



**Savannah River
National Laboratory**

We put science to work.™

South Carolina Nuclear Advisory Council Meeting

October 24, 2022

SRNL Accomplishments and Update

Vahid Majidi
Laboratory Director



SRNL is managed and operated by Battelle Savannah River Alliance, LLC for the U. S. Department of Energy.



SRNL: A Multi-Program National Laboratory (3 mission outcomes)



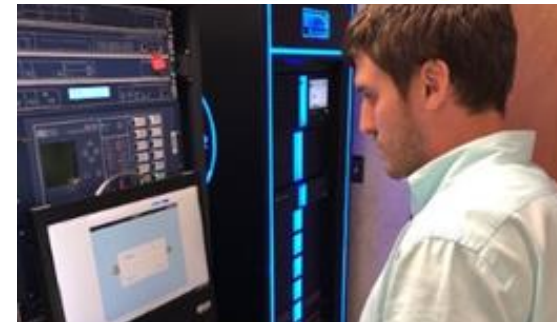
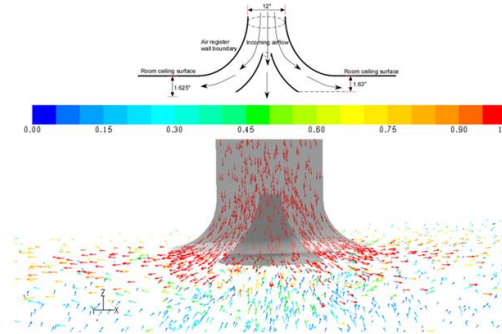
Environmental Stewardship

- Environmental Management
- Legacy Management
- Technology Deployment



National Security

- Supporting Nuclear Deterrent
- Preventing Proliferation
- Nuclear Material Management



Science, Engineering, & Energy

- Clean Energy Research
- Securing Connected Systems
- Advance Manufacturing

Key Accomplishments National Security

- **Hosted NNSA Administrator's visit to SRNL.**
- Established Nonproliferation Applied Science Center.
- **Provided support to Defense Threat Reduction Agency (DTRA) Technical Reachback on a hypothetical event at the Zaporizhzhia NPP in Ukraine by evaluating predicted plumes should a release occur and establish likely reasons for differences in predicted plumes from DTRA and the National Atmospheric Release Advisory Center (NARAC).**
- Pu-244 recovery from Mk-18A targets: Initiated testing of the full-scale mock-up of the crane, movement functions of the target receipt table, and operation of cell insert systems to prepare for delivery and processing of actual targets in SRNL Shielded Cells.
- Delivered isotopically-coded specimens of Ni, Mo, and W oxides to ORNL as a part of the "Intentional Forensics Venture" led by LANL
- **Successfully completed the Mobile Plutonium Facility (MPF) Dark Sleeper.**
- The SRNL UAS Program earned the Annual ICAP (Interagency Committee by Aviation Policy) best Unmanned Aircraft System award for FY21.



Key Accomplishments Environmental Management

- **Hosted Secretary Granholm visit to SRNL.**
- **AMC Groundbreaking.**
- Testified with EM1 at House S&T subcommittee hearing.
- Established Regulatory Center of Excellence
- SRNL performs remote visual examination of the Non-Aluminum Spent Nuclear Fuel (NASNF) fuel bundles currently stored in L-basin.
- Two ARPA-E proposals funded: “Pioneering a Cermet Waste Form for Disposal of Waste Streams from Advanced Reactors (Pace-Forward)” , “U Recovery from UNF with safeguards that harness volatility of chloride salts at high temperatures”. Both projects helpful for developing waste disposition technologies.
- **Developed a strategy through the EM network of national labs to prioritize EM’s critical science and technology needs.**
- Provide data for the long-term 3013 Pu surveillance program.
- For SRS sludge batch 10 (SRMC), performed characterization, assessments on the glass processing window, and bench-scale testing to provide necessary data for waste compliance, and processing parameters.

Ground broken on Advanced Manufacturing Collaborative at USC Aiken campus

BY MATTHEW CHRISTIAN MCHRISTIAN@AIKENSTANDARD.COM
APR 19, 2022



Ground was broken on the Advanced Manufacturing Collaborative at USC-Aiken Tuesday morning. Congressman Joe Wilson is in the center of the photo. Others in the photo are Ike White, senior advisor with the Department of Energy Environmental Management office, USC Aiken Chancellor Daniel Heimmerrmann, former USC Aiken Chancellor Sandra Jordan, Savannah River National Laboratory Director Wahid Majid, North Wind Construction Services President Brent Brooks, Savannah River Laboratory Office Director Tony Polk, Aiken County Council Chairman Gary Bunker, S.C. Rep. Bart Blackwell, R-Aiken, and Aiken County Commission on Higher Education Chairwoman Teresa Haas.

STAFF PHOTO BY MATTHEW CHRISTIAN



New Projects Funded at SRNL: Q4

- **Received two INFUSE awards with General Atomics and General Fusion to advance fusion energy.**
- **Clean Energy Science proposal (PI: Patrick Ward) was selected by Office of Science.**
- **Clemson/SRNL selected for EFRC**
- **Nonproliferation project ASET was selected by NNSA (multi year)**
- **New national security project funded by CESER**

Advanced Manufacturing Collaborative (AMC)

- \$50M facility being built on the campus of University of South Carolina, Aiken
 - Design and construction managed by DOE
 - ~50000+ ft²
 - 15,000 ft² laboratory space
- Occupancy expected in FY24
- Kicking off a multi-organizational task team to prepare for occupancy
 - Ensure ready to occupy when construction complete
 - Define operational model



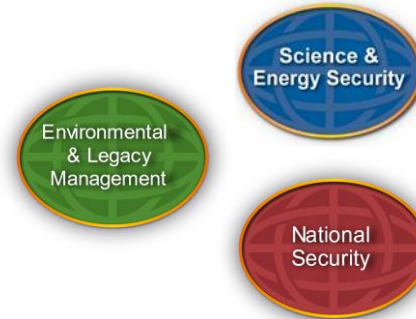
Advanced Manufacturing Collaborative Facility

Announcement on Advanced Manufacturing Collaborative at USC Aiken campus

BY MATTHEW CHRISTIAN MCHRISTIAN@AIKENSTANDARD.COM
APR 19, 2022



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...mission on Higher Education Chairwoman Teresa Haas.





Workforce Development
*Deliver the intellectual resources needed
to execute the vision for the nation.*

Implement a workforce development initiative in collaboration with our five partner universities

- **Six-tiered workforce development initiative:**

- Visiting scholar program
- Continuing professional development
- Post-doctoral scholar program
- Graduate Student Fellowships
- Undergraduate Student Assistantships
- Technical Training School



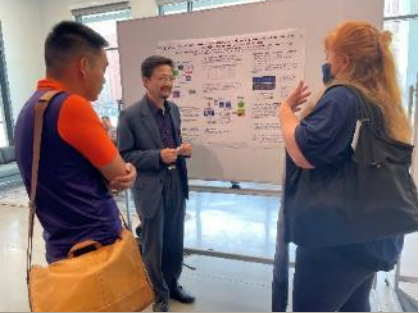
UNIVERSITY OF
SOUTH CAROLINA



- **Expand our joint appointments in partnership with the BSRA universities to support expansion of our core competencies**

We held the Inaugural BSRA Collaboration Exchange

- More than 120 registered participants, 60% from the BSRA Universities
- June 22-24, 2022; Georgia Cyber Center at Augusta University
- Focused on three of our seven core competencies
 - ✓ Creating Manufacturing Solutions
 - ✓ Advancing Next-Generation Nuclear Materials Processing
 - ✓ Assuring Production & Supply of Strategic Components and Materials



Doubled the Size of SRNL's Joint Appointment Program in FY22



NEW SRNL Joint Appointees in FY22

(left to right)

- Justin Conrad, UGA
- Margaret Kosal, Georgia Tech
- Robert Hayes, North Carolina State University



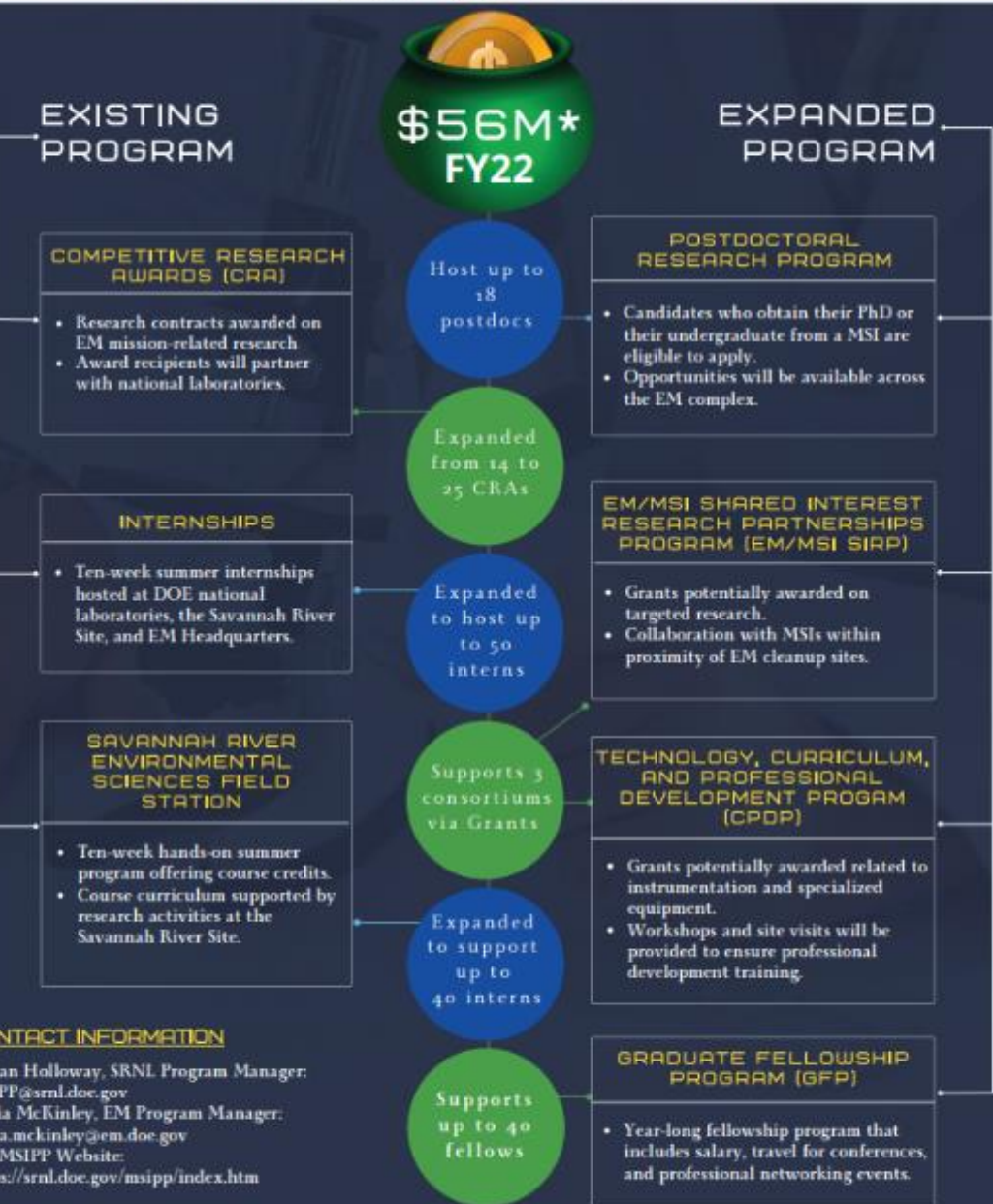
Established SRNL Joint Appointees

(left to right)

- Brian Powell, Clemson University
- Hans-Conrad zur Loye, University of South Carolina
- Jeff Morris, Augusta University

Anticipated Joint Appointments

Venetia Lyles (SCSU), Kristen Booth (UofSC), Johan Enslin (Clemson)



Providing Opportunities through EM-MSIPP

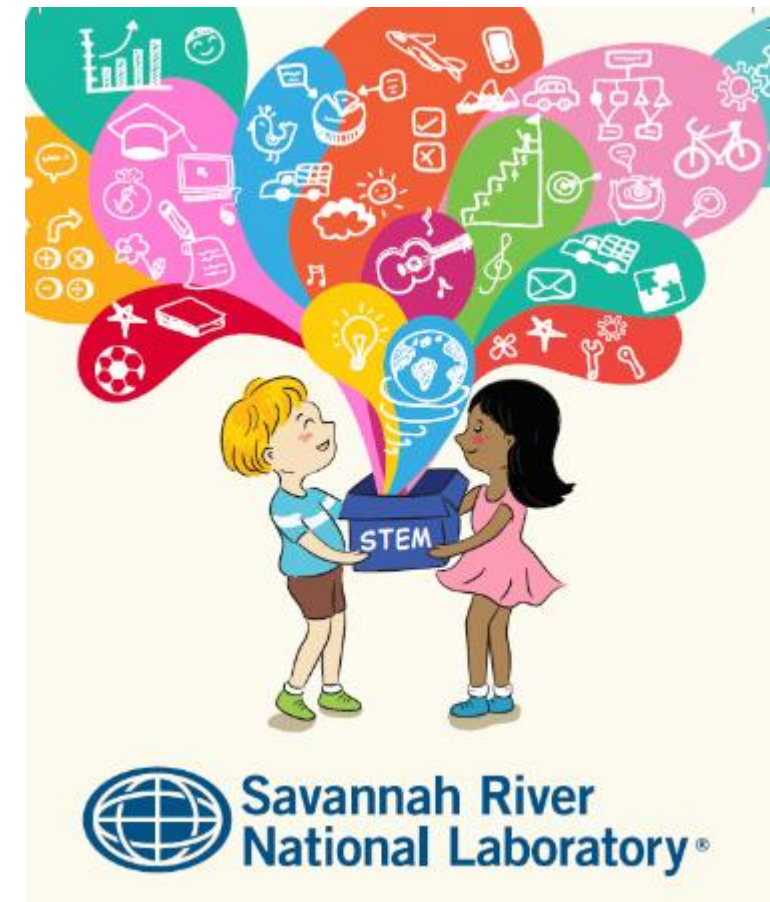
- Supporting 5 other National Laboratories to host positions for underrepresented students and postdocs
- Competitive Research Award Workshop
 - 11 HBSUs and other MSIs
 - 78 Faculty
 - 27 Students





STEM Education in the Classroom

- Developed and assembled science kits for staff to take into classrooms
- Establishing a virtual tour program which will run monthly during the school year that includes diversity at the forefront of the mission where all students can see themselves at SRNL
- Donation to science lab furniture to an underserved area school
- Donation to expand our local library
- Conducting outreach efforts to area school stakeholders (superintendents/principals/and teachers in Aiken, Barnwell, Richmond, and Williston).
- Partner with other non-profits in their mission to encourage STEM education and give STEM grants to area teachers



Engagement with Students

37th Annual Science Education Enrichment Day (SEED)
Saturday, Oct. 1



For the 21-22 school year, 971 students were reached

TEAM SRNL in the Community

- Charitable boards
- Food Bank
- Heart Walk
- United Way
- School clean up

