MEDIA CONTACT
Scott Shaw
Phone: 803-989-9042
Email: scott.shaw@srnl.doe.gov

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SRNL, University of South Carolina Appoint Kristen Booth to Joint Faculty Position

AIKEN, S.C. (Oct. 6, 2022) – Savannah River National Laboratory (SRNL) and University of South Carolina appointed Kristen Booth, Ph.D., to a joint faculty position.

As an assistant professor at University of South Carolina College of Engineering and Computing, Booth's research focuses on power electronics, power grid modernization and optimization, and artificial intelligence integration to power electronics. Her research interests also include:

- Direct Current (DC) Microgrids
- Medium Frequency Medium Voltage Transformer Optimization
- Electric Vehicle Charging Stations
- Solid State Transformers
- Reliability Testing of Wide Bandgap and Ultra-wide Bandgap Semiconductors in Power Converters

Working with SRNL's Global Security directorate, Booth's expertise and experience will help facilitate research and development activities pertaining to power system topics, such as modeling and simulation, power electronics, co-simulation, supervisory control and data acquisition (SCADA), operational technology (OT) network security, precision timing, and cyber security. Booth and SRNL will collaborate in developing cyber-centric solutions to address key issues within critical infrastructure as it pertains to the power grid.

"Dr. Booth's efforts will contribute directly to strengthening SRNL's core competency of securing connected control systems and associated data, ultimately expanding our existing competency in nuclear materials detection, characterization and assessment in support of national security mission needs associated with nuclear nonproliferation," said Associate Laboratory Director, Global Security, Tammy Taylor, PhD. Taylor added that expanding and developing relationships both within the University of South Carolina and throughout the power system research and development industry will facilitate further collaboration and provide a pipeline for new talent.

"I have had the fortunate opportunity to work with SRNL in the past, and the potential for the future is limitless by collaboratively creating solutions to today's problems while developing the next generation workforce," said Booth. "I am honored and look forward to supporting the lab's activities in these strategic thrusts as a joint appointee."

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Booth graduated from Murray State University in 2015 before receiving both her master's and doctoral degrees from North Carolina State University in 2017 and 2019. She then went on to become a postdoctoral researcher at The Ohio State University in the Center for High Performance Power Electronics before joining the University of South Carolina in 2020.

SRNL's Joint Appointment Program provides university faculty opportunities to engage in the laboratory's research and development that addresses the nation's challenges in energy, science, national security, and environmental stewardship. Together, SRNL staff and joint appointees are helping to ensure America's security and prosperity through transformative science and technology solutions. Joint appointees serve as a bridge between SRNL researchers, their university and students.

Savannah River National Laboratory is a United States Department of Energy multi-program research and development center that's managed and operated by Battelle Savannah River Alliance, LLC (BSRA). SRNL 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 (https://srnl.doe.gov/).

Kirsten Booth, PhD, SRNL Joint Appointee and University of South Carolina Assistant Professor, College of Engineering and Computing

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