The DOE Webinar will begin shortly . . .

- **Why is there no sound?**
  - Once you logged into the webinar, you were provided two options to listen to this broadcast. The first option is through your computer speakers, the second option is via dialing the phone number provided to you upon login to the webinar. If you chose to listen through your computer speakers, you may need to turn your speaker volume on or up.
- **Will DOE provide access to the recorded webinar after the meeting?**
  - Yes, all those who registered will receive a link to the slides and to the recorded webinar soon after the meeting. It will also be available on the DOE SBIR/STTR web site.
- **Where can I find the Topics being discussed today?**
  - This link will take you to the Funding Opportunity Announcement (FOA) page that lists the FY 2024 Phase I Release 2 Topics: https://science.osti.gov/sbir/Funding-Opportunities
- **What if my question was not answered at today's webinar?**
  - Please contact the point of contact that follows each subtopic in the document listed above for further clarification.
  - If you have a question about the grant application process, please send us an email at: sbir-sttr@science.doe.gov.

DOE SBIR/STTR
Phase I Release 2 Topics Webinar

Topics associated with the
FY 2024 Phase I Release 2
Funding Opportunity Announcement

Topics 1, 9-10 & 23-28

DOE SBIR/STTR Programs Office

November 14, 2023

TODAY'S AGENDA

Topics Introduction	DOE SBIR/STTR Programs Office
Topic 1	Office of Cyber Security, Energy Security, and Emergency Response
Topics 9-10	Office of Electricity
Topics 23 – 28	Office of Fossil Energy and Carbon Management

FY 2024 Phase I Schedule

	Release 1	Release 2
Topics Issued	Monday, July 10, 2023	Monday, November 6, 2023
Webinar(s)	Week of July 17, 2023	Week of November 13, 2023
FOA Issued	Monday, August 7, 2023	Monday, December 11, 2023
Webinar(s)	Friday, August 11, 2023	Friday, December 15, 2023
Letters of Intent (LOI) Due	Monday, August 28, 2023	Wednesday, January 3, 2024
Non-responsive LOI Feedback Provided	Monday, September 18, 2023	Tuesday, January 23, 2024
Applications Due	Tuesday, October 10, 2023	Wednesday, February 21, 2024
Award Notification	Tuesday, January 2, 2024	Monday, May 20, 2024

Phase I Funding Opportunity Announcements
Participating DOE Programs (FY 2024)

Phase I Release 1

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

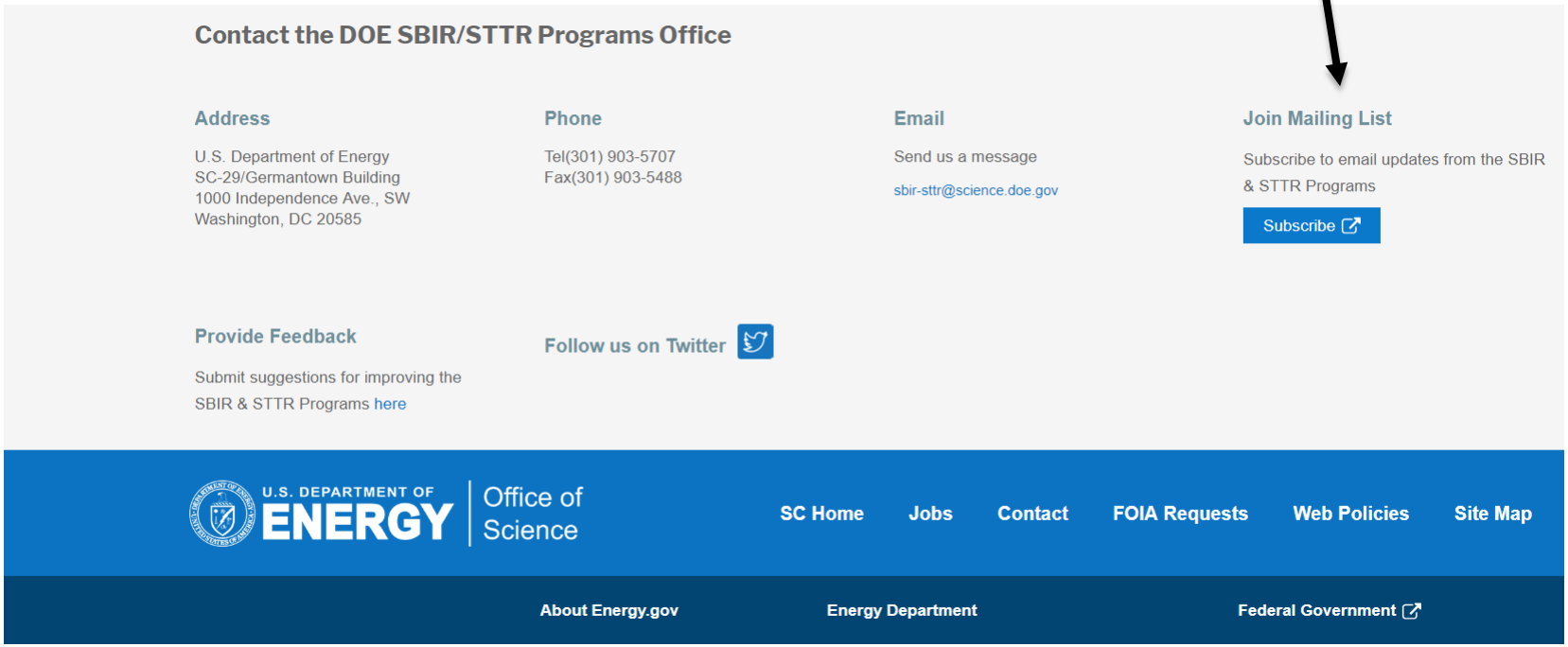
Phase I Release 2

- Office of Cyber Security, Energy Security, and Emergency Response
- Office Of Defense Nuclear Nonproliferation Research And Development
- Office of Electricity
- Office of Energy Efficiency and Renewable Energy
- Office of Fossil Energy and Carbon Management
- Office of Nuclear Energy

Funding Opportunity Announcement (FOA) Webinar

- FY24 Phase I Release 2 FOA will be issued on **December 11th**
- Join our Mailing List – this field is on every DOE SBIR/STTR web page
  - Following the issuance of the FOA, look for an email with a link to the FOA

- Webinar with Q&A for this FOA on **December 15th**
  - Overview of the FY 2023 DOE SBIR/STTR Programs
    - Following the issuance of the FOA, look for an email announcing this webinar



Reminder - Phase 0 Application Assistance Program

- Phase 0 application assistance program is available for first-time DOE SBIR/STTR applicants
- Participants receive an individual coach who is an expert in our application process.
- Program opens when Topics are released (Open now!)
- Visit http://www.dawnbreaker.com/doephase0/ to determine your eligibility and apply to Phase 0

Topic Basics

- Topics are created by DOE program managers and define important technology breakthroughs needed in R&D areas that support the DOE mission
- Topics are organized by DOE Program Office, e.g., EERE, FECM, etc.
- DOE program managers are listed with each subtopic
  - Questions to DOE program managers are limited to clarification of the topic and subtopic (including references)
  - Clarification is provided to help ***you*** determine whether your technology fits within the topic and subtopic
  - You may communicate with these topic managers from the release of topics until the grant application due date
  - The decision to apply is ***yours***

Example Topic

- Topic & Subtopic
  - You must specify the same topic and subtopic in your Letter of Intent and grant application
- Topic Header
  - Lists the maximum award amounts for Phase I & Phase II and the types of application accepted (SBIR and/or STTR)
- Program Manager
  - Each subtopic lists the responsible DOE program manager
- "Other" Subtopic
- References

12.INSTRUMENTATION FOR ADVANCED CHEMICAL IMAGING

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

The Department of Energy seeks to advance chemical imaging technologies that facilitate fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels. The Department is particularly interested in forefront advances in imaging techniques that combine molecular-scale spatial resolution and ultrafast temporal resolution to explore energy flow, molecular dynamics, breakage, or formation of chemical bonds, or conformational changes in nanoscale systems.

Grant applications are sought in the following subtopics:

a. **High Spatial Resolution Ultrafast Spectroscopy**
Chemical information associated with molecular-scale processes is often available from optical spectroscopies involving interactions with electromagnetic radiation ranging from the infrared spectrum to x-rays. Ultrafast laser technologies can provide temporally resolved chemical information via optical spectroscopy or laser-assisted mass sampling techniques. These approaches provide time resolution ranging from the breakage or formation of chemical bonds to conformational changes in nanoscale systems but generally lack the simultaneous spatial resolution required to analyze individual molecules. Grant applications are sought that make significant advancements in spatial resolution towards the molecular scale for ultrafast spectroscopic imaging instrumentation available to the research scientist. The nature of the advancement may span a range of approaches including sub-diffraction limit illumination or detection, selective sampling, and coherent or holographic signal analysis.

Questions – Contact: James Rustad, James.Rustad@Science.doe.gov

b. **Time-Resolved Chemical Information from Hybrid Probe Microscopies**
Probe microscopy instruments (including AFM and STM) have been developed that offer spatial resolution of molecules and even chemical bonds. While probe-based measurements alone do not typically offer the desired chemical information on molecular timescales, methods that take advantage of electromagnetic interactions or sampling with probe tips have been demonstrated. Grant applications are sought that would make available to scientists new hybrid probe instrumentation with significant advancements in chemical and temporal resolution towards that required for molecular scale chemical interactions. The nature of the advancement may span a range of approaches and probe techniques, from tip-enhanced or plasmonic enhancement of electromagnetic spectroscopies to probe-induced sample interactions that localize spectroscopic methods to the molecular scale.

Questions – Contact: James Rustad, James.Rustad@Science.doe.gov

c. **Other**
In addition to the specific subtopics listed above, the Department invites grant applications in other areas that fall within the scope of the topic description above.

Questions – Contact: James Rustad, James.Rustad@Science.doe.gov

References:

1. U.S. Department of Energy, 2006, Office of Science Notice DE-FG01-05ER05-30, Basic Research for Chemical Imaging, BES Chemical Imaging Research Solicitation. (http://science.energy.gov/~/media/grants/pdf/foas/2005/DE-FG01-05ER05-30.pdf).

2. National Research Council, 2006, Visualizing Chemistry, The Progress and Promise of Advanced Chemical Imaging, National Academies Press. (http://www.nap.edu/catalog.php?record_id=11663).

Topic C58-01: ENERGY SYSTEMS CYBERSECURITY

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: NO**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Cybersecurity for Electric Vehicle Charging Infrastructure (EVCI)

Questions:Joseph Dygert, Joseph.dygert@netl.doe.gov

Topic C58-09: ADVANCED GRID TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: NO**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Extending Distribution Transformer Lifetime and Increasing Reliability Through Innovation

Questions: Andre Pereira, andre.pereira@hq.doe.gov

Topic C58-10: ADVANCED BATTERY MANAGEMENT AND SENSORS FOR GRID-TIED ENERGY STORAGE

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: NO**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Advanced In-Situ Battery/Energy Management for Next Generation Battery Energy Storage Systems

Questions: Imre Gyuk, imre.gyuk@hq.doe.gov

Topic C58-23: CARBON CAPTURE, CONVERSION, AND STORAGE

Maximum Phase I Award Amount: $250,000	**Maximum Phase II Award Amount: $1,600,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Synthetic Aggregates Production via Carbon Conversion (BIL Funded)

b. Carbon Capture for Mobile Sources

c. AI Based Forecasting Models for Amine and Degradation Product Emissions

d. Carbon Transport and Injection: Asset Integrity Management/Design

e. Turn-Key Service to Create a Gravity-Based Geophysical Monitoring Network for Use During Carbon Storage Operations

f. Other

Questions: Subtopic a – Michael Stanton, Michael.Stanton@netl.doe.gov

Subtopic b – Dylan Leary, dylan.leary@netl.doe.gov

Subtopic c – Katharina Daniels, katharina.daniels@netl.doe.gov

Subtopic d, e, f – Liz Wilson, liz.wilson@netl.doe.gov

Topic C58-24: CARBON DIOXIDE REMOVAL

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Direct Air Capture Materials Durability Testing
b. Soil Carbon Monitoring for Enhanced Rock Weathering
c. Other

Questions: Richard (Mike) Bergen, richard.bergen@netl.doe.gov

Topic C58-25: HYDROGEN TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Advanced Thermal Barrier Coatings and Environmental Barrier Coatings for Ceramic Matric Composite

b. Impurity-Resistant SOEC Fuel Electrodes

c. Other

Questions: Subtopic a – John Homer, john.homer@netl.doe.gov

Subtopic b – Evelyn Lopez, evelyn.lopez@netl.doe.gov

Subtopic c – Richard Dalton, richard.dalton@netl.doe.gov

Topic C58-26: CRITICAL MINERALS AND MATERIALS APPLICATIONS

Maximum Phase I Award Amount: $250,000	**Maximum Phase II Award Amount: $1,600,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Development of Novel Sensors and Instrumentation for Rapid Subsurface Characterization
b. In-Situ Extraction Methodologies and Technologies for Use in the Subsurface Environment
c. Other

Questions: Sandy Napolitano, sandy.napolitano@netl.doe.gov

Topic C58-27: CARBON ORE PROCESSING

Maximum Phase I Award Amount: $250,000	**Maximum Phase II Award Amount: $1,600,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Direct Use of Coal or Carbonaceous Coal Wastes as Lithium-Ion Battery Anodes
b. Other

Questions: Christian Robinson, Christian.Robinson@netl.doe.gov

Topic C58-28: ADVANCED REMEDIATION TECHNOLOGIES

Maximum Phase I Award Amount: $250,000	**Maximum Phase II Award Amount: $1,600,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. "Proof of Concept" Approaches for Advanced Characterization Tools for Assessing Natural Gas and Thermal Energy Co-Production Potential

b. Produced Water Optimization – PARETO

c. Other

Questions: Eric Smistad, eric.smistad@netl.doe.gov

DOE SBIR/STTR Programs Office Contact Information

- SBIR/STTR Web: https://science.osti.gov/sbir
- Email: sbir-sttr@science.doe.gov
- Phone Assistance Hotline: 301-903-5707
- DOE Phase 0 Assistance Program: http://www.dawnbreaker.com/doephase0/
- DOE Application Assistance: https://doetutorials.dawnbreaker.com/