The DOE Webinar is scheduled to begin at 2:00 p.m. ET

AMERICA'S SEED FUND SBIR·STTR

- **Why is there no sound?**
  - This webinar is broadcast via your computer. You may need to turn your volume on or up as the sound for this webinar comes through your computer speakers.
    - We recommend using GOOGLE CHROME for this and other DOE SBIR webinars.
    - Use the dial-in number if you are having trouble with your computer sound
- **Will DOE provide access to the recorded webinar after the meeting?**
  - Yes, we will post the slides and the recorded webinar on the DOE SBIR/STTR web site.
- **Where can I find the FOA being discussed today?**
  - This link will take you to the FY 2023 Phase I Release 1 FOA: https://science.osti.gov/sbir/Funding-Opportunities
- **What if my question was not answered at today's webinar?**
  - If you have a question about the grant application process, please send us an email at: sbir-sttr@science.doe.gov or call us at (301) 903-5707

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

DOE's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs

Eileen Chant

Outreach Manager, DOE Office of SBIR/STTR Programs

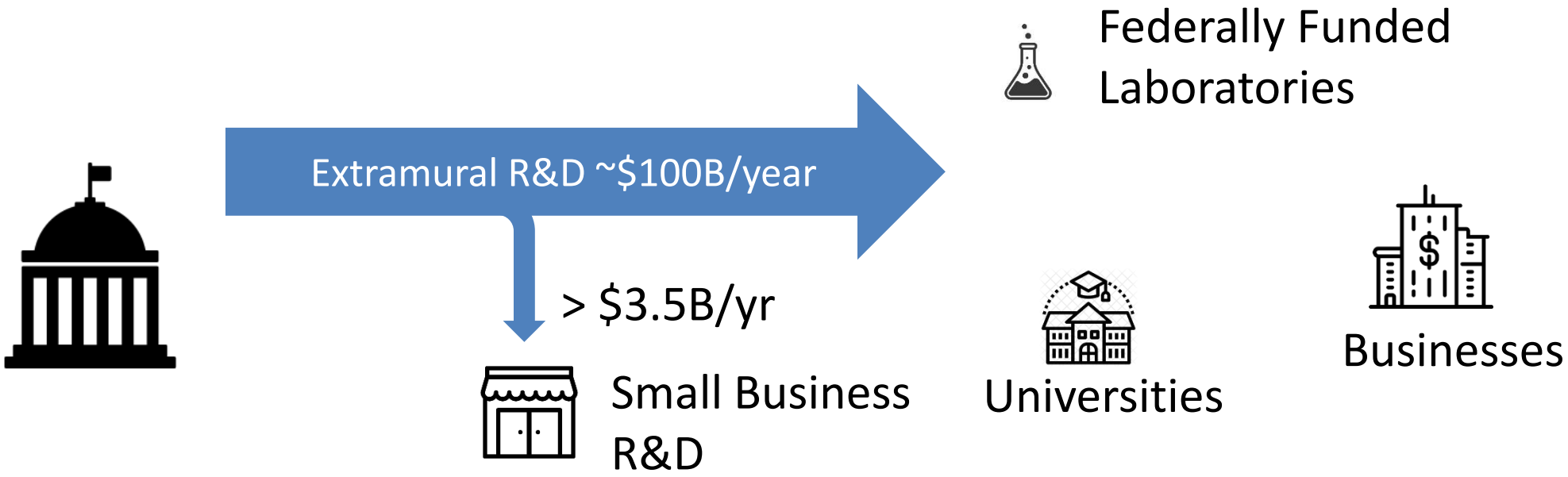
eileen.chant@science.doe.gov, (301) 903-5713

August 12, 2022

Federal SBIR/STTR Programs Overview

What is the Federal SBIR/STTR Program?

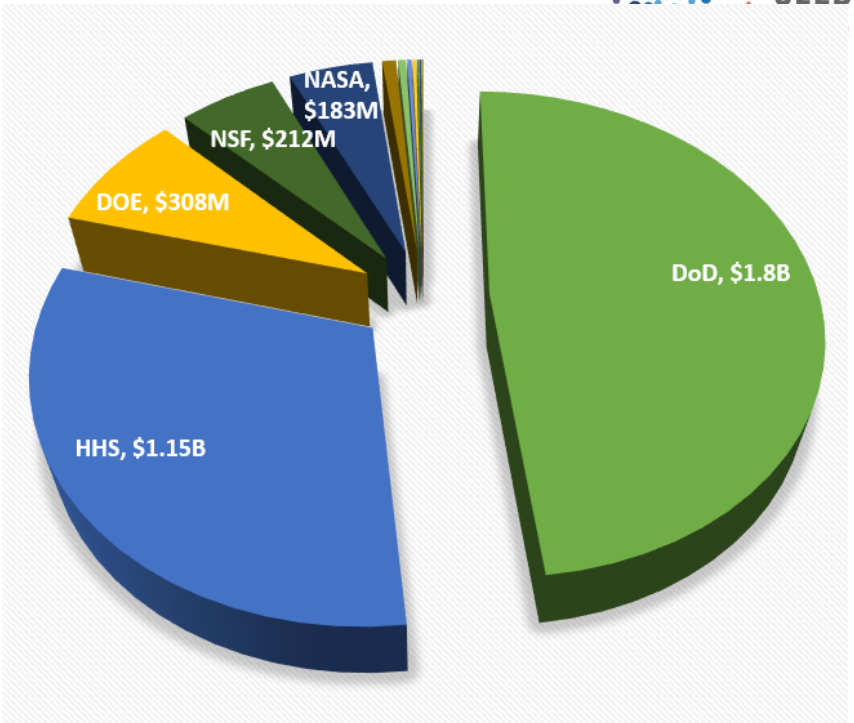
- A >$3.7 Billion early stage nondilutive R&D fund for small businesses
- A mechanism to fund best early-stage high-risk innovation ideas
- Funds ideas that are too high risk for the private sector
- Stimulates technological innovation



Estimated SBIR/STTR Budgets by Agency, FY 2019

AMERICA'S SEED FUND
·STTR

Agency	Budget (Millions)
Department of Defense (DoD)	$ 1,800
Department of Health and Human Services (HHS), incl. National Institute of Health (NIH)	$ 1,150
Department of Energy (DOE), incl. Advanced Research Projects Agency (ARPA -E)	$ 308
National Science Foundation (NSF)	$ 212
National Aeronautics and Space Administration (NASA)	$ 183
Department of Agriculture (USDA)	$ 30
Department of Homeland Security (DHS)	$ 17
Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Institute of Standards and Technology (NIST)	$ 13
Department of Education (ED)	$ 8.4
Department of Transportation (DOT)	$ 5.2
Environmental Protection Agency (EPA)	$ 3.6



SBIR: $3.28 Billion
STTR: $453 Million

Contracting agency
Granting agency
Both

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

Are Agencies' Programs all the Same?

- There are lots of differences!
- Grants vs Contracts
- Focused topics (e.g. DOE), to no topics (e.g. NSF)
- Who will be your customer? Not likely to be DOE, maybe DoD
- Application processes, systems and deadlines are all different

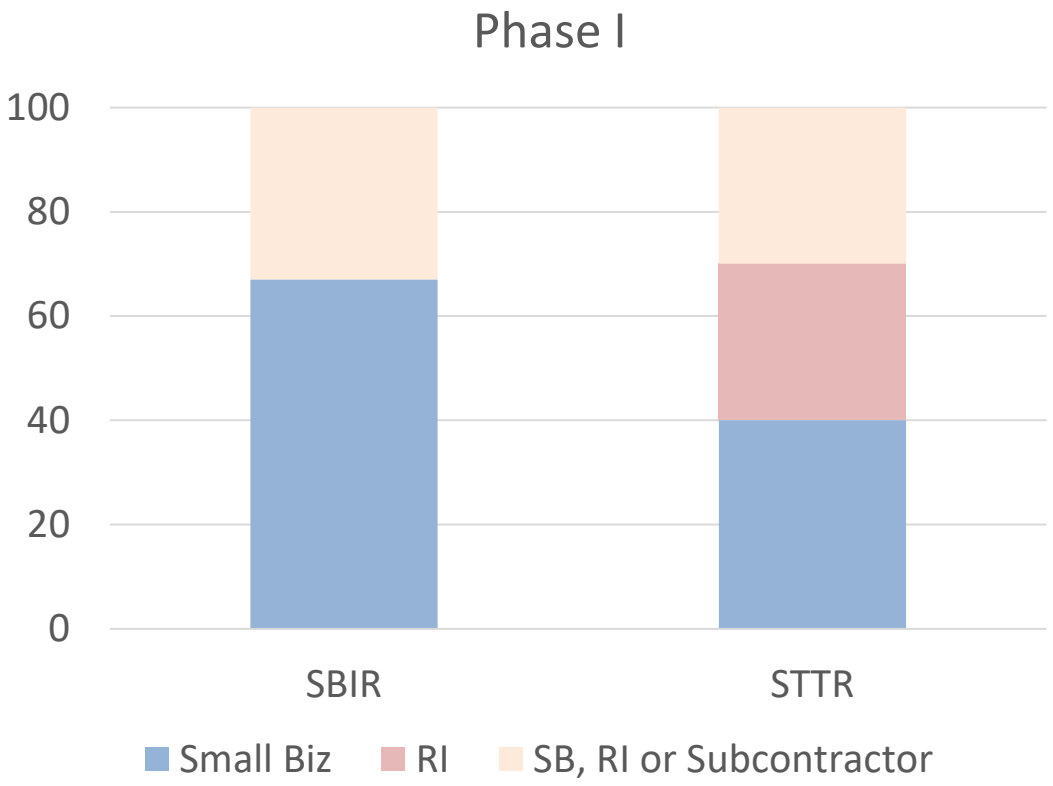
Get to know the agencies you are interested in

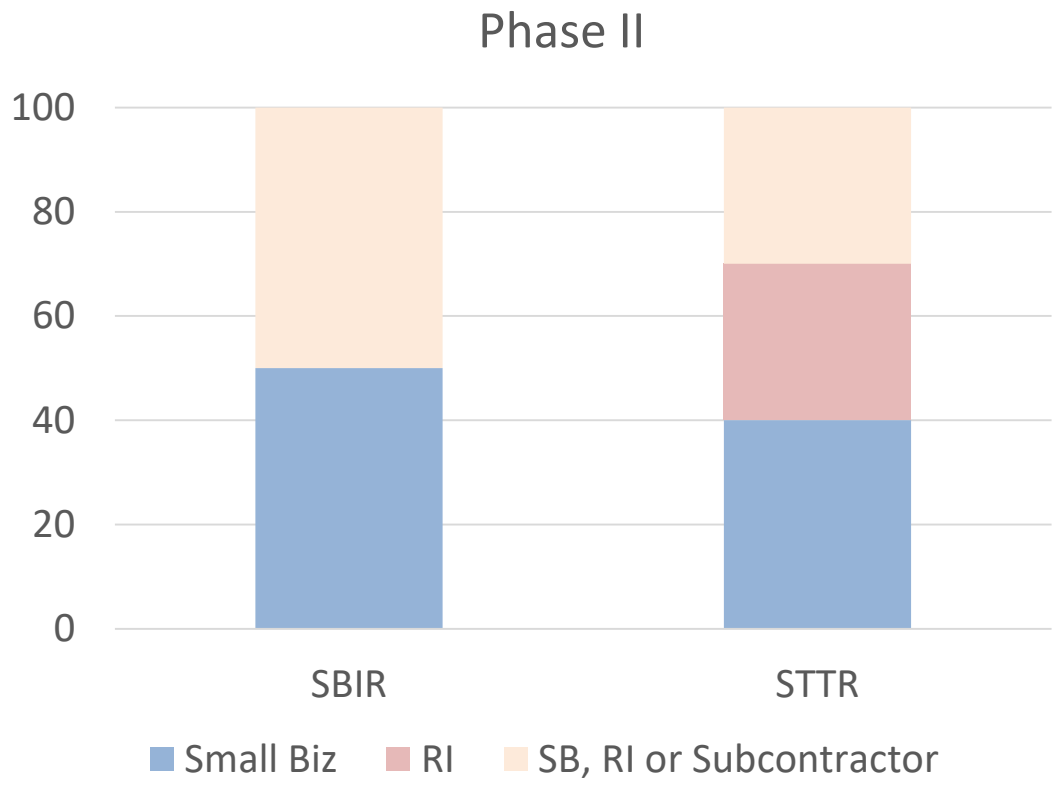
SBIR vs STTR

Small Business Innovation Research (SBIR) est. 1982	**Small Business Technology Transfer (STTR)** est. 1992
• Allows non-profit research institution partner • Principal Investigator (PI) employee of small business	• Foster technology transfer between small business concerns and research institutions • Requires non-profit research institution (RI) partner • PI can be employee of either small business or RI
If you fulfill requirements of SBIR & STIR, you can submit the same application to both programs *They are two pots of funding*	

SBIR and STTR were reauthorized on December 23, 2016 (P.L. 114-840) through September 30, 2022

SBIR vs STTR – R&D expenditure requirements in %





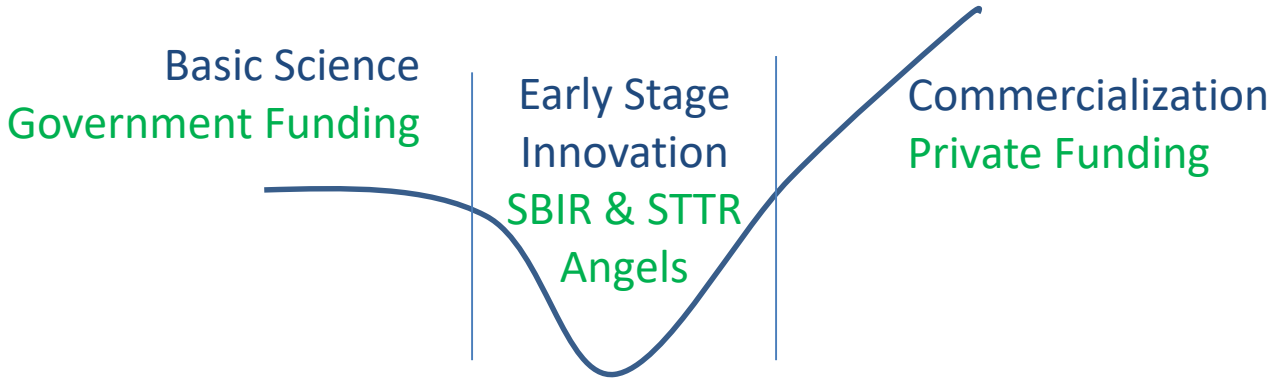
Our level of effort workbook can be used to ensure compliance prior to submitting your proposal

Small Business Eligibility for SBIR & STTR

- For-profit U.S. business
- 500 employees or fewer, including affiliates
- Ownership *(applies to all agencies)*
  - Be a concern which is more than 50% directly owned and controlled by one or more individuals (who are citizens or permanent resident aliens of the United States), other small business concerns (each of which is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the United States), or any combination of these
  - Joint ventures where the entities meet the requirements above
- Portfolio Companies *(some agencies, **not DOE**)*
  - Be a concern which is more than 50% owned by multiple venture capital operating companies, hedge funds, private equity firms, or any combination of these. No single venture capital operating company, hedge fund, or private equity firm may own more than 50% of the concern.
- Performance of R&D
  - All R&D must be performed in the United States

SBIR and STTR Awards

- Critical, Early-Stage R/R&D funding
  - The SBIR & STTR programs provide funding for innovative, early-stage research
  - Awards process is competitive, i.e. high quality and aligned applications are funded
  - SBIR & STTR awards provide credibility when seeking investors or partners
- SBIR/STTR awards are executed as grants or contracts
  - No repayment
  - No dilution of company equity
  - No cost sharing is required for Phases I and II

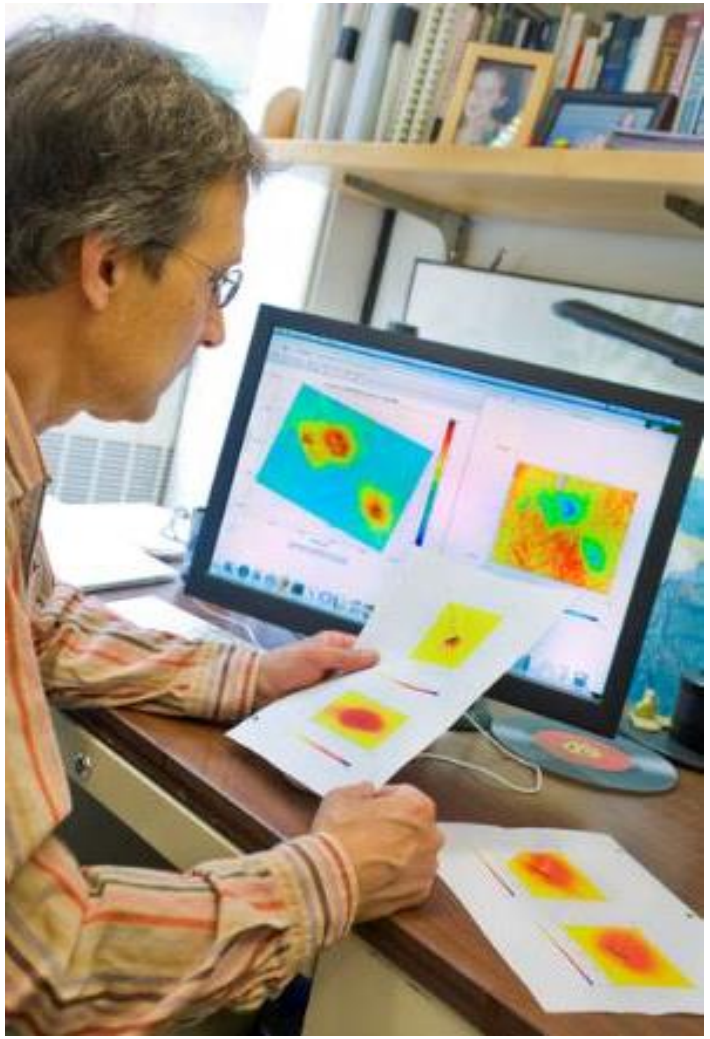


Intellectual Property

- Patent rights
  - Small business concerns normally retain the principal worldwide patent rights to any invention developed with Government support
- Government Use
  - The Federal Government receives a royalty-free license for Federal Government use

Data Protection

- Protection Period
  - Data generated from Phase I and II awards is protected from public disclosure for a minimum of 20 years from the start of your award. New policy change implemented in 2019
- Government Use
  - The Government retains a royalty-free license for Government use of any technical data delivered under an SBIR award, whether patented or not



U. S. Department of Energy Mission & Program Offices

- **DOE's Mission** is to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions.
  - **Goal 1:** Catalyze the timely, material, and efficient transformation of the nation's energy system and secure **U.S. leadership in energy technologies**.
  - **Goal 2:** Maintain a **vibrant U.S. effort in science and engineering** as a cornerstone of our economic prosperity, with clear leadership in strategic areas.
  - **Goal 3:** Enhance **nuclear security** through defense, nonproliferation, and environmental efforts.

Program Offices Participating in DOE SBIR/STTR

Cyber Security, Energy Security and Emergency Response
Electricity
Fossil Energy and Carbon Management
Energy Efficiency and Renewable Energy
Nuclear Energy
Advanced Scientific Computing Research*
Basic Energy Sciences*
Biological and Environmental Research*
Fusion Energy Sciences
High Energy Physics
Nuclear Physics*
Defense Nuclear Nonproliferation
Environmental Management

* Release 1

FY 2023 Phase I Funding Opportunity Announcements

AMERICA'S SEED FUND SBIR·STTR

Release 1

Jul 11 (topics) → Oct 11 (due)

- Office of Advanced Scientific Computing Research (ASCR)
- Office of Basic Energy Sciences (BES)
- Office of Biological and Environmental Research (BER)
- Office of Nuclear Physics (NP)

https://science.osti.gov/sbir/Funding-Opportunities

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

Release 2

Nov 7 (topics) → Feb 21 (due)

- Office of Cyber Security, Energy Security, and Emergency Response (CESER)
- Office of Defense Nuclear Nonproliferation (NA)
- Office of Electricity (OE)
- Office of Energy Efficiency and Renewable Energy (EERE)
- Office of Fossil Energy and Carbon Management (FECM)
- Office of Fusion Energy Sciences (FES)
- Office of High Energy Physics (HEP)
- Office of Nuclear Energy (NE)
- Office of Environment Management (EM)

Specific Topics Aligned with DOE Mission

AMERICA'S SEED FUND SBIR·STTR

Leadership in Clean Energy

- Advanced Turbine Technology
- Clean Coal, Oil and Gas Technologies
- Advanced Materials/Technologies for Nuclear Energy
- Smart Grid Technologies
- Cyber Security
- Energy Storage
- Bio-energy & Biofuels
- Hydrogen & Fuel Cells
- Solar Power
- Water Power
- Wind Energy
- Advanced Manufacturing
- Efficient Buildings & Vehicles

Leadership in Basic Energy and Engineering Sciences

- Advanced Detectors
- Accelerator technology
- RF Components and Systems
- Data Acquisition, Processing and Analysis
- Fusion Energy Systems
- High Performance Computing & Networking
- Quantum Information Sciences
- Modeling and Simulation
- Atmospheric Measurement Technology
- Genomic Science and Related Biotechnologies
- Advanced Sources: neutron, x-ray, electron

Enhancement of Nuclear Security

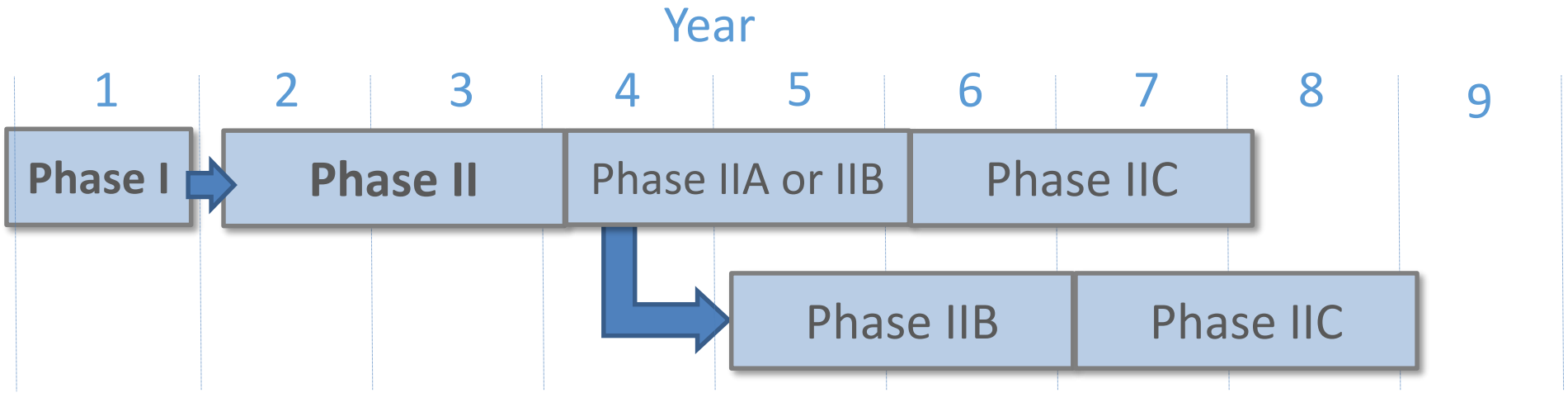
- Advanced Detectors
- Novel Radiation Monitoring Concepts
- In Situ Remediation
- Facility Deactivation and Decommissioning
- Remote Sensing
- Global Nuclear Safeguards R&D
- Nuclear Detonation Detection

Specific – but many more topics than you would expect

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

[Review topics at https://science.osti.gov/sbir/Funding-Opportunities](https://science.osti.gov/sbir/Funding-Opportunities)

How does our funding work?



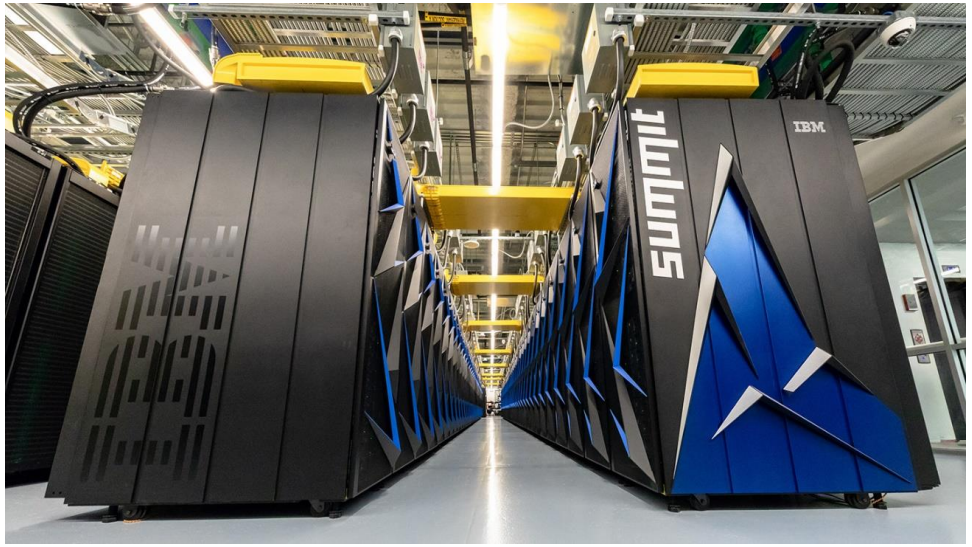
Phase I	Phase II	Phase IIA/IIB	Phase IIC
• Two annual Funding Opportunity Announcements • Focused, mission-aligned topics • Proof of feasibility • Feedback provided on letters of intent • $200,000/$250,000 • 6 - 12 months duration • ~ 350-400 awards per year	• Phase I awardees apply for Phase II the following year • Focus on prototype, demonstration and commercialization • $1,100,000/$1,600,000 • 2 years duration • ~ 160 awards per year	• For projects that require additional R&D funding to transition to commercialization • $1,100,000 • 2 years duration • ~30 awards per year	• Pilot program to leverage 1:1 matching funds for commercialization • $1,100,000 • 2 years duration

Release 1 Technology Areas
Topics Released: July 11, 2022

DOE SBIR & STTR Programs: Technology Areas

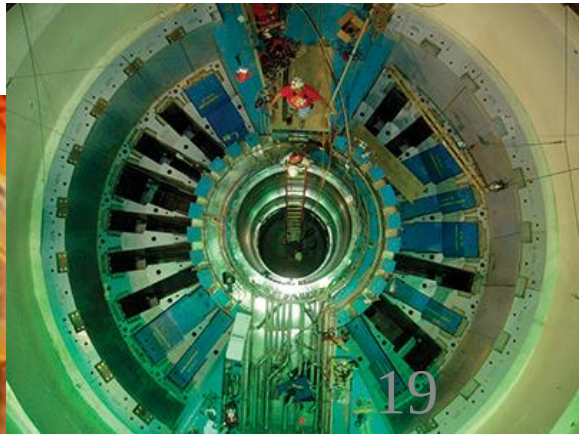
Advanced Scientific Computing Research

- Website: [Advanced Scientific Computing Research]



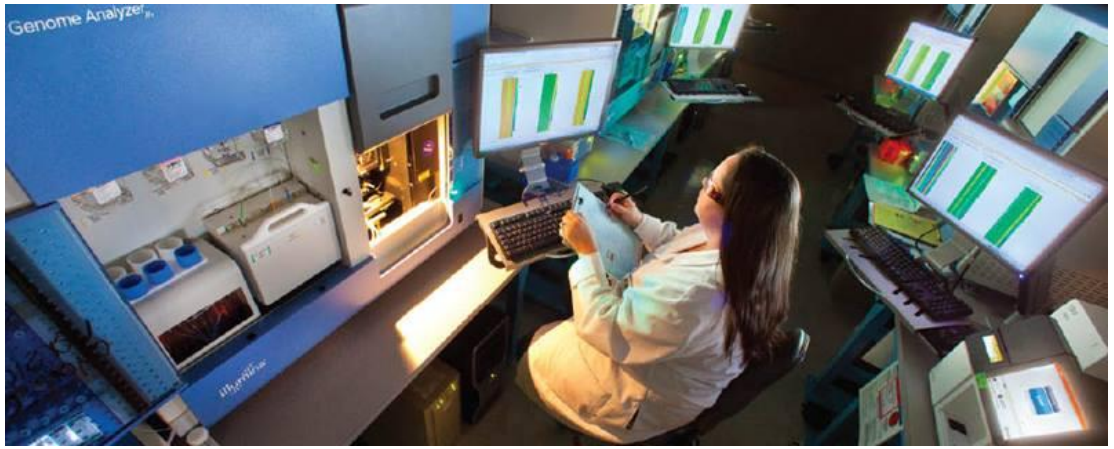
Basic Energy Sciences

- Website: [Basic Energy Sciences]



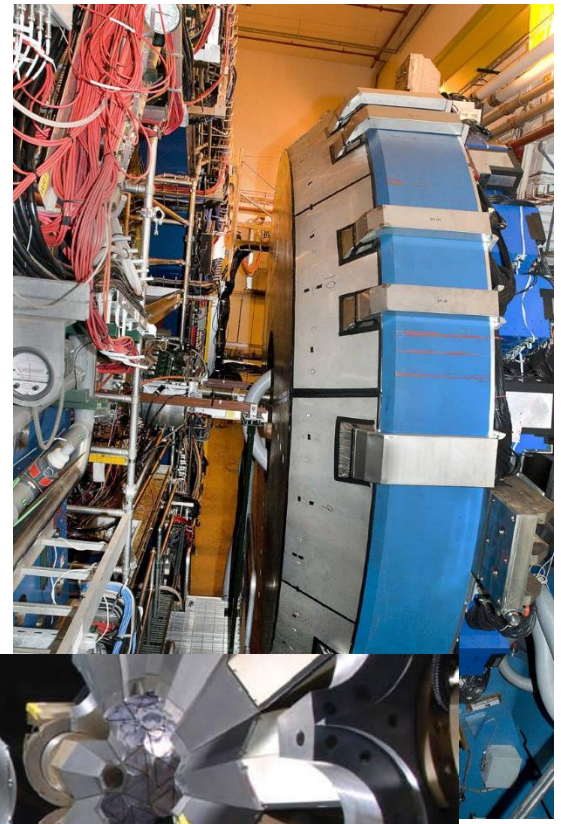
Biological and Environmental Research

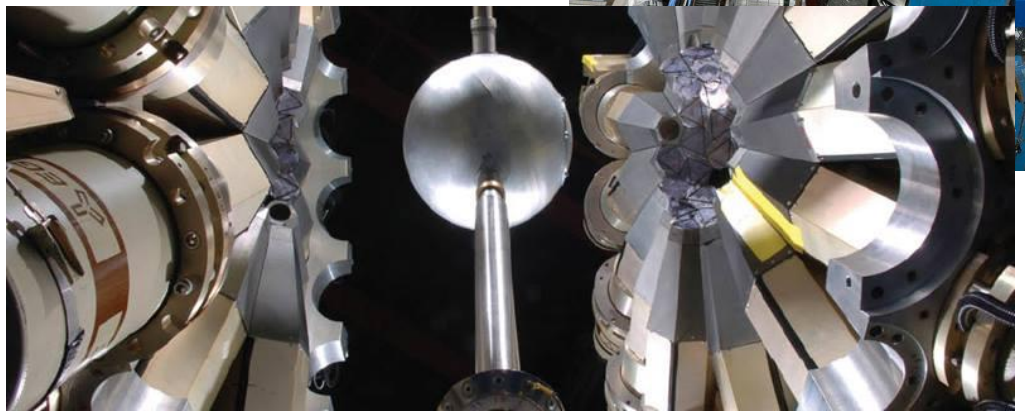
- Website: [Biological and Environmental Research]



Nuclear Physics

- Website: [Nuclear Physics]





Release 2 Technology Areas
Topics Released: November 7, 2022

DOE SBIR & STTR Programs: Technology Areas

FY2023 Phase I Release 2 Program Offices

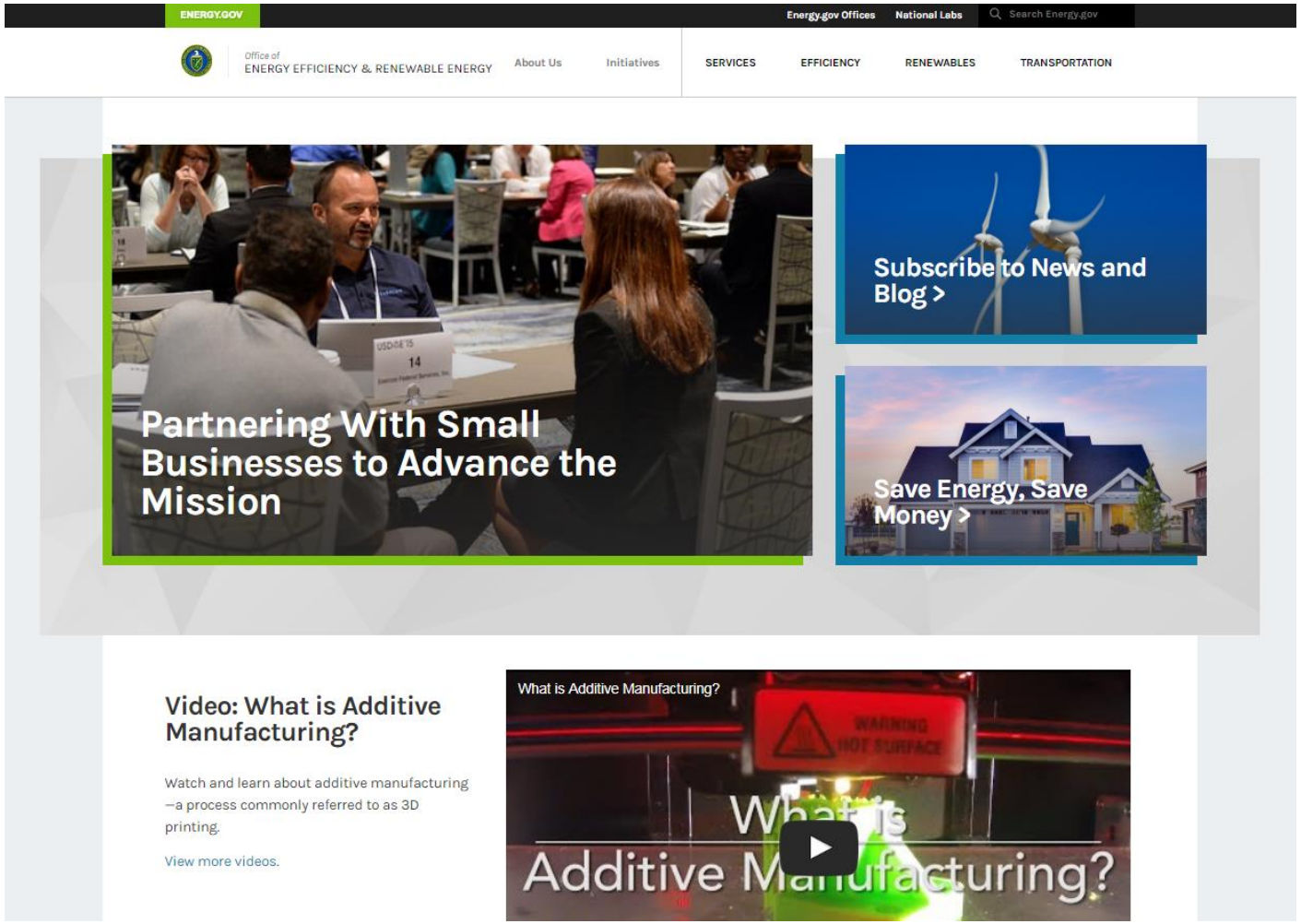
Release 2

November 8 (topics) → February 21 (applications due)

- Cyber Security, Energy Security, and Emergency Response
- Defense Nuclear Nonproliferation
- Electricity
- Energy Efficiency and Renewable Energy
- Fossil Energy and Carbon Management
- Fusion Energy Sciences
- High Energy Physics
- Nuclear Energy
- Environment Management

Information Available at DOE Program Office Websites

- Mission
- Funding Priorities and Announcements (non-SBIR)
- Technical Reference Data and Reports
- Workshop & Conference Proceedings
- Contact Information



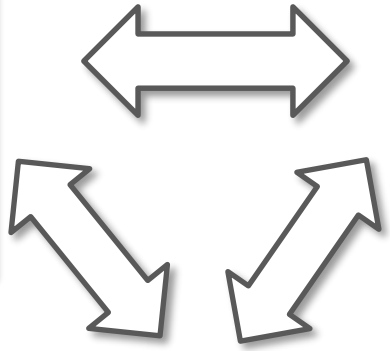
DOE SBIR & STTR Programs: Application & Award Process

Operation of the DOE SBIR and STTR Programs

Technical Expertise Leveraged Throughout DOE

DOE Program Office

- Develop Topics
- Identify Reviewers (Scientific Peer Review)
- Recommend Awardees
- Oversee Projects



Single Grants Office for Awardees

DOE Chicago Office

- Negotiate Grants
- Issue New and Continuation Awards
- Grant Closeout

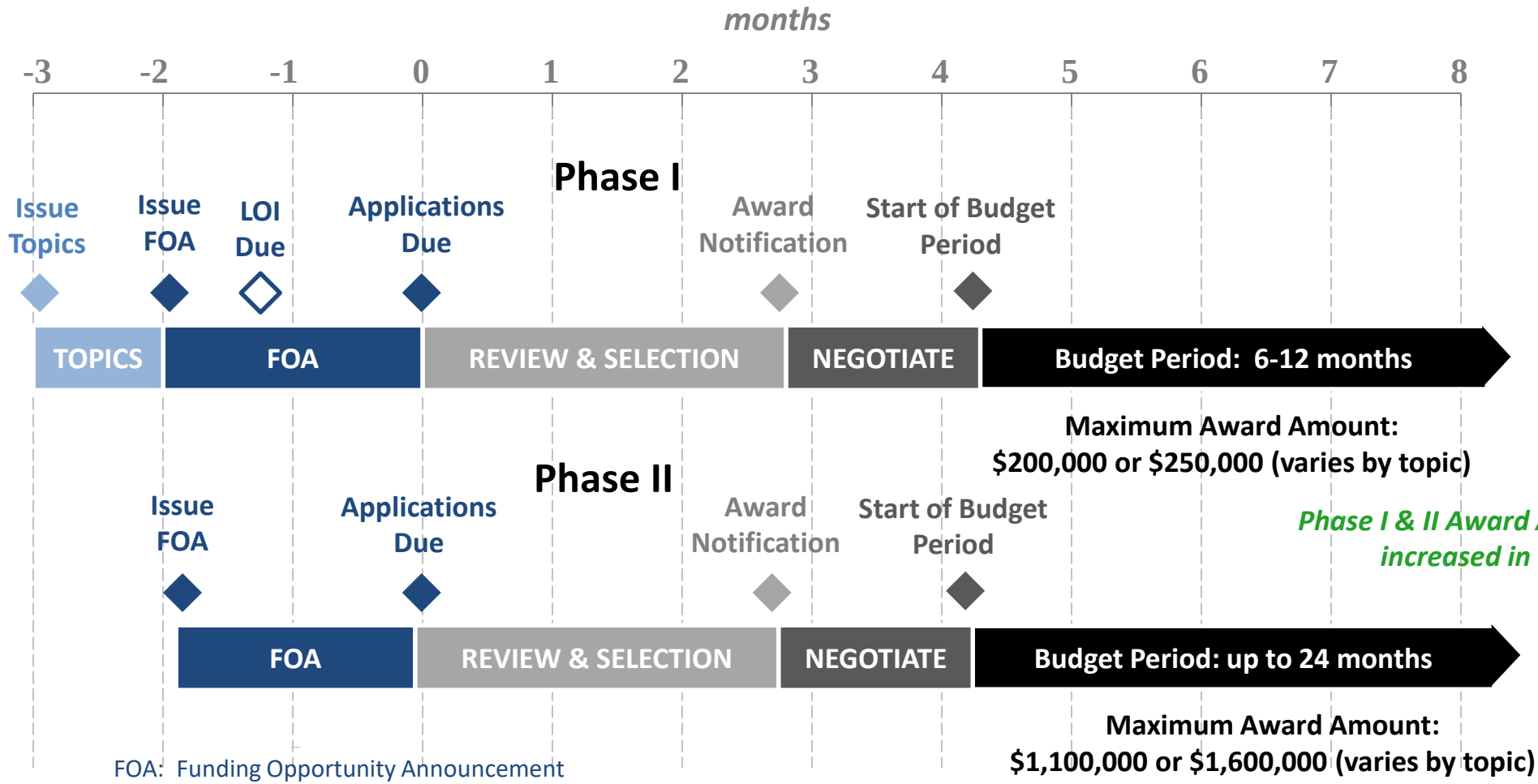
Single Administrative Office for Applicants

DOE SBIR/STTR Programs Office

- Develop Funding Opportunity Announcements
- Administer Review and Selection Process
- Ensure Compliance with SBIR/STTR Legislation
- Conduct Outreach

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

Application & Award Timelines



Phase I & II Award Amounts were increased in FY 2019

FOA: Funding Opportunity Announcement
LOI: Letter of Intent

Schedule: FY 2023 Phase I, Releases 1 & 2

Phase I FOA Schedule	Release 1	Release 2
Topics Issued	Monday, July 12, 2022	Monday, November 7, 2022
Webinar(s)	Week of July 18, 2022	Week of November 14, 2022
FOA Issued	Monday, August 8, 2022	Monday, December 12, 2022
Webinar(s)	Friday, August 12, 2022	Friday, December 16, 2022
Letters of Intent (LOI) Due	Monday, August 29, 2022	Tuesday, January 3, 2023
Non-Responsive LOI Feedback Provided	Monday, September 19, 2022	Tuesday, January 24, 2023
Applications Due	Tuesday, October 11, 2022	Tuesday, February 21, 2023
Award Notification	Tuesday, January 03, 2022*	Monday, May 15, 2023*
Projected Grant Start Date	Monday, February 13, 2023	Monday, June 26, 2023

**preliminary dates subject to change*

Schedule: FY 2023 Phase II, Releases 1 & 2

Phase II FOA Schedule	Release 1	Release 2
FOA Issued	Monday, October 17, 2022	Monday, February 27, 2023
Letters of Intent Due (All Phase II Applications)	Tuesday, November 8, 2022	Wednesday, March 29, 2023
Full Applications Due	Tuesday, December 6, 2022	Tuesday, April 18, 2023
Award Notification	Tuesday, February 21, 2023*	Monday, July 10, 2023*
Grant Start Date	Monday, April 3, 2023	Monday, August 21, 2023

**preliminary dates subject to change*

Application Assistance

Phase 0 application assistance for first-time DOE applicants (open now for Phase I Release 1!)

Email us!

General questions: sbir-sttr@science.doe.gov

Get Connected!

Subscribe to our mailing list: https://science.osti.gov/sbir

Stay Connected!

Recorded Topic and FOA Webinars

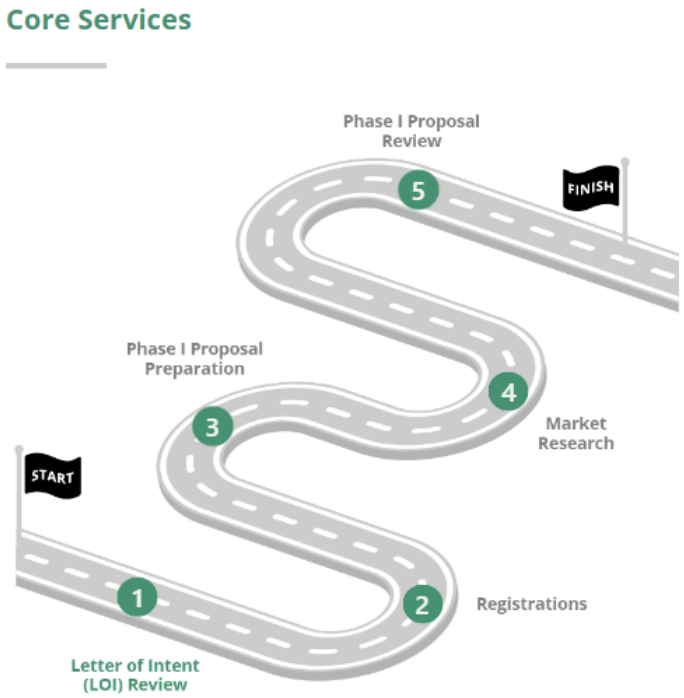
Ask-Us Anything During the Application Process

Being on our mailing list is the most important way to stay up to date on our funding opportunities!

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

Phase 0 Application Assistance

- Do you need help preparing your first DOE SBIR/STTR Phase I application?
- All first –timers are eligible (first come-first serve)
- Go/No-go discussion and decision:
  - Responsive to topic
  - Novel idea
  - Ability to conduct the proposed R&D
- Apply portal opens when Topics are released
- "Ample" opportunity to enroll
- Phase 0 program informational webinar hosted by provider.
- Signup for Phase 0 mailing list

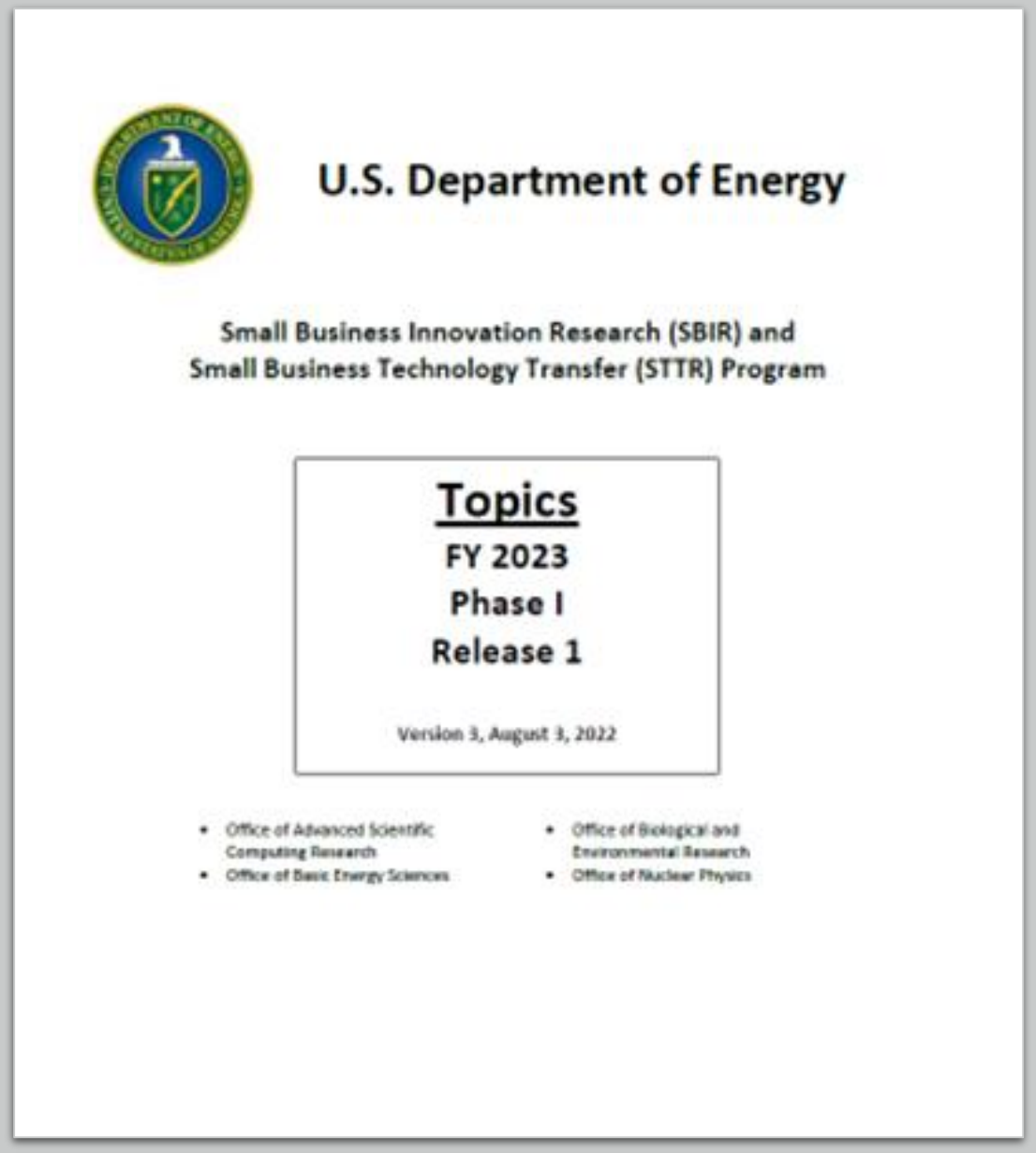


Optional Services (Pick 1 or 2):

- Small business training/mentoring
- Technology Advice & Consultation
- Intellectual Rates & Financial Assistance
- Travel Assistance

Topics

- Topics Document
  - DOE primarily uses focused topics
  - Issued 4 weeks prior to the FOA
- Communication with DOE program managers
  - Open communication permitted about topic scope
- Webinar
  - DOE program managers discuss their topics
  - Applicants submit questions in advance or during the webinar
  - Webinars are recorded and available at our website



U.S. Department of Energy

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

Topics
FY 2023
Phase I
Release 1

Version 3, August 3, 2022

- Office of Advanced Scientific Computing Research
- Office of Basic Energy Sciences
- Office of Biological and Environmental Research
- Office of Nuclear Physics

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

More about Topics

- DOE Mission-Focused Specific Topics
- At Topic Webinar (recorded), DOE Program Managers discuss the topic then Q&A
- Letter of Intent and Application must specify same Topic and Subtopic
- ***Reading references is highly recommended***

C55-16 URBAN MEASUREMENT TECHNOLOGY

Maximum Phase I Award Amount: $250,000	Maximum Phase II Award Amount: $1,600,000
Accepting SBIR Applications: YES	Accepting STTR Applications: YES

The Earth and Environmental Systems Sciences Division (EESSD) within the Biological and Environmental Research (BER) program has recently initiated a new focus on urban regions through development of an Urban Integrated Field Laboratories research effort (References 1-3). EESSD's objective for its urban research initiative is to advance the science underpinning understanding of the predictability of urban systems and their two-way interactions with the climate system and to provide the knowledge and information necessary to inform equitable climate and energy solutions that can strengthen community scale resilience across urban landscapes. As part of this focus on urban research, BER has identified the need for improved measurement technologies for urban regions.

This topic is focused on addressing measurement and data challenges to improve the spatial characterization of key atmospheric, ecological, and environmental variables across urban regions. Urban regions are densely populated areas and are highly heterogeneous, i.e., having uneven distribution of physical landforms and vegetation, environmental processes, the built environment and infrastructure, population density, and socioeconomic clustering in the urban landscape. These complex, heterogeneous environments make representative measurements of urban regions and systems challenging.
Some of the challenges of urban observations include: measurements conducted at a single location may not be representative of other areas in the urban region; properties and characteristics are likely to change rapidly over short distances and times and may be influenced by anthropogenic flows and sources of emissions, heat, and water; measurement techniques may not be designed for the variable surfaces and complex atmospheric flows experienced in urban areas; sensors need to be robust, self-cleaning, low powered, resistant to

Subtopics

- Open communication permitted about the topic scope with DOE Technical Topic Managers
- Letter of Intent and Application must specify same Topic and Subtopic

a. Urban Atmospheric Characterization

This subtopic solicits applications for novel and innovative measurement technologies for improved characterization of the spatial distribution of atmospheric properties in the urban boundary layer with a particular focus on boundary layer height, atmospheric turbulence, vertical wind profiles, aerosol composition, aerosol absorption, and aerosol size distribution.

High spatial and temporal-resolution measurements of the boundary layer height, atmospheric turbulence, and vertical profiles of atmospheric wind speed and direction within and around urban regions are important for understanding transport and dispersion of atmospheric pollutants, the maintenance of the urban heat island, and large-scale flow within and around cities (References 7-8). Additionally, such profiles are needed for initializing and validating high-resolution urban models (Reference 9). The heterogeneity of the urban environment makes it challenging to characterize atmospheric flow features such as dead zones, eddies, and flow through street canyons and around built and natural structures in urban areas (Reference 9). Existing measurement techniques such as radar wind profilers, Doppler lidars, scintillometry, and eddy covariance are increasingly being deployed in urban environments, but improvements in capabilities, size, power, cost, autonomous operation, reduced ground clutter, and portability are needed to make them more suitable for deployment as part of urban sensor networks (References 10-13). Additionally, improved methods for quality

Back to Table of Contents

control, calibration, and interpretation of measured data over complex urban surfaces are needed (Reference 11).

In addition to measurements of quantities relevant to physical meteorology, measurements of aerosol properties are sought as well. Aerosol properties can vary significantly over short time and space scales in urban environments due to the variability of emission sources, transport and dispersion, and chemical transformations. Therefore, low-cost sensors capable of being deployed as sensor networks are needed to better characterize aerosol properties in urban environments (References 14-15). While many low-cost sensors for measurement of aerosol particulate mass currently exist, measurements of aerosol size distributions, absorption, and composition are typically performed by more complex instruments.

Applications are sought for development of low-cost, low-power sensors for aerosol particle size distribution, aerosol absorption, and/or aerosol composition that are suitable for unattended and remote operation in urban environments.

Applications must clearly indicate how proposed sensors are an advance over existing commercially available technologies or existing sensor networks (e.g., increased capabilities; significantly lower size, power or cost) and why the proposed sensors are more suitable than existing commercial technologies for measurements in urban environments.

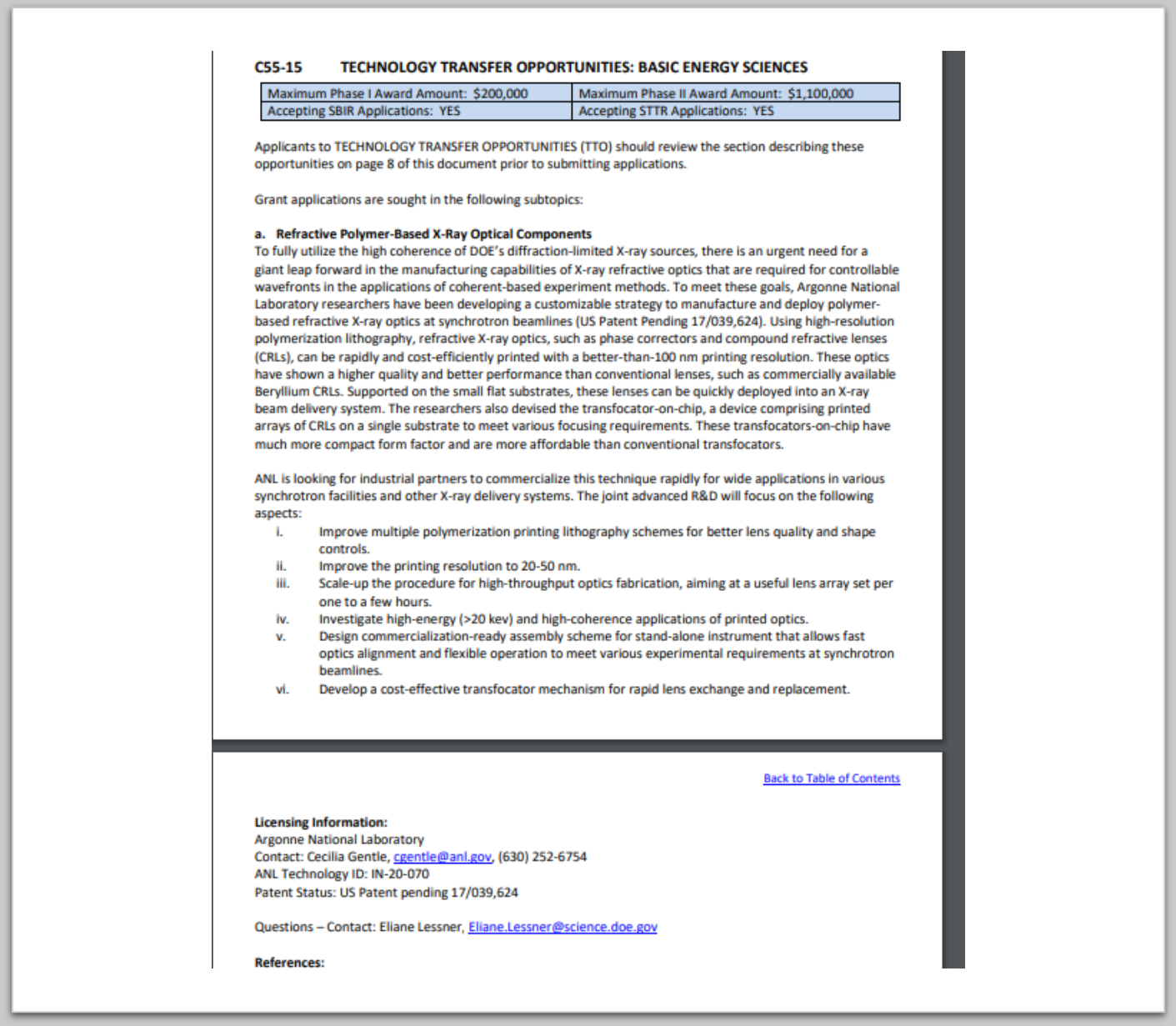
Questions – Contact: Sally McFarlane, Sally.McFarlane@science.doe.gov or Jeff Stehr, Jeff.Stehr@science.doe.gov

Technology Transfer Opportunities (TTOs)

- An opportunity to transfer inventions made by a DOE National Lab or university to your small business for commercialization
- Awardees receive
  - an SBIR/STTR grant and
  - an option to license the technology
- Please review TTO information section at the beginning of the topics document if you plan to submit an application to a TTO.

Technology Transfer Opportunity Topic

- Technology Transfer Opportunity
  - The topic or subtopic will be clearly labeled
- Research Organization
  - The DOE National Lab or university responsible for the TTO is listed along with contact information and other references
  - Please contact the Lab or university to obtain information about the TTO
- DOE Program Manager contact info is provided



C55-15 TECHNOLOGY TRANSFER OPPORTUNITIES: BASIC ENERGY SCIENCES

Maximum Phase I Award Amount: $200,000	Maximum Phase II Award Amount: $1,100,000
Accepting SBIR Applications: YES	Accepting STTR Applications: YES

Applicants to TECHNOLOGY TRANSFER OPPORTUNITIES (TTO) should review the section describing these opportunities on page 8 of this document prior to submitting applications.

Grant applications are sought in the following subtopics:

a. Refractive Polymer-Based X-Ray Optical Components

To fully utilize the high coherence of DOE's diffraction-limited X-ray sources, there is an urgent need for a giant leap forward in the manufacturing capabilities of X-ray refractive optics that are required for controllable wavefronts in the applications of coherent-based experiment methods. To meet these goals, Argonne National Laboratory researchers have been developing a customizable strategy to manufacture and deploy polymer-based refractive X-ray optics at synchrotron beamlines (US Patent Pending 17/039,624). Using high-resolution polymerization lithography, refractive X-ray optics, such as phase correctors and compound refractive lenses (CRLs), can be rapidly and cost-efficiently printed with a better-than-100 nm printing resolution. These optics have shown a higher quality and better performance than conventional lenses, such as commercially available Beryllium CRLs. Supported on the small flat substrates, these lenses can be quickly deployed into an X-ray beam delivery system. The researchers also devised the transfocator-on-chip, a device comprising printed arrays of CRLs on a single substrate to meet various focusing requirements. These transfocators-on-chip have much more compact form factor and are more affordable than conventional transfocators.

ANL is looking for industrial partners to commercialize this technique rapidly for wide applications in various synchrotron facilities and other X-ray delivery systems. The joint advanced R&D will focus on the following aspects:

i. Improve multiple polymerization printing lithography schemes for better lens quality and shape controls.
ii. Improve the printing resolution to 20-50 nm.
iii. Scale-up the procedure for high-throughput optics fabrication, aiming at a useful lens array set per one to a few hours.
iv. Investigate high-energy (>20 kev) and high-coherence applications of printed optics.
v. Design commercialization-ready assembly scheme for stand-alone instrument that allows fast optics alignment and flexible operation to meet various experimental requirements at synchrotron beamlines.
vi. Develop a cost-effective transfocator mechanism for rapid lens exchange and replacement.

Back to Table of Contents

Licensing Information:
Argonne National Laboratory
Contact: Cecilia Gentle, cgentle@anl.gov, (630) 252-6754
ANL Technology ID: IN-20-070
Patent Status: US Patent pending 17/039,624

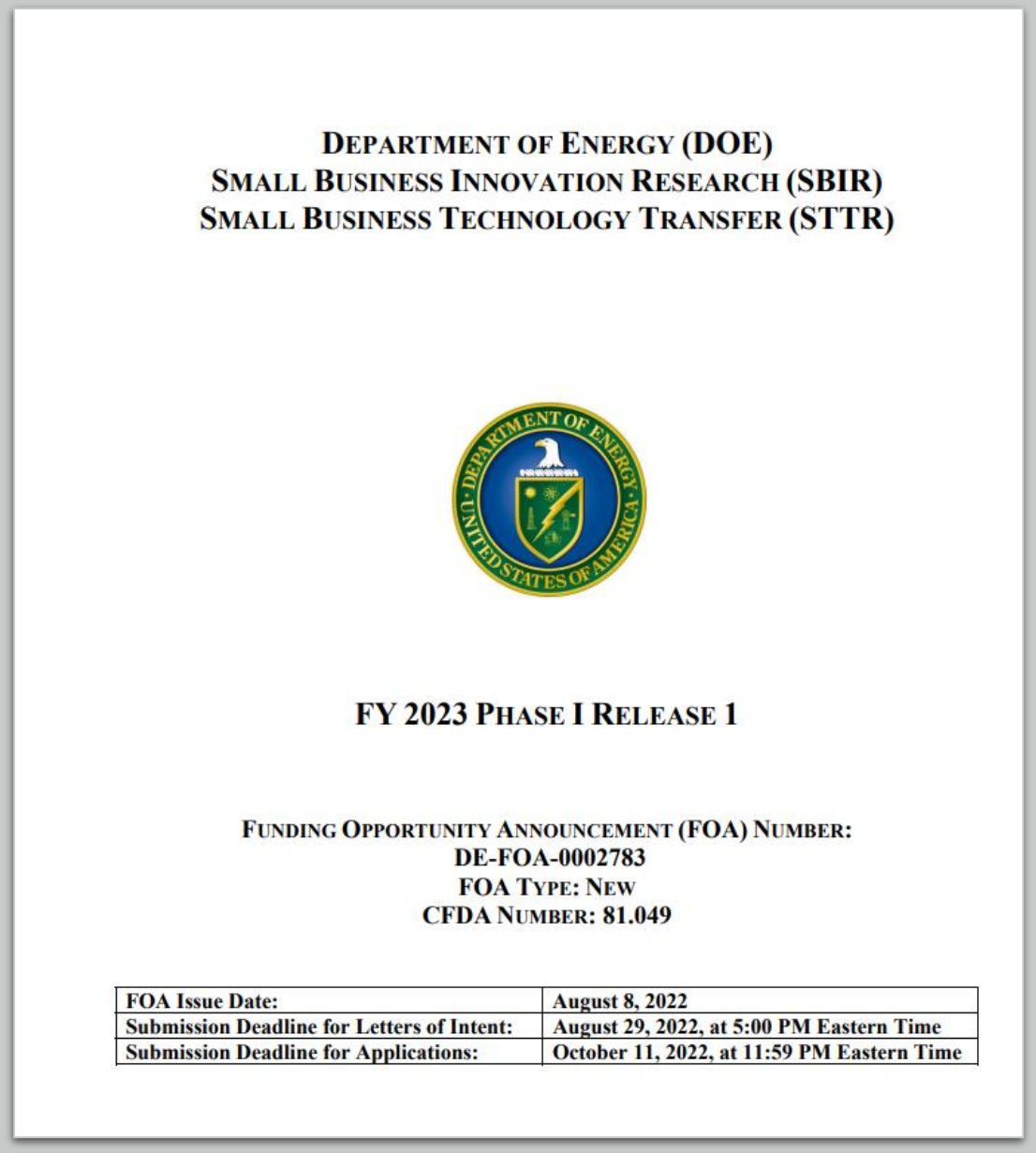
Questions – Contact: Eliane Lessner, Eliane.Lessner@science.doe.gov

References:

U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

Funding Opportunity Announcement (FOA)

- Available at the DOE SBIR website or Grants.gov and includes information on
  - Anticipated number of awards and funding available
  - Eligibility
  - Application Requirements
  - Review Criteria
  - Award Administration
  - Open for approximately 9 weeks



DEPARTMENT OF ENERGY (DOE)
SMALL BUSINESS INNOVATION RESEARCH (SBIR)
SMALL BUSINESS TECHNOLOGY TRANSFER (STTR)

FY 2023 PHASE I RELEASE 1

FUNDING OPPORTUNITY ANNOUNCEMENT (FOA) NUMBER:
DE-FOA-0002783
FOA TYPE: NEW
CFDA NUMBER: 81.049

FOA Issue Date:	August 8, 2022
Submission Deadline for Letters of Intent:	August 29, 2022, at 5:00 PM Eastern Time
Submission Deadline for Applications:	October 11, 2022, at 11:59 PM Eastern Time

Letters of Intent (LOI)

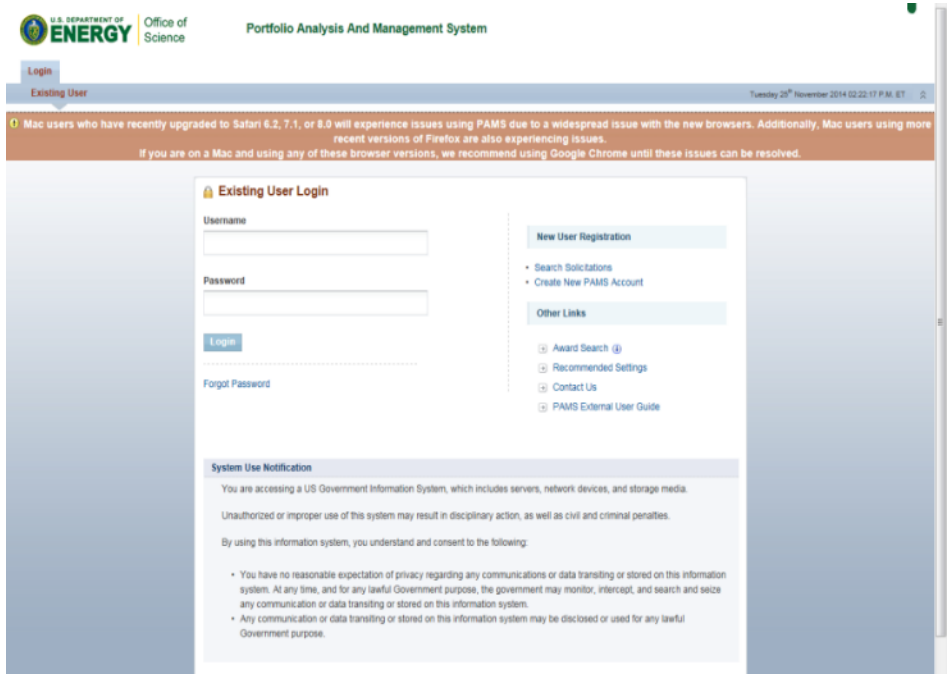
- Requirement
  - You must submit an LOI by the due date to be eligible to submit an application
- Primary purpose
  - begin reviewer assignment to reduce award selection time
  - due 3 weeks after FOA is issued
- Secondary purpose
  - provide email notification to applicants who appear to be non-responsive; you may submit an application if you receive this notification
  - Applicants whose LOI appears responsive will NOT receive a notification
- Limits
  - Small businesses may submit only 10 letters of intent (and 10 applications) per solicitation
  - Each letter of intent and application must be unique

Content of LOI

- Title
- Topic and Subtopic
- Abstract (<500 words)
  - ***Provide sufficient technical detail to enable reviewer assignment***
  - Non-proprietary
- List of Collaborators
- Small Business Information
  - Name, address
  - Business Official and contact information
  - Principal Investigator

Letter of Intent (LOI) Submission is Required

- Submit LOI online directly to the DOE Portfolio Analysis and Management System (PAMS) website: https://pamspublic.science.energy.gov/
  - Due Monday, August 29 by 5 PM EDT
  - Select “Create New PAMS Account” (if you do not have an account)
    - No prior registrations (SAM, etc.) are required to submit a LOI
  - Submit your abstract as a PDF file
  - Utilize the LOI instructions available at the DOE website to ensure that you submit all the required information
  - For additional details on the LOI submission process, see the FOA



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Letter of Intent: Sample Abstract

ABC LLC will develop a new class of low cost battery separator materials for lithium ion batteries. It is anticipated that the cost of this separator will be 70% lower than separator materials available today and will be a critical factor in reaching the $150/kWh cost target specified in topic 4b for lithium ion batteries for electric vehicle applications.

These separators will utilize a new optically-activated method of producing pores in nano-structured polyolefin films. This optical pore formation method results in a 10x increase in the speed of creating porous films. During Phase I, ABC LLC will (1) develop the compositions and methodology for formulating the dense nano-structured polyolefin films and (2) carry out preliminary feasibility studies to characterize the appropriate optical intensities and wavelengths to achieve uniform, high speed, pore formation. It is anticipated that multiple iterations will be required to optimize the composition and nanostructure of the precursor films to achieve the desired porosity and process speeds. All processing work will be carried out at ABC LLC but polymer characterization will leverage capabilities of the Polymer Lab at State University to evaluate the structure, porosity, tortuosity, and thermal properties of the polymer films. In addition we will be collaborating with Lion Battery Inc. who will do preliminary battery testing of our separator materials to identify any manufacturing or performance issues of the separators.

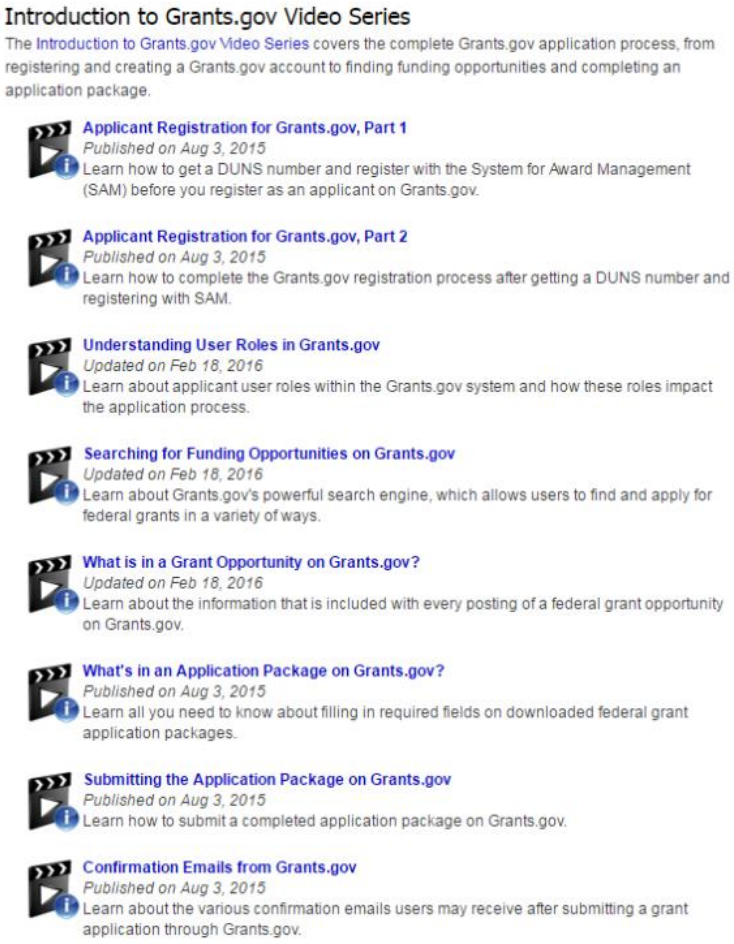
Clearly explain why the proposed R&D is responsive to the subtopic

Provide sufficient technical detail about the R&D so that DOE program managers can select reviewers with appropriate technical expertise.

Do not include proprietary information in a letter of intent.

Application Process: Registrations

- Applications must be submitted through Grants.gov
- Registration at Grants.gov is a 3 step process
  - Applicants must register with SAM at https://www.sam.gov/ and obtain a Unique Entity Identifier (UEI)*
    - Complete a SAM registration.
    - Must be updated annually
  - Complete Grants.gov registration
    - Start this process as early as possible!
- See the Grants.gov website for instructions
- Small Business Administration (SBA) company registry
  - Small businesses must register at the SBA company registry (http://www.sbir.gov/registration) and submit a copy of their registration with their grants.gov application

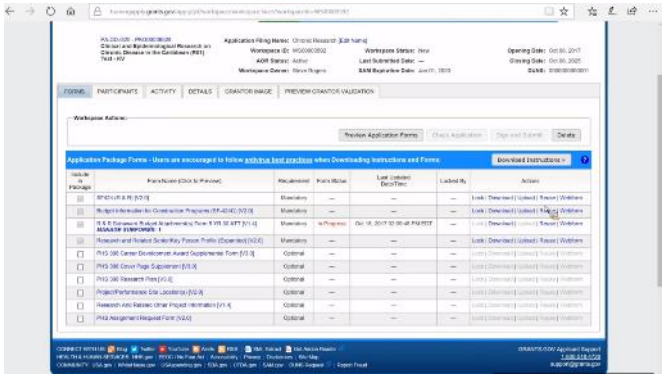


*DUNS was replaced by UEI in April 2022. No more DUNS & Bradstreet

https://www.grants.gov/web/grants/applicants/applicant-training.html

Completing a Grants.gov Application

- Workspace
  - Online application completion and submission
  - Online tutorials are available
  - https://www.grants.gov/applicants/workspace-overview.html



Elements of Your Application

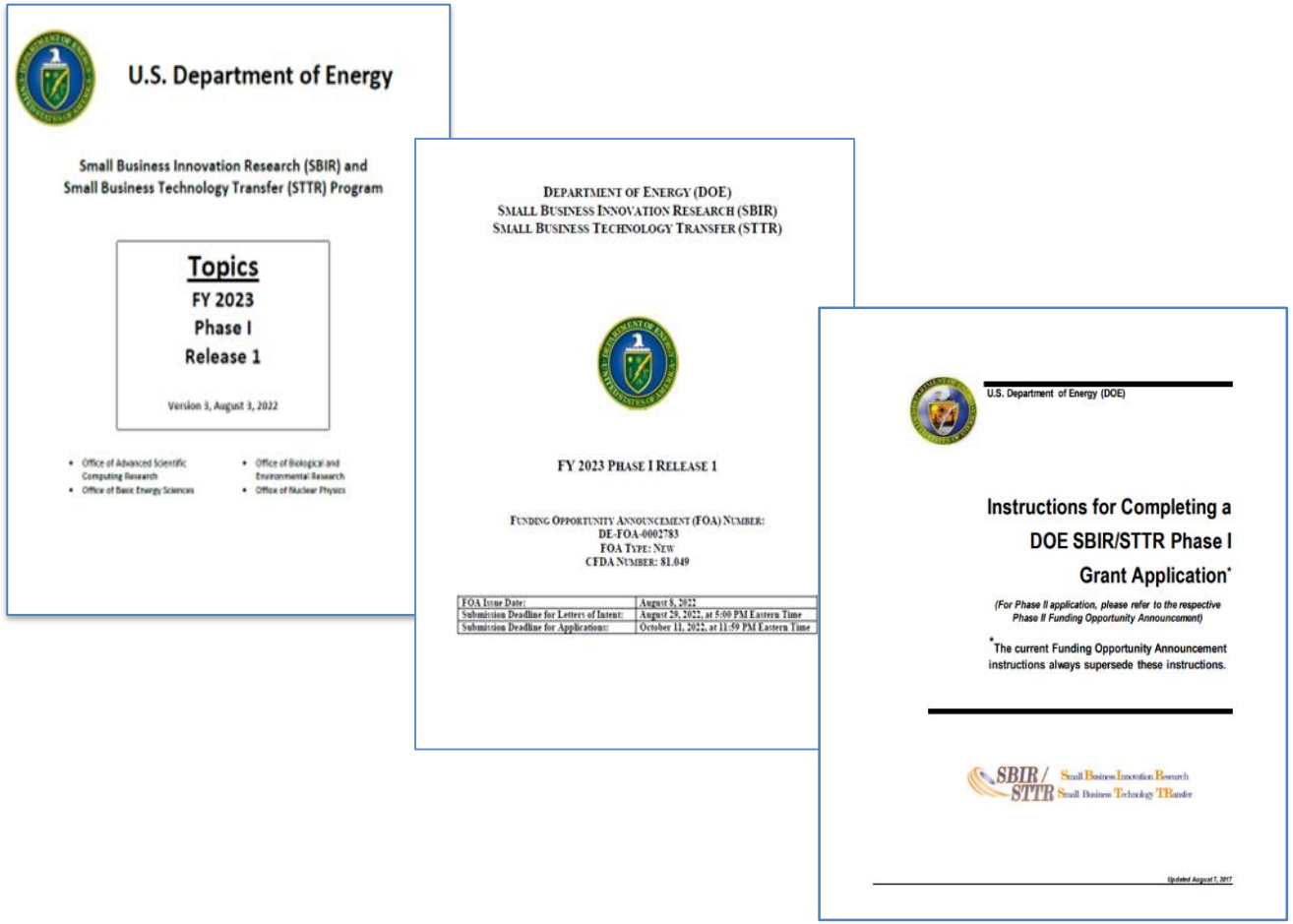
- Project Narrative
  - Page and word limits
    - Phase I: 15 pages, 7,500 words
- Budget & Budget Justification
- Key Personnel
  - Provide a resume for each person listed on the budget form
- Commercialization Plans
  - Phase I commercialization plan (2000 words)
    - an example can be found here at https://science.osti.gov/sbir/Applicant-Resources/Grant-Application
- SBIR/STTR Information form
- Data Management Plan

1.1 Summary of Mandatory (and Optional) Documentation for a DOE SBIR STTR Grant

Name of Document	Format	Attach to
Application for Federal Assistance, SF 424 Form	PDF	
Research and Related: Budget Form	PDF	
Additional Senior Key Persons, if applicable	PDF	Field A. 9
Additional Equipment, if applicable	PDF	Field C. 11
Budget Justification	PDF	Field K
Research and Related: Senior/Key Person Profile Form	PDF	
Biographical Sketch for each person	PDF	Appropriate Block
Current & Pending Support for each person, if applicable	PDF	Appropriate Block
Research and Related: Other Project Information Form	PDF	
Project Abstract and Summary	PDF	Field 7
Project Narrative	PDF	Field 8
Bibliography and References Cited, if applicable	PDF	Include in Project Narrative
Facilities and Other Resources, if applicable	PDF	Include in Project Narrative
Equipment, if applicable	PDF	Include in Project Narrative
Other— Data Management Plan	PDF	Field 12
Other—Level of Effort Worksheet	PDF	Field 12
Other—Letter of Commitment for consultant, sub-award, or research institution, if applicable	PDF	Field 12
Other—Letters of Support, if applicable	PDF	Field 12
Other—SBA Company Registration	PDF	Field 12
Other – Company Commercialization Report from SBIR.gov, if applicable (STTR-only application)	PDF	Field 12
Authorization for non-DOE/NNSA FFRDCs, if applicable	PDF	Field 12
Authorization for DOE/NNSA FFRDC, if applicable and if available	PDF	Field 12
Research and Related: Sub-award Budget Form, if applicable	PDF	
Budget Justification for each Sub-award	PDF	Appropriate Block
SF-LLL, Disclosure of Lobbying Activities, if applicable	PDF	
Project/Performance Site Location(s)	PDF	
SBIR/STTR Information Form	PDF	
Phase I Commercialization Plan	PDF	Field 7
Company Commercialization Report from SBIR.gov, if applicable (SBIR-only or Both application)	PDF	Field 8

Completing an Application

- Important documents to assist you with completing the application package
  - Topics Document, Funding Opportunity Announcement, & Instructions are available at the DOE SBIR/STTR website
  - Online tutorials are available at http://www.doesbirlearning.com/



Data Management Plan

- Purpose – Disseminate, as widely as possible, data generated with public funding

- Requirement – All SBIR and STTR applications must select one of the two Data Management Plan (DMP) options below:
  - Option 1
    - The Option 1 DMP is: "It is anticipated that all generated digital data will be protected as SBIR/STTR data and therefore will not be publicly shared during the applicable SBIR/STTR data protection period." If any data generated under this award are published, an effort will be made to also release any related digital data that is not protected SBIR/STTR data."
    - *Please note that if you do not include a DMP with your application, Option 1 for the DMP will be assumed for your application. However, If* you plan to publicly disclose generated digital data, you must provide a DMP under Option 2.
  - Option 2
    - If you plan to publicly disclose technical data during the data protection period or, for data not expected to be asserted as protected SBIR/STTR rights data, please submit a DMP. Use the DMP requirements outlined in the FOA.

Top Application Errors

Updating SAM registration at the last minute – and unable to submit on Grants.gov
Fail to submit letter of intent by the deadline
Fail to check level of effort is compliant (see slide 6)
Fail to meet PI effort requirements (a minimum of 3 hours/week on average)
Incorrect/missing marking of proprietary data. Instructions in FOA
Missing letters of commitment, required for each consultant and subaward
Proposing a technology that is not new
Unresponsive to the subtopic/ Not clearly addressing technology need
Not including the required documents
Proposal reflects unfamiliarity with the current literature
Budget form and budget justification are in agreement (to the penny). Subawards too!
Not fully reading the FOA!!

What makes you a good fit with DOE?

AMERICA'S SEED FUND SBIR·STTR

Application Review Criteria

1/3	Technical Merit
1/3	Ability to Carry Out the Project
1/3	Impact

- Must be technology development R&D!
- Idea is novel
- Solid work plan to prove feasibility
- Responsiveness to the topic & subtopic
- Your team is composed of the right expertise
- Potential impact if R&D is successful

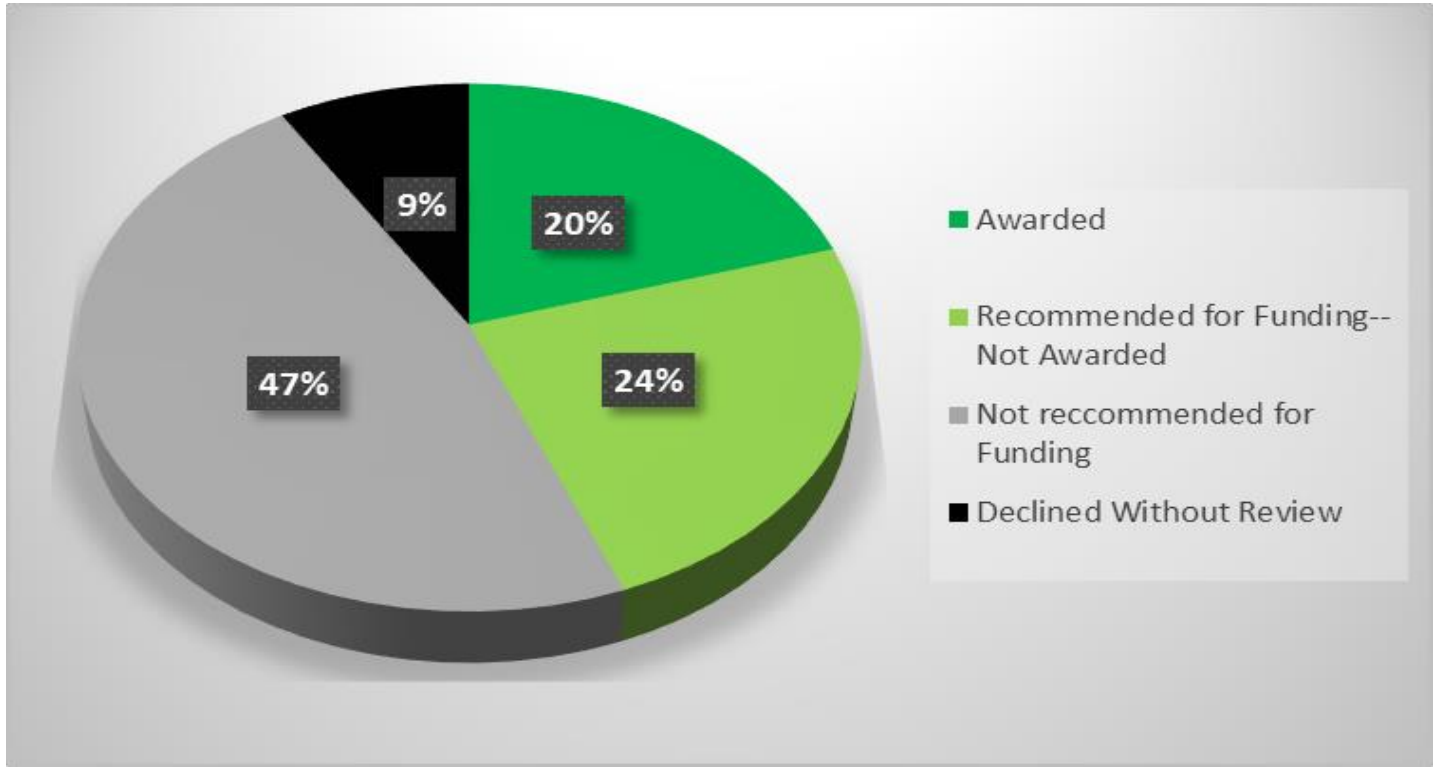
U.S. DEPARTMENT OF ENERGY | Office of SBIR/STTR Programs

Review and Selection of Applications

- DOE primarily uses external peer review to evaluate your applications
  - Typically at least 3 technical reviewers
  - 1 reviewer for the Phase II commercialization plan
- Selection
  - DOE ranks the most meritorious applications—award selections are made based on available funding
- You will be notified of the decision on your application within 90 days of the application deadline
  - Reviewer comments will be made available to you through PAMS. Use this feedback constructively to improve future applications

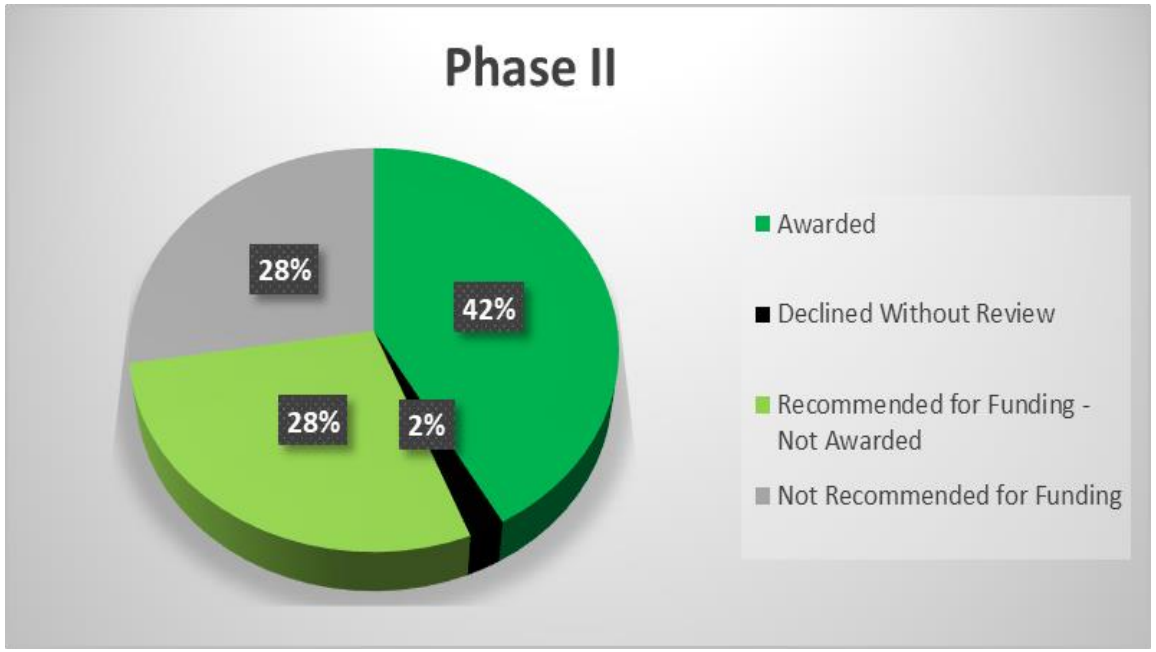
Phase I Application & Award Statistics for FY 2022

- Phase I
  - 2,073 applications
  - 419 awards

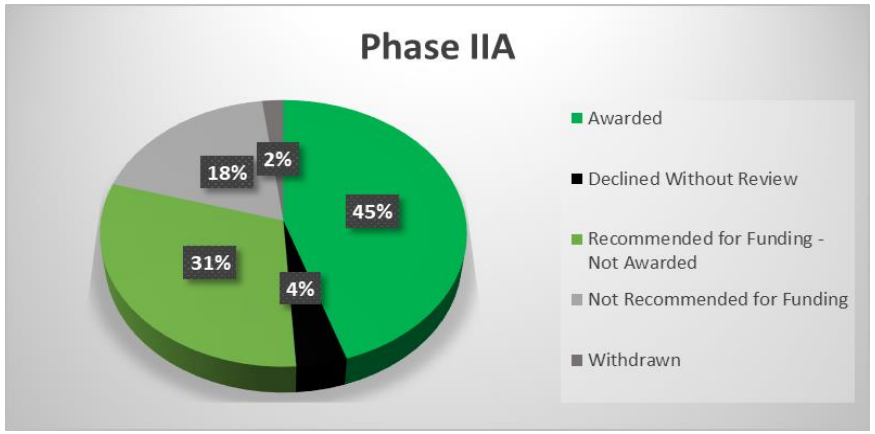


Phase II Application & Award Statistics for FY 2022

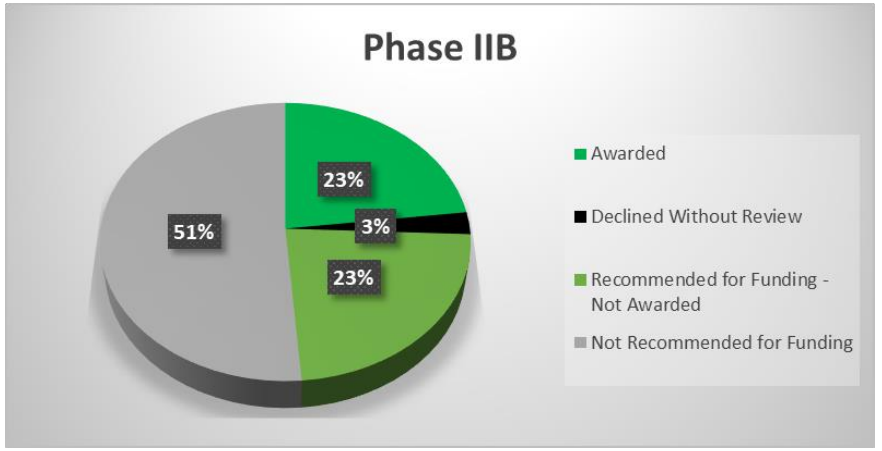
- Phase II
  - 417 applications
  - 175 awards



- Phase IIA
  - 49 applications
  - 22 awards



- Phase IIB
  - 78 applications
  - 18 awards



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Phase I Principal Investigator Meeting

- Phase I Principal Investigators are expected to attend a two-day DOE SBIR/STTR Principal Investigator Meeting held in the DC area
  - Release 1: June
  - Release 2: October
- Objectives
  - In-person meetings with DOE program managers and DOE Commercialization Assistance provider
  - Presentations relating to Phase II and Commercialization
  - Small business networking
- You may include the cost for the trip (registration, travel) in your Phase I budget
- Exceptions
  - If the DOE program office that funds your topic has a separate principal investigator meeting, you will be notified that your participation in the Phase I PI meeting is optional

Commercialization Assistance

- New for Applicants and Awardees! DOE SBIR/STTR Partnering Resources
  - Looking for SMEs, collaborators, subcontractors?
  - Understand related research being done at research institutes
  - Email carol.rabke@science.doe.gov to discuss your partnering needs

Technical and Business Assistance (TABA)

$6,500 above maximum award amount in Phase I

a) Select your own vendor

b) Use DOE vendor

$50,000 above maximum award for Phase II

Current vendor: http://www.larta.org/doecap

- Energy I-Corps
  - 40 are selected
  - Designed to educate on entrepreneurial concepts
  - 2 months training at no cost to participants
  - Customer discovery process

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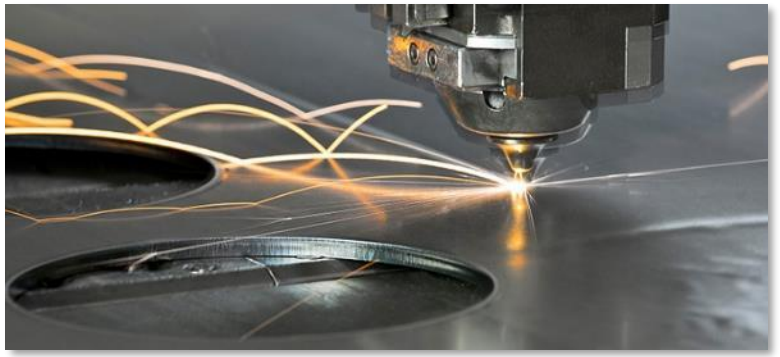
Commercialization



- DOE topics are drafted by program managers who are aware of the important technology roadblocks that are preventing progress in their mission areas
- Small business applicants are expected to address the commercialization challenges and ensure that there is a profitable, self-sustaining, business opportunity
  - Phase I & II Applications must include Commercialization Plans
  - Commercialization Plans can accommodate long commercialization timeframes
  - Ability to address adjacent markets can also be included in your commercialization plan
- DOE performs follow-up surveys to track commercialization outcomes of its SBIR/STTR awards

DOE SBIR & STTR Programs: Examples of Phase III Success
https://science.osti.gov/sbir/SBIR-STTR-Phase-III-Success-Stories

DOE Office of Inspector General: Fraud, Waste & Abuse

DOE Office of Inspector General

Combating Fraud

- ***What types of fraud are found in the SBIR Program?***
- Application Process
  - submitting a plagiarized proposal
  - providing false information regarding the company, the Principal Investigator (PI), or work to be performed
  - seeking funding for work that has already been completed
- During Award
  - using award funds for personal use or for any use other than the proposed activities
  - submitting plagiarized reports or reports falsely claiming work has been completed
  - claiming results for an award that were funded by a different source

DOE Office of Inspector General

Knowing the Rules

- ***Which SBIR rules should you be particularly familiar with?***
  - Duplicate or overlapping proposals may not be submitted to multiple agencies without full disclosure to all agencies.
  - The company must meet SBA's requirements for a small business, including being majority American owned and have 500 employees or fewer.
  - For SBIR: The PI's primary employment must be with the company during the grant period. The PI may not be employed full time elsewhere.
  - For SBIR: For Phase I, a minimum of two thirds of the research effort must be performed by the grantee company; for Phase II, a minimum of one-half of the research effort must be performed by the grantee company. Work performed by a university research lab is NOT work completed by the grantee company.
  - University employees participating on an SBIR award should disclose their involvement to the university as well as their use of university facilities.
  - R&D must be performed in the United States.

Consequences

- ***What Happens If You Break the Rules?***
  - If you commit fraud or other wrongdoing in applying for or carrying out an SBIR award, we will investigate.
  - We refer violations of civil or criminal law to the Department of Justice (DOJ). If DOJ prosecutes you for fraud or false statements, you may be sentenced to prison and required to pay full restitution. If DOJ pursues a civil action under the False Claims Act, you may have to pay treble damages and $11,000 for each false claim. In addition, DOE may terminate your awards and debar you from receiving grants or contracts from any federal agency.

Recent Prosecution

Friday, September 11, 2015

Scientists Sentenced To Prison For Defrauding The Small Business Innovation Research Program

Tampa, Florida – U.S. District Judge Virginia Hernandez Covington has sentenced Mahmoud Aldissi (a/k/a Matt) and Anastassia Bogomolova (a/k/a Anastasia) for conspiracy to commit wire fraud, wire fraud, aggravated identity theft, and falsification of records. Aldissi was sentenced to 15 years in federal prison and Bogomolova was sentenced to a term of 13 years. As part of their sentences, the court entered a money judgment in the amount of $10.6 million, representing the proceeds of the crime, and ordered them to pay $10.6 million in restitution. Aldissi and Bogomolova were found guilty on March 20, 2015.

According to testimony and evidence presented during the month-long trial, through their two companies, Fractal Systems, Inc., and Smart Polymers Research Corp., Aldissi and Bogomolova fraudulently obtained approximately $10.5 million of small business research awards from the federal government. In order to be awarded contracts, they submitted proposals using the stolen identities of real people to create false endorsements of and for their proposed contracts. In the proposals, they also lied about their facilities, costs, the principal investigator on some of the contracts, and certifications in the proposals.

https://www.justice.gov/usao-mdfl/pr/scientists-sentenced-prison-defrauding-small-business-innovation-research-program

DOE Office of Inspector General

Reporting Fraud

- The Department of Energy's Office of Inspector General (OIG) promotes the effective, efficient, and economical operation of DOE's programs and operations through audits, inspections, investigations, and other reviews.
- Within DOE OIG, the Office of Investigations is responsible for investigating any fraudulent acts involving DOE, its contractors or subcontractors, or any crime affecting the programs, operations, Government funds, or employees of those entities.

- ***If you want additional information or to report wrongdoing:***

  Internet: ig.energy.gov
  E-mail: ighotline@hq.doe.gov
  Telephone: 202-586-4073
  Hotline: 800-541-1625
  Fax: 202-586-5697

  U.S. DEPARTMENT OF ENERGY
  OFFICE OF INSPECTOR GENERAL
  ATTN: OFFICE OF INSPECTIONS
  1000 INDEPENDENCE AVENUE, SW
  MAIL STOP 5D-031
  WASHINGTON, DC 20585

Many Support Programs along the Innovation Continuum

Phase I Grant	Phase II, IIA Grants	Phase IIB, IIC Grants
Topics, Funding Opportunity and Q&A Webinars		
Phase 0 Assistance		
Online learning center and application resources		
National Laboratories collaboration resource		
Partnering	Assistance	
Technical and Business Assistance (TABA)		
Energy I-Corps		
PI Meeting		
NERSC Computing Resource		
Diversity Supplement		

Application Assistance

Awardee Resources

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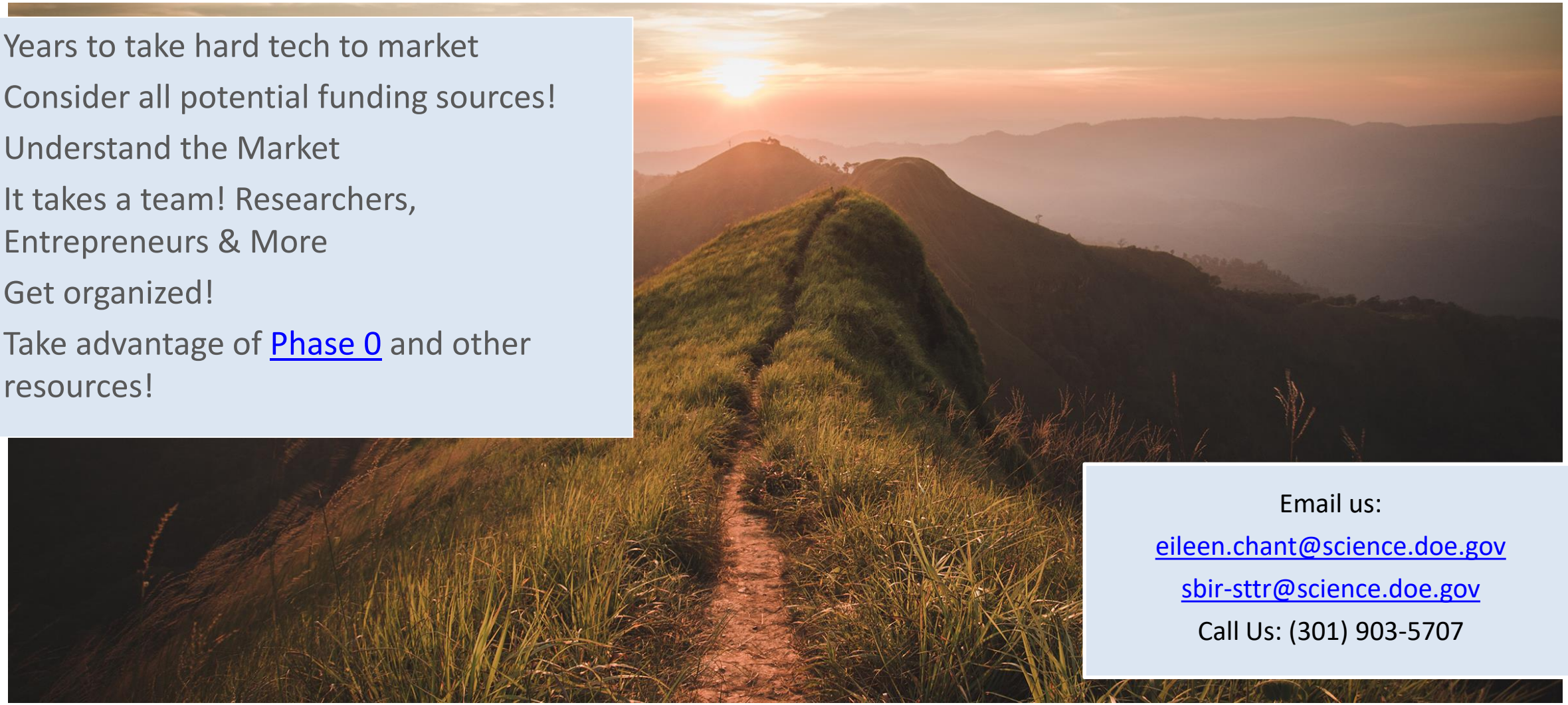
A Road filled with Challenges

AMERICA'S SEED FUND SBIR·STTR

- Years to take hard tech to market
- Consider all potential funding sources!
- Understand the Market
- It takes a team! Researchers, Entrepreneurs & More
- Get organized!
- Take advantage of Phase 0 and other resources!



Email us:

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Call Us: (301) 903-5707

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Thank you!