

Why Congress Should Act Quickly To Reauthorize SBIR, STTR

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Despite bipartisan efforts, the future is uncertain for the by all accounts highly successful Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) programs. Authorization for the current programs expires Sept. 30, 2017. Reauthorization efforts are underway, but it is not clear at this time when the House and Senate will consider the pending legislation necessary to ensure no lapse in the programs.

Congress' failure to reauthorize these programs would be an unfortunate mistake. The SBIR program provides \$2.5 billion a year in seed funding to companies with emerging technologies. Since program inception, more than 150,000 SBIR awards worth over \$42 billion have been made. The companies receiving these funds may not yet have a prototype or the proof of concept required to receive other private sources of funding, making government support all the more important. The STTR program supports, among other things, innovative advances in health care, with the National Institutes of Health providing about one-third of the annual STTR funding, which currently is approximately \$220 million.

Seventeen countries around the world have copied the U.S. SBIR/STTR programs. Program alumni include well-known companies such as iRobot Corp. (maker of unmanned robotic vehicles and the Roomba automatic vacuum cleaner), computer security firm Symantec Corp., telecommunications giant Qualcomm Inc. and biotech/biopharma companies Amgen Inc., Biogen Inc., and Chiron Corp.. The Jarvick artificial heart was also developed in part with SBIR funds.

For those unfamiliar with the SBIR and STTR programs, or interested in understanding more about their history and how they operate, some background information is provided below.

Program History

The SBIR program was signed into law by President Reagan in 1982. It was the result of a bipartisan effort in Congress to encourage federal agencies to make better use of the research power of small companies. The stated purposes of the SBIR program were to stimulate technological innovation in the private sector by supporting research and development, and assisting small businesses in commercializing innovative technologies.

In 2000, the program was authorized for an additional eight years. Despite the program's success, authorization lapsed in September 2008 due to congressional inaction. The program was not formally restarted until SBIR reauthorization language was included in the National Defense Authorization Act for



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2012, passed Dec. 15, 2011. In the interim, 14 continuing resolutions kept the program afloat for months at a time. This was not an ideal or efficient scenario, and it is a situation that the pending Senate version of the reauthorization legislation hopes to avoid by making the program permanent.

The STTR program started in 1992 by passage of the Small Business Technology Transfer Act. The STTR program was reauthorized in 1997 and 2001, and then in 2011 together with the SBIR reauthorization.

Each year, federal agencies make almost 5,000 SBIR/STTR awards. The U.S. Department of Defense alone is responsible for almost half, with the next largest awardee being the NIH.

SBIR/STTR funding recipients have received more than 125,000 patents. As noted above, several have gone onto great commercial success, and many have been acquired by much larger companies, including L-3 Communications Holdings Inc., SAIC, General Electric Co., and Lockheed Martin Corp.

SBIR Basics

Each year, 11 federal departments and agencies (those with extramural research and development budgets that exceed \$100 million) are required by the Small Business Innovation Development Act (as amended) to set aside a portion of their R&D budgets for SBIR awards to small businesses. These 11 are:

- U.S. Department of Agriculture
- U.S. Department of Commerce
- U.S. Department of Defense
- U.S. Department of Education
- U.S. Department of Energy
- U.S. Department of Health and Human Services
- U.S. Department of Homeland Security
- U.S. Department of Transportation
- U.S. Environmental Protection Agency
- National Aeronautics and Space Administration
- National Science Foundation

Companies seeking SBIR funding must meet several eligibility criteria. They must be American-owned and independently operated for-profit businesses. The principal researcher must be employed by the business (i.e., not just a consultant), and the business must have fewer than 500 employees. (Notably, many SBIR funding recipients have fewer than 10 employees.)

The SBIR program has three phases. Phase I is the startup phase. Awards of up to \$100,000 for approximately six months support exploration of the technical merit or feasibility of an idea or technology.

Phase II awards are generally available up to \$750,000 and for up to two years. They are used to expand on Phase I results. During Phase II, the company performs R&D work and evaluates commercialization potential. Only Phase I award winners are considered for Phase II.

Phase III is the period during which Phase II innovation moves from the laboratory into the marketplace. The small business must find funding in the private sector or other non-SBIR federal agency funding. The objective of Phase III is for the small business to pursue commercialization objectives resulting from the

Phase I/II activities. No SBIR funds support this phase, but with some agencies, Phase III may involve follow-on non-SBIR-funded R&D or production contracts for products, processes, or services intended for use by the U.S. government.

STTR Basics

The goal of the STTR program is to stimulate scientific and technological innovation through cooperative research or research and development carried out between small business concerns and research institutions. The program also assists the small business and research communities in commercializing innovative technologies.

To obtain an STTR award, a small business must team with a research institution. As with SBIRs, the small business must be an American-owned and independently operated for-profit company with fewer than 500 employees. Unlike SBIRs, the principal researcher on an STTR program need not be (and very often is not) employed by the small business; he/she can be affiliated with the research institution instead. The teaming research institution must be located in the U.S., and be a nonprofit college, university, or research organization, or a federally funded R&D center.

Each year, federal agencies with extramural R&D budgets that exceed \$1 billion are required by the Small Business Technology Transfer Act (as amended) to reserve 0.3 percent of their extramural research budget for STTR awards to small businesses. These federal departments and agencies are:

- Department of Defense
- Department of Energy
- Department of Health and Human Services
- National Aeronautics and Space Administration
- National Science Foundation

The STTR program also has three phases: Phase I, the startup/feasibility stage; Phase II, R&D and evaluation of commercial potential; and Phase III, non-STTR funding for full commercialization. As with SBIR Phase III commercialization activities, while federal agencies do not provide Phase III funding, they sometimes remain involved in Phase III, as commercialized products ultimately may be purchased by the government. Phase I STTR awards are generally limited to \$100,000 and are for approximately one year; Phase II awards can be up to \$750,000 and for as long as two years.

The Proposal and Award Process

Most agencies run phased SBIR/STTR programs with proposal submissions due at specific times throughout the year. For example, the DOD issues three SBIR and two STTR solicitations for proposals annually. Each solicitation has a pre-release phase (during which time the agency does not accept proposals but potential offerors can have discussions with agency technical experts), an open phase for submission of proposals (during which technical discussions are not permitted), and a close.

The NIH has several methods by which researchers can apply for SBIR/STTR funding. Researcher-initiated ideas can be submitted via the SBIR and STTR omnibus grant solicitations (also called funding opportunity announcements). Applicants may also apply via the SBIR/STTR targeted grant solicitations, and the annual HHS SBIR contract. The targeted SBIR/STTR grant solicitations are focused on specific research areas, and the HHS SBIR contract relates to only specified technologies.

A list of other federal government SBIR solicitations is available at SBIR.gov. As a general rule, agencies like the DOD and NASA that operate predominantly on a contract basis will have very specific SBIR solicitations, whereas those for the grant-based agencies (NIH, NSF, etc.) will be very broad. The NIH and NSF also will bring in external peer reviewers to review proposals, whereas other agencies tend to keep the review process exclusively internal.

Proposals generally must include information describing the significance of the work and the proposed research approach, including a description of the researchers' experience and the research facilities to be used. A budget is also required. The budget can include both direct and indirect costs, plus a small fee to cover other expenses (patent filing, market research, etc.). Note that while some agencies, such as NIH, will go over the customary caps for each phase of work, others, such as the DOD, will not.

Other Important Considerations

SBIR and STTR funding should be part of a global corporate funding strategy, not the sole source of funding. Companies are not limited to applying for a single contract or grant; SBIR/STTR funding can be stacked and spaced out to cover a platform of products. Once a company has SBIR/STTR funds, it may be more attractive to outside investors. Moreover, recipients of federal SBIR and STTR funding are also sometimes eligible for state matching grant or tax incentive programs. For example, the North Carolina small business program matches Phase 1 SBIR grants up to \$50,000. Louisiana provides a 40 percent tax credit on R&D expenses that include SBIR/STTR awards.

In addition to have a funding strategy, companies pursuing federal funding should have a global intellectual property strategy. Companies should understand what rights they retain and what rights they have provided to the government. This is an area subject to some fluctuations. For example, just this past April, the Small Business Administration proposed a significant change to SBIR/STTR data rights, whereby, if the proposed change is adopted, the U.S. government will be able to use SBIR/STTR data for any purpose after the expiration of a twelve year protection period. Where STTR funding is involved, the company will need to understand what rights are retained by the research institution and what rights it has in IP developed pursuant to the grant funding. Pre-existing IP should be kept segregated from new subject inventions developed with grant funds.

Finally, industry experts advise that companies should communicate with the relevant agency program managers and technical experts prior to submitting an SBIR/STTR proposal. This can save the company time if there is no interest on the part of the agency, or in instances where the agency has already funded similar projects. A company can also often be steered to a different agency, or within the NIH, to a different institute, for which the company's product is better suited. Such communications must happen prior to the close date for submission of solicitations, however, as communications after that date are forbidden.

Current Reauthorization Status

In January 2016, the Senate Small Business and Entrepreneurship Committee held a hearing on reauthorization of the programs. On May 11, 2016, the committee passed through S. 2812, the SBIR and STTR Reauthorization and Improvement Act of 2016, which would extend and make permanent authorization for the SBIR and STTR programs. The bill is sponsored by Committee Chairman Sen. David Vitter, R-La., and ranking member Jeanne Shaheen, D-N.H.

A parallel House bill, H.R. 4783, the Commercializing on Small Business Innovation Act of 2016, was passed through House Committee on Small Business in March. Unlike the Senate version of the bill, the House version only reauthorizes the SBIR and STTR programs through 2022.

A central issue in reconciling the Senate and House versions of the reauthorization legislation is whether to make the programs permanent. Reauthorization efforts have been difficult in the past, notwithstanding the documented success of the programs. (Multiple reports by the National Academy of Sciences and the U.S. Government Accountability Office have touted the programs' success in meeting congressional objectives.) Permanent authorization would recognize that SBIR/STTR programs are cost-effective investments of U.S. R&D funds.

Conclusion

The SBIR and STTR programs provide valuable research funding to companies with good ideas but little capital. The track record of proven success is significant and provides compelling support for reauthorization. Given the history of complications and delays with program reauthorization, Congress should make the programs permanent, while retaining oversight through required regular agency reporting to ensure that funding is being used appropriately. Few federal programs produce such measurable and important results — these are programs worth keeping for years to come.

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