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 2025 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 2025 Phase I Release 2
Notice of Funding Opportunity

Topics 1, 20-21 & 32-33

DOE SBIR/STTR Programs Office

November 19, 2024

TODAY'S AGENDA

Topics Introduction	DOE SBIR/STTR Programs Office
Topic 1	Office of Cyber Security, Energy Security, and Emergency Response
Topics 20-21	Office of Fossil Energy and Carbon Management
Topics 32-33	Office of Electricity

FY 2025 Phase I Schedule

	Release 1	Release 2
Topics Issued	Monday, July 8, 2024	Tuesday, November 12, 2024
Webinar(s)	Week of July 22, 2024	Week of November 18, 2024
NOFO Issued	Monday, August 5, 2024	Monday, December 16, 2024
NOFO Webinars	Thursday, August 8, 2024 (Webinar) Friday, August 9, 2024 (Q&A)	Thursday, December 19, 2024 (Webinar) Friday, December 20, 2024 (Q&A)
Letters of Intent (LOI) Due	Tuesday, August 27, 2024	Tuesday, January 7, 2025
Non-responsive LOI Feedback Provided	Monday, September 16, 2024	Monday, January 27, 2025
Applications Due	Tuesday, October 8, 2024	Wednesday, February 26, 2025
Award Notification	Monday, January 6, 2025	Tuesday, May 27, 2025

Phase I Funding Opportunity Announcements
Participating DOE Programs (FY 2025)

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

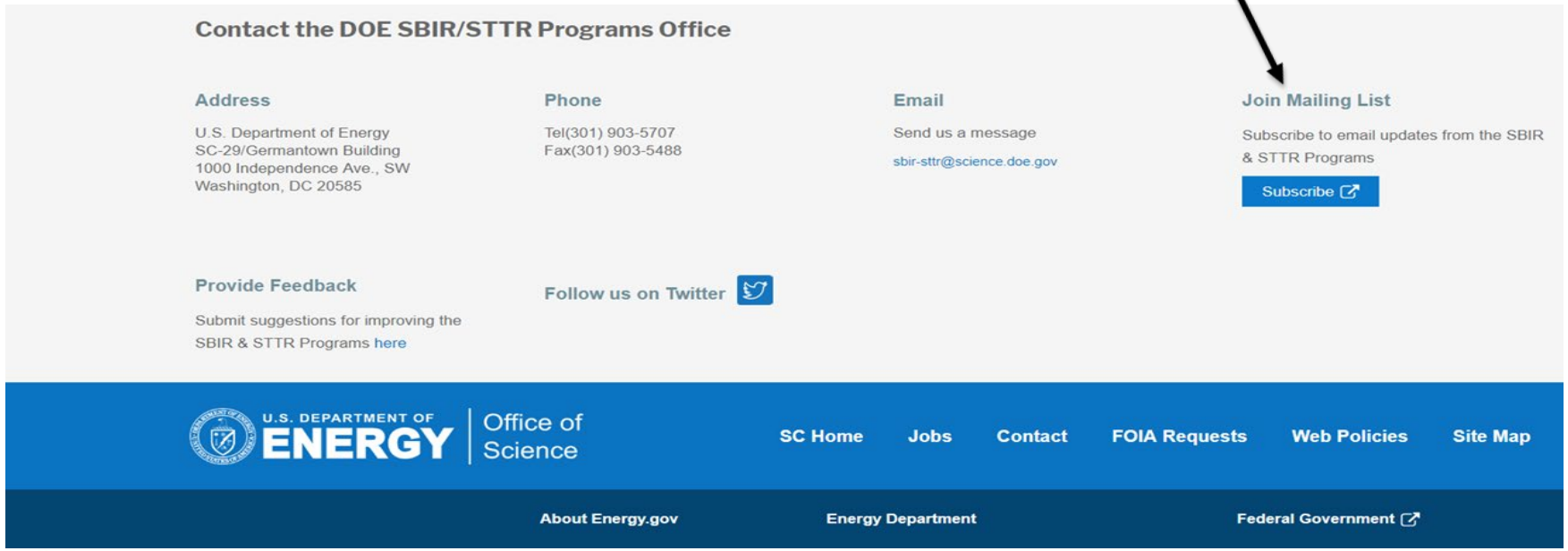
Phase I Release 2

- 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 Environmental Management
- Office of Fossil Energy and Carbon Management
- Office of Nuclear Energy

Notice of Funding Opportunity (NOFO) Webinar

- FY25 Phase I Release 2 NOFO will be issued on **December 16th**
- Join our Mailing List – this field is on every DOE SBIR/STTR web page
  - Following the issuance of the NOFO, look for an email with a link to the NOFO

- Webinar on **December 19th** and Q&A Webinar for this **December 20th**
  - Overview of the FY 2025 DOE SBIR/STTR Programs
    - Following the issuance of the NOFO, 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.
- Registration is open now and onboarding is in process!
- Services are expected to begin in December
- 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: $150,000	*Maximum Phase II Award Amount:* $1,000,000
Accepting SBIR Applications: YES	*Accepting STTR 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 C60-01: MALICIOUS EVENT DETECTION, DIAGNOSIS, AND RISK MITIGATION

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. AI for Malicious Event Detection & Diagnosis in the Energy Sector (IIJA)
b. Distribution Substation Ballistic Risk Mitigation (IIJA)

Questions: Subtopic a – Jodi Kouts, jodi.kouts@hq.doe.gov
Subtopic b – Joseph Blankenburg, joseph.blankenburg@hq.doe.gov

Topic C60-20: 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. Catalytic Conversion of Carbon Dioxide to Fuel (BIL Funded)
b. Digital Tools to Support Design and Materials Selection and Assurance of Operational Asset Integrity for CO2 Transport and Storage
c. Asset Integrity Assurance and Corrosion Mitigation for Surface and Subsurface Carbon Transport and Storage Infrastructure
d. Compact Carbon Capture Technologies
e. Techno-economic Feasibility Analysis of CO2 Impurity Removal Processes for Carbon Capture Systems at Industrial or Electric Generation Facilities
f. Lab-scale Testing of Highly Efficient Components to Remove CO2 Impurities for Point Source Carbon Capture
g. Other

Questions: Subtopics a & g – Michael Stanton, Michael.Stanton@netl.doe.gov
Subtopics b & c – Paul Zandhuis, Paul.Zandhuis@NETL.DOE.GOV
Subtopic d – Chet Mun Liew, ChetMun.Liew@netl.doe.gov
Subtopic e – Eric Grol, Eric.Grol@NETL.DOE.GOV
Subtopic f – Andy O'Palko, Andrew.Opalko@NETL.DOE.GOV

Topic C60-21: 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. Low-Concentration DAC Paired with Ex-Situ Mineralization
b. Freshwater Alkalinity Enhancement
c. Unconventional BiCRS Pathways
d. Other

Questions: Richard (Michael) Bergen, Richard.Bergen@NETL.DOE.GOV

Topic C60-32: 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. Cutting-edge Microgrid Database Development with Artificial Intelligence/Machine Learning/Big Data Analytics through SBIR Innovations
b. Risk and Uncertainty Visualization Tools for the Electric Grid Decision-Making

Questions: Subtopic a – Roxana Melendez, roxana.melendez@hq.doe.gov
Subtopic b – Roshi Nateghi, roshanak.nateghi@hq.doe.gov

Topic C60-33: DC-LINK CAPACITORLESS VOLTAGE SOURCE CONVERTERS FOR GRID-TIED 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 DC-Link Capacitorless Voltage Source Converters for Next Generation Battery Energy Storage Systems (Long Duration Storage Shot Topic)

Questions – contact: Dr. Imre Gyuk, imre.gyuk@hq.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: https://doephase0.dawnbreaker.com/
- DOE Application Assistance: https://science.osti.gov/SBIRLearning