

● SEPTEMBER 2020

SAVANNAH RIVER NUCLEAR SOLUTIONS



# SRNS Today

## Snap SRS



SRS art contest focuses on employee creativity



## This month

AMC event • HBCU MOUs • Cleanup activities • Red Cross Heroes • Celebrity Waiter





**Stuart MacVean**  
SRNS President and CEO

# Welcome

to the September 2020 edition of

# SRNS Today

As I look back over this month's accomplishments, I am reminded of the past and present group of diverse and talented employees who have worked or still work for Savannah River Nuclear Solutions.

Our employees can make science into art; can transform old buildings into new opportunities; and can make contaminated soil clean again. And they do all of this while continuing to make the world safer through the storage, processing and disposition of nuclear materials.

This month, SRNS signed Memorandum of Understandings (MOUs) with Allen University, Benedict College, Denmark Technical College and Voorhees College. The MOUs will provide a wide range of resources to each Historically Black College and University for the benefit of their students and will allow SRNS to promote careers and degree programs related to current and potential workforce needs.

The Department of Energy (DOE) and USC Aiken unveiled a 3-D model of the future Advanced Manufacturing Collaborative (AMC) facility created by the Savannah River National Laboratory (SRNL) during a ceremony at the USC Aiken campus. The event was attended by a number of dignitaries, including U.S. Rep. Joe Wilson, S.C. Gov. Henry McMaster and DOE Under Secretary Paul Dabbar. Community leaders gathered to applaud the progression of this initiative, which will enable SRNL to translate a range of advanced manufacturing technologies from the commercial-chemical and industrial manufacturing sectors into DOE processes, plants and missions to significantly reduce cost and shorten cleanup.

SRNS employees, along with other community members, also took part in the American Society of Safety Professionals Safety Management Certificate Program, hosted by the USC Aiken—proving yet again that SRNS is devoted to safety and security both on and off-site.

All of this was accomplished while providing unequalled operational performance and nuclear material safety and security. Our workforce has proven again to be well-rounded, flexible and able, and I continue to have confidence that they can handle any challenge.

I hope you enjoy this month's edition of SRNS Today.



Savannah River Nuclear Solutions, LLC, is a Fluor-led company whose members are Fluor Federal Services, Newport News Nuclear and Honeywell. Since August 2008, SRNS has been the management and operating contractor for the Savannah River Site, a Department of Energy-owned site near Aiken, South Carolina, including the Savannah River National Laboratory. The SRNS corporate and community offices are located in the renovated 1912 "Old Post Office" building in Aiken, S.C. The primary initiatives of SRNS are national security, clean energy and environmental stewardship. SRNS Today is published monthly by SRNS Corporate Communications to inform our employees and other stakeholders of the company's operational- and community-related activities. If you have questions or comments, please contact us at 803.952.6131 or visit our website.

[www.savannahrivernuclearsolutions.com](http://www.savannahrivernuclearsolutions.com)



Dr. Sandra Jordan, USC Aiken Chancellor (from left); Aiken Mayor Rick Osbon; U.S. Rep. Joe Wilson; and DOE Under Secretary for Science Paul Dabbar applaud the unveiling of a 3D model of the future AMC complex (shown in detail below), which will be located on the USC Aiken campus.



Thomas Johnson (left), DOE-Savannah River Deputy Manager, and Dr. Vahid Majidi, SRNS Executive Vice President and SRNL Director, take a closer look at the model developed by SRNL.

## AMC plans applauded by dignitaries at USC Aiken event



Officials from DOE, local government and academia, and SRNL gathered Sept. 24 at USC Aiken to take a look at the future of the planned Advanced Manufacturing Collaborative (AMC). S.C. Gov. Henry McMaster; U.S. Rep. Joe Wilson; William "Ike" White, the leader of DOE's Environmental Management office; and other stakeholders attended the event. The AMC will allow collaboration among national laboratories, commercial entities and educational institutions to stimulate innovative thinking, adapt new technology and train the future workforce to accomplish DOE missions.



Historical photos at the "Beyond the Barricades" exhibit provided a glimpse of the past to reception attendees.

## 'Beyond the Barricades' on display at ACA

As part of the SRS 70th anniversary celebration, the "Beyond the Barricades" exhibit of 70 years of historical and current Site photographs opened Sept. 10 with a reception at the Aiken Center for the Arts (ACA). The exhibit, which is open to the public, includes stylized versions of current mission photographs and the top winning selections from the "Snap SRS" photography competition for employees (see page 6 for the "People's Choice" winners from the contest). The reception also drew SRS employees, retirees and their families. One of the attendees was Faye Lawson, one of the earliest employees at SRS in the 1950s. She retired in 1996, and took the opportunity at the reception to describe to her grandsons and family the historical images of early Site construction. "Beyond the Barricades" and "Snap SRS" will remain at the ACA through Oct. 23, when they will be moved to the North Augusta Arts and Heritage Center.



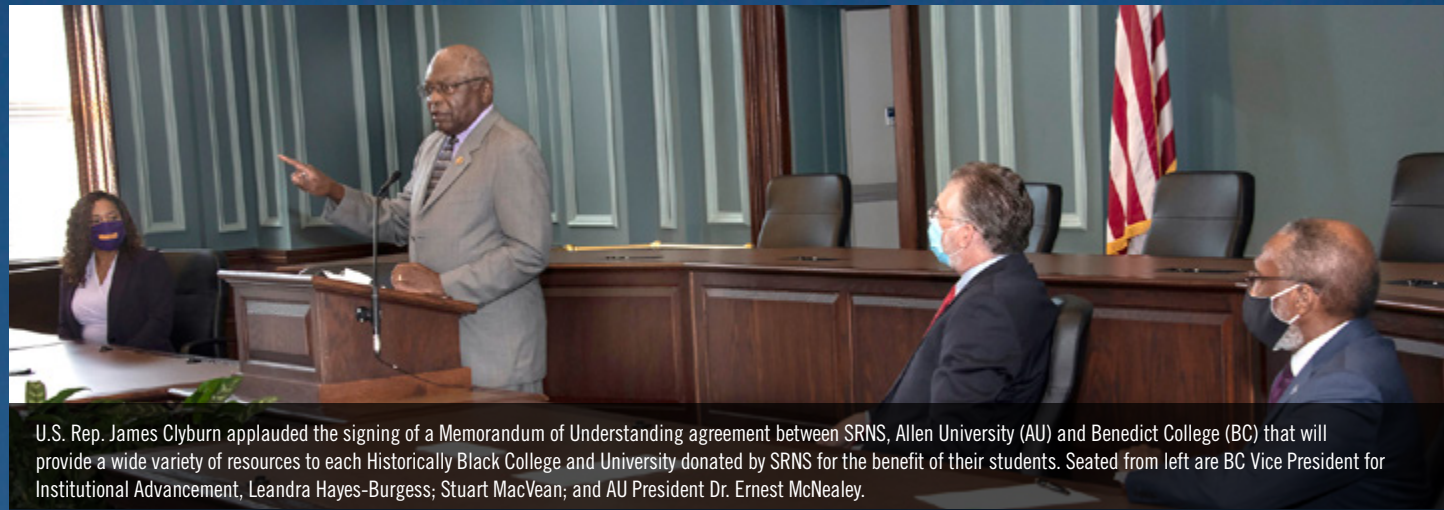
Faye Lawson



# Resources for the future



Dr. W. Franklin Evans (from left), VC President and CEO; Stuart MacVean; and DTC President Dr. Willie L. Todd, Jr., stand on the steps of the SRNS corporate office in Aiken, S.C., following the signing of an agreement that will provide needed resources for VC and DTC students.



U.S. Rep. James Clyburn applauded the signing of a Memorandum of Understanding agreement between SRNS, Allen University (AU) and Benedict College (BC) that will provide a wide variety of resources to each Historically Black College and University donated by SRNS for the benefit of their students. Seated from left are BC Vice President for Institutional Advancement, Leandra Hayes-Burgess; Stuart MacVean; and AU President Dr. Ernest McNealey.

## SRNS signs agreement with four HBCUs to increase SRS career opportunities

SRNS, Allen University (AU), Benedict College (BC), Denmark Technical College (DTC) and Voorhees College (VC) have agreed to an individual Memorandum of Understanding that will provide a wide variety of resources to each Historically Black College and University donated by SRNS for the benefit of their students, including monetary donations in support of scholarships and paid internships.

“Since the first day of the contract in 2008, SRNS has continued to support the valued heritage established at SRS in support of all levels of education throughout the region,” said Stuart MacVean. “Over the last four years alone, SRNS has donated more than \$260,000 to area colleges and universities.”

U.S. Rep. James Clyburn applauded the SRNS MOUs with these institutions and their potential impact. “An internship can be a game-changer that opens doors, builds experience and offers an excellent ‘test-drive’ for both students and employers. This is an outstanding, comprehensive effort to prepare students for the many current and future career opportunities right here in South Carolina, at SRS.”

Through each MOU, SRNS officials have agreed to offer annual tours of SRS for students and faculty; provide subject matter experts to serve as advisors and/or mentors; and conduct a workshop series to help students improve their resume writing and job interview skills.

As a result of the agreement, SRNS personnel will promote careers and degree programs related to current and potential future

workforce needs associated with cybersecurity, engineering and business management. This information will be available at [www.savannahrivernuclearsolutions.com](http://www.savannahrivernuclearsolutions.com). In return, AU, BC, DTC and VC will collaborate with SRNS to ensure alignment with existing programs and SRNS workforce requirements.

“We realize the importance of working with SRNS personnel to determine how our programs can be aligned to optimally meet their job-specific needs in multiple occupations found at SRS,” said AU President Dr. Ernest McNealey. “There are many rewarding careers to be pursued at SRS.”

With this signing, SRNS has established MOUs with 15 local colleges, universities and veteran programs.

“Our MOU with SRNS directly aligns with Benedict’s strategic plan and commitment to produce a highly-skilled minority talent pool for the region’s workforce. This partnership is a great example of how we can work with area companies and organizations to provide a broad array of services and opportunities for our students while simultaneously helping to fuel the economy,” said BC President and CEO Dr. Roslyn Clark Artis.

SRNS has provided more than \$5 million for education outreach since 2008, impacting more than 260,000 students and educators throughout the seven counties near the SRS.

Last year alone, more than 30,000 students and educators directly benefited from 12 SRNS Education Outreach annual programs and events prior to the closure of school buildings.

## ARPA-E awards \$3.8 million to SRNL for tritium fuel cycle projects to improve energy production

Two SRNL proposals totaling \$3.8 million were selected in a competitive process by DOE’s Advanced Research Projects Agency-Energy (ARPA-E) for the development of transformational technology that will enable a sustainable fuel cycle for commercial fusion reactors.

Creating a viable fuel cycle for fusion is an unprecedented challenge, as it requires handling of large amounts of tritium, a radioactive isotope of hydrogen that only naturally exists in minuscule quantities. SRNL is applying its vast expertise working with tritium to improve the reactor power production process, making fusion reactors more efficient.

The first project, led by Dr. George Larsen at SRNL, is a collaborative effort with Clemson University and the University of South Carolina. It takes on the challenge of moving tritium gas at high flows through the fusion plant using vacuum pumps. Currently, the vacuum technology needed to operate a compact fusion power plant does not exist.

“The conventional wisdom is that you can’t use any type of oil when pumping tritium,” said Dr. Larsen. “It’s a problem because pretty much every pump used in industry requires some kind of oil.”

Dr. Larsen determined that existing vacuum technology could be adapted to meet the challenges posed by fusion energy, but a radically new pump oil treatment and recycling system would be required, allowing vacuum pump technology to work for tritium usage at a large scale.

“We’re challenging convention a bit here,” said Dr. Larsen. “But, by designing the pumping fluid and recycling system in an integrated manner, we can achieve a holistic and innovative solution for fusion power plants.”

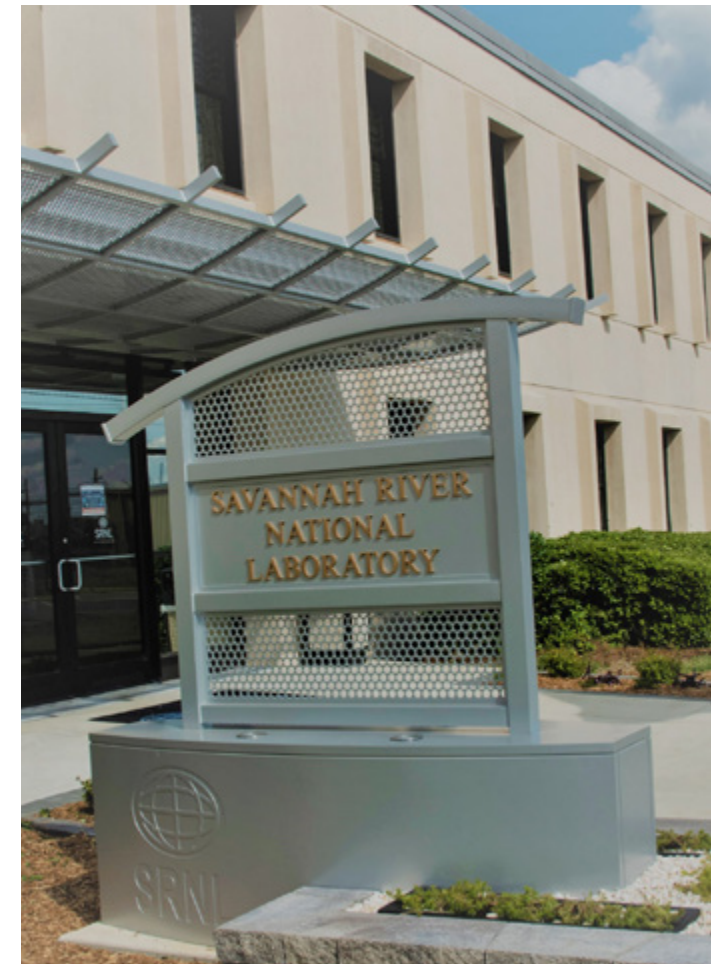
The three-year project, if successful, will meet ARPA-E’s targets for a fusion power plant and reduce pump operational costs at fusion facilities from an estimated \$14.5 million per year to \$103,000 a year. It would also reduce pump electric power consumption from an estimated 2.8 megawatts to 0.25 megawatts annually, a 10-times reduction of energy use. This process has the added benefit of also reducing in-process tritium fuel inventory from an estimated 2.03 kilograms to 0.48 kilograms, conserving the use of tritium.

The second project, led by Dr. Brenda Garcia-Diaz, was awarded to SRNL for \$1.5 million and focuses on the portion of the fuel cycle known as breeding, where the fusion power plant will generate its own tritium fuel through the interaction of neutrons with lithium.

Currently, there is no established way to extract tritium from lithium containing breeding material once it is produced. Dr. Garcia-Diaz has developed a process that harnesses technology originally developed for lithium ion batteries to do just that.

“This process allows the reaction to be performed in existing process vessels such as the breeding material buffer tank and reduces the footprint of the entire tritium extraction system,” said Dr. Garcia-Diaz. “It offers a process that eliminates the need for centrifugal contactors and molten salts, decreasing the need for expensive mechanical parts and gas clean up stages.”

This process intensification has the potential to reduce tritium extraction



SRNL scientists have been awarded two DOE ARPA-E proposals totaling \$3.8M for development of transformational technology enabling a sustainable fuel cycle for commercial fusion reactors.

costs from \$1,500 a gram to \$0.04 a gram and diminish the facility footprint required from 55,000 square feet to slightly more than 100 square feet. The three-year project will scale up the process from the demonstrated proof-of concept to an intermediate scale, demonstrating viability for further fusion-relevant application.

“These projects show a great deal of promise in improving reactor technology and financial savings by finding efficiencies in materials and processes,” said SRNL Laboratory Director Dr. Vahid Majidi. “We’re excited about how they can benefit fusion technology in both the public and private sector.”

The projects were awarded funding by ARPA-E’s Galvanizing Advances in Market-Aligned Fusion for an Overabundance of Watts (GAMWOW) program. GAMWOW projects work in synergy with publicly and privately funded fusion-development efforts and will leverage the technical resources and basic research SC-FES sponsors in these areas. ARPA-E and SC-FES will jointly fund the projects over the program’s three-year lifespan.



Art  
contest  
puts  
focus on  
employee  
creativity

# Snap SRS

## Science as art

“Celestial Night”

Rebecca Lynn, Savannah River Remediation

This is the result of a series of multiple long-exposure images taken over the span of three hours on a clear night that was later combined into one image. Star trails allow us to visually see the Earth’s rotation, or spin on its axis.



## Local scenery

“Morning Walk into the Swamp”

Jeff Coughlin, SRNL

This photo was taken during a camping trip to Santee Coastal Reserve during a short hike to the boardwalk from the campsite while listening to the alligators call.



## Nuclear knowledge

“U.S. Government Property”

Sean Poppy,  
Savannah River  
Ecology Laboratory

Students who participate in SREL’s “Ecologist for a Day” program see this sign, which—along with a chimney nearby—are reminders to discuss the history of SRS and the hardships of the families that formerly occupied the land.

“Snap SRS” is back for its second year. The only sitewide art contest aims to improve facility appearances and boost workplace morale through art. • During July, all SRS employees had the opportunity to submit their original artwork in four categories: Science as Art, Nuclear Knowledge, SRS Scenery and Local Scenery. Judges representing each Site entity reviewed the 256 eligible submissions and selected 39 images for display in prominent locations across SRS. • The 39 winners are from SRNS, SRNL, DOE, Savannah River Remediation, Centerra and the Savannah River Ecology Laboratory, and were finalists in the People’s Choice Award, when SRS employees were given the chance to vote for their favorites. During the two-week voting period, 2,028 employees cast their ballot in each of the four categories. The winners appear on these two pages. • “Snap SRS” grew from an SRNS LEAP (Leaders Emerging Among Professionals) initiative and continues as part of the ongoing SRS Compelling Place to Work program.

## On exhibit

*The Aiken Center for the Arts is hosting a “Snap SRS” exhibit to display the artwork of the 39 People’s Choice Award finalists from 2020, along with the 2019 finalists.*

*The free exhibit is open to the public through Oct. 23 and is part of the SRS 70th anniversary exhibit. The Center is located on Laurens Street in Aiken, S.C.*

*Can’t attend? View the artwork on Flickr at [Flickr.com](#) > Savannah River Site > Albums > 2020 Snap SRS*



## SRS scenery

“2F Evaporator”

Michael Shaffer,  
Savannah River  
Remediation

The 2F Evaporator  
at F Tank Farm



SRNS is working with DOE and the Savannah River Site Community Reuse Organization (SRSCRO) to dismantle six unneeded buildings for resale. Proceeds will help SRSCRO support economic and workforce development activities in the region.

The metal buildings were built in the early 1990s but are no longer needed to meet DOE missions. They were previously used to store materials for a now-closed coal-fired powerhouse at SRS.

According to SRNS Site Services Program Manager Andrew Albenesius, multiple organizations will benefit from this agreement with SRSCRO. "SRNS is avoiding costs associated with the decommissioning and demolition of each structure, saving nearly \$2 million. From a reuse perspective, businesses can purchase and re-assemble these buildings for a fraction of what a new building would cost and use that savings to purchase machinery, tools and hire employees.

"The partnership between DOE-Savannah River, SRSCRO and SRNS has avoided approximately \$12 million of cost over the past six to seven years, while reducing the Site footprint and supporting economic development in the surrounding communities. It's a win for everyone involved," said Albenesius.

Rick McLeod, SRSCRO President and CEO, explained that over the past five years alone, the SRSCRO has invested more than \$4.5 million in regional programs, such as Career Connection Forums (a STEM event); regional industrial park expenditures; SRS Economic Impact and Regional Workforce Studies; and support for local economic recruitment efforts. "A large percentage of these funds come from the sale of SRS surplus items. In addition, as fiscal agent and manager for a DOE workforce grant, the SRSCRO has secured and provided over \$6 million to our five local colleges and university partners."

McLeod stated that his organization has been fortunate to have excellent partners in Bolin Marketing Group (BMG), a company that brings significant expertise and networking in the surplus/salvage business. "The SRSCRO and BMG have been a successful team at SRS for over 15 years," he added.

SRSCRO's region of responsibility covers the counties of Richmond and Columbia in Georgia, and Aiken, Allendale and Barnwell in South Carolina. SRSCRO serves as the community interface for DOE-Savannah River regarding DOE-supported economic development initiatives.

PHOTO: Subcontractor employees managed by SRNS work to dismantle one of six buildings that will be donated to the SRSCRO.

## Old buildings, new opportunities

Resale of six dismantled D Area structures to benefit multiple organizations and communities



Mechanic Todd Cockrell (left), Engineer John Bradley (center) and Project Manager Joao Cardoso-Neto plan the removal and dismantlement of a now-unneeded high-vacuum soil vapor extraction unit, also pictured below.

A 12-year cleanup campaign at SRS has successfully removed more than 5,000 pounds of chemical solvents from SRS soil, while creating an annual cost avoidance of \$264,000.

During the Cold War, solvents were used to degrease manufactured metal components, including nuclear reactor fuel. For decades, several buildings in M Area disposed used solvents into an underground process pipeline that led to a pond-like storage basin. Eventually, these pipes began to leak where they joined four manhole access points.

This waste disposal system was the best technology available during the early years at SRS, then known as the Savannah River Plant, operated by E. I. Du Pont de Nemours under the management of the U.S. Atomic Energy Commission, and later, DOE.

"It met their needs at the time and served its purpose. Unfortunately, time and nature prevailed, and the drainage system began to degrade," said Joao Cardoso-Neto, SRNS Project Manager, Environmental Compliance and Area Completion Projects (EC&ACP).

## Mission complete

M Area Soil Vapor Extraction System closed, making the world safer

"We've dedicated an extensive array of resources over the years to help return this section of SRS to natural conditions. That's an important part of our mission here that we take seriously."

After reviewing recent comprehensive soil sampling results per an agreement with S.C. Department of Health and Environmental Control officials, the enormous task of remediating the area known as the M Area Inactive Process Sewer Line Operable Unit was celebrated as complete.

"I was pleasantly surprised when we reviewed the latest soil sampling data and pleased to see the solvent levels were much lower than I had expected, far below regulatory requirements," said John Bradley, EC&ACP Engineer. "We met all of our cleanup requirements for this project, an important step towards remediating the SRS environment."

Bradley explained the majority of the solvents were removed through the first phase of the project. It involved a high-vacuum soil vapor extraction system requiring large electric pumps, support facilities and monitoring equipment. With discontinued system operation and maintenance, SRS achieved an annual savings of \$264,000.

M Area cleanup campaign by the numbers

12 years  
length of  
cleanup campaign

5,000  
pounds of  
solvents removed

\$264k  
annual  
cost savings







Stuart MacVean and Mike Thomas (right), President of Allison South Company, participate in a live Facebook event during Celebrity Waiter.

# Back to the '50s

## Celebrity Waiter event features car hops and drive-in service

The 2020 SRNS Celebrity Waiter Night Car Hop raised \$37,543 in support of Children's Place, Inc. • Since 1994, Celebrity Waiter Night has been the largest fundraiser for Children's Place, Inc. Annually, SRNS shows support for this non-profit through a private event for employees and their family members. • Like many events this year, the Celebrity Waiter Night's original plans had to be altered due to COVID-19 guidelines. This year's event, held Aug. 31, featured a "to go" meal car hop and virtual auction. In accordance with social distancing guidelines, participants pulled up in front of Newberry Hall in Aiken, S.C., to submit their meal tickets, and the meals were brought directly to their vehicles. • Elizabeth Harm and Anne Claire Jordan, 2020 Celebrity Waiter Night Co-Chairs, were very appreciative of the support for this year's fundraiser. • Celebrity Waiter Night specifically supports the Therapeutic Childcare Program at Children's Place, one of only two programs of its kind in South Carolina. The program serves children ages 18 months to five years old who have endured adverse childhood experiences and offers early childhood mental health services and occupational, speech and play therapies.



Yolanda Pelzer of SRNS Training delivers an order to a waiting customer.



Cars line Newberry Street in Aiken, waiting for their "car hop" to deliver their orders.

## Employees named Red Cross Heroes

SRNS recently served as the presenting sponsor for the American Red Cross of Augusta's Heroes Breakfast, where several SRNS employees were honored with awards.

The Red Cross Heroes Breakfast is an annual event—held virtually this year—that honors local heroes who embody the Red Cross mission in their everyday lives.

Kevin O'Donnell, Lisa Sanders and John Raeth of SRNS Site Training were presented the Educator Hero award for teaching emergency training techniques. Their CPR, First Aid and AED classes, among others, have helped save at least 30 lives since 2013.

"A lot of people think they need special skills and a lot of expensive training to know how to save a life, but you really don't," said Lisa Sanders. "We try to impress upon them that the worst thing you can do in an emergency is nothing."

The Water Rescue Award was presented to Capt. TJ Brown, Franklin Stanley and Cal Cannon of the SRNS Fire Department for their quick response and efficient teamwork during a late-night remote area rescue on July 31, 2019. The three heroes were dispatched after receiving a call that two adults and one toddler had been involved in a boating accident around midnight. One of the adults suffered severe head trauma while the other adult and the toddler had been ejected from the boat. With the help of Centerra-SRS, all three were safely rescued within an hour and given proper medical care.

"We don't do this for the awards," said Capt. Brown. "In my mind, we're not heroes. We're just doing our job."



## SRNS joins USC Aiken in safety course

After years of planning with SRNS, USC Aiken recently hosted the American Society of Safety Professionals (ASSP) Safety Management Certificate Program. Occupational safety and health professionals in the CSRA who signed up for the program learned the fundamental skills necessary to successfully implement recognized approaches to safety management in their businesses.

Every year, thousands of preventable incidents (injuries, "close calls," fatalities, etc.) occur in the workplace. With the proper safety management systems and processes in place, employees have more protection and these incidents can be drastically reduced.

Karen Edgington, Executive Director of the Office of External Programs, Continuing Education, and Conferences, has been pushing to introduce a safety program at USC Aiken for years. "This three-course program started with SRNS and I discussing the need for some sort of safety training in place on our campus. I put together a survey for different businesses asking what types of training they were looking for, and the response was that there is a significant demand for safety certificates and degrees," Edgington said. "I reached out to ASSP headquarters and the Augusta Chapter of the ASSP, and they agreed to teach their Safety Management Certificate Program on our campus."

SRNS Director of Safety and Health Mike Conaway, who has been an advocate of the training since the discussion with USC Aiken began, was one of the first to sign up.

"SRNS employs over 6,000 employees who rely on us to keep them safe, and we are dedicated to making sure they go home in the same condition they arrived at work," said Conaway. "Safety management requires continuous improvement and flexibility, so I am always seeking new opportunities to enrich my safety education and enhance the existing safety programs we have in place."



Desseria Johnson (left) and Destiny Cyrus enjoy a stroll near the new Children's Place bus.

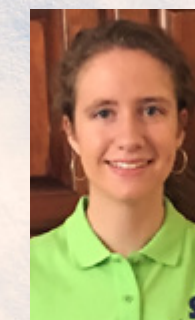
## New bus for Children's Place

Children's Place, Inc. now has a new bus for its daily routes, thanks in part to a \$10,000 contribution from SRNS. This is the second Children's Place bus purchase that SRNS has supported over the past 11 years. "SRNS employees support the great work that Children's Place and all the United Way agencies do across our region, so we were proud to join them on this effort," said Stuart MacVean.

## Intern learns about safety culture

SRNS Industrial Hygiene/Safety intern Sydney Scruggs has been interested in science since she was a child playing in her parent's garden. With her hands buried in the soil, Scruggs's passion flourished alongside the plants she nurtured.

Now, the Barnwell native uses that passion to fuel her studies at Clemson University, where she is a senior Chemistry major.



Sydney Scruggs

Scruggs was introduced to the many SRNS internship opportunities at her university's job fair in 2019. Last summer, she interned with the Solid Waste Management Facility and was impressed with the Site's rich safety culture. This year, she decided to seek out a new challenge with Environmental Compliance and Area Completion Projects.

"My summer has involved learning about the fundamental roles of industrial hygienists and safety engineers. This has increased my knowledge of methods that can be used to create a safe working environment. These fundamental skills have really stressed the importance of safe operations and have made a lasting impact on me," said Scruggs.

Additionally, Scruggs will be leaving her internship with qualifications in physiological monitoring and noise dosimetry. Her qualifications allowed her to perform different safety monitoring functions across the Site.





INNOVATION • DEFENSE

NONPROLIFERATION • ENVIRONMENT

# SRNS

**Savannah River Nuclear Solutions**

**We make the world**

**safer.**