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 1 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 1 Topics Webinar

Topics associated with the
FY 2025 Phase I Release 1
Funding Opportunity Announcement

Topics 1-11

DOE SBIR/STTR Programs Office

July 23, 2024

TODAY'S AGENDA

Topics Introduction	DOE SBIR/STTR Programs Office
Topics 01 – 02	Office of Advanced Scientific Computing Research
Topics 03 – 11	Office of Basic Energy Sciences

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
FOA Issued	Monday, August 5, 2024	Monday, December 16, 2024
Webinar(s)	Thursday, August 8, 2024 (Presentation) Friday, August 9, 2024 (Q&A)	Thursday, December 19, 2024 (Presentation) Friday, December 20, 2024 (Q&A)
Letters of Intent (LOI) Due	Tuesday, August 27, 2024	Tuesday, January 7, 2025
Non-responsive LOI Feedback Provided	Tuesday, 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

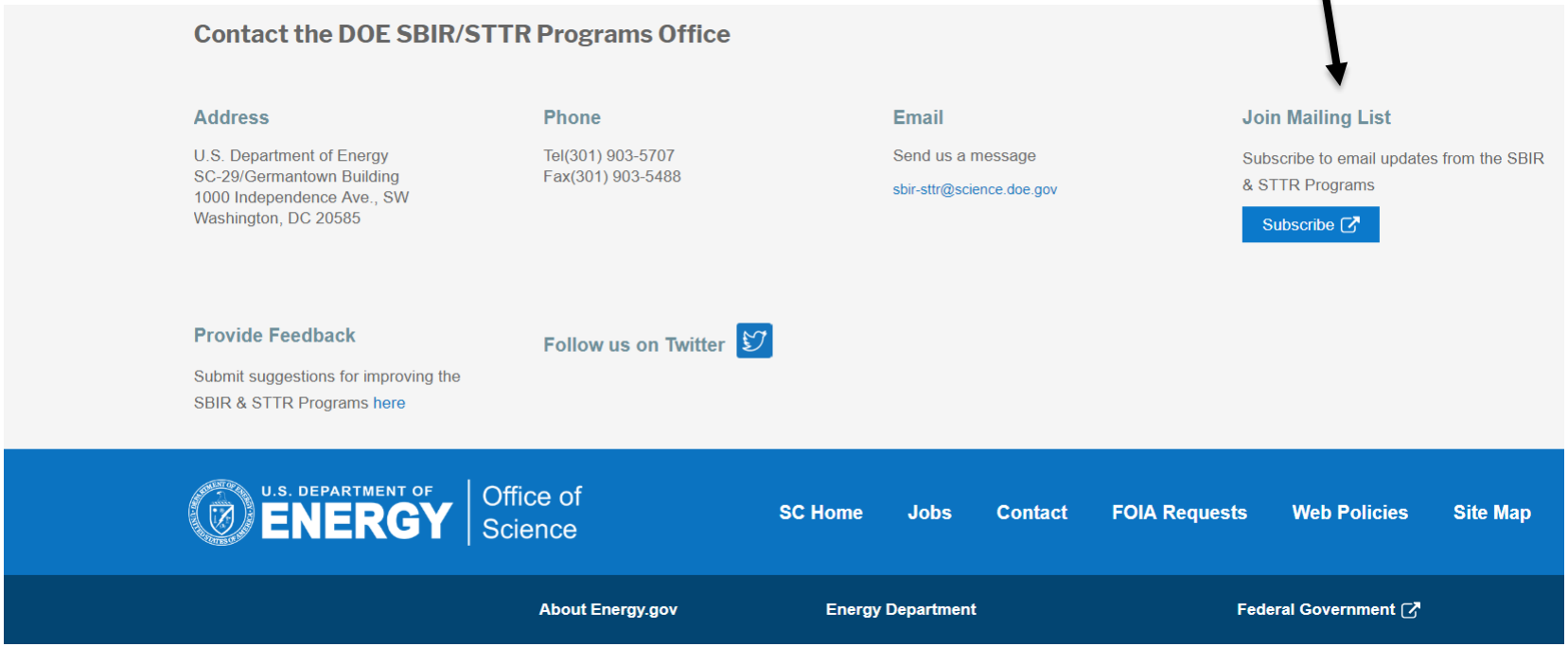
- Office of Advanced Scientific Computing Research
- Office of Basic Energy Sciences
- Office of Biological and Environmental Research
- Office of Fusion Energy Sciences
- Office of High Energy Physics
- Office of Nuclear Physics

Phase I Release 2

- Office of Cyber Security, Energy Security, and Emergency Response
- Office of Defense Nuclear Nonproliferation
- 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

- FY25 Phase I Release 1 FOA will be issued on **August 5th**
- 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
- FOA Webinar on **August 8th** and Q&A Webinar for this **August 9th**
  - Overview of the FY 2025 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

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 C59-01: ACCELERATING THE DEPLOYMENT OF ADVANCED SOFTWARE 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**

a. Deployment of ASCR-Funded Software

b. Integration of ASCR-Funded Libraries

c. Other

Questions: David Rabson, david.rabson@science.doe.gov and/or
William Spotz, William.Spotz@science.doe.gov

Topic C59-02: HPC 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: YES**

a. Strengthening Isolation Between HPC Users

b. Other

Questions: Carol Hawk, carol.hawk@science.doe.gov

Topic C59-03: IMPROVEMENTS IN OPTICAL METROLOGY FOR HIGH-PERFORMANCE VARIABLE-LINE-SPACING X-RAY GRATINGS

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**

a. High-Precision Interferometric Microscopy with Stitching and Data Reconstruction

b. Other

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

Topic C59-04: START-UP SCHEMES FOR HIGH-EFFICIENCY SHORT-WAVELENGTH FREE ELECTRON LASER (FEL) SYSTEMS

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**

a. Cost-Effective, Compact Igniter Scheme for High Efficiency FEL Systems
b. Build-Up in Oscillators with Tapered Undulator Systems
c. Other

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

Topic C59-05: COST-EFFECTIVE OPTICAL SLOPE SENSOR FOR SURFACE METROLOGY OF X-RAY MIRRORS

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**

a. High-Resolution Slope Sensor with Large Angular Range

b. Other

Questions: Dava Keavney, Dava.Keavney@science.doe.gov

Topic C59-06: DRY ULTRA-LOW TEMPERATURE SAMPLE ENVIRONMENTS FOR SYNCHROTRON SOURCES

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**

a. Development of a Compact X-Ray Synchrotron Beamline Compatible Dry ^{3}He Refrigerator

b. Other

Questions: Dava Keavney, Dava.Keavney@science.doe.gov

Topic C59-07: ADVANCED NEUTRON BEAM OPTICS 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**

a. Neutron Polarizers and Analyzers Using Magnetic Thin Films
b. Neutron Monochromators and Energy Analyzers
c. Other

Questions: Mikhail Zhernenkov, Mikhail.Zhernenkov@science.doe.gov

Topic C59-08: NANOMATERIAL-INTEGRATED MICROELECTRONICS FOR IR DETECTION AND 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**

a. Development of a Commercially Viable System for IR Detection and Imaging Via Nanomaterial-Integrated Microelectronics
b. Other

Questions: Claudia Cantoni, claudia.cantoni@science.doe.gov

Topic C59-09: CORROSION TOLERANT AND COST-EFFECTIVE ALLOYS FOR REVERSIBLE SOLID OXIDE FUEL CELL SYSTEMS

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**

a. Development of Corrosion-Resistant R-SOFC Cell and Stack Components

Questions: Jai-woh Kim, jai-woh.kim@hq.doe.gov

Topic C59-10: ADVANCED SUBSURFACE ENERGY 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**

a. Geothermal
b. Geologic Storage of CO_2
c. CO_2 Transport Systems

Questions: Subtopic a – William Vandermeer, william.vandermeer@ee.doe.gov or
Michael Weathers, michael.weathers@ee.doe.gov
Subtopic b – Mark McKoy, mark.mckoy@netl.doe.gov
Subtopic b – Kevin Dooley, kevin.dooley@hq.doe.gov

Topic C59-11: HIGH PERFORMANCE MATERIALS FOR NUCLEAR APPLICATION

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**

a. Powder Metallurgy-Hot Isostatic Pressing of High Temperature Metallic Alloys
b. Advanced Materials for Structural Applications
c. Other

Questions: Dirk Cairns-Gallimore, dirk.cairns-gallimore@nuclear.energy.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