of \$1 billion or more.<sup>2</sup>

Additionally, the Growth Accelerator Competition Fund Pilot was established in 2014 through a \$2.5 million appropriation aimed at funding grants to develop accelerator programs throughout the U.S. The SBA elected to disburse the funding using a competition and award prize model offering \$50k grants to competition winners.<sup>3</sup> The hearing will examine how SBA’s programs, such as the Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR), and

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<sup>1</sup> The Birth and History of the SBIR Program, SBIR STTR AMERICA’S SEED FUND, <https://www.sbir.gov/birth-and-history-of-the-sbir-program>.

<sup>2</sup> JOHN F. SARGENT, CONG. RESEARCH SERV., R43695, SMALL BUSINESS INNOVATION RESEARCH AND SMALL BUSINESS TECHNOLOGY TRANSFER PROGRAMS (2014) [hereinafter CRS R43695].

<sup>3</sup> SBA, 2014 GROWTH ACCELERATOR COMPETITION, QUARTERLY METRICS AND RESULTS AS OF JANUARY 31, 2015 (2015).

growth accelerators help innovative entrepreneurs, startups, and small businesses grow and create jobs.

Witnesses include:

- Ms. Alison Brown, President and CEO, Navsys Corporation, Colorado Springs, Colorado
- Mr. Rohit Shukla, CEO, Larta Institute, Los Angeles, CA
- Mr. Javier Saade, Managing Partner & Venture Partner, Impact Master Holdings & Fenway Summer Ventures, Washington, DC
- Mr. Ron Shroder CEO and President, Frontier Technology, Inc., Beaverton, Ohio

### **History and Current Trends in U.S. Innovation**

The U.S. has led the world in creating new industries and ways of doing business, establishing itself as the global innovation leader. During this time, the U.S. became the world's most innovative, educated, and competitive nation. The exceptional economic performance of the United States helped to improve the lives of its citizens and grow new businesses. The U.S. has a strong tradition of scientific advancement and world-class companies. While the U.S. continues to perform at high levels for innovation and economic growth by possessing a highly skilled work force and prominent companies, America's innovative performance slipped substantially during the past decade. In 2018, the U.S. lost its place as the global leader and dropped to number six among the top innovative countries.<sup>4</sup> Yet, 2019 saw the U.S. regain its competitiveness by ranking third behind Switzerland and Sweden.<sup>5</sup> Most importantly, the nation ranked first for its expenditures in both the public and private sectors for research and development, proving the need to continue federal efforts to support small innovative companies.<sup>6</sup>

Federally funded R&D has resulted in innovations and discoveries, leading to new companies and entire industries that have made Americans more prosperous, healthy, and safe. Small Business Administration (SBA) programs, such as the Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR), and Growth Accelerator programs were designed to assist these companies become global innovators. The hearing will give Members the opportunity to learn more about the programs and their impact on small business creation and growth.

### **SBIR Program**

The Small Business Innovation Research (SBIR) program was established under the Small Business Innovation Development Act of 1982<sup>7</sup> and subsequently reauthorized or extended multiple times, most recently in 2011 when the program was reauthorized through September 30, 2017, and extended through 2022 in the FY 2019 NDAA.<sup>8</sup> Under the program, each federal agency with an extramural Research & Development (R&D) budget greater than \$100 million is required to allocate a portion of that funding to conduct a multi-phase R&D grant program for small businesses. The objectives of the SBIR program include stimulating technological innovation; increasing the use of the small business community to meet federal R&D needs; fostering and

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<sup>4</sup> Sintia Radu, *The U.S. is (Again) Among the World's Top Innovators*, U.S. NEWS AND WORLD REPORT, Aug. 8, 2019.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> Pub. L. No. 97-219.

<sup>8</sup> Pub. L. No. 115-232.

encouraging participation in innovation and entrepreneurship by socially and economically disadvantaged individuals; and expanding private-sector commercialization of innovations resulting from federally funded R&D.

Currently, 11 federal agencies participate in the SBIR program outside of the Small Business Administration (SBA): the Departments of Agriculture (USDA), Commerce (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). These agencies must allocate at least 3.2% of extramural R&D funds to this program, though agencies may opt to exceed these minimum percentages. In FY 2016, total agency obligations were over \$2.3 billion, accounting for 2.84% of the agencies' aggregate extramural R&D funding.<sup>9</sup> Each participating agency operates its own SBIR program under the provisions of the law and regulations, as well as with the policy directive issued by the SBA in its *Small Business Innovation Research Program Policy Directive*.<sup>10</sup>

### SBIR Phases

The SBIR program is a three-phase program. The purposes and parameters of each phase are discussed below.

- **Phase I is the pre-prototype phase.** Funded up to \$100,000 for approximately 6 months (1 year for STTR) to explore the technical merit or feasibility of an idea, concept, or technology.
- **Phase II is the prototype phase.** Funded up to \$750,000 (\$500,000 for STTR), for a period of up to 2 years, 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.** The innovation is moved from the laboratory into the marketplace, and outside funds (non-SBIR and non-STTR) are used to market the product.

### SBIR Eligibility

A small business' eligibility for the SBIR program is contingent on its location, number of employees, ownership characteristics, and other factors. Eligibility to participate in the SBIR 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.<sup>11</sup> The small business must be:

- more than 50% directly owned and controlled by one or more citizens or permanent resident aliens of the United States, other small business concerns (also subject to the citizenship requirement), or any combination of these;
- more than 50% owned by multiple venture capital operating companies, hedge funds, private equity firms, or any combination of these, with no single such firm owning more than 50% of the small business; or

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<sup>9</sup> U.S. SMALL BUSINESS ADMINISTRATION, SMALL BUSINESS INNOVATION RESEARCH, SMALL BUSINESS TECHNOLOGY TRANSFER ANNUAL REPORT FY 2016 (2016) [hereinafter FY 2016 Report].

<sup>10</sup> U.S. SMALL BUSINESS ADMINISTRATION, SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM AND SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM POLICY DIRECTIVE (2019) [hereinafter Policy Directive].

<sup>11</sup> *Id.*

- a joint venture in which each entity to the joint venture meets either of the two previous requirements.<sup>12</sup>

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 venture capital operating companies, hedge funds, or private equity firms.<sup>13</sup> Additionally, small businesses that have received multiple prior SBIR/STTR awards must meet certain bench-mark requirements for progress toward commercialization to be eligible for a new Phase I award. For both Phase I and Phase II, the principal investigator's primary employment must be with the small business applicant at the time of award and during the conduct of the proposed project.<sup>14</sup>

### **Small Business Technology Transfer (STTR) Program**

The Small Business Technology Transfer (STTR) program was created by the Small Business Research and Development Enhancement Act of 1992<sup>15</sup> and has been reauthorized several times, most recently by the SBIR/STTR Reauthorization Act of 2011,<sup>16</sup> which reauthorized the program through September 30, 2017, and extended through 2022 in the FY 2019 NDAA.<sup>17</sup> Modeled largely after the SBIR program, the STTR program seeks to facilitate the commercialization of university and federal R&D by small companies. Under the program, each federal agency with extramural R&D budgets of \$1 billion or more is required to allocate a portion of its R&D funding to conduct a multi-phase R&D grant program for small businesses. The STTR program provides funding for research proposals that are developed and executed cooperatively between a small firm and a scientist in an eligible research institution and that are aligned with the mission requirements of the federal funding agency.

Currently, five agencies participate in the STTR program: DOD, DOE, HHS, NASA, and NSF. The minimum percentage of funds to be set aside is 0.45 percent of the extramural research budget for STTR awards to small businesses. In FY 2016, federal agencies awarded over \$313 million, accounting for 0.385% of the agencies' aggregate extramural R&D funding.<sup>18</sup>

The SBA emphasizes three principal differences between the STTR and SBIR programs: 1) under 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; 2) under STTR, the small business partner must perform at least 40% of the R&D and the research institution partner must perform at least 30% of the R&D; and 3) the STTR program does not require the principal investigator to be primarily employed by the small business, a requirement of the SBIR program.<sup>19</sup>

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<sup>12</sup> *Id.*

<sup>13</sup> *Id.* 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.

<sup>14</sup> *Id.*

<sup>15</sup> Pub. L. No. 102-564.

<sup>16</sup> Pub. L. No. 112-81

<sup>17</sup> Pub. L. No. 115-232.

<sup>18</sup> FY 2016 Report, *supra* note 9.

<sup>19</sup> CRS R43695, *supra* note 2.

As with the SBIR program, each participating agency operates its own STTR program under the provisions of the law and regulations, as well as with the policy directive issued by the SBA in its *Small Business Technology Transfer Program Policy Directive*.<sup>20</sup> According to some analysts, this approach allows for general consistency across 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.

### STTR Phases

The STTR program has three phases that are similar to those of the SBIR program.

- **Phase I** solicits proposals or grant applications to conduct feasibility-related experimental or theoretical research or research and development (R/R&D) related to agency requirements. These awards are also generally limited to \$150,000 like SBIR and have a mechanism to allow for agencies to exceed the guideline by as much as 50 percent.<sup>21</sup>
- **Phase II** awards have the same criteria for award as SBIR and have the same limitations on dollar amounts.
- **Phase III** is also commercialization but the funding does not come from the program itself but rather from the private sector or non-STTR governmental funds.

Lastly, STTR recipients can receive the same \$5,000 for technical assistance that is available to SBIR participants.

### STTR Eligibility

A small business' eligibility for the STTR program is contingent on its location, number of employees, ownership characteristics, and other factors. The partnering research institution must meet eligibility qualifications as well.<sup>22</sup> 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. The small business must be:

- more than 50% directly owned and controlled by one or more citizens or permanent resident aliens of the United States, other small business concerns (also subject to the citizenship requirement), or any combination of these; or
- a joint venture in which each entity to the joint venture meets the requirements listed above.

Many of the same criteria exist for small businesses that have received multiple prior awards. However, unlike the SBIR program, the 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.<sup>23</sup> However, as with SBIR, the STTR program may make awards to companies that are majority-venture capital backed if the VC firm is itself more than 50% directly owned and controlled by one or more individuals who are citizens

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<sup>20</sup> Policy Directive, *supra* note 10.

<sup>21</sup> *Id.*

<sup>22</sup> 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 research and development center.

<sup>23</sup> Policy Directive, *supra* note 10.

or permanent resident aliens of the United States.<sup>24</sup> In such a case, that VC is allowed to have majority ownership and control of the awardee; however, the VC and the awardee, and all other affiliates, must have a total of 500 employees or less.<sup>25</sup>

### SBIR/STTR Impact on Job Creation

SBIR's effect on job growth in small firms is critically important. SBIR grants create jobs as a result of the seed capital provided to entrepreneurs and through funds that enable an existing company to expand its operations. In both cases, data indicates that jobs are retained after the SBIR funding has been expended. For thousands of small firms, the SBIR awards create both jobs related to completing the requirements of an SBIR contract and sustainable jobs associated with a new product that is the outcome of the research and development funded by the grant.

Additionally, for existing companies, SBIR awards enable research firms to make new hires and provide funding for early stage research. By facilitating high-risk, high-reward research, these contracts have contributed to new innovation and resulted in job gains. Small medical companies have previously testified before the Committee that support from investors is often tied to the development and commercialization of their companies' lead therapies or technologies. Because of these restrictions, companies are often unable to use support from investors to explore promising early stage research. SBIR contracts can provide small companies with funding for promising research that is outside of a company's primary focus.

Finally, SBIR grants, especially the larger Phase II awards, help researchers transition and become research and development companies. Phase II grants include training resources and access to experts that can help awardees expand the operation and function of their firm. Awardees can receive assistance with product testing and evaluation, prototype development, and manufacturing. Accompanying these new functions is job creation, as the newly expanded firm aims to bring its research to market.

### Growth Accelerators

Business accelerators are organizations, in various formats, that offer a wide range of support services and funding opportunities for early stage companies. They generally follow the model of enrolling startups in months-long programs that offer mentorship, office space, and critical supply chain resources. Most importantly, business accelerator programs offer access to capital and investment in return for startup equity which helps participating business remain viable. Accelerators are able to provide vital information that business angels and venture capitalists need for diversifying their portfolios of high-potential companies. They give young enterprises an opportunity to build networks, with both peer ventures and mentors, who might be successful entrepreneurs, program graduates, venture capitalists, angel investors, or even corporate and non-profit executives. Most accelerator programs end with a culminating demonstration day, also referred to as "demo day" where ventures pitch to a large audience of qualified investors with the hopes of getting more funding.

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<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

### SBA Growth Accelerator Competition

On January 15, 2014, the SBA was appropriated \$2.5 million to fund a growth accelerators initiative. In May 2014, the SBA announced the implantation of the Growth Accelerator Fund Competition Program (GAFC). Instead of using existing grant authority, the SBA decided to implement the program using government-wide authority to hold competitions.<sup>26</sup> The SBA held the first competition in order to provide fifty \$50,000 awards with an emphasis on serving underserved groups, geographic areas with less access to capital, and organizations focused on manufacturing.<sup>27</sup>

As a result of the SBA's efforts, the first competition reached prize winners in 31 states, most of which were in areas that typically had less access to venture capital.<sup>28</sup> The second year was even more successful resulting in 88 prizes in 39 states. Beyond its diverse geographic reach, the growth accelerator program has also reached successfully awarded winners in underrepresented groups. In its second year, the programs awardees were 44% and 41% were underserved.<sup>29</sup> A recent report on the program also indicates that the GAFC awardees have also focused on benefitting small businesses with diverse backgrounds. Eighty percent of the GAFC winners serve start-ups that are owned by racial minorities, 42% have start-ups that are owned by women, and 61% served startups located in disadvantaged areas.<sup>30</sup>

### Small Business Benefits of Accelerators

Accelerators uniquely provide the best of both worlds for startups and investors as it merges the functionality of an all-inclusive creative hub with minimized investor risk. Providing technical assistance to growing a business and providing a central location for investors to find vetted businesses to support decreases the risk factor. Some of the high ranking benefits include: 1) funding stream diversification as startups have access to a plethora of investors locally while still having the opportunity to raise outside capital; 2) job creation as accelerators stabilize the high growth market allowing for more businesses to reach maturity and begin to invest in other businesses; and 3) focus on underserved populations as many accelerator models give access to high-growth businesses owned by women and minorities. These elements are important when evaluating the business opportunities of innovative companies and their potential to grow the U.S. job market.

#### 1. Funding Streams

Gaining the support of investors is critical for high growth early stage companies as it provides the means to build the business and develop prototypes that lead to full commercialization of innovative products through selling to the government and private entities, thus leading to revenue and market stability for the product. According to the National Venture Capital Association, only 3% of the nearly \$30 billion invested into over 4,000 deals in 2013 was seed stage capital. According to the Angel Capital Association, in that same year angels invested almost \$25 billion

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<sup>26</sup> 2014 GAFC Report, *supra* note 3.

<sup>27</sup> *Id.*

<sup>28</sup> U.S. SMALL BUSINESS ADMINISTRATION, 2015 GROWTH ACCELERATOR COMPETITION, QUARTERLY METRICS AND RESULTS AS OF DECEMBER 31, 2015 (2016).

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

into 71,000 deals, of which a little less than half were seed stage capital.<sup>31</sup> This flow of dollars as seed stage investments is small relative to the world of venture capitalism, but it represents a larger revenue flow when the company valuation is considered as that seed money allows businesses a boost in securing other funding.

Considering seed money as a distinct funding stream from other types of investment is important when analyzing the potential for companies to mature into multifaceted tech enterprises that are ripe for purchase by larger companies or able to sustain independently, as the companies involved in accelerators often aim to do. During the periods of completing- or recently-completing accelerator programs, the median and average valuation of these companies was \$5.5 million and \$7.1 million, respectively. However, those that went on to raise additional venture capital had a median valuation of \$15.6 million and an average of \$90 million. In 2015 alone, these numbers were \$30 million and \$196 million, respectively. Indeed, some very well-known companies belong to this group, including those dubbed “unicorns” (private companies valued at \$1 billion or more), such as AirBnB, Dropbox, and Stripe.”<sup>32</sup> By opening the funding stream for companies that might not otherwise have gained such exposures, accelerators contribute to securing monetary stability in a unique and needed way that leads to additional venture capital investment.

## 2. Job Creation

As previously noted, the well-known startup hubs house a high number of accelerators, but there is an increase of accelerators outside of these hubs which leads to new and exciting forms of job creation for many areas. In fact, 54 metro areas across 35 states and the District of Columbia have accelerator programs today.<sup>33</sup> To hone down on the formula for job creation, the larger accelerator impact must be extrapolated from SBA data. The 50 accelerator winners of the 2014 SBA Growth Accelerator Competition reported that since their beginnings, they have launched or currently house a total of 1,458 companies.<sup>34</sup> According to this data, on average each accelerator graduates about 10 companies per year.<sup>35</sup> When looking more broadly, experts report that there were approximately 145 accelerators in the U.S. between 2005 and 2015 that have experienced growth on scale with how many startups they have helped and deals they have made.

The companies that survived from the 2014 competition have created and sustained a total 4,769 jobs, which amounts to 104 jobs created by the startups in each accelerator on average.<sup>36</sup> The accelerators themselves also reported creating and sustaining 352 jobs, an average of about 8 employees per accelerator.<sup>37</sup> This is a tremendous benefit to the small businesses community as these businesses have high potential to yield multiple spinoff businesses. The SBA reports for the 2015 competition that 14,158 jobs were created or sustained and 3,437 startups were served.<sup>38</sup> Much of the anecdotal evidence is useful when considering broader based reports but there must be a way to measure the success of these programs.

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<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> SBA, The Growth Accelerator Fund Competition 2015 Fact Sheet.



### 3. Underserved Populations

It is well documented that business accelerators are designed to address the challenges all entrepreneurs encounter when starting off high growth innovative companies. Yet, women and minorities are not participating in high-tech incubators and accelerators at the same rates as their white, male counterparts.<sup>39</sup> This underrepresentation of minorities is especially concerning given that 43 percent of millennial adults are people of color.<sup>40</sup> Participation in accelerators is particularly useful because of the mentorship and networking possibilities which lead to investment, and if these underrepresented communities continue to be left out, there will be a larger gap in the near future of entrepreneurial opportunities for women and minorities.

Similar models are emerging for accelerators focused on minority high tech startups to provide ecosystems that breed long term success. Since the survival rate for companies that go through an accelerator is three times that of companies that do not, formats that focus on diversity are critical to diversifying the face of tech startups and broadening the economic base of entrepreneurship in the U.S. in large.<sup>41</sup> The hearing will give Members the opportunity to learn more about this SBA program and why it is critical to growing the American small business ecosystem.

### **Conclusion**

The SBA's SBIR/STTR and GAFC programs have had significant success in fostering U.S. innovation. The SBIR/STTR's decades of demonstrated positive return on investment and funding of groundbreaking technology shows that it is integral part of the U.S. government's technological ecosystem. The Growth Accelerators unprecedented results in reaching underrepresented tech start-ups is also a testament to the SBA's ability to impact the technology industry and maintain U.S. competitiveness. However, increased investment in U.S.'s tech ecosystem is necessary to maintain American leadership in innovation. Improvements and increased investment in these critical programs are necessary to foster and commercialize cutting-edge American technology. This hearing will allow Members of the Committee the ability to analyze the success of SBA programs that spur innovation and potential ways to improve them.

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<sup>39</sup> JP Morgan Chase & Co., *Creating Inclusive High-Tech Incubators and Accelerators*, 2016.

<sup>40</sup> *Id.*

<sup>41</sup> Carolyn Brown, *Best Accelerators For Minority Startups and Small Businesses To Get Funding*, 2016.