Leveraging America’s Seed Fund

John Williams - Office of Investment & Innovation
Goals

→ 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 entrepreneurship by women and socially/economically disadvantaged individuals
→ Foster technology transfer through cooperative R&D between small businesses and research institutions (STTR)
Small Business Innovation Research (SBIR)

→ ~$2.5 billion set-aside each year
→ 3.2% of the extramural research budget for agencies with a budget greater than $100 million per year
→ ~5,000 new awards each year
Small Business Technology Transfer (STTR)

→ ~$350 million set-aside each year
→ 0.45% of the extramural research budget for agencies with a budget greater than $1 billion per year
→ Parallel program which requires small businesses to subcontract with a U.S. research institution
Best Things about SBIR/STTR

→ **Non-Diluted Capital** – The funding agency cannot take an equity position or ownership of your firm

→ **IP/Data Rights** protection – Government can’t share your reports or data with anyone outside of the federal government for 5 years (DoD) or 4 years (other agencies)

→ **Direct follow on Phase III** awards – No need for further competition, which benefits both the government and small businesses
Agencies that Participate in SBIR & STTR

- Department of Agriculture (USDA)
- Department of Commerce (DoC)
- NIST, NOAA
- Department of Commerce (DoC)
- Department of Energy (DOE)
- Department of Health and Human Services (HHS)
- Department of Defense (DoD)
- Department of Homeland Security (DHS)
- Department of Education (ED)
- Department of Transportation (DOT)
- Environmental Protection Agency (EPA)
- National Aeronautics and Space Administration (NASA)
- National Science Foundation (NSF)
## SBIR/STTR Budget by Agency: FY2016

<table>
<thead>
<tr>
<th>Agencies</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Defense (DoD)*</td>
<td>$1.28 B</td>
</tr>
<tr>
<td>Department of Health and Human Services (HHS)**, including the National Institutes of Health (NIH)</td>
<td>$891.0 M</td>
</tr>
<tr>
<td>Department of Energy (DOE), including Advanced Research Projects Agency – Energy (ARPA-E)</td>
<td>$228.6 M</td>
</tr>
<tr>
<td>National Science Foundation (NSF)</td>
<td>$187.7 M</td>
</tr>
<tr>
<td>National Aeronautics and Space Administration (NASA)</td>
<td>$183.4 M</td>
</tr>
<tr>
<td>U.S. Department of Agriculture (USDA)</td>
<td>$28.8 M</td>
</tr>
<tr>
<td>Department of Homeland Security (DHS)</td>
<td>$17.0 M</td>
</tr>
<tr>
<td>Department of Transportation (DOT)</td>
<td>$11.6 M</td>
</tr>
<tr>
<td>Department of Commerce: National Oceanic and Atmospheric Administration (NOAA)</td>
<td>$9.2 M</td>
</tr>
<tr>
<td>Department of Education (ED)</td>
<td>$7.5 M</td>
</tr>
<tr>
<td>Environmental Protection Agency (EPA)</td>
<td>$4.9 M</td>
</tr>
<tr>
<td>Department of Commerce: National Institute of Standards and Technology (NIST)</td>
<td>$3.3 M</td>
</tr>
</tbody>
</table>

* Budgeted amount; other Agencies Obligated Amount
** Provides grants and contracts

SBIR: $2.50 Billion
STTR: $361 Million
Three Phase Process

Phase I
Concept Development
6 months – 1 year
~ $150,000

Phase II
Prototype Development
24 months
~ $1,000,000

Phase III
Commercialization
No SBIR funding

Solicitation to Award Process

Find Solicitation → Proposal Submission → Evaluation → Award Phase I
What does an SBIR/STTR firm look like?

• Company must be for profit, U.S. owned and operated, and under 500 people

• Work must be done in the U.S.

• Focus is on performing R&D – Not purchasing equipment, commercializing a technology that has already been developed, or one that has very low risk and only needs capital
Principal Investigator (PI)

→ Must be employed by the small business (or partnering research institution for STTR) at **time of award** (check solicitation)

→ Should have appropriate expertise to oversee project scientifically and technically

→ Expertise of the PI and team are one of the three evaluation factors
<table>
<thead>
<tr>
<th></th>
<th>SBIR</th>
<th>STTR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Partnering Requirement</strong></td>
<td>Permits partnering</td>
<td>Requires a non-profit research institution partner</td>
</tr>
<tr>
<td><strong>Principal Investigator</strong></td>
<td>Primary employment (&gt;50%) must be with the small business</td>
<td>PI may be employed by either the research institution partner or small business (check solicitation)</td>
</tr>
<tr>
<td><strong>Work Requirement</strong></td>
<td>May subcontract up to: 33% (Phase I) 50% (Phase II)</td>
<td>Minimum: 40% Small Business 30% Research Institution Partner</td>
</tr>
<tr>
<td><strong>Program Size</strong></td>
<td>3.2% (FY16 - $2.5B)</td>
<td>0.45% (FY16 - $360M)</td>
</tr>
<tr>
<td><strong>Majority VC ownership</strong></td>
<td>Allowed by some agencies</td>
<td>Not allowed</td>
</tr>
<tr>
<td><strong>Participating Agencies</strong></td>
<td>11 agencies (extramural R&amp;D budget &gt; $100M)</td>
<td>5 agencies (extramural R&amp;D budget &gt; $1B)</td>
</tr>
</tbody>
</table>

The small business is ALWAYS the applicant and awardee!
<table>
<thead>
<tr>
<th>Contracting Agencies</th>
<th>Granting Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Agency establishes plans, protocols, requirements</td>
<td></td>
</tr>
<tr>
<td>▪ Highly focused topics</td>
<td></td>
</tr>
<tr>
<td>▪ Procurement mechanism</td>
<td></td>
</tr>
<tr>
<td>▪ More fiscal requirements</td>
<td></td>
</tr>
<tr>
<td>▪ Invoiced on progress</td>
<td></td>
</tr>
<tr>
<td>▪ Binding agreement between a buyer and seller for goods/services</td>
<td></td>
</tr>
<tr>
<td>DoD, DHS, NASA, EPA, DOT, DoED</td>
<td></td>
</tr>
<tr>
<td>▪ Principal Investigator initiates approach</td>
<td></td>
</tr>
<tr>
<td>▪ Less-specified topics</td>
<td></td>
</tr>
<tr>
<td>▪ Assistance mechanism</td>
<td></td>
</tr>
<tr>
<td>▪ More flexibility</td>
<td></td>
</tr>
<tr>
<td>▪ Allows upfront payment</td>
<td></td>
</tr>
<tr>
<td>▪ Funds support a public purpose, best efforts in research</td>
<td></td>
</tr>
<tr>
<td>NSF, DoE, USDA, NIST</td>
<td></td>
</tr>
</tbody>
</table>

Contracting and Granting: HHS/NIH (mostly grants), NOAA
## Required Registrations

<table>
<thead>
<tr>
<th>Registration</th>
<th>NASA</th>
<th>HHS</th>
<th>NSF</th>
<th>DOE</th>
<th>DOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUNS</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>SAM.gov</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Company Registry (SBIR.gov)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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</tr>
<tr>
<td>Grants.gov</td>
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<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eRA Commons</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Electronic Handbook (EHB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>NSF FastLane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio Analysis and Management System (PAMS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>fedconnect.net</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding Accountability and Transparency Act Sub-award Reporting System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>DoD Submission Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **DUNS**: Unique Business Identifier System (DUNS) number registration
- **SAM.gov**: System for Award Management
- **Company Registry (SBIR.gov)**: Small Business Innovation Research (SBIR) company registry
- **Grants.gov**: Grants.gov
- **eRA Commons**: Electronic Research Administration Commons
- **Electronic Handbook (EHB)**: Electronic Handbook
- **NSF FastLane**: NSF FastLane
- **Portfolio Analysis and Management System (PAMS)**: Portfolio Analysis and Management System
- **fedconnect.net**: Online Financial Management System
- **Funding Accountability and Transparency Act Sub-award Reporting System**: System for reporting sub-award data
- **DoD Submission Website**: Department of Defense submission website

- **x**: Indicates required registration for the corresponding agency.
Why We Work on America’s Seed Fund

Where to Begin? – Topic Searches

Keyword searches – Learn which agencies fund your technology area!

www.sbir.gov/sbirsearch/topic/past
Where to Begin? – Award Searches

→ Identify successful firms
→ Identify agency investments in technology areas

www.sbir.gov/sbirsearch/award/all
Online Tutorials

→ 55 Courses including:
→ Agency overviews
→ Program basics
→ Data rights
→ IP protection

www.sbir.gov/tutorials
Connect to Your Network of Local Support

→ Federal and State Technology (FAST) partners
→ SBA District Offices
→ Small Business Development Centers (SBDCs)
→ Procurement Technical Assistance Centers (PTACs)
→ Women’s Business Centers

www.sba.gov/tools/local-assistance
Stay In Touch

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@SBIRgov
#seedthefuture

www.sbir.gov
SBIR Road Tour
SEEDING AMERICA’S FUTURE INNOVATIONS™
YOUR ONE STOP SHOP FOR FEDERAL LABORATORY INFORMATION

Jennifer Stewart
FLC Far West Coordinator
NSWC Corona T2 Manager

Annemarie Meike
FLC Far West Deputy Coordinator
Lawrence Livermore National Lab

SBIR Tech Connect 2018
The FLC’s mission is to **promote, facilitate, and educate** T2 among federal labs, academia, industry and other government agencies to achieve commercialization goals, and create social and economic impacts with new innovative technologies.
YOUR ONE-STOP SHOP FOR FEDERAL LAB INFORMATION

SEARCH FLC Business

CONNECT with a laboratory

ENGAGE with an expert

Technologies available for licensing

Funding opportunities

Lab facilities & equipment available to the public

Lab-specific special programs
Collaborative Research Access

- National Experts
- State of the Art Facilities
- Specialized Equipment
- Innovation

Labs can partner with:

- Businesses? ✓ YES
- Academia? ✓ YES
- Nonprofits? ✓ YES
- GOV Entities? ✓ YES

- Foreign Entities? ✓ YES
- Individuals? ✓ YES
- Other? ✓ YES
• Phase II SBIR grant

• CRADA with the Naval Medical Center in San Diego
  • Allowed for a California-based small business to utilize the facilities and expertise at the Naval Medical Center to advance the technology and develop a clinically useful tool that could benefit patients with amputations in gait training

• Mutual Benefit for both parties
  • Access to expertise and state of the art facilities
  • Fed lab involved in cutting edge R&D Efforts in a critical tech area
STEP 1: Identify your R&D needs and requirements

STEP 2: Search lab resources and Technologies

STEP 3: Work with lab to determine T2 mechanism

STEP 4: Re-assess your desires and needs

STEP 5: Connect with Lab Rep

STEP 6: Negotiate & Finalize Agreement

STEP 7: Execute, Collaborate and Commercialize

For Assistance contact your FLC Regional POC www.federallabs.org
THANK YOU

Questions?

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Annemarie Meike
FLC Far West Deputy Coordinator
Lawrence Livermore National Lab
meike1@llnl.gov
WHAT DO WE FUND?

• Mission
  • Leadership in clean energy technologies
  • Leadership in basic science and engineering in the physical sciences
  • Enhancement of nuclear security

• SBIR/STTR Research Areas
  • Renewable energy, energy efficiency, grid modernization, advanced fossil fuel technologies, nuclear energy, fusion energy
  • Advanced scientific instrumentation in the physical sciences, advanced computing, atmospheric and environmental monitoring, accelerator technology
  • Nuclear nonproliferation, environmental remediation and clean up
HOW DO WE OPERATE?

• Phase I
  • Issue two Funding Opportunities Announcements annually, DOE issues grants
  • Typically very focused topics areas, approximately 70 topics per year
  • Awards up to $150,000 or $225,000 (varies by topic), 6-12 months duration, ~ 350 per year
  • With a single application you can submit to both SBIR & STTR (if you meet eligibility requirements)

• Phase II
  • Phase I awardees compete Phase II Awards the following year
  • Awards up to $1,000,000 or $1,500,000 (varies by topic), up to 2 years duration, ~180 per year

• Sequential Phase II
  • Phase II grantees can compete for Sequential Phase II awards after completion of Phase II
  • Awards up to $1,000,000, up to 2 years duration
TAKE ADVANTAGE OF . . .

- Applicants
  - Online application tutorials (www.doesbirlearning.com)
  - Partnership with DOE National Labs

- Awardees
  - Commercialization Assistance Program
CONTACT US

• DOE SBIR/STTR Website:  www.science.energy.gov/sbir
  • You can join our mailing list on our homepage
• Telephone:  301-903-5707
• Email:  sbir-sttr@science.doe.gov
USDA SBIR Program

• Annual Budget ~$22 M
• Funding Opportunities for Grants – SBIR only
  • Phase I Grants = 8 Months/$100,000
  • Phase II Grants = 2 Years/$600,000
• Commercialization Assistance Programs for Both Phase I and Phase II Winners
• FY 2016: 76 Phase I and 34 Phase II
• FY 2017: 88 Phase I and 26 Phase II
Off the Shelf technologies allowed in these two topic areas
FY 2018 Timeline

Phase I

RFA Released July 2017
Proposal Deadline Oct 2017
Panels Jan & Feb 2018
Notifications March 2018
Awards* June – Aug 2018

Phase II – Only open to Phase I awardees, no straight to Phase II program

RFA Released Dec 2017
Proposal Deadline March 2018
Panels May 2018
Notifications June 2018
Awards* Sep 2018
Stony Creek Colors

Bio-based Dyes. With a whole system seed to closet approach

INDIGO PLANTS
We've tested a variety of indigo plants so that we grow the right ones for the southeast climate and ecology.

FARMERS AND FARMS
Working with farmers, we develop techniques to farm our indigo that bring profitability and nourish ecosystems.

CONSUMERS
Our colors empower people to purchase clothing that fully aligns with their desire to be a force for positive change.

STONY CREEK COLORS
With our mindful innovation approach, we develop the processes and chemistry to create bio-based dyes.

BRANDS
Partnering with pioneering brands, we develop bio-based dyes that bring full integrity to their clothing.

MILLS
We work with mills to ensure our bio-based dyes meet the highest quality specifications and work flawlessly with their systems.

2016 American Made Honoree
Unites States of Innovation 2017

Featured in Forbes, NPR, Huffington Post
Altaeros Energies

Technology Developed
• Altaeros Buoyant Airborne Turbine (BAT) leverages proven aerospace technology to lift a wind turbine into the strong, consistent winds beyond the reach of traditional towers.

Commercialization Success
• First commercial products sold in 2015.
• Technology was featured in CNN’s 2014 edition of THE CNN 10: Inventions and in the New York Times.
• Telecoms group SoftBank has invested $7m in Altaeros Energies for future deployment of the BAT technology in Japan.

SBIR History
• Phase I – 2011 ($150K)
• Phase II – 2012 ($450K)
• 8.6 Rural Development
USDA SBIR
Contact with SBIR Program Available Anytime

General Questions:
Scott Dockum – Program Coordinator
sbir@nifa.usda.gov

Web Site: https://nifa.usda.gov/sbir

If you have questions about a specific program area contact that National Program Leader or contact our Scientific Lead Charles Cleland cleland@nifa.usda.gov
DARPA SBIR/STTR Programs

POC/Website: David Busigo, Office Director and Susan Celis, Program Director Small Business Programs Office and SBIR/STTR Program Manager. Visit http://www.darpa.mil/work-with-us/for-small-businesses to learn more. Contact us: sbir@darpa.mil

Mission - Creating breakthrough technologies for national security. By making pivotal investments in new technology-driven ideas for the United States, DARPA imagines and makes possible new capabilities for overcoming the multifaceted threats and challenges that lie ahead. This makes a better, more secure future possible. In an uncertain world, with constrained budgets, providing these new capabilities is more important than ever. For more information regarding DARPA’s mission, perspective, and history, visit http://www.darpa.mil/about-us/about-darpa

Uniqueness - DARPA is DoD’s innovation engine focused on revolutionary change. DARPA maintains and encourages a culture of innovation and the ability to execute rapidly and effectively. To do this, the agency recruits individuals, who are at the top of their fields - from industry, academia, and government agencies - to tackle difficult challenges and to take big risks that push the limits of their disciplines. Program Managers (PMs) are the key to working with DARPA. PMs are generally with the agency for 3-5 years, and a program typically ends when the PM leaves.

Annual Budget - SBIR ~$88M/STTR ~$12M

Solicitations - DARPA typically participates in 3 SBIR and 1 STTR solicitations per year.

Topics - Average 18 SBIR and 6 STTR Topics per year

Awards - Average 75 Phase I contracts per year ranging from $150-225K. Average 25 Phase II contracts per year up to $1.5M.


DARPA’s research portfolio is managed by six technology offices charged with developing breakthrough technologies.

Biological Technologies Office (BTO):
Bio-complexity | Bio-systems | Disease | Health | Med-Devices | Syn-Bio

Defense Science Office (DSO):
Autonomy | Complexity | Fundamentals | Materials | Math | Sensors

Information Innovation Office (I2O):
Algorithms | Cyber | Data | ISR | Networking | Processing | Programming

Microsystems Technology Office (MTO):
Decentralization | Electronics | EW | Globalization | Microsystems | Mobile | Photonics | PNT | Spectrum

Strategic Technology Office (STO):
Air | Communications | Countermeasures | EW | ISR | Mobile | Spectrum | Tech-Foundations

Tactical Technology Office (TTO):
Air | Ground | ISR | Maritime | Munitions | Robotics | Space


The SBIR and STTR Programs

Small Business Innovation Research (SBIR)
Small Business set-aside program for Federal R&D – with potential for commercialization

Small Business Technology Transfer (STTR)
A sister set-aside program to facilitate cooperative R&D between small business concerns and U.S. research institutions – with potential for commercialization

NASA's SBIR and STTR programs have awarded more than $3.3 billion to research-intensive American small businesses

Engineers and scientists from more than 12,000 small businesses in all 50 States, DC and Puerto Rico have participated
SBIR/STTR Program Structure

NASA SBIR/STTR PROCESS

PHASE I
IDEA GENERATION

$125,000
SBIR 6 MONTHS
STTR 13 MONTHS

I-CORPS

PHASE II
PROTOTYPE
DEVELOPMENT

$750,000
24 MONTHS

PHASE III
INFUSION/
COMMERCIALIZATION

NON-SBIR
FUNDING

PHASE II-E
UP TO $375,000 FUNDING
6-TO-12 MONTH EXTENSION UNDER
A MATCHING FUND ARRANGEMENT

Go to sbir.nasa.gov/guide for details
Learning about NASA’s Needs

Focus Areas
NASA’s research subtopics are organized by “Focus Areas” that group interests and related technologies.

- **Identify** the Area(s) closest to your innovation/idea
- **Go** to our website to research
- **Prepare to write** a proposal tailored to NASA’s needs

http://sbir.gsfc.nasa.gov/solicit-detail/58007

### 2017 Focus Areas

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In-Space Propulsion Technologies</td>
<td>12. Entry, Descent and Landing Systems</td>
</tr>
<tr>
<td>2. Power and Energy Storage</td>
<td>13. Information Technologies for Science Data</td>
</tr>
<tr>
<td>10. Advanced Telescope Technologies</td>
<td>21. Small Spacecraft Technologies</td>
</tr>
<tr>
<td>11. Spacecraft and Platform Systems</td>
<td>22. ISS Utilization and Microgravity Research</td>
</tr>
</tbody>
</table>
You could be the next SBIR/STTR success

Easy and Non-intrusive Nanoscale Diagnostic Platform
DNA Medicine Institute (DMI), Cambridge, Massachusetts

Challenge
NASA had been searching for ways to monitor the health of astronauts during long missions using tests that would be easy to administer and are not intrusive. NASA also wanted to enable astronauts to address medical issues immediately without waiting for guidance from mission control.

Innovation
DMI developed a comprehensive nanoscale diagnostic platform to meet these stringent requirements. The solution includes fluorescence-based test strips, a hand-held sensor and software to generate a medical results dashboard.

PHASE III SUCCESS
$525,000 Grand Prize winner of the Nokia XChallenge. Awarded Over several million dollars in funding from private investors, and multiple biotech and pharmaceutical partners.

SNAPSHOT
Self-diagnosis for astronauts on long missions in outer space is possible using an innovative blood analysis system which can generate comprehensive medical test results within minutes using a single drop of blood.

https://sbir.nasa.gov/success-stories
Contact us and let’s innovate together

Website: www.sbir.nasa.gov

NASA Help Desk: 301.937.0888
Advanced Research Overview
The Increasing Ballistic Missile Threat

- **North Korean Taepo Dong-1 Launch, August 1998**
- **North Korean Taepo Dong-2 SLV Launch, December 2012**
- **North Korean KN08 ICBM Launcher on Parade, 2012**
- **Missile Launches in Iranian Noble Prophet III Exercise 2009**
- **Iranian Safir SLV on launch pad, 2011**
- **Iranian Ashura 2-stage solid MRBM launch 2012**

Approved for Public Release
18-MDA-9546 (9 Mar 18)
Today’s Ballistic Missile Defense System

Sensors

- Satellite Surveillance
- Forward-Based Radar
- Upgraded Early Warning Radar
- AEGIS BMD SPY-1 Radar
- Sea-Based X-Band Radar

The System Of Elements

- BOOST / ASCENT Defense Segment
- MIDCOURSE Defense Segment
- TERMINAL Defense Segment

Aegis Ballistic Missile Defense

- SM-3 Standard Missile-3
- GBI Ground-Based Interceptor
- THAAD Terminal High Altitude Area Defense
- PAC-3 Patriot Advanced Capability-3

C2BMC Command Control, Battle Management and Communications

NMCC USSTRATCOM USNORTHCOM USPACOM USEUCOM USCENTCOM

Approved for Public Release 18-MDA-9546 (9 Mar 18)
## Transforming Missile Defense

<table>
<thead>
<tr>
<th>Decrease Emphasis On:</th>
<th>Increase Emphasis On:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>Agile</td>
</tr>
<tr>
<td>Terrestrial Interceptors</td>
<td>Space</td>
</tr>
<tr>
<td>Right of Launch</td>
<td>Lasers</td>
</tr>
<tr>
<td>Centralized Control</td>
<td>Integrated Left &amp; Right</td>
</tr>
<tr>
<td>Prolonged Acquisition</td>
<td>Autonomy</td>
</tr>
<tr>
<td>Costly</td>
<td>Faster Refresh</td>
</tr>
<tr>
<td></td>
<td>Affordable</td>
</tr>
</tbody>
</table>

Invest in technology to revolutionize the BMDS and prove technology readiness through demonstrations

Approved for Public Release
18-MDA-9546 (9 Mar 18)
Technology Interest Areas

- **Interceptor Technology**
  - Guidance, navigation, & control
  - Batteries & power systems
  - Advanced materials
    - High temperature
    - Lightweight
  - Seeker technology
  - Rad-Hard technology
  - Deployment systems
  - Lightweight composites
  - Propulsion & control technologies
    - Improved specific impulse

- **C2BMC**
  - Advanced tracking & discrimination algorithms
  - Command & control algorithms
  - Low latency and secure communications
  - Battlespace management
  - Data fusion
  - Warfighter training

- **Modeling & Simulation**
  - Lethality
  - Battlespace environments
  - Engagement
  - Aerothermal environments
  - Technology investment evaluation
  - Test verification

- **BMDS Testing**
  - Affordable targets
  - Scene generation
  - HWIL
  - Rapid analysis SW toolkits
  - Predictive analysis & modeling
  - Range safety

- **Sensors**
  - EO/IR and radar
  - T/R modules
  - FPAs
  - Signal & data processing algorithms
  - Rad-Hard technology
  - Telescopes & antennas
  - Windows & radomes

Approved for Public Release 18-MDA-9546 (9 Mar 18)
Recent SBIR / RIF / BAA
Research Accomplishments

• Inaugurated a nanosat testbed program to demonstrate notional Kill Vehicle communication architecture
• Executed structural test series to validate SBIR developed lightweight unitary nosecone
• Near Net Shape Manufacturing Non-Eroding, Thin Walled, Tungsten
• Completed radiation testing on hardened mirrors
• Developed high-speed test instrumentation
For More 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)
• DoD SBIR/STTR website: https://sbir.defensebusiness.org
• SBA SBIR/STTR website: https://www.sbir.gov

To Contact MDA

• SBIR / STTR 256-955-2020 sbirsttr@mda.mil
• University / BAA 256-450-3800 Advanced Research@mda.mil
• Commercialization 256-450-5343 SBIR-PhaseIII@mda.mil

Approved for Public Release 18-MDA-9546 (9 Mar 18)
DON SBIR/STTR

- Primary Program Goals:
  - Use small business to develop innovative R&D that addresses DON need
  - Commercialize (Phase III) SBIR-developed technology into a DON platform or weapons/communication system, or for facilities use

- About the Program:
  - Acquisition Driven Process with Strong Technology Pull
  - $300M+ annual funding supporting small business innovation/research
  - Wide range of SBIR/STTR topics driven by specific program and project needs
Topic Area Distribution

- Weapons
- Sensors
- Materials/Processes
- Information Systems
- Human Systems
- Ground/Sea Vehicles
- Electronics
- Battlespace Awareness/Management
- Air Platforms

DISTRIBUTION STATEMENT A. Approved for public release
## SBIR/STTR Program Award Structure

**DON SYSCOMs tailor as needed**

### SBIR/STTR Funding

<table>
<thead>
<tr>
<th>Phase I Base</th>
<th>Phase I Option</th>
<th>FFP Contract</th>
<th>NTE $225K</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months (SBIR)</td>
<td>7 months (STTR)</td>
<td>$125K</td>
<td></td>
</tr>
</tbody>
</table>

### Phase I

- **Project Feasibility**
- **Technology Development and Prototype Demonstration**
- **Prototype Testing & Evaluation**

### Phase II

- **Phase II Base**
- **Phase II Option 1**
- **Phase II Option 2**

<table>
<thead>
<tr>
<th>Phase II Base</th>
<th>Phase II Option 1</th>
<th>Phase II Option 2</th>
<th>Cost Share</th>
</tr>
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<tbody>
<tr>
<td>~18 months</td>
<td>~9 months</td>
<td>~12-18 months</td>
<td>TTP required</td>
</tr>
<tr>
<td>$500K-$1M</td>
<td>TTP required</td>
<td>Signed TTA may be required</td>
<td></td>
</tr>
<tr>
<td>SBIR PM/PO review for Option 2 at exit</td>
<td>TRL 4 at exit</td>
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<td></td>
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</tbody>
</table>

- **CPFF Contract**
- **NTE $1.5M SBIR/STTR Funding**

### Subsequent Phase II

- Contingent upon having a successful project with a committed Transition Sponsor/Path

<table>
<thead>
<tr>
<th>Contract Type</th>
<th>NTE $1.5M SBIR/STTR Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPFF Contract</td>
<td></td>
</tr>
</tbody>
</table>

### Phase III

- Transition to Acquisition Program
- No limit on funding (only non-SBIR/STTR)

<table>
<thead>
<tr>
<th>Contract Type</th>
<th>NTE $3,225,000 Total SBIR/STTR Funding</th>
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<tbody>
<tr>
<td>CPFF Contract</td>
<td></td>
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</table>

**NOTE:** A 'Subsequent Phase II’ is a **Requirements Driven** process, i.e., based upon Acquisition program needs.

<table>
<thead>
<tr>
<th>TRL: 0 - 3</th>
<th>2 - 5</th>
<th>4 - 7</th>
<th>6 - 9</th>
</tr>
</thead>
</table>

**DISTRIBUTION STATEMENT:** A. Approved for public release

**Revised:** 29 July 2017

**TTP:** Technology Transition Plan

**TTA:** Technology Transition Agreement
Important Websites (Public)

• Navy SBIR/STTR Website – navysbir.com the first site for firms to find information on the DON SBIR/STTR programs including solicitations, topics, selections, program specifics, success stories, related links, and points of contact.

• Navy SBIR Search Database - navysbirsearch.com Uses Autonomy© licensed software to perform contextual searches on all DON SBIR awards.

• The Official DoD SBIR/STTR Home Page - https://sbir.defensebusiness.org - with information on these programs, links to the current and past solicitations and other DoD and Federal SBIR/STTR web sites, and other related links.
# Evolution of EMILY

**Emergency Integrated Lifesaving Lanyard**

**A Navy SBIR/STTR Success**

<table>
<thead>
<tr>
<th>Year</th>
<th>The Start</th>
<th>The Leveraging</th>
<th>Today</th>
<th>Tomorrow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Marine Mammal Detection and Mitigation</td>
<td><strong>Silver Fox UAV</strong> Combat Tested 2007</td>
<td><strong>Emergency Integrated Lifesaving Lanyard</strong></td>
<td><strong>Mobile Gateway Buoy (MGB)</strong> Operationally Tested 2017</td>
</tr>
</tbody>
</table>
|      | • Automatic Detection  
|      | • Low Cost Sensors  
|      | • Mitigation Decision Aids | • Video Communications  
|      |                      | • Threat Warning System  
|      |                      | • Sensor Classification | • Communications  
|      |                      | • Worldwide use by lifeguards  
|      |                      | • Rescue in USA  
|      |                      | • Swift water rescue  
|      |                      | • Used in Hurricane Harvey  
|      |                      |                      | • Video Sensors  
|      |                      |                      | • Sonar Sensors  
|      |                      |                      | • UUV data relay  
|      |                      |                      | • Bathometric mapping |

**Funding**

- **$5M STTR**
- **$7M SBIR**
- **$4.2M in Government Phase III Funds/$6M+ Commercial Sales**
Background/Additional Information
Commercialization Support

- SBIR/STTR Transition Program (STP)
- Forum for SBIR/STTR Transition (FST)
- Primes Initiative
- Commercialization Readiness Program (CRP)
- Phase III Guidebook
- SBIR/STTR Search Tool
- “Reachback” Strategy
- Sustainment and Operations Support Cost Reductions (SOCR) Pilot

DISTRIBUTION STATEMENT A. Approved for public release

66
The Primes Initiative
Revolutionizing Delivery of Innovation to the Warfighter

- Corporate goal for SBIR/STTR engagement
- Integrate SBIR/STTR into corporate sourcing strategy
- Establish SBIR/STTR partnering metrics; manage to these metrics
- Leverage current supplier, engineering, & marketing resources
- Explore SBIR/STTR Topic opportunities
- Explore Phase I, II, & III opportunities
- Track SBIR/STTR partnerships
- Developing risk management tools for government and industry to share
Commercialization Readiness Program (CRP)

- FY06 NDAA (P.L. 109-163, Section 252) authorized Commercialization Pilot Program for the DoD SBIR program; renamed to CRP and extended to STTR by P.L.112-81

- 1% of SBIR set-aside for CRP administration

- CRP funds can not be used for Phase III or any awards to the small business

- The purposes of the CRP is to:
  - Accelerate the transition of technologies, products, and services developed under the SBIR Program
  - Identify SBIRs that have potential for rapid transition to Phase III and into the acquisition process

- CRP supports activities include:
  - Risk Assessments
  - Exercise and Demonstration Participation
  - Manufacturing Readiness and Manufacturing Plan Assistance
Phase III Guidebook v1.2

- Developed by DON SBIR/STTR
  - Assist Program Managers, Contracting Officers, and Small Business professionals

- Comprehensive innovation desk reference
  - Cites authorities
  - Summarizes best practices
  - Answers FAQs

- Global commercialization resource
  - Small/Large Businesses
  - DoD Components & Agencies
  - Other Federal Agencies

Available for download at www.navysbir.com

v1.2 updated to provide Data Rights Annex
What is part of DON SBIR/STTR?

We need YOUR solutions
www.navysbirsearch.com
DON SBIR/STTR

Points of Contact

Program is Administered by the Office of Naval Research
Bob Smith – Director, Department of Navy SBIR/STTR Programs
robert.l.smith6@navy.mil

<table>
<thead>
<tr>
<th>DON STTR Program Manager</th>
<th>Steve Sullivan</th>
<th><a href="mailto:steven.sullivan@navy.mil">steven.sullivan@navy.mil</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>DON Commercialization Manager</td>
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<td><a href="mailto:leeann.boyer@navy.mil">leeann.boyer@navy.mil</a></td>
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<td>Naval Sea Systems Command (NAVSEA)</td>
<td>Dean Putnam</td>
<td><a href="mailto:dean.putnam@navy.mil">dean.putnam@navy.mil</a></td>
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<tr>
<td>Naval Air Systems Command (NAVAIR)</td>
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</tr>
<tr>
<td>Office of Naval Research (ONR)</td>
<td>Lore-Anne Ponirakis</td>
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<tr>
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<td>Shadi Azoum</td>
<td><a href="mailto:shadi.azoum@navy.mil">shadi.azoum@navy.mil</a></td>
</tr>
<tr>
<td>Marine Corps Systems Command (MARCOR)</td>
<td>Jeff Kent</td>
<td><a href="mailto:jeffrey.a.kent@usmc.mil">jeffrey.a.kent@usmc.mil</a></td>
</tr>
<tr>
<td>Naval Supply Systems Command (NAVSUP)</td>
<td>Heather Audet</td>
<td><a href="mailto:heather.audet@navy.mil">heather.audet@navy.mil</a></td>
</tr>
<tr>
<td>Naval Facilities Engineering Command (NAVFAC)</td>
<td>Dan Zarate</td>
<td><a href="mailto:daniel.zarate@navy.mil">daniel.zarate@navy.mil</a></td>
</tr>
</tbody>
</table>

www.navysbir.com
Check for the most up to date information about the program, topics, awards, and more!
DHS Small Business Innovation Research (SBIR) Programs Overview

2018 SBIR Road Tour

Seeding America's Future Innovations™

SBIR-STTR Southern Tour
April 16-20, 2018

John Pucci
DHS SBIR Program Director
Science and Technology Directorate
Homeland Security Missions

- Prevent Terrorism and Enhance Security
- Secure and Manage Our Borders
- Enforce and Administer Our Immigration Laws
- Safeguard and Secure Cyberspace
- Strengthen National Preparedness and Resilience
DHS SBIR Supports.....

- Federal Emergency Management Agency (FEMA)
- Customs and Border Protection (CBP)
- U.S. Coast Guard (USCG)
- Transportation Security Administration (TSA)
- Immigration and Customs Enforcement (ICE)
- National Protection and Programs Directorate (NPPD)
- U.S. Secret Service (USSS)
- Countering Weapons of Mass Destruction Office (CWMD)
- First Responders
Today DHS will...

**U.S. Immigration and Customs Enforcement**
- **REMOVE 645 CRIMINALS**
- **SEIZE $1.4M IN ILICIT CURRENCY AND ASSETS**

**U.S. Citizenship and Immigration Services**
- **NATURALIZE 2,000 NEW U.S. CITIZENS**
- **GRANT 1,723 PEOPLE PERMANENT RESIDENCE, ASYLUM, AND REFUGEE STATUS**

**Federal Law Enforcement Training Centers**
- **TRAIN 2,800 FEDERAL, STATE, LOCAL, TRIBAL, AND INTERNATIONAL LAW ENFORCEMENT PERSONNEL**

**Federal Protective Service**
- **PROTECT 1.4 MILLION FEDERAL EMPLOYEES AND VISITORS IN 9,000 FACILITIES ACROSS THE COUNTRY**

**U.S. Customs and Border Protection**
- **282,000 PRIVATELY OWNED VEHICLES**
- **72,000 TRUCK, RAIL, AND SEA CONTAINERS**
- **9,400 LBS OF ILICIT DRUGS**
- **$356,000 CURRENCY**

**Transportation Security Administration**
- **SCREEN 2 MILLION PASSENGERS AND 1 MILLION PIECES OF LUGGAGE**
- **ENROLL 4,500 IN TSA Pre✓**
- **SEIZE 7 FIREARMS**

**U.S. Secret Service**
- **PROVIDE SECRET SERVICE PROTECTION FOR AN AVERAGE OF 30 PROTECTEES AND FOREIGN DIGNITARIES**
- **PREVENT CIRCULATION OF $160,000 IN COUNTERFEIT CURRENCY**
- **PREVENT $5.4 MILLION IN POTENTIAL LOSSES THROUGH FINANCIAL CRIMES AND CYBER INVESTIGATIONS**

**U.S. Coast Guard**
- **SAVE 10 LIVES IN MORE THAN 45 SEARCH AND RESCUE OPERATIONS**
- **SEIZE AND REMOVE 874 LBS OF COCAINE AND 214 LBS OF MARIJUANA WITH A WHOLESALE VALUE OF $11.8 MILLION**
- **PROVIDE $17.6 MILLION IN FEDERAL ASSISTANCE TO STATE, LOCAL, AND TRIBAL GOVERNMENTS**

**Federal Emergency Management Agency**
- **SUPPORT LOCAL COMMUNITIES WITH $4.4 MILLION IN HOMELAND SECURITY ASSISTANCE**

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www.dhs.gov
S&T’s Visionary Goals

SCREENING AT SPEED:
Security that Matches the Pace of Life

A TRUSTED CYBER FUTURE:
Protecting Privacy, Commerce, and Community

ENABLE THE DECISION MAKER:
Actionable Information at the Speed of Thought

RESPONDER OF THE FUTURE:
Protected, Connected, and Fully Aware

RESILIENT COMMUNITIES:
Disaster-Proofing Society
Recent Topics

S&T

• Development of a Wearable Fentanyl Analog Sensor
• Cell Phone Location Finder for Maritime and Remote Search and Rescue
• Device to Detect Interference of Communications Systems
• Deterministic Augmentation of RF Transmissions for PNT
• LMR-P25 and LTE Mission Critical Push to Talk Interface Service
• Improved Human Systems for Computed Tomography
• Automated & Scalable Analysis of Mobile & IoT Device Firmware
• Blockchain Applications for Homeland Security Missions
• Enhanced Agent Situational Awareness in Dismounted, Low Light/Adverse Conditions
• Do Not Spoof Services for Modern Telephony

S&T continued

• Identity Verification & Validation for Mobile Networks Authentication Enhancement
• Wearable Chemical Sensor Badge
• Over-the-air Authentication Technology for Messaging via Emergency Alerts

DNDO

• Ground-Based Autonomous Robotic Inspection of General Aviation for Radiological Threats
• Exploitation of Security Networks and Video Management Systems for Nuclear Threat Identification and Tracking
• Semiconductor-Based Thermal Neutron Detector Module for Incorporation into Radiation Detector Systems
• Inorganic Microscopy Standardization and Training for Image Analysis
• Accelerated Crystal-Size Scale-Up Development of Thallium-based, High Efficiency, Dual or Tri-Mode Elpasolite Scintillator
• Unattended Radiation Detection Systems
DHS SBIR Program Specifics

- Two Directorates in DHS manage SBIR
  - Science & Technology (S&T) Directorate
  - Countering Weapons of Mass Destruction Office (CWMD)*

- FY2017 Budgets:
  - S&T Directorate’s SBIR: $14.3M
  - CWMD’s SBIR: $5.3M

- Topics determined by the government in response to component and HSE needs
  - Solicitation released in early December each year
  - 7-14 topics per year

- Phase I contracts: $150,000 in both S&T and CWMD
- Phase II contracts $750,000 in S&T; $1,000,000 in CWMD

* - CWMD Office data includes Domestic Nuclear Detection Office data through FY17
# DHS SBIR Points of Contact

<table>
<thead>
<tr>
<th>S&amp;T Directorate</th>
<th>CWMD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>John Pucci</strong></td>
<td><strong>Marissa Giles</strong></td>
</tr>
<tr>
<td>SBIR Program Director</td>
<td>SBIR Program Manager</td>
</tr>
<tr>
<td><a href="mailto:john.pucci@hq.dhs.gov">john.pucci@hq.dhs.gov</a></td>
<td><a href="mailto:marissa.giles@hq.dhs.gov">marissa.giles@hq.dhs.gov</a></td>
</tr>
<tr>
<td>202-254-8764</td>
<td>202-254-7615</td>
</tr>
<tr>
<td><strong>Dusty Lang</strong></td>
<td><strong>Roger Gima</strong></td>
</tr>
<tr>
<td>SBIR Management and Program Analyst</td>
<td>SBIR Program/Technical Analyst</td>
</tr>
<tr>
<td><a href="mailto:dusty.lang@hq.dhs.gov">dusty.lang@hq.dhs.gov</a></td>
<td><a href="mailto:roger.gima@associates.hq.dhs.gov">roger.gima@associates.hq.dhs.gov</a></td>
</tr>
<tr>
<td>202-254-6837</td>
<td>202-254-7033</td>
</tr>
<tr>
<td><strong>Peter Nielsen</strong></td>
<td><strong>DNDO SBIR Program email</strong></td>
</tr>
<tr>
<td>SBIR Program Analyst</td>
<td><a href="mailto:dndosbir@hq.dhs.gov">dndosbir@hq.dhs.gov</a></td>
</tr>
<tr>
<td><a href="mailto:peter.nielsen@hq.dhs.gov">peter.nielsen@hq.dhs.gov</a></td>
<td></td>
</tr>
<tr>
<td>202-254-5658</td>
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</tr>
</tbody>
</table>

**S&T Program email**

stsbir.program@hq.dhs.gov

**CWMD**

**SBIR Portal Help Desk**

Email: dhssbir@reisystems.com

Phone: 703-480-7676

---

To report DHS SBIR fraud, waste and abuse:

- **Anonymous Hotline:** 1-800-323-8603
- **Fax:** 202-254-4297
- **Mail:** DHS Office of Inspector General/Mail Stop 0305
  Attn: Office of Investigations - Hotline
  245 Murray Drive SW
  Washington, DC 20528-0305
Chemical and Biological Defense (CBD)

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

at The Joint Science and Technology Office
for Chemical and Biological Defense (JSTO-CBD)

Mr. Larry Pollack
CBD SBIR/STTR Program Manager
Chemical/Biological Detection
Provide our warfighters with in-depth detection capabilities which provides timely warning (to increase protective posture) and provide diagnostic capabilities to support more timely medical decisions and treatments.
Medical Diagnostics

Lab-based Analytical Methods

Fieldable Diagnostics
Provide our warfighters with vaccines and therapeutics to eliminate or mitigate biological threats thereby maintaining combat effectiveness and safeguarding lives.
Medical Countermeasures: Chemical & Biological
Individual CB Protection Continuum

**Lightweight**
- General-purpose
- Open-air battlefield levels of CB agents
- DoD specific requirements

**Medium Weight**
- Compatible with civil response needs
- Higher concentrations
- NFPA 1994 class 2/3;
  ISO 16604:2004

**Full Encapsulation**
- High hazard response
- Interior & confined space
- NFPA 1991/1994 class 1
Sprayable Decontamination

Sprayable slurry chemical decontaminant that effectively reduces the residual hazard of chemical agents in tactical settings.
Provide the warfighter with comprehensive data analysis, Modeling & Simulation, and fusion capabilities to support situational awareness, decision making, and threat management.
Develop and transition novel concepts and technologies to address current and emerging chemical & biological threats to protect the lives of our warfighters.
DoD SBIR/STTR Announcements

Dates established by OSD Office of Small Business Programs; not all DoD Components participate in each solicitation; **CBD SBIR plans to participate in the FY19.1 cycle.**

- A DoD Agency-wide Announcement includes:
  - DoD Instructions
  - Service/Component-specific Instructions
  - Topics

### Announcement Schedule

<table>
<thead>
<tr>
<th>Solicitation</th>
<th>Pre-Release</th>
<th>Open</th>
<th>Close</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBIR 19.1 &amp; STTR 19.A</td>
<td>28 Nov 18</td>
<td>8 Jan 19</td>
<td>6 Feb 19</td>
</tr>
</tbody>
</table>

All proposals due No Later Than 8:00pm Eastern Time for all DoD SBIR and STTR Announcements. All DoD SBIR & STTR Proposals submitted to: [https://sbir.defensebusiness.org](https://sbir.defensebusiness.org)

The forecast data is for planning purposes, does not represent a pre-solicitation synopsis, does not constitute an invitation for bid or request for proposal, and is not a commitment by the government to purchase the desired products and services.
Basic Questions to Ask Yourself

• What are you trying to achieve?
• How is it done today, and what are the limits of current practice?
• What is new in your approach and why do you think it will be successful?
• Who cares? If you succeed, what difference will it make?
• What are the risks? And how will you mitigate those risks?
• How much will it cost? To develop? To produce? To use?
Some Helpful Resources

DoD SBIR/STTR Program Information for Small Businesses and
DoD SBIR Proposal Submission (Phase I & Phase II):
https://sbir.defensebusiness.org

DoD Office of Small Business Programs – Doing Business with the DoD:

Doing Business with DoD:
Guide to DoD Contracting Opportunities:

Chem-Bio Defense (CBD) SBIR/STTR web-site:
http://www.cbdsbir.net
CBD SBIR/STTR Program Manager

Mr. Larry Pollack
Chemical and Biological Defense SBIR/STTR Program Manager
Joint Science & Technology Office for Chemical and Biological Defense
Fort Belvoir, VA 22060-6201

lawrence.p.pollack2.civ@mail.mil

(571) 616-6037
Why NIH SBIR/STTR?
2018 SBIR Road Tour
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robert.vinson@nih.gov
weberpa@mail.nih.gov

24 Different Funding NIH Institutes & Centers and CDC, FDA, and ACL (NIDILRR)

Women Owned & Socially/Economically Disadvantaged Small Businesses IDeA States

NIH 2017 SBIR/STTR Budget $982 million: SBIR - $861 million STTR - $121 million

Omnibus and Targeted Funding Opportunity Announcements (FOAs)
Includes Clinical Trial NOT Allowed + Clinical Trial Required FOAs

Fast-Track Application
One application for Phase I & Phase II that is submitted and reviewed together

Application Assistance Program (AAP) available for NCI, NHLBI, and NINDS only

Three Grant Receipt Dates (Sep. 5, Jan. 5, Apr. 5) and One Contract receipt date (Fall), annually

Apply electronically using Forms or use ASSIST (Application Submission System & Interface for Submission Tracking)

Technical Assistance Programs and Sponsoring Meetings: Niche, CAP, I-Corps (NCI)

Niche Assessment Program
- Phase I Awardees
- Provides market insight and customer analysis

Commercialization Accelerator Program
- Phase II Awardees
- Offers support toward commercialization

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COMING UP:
20th Annual HHS SBIR/STTR Conference in Dallas, Texas on Oct. 30 – Nov. 1, 2018

*National SBIR/STTR Conference (SBA)
*SBIR Road Tours
*NIH Regional Seminars
*Free Webinars

Why NIH SBIR/STTR?
2018 SBIR Road Tour
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*National SBIR/STTR Conference (SBA)
*SBIR Road Tours
*NIH Regional Seminars
*Free Webinars
Small Business Innovation Research & Small Business Technology Transfer Programs at the National Science Foundation

Presenter: Ruth Shuman, Ph.D. SBIR/STTR Program Director
NSF SBIR/STTR INNOVATION MODEL

Phase I
Feasibility Research
$225K/6-12 mos

Phase II
Research towards Prototype
$750K/24 mos

Phase III
Product Development to Commercial Market

Private Sector or Non-SBIR Investment

Federal Investment $\rightarrow$ $\rightarrow$

$\rightarrow$ $\rightarrow$

Taxes
Applications require written proposals responding to the solicitation (solicitations released 90 days before the submission deadline)

Submission deadlines typically in June and December

Next submission deadline – December 2018!

Submitting a proposal to NSF does not constitute a public disclosure. All information is treated as confidential, and proprietary details may be marked.

Proposals are reviewed by technical and commercial experts; process may last 3-5 months

Awards begin about 6-7 months from submission
Agency Focus

- **Pre-seed funding** for small businesses to catalyze the commercialization of high-risk technological innovations

- Typically, **first money in** to the company to fund proof-of-concept

- **~$200 million** annual budget in 2018

- Fund about **400 companies** each year

- **Grants** - not contracts, not loans – equity-free investment for R&D
Aims of the Program

- Provide funding to startups and small businesses developing high-impact engineering and science-based products and services
- De-risk technology development to encourage private investment
- De-risk value proposition and business model
- Long-term economic growth that will result in measurable revenue and job growth
We Fund:

- Novel, disruptive, game-changing technologies for a commercial product, process, or service
- *High-risk, high-impact, high-payback*
- Enabling technologies, especially with broad societal benefits

We Don’t Fund:

- Basic research
- *Incremental (evolutionary)* optimization of existing products and processes, or straightforward modifications to broaden the scope of an existing product or process
- Business development, including market research
Technology Topic Areas

Proposals in all areas of engineering and science and related education are welcome

- Advanced Manufacturing and Nanotechnology (MN)
- Advanced Materials and Instrumentation (MI)
- Biological Technologies (BT)
- Biomedical Technologies (BM)
- Chemical and Environmental Technologies (CT)
- Digital Health (DH) and Medical Devices (MD)
- Educational Technologies and Applications (EA)
- Electronic Hardware, Robotics and Wireless Technologies (EW)
- Information Technologies (IT)
- Internet of Things (I), Semiconductors (S), and Photonic (PH) Devices and Materials
- Other Topics (OT)
Pre-submission Feedback

- At your option, you may communicate with the Program Director to get their feedback, or submit through our online website portal.
- Typically, wait until a solicitation is released
- Preferred method of communication is e-mail
- Send a 1-2 page Executive Summary that discusses:
  - Core technology and IP position
  - Proposed project and anticipated product or service
  - Market opportunity, value proposition, customers, competition
  - Company/team (including commercial experience)
Percentage of Phase I awardees in most recent cohort that…

• ... were founded < 3 years prior to award: 59%
• ... were first-time submitters to NSF: 68%
• ... had 1 to 5 employees: 81%
• ... had never received a Phase II award (from any agency): 91%
Register Early

1. Data Universal Numbering System (DUNS)*
   www.dnb.com
2. System for Award Management (SAM)*
   www.sam.gov
3. SBIR.GOV Company Registry*
   www.sbir.gov/registration

*We recommend completing the registrations in this order.
Stay Connected

Additional information for Phase I submitters can be found on our website:

https://seedfund.nsf.gov/

We will host a series of Q&A webinars in 2018. Please watch for the schedule and register for a webinar.
THANK YOU!

We look forward to receiving your proposal.

Contact Us:
sbir@nsf.gov
seedfund.nsf.gov

@NSFSBIR
Small Business Innovation Research Program

Agency SBIR Overview “Reverse Pitch”

Vince Garcia
NOAA SBIR Program Manager
Technology Partnerships Office
2018 SBIR Road Tour
Pacific Northwest
National Oceanic and Atmospheric Administration
NOAA’s Mission:

To understand and predict changes in climate, weather, oceans and coasts.

To conserve and manage coastal and marine ecosystems and resources.

To share that knowledge and information with others.
NOAA SBIR Program

Awards: Grants (Starting in FY19)
Solicitation per fiscal year: One
Released: October
Proposals due: December/January
Available via: grants.gov / DoC Grants-Online

Typical Phase I Awards: $120K, 20 to 30
Typical Phase II Awards: $400K, 10 to 20
Commercialization Assistance: Available to Phase II awardees

2018 SBIR Road Tour
Pacific Northwest
NOAA SBIR Topics / Subtopics

FY2019 SBIR Phase I Solicitation: Subtopics TBD
Possible Examples*:
- Increased Aquaculture Production
- Recreational and Commercial Fisheries
- Extreme Weather Impacts, Forecast and Prediction
- Natural disasters / Weather events: Coastal Preparedness
- Technology Transfer

* These are just examples. Final NOAA SBIR subtopics will be published in the October solicitation.
Vince Garcia
NOAA SBIR Program Manager
vincent.garcia@noaa.gov
301.628.1011
techpartnerships.noaa.gov
@NOAASBIR
National Institute of Standards and Technology
U.S. Department of Commerce

Mary Clague
NIST SBIR Program Manager

2018 Pacific NW SBIR Road Tour
NIST Mission

To promote U.S. innovation and industrial competitiveness by advancing

• measurement science
• standards, and
• technology

in ways that enhance economic security and improve our quality of life.
NIST Laboratories & Programs

Extramural Programs:
- Advanced Manufacturing Office
- Hollings Manufacturing Extension Partnership
- Baldrige Performance Excellence Program
- Special Programs Office
NIST Research & Programmatic Areas

- Advanced Communications
- Bioscience
- Buildings & Construction
- Chemistry
- Cybersecurity
- Electronics
- Energy
- Environment
- Fire
- Forensic Science
- Healthcare
- Information Technology
- Infrastructure
- Manufacturing
- Materials
- Mathematics & Statistics
- Metrology
- Nanotechnology
- Neutron Research
- Performance Excellence
- Physics
- Public Safety
- Resilience
- Standards
- Transportation
# NIST SBIR 3-Phase Program

<table>
<thead>
<tr>
<th>Phase</th>
<th>Purpose</th>
<th>Duration</th>
<th>Funding Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>Feasibility</td>
<td>6 months</td>
<td>Up to $100,000</td>
</tr>
<tr>
<td>Phase II</td>
<td>R&amp;D</td>
<td>2 years</td>
<td>Up to $300,000</td>
</tr>
<tr>
<td>Phase III</td>
<td>Commercialization</td>
<td>No Limit</td>
<td>Non-SBIR funds</td>
</tr>
</tbody>
</table>
Phase I Solicitation Release Date: January
(available at www.nist.gov/sbir & grants.gov)

Phase I Proposals Due: April
Phase I Awards: June/July

Phase II Proposals Due: April
Phase II Awards: June/July

NIST awards are cooperative agreements.
NIST FY 2018 Subtopics

- SDN Enabled Secure Inter-Domain Routing
- Secure and Distributed Network Measurement
- Biomanufacturing
- Measuring Handedness by Fluorescence
- Digital Forensics
- Solid-State Dynamic Mode Mixer
- Optical Imager for Quantitative Deep Tissue Oximetry
- Process Modeling for IoT Health Services
- Technology Transfer
Success Story –
High Precision Devices (Boulder, CO)

New Tool for Breast Cancer Screening

The new breast phantom consists of two components. The one at left is designed to provide a standard for measuring proton spin relaxation time, which varies with different kinds of tissue. The one at right provides references for imaging diffusion.

Photo Credit: NIST/PML
Small Business Innovation Research Program (SBIR)

The National Institute of Standards and Technology’s SBIR program solicits R&D proposals from small businesses that respond to specific technical needs described in the solicitations of the annual Solicitation. Information regarding the solicitation will be made available only via the Solicitation. Please see the Resources below for more information on the specifics of the program.

SBIR BULLETIN BOARD

NIST SBIR Phase I
The FY 2018 NIST SBIR Phase I Notice of Funding Opportunity is closed.

NIST SBIR Phase II
The FY 2018 NIST SBIR Phase II Notice of Funding Opportunity is closed.

Contact
Mary Clague
NIST SBIR Program Manager
10B Bureau Dr., B75 2258
Columbia, MD 20184-2258
E-Mail: mary.clague@nist.gov
Phone: 202-875-4880

Fraud, Waste, or Abuse (FWA)
Report Suspected Fraud, Waste, or Abuse (FWA) to:
Department of Commerce Office of Inspector General
1200 New York Ave. NW
Washington, DC 20503
Phone: 800-426-3197
DD: 900-854-9402
Local: 202-482-2954
e-mail: inspectorate.doi.gov
Online online Complaint Form

Additional Links
DOL Office of Inspector General
DOC OIG Investigations
DOC OIG Suspensions and
Debarment Handbook
Successful Proposals of
SBIR/FWA
Examples of FWA
NIST SBIR/FWA page
SBIR FWA
Compliance with SBIR Program
Requirements, Applicants
Fraud Awareness Training

Manufacturing and Technology commercialization

Resources
Contact

Mary Clague, NIST SBIR Program Manager
mary.clague@nist.gov  301-975-4188

NIST SBIR website:  http://www.nist.gov/sbir
Grant Opportunities for a Public Purpose

Moderator: Brittany Sickler
Small Business Administration (SBA)

Rick Schwerdtfeger
National Science Foundation (NSF)

Robert Nowierski
Department of Agriculture (USDA)

Chris O’Gwin
U.S. Department of Energy (DOE)

Robert Vinson
National Institutes of Health (NIH)
## Overview of Intellectual Property

<table>
<thead>
<tr>
<th></th>
<th>What’s Protected</th>
<th>Examples</th>
<th>Protection Lasts for:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utility Patent</strong></td>
<td>Inventions</td>
<td>iPod, chemical fertilizer, process of manipulating genetic traits in mice</td>
<td>20 years from the date of filing regular patent application</td>
</tr>
<tr>
<td><strong>Design Patent</strong></td>
<td>Ornamental (non functional) designs</td>
<td>Unique shape of electric guitar, design for a lamp</td>
<td>15 years</td>
</tr>
<tr>
<td><strong>Copyright</strong></td>
<td>Books, photos, music, fine art, graphic images, videos, films, architecture, computer programs</td>
<td>Michael Jackson’s Thriller (music, artwork and video), Windows operating system</td>
<td>The life of the author plus 70 years (or some works, 95 years from pub., and others 120 years from creation)</td>
</tr>
<tr>
<td><strong>Trade Secret</strong></td>
<td>Formulas, methods, devices or compilations of information which is confidential and gives a business an advantage</td>
<td>Coca-Cola formula, survey methods used by a pollster, new invention for which patent application has not been filed</td>
<td>As long as information remains confidential and functions as a trade secret</td>
</tr>
<tr>
<td><strong>Trademark</strong></td>
<td>Words, symbols, logos, designs, or slogans that identify and distinguish products or services</td>
<td>Coca-Cola name and distinctive logo, Pillsbury doughboy character</td>
<td>As long as mark is in continuous use in connection with goods or services – renew by year 6, then at year 10, then every 10 years</td>
</tr>
</tbody>
</table>
Welcome to the Intellectual Property Awareness Assessment Tool. The IP Assessment includes the below five general categories, that are included in all assessments.

- IP Strategies & Best Practices
- International IP Rights
- IP Asset Tracking
- Licensing Technology to Others
- Using Technology of Others

There are five additional categories that all can take or, which may be customized through a Pre-assessment. These five categories include:

- Copyrights
- Design Patents
- Trademarks
- Trade Secrets
- Utility Patents

Not all businesses have all categories of IP Assets so they have an opportunity to opt out of certain categories by using the customizer or Pre-assessment or may opt to take the full assessment of ten categories containing 62 questions.

The full assessment requires about 20-30 minutes to complete. The customizer or Pre-assessment can reduce the required time by 10-15 minutes.
IP Strategy IS a Business Strategy

IP:
• Is attractive to investors and buyers
• Deters infringement lawsuits
• Can increase leveraging power – Mergers and acquisitions
• Is a property right than can add value to a company’s assets
• Is Global
The Silicon Valley USPTO
West Coast Regional Office
Outreach services:

• Walk-in services to obtain information and assistance on IP

• Workstations for searching patents and trademarks

• Interview rooms to connect applicants to examiners working in the region, at HQ or across the country

• Office hours with USPTO experts and strategic partners like Small Business Administration and the Export Assistance Center

• Educational Programs for the innovation ecosystem
Regional Focus for Workshops

• For All Levels – From K-12 to IP professionals
• From basic facts to updates on law and procedure
• Stakeholder roundtables & roadshows
• Inventor conferences w/ focus on startups
• Tech Specific Partnership Meetings
  – Software, BioTech, CyberTech, Additive Manufacturing
• Facilitated USPTO Webinars
• Lunch & Learn Programs
• International programs
• 1 on 1 assistance, both in-person and virtually
• Just-in-time programming (FITF, §101, Paralegal Workshops, etc.)
• Co-host programs with strategic community partners
Working with Startups

Programs for the Innovation Community designed to:

- **Increase Awareness of Intellectual Property**
  - IP Strategy IS a Business Strategy

- **Identify Risks of Early Public Disclosure**
  - U.S. is now a First Inventor to File System
    - Understanding the Grace Period
  - Loss of rights internationally
    - % foreign filing
  - Crowdfunding Campaigns
    - Disclosure vs. On Sale Bar issues?

- **Where to get help?**
Startup Resources

Many startup businesses face unique IP-related challenges, such as IP portfolio prerequisites to secure funding, and the possibility of costly patent infringement demand letters and lawsuits. We have tailored this area of our website to suit the specific needs of startup businesses, a segment of our stakeholders that continues to be recognized as an outsized engine of job creation, economic growth, and unparalleled innovation in the United States.

**Patents for startups**
- Patent Process Overview
- Inventors Assistance Center
- Patent FAQs
- Patent Homepage
- Search for Patents
- Official Gazette for Patents

**Trademarks for startups**
The trademark process can be confusing for a beginner, so here is basic information on registering a trademark.
- Trademark Basics
- Search for Trademarks
- Filing online
- Trademark Homepage

**Startup assistance**
The Inventors Assistance Center and Trademark Assistance Center provide information and services to the public. Center staff can answer questions on patent and trademark processes, but cannot provide specific legal advice.
- Inventors Assistance Center
- Trademark Assistance Center
- Patents Ombudsman Program
- BusinessUSA

**Current events**
Information about conferences, conventions and other opportunities to engage.
- Upcoming USPTO Events

[www.uspto.gov/startups](http://www.uspto.gov/startups)
Patent Pro Bono Program


- 22 regional programs across the country provide matching services.

In California

California Lawyers for the Arts
www.calawyersforthearts.org/CIAP
Law School Clinic Certification Program

Allows students in a participating law school’s clinic program to practice before the USPTO under the strict guidance of a Law School Faculty Clinic Supervisor.

In California
- University of San Francisco School of Law
- Lincoln Law School of San Jose
- University of California, Los Angeles School of Law
- Thomas Jefferson School of Law
- California Western School of Law
Micro Entity Status

• 75% off most patent fees
• Low cost submission to establish filing date
  – Provisional Application Filing Fees
    • $130 small entity
    • $65 micro entity

• Micro entity certifies that he/she:
  – Qualifies as a small entity (less than 500 employees);
  – Has not been named as an inventor on more than 4 previously filed patent applications;
  – Did not, in calendar year preceding the calendar year in which the applicable fee is paid, have a gross income exceeding 3 times median household income; and
  – Has not assigned, granted, or conveyed (and is not under obligation to do so) a license or other ownership interest in the application concerned to an entity that, in calendar year preceding the calendar year in which applicable fee is paid, had a gross income exceeding 3 times the median household income.
Process designed for issues that arise during patent application prosecution; used to get an application “back on track”

Use on-line ombudsman form at http://www.uspto.gov/patents/ombudsman.jsp

“This program brings a voice to the inventor that he normally would not have ... THANK-YOU!!!!!!”
Need Patent Protection Fast?

Need to FAST track your patent? Use Track One!
Move your ideas quickly with USPTO's Track One

www.uspto.gov/patent/initiatives/usptos-prioritized-patent-examination-program
Nationwide network of public, state and academic libraries that are designated by the USPTO to disseminate patent and trademark information and to support intellectual property needs of the public.

http://www.uspto.gov/ptrc
Resources

Helpline: 1-800-PTO-9199

- Patent Process: www.uspto.gov/patents/process
- IP Awareness Assessment Tool: www.uspto.gov/inventors/assessment
- Inventor and Entrepreneur Resources: www.uspto.gov/inventors
- Pro Se Assistance: www.uspto.gov/patents-getting-started/using-legal-services/pro-se-assistance-program
- Micro Entity Limit: www.uspto.gov/patents/law/micro_entity.jsp
- Patent Pro Bono help and video: www.uspto.gov/inventors/proseprobono
- First Inventor to File: www.uspto.gov/aia_implementation/patents.jsp#heading-10
Thank You
Staying On Track:
Aligning Your Company for Success in the DoD

Moderator:
John Williams
Small Business Administration (SBA)

Doug Deason
Missile Defense Agency (MDA)

Anne Neumann
Defense Advanced Research Projects Agency (DARPA)

Bob Smith
U.S. Navy

Larry Pollack
DoD Joint Science & Technology Office for Chemical and Biological Defense (JSTO-CBD)
What's Unique About DoD

- Focused on the warfighter
- Largest SBIR program in the Federal Government
- DoD is both an investor and a customer
- Sole-sourcing allowed for follow-on awards
- Issues contracts not grants
- Retain data rights for 5 years
- Does not allow majority-owned by multiple VCOCs, equity, or hedge funds to participate
Participating DoD Agencies

Army
Navy
Air Force
Missile Defense Agency (MDA)
Defense Threat Reduction Agency (DTRA)
Defense Microelectronics Activity (DMEA)
Defense Advanced Research Projects Agency (DARPA)
Defense Health Program (DHP)
Chemical and Biological Defense (CBD)
Special Operations Command (SOCOM)
Defense Logistics Agency (DLA)
National Geospatial Intelligence Agency (NGA)
Staying On Track: Aligning Your Company for Success in the DoD

Moderator: John Williams
Small Business Administration (SBA)

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Bob Smith
U.S. Navy

Larry Pollack
DoD Joint Science & Technology Office for Chemical and Biological Defense (JSTO-CBD)
Inside the Head of an Evaluator: Common Mistakes

Moderator:
Brittany Sickler
Small Business Administration (SBA)

Doug Deason
Missile Defense Agency (MDA)

John Pucci
Department of Homeland Security (DHS)

Jennifer Gustetic
National Aeronautics and Space Administration (NASA)

Ruth Shuman
National Science Foundation (NSF)