U.S. DEPARTMENT OF ENERGY

SRS

Savannah River National Laboratory (SRNL)

An Enduring DOE Mission

Savannah River Site

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Director, Savannah River Laboratory Office
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SRNL at a Glance

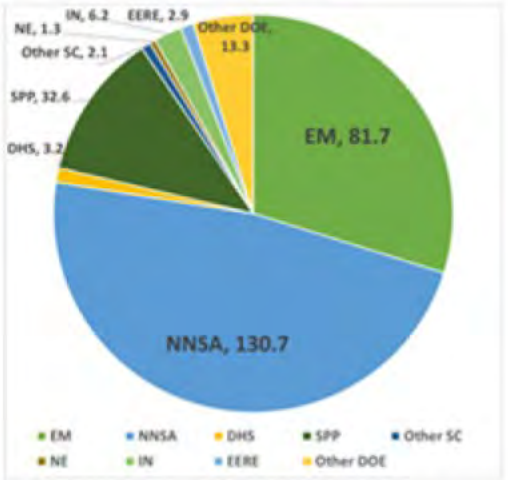
Savannah River National Laboratory
Lab-at-a-Glance

Location: Aiken, SC
Type: Multi-program Laboratory
Contractor: Battelle Savannah River Alliance, LLC
Responsible Site Office: Savannah River Site
Website: srnl.doe.gov

Physical Assets:
- 750,000 sq. ft., 59 buildings
- Replacement Plant Value: $2B
- 63,000 sq. ft. in Leased Facilities

Human Capital:
- ~1060 Full Time Equivalent Employees (FTEs)
- ~5 Joint Appointments
- ~45 Postdoctoral Researchers
- ~50 Undergraduate Students

FY 2021 Costs by Funding Source: *(Cost Data in $M):*

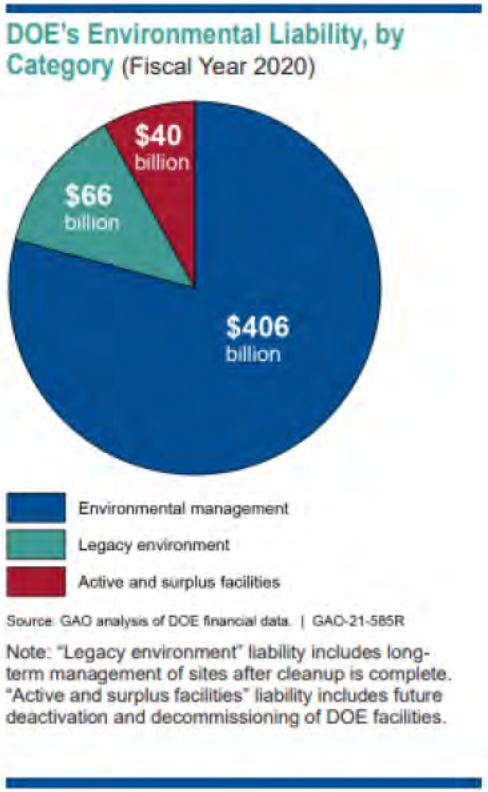


SRNL executed $348M in FY21 - $274M in Program execution and $74M for facility operations and maintenance costs

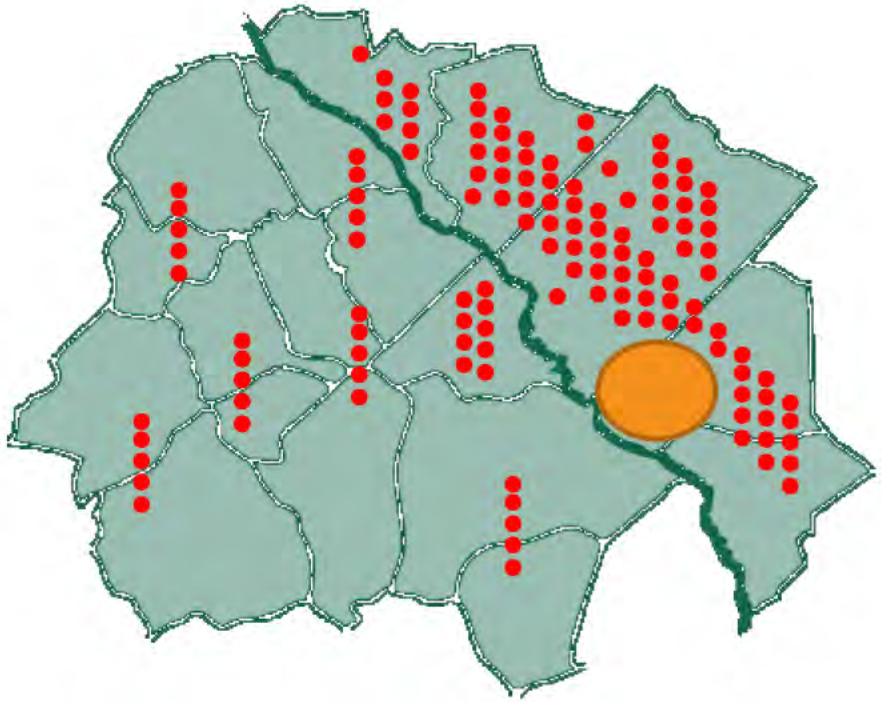
SRNL Mission

The Laboratory mission is to conduct basic and applied research and development (R&D) to advance scientific knowledge, to protect the Nation's energy resources, national security, environmental quality and human health, and to strengthen educational foundations and national economic competitiveness.

- DOE programs are carried out in partnership with other DOE National Laboratories, academia, government agencies, the international scientific community, and the private sector.
- The Laboratory's Contractor will seek to advance the frontiers of science and technology through broad interdisciplinary R&D programs that answer fundamental questions, solve technical problems (locally, regionally, nationally, and internationally), and support the development and application of technologies to address societal needs.



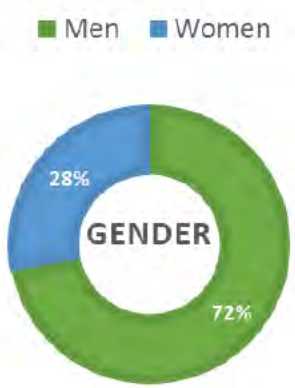
Regional Hires (18 counties in GA and SC)

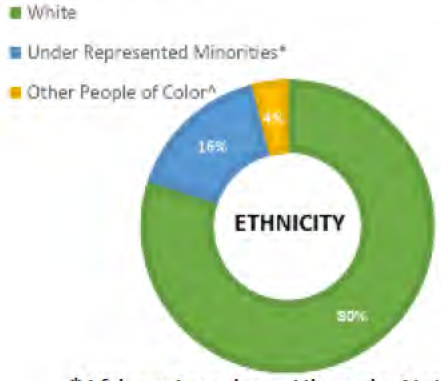


Central Savannah River Area (CSRA)

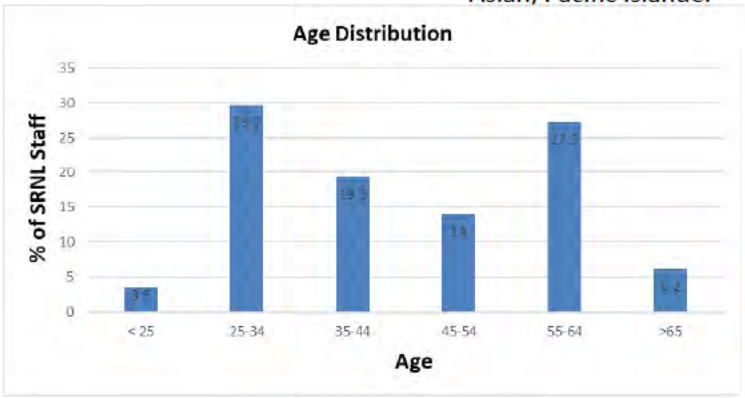
- Over 400 new staff in past 2 years
  - Average age down to 45
  - Several strategic hires
- Revitalized Post Doc program
  - ~ 30 Post Docs
  - Established Eisenhower post doc program
  - Process for conversion to staff
- Established Laboratory Fellow program
- Mentoring, personnel development, and recognition
- Recruitment of strategic positions

SRNL BSRA Workforce Demographics





*African American, Hispanic, Native American
^Asian, Pacific Islander



SRNL Average Age = 45 years

- **Utilization of EM Minority Serving Institutions Partnership Program**
- **Director's Office Diversity, Equity and Inclusion Committee**

Locations new employees moved from over past two years

The SRNL M&O Contractor

- On December 22, 2020, DOE awarded the SRNL Management and Operations (M&O) contract to Battelle Savannah River Alliance (BSRA)
- On June 21, 2021, BSRA assumed operation of the Laboratory

BSRA
Battelle Savannah River Alliance, LLC

SRNL Management & Operations:
University Partners

University of South Carolina
Clemson University
SC State University 1896
Georgia Tech
University of Georgia

SRNL Scope of Work

Major Mission Roles:

- Environmental Management
- National Security
- Science Discovery
- Energy Security
- Legacy Management

Environmental Management

- **Provide science and technology expertise that enables site cleanup and closure decisions to have a sound, scientific basis**
- **Expand the deployment of innovative technologies and practical solutions that substantially reduce lifecycle cost, accelerate schedule, and reduce risk to achieve optimal end states with DOE environmental cleanup**

Reduce Schedule and Lifecycle Cost of EM Cleanup	• Partner with Sites and other National Laboratories to provide technical expertise to develop, test, and evaluate program approaches
Enable Future Nuclear Materials Management	• Develop and deploy innovative approaches to nuclear chemical process engineering and nuclear materials management
Define Optimal and Sustainable Site End States	• Utilizing the lab's expertise, develop sound technical bases for end states
Develop, Enhance, and Sustain the Capabilities and Competencies	• Develop strategic partnerships with academia, government agencies, and industry
Develop the Next Generation of Scientists and Engineers	• Lead EM's Minority Serving Institutions Partnership Program; partner with academia to leverage programs that support the future workforce

National Nuclear Security

- **Support the nuclear deterrent, reduce global nuclear threats, and expand scientific knowledge and application to execute NNSA and DOE missions and strategic objectives**

Tritium Complex

Defense Programs	• Supports a robust nuclear weapons stockpile through support to the weapon design agencies for reservoir development and testing of components to ensure stockpile safety and reliability; • Perform tritium R&D and provide technical support to the tritium mission
Defense Nuclear Nonproliferation	• Develop nuclear proliferation detection and security technologies; • Remove and support the disposal of excess weapons-usable nuclear material from both foreign and domestic stockpiles
Production Modernization	• Provide technical support to the Savannah River Plutonium Processing Facility project and the pit production mission through technology evaluation, training and workforce development, and interfacing Weapons Design Agencies on processes and product quality

Science

- Deliver the fundamental scientific knowledge and discoveries to advance the frontiers defined by EM and EM's support for the Office of Science.
- Translate those discoveries into contributions to the DOE Science Strategic Objectives technology innovation.
- Support the Office of Science research portfolio.

Advanced Scientific Computing Research	• Delivering world leading computational and networking capabilities to extend the frontiers of science and technology
Basic Energy Sciences	• Understanding, predicting, and ultimately controlling matter and energy flow at the electronic, atomic, and molecular levels
Biological and Environmental Research	• Understanding complex biological, earth and environmental systems
Fusion Energy Sciences	• Building the scientific foundations for a fusion energy source
High Energy Physics	• Understanding how the universe works at its most fundamental level
Nuclear Physics	• Discovering, exploring, and understanding all forms of nuclear matter

Energy Security

- Advance the DOE goals and objectives by supporting prudent development, deployment, and efficient use of "energy strategies" that also create new jobs and industries;
- Support a more economically competitive, environmentally responsible, secure and resilient U.S. energy infrastructure.

Advanced Manufacturing

- Incorporate discoveries in advanced manufacturing to advance EM cleanup and contribute to regional and national economic growth

Electrical Grid Security

- Provide innovative solutions to increase electrical network security, reliability and resiliency by advancing SRNL's regional partnership with Clemson's e-Grid

Integrated Energy Technology

- Integrate energy technology for a variety of platforms and systems, for renewable energy technologies and national security applications

Legacy Management

Contribute to LM science and technology needs, including:

- **Optimizing long term monitoring and surveillance;**
- **Developing more cost effective and efficient groundwater treatment systems for completing remediation.**

Sustainably Isolating Residual Contamination Sources

- Provide reliable segregation of residual contaminant sources from the surrounding environment to limit releases and to reduce human and environmental risks

Sustainably Attenuating Contamination in the Environment

- Develop the technical basis for attenuation-based remedies that reduce the mobility, toxicity, mass and/or volume of DOE LM contaminants in the environment

Developing Beneficial and Alternative End States

- Identify end state options that provide a high level of protection to humans and the environment while providing collateral benefits to stakeholders

Advancing Long Term Monitoring Paradigms and Technologies

- Develop monitoring strategies/technologies that reduce costs and provide improved actional information, focusing on leading indicators of potential problems

Workforce Development to Enhance SRNL's Core Competencies: 2023-2028

- SRNL must expand the laboratory's expertise from our current four core competencies to seven in order to meet the needs of our key sponsors including Environmental Management, Legacy Management, National Nuclear Security Administration
- This will require programmatic expansion with associated increase of personnel in areas of artificial intelligence, machine learning, modeling and simulation, geochemistry, functional biology, advanced manufacturing, functional materials, cyber security, supply chain security, sensors and advanced electronics, intelligence and policy analysis, fusion science, and neutron science.
- The BSRA university partners will play a key role in providing, students, postdocs, and faculty to enhance SRNL's workforce.
- Critical functions for SRNL (all other areas).

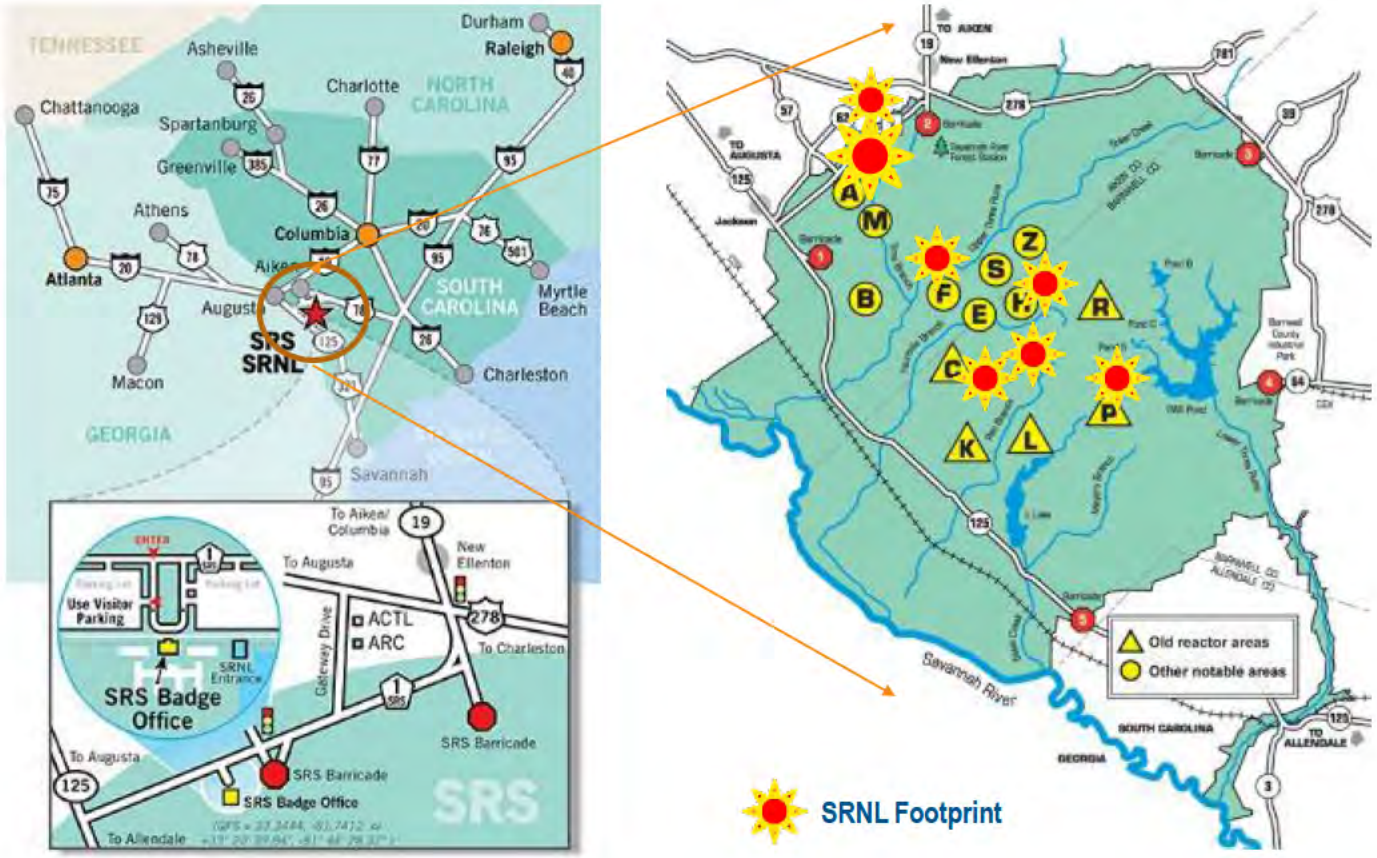
Distribution of FY22 Projects: Core Competencies

Accelerating remediation, minimizing waste, & reducing risks	$1.748M Investment in 5 Projects
Enabling next-generation nuclear materials processing & disposition	$1.540M Investment in 6 Projects
Creating manufacturing solutions for EM, NNSA, and energy security	$2.215M Investment in 7 Projects
Assuring production & supply of strategic materials & components	$0.667M Investment in 3 Projects
Sensing, characterizing, assessing and deterring nuclear proliferation	$0.920M Investment in 4 Projects
Engineering new materials & their applications with data-driven modeling & simulation	$1.170M Investment in 6 Projects
Securing connected control systems & associated data	$0.200M Investment in 1 Projects

Projects may support multiple competencies.

EM Cleanup Program

SRNL and Savannah River Site



Safe Operations

Our Safety Record

Savannah River National Laboratory

OSHA Safety Performance Metrics:
TRC: Total Recordable Case (DART + MTC) DART: Days Away, Restricted or Transferred MTC: Medical Treatment Case

Data obtained from DOE Computerized Accident/Incident Reporting System
Data not included for government-operated NETL laboratory

In the News

National and International


Ground broken on Advanced Manufacturing Collaborative at USC Aiken campus


US affirms new interpretation for high-level nuclear waste

By U.S. to help rid Norway of HEU

Thu, Sep 2, 2021, 4:02PM | Nuclear News


NNSA remove plutonium from IAEA Nuclear Material Laboratory

5 April 2022

Print Email


ACS announces fall 2022 election slat


New Savannah River Center to Focus on Secure Nuclear Energy, Nonproliferation

SRNL

NEWS

Savannah River National Lab opens satellite lab at Georgia Cyber Center

Advanced Manufacturing Collaborative

- $50M Investment by DOE
- Adds approximately 59,000 square feet to the SRNL facilities
- Located on University of South Carolina-Aiken Campus
- Enables SRNL to integrate and exploit the unique attributes of national laboratories, commercial entities and educational institutions to stimulate innovative thinking, foster modern industrial practices, adapt **advanced manufacturing** technology and train the future workforce to accomplish DOE missions.
- Provides 15,000 ft^2 of non-radiological laboratory space
- Occupancy in 2024

Questions?