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News from the Savannah River National Laboratory

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Laboratory, Universities, Discuss Collaboration on Vital Research

Clemson University, Medical University of South Carolina, South Carolina State University and University of South Carolina meet with Savannah River National Laboratory

AIKEN, S.C. – At the invitation of U.S. Senator Lindsey Graham, the U.S. Department of Energy's (DOE) Savannah River National Laboratory (SRNL) and South Carolina's research universities came together for the first time today to identify and enhance collaboration opportunities for addressing some of the nation's most important technology needs. The South Carolina Strategic Research Exchange was held at the Savannah River Site's SRNL and provided a first-ever structured forum in which the research institutions shared their respective expertise and unique capabilities and explored the best ways to work together.

Senator Graham and Congressmen Gresham Barrett and James Clyburn were all on hand to see and hear about some of the work that the five institutions are currently doing in four areas of strategic importance to the state:

- Homeland Security
- National Security
- Energy Security (Hydrogen)
- Environmental Science and Technology

All three of the legislators talked about the potential for what the state of South Carolina can achieve when the universities and the national laboratory team up.

"The sky's the limit," said Senator Graham. "We have an historic opportunity to take it to a new level – to take our economy in a new direction."

He added he has two goals for the collaboration among SRNL and the universities: "First, that whatever is going on at the universities is being leveraged by Savannah River's status as a national lab. I want it to be an asset for each individual university and be something bigger than the sum of its parts. My second goal is for South Carolina to become the Detroit of hydrogen," based on the hydrogen and transportation capabilities at SRNL and the universities."

Congressman Barrett added, "It's all about teamwork. This is the new 'research triangle,'" he said. "Once this research triangle gets off the ground, it will not have a comparison anywhere in the world. The future is as bright as we choose to make it."

Congressman Clyburn noted that South Carolina's future no longer lies in tobacco and textiles, the historic foundations of the state's economy, but in other future growth and development. "How do we seize that future?" he asked. "We need to shed old practices and adopt best practices." That would include initiatives such as today's Exchange, "to be here today, taking these four great universities and meshing them, coordinating, and using the best they have to move to the next level. We must work together," he added.

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“In the field of research and development, South Carolina has many unique strengths,” explained SRNL Director Dr. Todd Wright. “Premier among these strengths are the capabilities at the state’s four research universities and the Savannah River National Laboratory. When our institutions collaborate, we bring together complementary skills, facilities and programs. The result is advances in technology that can benefit South Carolina and the nation.”

Each of the universities and SRNL showcased some of their state-of-the-art work in the four focus areas and then participated in panel discussions to formulate plans for future collaboration opportunities in these areas.

Clemson University research activities include: automotive and transportation technology, advanced materials, biotechnology and sustainable environment. Clemson’s new International Center for Automotive Research (ICAR), now under construction, will support advanced engine design and the development of strong, light-weight materials for enhanced transportation applications for conventional vehicles, as well as hydrogen powered vehicles. Biotechnology at Clemson supports the understanding of plant cell structure and the enhancement of crops to increase yield and quality. Clemson’s work in sustainable environment includes work in groundwater and wastewater treatment remediation, and has supported several of the aquifer cleanup efforts at SRS.

The Medical University of South Carolina’s (MUSC) work in renewable sources of energy includes the successful building and operation of a microbial fuel cell, leading to the identification of microorganisms that will directly generate electricity or hydrogen. MUSC’s Environmental Biosciences Program is focused on understanding the molecular mechanisms of human disease associated with environmental exposures, and the development of new methodologies for investigating population health risks. This has led to increased understanding of the human health effects following exposure to trichloroethylene, the most significant groundwater contaminant in the nation.

South Carolina State University (SCSU) is involved in environmental restoration research that has supported wetlands restoration at the state, regional and national level, as well as bioremediation of contaminants found in extreme locales. The university’s Nuclear Engineering Program educates future nuclear engineers to develop the qualifications and expertise needed to address national security and energy related issues. SCSU also operates a Transportation Center of Excellence for the U.S. Department of Transportation, which supports the training of transportation specialists. In coordination with the University of South Carolina (USC), SCSU is conducting research in optimizing the performance of fuel cells.

USC collaborates with SRNL in several areas of environmental research. In addition, USC is active in research into hydrogen production, storage, and use in fuel cells to produce electricity. USC, in collaboration with SRNL and SCSU scientists, is developing hydrogen storage options using chemical and metal hydrides. USC researchers are improving fuel cell performance and longevity-- activities sponsored by federal agencies and private companies. Counter-terrorism research at USC encompasses five major threat areas: biological, chemical, nuclear, explosives, and cyber.

SRNL also has work in the four focus areas, including research in the technical development of new materials for hydrogen storage. SRNL has extensive experience in robotic and remote systems, such as the robot that has been deployed for the disarming of explosive devices in Iraq. Environmental science and technology at SRNL includes a wide range of applications, including environmental risk management, biotechnology and environmental restoration. SRNL emphasizes matching the environmental cleanup technology to the site’s characteristics, using low-energy, minimally intrusive technologies where appropriate.

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SRNL is the applied research and development laboratory at DOE's Savannah River Site. For over 50 years, the laboratory has been providing applied technology support for SRS, DOE and the nation. SRNL is operated for DOE by Washington Savannah River Company.

Note: Photos are available from the media contact listed above.

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