

SBIR/STTR
Agency Briefings

[Tuesday]

10:20 Monroe Harden – DoD-Army

10:25 Bob Smith – DoD-Navy

10:30 David Shahady – DoD-Air Force

10:35 Susan Celis – DARPA

10:40 Anthony Aldrich – DoD-SOCOM

10:45 (Break)

10:50 Carol Lewis – NASA

10:55 Vince Garcia – DOC-NOAA

11:00 CAPT Joseph Cohn – DoD-DHA

11:05 Mark Flohr – DoD-DTRA





# Monroe Harden – DoD-Army

[10:20 - 10:25am]







**Bob Smith – DoD-Navy** 

[10:25 - 10:30am]





# **Department of Navy (DON)**

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

Mr. Robert Smith
Director, DON SBIR/STTR & Special Programs
robert.l.smith6@navy.mil

www.navysbir.com



# **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 in expeditionary bases in new "pivot" locales in Africa and Asia

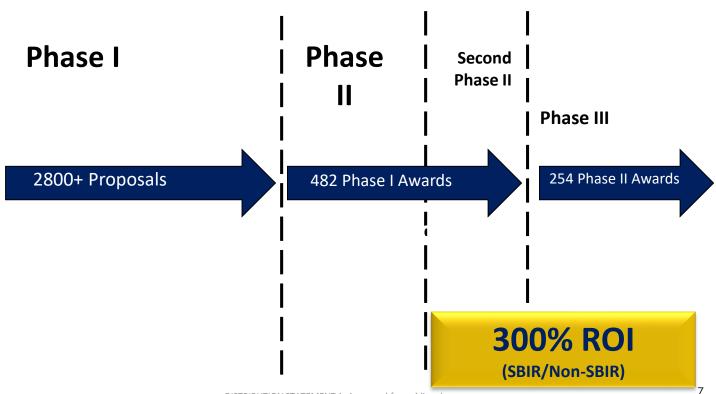
## About the Program:

- Acquisition Driven Process with Strong Technology Pull
- \$400 M+ annual funding supporting small business innovation/research
- Wide range of SBIR/STTR topics driven by PEO/PM/FNC specific needs
- Making a great program better through the use of pilot efforts

We Succeed When You Succeed



# "Life" of a Topic





# What is Part of DON SBIR/STTR?





# **Participating DON SYSCOMs**

DON Program Staff Bob Smith Director, DON SBIR/STTR

Lee Ann Boyer
DON CRP
Program Manager

Steve Sullivan
DON STTR
Program Manager

Joy McGlasson DON SBIR/STTR Operations Manager

Systems Commands (SYSCOM) Program Managers

#### **NAVSEA**

Dean Putnam Program Manager SBIR/STTR/CRP

#### MARCOR

Jeff Kent Program Manager SBIR/STTR/CRP

#### **ONR**

Lore-Anne Ponirakis Program Manager SBIR

#### **SPAWAR**

Shadi Azoum Program Manager SBIR/STTR/CRP

#### **NAVAIR**

Donna Attick Program Manager SBIR

#### **NAVSUP**

Esteban Diaz Program Manager SBIR/CRP

#### **SSP**

Mark Hrbacek Program Manager SBIR/STTR/CRP

#### NAVFAC

Tim Petro
Program Manager
SBIR/CRP

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# **Evolution of EMILY**

#### **Emergency Integrated Lifesaving Lanyard**



2001 2007 2017 2018

# The Start Marine Mammal Detection and Mitigation

- Automatic Detection
- Low Cost Sensors
- Mitigation Decision Aids

#### The Leveraging Silver Fox UAV Combat Tested 2007

- Video Communications
- Threat Warning System

**\$7M SBIR** 

Sensor Classification

#### Today Emergency Integrated Lifesaving Lanyard

- · Worldwide use by lifeguards
- Rescue in USA
- · Swift water rescue
- Used in Hurricane Harvey

#### **Tomorrow**

Mobile Gateway Buoy (MGB) Operationally Tested 2017

- Communications
- Video Sensors
- Sonar Sensors
- UUV data relay
- Rathometric manning

\$5M STTR

\$4.2M in Government Phase III Funds/\$6M+ +Commercial Sales



# Why Participate in SBIR/STTR?

- Largest source of early stage R&D funds for small businesses
- Builds credibility of company's research
- Data Rights retained for 5 years
  - STTR: small business must have data rights agreement with research institution
- Small business can maintain ownership of equipment purchased under Phase I and Phase II
- Better alternative than mortgaging the house...again!



# Questions



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# David Shahady – DoD-Air Force

[10:30 - 10:35am]







## Susan Celis – DARPA

[10:35 - 10:40am]





## Small Business Programs Office (SBPO)



Susan Celis Program Director susan.celis@darpa.mil



#### Doing Business with DARPA

DARPA makes pivotal investments in ideas that lead to breakthrough technologies for national security.

To maximize the pool of innovative proposal concepts it receives, DARPA strongly encourages participation by all capable sources: industry, academia, and individuals.

#### The DARPA Culture

- Maintain and encourage innovation and the ability to execute rapidly and effectively.
- DARPA Program Managers "Key individuals" are:
  - selected from industry, academia, and Government agencies (longevity with DARPA 3-5 years)
  - considered at the top of their fields
  - tackles difficult challenges and takes big risks which push the limits of their disciplines.

http://www.darpa.mil/about-us/about-darpa



#### Doing Business with DARPA (continued)

- Become familiar with the challenges and opportunities of National Security.
- Contact a DARPA Program Manager (PM) about your idea prior to submitting a white paper or proposal to gain insight into the general need for the type of effort. PMs are the key to working with DARPA.
- Ideas should be compelling with potential for revolutionary change.
- Visit <u>www.grants.gov</u> or <u>www.fedbizopps.gov</u> to view DARPA Broad Agency Announcements (BAAs), Research Announcement (RAs), and Requests for Proposals (RFPs).
- Visit <a href="https://sbir.defensebusiness.org/">https://sbir.defensebusiness.org/</a> to view DoD SBIR and STTR Program Announcements.

## Think **boldly**. Embrace risk.



## **DARPA** Technology Offices

ВТО	Biological Technology Bio-complexity   Bio-systems   Disease   Health   Med-Devices   Syn-Bio
DSO	Defense Sciences Autonomy   Complexity   Fundamentals   Materials   Math   Sensors
120	Information Innovation Algorithms   Cyber   Data   ISR   Networking   Processing   Programming
MTO	Microsystems  Decentralization   Electronics   EW   Globalization   Microsystems   Mobile   Photonics   PNT   Spectrum
STO	Strategic Technology Air   Communications   Countermeasures   EW   ISR   Mobile   Spectrum   Tech-Foundations

Air | Ground | ISR | Maritime | Munitions | Robotics | Space



#### **DARPA** Streamlined and Competitive Process

#### Broad Agency Announcement (BAA) Characteristics:

- No common Statement of Work (SOW)
- Varying technical approaches/solutions are anticipated
- Proposals are evaluated with technical quality and approach as the main factor
- Communication with proposers allowed during the open period of the BAA
- White papers or proposal abstracts may be solicited
- Usually have Industry Days where Program Managers brief interested communities on the research program solicitation

#### **BAA Types:**

- Tech Offices will issue program-specific BAAs throughout the year
- Tech Offices will also issue one or two year-long BAAs with a more general scope (rolling submission process)



### Seedlings vs. Programs vs. SBIR/STTR

#### **Seedlings**

- Open to all capable sources
- Usually submitted through Office-Wide BAA
- Small short duration (6-9 months) projects
- Move concepts from "disbelief" to "mere doubt"
- May lead to the next generation of program ideas

#### **Programs**

- Open to all capable sources
- Proposals solicited through specific program BAAs
- Often multi-year, multi-disciplinary efforts
- Technology development to move from "possibility" to "capability"

#### SBIR/STTR

- Open to eligible small business concerns
- Usually submitted through DoD SBIR/STTR BAA
- Phase I feasibility up to \$225K
- Phase II prototype development up to \$1.5M
- May lead to the next generation of program ideas



#### How we think: The Heilmeier Catechism

#### Important questions to consider when approaching DARPA with ideas:

- What are you trying to do? (no jargon!)
- How does this get done today?
- What is new about your approach?
- If you succeed, what difference do you think it will make?
- How long do you think it will take?
- Can your work transition (to the DoD or others)?
- How much will it cost?

http://www.darpa.mil/work-with-us/heilmeier-catechism

#### Small Business Programs Office (SBPO) 675 North Randolph Street Arlington, VA 22203-1714

http://www.darpa.mil/work-with-us/for-small-businesses

David Busigo, Jr.
Director
<a href="mailto:david.Busigo@darpa.mil">david.Busigo@darpa.mil</a>

Susan Celis Program Director susan.celis@darpa.mil

Small Business Support Team (703) 526-4170 sbir@darpa.mil



# **Anthony Aldrich – DoD-SOCOM**

[10:40 - 10:45am]



# U.S. Special Operations Command (SOCOM)

SEEDING AMERICA'S FUTURE INNOVATIONS™

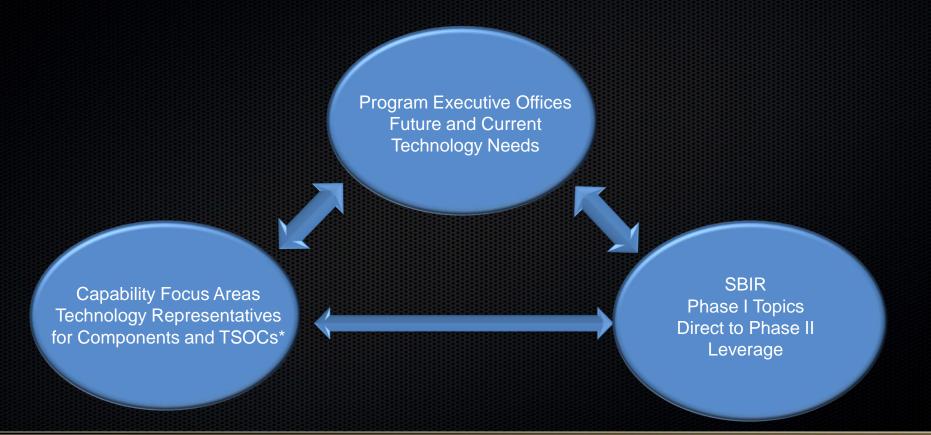


"Somewhere something incredible is waiting to be known."

-Carl Sagan

SCIENCE AND TECHNOLOGY

# **USSOCOM SBIR Technology Insertion**



\* Theater Special Operations Command (TSOC)

SCIENCE AND TECHNOLOGY

# AIR



# LAND



# SEA



# UNDERSEA



# SPACE





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# >50% of SOCOM Phase IIs Began as Non-SOCOM Efforts



## **SBIR LINKS**

- USSOCOM SBIR Program: <a href="https://www.socom.mil/SOF-ATL/Pages/sbir.aspx">https://www.socom.mil/SOF-ATL/Pages/sbir.aspx</a>
- DoD SBIR program (managed by OSBP): www.acq.osd.mil/osbp/sbir
- Federal SBIR Program (managed by SBA): www.sbir.gov



## Carol Lewis - NASA

[10:50 - 10:55am]





### **SBIR / STTR Programs Vision and Mission**

#### **VISION**

Empower small businesses to deliver technological innovation that contributes to NASA's missions, provides societal benefit, and grows the US economy.

#### **MISSION**

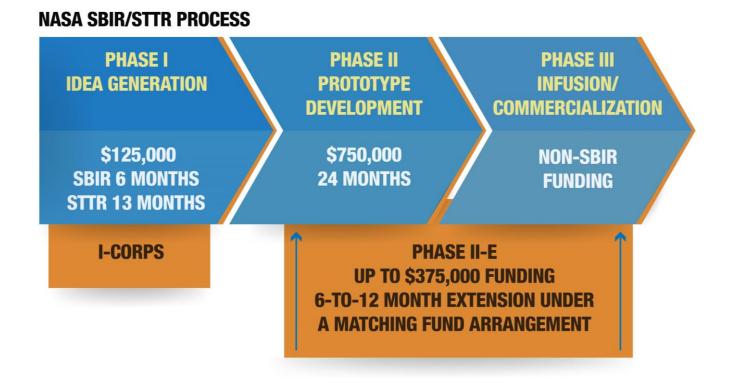
Create opportunities through SBIR/STTR awards to leverage small business knowledge and technology development for maximum impact and contribution

NASA's SBIR and STTR programs have awarded more than \$3.75 billion to research-intensive American small businesses.

Engineers and scientists from more than 3,100 Firms in all 50 States, DC, and Puerto Rico have participated across the two programs.

Approximately 15,000 total awards have been made to-date.

### **SBIR/STTR Program Structure**



### 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

https://sbir.nasa.gov/solicitations

2019 Focus Areas (FA)				
FA 1: In-Space Propulsion Technologies	FA 13: Information Technologies for Science Data			
FA 2: Power Energy and Storage	FA 14: In-Space and Advanced Manufacturing			
FA 3: Autonomous Systems for Space Exploration	FA 15: Materials, Materials Research, Structures, and Assembly			
<b>FA 4:</b> Robotic Systems for Space Exploration	FA 16: Ground and Launch Processing			
<b>FA 5:</b> Communications and Navigation	FA 17: Thermal Management Systems			
<b>FA 6:</b> Life Support and Habitation Systems	FA 18: Air Vehicle Technology			
FA 7: Human Research and Health Maintenance	FA 19: Integrated Flight Systems			
FA 8: In-Situ Resource Utilization	<b>FA 20:</b> Airspace Operations and Safety			
FA 9: Sensors, Detectors and Instruments	FA 21: Small Spacecraft Technologies			
FA 10: Advanced Telescope Technologies	FA 22: Low Earth Orbit Platform Utilization and Microgravity Research			
FA 11: Spacecraft and Platform Subsystems	FA 23: Digital Transformation for Aerospace			
FA 12: Entry, Descent and Landing Systems				

### **National Science Foundation (NSF) Space Topic**

### **NSF Space Topic**

- NSF is including a Space topic in its SBIR/STTR Program
- Given different program goals and criteria, it's likely that one agency would be a much better fit for any specific project.
- Learn more about the differences between the NSF SBIR/STTR and NASA SBIR/STTR Programs at:

https://sbir.gsfc.nasa.gov/content/nsf-sbirsttr-space-topicwhat-you-need-know





#### SBIR/STTR Success

#### **PHASE III SUCCESS**

IRIS AO products derived from SBIR funding are available for world-wide distribution by Edmund Optics - approximately \$2 million revenue generated annually from the technology developed from NASA SBIR. NASA's SBIR program invested \$875,000.

#### **SNAPSHOT**

Since the first exoplanet discovery in 1995, NASA has dedicated resources to develop deformable mirrors for powerful telescopes to determine if there are signs of life beyond Earth on planets outside our solar system.

https://sbir.nasa.gov/success-stories

#### SPECIAL MIRRORS HELP NASA DETECT PLANETS

IRIS AO, Inc., Berkeley, CA

#### Challenge

Starlight can lower the contrast in images sent back to Earth from a telescope traveling in space, making it harder to detect planets light years away.

#### Innovation

IRIS AO, Inc. helped NASA to develop deformable mirror (DM) technology that can filter out direct light from stars that limit the visibility of exoplanets. The technology is a key component of starlight blocking instruments on telescopes. The DM is used to correct optical aberrations that otherwise reduce the resolution of an image.



### Contact us and let's innovate together

Website www.sbir.nasa.gov

Sign up for our Newsletter <a href="https://sbir.nasa.gov/info">https://sbir.nasa.gov/info</a>

NASA Help Desk **301.937.0888** 



### Vince Garcia – DOC-NOAA

[10:55 – 11:00am]

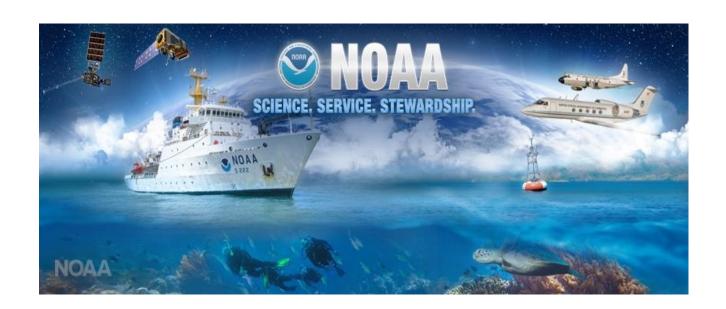




### Small Business Innovation Research Program

**Agency Briefing** 

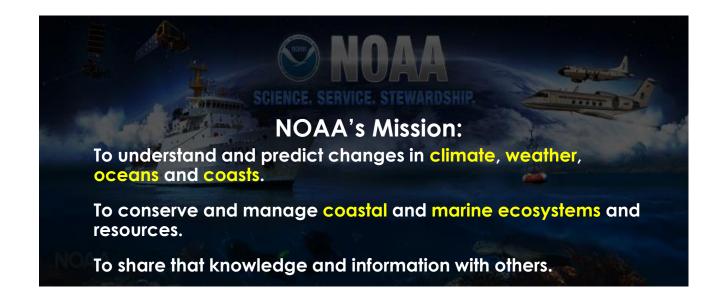
Vince Garcia NOAA SBIR Program Manager Technology Partnerships Office





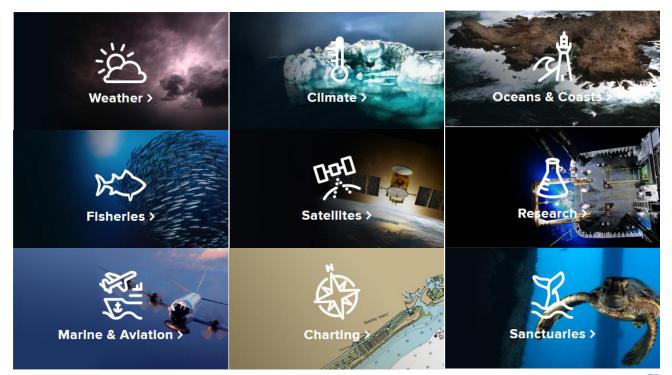








#### SBIR/STTR Spring Innovation Conference Boston, MA - June 2019









### NOAA SBIR Program

Awards Funding Announcement

Released Proposals due

Available via

Grants

One per fiscal year

October

January

grants.gov / DoC Grants-Online

Typical Phase I Awards
Typical Phase II Awards

Proposal Success Rates

\$120K, 20 to 30

\$400K, 10 to 20

Phase I: 20-25%, Phase II: 50-60%



# NOAA SBIR Topics

- Aquaculture
- Recreational and Commercial Fisheries
- Weather Service Improvement and Evolution
- SBIR Technology Transfer\*
- Next Generation NOAA Platforms
- Next Generation Observation and Modeling Systems
- > Floods

\*licensed technology TBD



### Subtopic Examples (FY19)

- Aquaculture
  - > Contaminants in Shellfish
- Recreational and Commercial Fisheries
  - Underwater Adhesive for Coral Restoration
  - Fishing Gear Entanglements
- Next Generation Observation and Modeling Systems
  - Mapping and Imagery of Seafloor and the Deep Ocean



### **NOAA SBIR Insider Tips - EARTH**

Early and Complete Submission

Apprehend the Rules

Read Funding Announcement Thoroughly

Think Commercialization, Propose Innovation

Homework





## **Vince Garcia NOAA SBIR Program Manager** vincent.garcia@noaa.gov sbir.inquiry@noaa.gov techpartnerships.noaa.gov @NOAASBIR





### **CAPT Joseph Cohn – DoD-DHA**

[11:00 - 11:05am]





# The Defense Health Agency's Healthcare and Biomedical SBIR/STTR Program

CAPT Joseph Cohn, PhD
DHA J-9
Chief, Research Program Division
DHA SBIR, STTR,
and Rapid Innovation Fund Programs















# The Military Health System Enabled By Research and Development



"The MHS is a complex organization with readiness at the center of the MHS mission. It draws strength from that complexity. Our *health care delivery* system, our *health benefit*, our *education and training* system, our medical *research and development* programs, and our *public health* capabilities complement each other in supporting this mission."

#### **Research and Development Enables:**

- Discovery of innovative approaches to protect, support, and advance the health and welfare of military personnel, families, and communities
- Transition of new medical technologies into the hands of healthcare providers
- Dissemination of new healthcare knowledge in-theater or into clinical facilities across the Military Health System

DHA is responsible for managing the Defense Health Program Research and Development Appropriation

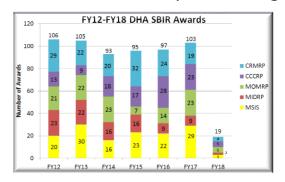
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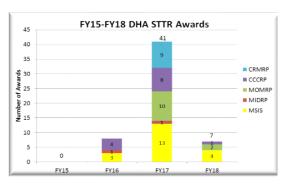
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### **DHA SBIR/STTR Overview**



- DHA SBIR Program was established in 2012 (FY19 Budget = \$58.5M)
- DHA STTR Program was established in 2015 (FY19 Budget = \$8.2M)
- DHA SBIR/STTR Topics are aligned to six Research Domains





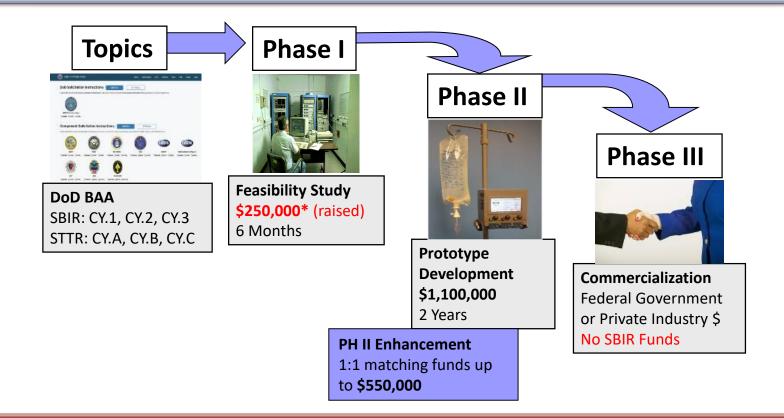
- DHA SBIR topics published in FY18 12
- DHA STTR topics published in FY18 2

DHA has open topics in the 19.2/19.B DoD SBIR/STTR BAAs.

This BAA is currently in full release.

### **DHA SBIR/STTR Funding Pathways**





Unclassified 59

# CNS TBI Integrated Clinical Environment (ICE) to Improve Neurocritical Care Patient Safety and Outcomes



#### **Challenge:**

 To develop a "vital signs' monitor for the brain. Previously no monitor showed comprehensive data from the acutely injured brain, time-synchronized on a single display.

#### **Benefit:**

- Moberg's Component Neuromonitoring System (CNS) provides comprehensive data for precision management of traumatic brain injured patients.
- The System provides the only source of data suitable for subsequent machine learning to detect problems in brain status.

#### **Accomplishments:**

- Revised system according to the ICE architecture. (TRL 8)
- 8 new medial device connections completed (TRL 8)
- API design (TRL 5)
- Remote data review dashboard (TRL 7)

#### **Results:**

- Product used in first fully-wired Smart Neuro ICU site installed at Zuckerberg San Francisco General Hospital.
- Product being used in many hospitals commercially and in many federally funded clinical trials on TBI in the U.S. and Europe.
- Successful transition to JPC-6 Combat Casualty Care Funding for use of system as a TBI precision medicine platform.



DHA: DHMS, IPO, JPC-1

**Moberg Research (small business)** 

DHA SBIR and Rapid Innovation Fund (RIF) investment

# **KeraStat® Burn Gel and Halofuginone to Prevent Scar Contracture after Burn Injuries**



#### **Challenge:**

 The DoD currently spends significant resources treating burn wounds suffered by Service Members.

#### Benefit:

 A product that could be easily applied via topical administration immediately post-injury to promote healing, close burns faster, and prevent hypertrophic scarring would yield increased return to duty rates and reduced disability and care costs, as well as improved quality of life for Service Members

#### **Accomplishments:**

 KeraStat Gel was cleared by FDA in 2017, and the process was supported by DHA SBIR funding. A subsequent scarring study will support the addition of claims for the wound dressing.

#### **Results:**

 KeraStat Gel could be used by medics and DoD medical staff at all points of care as a wound dressing for partial thickness burns and other partial thickness wounds. The product will be able to be used by emergency responders and medical providers in the private sector for partial thickness burns and other partial thickness wounds.



DHA: USAMMDA WEMT PMO, JPC-6

Keratin Biosciences (small business)

DHA SBIR and DHA J9 investment

### **DHA SBIR/STTR Points of Contact**



#### <u>Defense Health Agency – Falls Church, VA</u>

https://health.mil/About-MHS/Defense-Health-Agency



CAPT Joseph Cohn, Chief Research Program Administration Division / DHA SBIR/STTR Programs (Joseph.v.cohn.mil@mail.mil, 703-681-8370)

#### **US Army Medical Research and Materiel Command – Fort Detrick, MD**



http://mrmc.amedd.army.mil/

Mr. J.R. Myers, SBIR/STTR Project Manager (james.r.myers.38.civ@mail.mil, 301-619-7377)

Ms. Colleen Gibney, SBIR/STTR Deputy Project Manager (colleen.n.gibney.civ@mail.mil, 301-619-3719)

Ms. Amanda Cecil, SBIR/STTR Operations Manager (amanda.l.cecil3.ctr@mail.mil, 301-619-7296)

Ms. Lauren Lynch, DHA SBIR/STTR Program Analyst (lauren.a.lynch6.ctr@mail.mil, 301-619-5146)

Unclassified 62



### Mark Flohr – DoD-DTRA

[11:05 - 11:10am]



# Defense Threat Reduction Agency

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

Mark Flohr Program Manager DTRA R&D

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### **Agency Mission**

The Defense Threat Reduction Agency enables DoD, the U.S. Government and International Partners to counter and deter Weapons of Mass Destruction and Improvised Threat Networks.

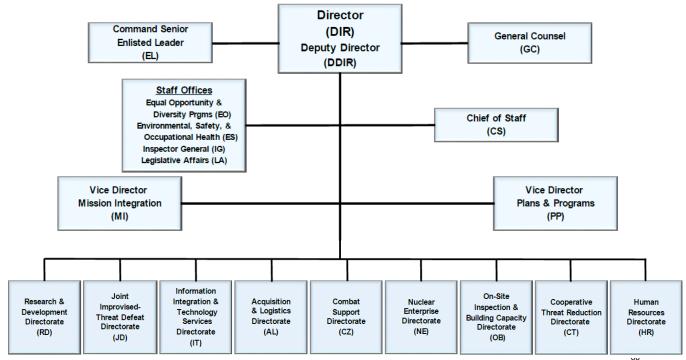




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### **DTRA Organization Chart**





### **Mission and Vision**

#### **Our R&D Mission**

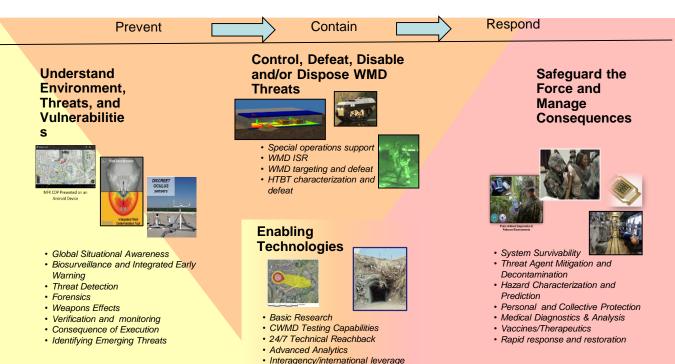
Provide research, development, test and evaluation (RDT&E) investments that focus on maintaining the U.S. military's CWMD technological superiority, supporting current readiness, and mitigating the risks of technical surprise for the CWMD mission.

#### **Our R&D Vision**

Be the recognized leader for CWMD technical innovation – responding to urgent warfighter needs while investing in R&D to shape the Nation's CWMD capabilities.



#### DTRA R&D Aligns with DoD Strategy for CWMD





### **DTRA RDT&E Summary**

- DoD's R&D organization focused on CWMD
  - Executes the two primary DoD CWMD S&T programs
  - Integration of JIDO's efforts adds significant value to overall RDT&E portfolio
- Responds to national/DoD CWMD priorities and SecDef's Lines of Effort (LOE)
  - Supports the strategic deterrent
  - Provides USSOCOM primary support for CWMD capabilities
  - Develops, coordinates, and transitions CBDP S&T medical and physical sciences technologies for validated joint military capability needs
- WMD-related research into over 100 universities
- Preserves core scientific and technology capabilities within the Military Service laboratories
- Comprehensive integrated R&D investment increases agility to respond to new/changing requirements



### What's Unique about DTRA RDT&E

- Focused Solely on CBRNE
  - Collaboratively executes the two primary DoD S&T budgets for CWMD
  - Integration of JIDO's efforts adds significant value to overall RDT&E portfolio
- Within a Combat Support Agency (CSA)
  - Military / Deployable Workforce
  - 24/7 Ops / Reachback Center
  - Liaison offices at all US Commands
- Nimble and responsive to urgent needs
  - Basic Research through Advanced Technology Development (6.1 6.3) "under one roof"
- Top-notch and unique in-house field test capability
- Competitive "Best of Breed" across National/DoD labs, industry, academia



### **DTRA SBIR**

#### DTRA SBIR

- Funds: FY16 = \$9.1 FY17 = \$9.2M FY18=\$9.9M FY19=\$9.9M
- Participate in one DoD Broad Agency Announcement per year
- Solicitation 16.2 (7 topics / 14 Phase I awards and planned up to 7 Phase II awards)
- SBIR 17.2 BAA (8 topics / 19 Phase I awards and planned up to 8 Phase II awards)
- SBIR 18.2 BAA (7 topics / plan for 14 Phase I awards and up to 7 Phase II awards
- SBIR 19.2 BAA (7 topics / plan for 14 Phase I awards and up to 7 Phase II awards
- Potential for additional SBIR Phase II awards using OSD SBIR STTR funds



### **DTRA SBIR**

#### Participating in one DoD solicitation per year

ВАА	No of Topics	Phase I awards	Phase II awards	OSD funded	Total Phase II Awards
15.2	8	16	9	0	9
16.2	7	16	10	0	10
17.2	8	18	8*	TBD	TBD
18.2	7	19	7*	TBD	TBD
19.2	7	14	7*	TBD	TBD

Blue – Awarded Green – To be Awarded

<sup>\*</sup> Potential for additional funding



### DTRA STTR

### DTRA STTR

- Funds: FY16 \$1.4M FY17 \$1.3M FY18 \$1.4M FY19 \$1.4M
- Participate in DoD Broad Agency Announcement in even years
- Solicitation FY16.A (4 topics / 8 Phase I awards, 1 Phase II award) Two additional STTR Phase II awards using OSD SBIR STTR funds
- No STTR Topics in FY17
- FY18.B BAA (4 topic / 8 Phase I awards and 1 Phase II award) May request OSD SBIR-STTR funds for additional Phase II awards.
- FY19.B BAA (3 topics / 6 Phase I awards and 1 Phase II award) May request OSD SBIR-STTR funds for additional Phase II awards.



## **DTRA STTR**

### Participating in DoD solicitation mainly in even years

ВАА	No of Topics	Phase I awards	Phase II awards	OSD funded	Total Phase II Awards
16.A	4	10	1	2	3
17.A	NA				
18.B	4	8	TBD	TBD	TBD
19.B	3	6	TBD	TBD	TBD

Blue – Awarded Green – To be Awarded



### **DTRA SBIR/STTR Contact:**

Mr. Mark Flohr

SBIR/STTR Program Manager

E-Mail: Mark.D.Flohr.civ@mail.mil



SBIR/STTR Agency Briefings

[Tuesday]

11:10 John Pucci – DHS

11:15 Larry Pollack – DoD-CBD

11:20 Matt Portnoy – NIH / Sean Griffiths – CDC

11:25 Maggie Scully – NIH-FNLCR

11:30 Manny Oliver – DOE

11:35 Ben Schrag - NSF

11:40 Elden Hawkes – USDA

11:45 Clare Masucci – DOT

11:50 J'aime Maynard – DOC-NIST

11:55 April Richards – EPA





John Pucci - DHS

[11:10 - 11:15am]



# DHS Small Business Innovation Research (SBIR) Programs Overview



## **2019 SBIR Spring Conference**

Seeding America's Future Innovations TM

June 18, 2019



John Pucci DHS SBIR Program Director Science and Technology Directorate

# A 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)
- Cybersecurity and Infrastructure Security Agency (CISA)
- U.S. Secret Service (USSS)
- Countering Weapons of Mass Destruction Office (CWMD)
- First Responders













### **Today DHS will...**



### Federal Law Enforcement Training Centers

U.S. Citizenship and

Immigration Services

GRANT 1,723 PEOPLE

ASYLUM, AND REFUGEE STATUS

PERMANENT RESIDENCE.

NATURALIZE 2,000

**NEW U.S. CITIZENS** 

TRAIN 2,800 FEDERAL, STATE, LOCAL, TRIBAL, AND INTERNATIONAL LAW ENFORCEMENT PERSONNEL



#### Law Enforcement Support

SUPPORT STATE AND LOCAL LAW 🧥 **ENFORCEMENT** 



**CURRENCY AND ASSETS** 

#### Federal Protective Service







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

#### U.S. Customs and Border Protection





WARNINGS

Cyber

BLOCK 1,900

POSSIBLE

**INTRUSIONS** 

282,000 PRIVATELY OWNED

TRUCK, RAIL, AND **VEHICLES** 



9.400 LBS OF ILLICIT DRUGS





#### Transportation Security Administration

SCREEN



**ENROLL 4,500** IN TSA Pre√

### SEIZE 7 **FIREARMS**

SECRET SERVICE

PROVIDE



#### U.S. Coast Guard

IN MORE THAN E SEARCH AND RESCUE **OPERATIONS** 

SEIZE AND REMOVE

874 LBS COCAINE 214 LBS OF MARIJUANA

WITH A WHOLESALE VALUE OF \$11.8 MILLION

#### U.S. Secret Service Federal Emergency Management Agency







OF \$160,000 IN COUNTERFEIT CURRENCY



IN POTENTIAL LOSSES THROUGH FINANCIAL CRIMES AND CYBER INVESTIGATIONS



\$17.6 MILLION IN FEDERAL ASSISTANCE

TO STATE, LOCAL, AND TRIBAL GOVERNMENTS



SUPPORT LOCAL **COMMUNITIES WITH** 

IN HOMELAND SECURITY ASSISTANCE







## 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** 



## FY18 and 19 Topics

### S&T

- Reach-Back Capability for Fielded Rapid DNA Systems
- ICAM On-the-Fly
- On Body Power Module for First Responders
- Modeling-based Design of Sensors for Chemical Detection in Complex Environment
- Synthetic Training Data for Explosive Detection Machine Learning Algorithms
- Cybersecurity Peer-to-Peer Knowledge/Lessons Learned Tool
- Network Modeling for Risk Assessment
- Blockchain Applications for Homeland Security Forensic Analytics
- 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

### **S&T** continued

- 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

### **CWMD**

- Detector Integration with Current and Emerging Networked Systems
- Unmanned Aerial System Autonomous Search of Limited Area for Radiological Threats
- 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



## **DHS SBIR Program Specifics**

- Two Directorates in DHS manage SBIR
  - Science & Technology (S&T) Directorate
  - Countering Weapons of Mass Destruction Office (CWMD)\*
- FY2018 Budgets:

S&T Directorate's SBIR: \$15.7M

CWMD's SBIR: \$2.0M

- Topics determined by the government in response to component and HSE needs
  - Solicitation released in early December each year
  - 7-14 topics per year
  - 10 topics in December 2018 solicitation

Phase I contracts: \$150,000
Phase II contracts \$1,000,000

\* - CWMD Office data includes Domestic Nuclear Detection Office data through FY17



## **DHS SBIR Points of Contact**

### **S&T Directorate**

### John Pucci

SBIR Program Director john.pucci@hq.dhs.gov 202-254-8764

### **S&T Program email**

stsbir.program@hq.dhs.gov

### **SBIR Portal Help Desk**

Email: dhssbir@reisystems.com

Phone: 703-480-7676

### **CWMD**

### **Marissa Giles**

SBIR Program Manager marissa.giles@hq.dhs.gov 202-254-7615

### **Roger Gima**

SBIR Program/Technical Analyst roger.gima@associates.hq.dhs.gov 202-254-7033

### **DNDO SBIR Program email**

dndosbir@hq.dhs.gov

### 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



# I asked for dedicated staff that knew DHS operational needs and this is what they gave me!







## **Larry Pollack – DoD-CBD**

[11:15 - 11:20am]



## 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**



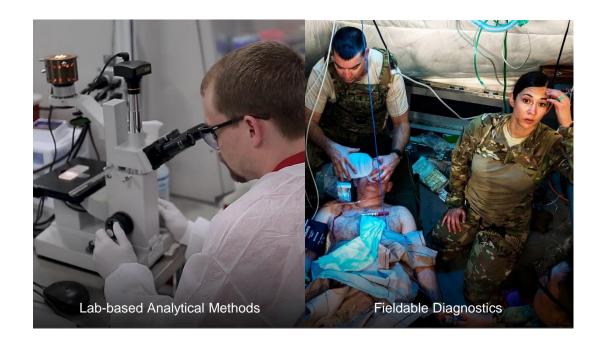


## **Detection/Diagnostics**





## **Medical Diagnostics**





## **Vaccines/Therapeutics**





## Medical Countermeasures: Chemical & Biological





### **Individual CB Protection Continuum**

**Lightweight** 



- ✓ Open-air battlefield
- ✓ DoD specific

**Medium Weight** 



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

Full Encapsulation



- space
- ✓ NFPA 1991/1994 class

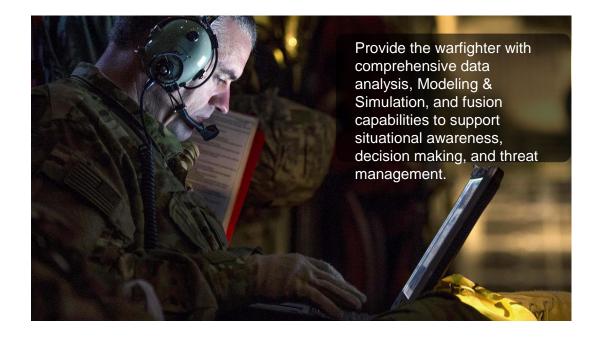


## **Decontamination**





## **Information Systems/Surveillance**





## **Advanced and Emerging Threats**





### **DoD SBIR/STTR Announcements**

Dates established by Assistant Secretary of Defense/Research & Engineering (ASD R&E); not all DoD Components participate in each Announcement

	Solicitation SBIR / STTR	Pre-Release	Open	Close *
CBD SBIR	FY19.1 / FY19.A	28 Nov 2018	8 Jan 2019	6 Feb 2019
	FY19.2 FY19.B	2 May 2019	30 May 2019	1 Jul 2019
	FY19.3 / FY19.C	23 Aug 2019	24 Sep 2019	23 Oct 2019

All proposals due No Later Than 8:00pm Eastern Time for all DoD SBIR and STTR Announcements



# DoD FY19.2 SBIR Announcement CBD SBIR Has New Topics!

### **'ON-THE-STREET' RIGHT NOW!**

**UNCLASSIFIED** 

Phase I Proposals due July 1 No Later Than 8:00pm EDT

SEE:

https://sbir.defensebusiness.org



## **CBD SBIR – FY19.2 Announcement Topics**

CBD192-001	Military Working Dog Decontamination Kit
CBD192-002	On-site Treatment of Contaminated Equipment
CBD192-004	Phage therapy for bio-threat bacteria
CBD192-005	Development (or Application) of a Non-Invasive Device
	to Measure Changes in Intra-Cranial Pressure resulting
	from Viral or Bacterial Infections of the Central Nervous
	System
CBD192-006	Development of Small Molecule Therapeutics for
	Emerging Viral Agents
CBD192-007	Optimized Platforms for Proper Glycosylation and
	Sialylation of Recombinant Human
	Butyrylcholinesterase (rBChE)
CBD192-008	Long Duration, Novel Opioid Medical Countermeasure
	for Intramuscular Injection

http://sbir.defensebusiness.org

Proposals due NLT 8pm ET, 1 July 201916



## **Some Helpful Resources**

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

DoD Office of Small Business Programs – Doing Business with the DoD: <a href="http://www.acq.osd.mil/osbp/sb/dod.shtml">http://www.acq.osd.mil/osbp/sb/dod.shtml</a>

Doing Business with DoD:
Guide to DoD Contracting Opportunities:
<a href="http://www.acq.osd.mil/dpap/cpic/cp/doing\_business\_with\_the\_department\_of\_defense\_dod\_us.html">http://www.acq.osd.mil/dpap/cpic/cp/doing\_business\_with\_the\_department\_of\_defense\_dod\_us.html</a>

Chem-Bio Defense (CBD) SBIR/STTR web-site: <a href="http://www.cbdsbir.net">http://www.cbdsbir.net</a>



## **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



**Matt Portnoy – NIH** 

Sean Griffiths - CDC

[11:20 - 11:25am]



### Why NIH SBIR/STTR?

2019 SBIR Road Tour

SBIR.NIH.GOV SBIR@od.nih.gov

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

Women Owned &
Socially/Economically
Disadvantaged Small
Businesses
IDeA States

NIH 2019 SBIR/STTR Budget \$1.1 billion: SBIR - \$861 million STTR - \$121 million Omnibus AND Targeted Funding Opportunity Announcements (FOAs)

Includes Clinical Trial **NOT** Allowed + Clinical
Trial **REQUIRED** FOAs

### **NIH-ONLY Options:**

Fast-Track Application
Direct to Phase II

Application Assistance
Program (AAP)

Administrative Diversity Supplement

Three Grant Receipt

Dates
(Sep 5, Jan 5, Apr 5)

One Contract Receipt

Date

(October 22) Annually

Apply Electronically using Forms OR use NIH ASSIST (Application Submission System & Interface for Submission Tracking)

NIH 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 (CAP)

- Phase 2 Awardees- Offers support toward commercialization

National SBIR/STTR Conference (SBA)

**SBIR Road Tours** 

**NIH Regional Seminars** 

**Free Webinars** 



### Solicitations and Due Dates

# NIH, CDC, & FDA SBIR/STTR Grant Solicitation "Parent" FOAs:

https://sbir.nih.gov/funding#omni-sbir

**Clinical Trial Required** 

SBIR: <u>PA-19-273</u> STTR: <u>PA-19-271</u>

**Clinical Trial Not Allowed** 

SBIR: <u>PA-19-272</u> STTR: <u>PA-19-270</u>

Release: May, 2019

Standard Due Dates: September 5<sup>th</sup> (2019)

January 6<sup>th</sup>, April 6<sup>th</sup> (2020)



9 Different Funding Centers and NIOSH

**SBIR Funding Opportunities** 

Grant Omnibus Funding
Opportunity Announcement
(FOA)

**Contract Solicitation** 

CDC 2019 SBIR Budget \$10 million



# Centers for Disease Control and Prevention (CDC)

Small Business Innovation Research (SBIR)

Program

Website: <a href="www.cdc.gov/sbir">www.cdc.gov/sbir</a>
Questions? Send E-mail: SBIR@CDC.GOV

**CDC SBIR FACT FACTS** 

TOPICS: 20-40 SBIR topics published per year in both the grant omnibus and contract solicitation

Emerging Public Health Issues: CDC will accept investigator-initiated proposals (e.g., Ebola (EVD, Opioid overdose, etc.)

# **→ (CDC24/7**

PROTECTING AMERICA'S SAFETY, HEALTH, AND SECURITY

# CDC SBIR Technical Assistance

(Niche, Commercialization Acceleration Program (CAP), I-Corps @ NIH)

### **Tips for SBC applying**

- Talk to CDC
- Apply Early!!
- Continue to Apply

### **How Can I Engage?**

- E-mail: SBIR@cdc.gov
- 21st Annual HHS SBIR/STTR Conference
- Apply for Technical Assistance





## Maggie Scully – NIH-FNLCR

[11:25 - 11:30am]



# Frederick National Laboratory for Cancer Research

sponsored by the National Cancer Institute



# Partnership Opportunities with the Frederick National Laboratory

Maggie Scully, Ph.D.

Sr. Business Development Analyst – Partnership Development Office

SBIR/STTR Spring Innovation Conference





The Frederick National Laboratory is dedicated to improving human health through discovery and innovation in the biomedical sciences, focusing on cancer, AIDS, and emerging infectious diseases.

FNL consist of many labs and programs....

computational science

molecular characterization



basic, translational, and clinical science

cancer, HIV/AIDS, and cancer viruses nanotechnology characterization and formulation



animal models and animal imaging

biomedical imaging

electron microscopy









# **Partnership Mechanisms**

	cCRADA & mcCRADA	Collaboration Agreement	МТА	Beta-Testing
Research Plan			1	
Data Publishing Provisions	1			
IP and Licensing Opportunities	1			
Confidentiality				
Incoming Funds	1			
Material Exchange			1	
Collaborative Research				

### Partnership Mechanisms: Technical Service Agreements (TSAs)



TSAs offer easy access to some of FNL's unique services and solutions. Each service has a set fee, and the TSA can be negotiated quickly (~1 week).

Currently, 27 services are available, including:

- Viral load analysis
- cDNA Synthesis/Single Genome Amplification

HIV/SIV Services



- KRAS/p53 mouse models & cell lines for PDAC, NSCLC
- 1,501 mouse embryonic cell lines with most known mouse miRNAs

Lab Animal Services



- Nanomedicine PK in rats
- Nanomedicine drug release in human plasma
- Identification of possible infusion reactions

Nanomed & Formulation



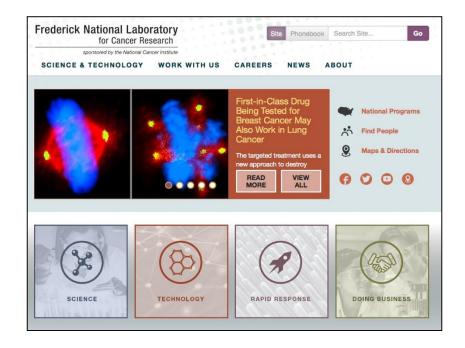
- HLA genotyping
- Expression profiling for human B-cell lymphoma on NanoString platform
- TypeSeqer HPV Genotyping

Other Services



#### frederick.cancer.gov







Maggie Scully, PhD
Business Dev. Analyst
Maggie.Scully@nih.gov



@FredNatLab\_PDO
#FredNatLab



# Manny Oliver – DOE

[11:30 - 11:35am]



## 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
- More details: https://science.osti.gov/sbir/Research-Areas-and-Impact





# 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 \$200,000, 6-12 months duration, ~ 400 per year
- Phase II
  - Phase I awardees compete for Phase II Awards the following year
  - Awards up to \$1,100,000 or \$1,600,000 (varies by topic), up to 2 years duration, ~180 per year
- Second & Third Phase II
  - These award focus on follow-on R&D to achieve commercialization. Third Phase II requires investor matching funds.
  - Awards up to \$1,100,000, up to 2 years duration

**SBIR/STTR Programs** 

• Schedule: <a href="https://science.osti.gov/sbir/Funding-Opportunities">https://science.osti.gov/sbir/Funding-Opportunities</a>



## TAKE ADVANTAGE OF . . .

#### Applicants

- Phase O Application Assistance program for first time applicants
- Online application tutorials (<u>www.doesbirlearning.com</u>)
- Partnership with DOE National Labs (<u>https://science.osti.gov/sbir/Applicant-Resources/National-Labs-Profiles-and-Contacts</u> and <a href="https://www.labpartnering.org/partnering">https://www.labpartnering.org/partnering</a>)

#### Awardees

• Select your own commercialization assistance provider or utilize the DOE Commercialization Assistance Program (<a href="http://www.larta.org/doecap">http://www.larta.org/doecap</a>). Up to \$6,500 available for Phase I and \$50,000 available for Phase II.



# CONTACT US

- DOE SBIR/STTR Website: <a href="https://science.osti.gov/sbir">https://science.osti.gov/sbir</a>
  - You can join our mailing list on our homepage (near the page bottom)
- Telephone: 301-903-5707
- Email: <u>sbir-sttr@science.doe.gov</u>





Ben Schrag- NSF

[11:35 - 11:40am]







# **America's Seed Fund at NSF**

https://seedfund.nsf.gov/ @NSFSBIR sbir@nsf.gov



#### **NSF: Key takeaways**



- •Phase I submission windows: March-June and June-December (2019)
- Topics: essentially unlimited (other than drug development)
- Motivation: commercialization → broader impacts
- •Focus: early-stage start-ups + commercially disruptive, unproven technology
- •Mechanism: Highly flexible grant with the ability to pivot
- •Structure: Decision-making Program Directors with deep technical and commercial/entrepreneurial experience + external merit review
- •Post-award: Ongoing PD engagement throughout the award + Beat-the-Odds Boot Camp offered free to all Phase I awardees



#### **Intellectual Merit**

- Innovative (i.e. novel and differentiable new approach that will solve a problem)
- High-technical-risk requiring R&D to prove out

#### **Broader Impacts**

 Potential to benefit society and contribute to the achievement of specific societal outcomes

#### **Commercial Potential**

- Customer/market traction and engagement
- Company/team suited to aggressive commercialization
- Competitive advantage, business model
- NSF funding will "move the needle"



- Budget: ~\$200 million (300-350 Phase I awards/year)
- Recent Phase I awardee stats (<u>NSF Award Search</u>):
  - 95% have never had a Phase II award (any agency)
  - 80% have four or fewer employees
  - 56% founded in past two years
  - 63% awarded based on firm's first NSF submission
- Strong commercial outcomes for portfolio companies (all based on public data only, 2014-present):
  - \$6.5 billion in follow-on institutional (equity) financing
  - 90 successful exits (acquisitions, mergers, IPOs)







# AMO to buy IntraLase for \$808 million

Spider silk startup Bolt Threads closes on \$123 million in Series D funding

After scrapping Monsanto deal, Deere agrees to buy precision farming startup Blue River for \$305M

Posted Sep 6, 2017 by Catherine Shu (@catherineshu)

Boston Scientific Nabs Apama Medical in \$300 Million Deal

Deal calls for \$175 million in cash plus \$125 million based on milestones

Ginkgo Bioworks secures \$275 million in Series D, valuing the company at over \$1 billion



ClearMotion Secures \$100 Million Investment Led By J.P. Morgan Asset Management To Commercialize World's First Digital Chassis



### **Elden Hawkes – USDA**

[11:40 – 11:45am]



# U.S. Department of Agriculture Small Business Innovation Research Program



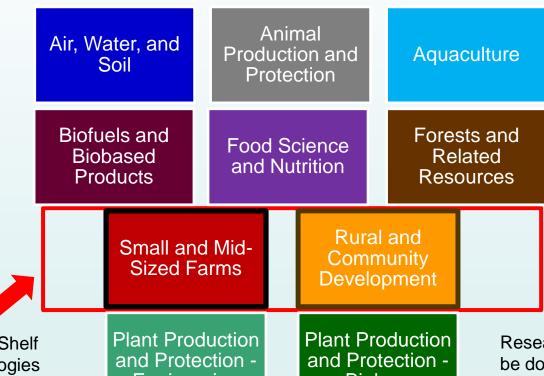
# **USDA SBIR Program**

- Annual Budget ~\$24 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 Phase I Winners
- Phase II Winners can request additional funds for commercialization.
- Research can be done with existing ARS patents via ARS CRADAs
- FY 2018: Phase I
  - 533 Phase I applications submitted
  - 79 Phase I awards
  - Phase II
    - 67 Phase II applications submitted
    - 35 Phase II awards





# **SBIR Topic Areas**



Off the Shelf technologies allowed in these two topic areas

Engineering

Biology

Research can be done with existing ARS patents via ARS CRADAs

# FY 2020 Timeline



#### Phase I

RFA Released July 2019 Proposal Deadline Oct 2019

Panels Jan & Feb 2020 Notifications March 2020 Awards\* June –Aug 2020

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

RFA Released Dec 2019 Proposal Deadline Feb 2020

Panels May 2020 Notifications June 2020

Awards\* Sep 2020

# Freund's Farm, Inc.











# **Stony Creek Colors**







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



Dyes. With a whole system seed to closet approach

Bio-based

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



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 dye
meet the highest quality
specifications and work
flawlessly with their
systems.

Featured in Forbes, NPR, Huffington Post

ecology.

CONSUMERS Our colors empower

people to purchase

clothing that fully aligns

force for positive

change.

with their desire to be a

















Fungal Mycelium



Mushroom® Materials



# **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

**Elden Hawkes – Program Specialist** 

Elden.Hawkes@usda.gov

Web Site: <a href="https://nifa.usda.gov/sbir">https://nifa.usda.gov/sbir</a>





### Clare Masucci – DOT

[11:45 – 11:50am]



# Stimulating Innovation and the U.S. Economy through the U.S. DOT's Small Business Innovation Research (SBIR) Program

SBIR/STTR Spring Innovation Conference
June 2019







# How SBIR Supports the Mission of DOT

Mission: To ensure a fast, safe, efficient, accessible, and convenient transportation system that meets vital national interests and enhances the quality of life of the American people.

SBIR addresses high priority research gaps within DOT's R&D Program.

SBIR topics are developed to align with Secretary's strategic priorities, specific modal priorities, and SBA.









# **Phase I Participation by Agency**

DOT Operating Administration	2014	2015	2016	2017	2018	2019
Federal Aviation Administration*						
Federal Highway Administration / Intelligent Transportation Systems-Joint Program Office (ITS JPO)	Х	Х	Х	Х	Х	Х
Federal Railroad Administration	X	X		Х	Х	Χ
Federal Transit Administration	X	Х	Х	Х	Х	Х
Federal Motor Carrier Safety Administration						Х
National Highway Traffic Safety Administration		Х		Х	Х	Х
Office of the Secretary				Х		
Pipeline and Hazardous Material Safety Administration	Х				Х	



<sup>\*</sup>Excused by Legislation: FAA contributed to the U.S. DOT's SBIR Program from 1985 to 2005

## **DOT's SBIR Topics**



# **DOT's SBIR Program Details**

- > Annual SBIR budget approx. \$9M
- > 5-10 topics per year (11 topics in FY19)
  - ➤ Phase 1 Up to \$150K
  - ➤ Phase 2 \$200K to \$1M
  - ➤ Phase 2B \$250K to \$1M
- Number of awards per year
  - ➤ Phase 1 based on solicitation topics
  - $\triangleright$  Phase 2 50-60% of Phase 1 awards
  - ➤ Phase 2B ~25% of Phase 2 awards



# **DOT's SBIR Program Details**

- > One solicitation per year
- > Next solicitation expected Winter 2019-20
  - ➤ Sign up on our website to receive notifications of when topics are posted, as well as solicitation open and close dates
- > Administer Contracts, not Grants
- > Majority VC firms not eligible
- > Program Office does not accept unsolicited proposals



# **DOT SBIR Program Details**

- Commercialization Assistance Program (CAP) available to U.S. DOT SBIR awardees
  Focus on increasing commercialization potential for the Phase I award and preparing for entry into the marketplace for Phase II
- Pre-proposal conference calls for Phase II
- > Improved cost appendices
- > Funding for CORs to travel to project sites



#### This Year's FY 2019 Solicitation Schedule

# Visit <a href="www.volpe.dot.gov/sbir">www.volpe.dot.gov/sbir</a> to sign-up to receive alerts on new solicitations

Action	Start Date	End Date		
Solicitation Open and Close Dates	Feb. 19, 2019	Apr. 22, 2019		
Evaluation Period Initiation and Completion	Late April	June		
Announce Award Recommendations	NLT 90 days (Jul. 22, 2019) from Solicitation Close			
Award Contracts	NLT 180 days (Oct. 21, 2019) from Solicitation Close			





TransportationGov @USDOT - 14 Dec 2015

Kudos to @VolpeUSDOT @USDOTFHWA and @SolarRoadways. This. Is. Way. Cool. 1.usa.gov/1RkywBk





TransportationGov @USDOT - 14 Dec 2015

Someone ask for solar pavement that illuminates lines, melts snow? Oh, we did! 1.usa.gov/1RkywBk



Top Tweet earned 2,460 impressions

Distracted driving and walking: How @USDOTs #SBIR helps make it safer to cross the street. go.usa.gov/cY9bY pic.twitter.com/C6phwOH4Dz







### **DOT Solicitation Process**

- Solicitations are posted at <u>volpe.dot.gov/sbir</u> and <u>fbo.gov</u>
- □ Requests for clarifications/questions on research topics can be submitted to the Program Office staff
- Submission of offers via secured website is a requirement



# Opportunities Outside of DOT SBIR Program

- DOT/Office of Small and Disadvantaged Business Utilization –
   osdbu.dot.gov
- ☐ Fed Biz Ops <u>fbo.gov</u>
- □ University Transportation Center Program –<u>utc.dot.gov</u>
- □ Transportation Research Board <u>trb.org</u>
- □ Challenge.gov
- □ Check DOT agency websites for BAAs, RFIs and other research opportunities



# U.S. DOT SBIR Contact Information

http://www.volpe.dot.gov/sbir

DOT SBIR Hotline 617-494-2051 DOTSBIR@dot.gov

Melissa Wong
SBIR Program Manager
melissa.wong@dot.gov
617-494-3414

Tammy Taylor
SBIR Contracting Officer
tammy.taylor@dot.gov
617-494-3462







#### J'aime Maynard – DOC-NIST

[11:50 - 11:55am]





#### National Institute of Standards and Technology

#### **U.S. Department of Commerce**

Mary Clague NIST SBIR Program Manager J'aime Maynard SBIR Administrator

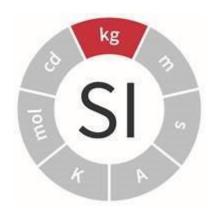


#### Mission

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.



Photo Credit: A. Holt/NIST



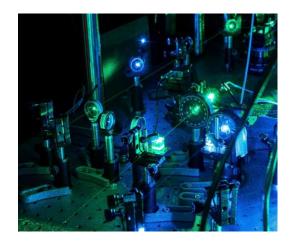
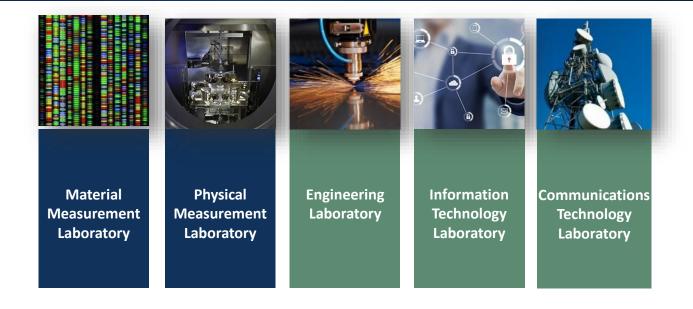


Photo Credit: Curt Suplee/NIST





## Laboratories & Programs



#### User Facility & Extramural Programs:

- NIST Center for Neutron Research
- Advanced Manufacturing Office
- Hollings Manufacturing Extension Partnership
- Baldrige Performance Excellence Program
- Special Programs Office





#### **Research & Programmatic Areas**

**Advanced Communications** 

Bioscience

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





# SBIR 3-Phase Program

	Purpose	Duration	Funding Amount
Phase I	Feasibility	6 months	Up to \$100,000
Phase II	R&D	2 years	Up to \$400,000
Phase III	Commercialization	No Limit	Non-SBIR funds





#### Program Timeline (tentative)

 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.





#### FY 2019 Research Areas

- Advanced Communications, Networks and Scientific Data Systems
- Advanced Manufacturing and Material Measurements
- Cybersecurity and Privacy
- Fundamental Measurement, Quantum Science and Measurement Dissemination
- Health and Biological Systems Measurements
- Physical Infrastructure and Resilience
- Exploratory Measurement Science
- Applicants will need to identify where their technology fits with NIST.



#### Success Story

# High Precision Devices (Boulder, Colorado)

#### **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.

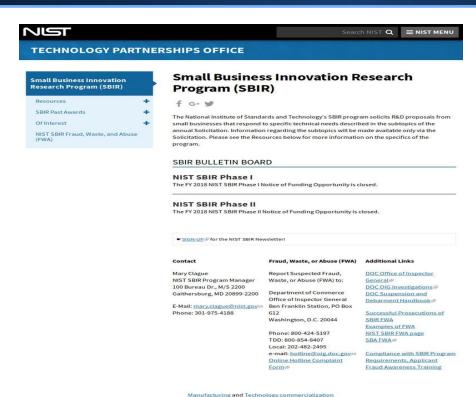


Photo Credit: NIST/PML





#### NIST SBIR website



Resources

http://www.nist.gov/sbir





#### Contact Information

Mary Clague, NIST SBIR Program Manager

mary.clague@nist.gov 301-975-4188

J'aime Maynard, SBIR Administrator

Jaime.Maynard@nist.gov 301-975-8408

NIST SBIR website: <a href="http://www.nist.gov/sbir">http://www.nist.gov/sbir</a>





#### **April Richards – EPA**

[11:55am - 12:00pm]





# Environmental Protection Agency's Small Business Innovation Research (SBIR) Program

April Richards, Program Manager SBIR National Conference June 17-18, 2019



#### **EPA-SBIR Mission**

**EPA** 

Protect human health and the environment

**EPA SBIR** 

Support development and commercialization of innovative technologies to meet Agency's mission





#### **EPA SBIR Budget & Awards**

#### Award Budget for FY19 = ~\$4.2 M

#### PHASE I:

Proof Of Concept

\$100,000

6 Months

Awards = Contracts

#### PHASE II:

Develop & Commercialize
Technology

\$400,000

2 Years



#### **EPA'S SBIR Program**



One of the small SBIR Programs



Provide awardees with EPA technical connection



Focus on commercialization: \$6,500 & \$100,000



Communicate successful projects



Help to protect the planet



# Solicitation Now Open! Closes July 31, 2019



Information at: <a href="https://www.epa.gov/sbir">www.epa.gov/sbir</a>

Apply at: FedConnect

Subscribe to SBIR listserv:

https://www.epa.gov/sbir/sbir-listserv



#### **Solicitation - Broad Topic Areas**



Clean & Safe Water



Air Quality



Land Revitalization



Homeland Security



Sustainable Materials Management



Safer Chemicals





#### **Clean & Safe Water**

- Sampling devices for microplastics
- Rehabilitation of water infrastructure
- Technologies for the destruction of PFAS in water and wastewater
- POU treatment for opportunistic pathogens
- Rapid detection and treatment of antibiotic resistant bacteria in wastewater
- Treatment for cyanobacteria and cyanotoxins in drinking water
- Resource Recovery for Decentralized Wastewater
   Systems





#### **Air Quality**



Innovative Air Monitoring Technologies:

- ethylene oxide (EtO)
- sulfur dioxide (SO2)



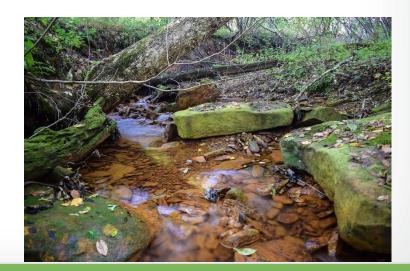


#### **Land Revitalization**



Mining site characterization and remediation







#### **Homeland Security**





- 3-D Gamma Camera to Map Radiological Contamination
- Novel water distribution and stormwater system sensors





#### **Sustainable Materials Management**



- New Applications for Industrial Non-Hazardous Secondary Materials
- Preventing Food Waste





#### **Safer Chemicals**



Safer paint and coating removal products







#### **Anticipated Schedule**

#### PHASE I

Contracts Began: Ap

April 2020

Contracts End:



September 2020

#### PHASE II

# Solicitation Open:

• September 2020

## Proposals Due:

November 2020

#### Contracts Awarded:

• May 2021

#### Option Documentation Due:

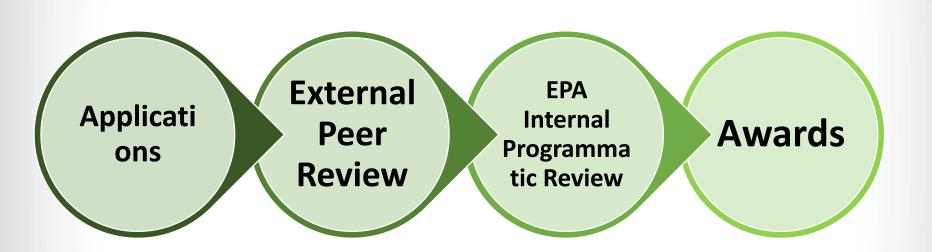
 90 days before end of Phase II contract

## Phase II Ends:

• May 2023



#### **Proposal Evaluation & Selection**





#### **External Peer Review: Phase I**

#### RATINGS

Highly Recommend

Recommend

Do Not Recommend

#### REVIEW CRITERIA

#### **Commercialization Criteria**

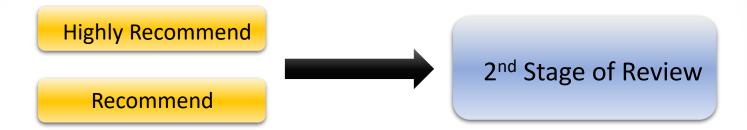
- Market Opportunity
- Company/Team
- Commercialization Approach

#### **Technical Criteria**

- Innovation
- Technical Approach
- Technical Challenges



#### **Internal Programmatic Review**



#### **EVALUATION CRITERIA**

- Relevance to Topics & Agency priorities
- Advance Sustainability





Wide use, broad application/impact



#### **SBIR Sensors Research Microsite**

The Federal government is a significant driver of sensor innovation: investing in low cost, portable, easy-to-use technologies to facilitate the collection of real time, reliable measurement information.

Central web location promotes collaboration across SBIR agencies

Easier for sensor developers to locate relevant SBIR/STTR funding opportunities





















# **EPA SBIR**Success Stories

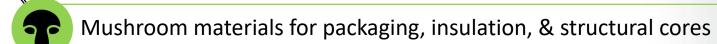




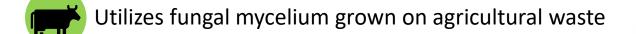
#### **Ecovative: Green Island, NY**











Renewable, Biodegradable, Compostable

Recently licensed "leather" biomaterial to Bolt Threads (Forbes, 4/2018)



#### **EP Purification: Champaign, IL**









Design/manufacture ozone-producing water disinfection systems



Systems generate any amount of ozone for precise disinfection



Available with solar panel, this allows use in +24 countries

Received the 2014 Wells Fargo Clean Energy Challenge Prize & Entrepreneurial Excellence New Venture Award



#### **For More Information**

SBIR Program Manager: April Richards <a href="mailto:richards.april@epa.gov">richards.april@epa.gov</a>

Website: www.epa.gov/sbir

**Listserv:** <a href="https://www.epa.gov/sbir/sbir-listserv">https://www.epa.gov/sbir/sbir-listserv</a>

SBA SBIR website: www.SBIR.gov



SBIR/STTR
Agency Briefings
[Tuesday]

1:20 NaThanya Ferguson – USPTO

1:30 Jeff DiTullio – FLC





#### NaThanya Ferguson – USPTO

[1:20 - 1:30pm]



UNITED STATES
PATENT AND TRADEMARK OFFICE



# USPTO Resources for Independent Inventors, Small Business Owners, and Entrepreneurs

NaThanya Ferguson Supervisory Innovation Development Program Specialist



### Types of intellectual property



### Inventor and entrepreneur resources

- USPTO's hub for resources and information for inventors, entrepreneurs, and small businesses.
- Webpage: www.uspto.gov/inventors





## Inventor and entrepreneur resources by state

Resources and assistance in your state for filing for a patent or registering a trademark

- Free patent and trademark legal assistance
- Learn to search inventions and trademarks
- Attend events in your region
- Network with inventor and entrepreneur organizations in your state
- Accessible via uspto.gov homepage
  - New to IP? Find help in your are

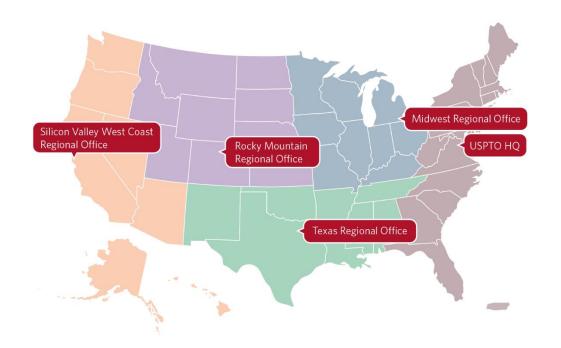








#### **USPTO** offices



#### **USPTO Headquarters**

Alexandria, VA

#### **Midwest Regional Office**

Detroit, MI Stroh Building

#### **Rocky Mountain Regional Office**

Denver, CO Byron G. Rogers Federal Building

#### **Silicon Valley Regional Office**

San Jose, CA
San Jose City Hall Building

#### **Texas Regional Office**

Dallas, TX Terminal Annex Federal Building



### Office of Innovation Development (OID)

- Targeted support to connect independent inventors, small business owners, and entrepreneurs with helpful and relevant resources and information.
- Dedicated personnel for assisting inventors who are filing an application without an attorney (pro se applicant).
  - Explanation of different types of application filings
  - Assistance with completing forms
  - Review of application (e.g., specification, drawings, and claims)
     for compliance with current regulations
- In-person assistance at USPTO headquarters and virtual assistance from select Patent and Trademark Resource Centers (PTRCs).

## **Pro Se Assistance Program**

#### Hours of Operation

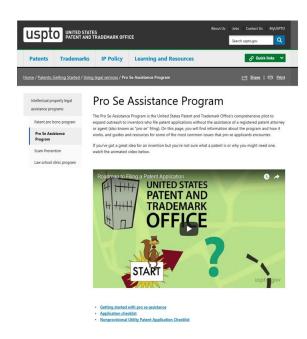
8:30 a.m. – 5 p.m. (ET),Monday through Friday

#### Email

innovationdevelopment@uspto.gov

#### Phone

- **–** (866) 757-3848
- Webpage <u>www.uspto.gov/ProSePatents</u>





### **Trademark Assistance Center (TAC)**

- Provides general information about the registration process
- Responds to status inquiries
- Hours of Operation
  - 8:30 a.m. 8 p.m. (ET), Monday through Friday
- Phone
  - (571) 272-9250 or (800) 786-9199
- Email
  - TrademarkAssistanceCenter@uspto.gov
- Webpage: <u>www.uspto.gov/TrademarkAssistance</u>



## Patent and Trademark Resource Centers (PTRC)

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



## Patent and Trademark Resource Centers (PTRCs)

- Assist in identifying relevant USPTO search tools and related resources
- Demonstrate how to use search tools to conduct a preliminary patent search
- Demonstrate how to use search tools to conduct a preliminary trademark search
- Provide access to the PubEAST and PubWEST examiner-based search systems

## Free legal assistance\*

- Patent Pro Bono Program
- Law School Clinic Certification Program

\*Applicant(s) must pay for all USPTO fees



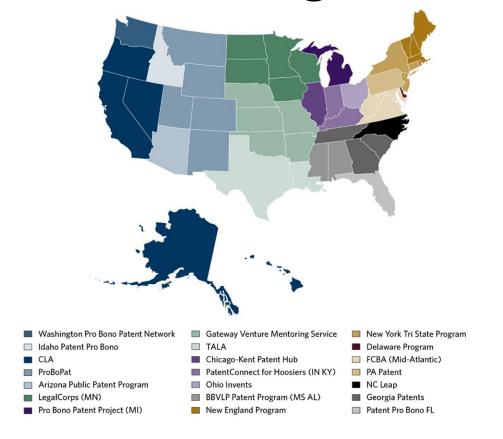
- Nationwide network of 21 independently operated regional not-for-profit programs
- Matches financially under-resourced independent inventors and small businesses with patent practitioners who volunteer their legal services
  - Patent legal services are free; applicant is responsible for other costs (filing fees, drawings, etc.)



## In general, there are 3 basic eligibility requirements:

- 1. Household income below a certain threshold
- 2. Knowledge of the patent system
- 3. You must have an invention—not just an idea







- Learn more about how to apply for patent pro bono assistance:
  - www.uspto.gov/probonopatents
- Questions? Please email: probono@uspto.gov



## **Law School Clinic Certification Program**

- Independent law school clinics that provide free patent and/or trademark legal services to qualified applicants
  - Law school students provide the services under the supervision of an experienced law school supervising attorney
  - Students practice in patent and trademark law
- 60 law schools currently participate in the program
- Website: <a href="https://www.uspto.gov/learning-and-resources/ip-policy/public-information-about-practitioners/law-school-clinic-1">www.uspto.gov/learning-and-resources/ip-policy/public-information-about-practitioners/law-school-clinic-1</a>
- Phone: (571) 272-4097
- Email: lawschoolinformation@uspto.gov



## Reduced patent fees

#### **Small Entity**

- 50% reduction in most patent fees
- Must be an individual or
- A small business (less than 500 employees) or a non-profit organization

#### **Micro-Entity**

- 75% reduction in most patent fees
- Meet small entity requirement
- Filed no more than 4 previous applications
- Income not greater than 3x median income
- Not assigned to other than a micro-entity
- Inventions assigned to employer don't count against you

For more information on Micro Entity: <a href="https://www.uspto.gov/MicroEntity">www.uspto.gov/MicroEntity</a>



#### **Patents Ombudsman Office**

- Assists applicants throughout the application process including initial filing, patent examination, and post examination
- Helps applicants get their applications back on track.
- Hours of Operation: 8:30 a.m. 8 p.m. (ET),
   Monday through Friday
  - Telephone: (571) 272-5555 or (855) 559-8589
  - Email: PatentsOmbudsmanProgram@uspto.gov
- Website:
  - www.uspto.gov/Ombudsman



## Thank you!

Office Of Innovation Development

innovationdevelopment@USPTO.GOV (571) 272-8877

For upcoming USPTO events, please visit: <a href="www.uspto.gov/events">www.uspto.gov/events</a>







Jeff DiTullio – FLC

[1:30 - 1:40pm]





#### THE FLC'S MISSION

**PROMOTE** awareness and foster dialogue about federal R&D and the significant economic benefits of T2 among government, industry academia and external partners.

**EDUCATE** the federal T2 professionals on commercialization best practice strategies through various training opportunities and resources.

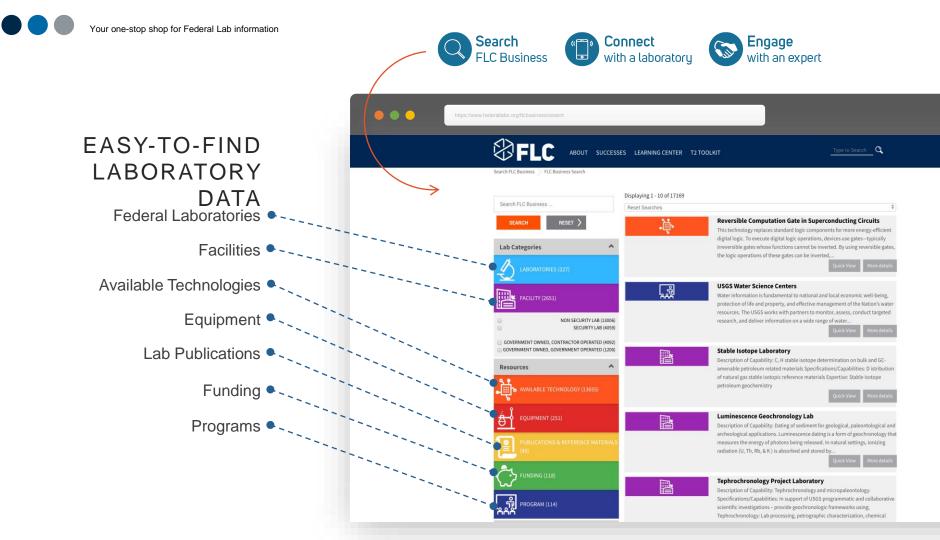
**FACILITATE** federal laboratories T2 goals through FLC-created tools and services that enable an accessible path for getting technologies from lab to market.

Foster lab-to-market strategies and connections to accelerate federal technologies.













#### **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?
- Individuals?
- Other?

**✓YES** 

**√YES** 

**√YES** 

## SBIR Example – NSWC CRANE

- US Army Phase II SBIR Project Flex Force Enterprises
- CRADA with NSWC Crane
  - Joint Research & Development of Improved Stabilized Weapons Platforms
  - Allows for the exchange of information, intellectual property, guidance and ideas on how to provide improved accuracy of stabilized weapon platforms.
- Mutual Benefit for both parties
  - Access to expertise and end users
  - Fed lab involved in cutting edge R&D Efforts in a critical tech area











## SBIR Example – Naval Medical Center

- 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

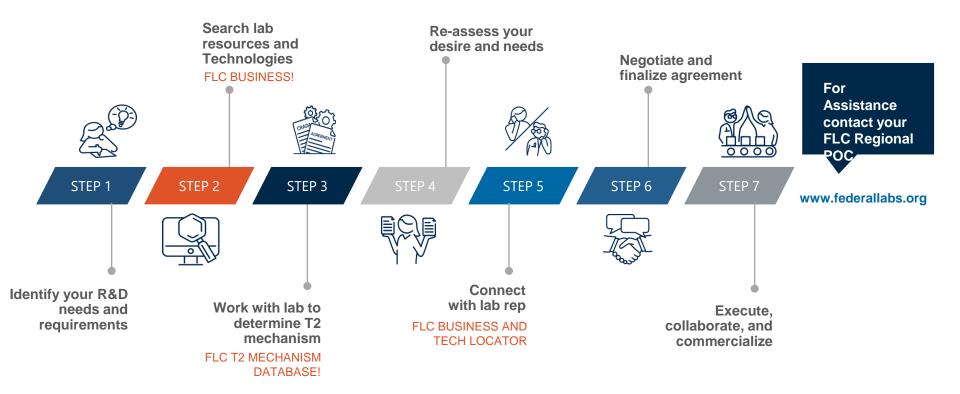


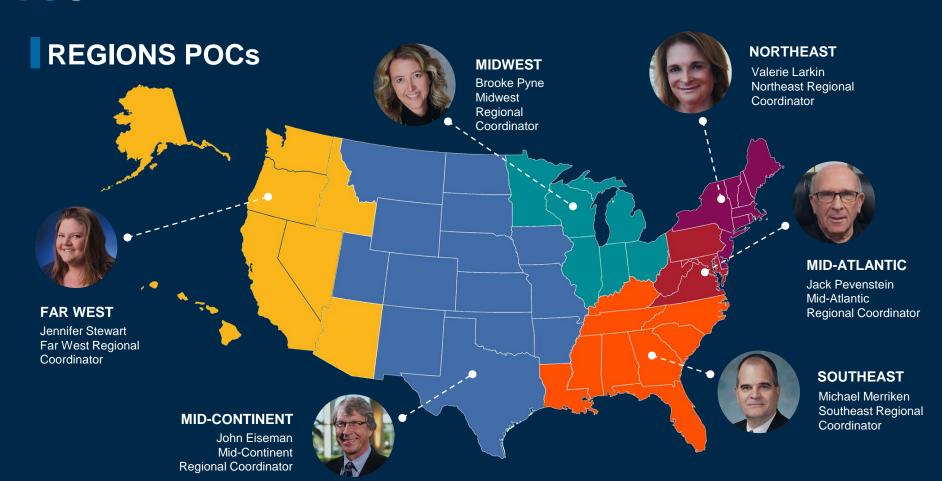






#### **T2 SUCCESS TRACK**





## CONNECT WITH US!

flcbusiness.org





## ? QUESTIONS

Thank you!

