

**MEDIA CONTACT**

Christian Harris  
803-725-5819  
christian.harris@srnl.doe.gov

**FOR IMMEDIATE RELEASE**

## **LDRD Advancing Science: SRNL Completes Annual R&D Proving Ground**

AIKEN, S.C. (Oct. 22, 2019) SRNL concluded its Fiscal Year 2019 Laboratory Directed Research & Development Program, or LDRD, by hosting a Year-End Review and Poster Session on Oct. 8 at the Applied Research Center in Aiken.

The session featured annual highlights, and researchers presented posters detailing each of the 29 funded projects. Project topics ranged from processing image analysis using big data, machine learning and computer vision to researching large area airborne contamination monitoring.

SRNL's LDRD program helps develop scientific capabilities that will enhance the laboratory's ability to address future DOE and NNSA missions. It is a vehicle to foster creativity and stimulate the exploration of science and technology while providing a proving ground for new concepts in research and development.

“We are now at a new transformational point for the lab,” Ralph James, Associate Laboratory Director Science and Technology, told the audience. “One where our thirst for discovery will grow, and hopefully we will experience cutting-edge breakthroughs of revolutionary impact that will expand the frontiers of science and technology while preserving our historically significant applied contributions.”

LDRD is the principal source of discretionary research funding available to the Laboratory Director to use to strengthen the lab's core competencies and position it for the future. FY19 projects received a total of \$7.5 million



*Dr. Simona Murph, LDRD MVP working at SRNL. Her work has received funding from NNSA since FY 2015.*

in funding, said Jose Cortes-Concepcion, LDRD Program Manager. Nearly half of the projects focus on National Security. Other major focus areas are Environmental Stewardship, Nuclear Materials Management, and Secure Energy Manufacturing.

Of note was a previously-funded project led by Dr. Simona Murph researching “Magnetically induced heat generation for controlled hydrogen isotope release from hydrides.”

It was named the program’s MVP Award this year and has received funding from NNSA since FY 2015. The project looks at new technologies for heating nanoparticles that are rich in hydrogen. The process is faster than current conventional heating strategies, localizes the heating on nanoparticles embedded in a solid matrix, and can reduce the demand for heat energy on the environment.

With a very small footprint, the technology provides a safer method of precisely handling hydrogen and its isotopes stored in hydride materials. This was the first study showing the controlled hydrogen gas release and selective hydrogen isotope release through application of an alternating magnetic field.

The research has far-reaching potential applications such as treating environmental waste and destroying contaminants by raising the temperature remotely. There are many potential bio/medical applications such as unclogging arteries and new approaches to delivering drugs.

Her team’s work has appeared in nine peer-reviewed publications, generated four invention disclosures and received 12 different awards and recognitions. Additionally, the team submitted two patent applications, and one patent has been issued.

The FY20 projects were also announced during the presentation. There were 18 new projects funded, and 12 projects received continuing funds.

*The United States Department of Energy (DOE) Savannah River National Laboratory (SRNL) is a multi-program research and development center that puts science to work to protect the nation by providing practical, cost-effective solutions to the nation’s environmental, nuclear security, nuclear materials management, and energy manufacturing challenges. SRNL is managed for DOE by Savannah River Nuclear Solutions, a Fluor-led company whose members are Fluor Federal Services, Newport News Nuclear and Honeywell.*

Visit us on the web at <http://srnl.doe.gov>