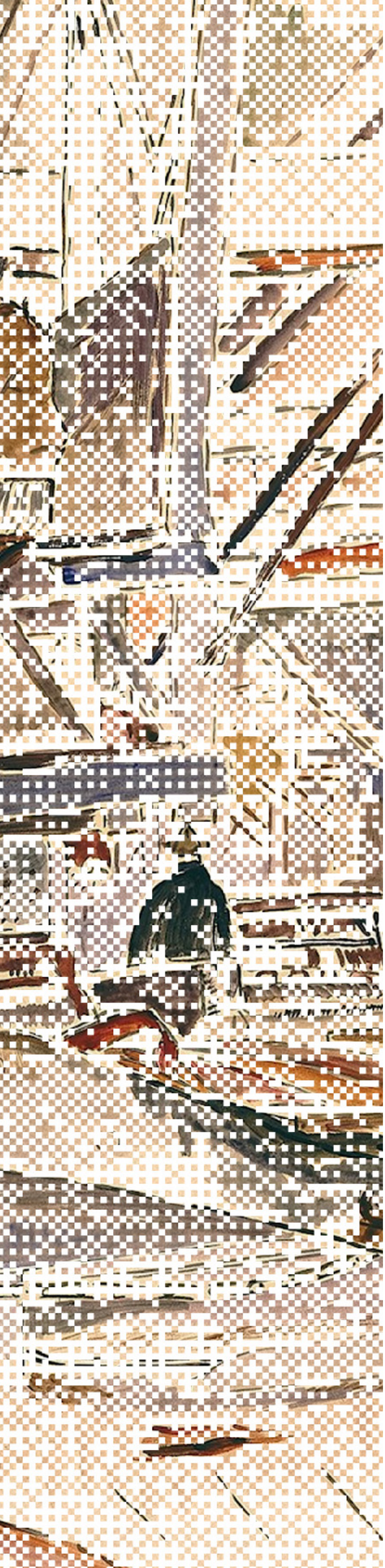

■ Frontier Science & Technology

Reforming the SBIR Program

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SUMMARY

The Small Business Innovation Research (SBIR) program, established in 1982, is a powerful tool for the federal government to commercialize innovative research and assist in turning startups into major companies. But despite meaningful reforms in recent years, problems persist that limit its ability to commercialize critical technologies. Companies earn hundreds of awards despite being mediocre at commercializing research, and malign foreign actors continue to take advantage of the SBIR program. Both harm the program's effectiveness at enhancing American competitiveness.

Senator Joni Ernst (R-IA), Chair of the Senate Small Business Committee, which oversees the SBIR program, has introduced S. 853, the INNOVATE Act, to reauthorize the SBIR program and address these problems. The bill enhances commercialization requirements to ensure that companies with dozens of awards do not rely on SBIR dollars as their principal source of revenue, strengthens the due diligence process that agencies undertake to evaluate SBIR companies for foreign risk, and reforms SBIR awards to increase the applicant pool and help companies cross the "valley of death."

PROBLEM

At the inception of the program, Congress intended SBIR to provide early-stage seed funding to help the best startups attract private capital. The SBIR program counts among its success stories companies such as Qualcomm and Anduril, both of which used SBIR awards to scale up their operations.

There are three tiers of SBIR awards. Phase I awards are approximately $200,000 to test if a technical idea has commercialization potential. Phase II awards are approximately $1,000,000 (though some agencies such as the Department of Defense (DOD) award larger awards) to turn ideas into products. To receive a Phase II award, a company must generally have received a Phase I award (or completed equivalent work outside of the program), as the Phase II award follows up on the work done in the Phase I award. Finally, a Phase III award is a term for a contract that is derived from a Phase II contract or through prior SBIR work, funded by an agency's general R&D or acquisition budget. There are several traits of Phase III contracts that are unique compared to other kinds of government contracts.

The SBIR program has two major problems. First, many Phase I and Phase II SBIR awards go toward a few unproductive companies rather than companies creating bold new technologies. These are colloquially called "SBIR mills." According to the author's calculations, from 2010 to 2023, 25 companies received 9 percent of all SBIR award dollars, out of 17,563 companies that received SBIR awards in total. Concentration is worse in some agencies. For example, 25 companies received $3.2 billion percent of all DOD SBIR awards from 2010 to 2023. Many of these companies are not effectively commercializing their Phase I/II SBIR awards. Only four of the top 25 DOD SBIR companies generated more in DOD Phase III contracts than they received in Phase I/Phase II awards from FY 2012 to FY 2021.

The second problem is the SBIR program's vulnerability to China's attempts to steal American research. Some SBIR companies maintain employees tied to Malign Foreign Talent Recruitment Programs in China. In some cases, researchers received SBIR awards while actively doing research for Chinese universities.

Large-scale collaborations can pose a risk to SBIR-funded research. SBIR companies have conducted joint research or joint ventures with entities known to have ties to foreign adversaries. Even more troubling are cases in which an SBIR company has had a branch in China that became the primary beneficiary of the SBIR funds. The 2022 reauthorization of the SBIR program made some progress on these problems, creating new foreign ownership, control, or influence due diligence programs within SBIR programs. But the problem continues: companies with risky backgrounds are still receiving SBIR awards.

The mill problem weakens the SBIR program's ability to help companies cross the "valley of death"—the gap in funding that companies with advanced technologies face when trying to transition research from an idea to a product. The current structure of the SBIR program, with inadequate funding available at later stages of commercialization and tolerance of large firms exploiting program dollars for perpetual R&D, creates a struggle for motivated companies to transition from SBIR awards to regular contracts. The foreign influence problem, meanwhile, weakens America's ability to benefit from SBIR-funded technologies, as the program remains vulnerable to technological theft by China and other adversaries.

SOLUTION

Congressional Recommendations

Senator Ernst, as Chair of the Senate Small Business Committee, has introduced S. 853, the INNOVATE Act, to reform the SBIR program as part of the fiscal year 2025 reauthorization of the program. The bill would make three major reforms.

First, the legislation would strengthen commercialization requirements:

- It would implement a lifetime cap on how many SBIR award dollars a company can receive. While the vast majority of companies receive fewer than five SBIR awards, SBIR mills over the lifetime of the program have received hundreds or even thousands of awards. The program should be structured as an initial investment to grow companies, as Congress intended when creating the program in 1982, instead of letting companies rely on SBIR awards as a perpetual source of revenue.
- It would strengthen commercialization benchmark requirements associated with SBIR companies that win hundreds of awards. The bill would require agencies to check how much revenue a company has received from SBIR awards versus from other sources of revenue. The goal is to ensure that companies that receive SBIR awards grow and graduate from the program.
- It would make SBIR and Small Business Technology Transfer (STTR) contracts fixed-price contracts by default. A fixed-price contract is one in which the dollar amount paid is set in advance. Some SBIR contracts are currently cost-plus contracts, whereby the government pays the contract winner negotiated overhead fees associated with the project. Restructuring these contracts as fixed-price rather than cost-plus would incentivize companies to deliver what they promised quickly and efficiently. Fixed-price contracts ensure taxpayers are not spending money on corporate cost overruns.

Second, the bill would improve agency due diligence programs:

- It would enact a stronger definition of foreign risk to ensure that federal agencies take a standardized approach in analyzing SBIR applicants from a research security perspective. One area for improvement from the provisions in the 2022 SBIR reauthorization is that federal agencies have the latitude to evaluate foreign risk differently. This has resulted in cases where a company that was denied a SBIR award by one agency on the basis of foreign ties could potentially receive a SBIR award from a different agency.
- It would require agency due diligence programs to consult applicants' relationships to entities on a common set of established lists of sanctioned and adversary-linked entities when checking if a company has dangerous foreign ties. An applicant company could not be affiliated with a corporation, research insti-

tution, or other entity on one of the federal government's many Chinese military-industrial complex lists and still remain eligible for award dollars.

Finally, the legislation aims to attract new entrants and help the best companies cross the "valley of death":

- It would simplify the process of getting SBIR awards. Agencies would be required to create a simply one-time-only Phase I SBIR award focused on commercialization potential. This would increase the amount of technologies agencies could choose from for targeted investment.
- It would help DOD scale companies through SBIR awards by creating a new transition-focused Phase II allocation with 0.25 percent of the DOD SBIR-STTR budget. The allocation would be reserved for high-dollar awards to small businesses that best improve the effectiveness of the warfighter with a focus on scaling the production of new technologies. This proposal is inspired by the success of the Air Force's STRATFI/TACFI (see appendix).
- These reforms would help agencies pick the best companies and make targeted investments to accelerate their technology. The streamlined Phase I award would make it easier for companies with worthy technology to get their foot in the door with federal agencies that have SBIR programs. The transition-focused Phase II awards would enable agencies to choose technologies with the best commercialization potential and rapidly scale them.

JUSTIFICATION

The SBIR program expires at the end of fiscal year 2025, and its reauthorization offers an opportunity to reform the program. Several senators have pursued SBIR reform, with mixed success.

In 2019, the Chair of the Senate Small Business Committee, Senator Mark Rubio (R-FL), introduced the SBA Reauthorization and Improvement Act of 2019, which would have reauthorized the Small Business Administration (SBA). Section 205 would have created a Phase III SBIR contracting authority education program; Section 206 would have required SBIR program officers to more heavily weigh commercialization potential when choosing companies to award. The SBA reauthorization bill containing these SBIR reforms stalled in 2019 because of differences between the Republican majority and Democratic minority on regulatory reform.

The SBIR program was most recently reauthorized in 2022. While the reauthorization bill passed and contained key reforms to the SBIR program, including foreign ties due diligence, a requirement for the Government Accountability Office (GAO) study on multiple award winners, and enhanced commercialization benchmarks for multiple awardees, these reforms did not go far enough.

Given a narrow number of firms subject to new standards and relatively lenient standards to escape penalty, the 2022 reauthorization's commercialization benchmarks did not meaningfully affect the role of SBIR mills in the program. A 2024 GAO study showed that new commercialization standards only affected six multiple awardees (a broader group of companies of which SBIR mills are a subset). Further, while the legislation requires a foreign ties due diligence program at participating agencies, some now have disparate due diligence practices and varying evaluations of adversarial influence in potential awardees, which can lead to companies with malign ties continuing to receive awards. The 2025 reauthorization presents an opportunity to fix these flaws in the program. ■

FURTHER RESOURCES

- Amanda Bresler, "Assessing the Effectiveness of Defense-Sponsored Innovation Programs as a Means of Accelerating the Adoption of Innovation Forcewide," Acquisition Research Program, 2023
- Defense Innovation Board, "Terraforming the Valley of Death: Making the Defense Market Navigable for Startups," 2023
- Protecting the National Security Innovation Base Study Group and OSE/Factor 8 Program, "Survey of PRC State-Sponsored Technology Transfers Affecting SBIR Programs: A DoD Case Study," 2021
- Government Accountability Office, "Increased Performance Standards Likely Affect Few Businesses Receiving Multiple Awards," 2024
- Ben Van Roo, "Are a Few Dozen SBIR Mills Sucking the Air Out of Small Business Innovation?" Beyond Visual Range—AI, Defense, and Policy, 2022
- Ben Van Roo, "Congress Renews SBIRs. Yay!?" Beyond Visual Range—AI, Defense, and Policy, 2022

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APPENDIX

Small Business Technology Transfer contracts: STTR contracts are SBIR awards whereby a small business cooperates with colleges or universities, Federally Funded Research and Development Centers (FFRDCs) or qualified non-profit research institutions to commercialize research from those institutions.

Strategic Funding Increase/Tactical Funding Increase (STRATFI/TACFI) Programs: SBIR funding programs run through AFWERX, the innovation arm of the Department of the Air Force. STRATFI/TACFI award larger than usual SBIR Phase II awards ($3–15 million and $375,000–$2 million) with a combination of SBIR and non-SBIR government dollars. The Air Force uses STRATFI/TACFI awards to help companies cross the gap between receiving SBIR awards and entering long-term, larger government contracts.