


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 23-33

DOE SBIR/STTR Programs Office

July 25, 2024

TODAY'S AGENDA

Topics Introduction	DOE SBIR/STTR Programs Office
Topics 23 – 29	Office of High Energy Physics
Topics 30 – 33	Office of Nuclear Physics



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




Contact the DOE SBIR/STTR Programs Office

Address U.S. Department of Energy SC-29/Germantown Building 1000 Independence Ave., SW Washington, DC 20585	Phone Tel(301) 903-5707 Fax(301) 903-5488	Email Send us a message sbir-str@science.doe.gov	Join Mailing List Subscribe to email updates from the SBIR & STTR Programs Subscribe
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Provide Feedback
Submit suggestions for improving the SBIR & STTR Programs [here](#)

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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 C59-23: ADVANCED CONCEPTS AND TECHNOLOGY FOR PARTICLE ACCELERATORS

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. Graphical User-Interfaces for Accelerator Modeling
- b. Digital Twin for HEP Accelerator Beam Test Facilities
- c. Non-Destructive Electron Beam Position Monitors
- d. Other

Questions: Derun Li, Derun.Li@science.doe.gov

Topic C59-24: RADIO FREQUENCY ACCELERATOR TECHNOLOGY

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. Low-Cost Radio Frequency Power Sources for Accelerator Application
- b. New Tunable Superconducting Cavities for Proton Accelerators
- c. Auxiliary Components and Instrumentation for SRF Cavities
- d. Other

Questions: Subtopic a – Eric Colby, Eric.Colby@science.doe.gov

Subtopics b, c & d – Ken Marken, ken.marken@science.doe.gov

Topic C59-25: LASER TECHNOLOGY R&D FOR ACCELERATORS

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. Aperture-Scalable High Performance Diffraction Gratings
- b. Other

Questions: Eric Colby, eric.colby@science.doe.gov

Topic C59-26: HIGH FIELD SUPERCONDUCTING MAGNET TECHNOLOGY

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-Field HTS Wire and Cable Technologies for Magnets
- b. Cryogenic Power Electronics for Distributed Powering and Quench Protection of HTS and Hybrid Magnets
- c. Other

Questions: Ken Marken, ken.marken@science.doe.gov

Topic C59-27: HIGH ENERGY PHYSICS ELECTRONICS

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. Radiation-Hard Sensors and Engineered Substrates for Detectors at High Energy Colliders
- b. Novel Interconnect Techniques and Integration
- c. Electronics and Sensors for Ultra-Low-Temperature Experiments (4 K and Below)
- d. Other

Questions: Helmut Marsiske, helmut.marsiske@science.doe.gov

Topic C59-28: HIGH ENERGY PHYSICS DETECTORS AND INSTRUMENTATION

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. Low-Cost, High-Performance (V)UV/Visible/Near-IR Photon Detection
- b. Scintillating Detector Materials and Wavelength Shifters
- c. Vibration-Free Cooling Solutions for Low-Temperature Experiments
- d. Other

Questions: Helmut Marsiske, helmut.marsiske@science.doe.gov

Topic C59-29: ARTIFICIAL INTELLIGENCE/MACHINE LEARNING FOR HIGH ENERGY PHYSICS

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. HEP AI/ML Training Tools
- b. HEP AI/ML Visualization Tools – Description
- c. Other

Questions: Jeremy Love, Jeremy.Love@science.doe.gov

Topic C59-30: NUCLEAR PHYSICS SOFTWARE AND DATA MANAGEMENT

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

- a. Tools for Large Scale Nuclear Physics Data Processing
- b. Application of Emerging Data Science Techniques to Nuclear Physics
- c. Heterogeneous Concurrent Computing
- d. Other

Questions: Michelle Shinn, Michelle.Shinn@science.doe.gov or
Gulshan Rai, Gulshan.Rai@science.doe.gov

Topic C59-31: NUCLEAR PHYSICS ELECTRONICS DESIGN AND FABRICATION

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

- a. Advanced Digital Processing Microelectronics
- b. Front-End Application-Specific Integrated Circuits
- c. Other

Questions: Michelle Shinn, Michelle.Shinn@science.doe.gov or

Manouchehr Farkhondeh, Manouchehr.Farkhondeh@science.doe.gov

Topic C59-32: NUCLEAR PHYSICS ACCELERATOR TECHNOLOGY

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

- a. Materials and Components for Accelerators at Nuclear Physics Facilities
- b. Design and Operation of Radio Frequency Beam Acceleration Systems
- c. Polarized Beam Sources and Polarimeters
- d. Rare Isotope Beam Production Technology
- e. Accelerator Diagnostics
- f. Other

Questions: Michelle Shinn, Michelle.Shinn@science.doe.gov

Topic C59-33: NUCLEAR PHYSICS INSTRUMENTATION, DETECTION SYSTEMS AND TECHNIQUES

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

- a. Advances in Detector Technology
- b. Technology for Rare Decay and Rare Particle Detection
- c. Other

Questions: Michelle Shinn, Michelle.Shinn@science.doe.gov or
Elizabeth Bartosz, Elizabeth.Bartosz@science.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>