

The DOE Webinar will begin shortly . . .

- **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.
- **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 2019 Phase I Release 2 Topics: <https://go.usa.gov/xUXpQ>
- **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 or call us at (301) 903-5707.





DOE SBIR/STTR
Phase I Release 2 Topics Webinar

Topics associated with the
FY 2019 Phase I Release 2
Funding Opportunity Announcement

Topics 1-6 & 19-22

DOE SBIR/STTR Programs Office

November 5, 2018

TODAY'S AGENDA

Topics Introduction	DOE SBIR/STTR Programs Office – Chris O’Gwin
Topic 1:	Office of Cybersecurity, Energy Security, and Emergency Response
Topics 2 – 4:	Office of Defense Nuclear Nonproliferation
Topics 5 – 6:	Office of Electricity
Topic 19:	Office of Environmental Management
Topics 20 – 22:	Office of Fossil Energy



FY 2019 Phase I Schedule

	Release 1	Release 2
Topics Issued	Monday, July 16, 2018	Monday, October 29, 2018
Webinar(s)	Week of July 30, 2018	Week of November 5, 2018
FOA Issued	Monday, August 17, 2018	Monday, November 26, 2018
Webinar(s)	Friday, August 27, 2018	Friday, November 30, 2018
Letters of Intent (LOI) Due	Tuesday, September 4, 2018	Monday, December 17, 2018
Non-responsive LOI Feedback Provided	Tuesday, September 25, 2018	Monday, January 7, 2019
Applications Due	Monday, October 15, 2018	Monday, February 4, 2019
Award Notification	Monday, January 7, 2019	Monday, April 29, 2019

Phase I Funding Opportunity Announcements

Participating DOE Programs (FY 2019)

Phase I Release 1

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

Phase I Release 2

- Office of Cybersecurity, Energy Security, and Emergency Response
- Office of Defense Nuclear Nonproliferation
- Office of Electricity Delivery
- Office of Energy Efficiency and Renewable Energy
- Office of Environmental Management
- Office of Fossil Energy
- Office of Fusion Energy Sciences
- Office of High Energy Physics
- Office of Nuclear Energy



Funding Opportunity Announcement (FOA) Webinar

- FY19 Phase I Release 2 FOA will be issued on **November 26th**
- 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 **November 30th**
 - Overview of the FY 2019 DOE SBIR/STTR Programs
 - Following the issuance of the FOA, look for an email announcing this webinar

CONTACT INFORMATION
Small Business Innovation Research and Small Business Technology Transfer
U.S. Department of Energy
SC-29/Germantown Building
1000 Independence Ave., SW
Washington, DC 20585
P: (301) 903-5707
F: (301) 903-5488
E: [Email Us](#)

Join Mailing List
Enter your email address below to subscribe to email updates from the SBIR & STTR Programs:

Provide Feedback
Submit suggestions for improving the SBIR & STTR Programs [here](#)

[More Information »](#)



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
- 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 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

- a. Cybersecurity during Contingency Operations
- b. Power Systems Settings Security

Questions: Walter Yamben, Walter.Yamben@netl.doe.gov

Topic 02: ADVANCED SAMPLE REGISTRATION FOR MICROANALYSES

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. Optical Microscopic Correlation to Analytical Imaging Platforms
- b. Particle Manipulation and Removal for Dispersed Samples
- c. Other

Questions: Timothy Ashenfelter, Timothy.Ashenfelter@nnsa.doe.gov

Topic 03: REMOTE DETECTION 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

- a. Novel HSI Sensor
- b. Small Sensor Packages
- c. Vegetation Subtraction Tool
- d. Flora Bio-Indicator
- e. Other

Questions: Chris Ramos, Christopher.ramos@nnsa.doe.gov

Topic 04: ALTERNATIVE RADIATION SOURCE 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

- a. Compact Cyclotrons for Nuclear Security
- b. Non-Radioisotopic Technology for Industrial Radiography
- c. Non-Radioisotopic Irradiation Technology to Enable Sterile Insect Technique
- d. Other

Questions: Donald Hornback, Donald.Hornback@nnsa.doe.gov

Topic 05: ADVANCED GRID OPERATIONAL 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

- a. Blockchain Technologies for the Electric Grid
- b. Advanced Protective Relaying Technologies and Tools

Questions: Subtopic a – Christopher Irwin, Christopher.Irwin@hq.doe.gov

Questions: Subtopic b – David Howard, david.howard@hq.doe.gov

Topic 06: ADVANCED GRID-TIED ENERGY STORAGE 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

- a. Battery Systems for Energy Assurance During and After Extreme Weather Events
- b. Advanced Circuit Topologies for Reliable Grid-Tied Energy Storage Systems

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

Topic 19: NOVEL MONITORING CONCEPTS IN THE SUBSURFACE

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. Leak Integrity Inspections of Aging Critical Infrastructure with Remote Inspection Non-Destructive Evaluation Technology (NDE)

Questions: Latrincy Bates, Latrincy.Bates@em.doe.gov or
Skip Chamberlain, grover.chamberlain@em.doe.gov

Topic 20: CARBON STORAGE 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. High Volume Subsurface Monitoring Data Processing and Minimization
- b. Telemetry Systems for Deep Subsurface Monitoring
- c. Nanosensors for Deep Subsurface Reservoir Monitoring
- d. CO₂ Use and Reuse – Plasma Technologies
- e. Other

Questions: Andrea McNemar, andrea.mcnemar@netl.doe.gov

Topic 21: RARE EARTH ELEMENTS AND CRITICAL MINERALS

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. Production of Rare Earth Metals
- b. Other

Questions: Charles Miller, charles.miller@netl.doe.gov

Topic 22: OIL & NATURAL GAS

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. Technologies for Capturing and Converting Natural Gas to Useful Products to Reduce Flaring
- b. Other

Questions: William Fincham, william.fincham@netl.doe.gov

DOE SBIR/STTR Programs Office

Contact Information

- SBIR/STTR Web: www.science.energy.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: www.doesbirlearning.com

