

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

MEMORANDUM

TO: Members, Subcommittee on Underserved, Agricultural, and Rural Development
FROM: Jared Golden, Chairman
DATE: June 23, 2021
RE: Subcommittee Hybrid Hearing: “Prioritizing Small Underserved and Rural Businesses in the SBIR/STTR Programs”

The Committee on Small Business will meet for a hybrid hearing titled “Prioritizing Small Underserved and Rural Businesses in the SBIR/STTR Programs.” **The hearing is scheduled to begin at 2:00 P.M. on June 23, 2021, in person in 2360 Rayburn House Office Building, and virtually via the Zoom platform.**

This is the second hearing in a series on the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, which is authorized through September 30, 2022. The SBIR and STTR programs share four goals, one is to foster inclusion and diversification among innovative firms. At this hearing, Members will examine agency strategies and measure progress made towards the diversification goal.

Panel

- Dr. Joshua A. Henry, President and Founder, GO Lab, Inc., Belfast, ME
- Ms. Nancy Min, Founder, ecoLong, Buffalo, NY, Testifying on behalf of the Clean Energy Business Network
- Dr. Angelique Johnson, Founder & Chief Executive Officer, MEMStim LLC, Louisville, KY
- Dr. David Green, Chief Executive Officer, Physical Sciences Inc., Andover, MA, Testifying on behalf of the New England Innovation Alliance (NEIA)

Background

The science, technology, engineering and math (STEM) field is a significant driver of U.S. economic growth and global competition. In 2019, there were 19.1 million workers employed in STEM occupations.¹ STEM job growth continues to outpace non-STEM jobs, however certain demographic groups remain underrepresented in the field.² Hispanic workers make up only 8% of STEM workers but 17% of workers across all occupations; black workers make up only 9% of

¹ Rick Fry, et. al, Pew Research Council, STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity (Apr 2021), available at <https://www.pewresearch.org/science/2021/04/01/stem-jobs-see-uneven-progress-in-increasing-gender-racial-and-ethnic-diversity/>.

² *Id.*

STEM workers but 11% of workers across all occupations.³ Women’s share in STEM jobs (50%) is slightly higher than their share in the overall workforce (47%); but remain underrepresented in certain occupations. Women make up 25% of workers in computer occupations, and 15% in engineering and architecture occupations.⁴ Federal research and development (R&D) efforts often include diversification goals to counter these trends.

SBIR/STTR Program Basics

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.⁵

Federal agencies with an extramural R&D budget over \$100 million are required to set aside at least 3.2% of that budget for SBIR awards to small businesses. There are 11 agencies participating: 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). Total agency obligation for FY 2020 was \$3.3 billion for 5,976 awards to 3,547 small businesses.⁶

The STTR program has an additional statutory purpose to stimulate partnerships between small businesses and non-profit research institutions.⁷ Federal agencies with an extramural R&D budget over \$1 billion must set aside at least 0.45% 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.⁸

Diversity in the SBIR/STTR Program

As defined by the Small Business Administration (SBA) Policy Directive, the third goal is to “foster and encourage participation by socially and economically disadvantaged SBCs (SDBs), and by women-owned SBCs (WOSBs), in technological innovation.”⁹ The definition of SDBs aligns with the SBA’s 8(a) business status determination.¹⁰

³ *Id.*

⁴ *Id.*

⁵ About, SBIR STTR AMERICA’S SEED FUND, [hereinafter About], <https://www.sbir.gov/about>.

⁶ Award Data, SBIR STTR AMERICA’S SEED FUND, [hereinafter Award Data], <https://www.sbir.gov/sbirsearch/award/all>.

⁷ About, *supra* note 5.

⁸ Award Data, *supra* note 6.

⁹ 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.

¹⁰ 13 CFR § 124.103

Women- owned Businesses (WOSBs)

Data for WOSBs from the SBA’s 2018 report is summarized in Table 1.

Table 1. WOSB Participation and Success in the SBIR and STTR Programs by Program Phase, FY2013-FY2018

Program/ Agency	Fiscal Year	Phase I			Phase II		
		Proposal Success Rate-All Applicants	WOSB Share of Proposals	WOSB Share of Awards	Proposal Success Rate-All Applicants	WOSB Share of Proposals	WOSB Share of Awards
SBIR Overall	2013	15%	15%	14%	54%	11%	13%
	2014	18%	16%	14%	51%	13%	13%
	2015	17%	16%	16%	52%	14%	11%
	2016	16%	15%	14%	48%	14%	14%
	2017	17%	16%	14%	59%	14%	13%
	2018	16%	14%	13%	55%	11%	12%
STTR Overall	2013	18%	14%	13%	55%	1%	3%
	2014	23%	14%	14%	58%	3%	8%
	2015	21%	14%	13%	50%	2%	4%
	2016	20%	14%	12%	44%	2%	3%
	2017	22%	13%	12%	57%	2%	5%
	2018	19%	13%	13%	47%	2%	6%

Source: CRS analysis of data from Small Business Administration, Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs Annual Report for each fiscal year. Annual reports available at <https://www.sbir.gov/annual-reports-files>.

Notes: WOSB=women-owned small business, Overall=all federal agencies participating in the SBIR or STTR programs. 11 federal agencies participate in the SBIR program: 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). Five federal agencies—HHS, DOD, DOE, NASA, and NSF—also participate in the STTR program.

Socially and Economically Disadvantaged Businesses (SDBs)

Data for SDBs from the SBA’s 2018 report is summarized in Table 2.

Table 2. SDB Participation and Success in the SBIR and STTR Programs by Program Phase, FY2013-FY2018

Program/ Agency	Fiscal Year	Phase I			Phase II		
		Proposal Success Rate-All Applicants	SDB Share of Proposals	SDB Share of Awards	Proposal Success Rate-All Applicants	SDB Share of Proposals	SDB Share of Awards
SBIR Overall	2013	15%	9%	7%	54%	4%	5%
	2014	18%	9%	4%	51%	5%	3%
	2015	17%	9%	7%	52%	5%	5%
	2016	16%	9%	6%	48%	7%	6%
	2017	17%	11%	7%	59%	6%	5%
	2018	16%	12%	7%	55%	7%	6%
STTR Overall	2013	18%	10%	5%	55%	7%	4%
	2014	23%	8%	7%	58%	8%	6%
	2015	21%	8%	6%	50%	7%	8%
	2016	20%	7%	7%	44%	7%	8%
	2017	22%	9%	8%	57%	9%	8%
	2018	19%	8%	7%	47%	8%	9%

Source: CRS analysis of data from Small Business Administration, Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs Annual Report for each fiscal year. Annual reports available at <https://www.sbir.gov/annual-reports-files>.

Notes: SDB=socially and economically disadvantaged small business, Overall=all federal agencies participating in the SBIR or STTR programs. 11 federal agencies participate in the SBIR program: 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). Five federal agencies—HHS, DOD, DOE, NASA, and NSF—also participate in the STTR program.

Underrepresented Areas

The SBA's Historically Underutilized Business Zone (HUBZone) Program is charged with stimulating economic development by increasing employment and capital investment through the use of federal contracting preferences to small businesses operating in economically distressed areas. SBIR/STTR grant awards in HUBZones are tracked as a socioeconomic group with WOSBs and SDBs. In SBIR, USDA had the highest percentage of Phase I award dollars (20%) to HUBZones, and EPA had the highest percentage of Phase II award dollars (20%) to HUBZones.¹¹ In STTR, NSF had the highest percentage of award dollars to HUBZones, 27% of Phase I STTR and 25% of Phase II STTR dollars went to HUBZones.¹² In SBIR, DOD spent 3% of Phase I dollars and 1% of Phase II dollars on businesses in HUBZones; in STTR, DOD spent 6% of Phase I dollars and 3% of Phase II dollars on businesses in HUBZones.¹³

SBIR/STTR awards are also tracked by state. The data is provided in the SBA's annual report, and rankings are included in the Federal and State Technology (FAST) Partnership Program Notice of Funding Agreement.¹⁴ "Underrepresented states" are typically those that receive the fewest amount of awards; based on FY 2019 data, underrepresented states are:¹⁵

Rank, State, Number of Awards		
35 Louisiana 15	43 Wyoming 7	51 Mississippi 1
36 Montana 15	44 Idaho 6	52 North Dakota 0
37 South Carolina 15	45 Maine 6	53 American Samoa 0
38 Rhode Island 13	46 Puerto Rico 5	54 Guam 0
39 Oklahoma 11	47 Nevada 4	55 Virgin Islands 0
40 South Dakota 10	48 Nebraska 3	56 Northern Mariana Islands 0
41 Arkansas 9	49 Alaska 2	
42 Vermont 9	50 West Virginia 2	

SBIR/STTR Participant Diversity Efforts

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.¹⁶

Since 2015, the SBA has conducted the SBIR Road Tour to increase program awareness and access, especially for underrepresented individuals and states; it has held events in all 50 states and Puerto Rico, and conducted virtual events in 2020.¹⁷ The events are hosted by business development organizations and research institutions, and often include introductory presentations and workshops led by agency SBIR/STTR program managers. According to the SBA's Annual

¹¹ U.S. SMALL BUS. ADMIN, FY 2018 SBIR/STTR ANNUAL REPORT [hereinafter "2018 Report"], https://www.sbir.gov/sites/default/files/SBA_SBIR_STTR_FY18_Annual_Report-Final_508.pdf.

¹² *Id.*

¹³ *Id.*

¹⁴ U.S. SMALL BUS. ADMIN, FEDERAL AND STATE TECHNOLOGY PARTNERSHIP PROGRAM, FUNDING OPPORTUNITY No. SB-OIIFT-21-00 (Apr. 9, 2021), https://www.sbir.gov/sites/default/files/FAST_FY21_NOFO_Draft_Final_4-9-2021.pdf.

¹⁵ *Id.*, at 17.

¹⁶ Policy Directive *supra* note 9, at 100-101.

¹⁷ <https://www.sbirroadtour.com/sbir/>.

Report on FY 2018, there were an average of 16 SBIR/STTR representatives and 160 attendees at each of the 18 stops.¹⁸ In total, the SBA facilitated 2,900 one on one meetings between potential applicants and program managers.¹⁹

The SBA offers grants to support organizations through the Federal and State Technology (FAST) Partnership Program which aims to increase diversity in the SBIR/STTR pipeline.²⁰ Specifically, it aims to increase SBIR/STTR awards to “women, socially/economically disadvantaged individuals, and small businesses in underrepresented areas - typically rural states.”²¹ The one-year grant is used to fund technical and business assistance, outreach, and financial support.²²

Research Agencies

Each participating agency operates its own SBIR/STTR programs under the provisions of the law and regulations, as well as with the policy directive issued by the SBA in its SBIR/STTR Policy Directive. 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. This enables each agency to use their own strategies and resources to expand access to the program. Agencies are authorized to use up to 3% of SBIR/STTR funds on administrative, oversight, and contract processing costs. As outlined in the Policy Directive, the money must be used to “attempt to increase participation” by SDBs and WOSBs and small businesses in states with low levels of awards.²³

Agencies report company related data which includes women-owned, socially and economically disadvantaged, or HUBZone-owned specifications.²⁴ Agencies are also required to report outreach activities targeting WOSBs, SDBs, and underrepresented states.²⁵ Most agencies list participation in the SBIR Road Tour and other government and industry events, and various web-based strategies. This data is summarized by agency in the SBA Annual Report.

Research Institutions

There are more than 700 Minority Serving Institutions (MSIs), which includes historically designated Historically Black Colleges and Universities (HBCUs) and Tribal Colleges and Universities, and institutions designated by the Department of Education based on enrollment and expenditure thresholds.²⁶ According to the National Academies of Science, MSIs are an underutilized resource for the nation’s STEM workforce and output.²⁷ MSIs produce one-fifth of

¹⁸ 2018 Report *supra* note 11.

¹⁹ *Id.*, at 81.

²⁰ Federal and State Technology (FAST) Partnership Program, SBIR STTR AMERICA’S SEED FUND, <https://www.sbir.gov/about-fast>.

²¹ *Id.*

²² *Id.*

²³ Policy Directive *supra* note 9, at 70.

²⁴ 2018 Report *supra* note 11, at 14.

²⁵ *Id.*, at 66.

²⁶ NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE, MINORITY SERVING INSTITUTIONS: AMERICA’S UNDERUTILIZED RESOURCE FOR STRENGTHENING THE STEM WORKFORCE 3(2019), available at <https://www.nap.edu/catalog/25257/minority-serving-institutions-americas-underutilized-resource-for-strengthening-the-stem>.

²⁷ *Id.*, at 23.

STEM bachelor's degrees, but are often overlooked and underinvested in STEM fields.²⁸ Of the nearly 100 road tour events, both in person and virtual, only 13 Minority Serving Institutions (MSIs) served as local host organizations between 2015-2019.²⁹ Because the SBA database is not searchable by research institution, it is difficult to determine how many SBIR/STTR awards were made to MSIs. It is unclear what impact the road tour events have on program interest, application, and success of attendees.

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), and Women's Business Centers (WBCs), and Regional Innovation Clusters (RICs).³⁰ These organizations support SBIR/STTR by conducting outreach, which may include hosting SBA and agency speakers or workshops, and providing technical and business assistance to applicants and awardees.

According to the SBA Policy Directive, agencies may enter agreements with one or more vendors to provide technical and business assistance (TABAs). This may include “access to a network of scientists and engineers engaged in a wide range of technologies, assistance with product sales, intellectual property protections, market research, market validation, and development of regulatory plans and manufacturing plans, or access to technical and business literature available through on-line databases.”³¹ If using SBIR/STTR funds, agencies may provide \$6,500 for each Phase I award, and \$50,000 for each Phase II award.³²

Awardees may use the funds on agency preferred vendors or request authority to select its own provider; it is up to the agencies to decide if funds may be included as part of the award or in addition to the award.³³ TABA funds are a crucial support mechanism for businesses that may not have the resources to navigate program requirements. Allowing awardees to select their own provider enables businesses to get assistance to meet their unique needs. TABA flexibility is crucial not only for SDB WOSB awardees, but also for agency SBIR/STTR program offices that may not have the bandwidth to manage a network of vendors that can meet every unique need.

Conclusion

The SBIR/STTR program has decades of demonstrated positive return on investment and funding of groundbreaking technology that shows that it is integral part of the U.S. government's technological ecosystem. Although statutorily required, participating agencies have struggled to increase participation of WOSBs, SDBs, and businesses in underrepresented states. The Committee intends to prioritize diversity issues and policies as part of the SBIR/STTR reauthorization process.

²⁸ *Id.*, at 2.

²⁹ Attendance data for 2015-2018 was derived from the SBIR and STTR annual reports, 2019 data was submitted by SBA.

³⁰ Support Organizations, SBIR STTR AMERICA'S SEED FUND, <https://www.sbir.gov/support-organizations>.

³¹ Policy Directive *supra* note 9, at 63.

³² *Id.*

³³ *Id.*, at 65.