U.S. DEPARTMENT OF ENERGY | **Office of Science**

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Cross Cutting Activities

The ASCR Research Division collaborates in cross cutting activities with the ASCR facilities division, with other programs under the Office of Science, with applied and national-security offices elsewhere in the Department of Energy, and with other Federal agencies.

Stewarding an Innovative Next-Generation Software Stack

Large and complex software packages originally developed under the auspices of SciDAC, through the Exascale Computing Project, or with other support have become vital to the users of Department of Energy leadership-class supercomputers and to computational scientists more broadly. The stewardship-and-innovation effort ensures that this software remains up-to-date, operational, and optimized even as new hardware comes online, and as operating systems and underlying software libraries change.

Earthshots/Energy Earthshot Research Centers

In fall 2023, the Office of Science announced the creation of 10 Energy Earthshot Research Centers at DOE national laboratories and 18 university-led Science Foundations for Energy Earthshots awards. This Office-of-Science-wide initiative, totaling $264M, seeks fundamental scientific knowledge in areas needed to advance the Department's goals in hydrogen as a fuel, long-duration electricity storage, removing anthropogenic carbon dioxide from the atmosphere, enhanced geo-thermal energy production, floating offshore wind turbines for generating electricity, and reducing the energy consumption of industrial processes that require heat.

Small Business Innovation Research / Small Business Technology Transfer

The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs are U. S. Government programs intended to help small businesses conduct research and development and to foster technology transfer. The SBIR/STTR Programs Office works collaboratively with 13 program offices throughout DOE, including the Advanced Scientific Computing Research program, to select specific research topics.

ASCR Funding

- FY2024: Building EPSCoR-State/National Laboratory Partnerships: Press Release, Award List [📄], Funding Opportunity [📄]
- FY2023: Accelerate Innovations in Emerging Technologies: Press Release, Award List [📄], Lab Funding Opportunity [📄]
- FY2023: Science Foundations for Energy Earthshots: Press Release, Award List [📄], Funding Opportunity [📄]
- FY2023: Biopreparedness Research Virtual Environment (BRaVE): Press Release, Award List [📄], Lab Funding Opportunity [📄]
- FY2023: Energy Earthshot Research Centers: Press Release, Award List [📄], Lab Funding Opportunity [📄]
- FY2021: Microelectronics Co-Design Research: Press Release, Award List [📄], Lab Funding Opportunity [📄]
- FY2020: National Quantum Information Science Research Centers: Press Release, Award List, Funding Opportunity [📄]

Award abstracts and information about awards made prior to FY2018 can be found here [↗].

ASCR Workshops and Reports

- 5G Enabled Energy Innovation: Advanced Wireless Networks for Science (March 2020)
- AI for Science: Report on the Department of Energy Town Halls on Artificial Intelligence for Science (February 2020)
- Data and Models: A Framework for Advancing AI in Science (December 2019)
- Workshop Report on Basic Research Needs for Scientific Machine Learning: Core Technologies for Artificial Intelligence (February 2019)
- Basic Research Needs for Microelectronics (October 2018)

Workshop and reports completed prior to FY2018 can be found here.

Other Notable Reports

- Advanced Research Directions on AI for Science, Energy, and Security: Report on Summer 2022 Workshops (May 2023)
- Foundational Science for Biopreparedness and Response (March 2022)
- Opportunities and Challenges from Artificial Intelligence and Machine Learning for the Advancement of Science, Technology, and the Office of Science Missions (September 2020)
- National Strategic Overview for Quantum Information Science (September 2018) [📄]

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