

# **CNTAware**



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Tech •ABD is a G-O!

Vogtle Unit 3

## Update from our Board Chair

Interesting times in the Nuclear Energy realm. In much the same way that Michael Shellenberger, our Teller Lecture speaker from 3 years ago explained, many environmentalists are becoming more open to nuclear energy with their tiny carbon footprint. They are beginning to realize that some markets were too optimistic in their ability to move toward reliance on highly variable "renewables" such as wind and solar without maintaining reliable, cost effective baseload energy production. Most noteworthy in the last months are California and Germany where their environmental movement influenced their political leadership to prematurely shut down viable nuclear power plants. With the skyrocketing price of natural gas in recent months, electricity costs are following (10x increase in Germany over last year) as gas fired power plants struggle to cover the short-falls of renewable energy supply and some markets are having to revert to coal fired plants and their large carbon emissions. Now governments are rethinking their plans for taking nuclear off-line. Now "Energy Security" has become part of the lexicon as there are struggles to maintain reliable power now and in the future.

We recognize that the CSRA has long been a key player in "National Security" through our support to the DOE's Savannah River Site. Now we are contributing to our "Energy Security" with the addition of two new reactors at Plant Vogtle. DOE is working hard to accelerate development and deployment of advanced reactors and reactor fuels - so there may be new and exciting opportunities to expand our support of nuclear energy and its contribution to the country's energy security.

CNTA looks forward to welcoming Dr. Kathryn Huff as our Keynote Speaker for the 2022 Teller Lecture. As the Assistant Secretary for Nuclear Energy, come hear the exciting things DOE is doing under her leadership in advanced nuclear and the opportunities it may bring to our community.

Regards.

Steve Sheetz

## Update from our Executive Director

It has been a busy summer for CNTA and the nuclear community. Worldwide and national events have brought a renewed interest in nuclear energy. The war in Ukraine and historically high temperatures around the globe have highlighted a need for reliable energy. As Seve Sheetz points out below, nuclear energy is now, rightfully, being seen as the source for clean, stable energy! Additionally, the recently enacted Inflation Reduction Act includes provisions to support existing nuclear power plants and emerging future nuclear technologies. Specifically, the act supports production tax credits for existing plants, financing support through expanded loan guarantees, funding to support domestic uranium fuel production, and tax credits for new nuclear energy technologies.

I would be remiss to not mention that tenuous situation at the Zaporizhzhya Nuclear Power Plant in Ukraine. The conditions at the plant continue to be in a state of flux. Thankfully, the International Atomic Energy Agency recently brought a team of inspectors to the plant and some stayed on site to maintain a monitoring presence. The IAEA's website (www.iaea.org) is a good source of up-to-date information on this serious situation.

Meanwhile, CNTA has had a busy late spring and summer, and do I dare say it(!), a return to more normal activities. This year's golf tournament was one of our most successful ever. Thanks to the sponsors, volunteers and players for their support. We also participated in several STEM camps and festivals which are highlighted in this newsletter. Paul Ebel and I again taught a college class on Research Methods as part of the DOE Minority Serving Institution Environmental Field Station program at SRS. Frank Heckendorn also taught a course on Robotics to the same cohort of students. The best part was that the program was again held in person so we had the pleasure of interacting with these bright students directly. Finally, we have had a steady diet (pun intended) of Up and Atom breakfasts with some dynamic speakers. If you were unable to attend any of these, the speaker's slides can be found on our website. We have three more Up and Atom's scheduled for the rest of the year.

The fall will again be busy for CNTA. You will note in the newsletter announcements for the Young Professional Oyster Roast Fundraiser and the Teller Lecture. We look forward to getting back into the classroom for our Nuclear Blitz and participating in fall STEM festivals. Also, look for our newspaper insert in the Aiken Standard on Sunday, October 16 to highlight the start of Nuclear Science Week.

I want to close by thanking Allison, the board and our many volunteers for all you do for CNTA. Look forward to seeing you this fall!

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# **Education Committee Updates**

## **STEM ACTIVITIES**

CNTA's Education Committee has been hard at work this summer. They've taught a summer course, participated in STEM festivals, and taught nuclear fundamentals to several groups and camps. They are also gearing up for a busy fall launching the 2023 Educator Grant Program and High School Essay Contest.



SRNL

The course in Engineering Research Methods in Environmental Management is intended to arm students with the tools necessary to plan and conduct research projects, perform analyses pertinent to

ch and present re

Introduction

engineering rese both orally and in

Methods

# **Summer Course to Young Engineers**

CNTA members Paul Ebel and Jim Marra taught a summer course on Research Methods, and Frank Heckendorn taught a course on Robotics to a group of young engineers through the DOE Minority Serving Institutions Field Station at SRS. These students came to Aiken from across the country to participate in this summer program hosted at UofSC Aiken.



Engineering Research Methods in Environmental Management

Instructors: Mr. Paul Ebel, Dr. Jim Marra Studerts: Sandra Barrea, Jesus Chavaria, Kidus Habte, Mustafa Hasan, Brenay Howard, Mahbubur Mojumder, Eric Penard, Nakya Stewart

Students completed a major project involving writing Objectives





The course culminated with a final project involving student teams planning an experiments or development program from proposal stage to completion of a final report. The project involved developing:

- involved developing: • a detailed budget • a detailed schedule
- a work plan that demonstrated definition of objectives, how objectives will be met, experimental design principles
   safety analyses and hazards analyses documents and experimental instructions or
- safety analyses and hazards analyses documents and experimental instructions or procedures
- procedures a presentation that proposes the project, presents the budget, schedule, work pl expected outcomes an outline for a final deliverable report



Acknowledgements:

- At the conclusion of the course, the students learned: - Practices to safely and efficiently plan and conduct research experiments - Nuclear fundamentals as they pertain to performing environmental management insearch
- Principles of risk and risk assessment practices Negotiation secrets and preparing
- winning proposals Project management practices for
- budget and scheduling
   Alternative study approaches
- presentation
- learned to write and present research work from the proposal stage through final results



Conclusions The 2022 Engineering Research Methods course successfully taught students the many aspects of anearch starting from the proposal stage through presentation of mealts to the raisoarch antifering that facilitates the transfer of information. Lockness, classroom activities, projects and site valies facilitated the transfer of information. The students and instructors found this to be a great experience!

# 2022 Maher Memorial Scholarship Recipient

Citizens for Nuclear Technology Awareness (CNTA) and Savannah River Mission Completion (SRMC) has announced University of South Carolina (U of SC) student Robert Demuth as the winner of the 2022 Robert Maher Memorial Scholarship.

The scholarship is sponsored by SRMC, the liquid waste contractor for the U.S. Department of Energy (DOE) at the Savannah River Site (SRS).

Demuth, who is from Gray Court, S.C., is a senior pursuing a bachelor's degree in aerospace engineering with a minor in nuclear engineering. He is also pursuing an accelerated Master of Science in nuclear engineering.

CNTA Executive Director Jim Marra said CNTA is proud to award this \$5,000 scholarship to such an ambitious, enthusiastic, and deserving student.

"Robert has a great passion to pursue nuclear research and grow his knowledge and experience in the field," Marra said. "All these go-getter qualities make him the ideal candidate to receive this scholarship. No doubt Robert will be an exemplary addition to the nuclear industry."

In 2019, Robert was offered a position as an undergraduate research assistant and began training in U of SC's Advanced Nuclear Materials Laboratory.

In 2020, he began his first independent research project in a joint collaboration project between U of SC, Savannah River National Laboratory, and Idaho National Laboratory. This project involved engineering-scale spent nuclear fuel drying tests, which were performed to evaluate the effectiveness of two distinct drying processes on spent nuclear fuel in preparation for long-term dry storage.

In 2021, he assisted in a Westinghouse research study of the cracking behavior of uranium and Advanced Doped Pellet Technology (ADOPT) fuel.

In 2022, he undertook the lead position in a research endeavor between U of SC, DOE, and Westinghouse. This project aims to provide a robust solution to analyzing the safety of long-term spent fuel storage. His portion of the project entailed designing a proprietary nuclear fuel drying system capable of testing Westinghouse equipment under commercial nuclear fuel drying conditions.

He is currently the lab manager for the Used Fuel Storage and Disposition Laboratory at U of SC.

"Ever since I was a child, I have always been fascinated by outer space and witnessing mankind extend its reach into the universe," Demuth said. "Now I desire to actively participate in this endeavor while ensuring that safety and public health remain a top priority, along with reducing the environmental impact of our actions. I strive to accomplish this goal with a career at NASA in the nuclear field. My interests are primarily in Nuclear Space Reactors and Nuclear Thermal Propulsion. These two highly advanced technologies present unique challenges that I wish to assist in overcoming."

He has been involved in many school and community activities, including the local chapter of the American Nuclear Society as Communications Officer, Habitat for Humanity, and many church activities, such as the praise band, food pantry, and mission trips.

The Robert Maher Memorial Scholarship is a joint project of CNTA and SRMC. Maher, Vice President and General Manager for Strategic Mission Development at SRS, passed away in 2002 after a 48-year career at the Site. A visionary with a broad view of the Site's potential, Maher helped shape SRS.

The annual scholarship was established in Maher's memory to support students pursuing science and engineering degrees in preparation for careers in the nuclear field. Details on the scholarship can be found at: <u>https://cntaware.org/maher-memorial-scholarship/</u>.



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# **Advocacy/ Public Outreach Activities**

CNTA is active on social media to expand our outreach. We track hits, likes, clicks, etc. on Facebook. Instagram, Twitter, YouTube, and our website to see what is popular and what is trending.

We track where website clicks originate from, and since May of this year, most hits to our website have been from a direct link, but over 22% of our web users find us through a search engine.

# While CNTA keeps the website updated, we are always on the look-out for content with social media! Send ideas our way!



# **Communications Committee Update**

The communications committee of CNTA has been hard at work this summer writing stories, working on the layout, and copy-editing the 2022 Nuclear Science Week Insert. Every year the committee partners with the *Aiken Standard* to publish this insert and this year's is looking stellar! Great work to all the committee members. Be on the lookout for a copy in the October 16th Sunday Edition of the *Aiken Standard*!

In addition to this effort, committee members have been active with CNTA's social media, website, and have written five press releases for publication later this fall. Since the start of 2022, the committee has published 9 press releases on CNTA activities and events.

## 20th Annual CNTA Charity Golf Tournament

Citizens for Nuclear Technology Awareness (CNTA) held our 20<sup>th</sup> Annual CNTA Charity Golf Tournament on May 6, 2022, at Houndslake Country Club in Aiken, SC.

Executive Director of CNTA, Jim Marra, said the event was a great success.

"We had 26 teams participate in a fantastic day of golf," Marra said. "This tournament is one of CNTA's most important fundraisers and is a fun, competitive event for participants. Our net proceeds were over \$20,000, and will help CNTA promote and educate the public on nuclear technology."

The winning contest participants and their teams include:

- First Low Net Savannah Reiver Ecology Laboratory
- Second Low Net Holli's Heroes
- Third Low Net Southern Nuclear, Plant Vogtle
- Low Gross BWXT Team 2

Marra added that CNTA was greatly appreciative of the volunteers and donors who helped make this year's golf tournament a tremendous success. "CNTA exists as a grassroots organization, and events like these would be impossible without our community's support."

More photos and information available at: <u>https://cntaware.org/annual-golf-tournament/</u>

**SAVE THE DATE** The 21st Annual CNTA Charity Golf tournament will be held May 12, 2023. Early team registration is available!





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2022 CNTA Charity Golf

Tournament

Raffle/Prize Donors &

**Community Gift Card Donors:** 

Merrick

Many thanks to all who chose to remain anonymous & donated!

Your support helped raise over \$19,000 today

Wyatt Clark

#### **CNTA**ware

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## Up & Atoms

- May 12, 2022- Dr. Mark Peters, Executive Vice President for National Laboratory Management and Operations at Battelle
- June 15, 2022- Stuart MacVean, President & CEO of Savannah River Nuclear Solutions LLC. Sponsored by SRNS
- July 19, 2022- SRS Interns- Interns from SRNS & SRMC spoke on their summer experiences
- August 17, 2022- Alan Carr, Los Alamos National Laboratory Historian

## Upcoming:

- September 29, 2022- Dr. Dave Olson, SRMC President and Program Manager- 7:30am at Newberry Hall in Aiken, SC
- October 20, 2022- Up & Atom with the Apprenticeship Program-7:30am at Newberry Hall in Aiken, SC

Copies of previous Up & Atom Speaker Presentations available at: https://cntaware.org/previous-up-atom-speakers/









# **CNTA COMMITTEE DESCRIPTIONS**

Detailed information on ALL of our committees available at: https://cntaware.org/committees/

## **Communications Committee**

The Communications Committee is responsible for ensuring accurate and timely information to the media, stakeholders, and the public and to reflect the goals and objectives of CNTA. They write all CNTA press releases and publish the Nuclear Science Week Insert in the Aiken Standard every year.

#### **Education Committee**

The goal of the Education Committee is to educate the public on the benefits, uses, and truths of nuclear technology. They oversee all education outreach activities and organize the Educator Grants Program and Essay Contest.

## Young Professionals Committee

The purpose of the Young Professionals Committee is to recruit and engage young professional members by providing them with mentorship and professional development opportunities as well as raising money to make membership free for those under 40.

## **Golf Tournament Committee**

The Golf Committee is responsible for reviewing previous tournaments and planning the next annual tournament. This planning includes raffles, marketing, and food and beverage. The Annual CNTA Charity Golf Tournament is the biggest fundraiser of the year. Volunteers are needed to help plan the event and dozens of day-of volunteers make this event possible.

# Young Professionals Committee

# Tap Into Nuclear

June 16, 2022- "CNTA Night out at the Ballpark" with the Augusta Greenjackets at SRP Park! Over 40 CNTA members showed up and had a great evening!





# **Young Professional In-reach**

Young professional members of CNTA represented the organization in July at the SRS Aspiring Mid-Career Professionals, or AMP, Roadshow. This event took place over lunch across four days in four different areas of the Savannah River Site. Over a dozen members participated and CNTA received several new young professional members from their efforts!





## Oyster Roast & Low Country Boil 2022

 October 15<sup>th</sup>
 Live Music by

 6:30pm-9:00pm
 Keith Gregory,

 Palmetto Golf Club
 Raffles and MORE!

Tickets can be purchased at <u>CNTAWARE.ORG</u> \$50 per person and includes your first two drinks!

Thank you to our sponsors:

Platinum:





# Fall Young Professional Fundraising Event

The committee has been hard at work planning the 4th Annual Oyster Roast & Low Country Boil!

The event is set, tickets are now on sale, and the committee looks forward to hosting everyone on October 15th at Palmetto Golf Club!

The proceeds of this event go to support CNTA's young professional activities and the free membership for individuals under 40.

Tickets to the event and more information can be found at: <a href="https://cntaware.org/event/2022-oyster-roast/">https://cntaware.org/event/2022-oyster-roast/</a>

The committee is looking for volunteers to help that evening with set-up, tear-down, and raffle ticket sales. All volunteers attend the event for free! If interested in helping the young professionals committee at this event please email cnta@bellsouth.net.

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Energy.

This summer CNTA started planning our 31st Annual Teller

Lecture. We are excited to announce our keynote speaker is Dr. Kathryn Huff, the

Assistant Secretary for Nuclear Energy with the Department of

She will speak at the Amentum Center on November 1st, and

there will be a dinner reception

All Member+ and Benefactor members of CNTA receive one

ticket to this event as part of

if you'd like to redeem your ticket by emailing us!

reservations are available. For

Individual tickets to the event

https://cntaware.org/event/2022

We also recognize our 2022

Nuclear Service Award

Winner and our 2022

**Distinguished Scientist** 

Award at this event!

are available for purchase at:

Sponsorship and table

details on this, email

cnta@bellsouth.net.

-teller-lecture/

their membership. Let us know

following the lecture at

Newberry Hall.

# **31st Annual Teller Lecture**

# 2022 Teller Lecture

November 1, 2022 Aiken SC

Keynote Speaker: Dr. Kathryn Huff, Assistant Secretary for Nuclear Energy



6:30pm- Lecture at the Amentum Center for Performing Arts 7:30pm- Reception at Newberry Hall

Tickets Required. Seating is Limited.

## RSVP by October 21, 2022

Tickets are \$50/person\* Available at: https://cntaware.org/event/2022-tellerlecture/

Email cnta@bellsouth.net for questions, to RSVP, and for sponsorship opportunities.

\*CNTA Member+ and Benefactor members receive one free ticket to event and private reception (held at 5:30pm) Attendance at both for quests of invited members is a total of \$65/guest. Contact CNTA for information.

The program will include recognition of the 2022 Distinguished Scientist and Nuclear Service winners. We will also recognize the many educational grant, scholarship, and award winners for CNTA in 2022.



Dr. Kathryn D. Huff serves as the Assistant Secretary for Nuclear Energy. Prior to her current role, she served as the Principal Deputy Assistant Secretary for the Office of Nuclear Energy. Before joining the Department of Energy, she was an Assistant Professor in the Department of Nuclear, Plasma, and Radiological Engineering at the University of Illinois at Urbana-Champaign where she led the Advanced Reactors and Fuel Cycles Research Group. She was also a Blue Waters Assistant Professor with the National Center for Supercomputing Applications. She was previously a Postdoctoral Fellow in both the Nuclear Science and Security Consortium and the Berkeley Institute for Data Science at the University of California – Berkeley. She received her PhD in Nuclear Engineering from the University of Wisconsin-Madison in 2013 and her undergraduate degree in Physics from the University of Chicago. Her research focused on modeling and simulation of advanced nuclear reactors and fuel cycles

She is an active member of the American Nuclear Society as the past Chair of both the Nuclear Nonproliferation and Policy Division and the Fuel Cycle and Waste Management Division, and recipient of both the Young Member Excellence and Mary Jane Oestmann Professional Women's Achievement awards. Through leadership within Software Carpentry, SciPy, the Hacker Within, and the Journal of Open Source Software, she also advocates for best practices in open reproducible scientific computing.

CNTA 1204 Whiskey Rd, Suite B Aiken SC 29803 CNTA is a 501(c)3 non-profit organization: ID #57-0953103

cnta@bellsouth.net (803) 649-3456 www.cntaware.org

## Many thanks to our current sponsors:

Platinum: Amentum, Battelle Savannah River Alliance, Savannah River Nuclear Solutions

Gold: Applied Research Center, Centerra, Huntington Ingalls Industries, Merrick, and Southern Nuclear

Non-Profit: Nuclear Energy Institute, Nuclear Workforce Initiative, SRS Community Reuse Organization

#### Sponsorship opportunities still available!

## Youth Apprenticeship Pilot Program Begins at the Savannah River Site

## Submitted by Savannah River Nuclear Solutions

Savannah River Nuclear Solutions is breaking new ground with a pilot program that provides area high school students the opportunity be employed as apprentices at the Savannah River Site (SRS).

"We have a wide range of career opportunities requiring a technical school degree, and we need to fill and maintain that job pipeline," said Dorian Newton, Ph.D, Program Manager Apprenticeship and Pipeline Training. "Agreements with the Aiken, Denmark, Orangeburg, and Augusta technical schools have been very helpful towards filling this need through our extensive adult apprenticeship program at SRNS. That said, we realize the next step is to facilitate a way for local high school students to complete their high school curriculum, while gaining hands-on experience working side-by-side with our employees as youth apprentices."

Two seniors, Arian Williams from Allendale High School and Drew Platts from Barnwell High School, have agreed to be the initial apprenticeship program participants.

"The Youth Apprenticeship Program at the Savannah River Nuclear Solutions has been a wonderful experience. They are very understanding and work with you while you're in school," said Williams. "I have met many people who have given me great advice and assured me that I could come to them about any safety issues or concerns. This program has been a blessing, and I hope that I continue my journey at SRNS."

Cynthia "Booboo" Roberts, SRNS Deputy Program Manager, Apprenticeship and Pipeline Training, will coach Platts and Williams through this process.

"Though both students are in our newly created Site Training Youth Apprenticeship program. We want to expose them to various types of jobs available at SRS. You never know what might spark a strong interest in a career that had not been previously considered," said Roberts.

As apprentices, Platts and Williams will primarily have administrative duties, such as preparing and maintaining training records, setting up and breaking down of classroom equipment and instructional aids.

"The ultimate goal, after the successful completion of this youth pilot program, will be to expand the program to include courses at local technical colleges, much like our adult apprenticeship program," said Newton. "This will make for an

optimum, well-rounded experience that will benefit these high school seniors and our company, as we receive highly qualified job candidates throughout the foreseeable future through this process."

"My first few days on-site were fun and exciting, traveling around the Site and visiting facilities," said Platts. "I am excited to work at the Savanah River Site and explore all that it has to offer."

Savannah River Nuclear Solutions, a Fluor-led company with Newport News Nuclear and Honeywell, is responsible for the management and operations of the Department of Energy's Savannah River Site located near Aiken, South Carolina.



Seniors Drew Platts, Barnwell High School, and Arian Williams, Allendale High School, are first-time participants in Savannah River Nuclear Solutions' new youth apprenticeship program at the Savannah River Site.

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## North Wind is Building for Success

#### Submitted by North Wind Group

#### **Regional Project Progress**

Construction is progressing at the Department of Energy's (DOE) Mercury Treatment Facility at the Y-12 National Security Complex in Oak Ridge, Tennessee. The facility is key to future cleanup projects at the site. Construction of the facility is being completed by a joint venture of APTIM and North Wind (ANW).

#### Safety

The Luckey Formerly Utilized Sites Remedial Action Program (FUSRAP) Site recently reached a safety milestone of 10,000 truckloads safely moved for off-site disposal. Each truckload averages approximately 17 tons of material and typically 70 truckloads leave the site each week. Since the cleanup contract was awarded in 2015, North Wind Portage has worked over 533,771 hours without a lost time accident.



Photo credit: DOE OREM Facebook post June 16, 2022

#### Awards

- Portsmouth Gaseous Diffusion Plant (PORTS) and Moab Uranium Mill Tailings Remedial Action (UMTRA) projects are the recipients of DOE GreenBuy Awards for fiscal year 2021 by purchasing Priority Products in multiple categories.
- North Wind Solutions, LLC (a North Wind subsidiary company) recently received a "Business On a Roll Award" from the Tri-City Regional Chamber of Commerce in Washington. North Wind is a critical subcontractor to Environmental Management contractor Hanford Mission Integration Solutions (HMIS) for the Hanford Mission Essential Services Contract, providing infrastructure and site services necessary to accomplish environmental cleanup of the Hanford Site.

#### Community

North Wind Group awarded the 21<sup>st</sup> Annual North Wind/ Idaho State University Scholarship to two Idaho State University (ISU) students majoring in Geology and Biology, Grant Bradbury and Joseph Hively, for \$4,404 each. Idaho Falls Mayor, Rebecca Casper, several North Wind employees, and ISU faculty and students attended the check presentation event in August. The scholarship has been so successful that North Wind has established a second scholarship for ISU students majoring in science, technology, engineering, and mathematics (STEM) degrees to broaden their reach and impact on students.



North Wind is actively seeking talent to fill key positions all over the country as the company has seen significant growth in the last several years. To view or apply for current career opportunities, visit: <u>https://northwindgrp.com/careers/</u>

#### Summer 2022

## **Centerra Awards Family Scholarships**

### Submitted by Centerra-SRS

Centerra, the security contractor at the Department of Energy's Savannah River Site, recently awarded 10 scholarships to dependents of employees, with each scholarship recipient receiving a check for \$1,000 payable to the student.

The Centerra Family Scholarships are open to sons, daughters or legal dependents of active full-time employees of the Company. The son, daughter or legal dependent must be a 2022 graduating senior of a public, private, home, or parochial high school, or current college student, who will be attending any two-year or four-year accredited college or university for an undergraduate degree program in Fall 2022.

The scholarship recipients were chosen by a random selection from all qualified applicants that were received by the deadline. This year, the names of scholarship applicants were placed in balloons and ten of the balloons were randomly selected and popped by Mark Bolton, General Manager.



Mark Bolton, Centerra-SRS General Manager, selects scholarship recipients with Joanne Glenne, Workforce Services Department Administrator.

"We are pleased to sponsor this program to help the family members of our employees further their education," said Mr. Bolton. "We wish all the scholarship recipients, and all that applied, the best in their future educational endeavors."

This year, the scholarships were awarded to the following students, with Centerra employee for each student listed in parentheses: Wright Sullivan Andrews (Ethan Andrews), Andrew Carson Barrett (Andrew Barrett), India Renee Brown (Larry Brown), Caroline Nicole DuBose (Melanie Hunt), Laci Savanna DuBose (Melanie Hunt), Ian Hunter Garland (Kimberly Garland), Gunnar Joshua Hornung (Gideon Hornung), Sidney John-Michael Lee (Stacey Lee), Sariah Elizabeth Ramsey (Willie Ramsey), Travis Antonio Thompson (Marie Thompson).

## New Exhibits Coming to SRS Museum

#### Submitted by Savannah River Site Museum

The SRS Museum has been developing the Defense, Deterrence, and Discovery exhibit to debut in October 2022. Visitors will learn about the legacy of Savannah River Plant operations, from the facility's ambitious construction to the future goals of the Savannah River Site. Generous sponsorship from the National Nuclear Security Administration (NNSA) has allowed the SRS Museum and SRS Heritage Foundation, in partnership with New South Associates, to create a project that features fun interactive components and educational activities for the entire community.

An updated Radiation Exhibit is also in development at the SRS Museum with the financial support and in collaboration with the Savannah River National Laboratory. This exhibit will include an interactive portion that demonstrates how radiological workers protect themselves from different forms of radiation.

Visitors will also learn about everyday radioactive items, such as uranium glass and smoke detectors.

The SRS Museum has received the opportunity to work with Arcadia Publishing Co. on publishing an Images of America book. The book focuses on the early years of the Savannah River Plant and will be on sale at the museum in time for Christmas. This insightful book is the perfect gift for the retired or current nuclear worker in your life!

The museum is seeking volunteer docents passionate about the impact of SRS on Aiken's history. Docents engage visitors, share background knowledge, and occasionally assist at events. As the SRS Museum grows, so too does our team of dedicated volunteers. Interested individuals may apply at the following link: <a href="https://www.srsheritagemuseum.org/volunteer">https://www.srsheritagemuseum.org/volunteer</a>





## Savannah River Mission Completion Signs Collaborative Agreement with Denmark Technical College

## Submitted by Savannah River Mission Completion

Savannah River Mission Completion (SRMC), the liquid waste contractor at Savannah River Site (SRS), signed a Memorandum of Understanding with Denmark Technical College (DTC) with the goal of helping prepare students for their future careers at SRS.

DTC is the only historically black technical college in the state of South Carolina, focusing on technical career training, associates degrees, and a four-year college transfer program.

The new agreement enables SRMC to provide guidance to DTC students on careers in Science, Technology, Engineering and Math (STEM), mostly by providing more opportunities for work on degrees with experience through the apprenticeship programs for nuclear operators, mechanics, and radiological inspectors. In addition, students will receive information about possible internship and job opportunities with SRMC.

SRMC is pledging to donate to the college for scholarships and other critical STEM-related needs, as identified.

SRMC President and Program Manager Dave Olson believes the MOU offers a winning opportunity for both Denmark Tech students and SRMC.

"DTC students who are preparing themselves for STEM-based jobs could qualify to work in positions or internships being offered by our company," Olson said. "We believe this collaboration makes a strong investment in education, giving these students an additional step up in their careers."

DTC President and CEO Dr. Willie L. Todd Jr. said the arrangement will be mutually beneficial for both organizations.

"We are grateful for SRMC's support and the opportunities provided to our students," Todd said. "SRMC is making a difference. With this agreement in

place, we can identify those students who potentially fit SRMC's current and future employment needs."

The MOU between SRMC and DTC is effective from July 1, 2022, to June 30, 2023, and can be renewed.

SRMC comprises parent company BWX Technologies, Inc. with partners Amentum and Fluor. Its team brings the capabilities necessary to accelerate cleanup at the U.S. Department of Energy's Savannah River Site through safe nuclear operations, optimized and integrated mission execution, and strong corporate governance.



SRMC President and Program Manager Dave Olson (left) prepares to sign a Memorandum of Understanding with Denmark Technical College President and CEO Dr. Willie Todd.

## ABD is a G-O!

# SRS's Operations Receive Approval for Accelerated Basin De-inventory Mission, saving time and money

## Submitted by Savannah River Nuclear Solutions

The Savannah River Site (SRS) received approval from the Department of Energy to proceed with a new approach to spent nuclear fuel (SNF) disposition that will result in a lifecycle cost reduction of over \$4 billion dollars and represents a more than 20-year acceleration over the current approach.

Since 1995, the H Canyon chemical separations facility has been used to dissolve SNF from SRS's L Area Disassembly Basin, an underwater facility that safely receives and stores SNF from foreign and domestic research reactors. After dissolution, H Canyon would use complex chemical processes to purify and blend the resulting highly enriched uranium (HEU) with natural uranium to produce low enriched uranium (LEU). The LEU was then used in commercial power reactors to make electricity. This approach made the HEU non-proliferable, or no longer usable for nuclear weapons.

The newly approved approach, called Accelerated Basin De-inventory (ABD), will use H Canyon to dissolve the SNF and then, instead of processing further into LEU, send it through the Site's liquid waste program to be vitrified and safely stored onsite until a federal repository is identified.

"There are so many reasons that ABD is a better path forward," said Eloy Saldivar, the ABD Program Manager for SRS management and operations contractor Savannah River Nuclear Solutions. "H Canyon is a complex, unique resource and is the only operating production-scale nuclear radiochemical separations facility in the US. But the facility is nearly 70 years old and its expensive to maintain and operate. Add that to the fact that L Basin is nearing its storage capacity, and there are other cheaper sources of fuel for commercial power reactors, so our LEU is no longer needed. ABD is just a cheaper, faster and simpler approach to dispositioning SNF."

ABD allows certain H Canyon systems to be made inactive, saving processing and associated upkeep and maintenance costs. It also allows SRS to disposition the more than 3,000 SNF bundles in L Basin by 2033, when the current operating approach would have taken until the year 2060.

"The Department of Energy and its contractors are committed to reducing costs, completing projects more quickly and safely, optimizing operations, and engaging employees in a highly effective production environment," said SRS Manager for DOE, Mike Budney. "The ABD solution to improve the Savannah River Site cleanup mission embodies this approach."



# Historic Nuclear Regulatory Commission 103(g) finding marks a critical step leading up to Vogtle Unit 3 fuel load

## Submitted by Southern Nuclear- Plant Vogtle

Georgia Power announced today a historic milestone in the completion of Vogtle Unit 3 near Waynesboro, Ga. – the receipt of the 103(g) finding from the Nuclear Regulatory Commission (NRC). This finding was confirmed in an official letter received by Southern Nuclear and signifies that the new unit has been constructed and will be operated in conformance with the Combined License and NRC regulations. No further NRC findings are necessary in order for Southern Nuclear to load fuel or begin the startup sequence for the new unit.

"Today's finding by the NRC helps ensure we have met our commitment to building Vogtle 3 & 4 with the highest safety and quality standards," said Chris Womack, chairman, president and CEO of Georgia Power. "These new units remain a strong long-term investment for this state, and, once operating, are expected to provide customers with a reliable and resilient, clean, emission-free source of energy for the next 60 to 80 years. That's why we've been so committed to getting this project done right – it's about serving our customers today and for decades to come."



The issuance of the 103(g) finding follows years of diligent and careful work by the team at the site to submit documentation that Unit 3 has satisfied 398 required inspections, tests, analyses, and acceptance criteria (ITAACs) as outlined in Southern Nuclear's Combined License – helping ensure the unit meets strict nuclear safety and quality standards. This process was completed on July 29, and the NRC conducted a thorough review process of each submission and targeted inspections of the facility before issuing the 103(g) finding. As required by the NRC, each ITAAC had to be verified before fuel load and operations.

The team at the site continues working diligently to make final preparations for Unit 3 fuel load, initiate startup testing and bring the unit online. Over the next several weeks, well-trained and highly qualified nuclear technicians will continue work required to support loading fuel, which is already onsite, into the unit's reactor. This will be followed by several months of startup testing and operations. Startup testing is designed to demonstrate the integrated operation of the primary coolant system and steam supply system at design temperature and pressure with fuel inside the reactor. Operators will also bring the plant from cold shutdown to initial criticality, synchronize the Unit to the grid and systematically raise power to 100%.

The new Vogtle units are an essential part of Georgia Power's commitment to delivering clean, safe, reliable and affordable energy, and, once operating, the two new units at Plant Vogtle are expected to power more than 500,000 homes and businesses. Additionally, the new units will be clean energy sources that produce zero air pollution.

#### <u>About Georgia Power</u>

Georgia Power is the largest electric subsidiary of Southern Company (NYSE: SO), America's premier energy company. Value, Reliability, Customer Service and Stewardship are the cornerstones of the company's promise to 2.7 million customers in all but four of Georgia's 159 counties. Committed to delivering clean, safe, reliable and affordable energy at rates below the national average, Georgia Power maintains a diverse, innovative generation mix that includes nuclear, coal and natural gas, as well as renewables such as solar, hydroelectric and wind. Georgia Power focuses on delivering world -class service to its customers every day and the company is recognized by J.D. Power as an industry leader in customer satisfaction. For more information, visit www.GeorgiaPower.com and connect with the company on Facebook (Facebook.com/Georgia Power), Twitter (Twitter.com/ GeorgiaPower) and Instagram (Instagram.com/ga\_power).

## SRNL Awarded \$3M to Advance Clean Energy Technologies

#### Submitted by Savannah River National Laboratory

Savannah River National Laboratory (SRNL) received a \$3 million Department of Energy (DOE) Office of Science Basic Energy Science Program award to further fundamental research capable of enabling new pathways for hydrogen storage and production technologies.

The award is part of DOE's recent announcement of awarding \$540 million for university- and national laboratory-led research into clean energy technologies and low-carbon manufacturing to transform energy production and cut emissions.

The research will provide greater insight into the variety of surface characteristics that promote dissociation and recombination of hydrogen on a material surface and the behavior of subsurface hydrogen species. The objective is to provide an in-depth analysis of the interactions between MXenes, a two-dimensional ceramic material, and hydrogen, as well as the influence of external stimuli to fine-tune this interaction. This collaborative research effort is led by SRNL researcher Patrick Ward, Ph.D., Yury Gogotsi, Ph.D., from Drexel University, Kah Chun Lau, Ph.D., from California State University Northridge, and Paul Weiss, Ph.D., from University of California, Los Angeles.

"Utilizing a theory-guided experimental approach, we can systematically evaluate the nature and mechanistic behavior behind the interactions of hydrogen with these materials," said Ward. "By combining our knowledge of the basic influential surface and subsurface features, which dominate the hydrogen interaction behavior with induced behaviors from external stimuli, a cohesive and complete perspective can be obtained. It is through expansion of our fundamental understanding of the physical world that led to great advances in technology. We have assembled an extraordinary team, which is determined to accomplish this," he said.

This SRNL-led fundamental research supports underpinning aspects of the three DOE Energy Earthshots, initiatives to set goals for improvements in clean-energy technologies. This research is particularly suited for addressing the Hydrogen Shot initiative, which seeks to reduce the cost of clean hydrogen by 80 percent to \$1 per 1 kilogram in 1 decade ("1 1 I") and unlock new markets for hydrogen.

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 (<u>BSRA</u>). 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 (<u>https://srnl.doe.gov/</u>).

## Augusta Tech to GA Tech

## Submitted by Augusta Technical College

Augusta Technical College celebrates, Sidney Lee as a dual enrolled graduate who then received acceptance into GA Tech. Sidney received his Nuclear Engineering Technology Associates Degree. Currently, he is pursuing his nuclear engineering degree at GA Tech. Sidney shares his personal experience on how dual enrollment was the best choice for him and how he currently benefits.

Click to listen to Sidney's story. ATECH-082222-DualEnrollment-Sidney on Vimeo



Workforce Development Coordinator Mylinthia Renee Kelly

## Savannah River Site Vitrification Facility Undergoes Major Upgrade

## Submitted by Savannah River Mission Completion

DOE-Environmental Management's vitrification plant at <u>Savannah River Site</u> (SRS) is undergoing a significant process improvement.

The <u>Defense Waste Processing Facility</u> (DWPF) enters an outage this month to begin the replacement of formic acid with glycolic acid in the facility's vitrification process. Glycolic acid will allow for safer processing of high-activity radioactive waste at DWPF, leading to more efficient conversion of waste into glass. The transition to glycolic acid is expected to be completed by October 2022.

The current use of formic acid results in generation of hydrogen and produces ammonia as the acid reacts at elevated temperatures. Glycolic acid significantly reduces these off-gas hazards while providing chemical stability for the process.

This change is another step to ensure the <u>Salt Waste Processing Facility</u> (SWPF) can operate at high production rates since DWPF will be able to treat greater quantities of waste due to the stability of the process.

SRS liquid waste contractor Savannah River Mission Completion (SRMC) operates DWPF and SWPF for EM.

The replacement of formic acid with glycolic acid was studied for 10 years before it was put into use, according to Jim Folk, DOE-Savannah River assistant manager for waste disposition.

"Extensive laboratory testing showed us that glycolic acid enables DWPF to treat more waste, removing curies from SRS waste tanks at a faster rate," Folk said. "Safely removing greater volumes of liquid waste continues to reduce the risk this waste poses."

Wyatt Clark, SRMC chief operations officer, said the use of glycolic acid is a significant innovation for the overall waste treatment process.

"We expect glycolic acid to improve the overall efficiency of waste processing inside DWPF," Clark said. "Removing formic acid will allow us to process more waste. The overall impact is more efficient processing in an environment that is even safer than before, making this a win-win for the SRS Liquid Waste Program and our employees."

The change to glycolic acid means that all major SRS liquid waste facilities will also be paused since the facilities are integrated. However, during this planned outage, preventive and corrective maintenance work will be performed in SRS liquid waste facilities. Performing this maintenance work now takes advantage of the pause and will make the entire liquid waste system more reliable and more robust when

operations resume.

During the outage, the Saltstone Disposal Units construction will continue, as will any work not connected to the change to glycolic acid. Those units are where the saltstone grout resulting from waste processing solidifies into a nonhazardous, solid lowlevel waste form.



High-activity liquid waste is converted to glass inside the Savannah River Site's Defense Waste Processing Facility, where the implementation of glycolic acid in the treatment process will improve efficiency and safety.

## **Essential SRPPF Operations System Passes First Round of Testing**

#### Submitted by Savannah River Nuclear Solutions

A material transfer system that will be central to operations in the Savannah River Plutonium Processing Facility (SRPPF) has successfully completed its first round of testing. The results will help guide the final design of the system, which will transport materials through the facility's various steps in producing plutonium pits needed for the nation's nuclear deterrent.

The Savannah River Site (SRS) is repurposing an unfinished National Nuclear Security Administration (NNSA) facility as the SRPPF. Design work for the conversion is currently underway. "The material transfer system will be the veins and arteries of the SRPPF, moving material from beginning to end of the production process," said Patrick Schneider, SRNS Plutonium Modernization Manager of Operations. "Designing, assembling and testing a prototype of the transfer system now will allow the development of a final system that works seamlessly with the production processes."

A version of the system will also be installed in SRPPF's Training & Operations Center, where training, qualification and procedure development will begin well in advance of operations in SRPPF.

Work in the SRPPF will take place inside gloveboxes, which are enclosures that allow employees to perform work in a protective environment. The material transfer system will move materials, tools and waste through the series of connected gloveboxes.

SRPPF worked with the Savannah River National Laboratory (SRNL) on the system. The partnership among SRPPF Operations, SRPPF Maintenance, SRPPF Project Engineers and SRNL researchers was one of the keys to the testing program's success. Schneider said, "Bringing together this cross section of functional organizations at this early stage in the project will support our future success."

SRNL began by researching available technologies for moving materials and items through the system. They evaluated the different technologies to



SRNL assembled the first version of the system and operated it in the lab to make sure it would run. It was then transferred to an existing facility that will eventually become SRPPF's Training & Operations Center, where a three-person operations team began putting it through its paces. The prototype had to demonstrate movement laterally and around corners. The final test was a multi-phase endurance test to ensure that it could transport more than the required weight over a four-week period.

Each phase required the system to run 24/7 for a week. The test began with a nearly 10-pound empty cart operating for the first week. A 10-pound bag was added to the cart for the second week, then another 10-pound bag was added for week three, and finally, a third 10-pound bag was added to complete the month-long test. "When we got to 40 pounds, it was still operating and functioning, so we know it can do what's needed," Schneider said. "The magnetic-driven technology proved to be efficient and low maintenance."

Information gained from testing has been shared with the glovebox design team. They will update the system's design, based on improvements indicated by the testing. Then the updated system will be assembled, and testing will begin again.



Kristen Phillippi, Operations Support Specialist – SRPPF, loads a 10-pound bag into the test transport container that sits on a cart driven by magnetic technology within the prototype of the material transfer system.



A prototype of the material transfer system that will be used to move material and items during the plutonium pit production process in SRPPF.

thank

# **Thank You Business Members!**

## PLATINUM

# SAVANNAH RIVER MISSION COMPLETION SAVANNAH RIVER NUCLEAR SOLUTIONS

## GOLD

ARTHUR RICH BATTELLE SAVANNAH RIVER ALLIANCE CENTERRA-SRS FLUOR GOVERNMENT GROUP HUNTINGTON INGALLS INDUSTRIES

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# **Mission of CNTA**

*Citizens for Nuclear Technology Awareness, Inc., is an education and advocacy group promoting the safe and effective use of nuclear power, nuclear research and nuclear medicine.* 

We provide education, networking, and a voice of understanding from a technical perspective in a world often influenced by *inaccurate* and unwarranted fear.

CNTA membership encompasses individuals, families, and businesses who support the use of nuclear science and technology for many applications, including: energy, national security, nuclear medicine and diagnostics, and industrial applications.

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Member Plus: \$250.00 or more Benefactor: \$125.00 Patron: \$70.00 Sustaining: \$35.00 Young Professional : Free for 1 year, and free renewals until age 40.

Membership Information is available online at: <u>http://cntaware.org/join-us/</u>

All membership levels include invitations to breakfasts/ dinners, other events, quarterly newsletters and opinion letters/editorials. Benefactor and Member Plus also receive one free private reception ticket and one free Teller Lecture banquet ticket when dues are current.

YOUR DUES SUPPORT PUBLIC OUTREACH Federal ID# 57-0953103

## Summer 2022



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# HOW YOU CAN HELP

## As a charitable, non-profit organization, CNTA can ALWAYS use help.

## **Opportunities include:**

- Donate Items for Raffles/Auctions
  - Donate to Our Community Gift Card Program!
  - Donate to CNTA as a charitable non-profit (<u>https://cntaware.org/about-us/</u>)
- Volunteer your time
  - Get involved with a CNTA Committee (committee information on page 6)
  - Help the CNTA Education Committee revamp our educational outreach
  - Help CNTA expand their reach on social media
  - Volunteer to help in our Office (there is always work to be done there!)
  - Be an event-specific volunteer
  - Be an education committee contest judge or outreach volunteer
- Sponsor a 2023 Event or Education Outreach!

For information, email Allison at office@cntaware.org

## **CNTA CALENDAR OF EVENTS**

- **September 29, 2022-** Up & Atom sponsored by SRMC. 7:30am at Newberry Hall in Aiken, SC.
- October 15, 2022- Oyster Roast & Low Country Boil. 6:30-9pm at Palmetto Golf Club in Aiken, SC.
- October 16-22, 2022- Nuclear Science Week Celebrated
- October 20, 2022- Up & Atom with the Apprenticeship Program. 7:30am at Newberry Hall in Aiken, SC.
- November 1, 2022- 31st Annual Teller Lecture. Dr. Kathryn Huff, Assistant Secretary of the Office of Nuclear Energy is the keynote. 6:30pm at the Amentum Center for Performing Arts in Aiken, SC.
- May 12, 2023 21st Annual CNTA Charity Golf Tournament! Shotgun start at 8:30am. Held at Houndslake Country Club in Aiken, SC.

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