

August 17, 2021

Small Business Training Week

Small Business Innovation Research (SBIR)/ Small Business Technology Transfer (STTR)

Leveraging America's Seed Fund









What Entrepreneurs Love about SBIR/STTR

 → Non-Dilutive Capital
 → IP/Data Rights
 → Direct follow-on

Phase III awards

SB)



Why?

risk, high-impact technologies into marketable products and services businesses transform their high-To help startups and small that solve problems.

SBIR/STTR Program Goals

- ightarrow Meet federal **research and development needs**
- Increase private-sector commercialization of innovation derived from federal research and development funding
- Stimulate technological innovation
- Foster and encourage participation in innovation and disadvantaged individuals entrepreneurship by women and socially/economically
- Foster technology transfer through cooperative R&D between small businesses and research institutions (STTR)

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May be grants or contracts depending on the agency

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SB			-
Environmen Ag	Department of Energy (DOE)	Department of Agriculture (USDA)	Agencies
tal Protection P ency PA)	Dept of Health an Services (HHS) NIH, FDA, CDC	Department of Co (DoC) NIST, NOA	that Fu
lational Aeronautics an Space Administration (NASA)	d Human Departm	ommerce Departı A	nd SBIR/
d National So Foundat (NSF)	ent of Homeland Security (DHS)	nent of Defense (DoD)	STTR Ph
ion	Department of Transportation (DOT)	Department of Education (ED)	ase &



Defense

Participating DoD Components



Research Projects Agency (DARPA)





Program (DHP)



Defense (CBD) Chemical and Biological

Special Operations

Defense Logistics Agency (DLA)

Agency (NGA) Intelligence

Geospatial National

Command (SOCOM)







Defense Health

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FY2020 SBIR/STTR Budgets by Agency

Agencies	Budget
Department of Defense (DoD)*	\$1.97 B
Department of Health and Human Services (HHS)**, including the National Institutes of Health (NIH)	\$1.21 B
Department of Energy (DOE), including Advanced Research Projects Agency – Energy (ARPA-E)	\$320 M
National Science Foundation (NSF)	\$219 M
National Aeronautics and Space Administration (NASA)	\$219 M
U.S. Department of Agriculture (USDA)***	\$30 M
Department of Homeland Security (DHS)	\$14 M
Department of Commerce: National Oceanic and Atmospheric Administration (NOAA)	\$10 M
Department of Education (ED)	\$7.7 M
Department of Transportation (DOT)	\$12.7 M
Department of Commerce: National Institute of Standards and Technology (NIST)	\$3.7 M
Environmental Protection Agency (EPA)*	\$3.7 M
* Budgeted Amount: other Agencies Obligated Amount	

** Provides grants and contracts

*** Estimated from prior years



Agency Implementation Varies

- Mission
- Award amounts
- Number of solicitations each year
- Special programs
- Contracts vs. Grants
- Contracts: DoD, DHS, NASA, EPA, DOT, DoED
- Grants: NSF, DoE, USDA, NIST, NOAA
- Both: HHS
- Specificity of topics
- Agency as potential customer

[SB]

SBA Office of Innovation & Technology (OI&T) **Major Responsibilities**

- Provides oversight of SBIR/STTR Programs
- Monitors participating agencies, develops policy, improves quality of data, manages SBIR.gov, and reports to Congress
- Builds capacity within SBIR Support Organizations
- Manages two funding programs: FAST & Growth Accelerators
- Provides training for innovation ecosystem builders (state economic development, universities, accelerators, PTACs & SBA Resource Partners)
- Leads Collaborative Federal Outreach and Training
- Focuses on underrepresented populations
- Creates a friendly front-door for small businesses

More on the SBA Innovation team at <u>www.sbir.gov/about/leadership</u>



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Phase III Resources

- Agency Phase III Guidebooks
- Navy SBIR/STTR Phase III Guidebook v2 (March 2020)
- <u>Air Force Phase III Desk Reference v2.0</u> (Jan 2019)
- <u>NASA Phase III Customer Guide</u> (Aug 2019)
- Discussion on FY20 NDAA changes to enhance support of SPEs, OSDBUs, PCRs for SBIR awardees
- SBA First Wednesday Learning Series recording <u>https://youtu.be/uR-LkHLsnn8</u> (Dec 2020)
- Non-gov perspective "A Government Guide to SBIR" -https://www.fedscout.com/resources
- Developed by a <u>Growth Accelerator</u> awardee (not an endorsement)

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Topic Searches



Learn which agencies fund different technology areas!

www.sbir.gov/sbirsearch/topic/past

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How can the SBA SBIR team help you?



- What information or tools would help you?
- Resources from SBA/OI&T? https://www.sbir.gov/agencyrepresentative
- Resources from SBIR participating agencies?

Reach out and let us know – technology@sba.gov

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www.sbir.gov technology@sba.gov

@SBIRgov #seedthefuture

bit.ly/JoinSBIRList

Stay In Touch



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DEPARTMENT OF DEFENSE



Program Overview

Presented by: Ms. Susan Celis Acting Director, Small Business and Technology Partnerships DoD SBIR/STTR Program Manager

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Statutory Origins of SBIR/STTR Programs



15 U.S.C. 632 - Small Business Act

 Requires that a fair portion of the total Federal Government contracts and spend be placed with small business concerns to maintain and strengthen the overall economy of the country.

15 U.S.C. 638 - Research and Development

- Empowers the Small Business Administration to assist small-business concerns to obtain development performed under Government contracts or at Government expense Government contracts for research and development to obtain the benefits of research and
- engage in manufacturing research and development for the purpose of developing and producing small manufacturing companies and other small business concerns engaged in or planning to new products and technologies in the United States. to participate in SBIR or STTR programs under this section, Federal agencies give high priority to 15 U.S.C. 638 Section 9 of the Small Business Act, ensures that, in selecting small business concerns

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SBIR Program

- Established in 1982 by Public Law (P.L.) 97-219; reauthorized for continuation of SBIR/STTR programs through 30 September 2022.
- Requires Federal agencies with extramural Research and Development (R&D) budgets that exceed \$100 million to allocate a percentage of their R&D budget to these programs.
- Created as a competitive three-phased process to solicit proposals for Research/Research and Development (R/R&D), production, services, or any combination to meet stated agency needs or missions; and to award funding agreements to qualifying SBCs.

STTR Program

- Established in 1992 by P.L. 102-564; reauthorized for continuation through 30 September 2022.
- Requires Federal agencies with extramural R&D budgets that exceed \$1 billion to reserve 0.45% of the extramural research budget for STTR awards to SBCs.
- Created as a parallel program to SBIR with the added requirement that SBCs partner with colleges/universities, Federally Funded Research and Development Centers (FFRDCs) or qualified nonprofit research institutions on

cooperative R/R&D

Modernization Technology Priorities





Artificial Intelligence (AI)

The DoD will leverage AI to enable U.S. forces to operate more effectively and efficiently. As a Department, we are evaluating which of our processes and procedures can be enabled via adoption of AI technology to meet warfighter needs and Defense priorities.



Biotechnology

Biotechnology is an engineering discipline that utilizes or exploits living systems to produce a wide range of technologies and products. Future advances in biotechnology will provide new operational capabilities to the Department of Defense across multiple domains, spanning material & systems, military medicine, warfighter performance, and chem-bio defense.



Autonomy extends and complements human capabilities. Advantages include persistence, size, speed, maneuverability, and reduced risk to human life. The DoD targets seamless integration of diverse unmanned/mixed team capabilities that provide flexible options for the Joint Force.



Cyber is a unique operational domain with significant security challenges and potential leap-ahead capabilities for military operations requiring enhanced command, control and situational awareness, and autonomous operations. Ability to gain and maintain the U.S. technological edge in cyberspace in the face of rapid evolution is essential to maintaining mission readiness. Cyber



Directed Energy

When directed energy matures to a deployable capability, our armed forces will have the potential to defend against several types of threats with great precision and minimal collateral damage, at minimal cost per engagement. High Energy Laser (HEL) technology development and advancements in hardware are making laser weapon systems increasingly viable.



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Hypersonics

protection against an increasing threat, in pervasiveness and effectiveness.

acquire, process, and disseminate information across force elements. DoD requires a clear path to Fully Networked Command, Control, and Communications technology encompasses the capability to

robust C4I with multiply redundant fully-networked "Comms." Existing capabilities require sufficient

Fully Networked Command, Control, and Communications

offensive and defensive force structure to both utilize and deter this capability. capability that these sorts of weapons bring to theater conflicts or regional conflicts. Very quick Hypersonic weapons travel five or more times the speed of sound. There is a focus on the tactical response, high speed, highly maneuverable, difficult to find and track and kill. We are modernizing our

Microelectronics

infrastructure, and achieve economic competitiveness. and deliver next generation microelectronic technologies to enhance lethality, ensure critical has increased, and have been incorporated into countless DoD systems. Our modernization ability is Microelectronics have been rapidly evolving as the demand for inexpensive and lightweight equipment jeopardized by foreign microelectronics (ME) production, actions, and investments. We must develop

Quantum Science

fixing elusive targets, and will deliver resource multiplying effects for commercially developed quantum in GPS-denied theaters. Quantum networks will deliver drastically enhanced sensors for finding and deliver new and assured precision position, navigation, and timing capabilities, keeping our forces safe protect our most sensitive communications against a quantum computer attack. Quantum sensing will quantum information science will keep us ahead of these risks, and NSA crypto-modernization will Quantum computers pose an impending threat to secure communications. Continued US dominance in computers to solve DoD's hardest analytical problems.

Space

posture. Added protection and resiliency to our current spacecraft fleet is essential. capabilities and advancements require us to move quickly to a more defendable and resilient space The U.S. way of war, across all domains, is dependent on timely and assured space effects. Adversary

5G 5G will bring about wireless, ubiquitous connectivity across humans, machines, and the Internet of ecosystem. the defense industry and commercial suppliers to accelerate U.S. prominence in the 5G global partnering among allies. 5G prototyping and experimentation will be conducted in collaboration with contested spectrum and in spite of compromised networks to ensure maximum readiness, lethality, and Things. DOD will adapt 5G and next generation technologies to "operate through" congested and

Visit: https://www.cto.mil/modernization-priorities/ for more information.

DoD SBIR/STTR Process and Components





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https://rt.cto.mil/rtl-small-business-resources/sbir-sttr/contacts/

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Phase	SBIR	/STTR
Phase I	\$256,580 cap Feasibili	(~10 months) ity Study
Phase II/Direct-to-Phase II*	\$1,710,531 cap Adoptions Continued Resear	(24-36 months) s/Co-funds rch and Prototype
Phase II Enhancement	\$1:\$1 Match (u Up to	p to 12 months) \$500K
Phase III	No tin No SBI	ne limit R funds
	SBIR	STTR
Program Differences	 A minimum of 2/3 of the research/work must be performed by the proposing Small Business in Phase I 	Small Businesses MUST partner with a U.S. Research Institution At least 40% of the work must be performed by the proposing Small Business
	 A minimum of 1/2 of the research/work must be performed by the proposing Small Business in 	At least 30% of the work must be performed by the Research Institution Small Businesses must manage and control
se numbers if a simple waiver	Primary employment of the Principal Investigator must	the SLIK tunging agreement Principal Investigator may be employed at either the Small Business or the Research
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	Phase I Phase II/Direct-to-Phase II* Phase II Enhancement Phase III Phase III Se numbers if a simple waiver	PhaseSBIRPhase II/Direct-to-Phase II*\$256,580 cap FeasibilPhase II/Direct-to-Phase II*\$256,580 cap FeasibilPhase II Enhancement\$1,710,531 cap (Continued ReseaPhase II Enhancement\$1,710,531 cap (Continued ReseaPhase II Enhancement\$1:\$1 Match (up to Phase IIIPhase IINo tin Phase IIIPhase IISBIRPhase IINo tin No SBIPhase IIA minimum of 2/3 of the research/work must be performed by the proposing Small Business in Phase Ise numbers if a simple walverA minimum of 1/2 of the phase IIse numbers if a simple walverPrimary employment of the phase II

Broad Agency Announcement (BAA) Schedule 😢

A DoD Agency-wide announcement includes:

- DoD Instructions
- Service/Component
 Unique Instructions
- Topics
- Not all Components participate in each solicitation.
- Multiple solicitations provide opportunities to participate throughout the fiscal year.



Note: Dates are subject to change.

Out-of-cycle BAAs are released when a component needs to solicit topics outside of the three DoD SBIR/STTR BAA cycles shown.

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TechLink Economic Impact Study



- DoD SBIR/STTR Economic Impact Study released October 2019
- Conducted by TechLink, a national DoD partnership intermediary (PIA) at Montana Boulder State University-Bozeman, in collaboration with the University of Colorado in
- The study quantifies the DoD SBIR/STTR Programs' overall contribution to the nation's economy and defense mission
- Examines the economic outcomes and impacts up to 2018 from DoD SBIR/STTR Phase II contracts initiated during the 1995-2012 FY
- Major findings of the study include:







View the DoD SBIR/STTR Economic Impact Study: https://www.sbir.gov/impact

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JOBS (65,578 PER YEAR) WITH AVERAGE COMPENSATION OF

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Summer Department	Helpful Websites	DEp
•	SBA SBIR/STTR - https://www.sbir.gov/about	
•	Defense SBIR/STTR Innovation Portal (DSIP) - https://www.dodsbirsttr.mil/submissions	
•	DoD SBIR/STTR - https://rt.cto.mil/rtl-small-business-resources/sbir-sttr/	
•	System for Award Management (SAM) registration - www.sam.gov	
•	Export Control - https://www.pmddtc.state.gov/ddtc_public	
•	Historically Black Colleges and Universities and Minority Institutions (HBCU/MI) - http://www.ed.gov/about/offices/list/ocr/edlite-minorityinst.html	
•	Federally Funded Research and Development Centers - https://www.nsf.gov/statistics/ffrdclist/	
•	National Institutes of Health Guidelines for Research Involving Recombinant DNA Molecules - https://osp.od.nih.gov/wp-content/uploads/2016/05/NIH_Guidelines.pdf	
•	Defense Counterintelligence and Security Agency (DCSA) facility and personnel clearance procedures an requirements - https://www.dcsa.mil/mc/ctp/fc/	0
•	Invention Reporting - <u>www.iedison.gov</u>	

- Technical Reporting <u>https://discover.dtic.mil/submit-documents/</u>
- Defense Contract Audit Agency <u>https://www.dcaa.mil/Guidance/Audit-Process-Overview/</u>
- Procurement Technical Assistance Centers https://www.aptac-us.org/



SBIR/STTR TECHNOLOGIES (OTST OSD TRANSITIONS

Phase II Development to Phase III Transition/Integration "Transitioning SBIR Technology to the Warfighter"

PROGRAM

Presented by: Mr. Matthew B. Williams, Technology Portfolio Manager, Small Business and Technology Partnerships

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Accelerate transitions to Phase III for acquisition programs.





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The SBIR/STTR Process

How SBCs Participate

- Determine eligibility https://www.sbir.gov/faqs/eligibility-requirements
- \mathbf{N} Research topics consistent with their business strategies https://www.dodsbirsttr.mil/submission/login
- ω Read and understand the DoD Broad Agency Announcement (BAA) and Component-specific BAA instructions https://www.dodsbirsttr.mil/submission/login
- 4 Use templates as instructed by BAA www.navysbir.com/links_forms.htm
- S Submit a proposal that meets the stated need of the topic https://www.dodsbirsttr.mil/submission/login

Navy Differentiators

- targets Topics tied to **specific Naval needs** in acquisition programs with defined transition
- Proposal requirements 50% less than DoD standard
- Faster awards via dedicated SBIR Contracting Command (all Phases)
- Larger first Phase I payment, 75% faster
- Navy-funded SBIR/STTR Transition Program to facilitate transition of technology (NavySTP.com)
- Naval Technology Accelerator to help companies stand on their own in the commercial sector
- New SBIR Experimentation Cell connecting SBIR innovators with the DON experimentation community
- Commercialization success that accounts for over 50% of all of DoD

Stay in Touch with DON SBIR/STTR



SBIR SOUNDINGS Quarterly E-Newsletter



Subscribe to SBIR SOUNDINGS and receive updates delivered to your inbox every quarter! Use the QR code above or the link below

Approved for Public Release 21-MDA-10783 (20 Apr 21)

Embracing Innovation, Science, and Technology to Outpace the Threat

SBIR/STTR INNOVATION SUMMIT

SBIR/STTR PROGRAM OVERVIEW

AGENCY

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TECHNOLOGY

SCIENCE &

MISSILE DEFENSE

2021

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SBIR/STTR SOLICITATION PROCESS

- SBIR / STTR program is a four step process
- Phase I: Feasibility and concept development
- Phase II: Technology and prototype development
- V Technology may receive one sequential Phase II
- Phase II Enhancement: Prototype testing and technology demonstrations and validation
- Phase III: Commercialization and Transition







Phase

(SBIR/STTR Funded)

Phase I

Feasibility

Study

& Prototype Demonstration Technology Development

Phase II Enhancement

Prototype Testing & **Demo & Validation Evolution Technology**

Announcement published in <u>https://www.dodsbirsttr.mil</u>

Approved for Public Release 20-MDA-10455 (13 Apr 20)

STELLAR TEAM NOBLE MISSION



Modeling & Simulation	Survivability	Lethality	Industrial Manufacturing	Director for Technology Protection	Radar	C2BMC	Sea-Based Weapon Systems	Research Area
Aerodynamic Controls for Hypersonic Vehicles, hypersonic vehicle modeling, upper stage motors	RadHard Parts, Testing of Nuclear Survivability	Modeling and testing of materials for Lethality Assessments	Advanced Supercapacitors Based on Novel Low-cost Biocarbon Materials	Bare Metal Hypervisor and Anti-Tamper Protections	Kinematic Invariant Space Maximum Entropy Tracker	Artificial Intelligence applied to Battle Management	Innovative Ejector Launch System, Standard Missile 3 (SM-3) Materials Design Improvements	Research Interests

SBIR/STTR RESEARCH AREAS

STELLAR TEAM NOBLE MISSION

Approved for Public Release 20-MDA-10455 (13 Apr 20)

Research Area	Research Interests
Ground Based Midcourse Defense	IR signature modeling, Lightweight Multifunctional Components for Next-Gen Kill Vehicles
Targets & Countermeasures	Sensors and In-flight Communications
THAAD	LADAR, Antennas, and Hypersonic Control Surfaces, Thermal Batteries
Test Instrumentation	Optics testing
Technology Maturation	Hypersonics, propulsion, advanced materials,
Sensors & Directed Energy	Fiber laser modeling and performance
Quality, Safety & Mission Assurance	Transparent SiC windows, Igniter Systems for Solid Rocke Motors

SBIR/STTR RESEARCH AREAS



CONTACT INFORMATION

www.mda.mil

- Missile Defense News, Images, Videos, Fact Sheets
- BMDS Overview, BMD Basics
- MDA Business Opportunities (https://www.mda.mil/business/advanced_research.html)
- SBIR/STTR Innovation Summit Charts

(https://www.mda.mil/business/SBIR_STTR_programs.html)

- DoD SBIR/STTR website: https://sbir.defensebusiness.org
- SBA SBIR/STTR website: https://www.sbir.gov

To Contact MDA

- SBIR / STTR
- Commercialization

256-450-5343 SBIR-PhaseIII@mda.mil 256-955-2020 sbirsttrindustry@mda.mil