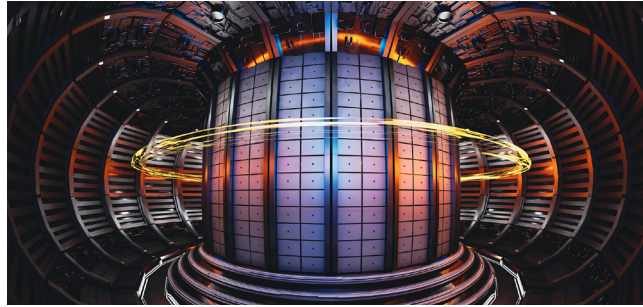


Savannah River National Laboratory to Receive \$1.5 Million for Technology to Enable Fusion Power Plants

SRNL will receive \$1.5 million in funding from the U.S. Department of Energy Advanced Research Projects Agency-Energy (ARPA-E) for SRNL's work with the Creating Hardened And Durable fusion first Wall Incorporating Centralized Knowledge (CHADWICK) program. The CHADWICK program aims to explore promising alloy design space and manufacturing processes to develop next generation materials to strengthen a fusion power plant's first wall, which surrounds the fusion core.



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SRNL will work with Colorado School of Mines and the University of Illinois Urbana-Champaign on the Machine Learning for Alloy Discovery Coupled with Geometric Optimization for Functionally Graded Liquid Metal. The project will develop a

suitable material and 3D print the geometrically complex structures that will control how much liquid metal is exposed to the fusion reaction without excessive evaporation. Using liquid metal in fusion power plants provides the opportunity to continuously replace the first wall and repair the irradiation damage from the fusion reactions. The project develops novel approaches to keeping the liquid in place, and its success will help validate that the inside surface of a fusion power plant chamber can be made of liquid instead of solid material.

https://www.srnl.gov/srnl_news/savannah-river-national-laboratory-to-receive-1-5m-for-technology-to-enable-fusion-power-plants/

Savannah River National Laboratory, Flibe Energy Strengthen Nuclear Energy Fuel Cycle Research and Development



Savannah River National Laboratory and Flibe Energy, Inc. signed a memorandum of understanding to strengthen their research and development capabilities and explore opportunities for collaboration related to nuclear energy and advanced nuclear fuel cycles. Under the MOU, SRNL and

Flibe Energy will foster scientific and technical collaboration in areas involving:

- Flibe Energy reactor and fuel cycle technology.
- Potential projects supporting SRNL enduring missions.

- Thorium-based and Low Enriched Uranium-based fuel and supply chain development.
- Joint research projects and funding collaborations.

As these efforts develop and grow, the formation of alliances between SRNL and Flibe Energy and their affiliated institutions will be evaluated to more broadly support important initiatives in the areas above.

<https://www.srnl.gov/news-releases/savannah-river-national-laboratory-and-flibe-energy-strengthen-nuclear-energy-fuel-cycle-research-and-development/>

SRNL Analyses Supports General Fusion's Design for Fusion Power Commercialization

New analyses from SRNL and the UK Atomic Energy Authority support General



Fusion's Magnetized Target Fusion design approach to shielding the fusion machine's vessel from neutron damage and producing enough tritium to sustain power plant operations for the life of the machine.

These characteristics of General Fusion's unique approach are designed to address two key barriers to commercializing fusion power: sustainable fuel use and production, and the 'first wall problem.'

The SRNL study, completed as part of the U.S. Department of Energy's INFUSE program, builds upon the UKAEA's analysis and further confirms the tritium supply advantages of General Fusion's power plant design.

<https://generalfusion.com/post/new-third-party-analyses-support-general-fusions-mtf-technology-path-to-commercialization/>

20th Anniversary Edition of MATTER Magazine Published

The 20th Anniversary edition of MATTER Magazine is available on SRNL's website at <https://www.srnl.gov/newsroom/matter-magazine/>. MATTER provides feature length articles about how SRNL puts science to work to help protect our environment, serve our national defense, secure our clean energy future, and reduce emerging nuclear threats.

In this edition, stories include SRNL's work focusing on space nonproliferation, the Center for Hierarchical Waste Forms, grid security, our mobile facilities and the deployment of Advanced Long-Term Environmental Monitoring Systems beyond the Savannah River Site. Nearly every story in this edition highlights the impact of SRNL's research and development and applied science achievements across the DOE complex, our nation and the world.



30 Teachers Receive Catalyst Grants for STEM Education



Teachers receiving Catalyst Grants gathered at Newberry Hall, Aiken S.C.

Battelle Savannah River Alliance, LLC (BSRA), the manager and operator of Savannah River National Laboratory, awarded \$125,000 in SRNL K-12 Catalyst Grants for STEM Education to CSRA schools to advance activities and programs relating to science, technology, engineering and mathematics. Grants of \$2,500, or \$5,000 were awarded to 30 teachers from 25 different schools within the Georgia counties of Burke, Columbia, McDuffie and Richmond, and in the South Carolina counties of Aiken, Barnwell, Edgefield and Orangeburg, during a reception held August 22, at Newberry Hall, Aiken, South Carolina.



K-12 Catalyst Grants for STEM Education

Behind the Science Virtual Laboratory Tours Ready for New School Year

SRNL's Behind the Science Virtual Tours allow teachers and students to embark on an extraordinary journey without leaving the classroom. A Behind the Science Virtual Tour takes students on immersive adventures, exploring scientific wonders and essential business functions of SRNL from the comfort of their own classroom seats. Students also have the opportunity to ask SRNL staff any questions in a live Q&A session.

Participation in a Behind the Science Virtual Tour of SRNL is an exciting way to ignite curiosity and expand horizons. Virtual tours are available for those in grades 6-12 from October 2024 through March 2025.

The next Behind the Science Virtual Tour is Nov. 14 and teachers can register their classroom to attend by visiting <https://survey.alchemer.com/s3/8055129/November-s-Behind-the-Science-Virtual-Tour>

SRNL Day at Georgia Tech



SRNL employees interact with Georgia Tech students and staff at SRNL Day.

SRNL recently held SRNL Day at Georgia Tech to enhance student and faculty awareness of SRNL's ongoing research and to explore potential avenues for collaboration. Elizabeth Hoffman, SRNL director of Innovation and University Engagement; Marc Taylor, SRNL Department of Defense portfolio manager and executive advisor; and Natalie Logue, SRNL research librarian, provided presentations about SRNL. The Georgia Tech Research Institute executive vice president also discussed and encouraged collaboration opportunities with SRNL. The day included breakout sessions about each of SRNL's research directorates, panel discussions, lightning talks and a poster session. SRNL Human Resources representatives also shared current job opportunities with Georgia Tech students.



Behind the Science Virtual Tour

Embark on an extraordinary journey without leaving your classroom. Our virtual tours take students on an immersive adventure, exploring scientific wonders and business functions from the comfort of their seats. Students will hear from chemical, nuclear, and environmental scientists and a graphic designer. They will also have the opportunity to participate in a live Q&A session with each staff member. Get those questions ready! This tour is available to 6th - 12th grade students.

Thursday, November 14
9-10:30 am
Teams link to follow



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