National Science Foundation: America's Seed Fund for Innovative Technology

March 2020

mti
Maine Technology Institute

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Agenda

1. SBIR/STTR Overview
2. Company Considerations
3. NSF SBIR/STTR Overview - Virtual
4. NSF Solicitation/Review Process
5. Registrations
6. MTI Support Programs & MCE
7. Next Steps

SBIR/STTR Overview

SBIR/STTR Program Facts

- SBIR: Small Business Innovation Research
  - Small business must perform minimum 67% of work (Ph I), 50% (Ph II) outsources balance of effort to subcontractors/consultants
  - May partner with non-profit research institution
- STTR: Small Business Technology Transfer
  - Small business performs minimum 40% of work, and
  - MUST partner with research institution (30%),
  - Balance is discretionary
  - Negotiate allocation of IP rights

Three Phase Process

Phase I
Concept Development
6 months – 1 year
~ $250,000

Phase II
Prototype Development
24 months
~ $1,250,000

Phase III
Commercialization
No SBIR funding

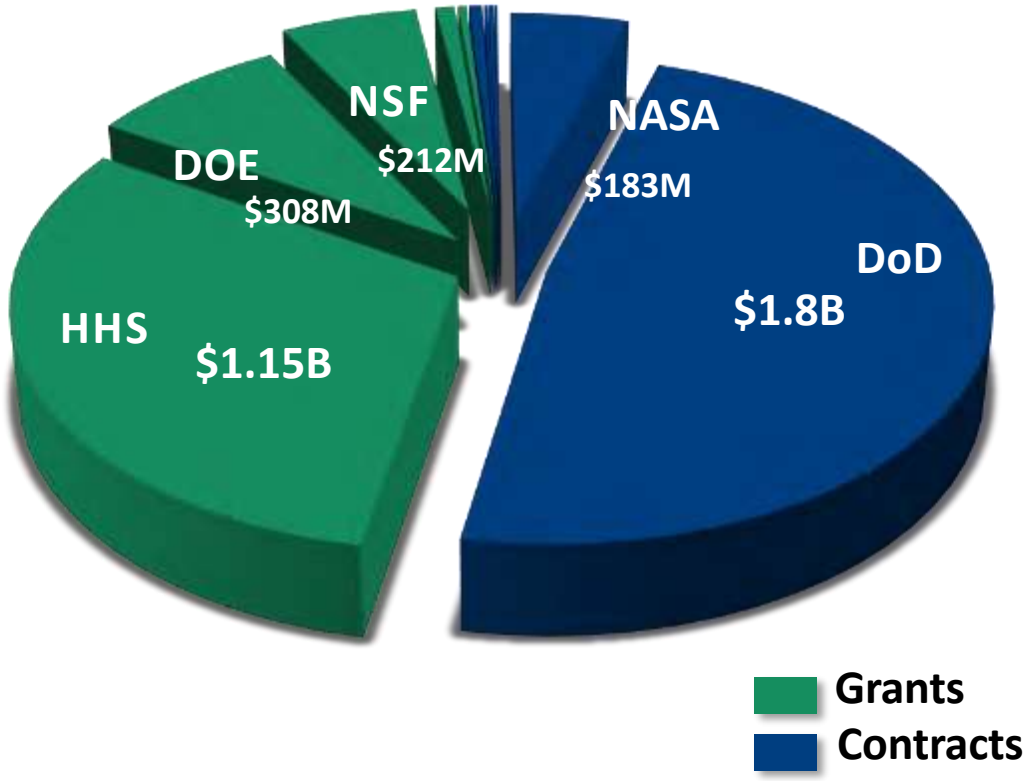
Solicitation to Award Process

Find Solicitation → **Proposal Submission** → **Evaluation** → **Award Phase I**

FY2019 SBIR/STTR Budgets by Agency

Agencies	Budget
Department of Defense (DoD)*	$1.80 B
Department of Health and Human Services (HHS)**, including the National Institutes of Health (NIH)	$1.15 B
Department of Energy (DOE), including Advanced Research Projects Agency – Energy (ARPA-E)	$308 M
National Science Foundation (NSF)	$212 M
National Aeronautics and Space Administration (NASA)	$183 M
U.S. Department of Agriculture (USDA)	$30 M
Department of Homeland Security (DHS)	$17 M
Department of Commerce: National Oceanic and Atmospheric Administration (NOAA)	$9.5 M
Department of Education (ED)	$8.4 M
Department of Transportation (DOT)	$5.2 M
Department of Commerce: National Institute of Standards and Technology (NIST)	$3.9 M
Environmental Protection Agency (EPA)*	$3.6 M

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



SBIR: $3.28 Billion
STTR: $453 Million

The SBIR/STTR Process Summary

- 11 agencies have Small Business Innovation Research (SBIR) Program
- 5 agencies have Small Business Technology Transfer (STTR) Program
- Gated Program – Phase I ➡ Phase II ➡ Phase III 
  - With exceptions and caveats
- Agencies issue solicitation with topics of interest
- Small Businesses submit technically competitive proposals
- Agencies award over 5,000 grants or contracts

Company Considerations

SBIR/STTR Program Facts

- For Small Businesses that are:
  - Independently owned and operated
  - Organized for-profit
  - Principal place of business is in the USA
  - 51% + ownership by US citizens/permanent residents
  - 500 or less employees, including affiliates
  - Principal Investigator (PI) leading the effort must be more than 50% employee of the business
- Small Businesses are always the applicant

Why Participate?

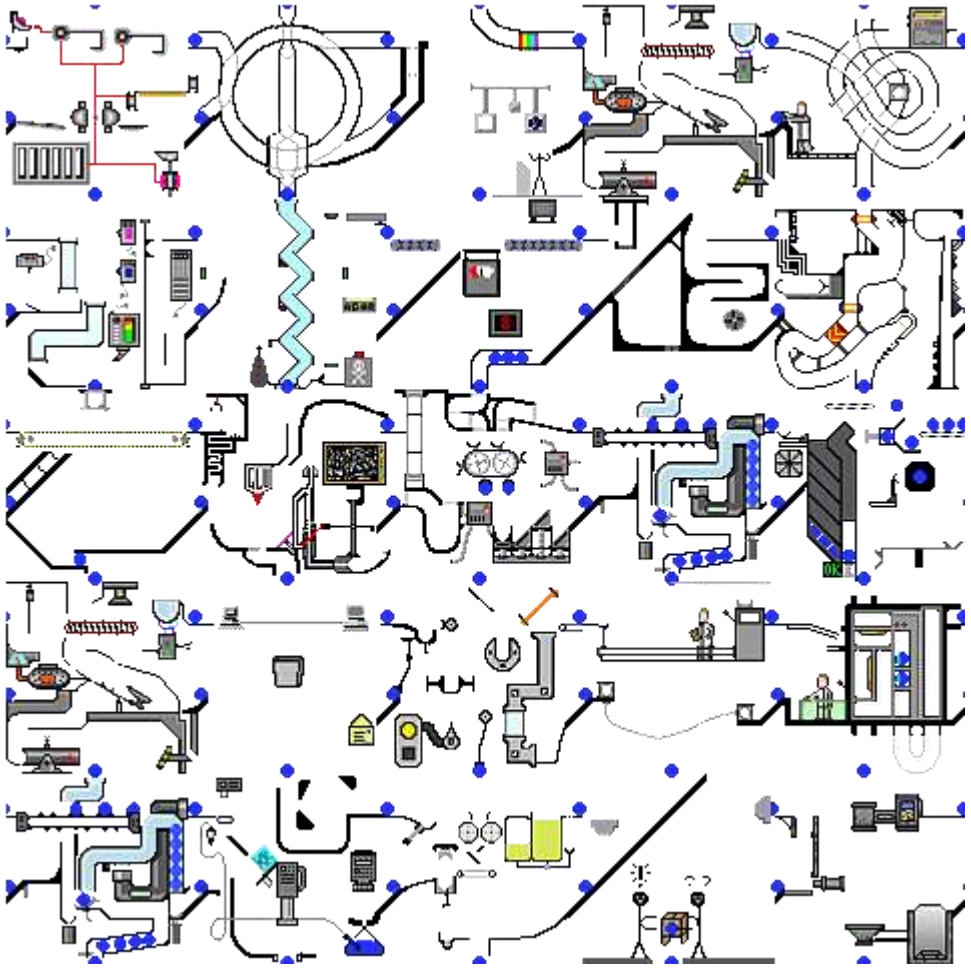
- Ideas are Investigator-Initiated
- Requires NO REPAYMENT of monies received – grant or contract
- Requires NO EQUITY sacrifice
- Intellectual property rights remain with small business
- Follow-on Phase III awards are sole source up to 5 years from date of last SBIR/STTR award
- Normally only source of early stage funding for R&D

Is the SBIR/STTR Program Right for My Company?

- Do you have an innovative idea for a product, process or service?
- Does developing this technology meet your company goals and mission?
- Do you have the technical competence to oversee the effort?
- If not, do you have access to resources to build a credible team?
- Does your project have broad societal merit with a strong ROI?
- Do you want up to $1.25M to conduct early-stage, high-risk development of innovative technology?
- Are you patient? Typically 3-4 years process from idea to market.

Other Questions to Consider

- ❑ In 3-5 years where do I want the technology to be?
- ❑ Do I see myself running the business?
- ❑ How can I partner with an existing business?
- ❑ How can I gather the necessary resources
- ❑ What do my business and technical roadmaps look like?



NSF SBIR/STTR Program Overview

www.seedfund.nsf.gov

NSF Topic Areas

- Advanced Manufacturing (M)
- Advanced Materials (AM)
- Artificial Intelligence (AI)
- Biological Technologies (BT)
- Biomedical Technologies (BM)
- Chemical Technologies (CT)
- Digital Health (DH)
- Distributed Ledger (DL)
- Energy Technologies (EN)
- Environmental Technologies (ET)
- Information Technologies (IT)
- Instrumentation and Hardware Systems (IH)
- Internet of Things (I)
- Medical Devices (MD)
- Nanotechnology (N)
- Other Topics (OT)
- Pharmaceutical Technologies (PT)
- Photonics (PH)
- Power Management (PM)
- Quantum Information Technologies (QT)
- Robotics (R)
- Semiconductors (S)
- Space (SP)
- Wireless Technologies (W)

Project Pitch

- Must submit Pitch in order to receive invite
- 4 areas – either 500 or 250 words
- Three-week review by NSF
- Must show commercial potential
- Must show societal benefit
- Must have technical risk
- Invite is good for one year
- MTI and MCE can help you draft a convincing Pitch

Review Process

Criteria for Award

- Evaluation is based on:
  - scientific and technical merit,
  - commercial potential,
  - firms' qualifications, and
  - societal benefits
- Proposals reviewed by outside experts – academia, businesses and consultants
- Subcontracting to universities and labs are permitted and encouraged
- NSF Phase IIB – Match funding program – up to $1M

Timeline to Commercialization

- Write and submit a proposal - 2 to 4 months
- 4 to 6 - month review process by internal or external panel of reviewers
- 1 to 2 month award process
- 6 to 9 month period of performance for Phase I
- Submit Phase II proposal
- 4 - month review process
- 2 - year period of performance for Phase II
- Commercialization

On average a 3-4 year program but uses OPM (other people's money)!

SBIR/STTR Reality

- Highly Competitive – Requires excellence in all aspects of competition process
- Funding generally NOT CONTINUOUS between Phase I and Phase II
- A credible project team must be assembled
- A viable commercialization plan is critical
- You need to submit an excellent and compelling proposal that excites reviewers, is complete and is innovative

Registrations

Registrations

Register the business with the IRS and receive a Taxpayer Identification Number
Register with Dun & Bradstreet at http://fedgov.dnb.com/webform (free, 1 day)
Register with System for Award Management (SAM) at https://www.sam.gov (free)
Register with SBIR.gov: www.sbir.gov
Register with NSF: www.research.gov/
NSF Submission Portal: https://www.fastlane.nsf.gov/index.jsp
This is where forms are completed and documents uploaded

Register early - There are no exceptions – except death or illness

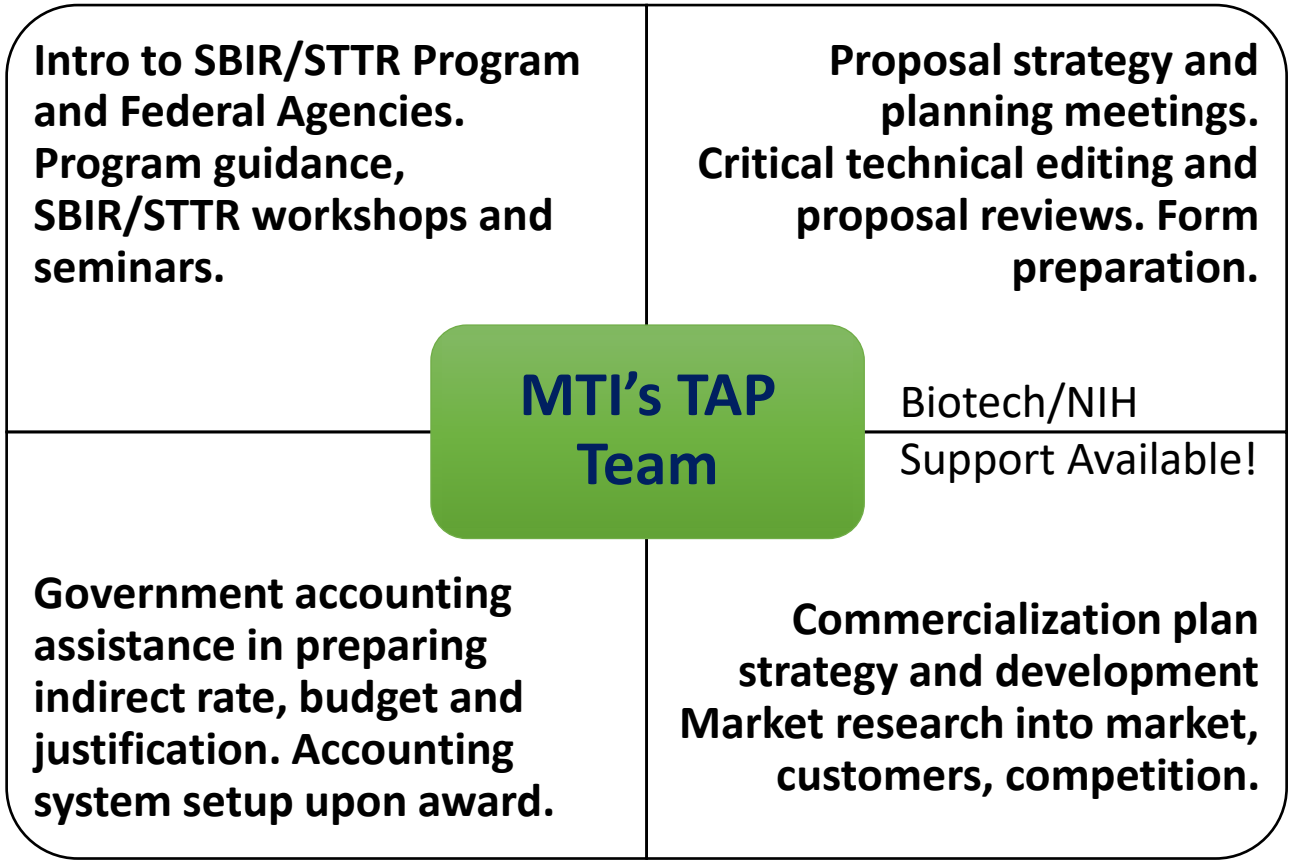
Contact your local counselor from the Maine PTAC for assistance – www.mptac.org

Registrations are free!

Support Programs:

MTI's SBIR/STTR Technical Assistance Program (TAP)

MCE Programs



MTI - Funding opportunities to defray the costs of writing a Phase I/II proposal and to support Biz Dev. Activities in support of an award

MAINE CENTER FOR ENTREPRENEURS

Since 1997 MCE has empowered Maine's most promising entrepreneurs through accelerator programs, partnerships, and a network of over 130 mentors.

TopGun

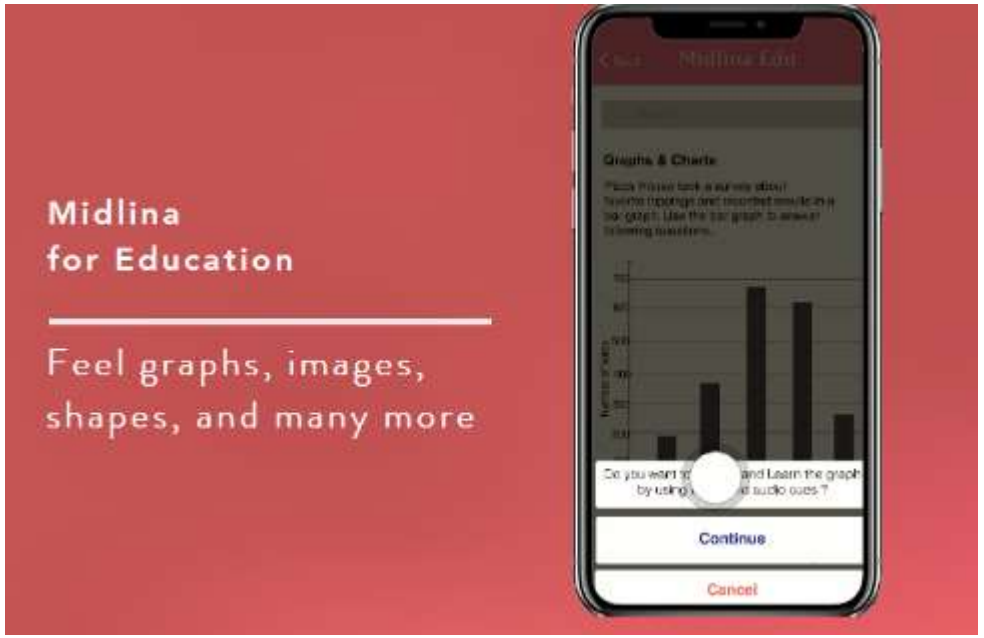
Cultivator
FOOD, BEVERAGE & AG ACCELERATOR

MarketShare Accel
FOOD, BEVERAGE & AG SALES ACCELERATOR

- **SBA Growth Accelerator Grant**
- Life Sciences Summit – 2019 and 2020
- New Emerging Technologies Group

Maine SBIR/STTR Award Snapshot

- Over 114 small businesses have won 397 awards
- Maine's small businesses have received over $115M since 1997
- Businesses in all 16 Maine counties have received awards
- With MTI support, companies tend to have a *higher* success rate than going it alone!



UNAR Lab, Inc.

Phase I SBIR award from NSF $225,000

Development of Multimodal Interface for Improving Independence of Blind and Visually –Impaired People

Phase II – Just submitted - $1,000,000

Montalvo Corporation

Phase I and II SBIR awards from the National Science Foundation
Phase I Total: $225,000
Phase II Total: $750,000

Title: Modular Tensioning Cartridge

Introspective Systems, Inc.

"Don't apply to every SBIR that you could possibly do. Focus on ones that legitimately extend your technology and move you toward your company's end goal."

Kay Aikin, CEO

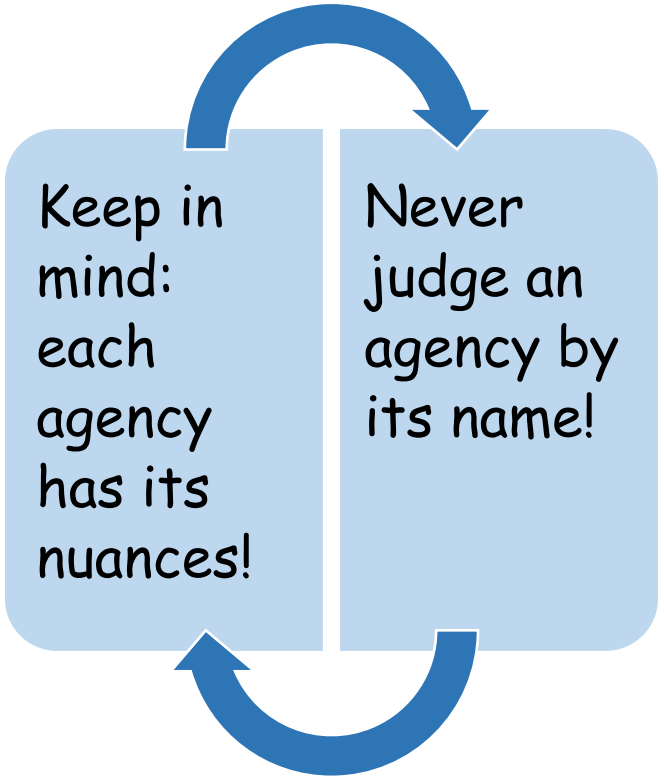
Numerous Phase I/II's from the Department of Energy

Topic Areas – National Grid, MicroGrids, Energy Transactions

Next Steps

Technology Fit and Situation

- Search the literature
- Conduct market research
- Talk to others
- Understand what differentiates your approach and technology from others
- Research agencies, topics and determine fit
- Review www.SBIR.gov
  - Closed topics
  - Closed awards
  - Open solicitations
  - Tutorials
  - Talk to agency program manager



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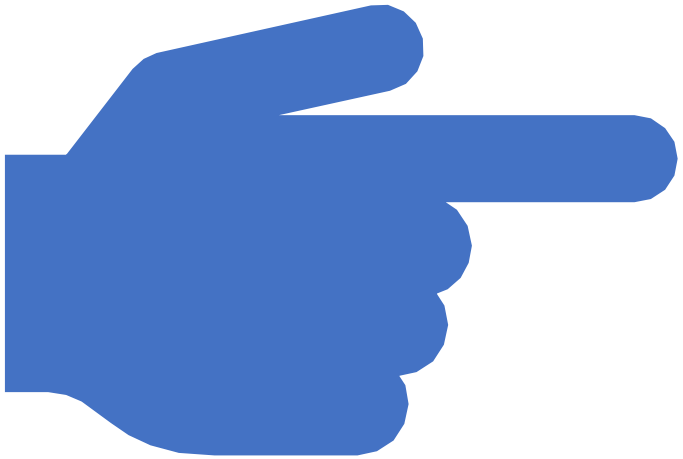

- Get Registered – contact Maine PTAC for assistance up to 5 required registrations
- Contact Karen West!
- Get mentally prepared to spend 140-180 hours to write a competitive proposal
- Pull together your team
- Understand where your technology fits into the market
- Read the solicitation, over and over and over again
- Understand the elements of a proposal
- Have faith that you can do it!

Thank You!

Karen West
cpmgmt@fairpoint.net
(207) 845-2934

www.mainetechnology.org