



NATIONAL ADVISORY COUNCIL ON
INNOVATION AND ENTREPRENEURSHIP



March 4, 2016

The Honorable Penny Pritzker
U.S. Department of Commerce
1401 Constitution Avenue NW
Washington, DC 20230

Dear Secretary Pritzker:

On behalf of the National Advisory Council on Innovation and Entrepreneurship (NACIE), we are pleased to offer recommendations that aim to improve the outcomes of the Small Business Innovation Research and Small Business Technology Transfer programs (collectively, the SBIR/STTR programs). The SBIR/STTR programs, through eleven agencies, including the Department of Commerce, annually deploy more than \$2 billion of Federal research and development investments in small businesses focused on a broad array of scientific and technological domains. While these investments fuel innovations across these domains, NACIE believes that changes to the SBIR/STTR programs can result in more efficient commercialization of those innovations by fostering their development into products and services, business, and jobs through a greater focus on activities that enable the transition of research to the marketplace. Attached hereto, NACIE's recommendations propose that the SBIR/STTR programs be modified to

1. allow the use of SBIR/STTR award funds for commercialization activities (e.g., market analysis, business model development, and intellectual property evaluation and protection);
2. significantly increase the allocation of agencies' SBIR project budgets to commercialization activities;
3. modify the criteria and composition of review panels to make commercialization potential a more prominent factor in funding decisions; and

4. encourage or require engagement of intermediary organizations in supporting the development of startups.

The SBIR/STTR programs have successfully funded innovative research that has resulted in technologies that are essential to our lives and the American economy. NACIE believes that these recommendations can better equip our nation's innovators to become successful entrepreneurs who not only create products and services that better our lives but also create businesses and jobs that better our economy. NACIE stands ready to advocate for these changes and to provide and gather the additional details necessary to implement these changes and to realize their impacts.

Respectfully submitted,



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Improving Commercialization Outcomes of the SBIR/STTR Programs

A Recommendation of the National Advisory Council on Innovation and Entrepreneurship (NACIE)

Objective and Background

In order to enhance the effectiveness and impact of the SBIR/STTR programs, which are critical pieces in the capital continuum from R&D to the market, these recommendations aim to

- put a greater emphasis on commercialization in award selection and oversight;
- fund commercialization-related activities to a greater extent, commensurate with the importance of evaluating and developing the potential for commercialization when seeking to facilitate market entry and success; and
- broaden the engagement with commercialization-focused intermediary S&T organizations that play a critical role in translation of science to business.

Billed as “America’s Seed Fund,” the Small Business Innovation Research and Small Business Technology Transfer programs (collectively, the SBIR/STTR programs) provide over \$2 billion per year to qualified small businesses to fund research and development activities through multiple Federal agencies.

The National Advisory Council on Innovation and Entrepreneurship (NACIE) recognizes the important role that the SBIR/STTR programs play, filling a gap between basic science research funding and traditional sources of private capital (including angel and venture capital, debt, and corporate strategic funding).

This gap is especially acute for science-based startups, which often have long, capital-intensive, and/or regulated pathways to market. While angel and venture funding has grown significantly to be an important source of early capital for many internet/IT and other companies with faster development cycles, scientific research-based startups are more likely to have significant shortfalls, impeding them in their market-facing efforts. Examples of companies facing these challenges include startups and/or emerging companies developing important technologies like batteries, new materials for extreme environments, energy generation, medical devices, pharmaceuticals and agricultural products.

While many agencies offering SBIR/STTR funding consider commercial potential and planning an important factor in making award decisions, NACIE believes that some changes to the SBIR/STTR programs should be considered to ensure a greater likelihood of commercialization success on the part of awardees. While NACIE acknowledges that the SBIR programs of some agencies (e.g., the Department of Defense (DOD), the National Aeronautics and Space Administration (NASA)) have internal paths to commercialization through Federal procurement and that the SBIR programs of some other

agencies (e.g., the Department of Health and Human Services (HHS), the Department of Education (DOEd), and the National Oceanic and Atmospheric Administration (NOAA)) fund public policy or basic research that lacks a natural path to commercialization, nearly every agency's SBIR program results in research that can more efficiently be turned into products and services and, ultimately, into companies and jobs. Therefore, NACIE recommends that the SBIR/STTR programs be modified as follows:

Recommendation 1: Allow the use of SBIR/STTR award funds for commercialization activities.

Awardees are prohibited from utilizing their grants to fund critical commercialization activities that will enable them to raise their profiles and accomplish certain key milestones in order to build product or service prototypes, acquire commercial customers, attract private capital, and accelerate their market entry. These activities cover the gamut of important commercial activities, including intellectual property development and prosecution, marketing and market development, and the recruitment of key team members associated with customer acquisition (e.g., marketing and sales)—all critical to commercialization.

It is clear that these activities are less likely to be accomplished without emphasizing them from the beginning in the performance of SBIR/STTR grants or contracts. It is also equally clear that without these activities awardees cannot achieve true market entry, regardless of any technical accomplishments that the grants seek to stimulate. Yet, funding for commercialization-related work is rarely forthcoming from private investment sources while the technology is still in the research stage. This is especially true of science-based research funded in the SBIR/STTR programs. Furthermore, it is often critical that these other, non-research activities be completed in advance of or in parallel with research activities to ensure that research efforts are optimized. For example, customer input is critical in determining how research activities should be directed or which technology or product features should be prioritized.

NACIE recommends that SBIR awardees be permitted to use a percentage, not less than five percent (5%), of SBIR award funds for commercialization activities. For Phase I awardees, which generally are further from market, the set of allowable activities should be narrow (e.g., market validation); for Phase II awardees, which generally should be closer to market, the set of allowable activities should be broad (not only market validation but also, e.g., intellectual property protection, business model development, and market research).

Recommendation 2: Significantly increase the allocation of agencies' SBIR project budgets to commercialization activities.

Though some of the participating agencies offer SBIR/STTR award "supplements" to awardees to select their own vendors, or offer commercialization programs conducted by outside vendors, these are capped at \$5,000 per year per awardee for commercialization activities and cannot be used to fund company employees specifically devoted to these activities. This allocation is a small fraction of the overall SBIR/STTR award; more significant funding would expand and accelerate the opportunity for awardees to conduct activities that are as crucial as their research results in attracting private capital

and gaining market entry. Also, agencies are constrained in their abilities to allocate more agency resources to commercialization-related activities.

NACIE recommends increasing the allocation of agencies' SBIR project funding toward commercialization to ensure that support, monitoring, and oversight of commercialization efforts are encouraged, instituted, and/or augmented. Agencies should be encouraged or required (a) to evaluate the performance of these outside vendors in order to ensure quality and (b) to match outside vendors to SBIR awardees in order to ensure an appropriate fit with respect to sector, stage, region, and other applicable factors. Expanding Federal support for commercialization in conjunction with private or state/local matching funds would be one avenue to ensure that these resources are going to companies with existing commercialization traction and leveraging non-Federal dollars. Additionally, agencies should implement their current authority to allow each individual SBIR awardee to choose the outside vendor that provides these services to that awardee.

Recommendation 3: Modify the criteria and composition of review panels to make commercialization potential a more prominent factor in funding decisions.

All participating agencies consider commercialization potential and plans in their grant funding decisions. However, agencies differ, sometimes considerably, in the weight or emphasis they place on commercialization (e.g., NSF has incorporated some external review into its evaluation process).

NACIE recommends that, at the agencies for which the intended customers of the technologies being developed are external to the agency (i.e., agencies other than, e.g., DOD and NASA), a significant portion of the merit review evaluation criteria and scoring should include commercialization factors, such as the company's understanding of and ability to address the market opportunity, target customers, competitive landscape, commercialization risks, product development timelines and needed resources. Further, to evaluate these important criteria, the composition of SBIR/STTR review panels at these agencies should include industry experts, investors with relevant industry or technology expertise, and/or representatives from commercialization intermediary organizations or venture development organizations, while addressing any concerns about conflict of interest.

Recommendation 4: Encourage or require engagement of commercialization-focused intermediary organizations in supporting the development of startups.

While agencies have expanded their commercialization programs through funding services offered by third party organizations (as noted above in Recommendation 2), the SBIR/STTR program should encourage the engagement and participation of science- and technology-oriented intermediary organizations that have been effective in helping grantees to translate science-based plans into commercial opportunity in regions around the country. As a key pillar of economic development, these organizations (which are often government or nonprofit entities) could more effectively leverage Federal funding, engage local resources in various functions, and generate local interest in awardees. Startups should utilize the expert knowledge and resources provided by proven support organizations.

SBIR/STTR investments that are coupled with guidance from regional intermediaries experienced with helping innovators will have a greater likelihood of success and long term stability.

Currently, ad hoc consultations occur across the board, as facilitated through initiatives such as the Small Business Administration's (SBA's) SBIR Road Tour and through the Department of Energy's (DOE's) National Incubator Initiative for Clean Energy. However, NACIE recommends the creation of formal pathways that would link these intermediary organizations and their efforts to the SBIR/STTR programs themselves, which would offer more hands-on input and support than the Federal agencies are able to provide.