DEFENSE SBIR/STTR PROGRAM QUARTERLY REVIEW

Q1 Volume 3 Issue 1

Message from the Defense SBIR/STTR Program Director

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Defense SBIR/STTR Program Office
Office of the Under Secretary of Defense
for Research and Engineering

Hello Everyone,

I'm excited for the opportunity to be the new Defense SBIR/STTR Program Director! In my role, I am the primary point of contact for Congress, the Small Business Administration, Government Accountability Office and of course, this amazing SBIR/STTR community. My goal for our program is to foster transparency, identify gaps and concerns, and encourage improvements in our SBIR/STTR processes to foster innovation to the Warfighter.

Additionally, I'm dedicated to being a source of support to our ever-growing, innovative SBC community. Together, we will ensure small businesses have manageable, repeatable, easy to understand processes in place to execute innovative solutions across the DoD.

A little bit about me – I'm a career civilian with 15 years of acquisition and program management experience. Most recently, I was the Specific Topic Branch Chief under AFWERX's AFVentures Division. During my time with AFVentures, I was successful in creating a SBIR/STTR Lifecycle to support both end users and SBCs. Through this lens, I was captivated by the SBIR/STTR community and inspired to help connect SBCs innovation and technology to the needs of the Warfighter.

I have two children – Jordan, 8 and Sophie, 5 and when I'm not a program director or mom, I thoroughly enjoy reading and love talking to others about what they're reading. Please feel free to reach out to me at any time to say hello and share your concerns and/or ideas!

Sincerely,

Regina "Gina" Sims

Inside This Issue

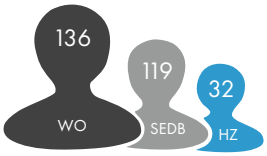
The Hill

With the start of a new fiscal year, the Defense SBIR/STTR Program now turns its focus to the budgetary cycle and legislative planning for FY25. Through continued engagement with Congress this Spring, our office will highlight the recent successes of the SBIR/STTR program, encourage future partnership between the Department and innovative small businesses across the country, and pursue improvements to SBIR/STTR policy, such as permanency for the program.

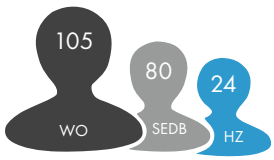
DoD SBIR/STTR Program Statistics

The following data provides a snapshot of program statistics—proposal and award data in DSIP throughout FY23 (Q1-Q4), as of January 16, 2024 (statistics change as data are received from Components).

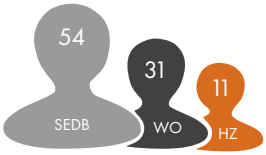
SBIR Phase I proposal submissions by socioeconomic category



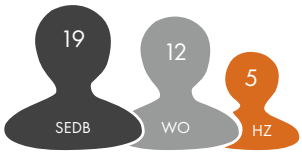
SBIR Phase II proposal submissions by socioeconomic category



STTR Phase I proposal submissions by socioeconomic category



STTR Phase II proposal submissions by socioeconomic category



TERMINOLOGY KEY:

SEDB = Socially and Economically Disadvantaged Business

HZ = HUBZONE Historically Underutilized Business Zone

WO = Woman-owned Small Business

Funding Opportunities

In the first quarter, the Defense SBIR/STTR Program Office released approximately 158 Small Business Innovation Research (SBIR) topics and 32 Small Business Technology Transfer (STTR) topics across four Broad Agency Announcements (BAAs) and one Commercial Solutions Opening (CSO). This included topics under the DoD-wide Annual SBIR & STTR BAAs, as well as topics under the DoD 24.1 SBIR & 24.A STTR and the Air Force X24.4 CSO. During this timeframe, approximately 3,515 proposals were submitted across all topics and solicitations.

For a full list of current and upcoming funding opportunities, please visit https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/.

To be notified of new funding opportunities and to receive e-mail updates on the DoD SBIR and STTR Programs, subscribe to our listserv by visiting https://www.dodsbirsttr.mil/submissions/login and clicking "DSIP Listserv" located under Quick Links.

SBIR Awards by Component

ARMY
Phase I: 175
Phase II: 130
Direct to PII: 20

CBD
Phase I: 15
Phase II: 18

DARPA
Phase I: 5
Phase II: 93
Direct to PII: 25

DHA
Phase I: 20
Phase II: 37
Direct to PII: 2

DLA
Phase I: 29
Phase II: 33
Direct to PII: 10

OSD
Phase II: 4

SDA
Phase II: 9
Direct to PII: 9

USAF
Phase I: 757
Phase II: 588
Direct to PII: 444

DTRA
Phase I: 20
Phase II: 6

DMEA
Phase I: 12
Phase II: 4
Direct to PII: 2

MDA
Phase II: 25
Direct to PII: 1

NAVY
Phase I: 323
Phase II: 172

NGA
Phase II: 6
Direct to PII: 1

SCO
Phase II: 1
Direct to PII: 1

SOCOM
Phase I: 19
Phase II: 23
Direct to PII: 5

STTR Awards by Component

ARMY
Phase II: 29

CBD
Phase II: 4

DARPA
Phase I: 2
Phase II: 14

DHA
Phase II: 10

DLA
Phase I: 11

SDA
Phase II: 2

USAF
Phase I: 240
Phase II: 83

DTRA
Phase I: 4
Phase II: 3

NAVY
Phase I: 89
Phase II: 28

MDA
Phase I: 37
Phase II: 6

OSD
Phase I: 9
Phase II: 9

NGA
Phase II: 1

SOCOM
Phase I: 4
Phase II: 3

SBIR Proposals by Component

ARMY
1609

CBD
15

DARPA
281

DHA
143

DLA
271

SOCOM
276

SDA
2

DMEA
69

DTRA
77

MDA
95

NAVY
2831

OSD
128

USAF
5991

STTR Proposals by Component

ARMY
513

DARPA
12

DHA
30

DLA
21

USAF
991

DTRA
10

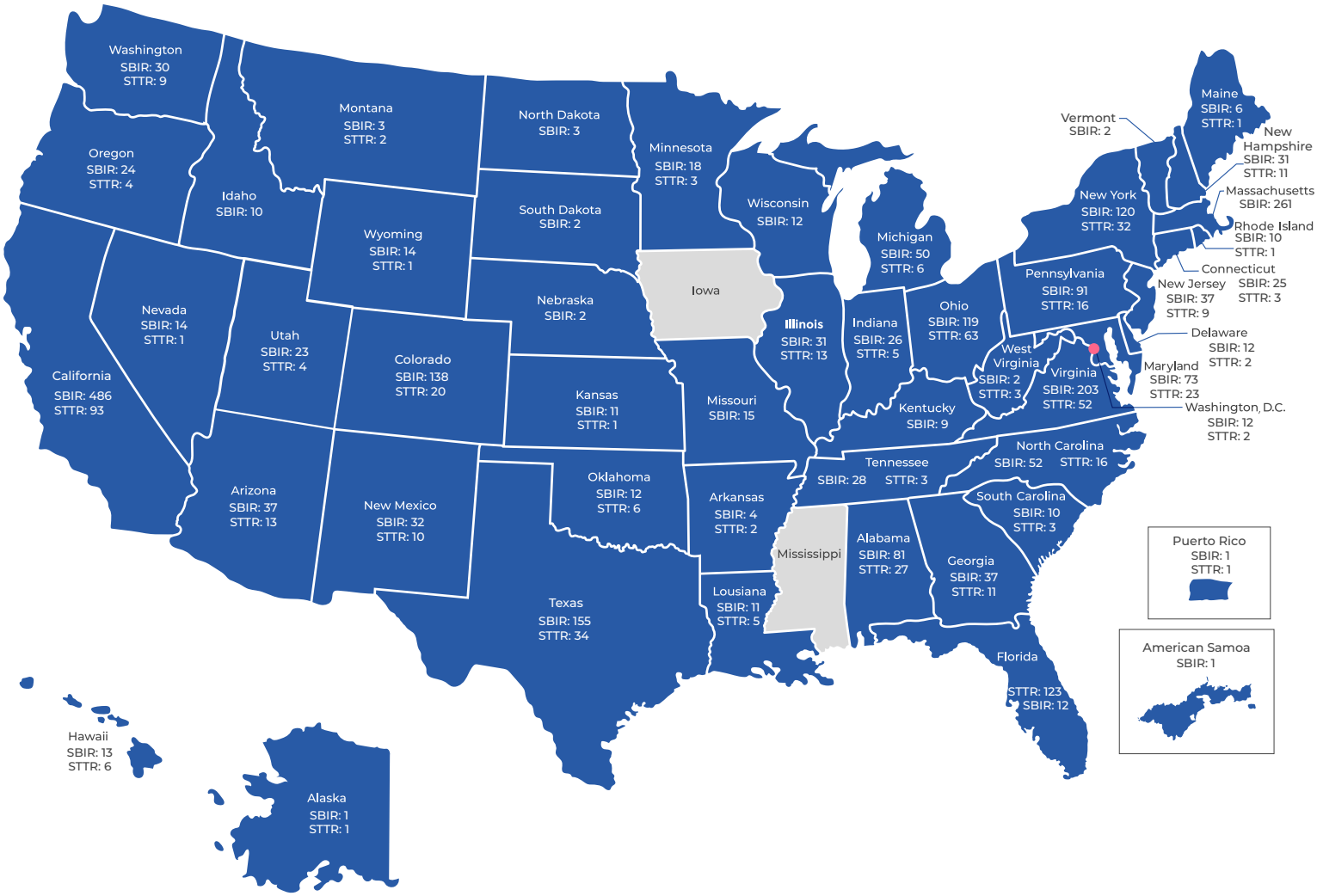
MDA
101

NAVY
335

OSD
42

SOCOM
45

SBIR/STTR Contract Awards by State



Components Connection

Army Offers Firms up to $75 million With Second Army SBIR CATALYST Launch

Collaborating with small businesses is an integral part of Army SBIR CATALYST — an Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology-led initiative leveraging $75 million in matching funds from the Army SBIR Program, Army customers and integrators to spur disruptive innovation across the federal government. Dr. Matt Willis, director of Army Prize Competitions and Army Applied SBIR Program, unveiled the second iteration of Army SBIR CATALYST at the October 2023 Association of the United States Army Annual Meeting and Exposition, which will expand on the successful pilot program that selected five small businesses to receive up to $15 million each in May 2023.

The second iteration of Army SBIR CATALYST will broaden eligibility to firms that have previously received Small Business Innovation Research or Small Business Technology Transfer contracts from any federal agency, to maximize coordination and transition between small businesses, technology integrators and federal stakeholders. Army SBIR CATALYST will require interested Army transition partners to recommend SBIR projects for the program via an application process. Additionally, federal agencies beyond the Army can work with these Army transition partners to submit topics addressing broader government needs.

Dr. Matt Willis and UAT Talk Entrepreneurship on "Veteran's Playbook" Season Finale

The season one finale of "Veteran's Playbook" aired on Destination America on Dec. 20, 2023, featuring Dr. Matt Willis, director of Army Prize Competitions and the Army Applied SBIR Program, and xTechSearch 2 finalist United Aircraft Technologies. The episode showcased examples of veteran entrepreneurs in action and included a sit-down discussion between Dr. Willis and UAT at the Association of the United States Army Annual Meeting and Exposition in October 2023, where they talked about the value of Army programming to veteran entrepreneurs. You can watch the full episode on the Veteran's Playbook YouTube channel.

Dr. Matt Willis, director of Army Prize Competitions and the Army Applied SBIR Program (right) and xTechSearch 2 finalist, United Aircraft Technologies.

xTechPrime Offers Winners $1M in Cash Prizes and up to $28.5M in Follow-on Awards

The U.S. Army xTech Program announced 15 winners from xTechPrime, the Army's first competition focused on partnering small businesses with technology integrators to address Army modernization challenges. Announced by the Under Secretary of the Army, Hon. Gabe Camarillo, at the 2022 Association of the United States Army Annual Meeting and Exposition, the Army's xTechPrime competition is one of five initiatives — alongside the Army SBIR CATALYST Program, Army Tech Marketplace, IP Cadre and Project VISTA — incentivizing collaboration with industry.

Following xTechPrime's launch, the Army received 345 concept white papers highlighting technologies capable of supporting Soldiers via solutions in artificial intelligence and machine learning, autonomy, climate and clean tech, contested logistics and sustainment, immersive and wearables, and sensors. An evaluator panel of Army subject matter experts then narrowed down these submissions. Forty-six semifinalists then formed teams with technology integrators via the optional xTech Collider Event or other arrangements. These teams conducted a virtual pitch of their technology concepts, which led to another down-select to 24 finalists. From Dec. 11-14, the competition hosted a final technology pitch event, where evaluators selected 15 winners who each received $40,000 total in cash prizes over the competition's three rounds. To view the list xTechPrime winners, you can visit the xTech Program's News and Announcements page.

xTechHBCU Winner Leaps Over Achievement Gap with Boost From U.S. Army

A college student's journey from undergraduate to employment was fast-tracked for success when she entered and won the U.S. Army xTech Program's first-ever xTechHBCU Student competition. In September 2022, xTech launched the xTechHBCU Student competition to engage with a new generation of innovators from Historically Black Colleges and Universities, an underrepresented group across the Army's tech enterprise that has the potential to solve major Army challenges with diverse perspectives and solutions.

Deneen Royal, xTechHBCU winner and Lockheed Martin employee.

Deneen Royal, a senior at Fayetteville State University at the time, heard about the competition through a college professor and submitted a proposal on Artificial Intelligence for Independent Surveillance Missions. Her technology concept was an AI-based drone that would perform autonomous search and rescue missions. This ingenuity enabled Royal to earn a cash prize of $8,000, the opportunity to develop a prototype of her technology and helped her land a job with defense contractor, Lockheed Martin.

Navy Announces $6M Funding Opportunity and Invitation to Present Capabilities at Sea-Air-Space Exposition

The Department of the Navy (DoN) Small Business Innovation Research (SBIR) 24.4 Direct to Phase II Broad Agency Announcement (BAA) opened for proposal submissions on 1 February, and closed on 5 March.

In this BAA, the DoN - through the Office of Naval Research (ONR) - solicited innovative solutions from domestic small businesses that address critical Naval needs in next-generation autonomy for Unmanned Maritime Vehicles (UMVs).

All small business concerns that submitted proposals to topic N244-D04 will be invited to participate in the 2024 Sea-Air-Space Exposition Small Business Showcase on 9 April at the Gaylord National Resort and Convention Center, National Harbor, Maryland. Small business concerns selected to submit a Full Direct to Phase II Proposal will be invited to present their capabilities to Naval leadership and Sea-Air-Space attendees during the Showcase. (Note: Information presented by the small business concerns at Sea-Air-Space will not be considered evaluative for final selections.)

Learn About Emerging Tech at Upcoming Navy STP Showcases

Navy SBIR Transition Program (Navy STP) Showcase events feature Navy STP Phase II companies' technologies and engage the fleet, primes, and acquisition stakeholders by promoting mature Naval SBIR/STTR technologies ready for transition and connecting small business innovators with DoD decisionmakers and industry from across the country.

The events provide excellent opportunities for national security and defense stakeholders to review SBIR/STTR technology breakthroughs that improve defense readiness and response capabilities. Navy STP Showcase events connect participating small businesses with government and industry personnel through on-demand Tech Talks and an enhanced online presence via the Navy STP Virtual Transition Marketplace (VTM) found at https://vtm.navyfst.com/

Two upcoming Navy STP Showcase events are scheduled in 2024.

Navy STP West 2023

NAVAIR & NAVSEA Technical Information Exchange
NAVAIR & NAVSEA Technical Information Exchange on 12-13 March, Arlington, Virginia. Email navystp@atsi-corp.com with the subject "Technical Information Exchange" to register. Attendance is open to government and industry personnel.

Sea-Air-Space 2024
Sea-Air-Space 2024 on 8-10 April, Gaylord National Resort & Convention Center, National Harbor, Maryland - Booth #223 https://navyfst.com/events/sea-air-space-2024/

Success Story

Sky's the Limit

SBIR-supported radio tech creates a new approach to satellite communications

Military satellites can be used for any number of essential purposes, from tracking military deployments and providing pictures of enemy capabilities, to the global positioning system (GPS) that directs troop movements and aids missile and drone guidance. But there is another type of military satellite that is equally important—the communications satellite (SATCOM). SATCOMs allow the military to maintain consistent communications in all environments and situations, relaying intelligence and surveillance information so commanders can understand situations and act decisively. They provide beyond-line of-sight (BLOS) connectivity for mobile forces, transmitting real-time battlefield intelligence.

Warfighters often have difficulties in communications when they are on the move and farther away than line-of-sight. To connect to the Defense Information System Network (DISN), they have traditionally had to hold terrain and bring in cable, increasing operational exposure. Legacy Ultra High Frequency (UHF) satellites are slow, require a lot of power, have limited bandwidth, and are limited to line-of-sight. The current UHF satellites are also working past their designed life expectancy.

The next generation satellite communications system from the Department of Defense (DoD), with help from the DoD's Small Business Innovation Research (SBIR) program, will revolutionize DoD's SATCOM use. It's called the Mobile User Objective System (MUOS), and it adapts the architecture of a 3G cellular phone network and combines it with geosynchronous satellites (which effectively take the place of cell towers). The new MUOS system is designed to provide more than ten times the capacity of the current UHF system, delivering secure voice and data communications worldwide. The system supports ground, naval, and air tactical warfighters who need to operate on-the-move, BLOS, and in difficult terrain conditions.

When the DoD issued its initial SBIR solicitation, it was for a MUOS data link on a small satellite. Among other requirements, the radio needed to be software-defined, meaning that its operations could be remotely altered through software. (Unlike your cellphone, you can't easily trade in a radio on a satellite when technology changes.) Given the costs of wiring the radio to a satellite and putting it into space, the radio needed the ability to be updated remotely. The radio had to be light enough to launch into orbit, yet powerful enough to send and receive signals to the MUOS geosynchronous satellite constellation. Finally, the radio had to be smart, so it could detect and coordinate messages between users, and to be able to use a variety of specialized antenna systems.

Vulcan Wireless, a small company based in Carlsbad, California, was awarded the SBIR contract to make the radio the DoD needed. Building the radio, however, presented Vulcan with a number of challenges.

Commercial cell towers for terrestrial communications have a range of about five miles. The radio Vulcan was tasked with creating had to have a range of 23,000 miles to reach satellites in geostationary orbit. Vulcan put the radio software on a miniature processor and added filters and amplifiers to ensure the signal would also be resilient against jamming and interference. A signal travelling 23,000 miles can degrade along the way, so Vulcan also developed ways to make sure the signal would still be coherent when it reached its destination.

Some of this ground had already been covered, albeit in a different context. The Air Force has been using software-defined radios for a long time. A fighter pilot might need as many as 16 different radios, but only have physical room for eight, so radios with the ability to have multiple personalities were created.

The radio the DoD asked Vulcan to create needed similar capabilities, but for an even greater number of radio personalities. The radio Vulcan created can be as many different types as needed. Today the radio can use the MUOS waveform, and to-

morrow it can accommodate technologies that are not yet developed.

The MUOS satellites are geosynchronous, so they always stay above the same spot on Earth. If two users of the system who are on opposite sides of the globe need to communicate, they can send a message from the ground to the nearest satellite, then back to a ground station, back to the next nearest satellite, and so on until the message arrives. But it's expensive to get information from a satellite to the ground and may be subject to additional atmospheric interference with each succeeding pass. A better method is to send the message up to the satellite, then to the next satellite, and so on, then ultimately down to the ground. The radio built by Vulcan Wireless determines which satellites to talk to in order to get the message down to the ground most efficiently.

As a small business owner, the CEO of Vulcan Wireless, Kevin Lynaugh, encourages other small businesses to look for SBIR/STTR opportunities. "The SBIR program is an excellent way to support our men and women in the armed forces with innovative solutions that are not addressed by the commercial markets. There are so many opportunities available for the entrepreneur who wants to use their talents to solve these problems while building a company. The SBIR program has really been a challenging and rewarding program for us, and we are thankful that it is there. We went from our very first SBIR Phase 1 to providing communication solutions for a Lunar lander. We have truly taken our technology from the drawing board to the heavens above."

Outreach Events

Defense SBIR/STTR Program Joins NASEM for Roundtable Series Under the Board on Army Research and Development

On 4-6 October 2023, the National Academies of Sciences, Engineering, and Medicine (NASEM) convened a series of roundtable meetings to serve as a forum to discuss small business and nontraditional partner involvement in US Army acquisition and technology transfer. On 5 October 2023, Ms. Christina Barnhill, Associate Director, Defense SBIR/STTR Program Office, participated on the "Inside of the Mind of the Evaluator" panel, which was focused on improving Army/DoD/government to industry (small and large businesses) communications and minimizing the challenges inherent to those interactions. In addition, Ms. Barnhill was invited to additional panel sessions to observe and ask questions.

Defense SBIR/STTR Program Presents Process and Programs Overview at StartUpNV Seed Funding Workshop

StartUpNV held a virtual and in-person hybrid training event on October 12th and 13th in Las Vegas, NV that provided a comprehensive overview of how to secure non-dilutive SBIR & STTR funding. On 13 October, Ms. Christina Barnhill, Associate Director, Defense SBIR/STTR Program Office, presented an"Overview of DOD's SBIR/STTR Process and Programs." The event was designed for aspiring entrepreneurs, innovators, and small business owners looking to harness SBIR grants to fuel their startup growth. Additionally, it provided guidance to Economic Support Organization (ESO) seeking to guide entrepreneurs through the SBIR application process via their Train the Trainer workshop.

BBCetc's "From the Sources' Mouth"

Mr. Matthew Williams, DoD SBIR/STTR Technology Portfolio Manager and OSD Transitions SBIR/STTR Technology (OTST) Program Director, gave a presentation entitled, "The Department of Defense SBIR Overview," on 18 October, which covered the nuances of the Program, followed by a 30-minute Q&A. In addition, Ms. Christina Barnhill participated on the "Getting in

the Head of the Reviewer" panel along with Nicole Fox, Army's Applied Small Business Innovation Research (SBIR) Director and Drew McDougall, NAVSEA SBIR/STTR Senior Program Analyst. The virtual event focused on Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) training.

Defense SBIR/STTR Program Presents at the SBIR/STTR Fall Innovation Conference, Co-located with Defense TechConnect Innovation Summit & Expo

From 28-29 November 2023, the Defense SBIR/STTR Program Office participated in the SBIR/STTR Fall Innovation Conference in National Harbor, MD. Mr. Matthew B. Williams, DoD SBIR/STTR Technology Portfolio Manager and OSD Transitions SBIR/STTR Technology (OTST) Program Director and former Acting Director, Defense SBIR/STTR Program Office led two (2) panel sessions, SBIR: Phase III: Learn the Keys to a Successful SBIR/STTR Journey and Phase III Success and SBIR/STTR: Working with Defense Primes, which included four (4) major DoD contractors. Ms. Christina Barnhill, former Associate Director, Defense SBIR/STTR Program Office, along with representatives from DoD and non-DoD SBIR/STTR organizations, participated in several panels. In addition, the Defense SBIR/STTR team hosted a booth in the SBIR/STTR Agency Pavilion to field questions about the DoD SBIR/STTR and OTST Programs.

DoD SBIR/STTR Program presents at the Illinois FAST Center Webinar

On 19 December 2023, Mr. Matthew Williams, Acting Director, Defense SBIR/STTR Program Office presented at the Illinois FAST Center Webinar, providing an overview of the Department of Defense SBIR/STTR Program. The presentation was followed by a moderated panel of startups that have received DOD SBIR funding.

DoD SBIR/STTR Program Conducts Outreach at the Defense Manufacturing Conference

From 11-14 December 2023, members of the Defense SBIR/STTR Program Office participated in DMC 2023, in Nashville, Tennessee. A booth was shared with the Defense Logistics Agency providing an opportunity to engage with Conference attendees and field questions about the DoD SBIR/STTR and OTST Programs.

Pacific Operational Science & Technology Conference (POST) 2024
March 4-7
Honolulu, Hawaii
www.postconference.org

DoD SBIR/STTR at Capital Factory House, SXSW - Join the Cutting Edge

The DoD SBIR/STTR Program Office will, for the first time ever, present a day and a half of programming March 9-10 at the Capital Factory House as part of SXSW in Austin, Texas. Join the conversation as covered topics range from Critical Technologies, Venture Capital, Due Diligence, Transition, and much more. Don't miss your chance to be at the forefront of Defense Innovation. Register today at: https://house.capitalfactory.com

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