2019 Neutrino

American Nuclear Society
Savannah River Section

Officers and Executive Committee

Chair: Amanda Bryson

Vice Chair: Bill Wabbersen

Secretary: Tracy Stover

Treasurer: Sidney Keener

Membership: Rebecca Rice

Publications: Phil Cupp

Arrangements: Tim McKinsey

Programs: Kevin O'Kula

Admin: Dianne Shelton

Retiree Liaison: Mel Buckner and Holly Watson

Vogtle Liaison: TJ Corder

CNTA Liaison: Chuan Wu

Outreach/Education: Bob Eble

Augusta University: Gregory G. Passmmore

Vogtle Young Member Co-chair: Griffith Kiah

SRS Young Member Co-chair: Graham Jones

Past Chair: Chip Lagdon

2019 Neutrino

Chair's Message

Welcome to the mid-year Neutrino update!
We had a busy and successful 2018-2019 year; and as we move into 2020, there is a lot to look forward to.
ANS Savannah River has again received national recognition for excellence, being honored for Best Local Section Outreach and Best Local Section Management under Chip Lagdon's leadership in 2018-2019.
With this year's officer election, we were fortunate to welcome several new members of the executive committee:

Rebecca Rice, Membership Chair
Holly Watson, Retiree Liaison Co-Chair
Kiah Griffin, Young Members Co-Chair
Graham Jones, Young Members Co-chair

We have also welcomed Bill Wabbersen back to the EC as Vice-Chair and incoming Chair for 2020-2021; along with Sid Keener as treasurer.

Looking ahead, 2020 and 2021 promise a lot of excitement and change. The 70th Anniversary of the Savannah River Site will be celebrated in 2020. In April of 2020, ANS-SR will host TOFE 2020, the fusion topical, in Charleston, SC. And of course, in 2021, Plant Vogtle Unit 3, the first new commercial nuclear reactor constructed in the United States in over 30 years, is scheduled to complete startup. This is in addition to ANS-SR's usual full roster of technical meetings and educational outreach.

The SRS anniversary and Vogtle startup work will be going on simultaneously with changes in how ANS National does business with local sections and topical meetings. Those changes could lead to opportunities for innovative networking within the larger ANS organization. They will also require ANS-SR to become financially self-supporting without revenue from topical meetings after TOFE 2020.

As you can see, ANS-SR is at the epicenter of a lot of activity, and perfectly positioned to provide technical leadership and communication with the community. ANS-SR is well represented at ANS National, and we can innovate and succeed while adapting to the planned changes in our larger organization. SRS and Vogtle will be in the news, and the time to proactively communicate and prepare for questions is now! Our section Vice-chair, Bill Wabbersen, has prepared some thoughts on communicating about nuclear which you can read in "Wrestling with Chernobyl" in this Neutrino. I feel very privileged to be part of ANS-SR, especially at this exciting time. The mixture of nuclear interests represented by Plant Vogtle; SRS; and the hospitals, universities, and technical colleges in the CSRA mean that our region is home to a large and diverse group of skilled and talented nuclear professionals. Leadership and knowledge provided by those individuals is reflected in outstanding projects and research around the country and around the world.

2019 Neutrino

The success and vitality of ANS-SR owed to a select group of those individuals – each of you, our ANS-SR section membership. Thank you for continuing to be part of ANS-SR. I can't wait to see what the future brings!

Amanda Bryson
ANS-SR Chair, 2019-2020

2019 Neutrino

Reflections from the Passenger Seat

I have been on the ANS-SR Executive Committee on and off again since 2002 (more on than off), and I've learned quite a few things. One important thing that I have learned is that the Chair and the Programs Chair are the two most demanding positions on the committee. The least demanding position on the EC is the Past Chair. They have completed their duty and then act as an advisor to ensure continuity. They have earned the rest. The second least demanding position is the Vice-Chair. That position has no real defined responsibilities. The Vice-Chair can observe, and dream, and plan for the next year's activities. I like to think of it as riding in the passenger seat while the Chair drives the section down the highway to success. I don't know about you, but my mind tends to wander when heading down the highway staring out the window with no real responsibilities. The following article was born from one of those moments.

Wrestling with Chernobyl

Dusty Rhodes
The American
Dream

Versus

Lyudmilla Ignatenko
HBO's Chernobyl

When I was a boy, we only had five channels on the TV: ABC, NBC, CBS and PBS on VHF and one independent station on UHF. The UHF station, Channel 44, was by far my favorite, and my favorite show was Championship Wrestling from Florida with Gordon Solie on Saturday night. It was exciting, and it was recorded about 30 miles away in Tampa. I enjoyed watching the Brisco Brothers tag team, Eddie Graham, and the Super Destroyer. However, Dusty Rhodes was the real star. He was called Dusty Rhodes, the American Dream, and his signature move was the Bionic Elbow. The boys in my neighborhood would gather up in my backyard and we would push four shovels down into the sandy soil in a square shape and wrap a garden hose around the upright shovel handles to form the ring ropes. We would then wrestle like we saw on TV. It was fun!

However, one thing bothered me. Many of the adults I knew would say, “I don’t know why you boys watch that. It’s all fake.” Mr. Butler, my friend Matt’s grandfather, would excitedly say, “Boys, that’s not just TV, that’s entertainment.” I didn’t understand that at the time.

When the oldest boy in the neighborhood, Gary, got his driver’s license, we had our chance to go see wrestling live at the Fort Homer Hesterly Armory in Tampa on Tuesday nights! We would hunt coke bottles all weekend and turn them in to get enough money to afford the $2.00 entry fee for the cheap seats. Five or six of us boys would pile into Gary’s old impala and head to the city. Our tickets would get us onto the terrace, and we would stand on our folding chairs in order to watch the wrestling matches. It was so loud and all of the famous wrestlers from TV were there. I got to watch my favorite Dusty Rhodes drop his signature Bionic Elbow on all of the bad guys, including the Funk brothers and the terrible Harley Race. I loved it! It didn’t seem fake to me. I would watch them fly around the ring, jumping off the top turnbuckle, knocking each other out with the sleeper hold, or grabbing a folding metal chair from the audience and whacking each other on the head with it. The sound of the chair rung like a bell. I knew it certainly couldn’t have been faked.

When I got into high school, I was a linebacker on the football team. It just so happened that the linebacker coach was also the wrestling coach, and one of the other linebackers was a state champion wrestler. They both convinced me to try out for the wrestling team. I tried out and quickly made the varsity team. I was a pretty good wrestler, I went to the state Olympics twice, and I really enjoyed it. However, there was one thing that was lost forever. With my new knowledge of real wrestling, it was clear to me that Championship Wrestling on TV was fake. The adults were right; it was just entertainment. I couldn’t watch it anymore. I wondered why actual collegiate wrestling was not shown on TV. I could see through the charade of Championship Wrestling, and all I could now see was the cheap pandering to the lowest human emotions. Maybe, like in Plato’s *Allegory of the Cave*, initial awareness creates the path to knowledge. Maybe, with knowledge comes the loss of innocence. Regardless, there was no going back, like a line from the Pearl Jam song, *I’m Open*, “he had deciphered the illusion, trading magic for fact, no trade backs…”

My senior year in high school I worked as a busboy in a nice seafood restaurant that was frequented by the professional wrestlers from TV. One of my favorites, Eddie Graham, signed one of the menus for me. His note said, “Stay right.” It was a reference to the maximum leverage of the right angle in wrestling, and a message for life.

In April of 1986 I was in the Navy and I was working as a nuclear systems instructor stationed in upstate New York. That was when I first heard about Chernobyl. I had only been in the nuclear industry a couple of years and it was my first time keenly sensing the fear of nuclear in the public, fueled by the media. Within days there were protesters at the plant boundary. They were protesting nuclear power, and they were protesting nuclear weapons. I was really confused. I knew the news media had their facts wrong and seemed to be guessing, which was fueling irrational fears. The protesters seemed to be just a bunch of angry people mixing things up. I really was surprised how this could all be confused, and why the errors in the media reports were not countered.

I saw similar reactions in anti-nuclear protests in Florida in the late 1980's and here in South Carolina in the late 1990s, early 2000s. I'm a literal person and I never understood how the press could get facts so wrong in a business that I found relatively straightforward. In 2001, DOE and NNSA were preparing to bring plutonium to South Carolina and they were in the early stages of planning for the MOX Project. Local newspapers would often get facts wrong, and they would regularly describe plutonium as "the most dangerous element." That year I attended a CNTA Up and Atom breakfast and I happened to be seated next to an editor for a newspaper. I mentioned that ANS-SR could help his writers have a greater understanding of nuclear topics by conducting a short basics of nuclear workshop. That might help the articles to be more accurate. The editor declined my offer and explained to me that it was not the paper's function to teach people. Instead, he said that the newspaper's function was to write what people wanted to read so that the paper could sell advertisements. They were not allowed to tell a lie, but they were not required to teach the truth. He said teaching the truth was my job. At first, I was shocked and a little angry. I quickly got over it because I realized he was just being honest with me. I remembered Mr. Butler's old saying, "Boys, that's not just [News] that's entertainment." I decided at that moment to make a concerted effort to teach the truth.

In March of 2011 an earthquake and subsequent tsunami in Japan caused the next round of major media fear-mongering about nuclear power. The Fukushima Dai-ichi Power Plant was essentially the last thing standing following the tsunami and became the focus of intense media coverage. News stories about "radiation" detected in California were ominous and widespread. Fortunately, ANS-SR and CNTA had been conducting local nuclear outreach activities in schools for many years by this time. We had been out there teaching the nuclear truth based on science. Teachers from all over the CSRA started emailing me and calling me. They were concerned about the news reports and how they did not align with the science-based information taught by ANS-SR and CNTA. When I explained the missing information from the newspaper articles, and how it affected the perception of truth, the teachers got mad too. I would often hear, "Why are they misleading me with half-truths?" At this point I had a new recognition about how our industry is perceived. We must get out into the public and build trust through open, frank conversation well before any incident. When you build trust through personal interaction before an incident, people are open to listen. If you wait and defend your industry after an incident, it is too late. ANS-SR and CNTA redoubled our efforts to get out into schools, and we have been very successful in our region and across the state.

In the summer of 2019, I gained a brand-new understanding of how the media treats our industry. Teachers from around the state that I had presented to started texting me about the new miniseries on HBO about Chernobyl. I don't get HBO and hadn't seen the series. I just tried to answer their specific questions and concerns and then read what others had written about the show. After reading many reviews and articles I was confused. How could an accident from over 30 years ago be dramatized in a manner that made it feel like a new nuclear incident with grossly exaggerated casualties? Current media coverage treated Chernobyl like it happened all over again. The ANS Nuclear Café had a good article about the accuracy of the set design but how wrong the show was related to radiation hazards. I

sent the curious teachers the link to that article. The trust equity that we had built for many years was still paying off. http://ansnuclearcafe.org/2019/07/10/how-hbo-got-it-wrong-on-chernobyl/
In October, I was on a flight back to the US from Europe and saw that the miniseries was on the flight entertainment system. I watched all five episodes back-to-back on the flight home. I was furious by the time I landed. I have inspected Russian graphite reactors for many years and was able to see that the set design of the show was amazingly accurate. However, the villainization of radiation and nuclear power was outrageous. Like the professional wrestling of my youth, HBO pandered to the human emotion of fear. I decided that I was going to watch the show again and write down everything that was wrong. My wife then shared with me this Forbes article, and I realized that someone had already written down the details of what was wrong with the series.
www.forbes.com/sites/michaelshellenberger/2019/06/06/why-hbos-chernobyl-gets-nuclear-so-wrong.
This article captures the misleading information in the miniseries very well. I shared the Forbes article with teachers to try and explain how the show misled them.

As I thought about the miniseries, I again heard Mr. Butler saying, “Boys, that’s not just [a drama] that’s entertainment.” I thought of Dusty Rhodes and his Bionic Elbow. I thought of the purpose of the drama, to sell subscriptions not to teach the truth. Collegiate wrestling is based on the science of leverage, and it’s a little boring on TV. Championship Wrestling is based on entertainment, and it’s so exciting that they have pay-per-view events. The science of nuclear technology can be boring. The HBO series is dramatic.

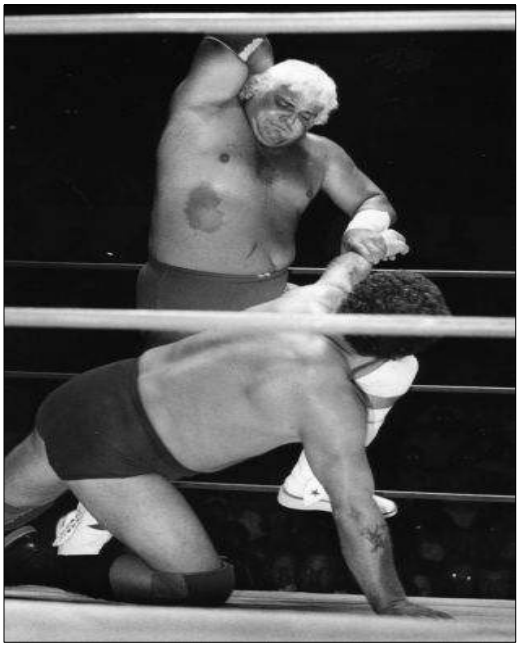
2019 Neutrino

I realize that it is time to stop wrestling with Chernobyl and get back to teaching the truth. Will you join me? Stay Right!

Bill Wabbersen Vice Chair 2019-2020

Dusty Rhodes' Obit:
www.tampabay.com/news/obituaries/remembering-dusty-rhodes-tampa-bay-wrestling-legend-and-original-sports/2233307/

The Bionic Elbow



Best Dusty Rhodes Promos!
www.youtube.com/watch?v=l39Zbet4GSI

Dusty Rhodes Playlist – Now that's Entertainment!
www.youtube.com/playlist?list=PLz2kOn-RunCBTE0EtPtTj1HRGazp0FYjy

2019 Neutrino

Technical Meetings:

October

First meeting

Mr. Steve Hommel, Principal Engineer at SRR gave a presentation on "Using Correlations to Cs-137 to Reduce Uncertainty In SRS Tank Farm Tc-99 and I-129 Inventories". This first Technical meeting of the year was held at Newberry Hall on October 7th. DOE uses Performance Assessment models to estimate potential dose risks from long term waste disposal. At SRS, the PA for the Saltstone Disposal Facility (SDF) has shown that I-129 and Tc-99 are the two most significant radionuclides. Historically, the generation and storage of I-129 and Tc-99 was not tracked in SRS wastes, so there is uncertainty in the projected waste disposal inventories. A quantitative analysis of available data was used to reduce this uncertainty. Mr. Hommel was named a Superior Paper Award winner at the 2019 Waste Management Symposia earlier this year in Phoenix.

Second October Meeting

NUCLEAR ENERGY DEVELOPMENT
As the United States seeks to increase the use of zero-carbon energy sources, we are obliged to make the best possible use of all clean energy technologies through an increased program of research and development, as was emphasized by American Nuclear Society President Marilyn Kray in an address to the ANS local section at the Crown Plaza in North Augusta on October 23, 2019.

2019 Neutrino

The nuclear industry can contribute if it adopts the most promising new technology – the small modular reactor (SMR) – to serve the needs of electricity producers both in the United States and abroad without increasing power costs and environmental problems.

Safe and reliable, the SMR can be operated from underground sites near cities and in remote rural areas anywhere in the world. One design shuts itself down, if needed, and self-cools for an indefinite period of time, with no operator action required, no additional water, and no electricity needed.

The design uses conventional light-water technology to produce 60 megawatts of electricity. SMR's will be built in a factory and shipped to a nuclear site. As many as a dozen SMRs situated alongside one another could supply as much electricity as a mid-size power plant but at a fraction of the cost. An application for design certification has already submitted to the Nuclear Regulatory Commission for the first-ever SMR in the United States.

The potential environmental benefits of SMRs are significant when combined with the surge in renewable energy sources, could lead to big reductions in emissions over time. These technologies should also help reduce local air pollution in countries like China and India, which is why their leaders are strongly behind advanced nuclear power . Government incentives have turned China into the biggest market for SMRs.

Importantly, Congress, in authorizing funding for SMRs, lowered the regulatory cost and burden associated with the NRC licensing process. That change will make it easier for US nuclear companies to compete with foreign reactor manufacturers.

Now, more than ever, in a world made warmer by the burning of fossil fuels, we must work to switch the power sector to nuclear power and renewables. Encouraging the use of SMRs and other advanced nuclear technologies will pave the way.

2019 Neutrino

November

On November 14th Connie Herman presented how SRNL has been supporting the radioactive waste processing mission at SRS since its inception with the Defense Waste Processing Facility entering its 23rd year of production. The meeting was held at Bobby's BBQ in Warrenville, SC. Over the last several years, SRNL has also been working with other DOE sites to leverage our deployed technologies and lessons learned to help complete the Environmental Management mission. The presentation focused on the processing achievements, potential impacts to the SRS waste processing mission from new facilities coming on line, and some of the efforts across the DOE Complex. Connie is currently the Associate Laboratory Director of SRNL's Environmental Stewardship Directorate, which provides strategies and technologies for remediation of former nuclear weapons sites.

December

December was the annual Holiday Celebration. ANS Members and guests had a wonderful six course dinner with fine wines. All shared and enjoyable time with friends, family, and colleagues. Thanks to all who made this event so wonderful. The celebration was held at the North Augusta Community Center in SC.

2019 Neutrino

Outreach and Education:

Science Education Enrichment Day

The following was taken at Science Education Enrichment Day (S.E.E.D.), put on by USC Aiken (https://www.usca.edu/rpsec/events/seed) on October 5th. ANS had a booth set up where kids use a Geiger counter to determine what plates, rocks, etc. on display were radioactive. Also used a black rubber square in bottom left as well as lifting the detector away from radioactive objects to demonstrate how shielding and distance play key roles in lowering the number of clicks heard. There was not easy way to demonstrate time, so just an explanation the principle of ALARA. Yellow marbles in the middle of the photo were Uranium glass, and would fluoresce under a UV light. The children were allowed to take one with them. Not pictured at the other end of the booth was the mousetrap demonstration every 15-30 minutes to show a chain reaction when a few ping pong balls were dropped on them. This was the 34th annual S.E.E.D at USCA.

S.E.E.D.
Science Education Enrichment Day
Explore. Discover. Imagine

2019 Neutrino

Nuclear Science Week:

The following photograph shows Outreach Chair, Bob Eble speaking to a group of students at Aiken High School. Three classes were conducted during Nuclear Science week, October 14 to 18th. It was a great group of students. One of the students asked about nuclear weapons. So Bob explained the different diffusion rates and the concept of negative temperature coefficient. Also was discussed the vast difference between high level radiation effects versus low level and the limits. The presentations to the classes went well.

2019 Neutrino

CSRA College Night

The ANS SR team at this year's September 12, 2019 College Night was part of a group of 130 universities, colleges, and technical societies that participated. The team of Becca Rice, Tracy Stover, Maeley Brown, Amanda Bryson, and Kevin O'Kula estimated that they talked to over 100 students, parents, siblings and educators this year, with many discussions taking place with first-year, sophomore, and junior students. Discussions centered on STEM colleges, nuclear science and technology, and careers in this area in the nuclear field in the CSRA as well as throughout the U.S. The radiation detection equipment from Outreach, nuclear flyers, and of course, the pre-Halloween candy bowl helped the interaction with the next generation of nuclear engineers and scientists.

Becca Rice and Tracy Stover before the event began in front of the ANS-SRS table

Maeley Brown and Tracy Stover talk with in students and parents during College Night.

Maeley Brown makes a point with a student and and parent

Tracy, and Chair Amanda Bryson after standing for 3.5 hours

CSRA College Night Continued

Amanda and Tracy speak with students

Educator Grants Program

ANS-SR has joined with CNTA as a sponsor of the Educator Grants Program. The grants can be used to fund a project in any area of science or technology that promotes an increased understanding of atomic and nuclear fundamentals, radiation and nuclear materials safety, and applications of nuclear technology.

High Schools in the South Carolina counties of Aiken, Allendale, Bamberg, Barnwell, Edgefield, and Orangeburg; and in the Georgia counties of Columbia, Richmond, and Burke are invited to submit proposals. Teachers who are members of CNTA are also eligible to apply regardless of school location.

Application Process

Grant proposal packages are emailed to each high school principal.
Applications can be completed by one teacher or a group of teachers.
Proposals can be submitted for grants in any amount up to $500.
Proposals must be approved by the school principal.

Proposals must be submitted by January 31, 2020. Additional information is available on the CNTA website.

2019 Neutrino

Local Section Meritorious Award

The Savannah River Local Section was awarded the 2019 Local Section Best Public Information & Education and Best Section Management awards in the Local Section Meritorious Award competition at the November 2019 ANS Winter Meeting on Sunday, November 17th in Washington, D.C. Four awards are given annually, and ANS SR was the only section to be recognized in more than one category, with Best Membership being awarded to Oak Ridge/Knoxville, and Best Meetings and Programs being awarded by Eastern Washington.

This year's awards are the first time to have a financial benefit. ANS SR received a total of $600 for its work over the 2018-2019 section year in the Public Information & Education, and Section Management areas. The awards are not single-person recognition, but applaud the collective work of the Savannah River Section in public outreach and education events in the CSRA community, as well as overall management of the Section's activities.

ANS Local Section Committee Chair Shikha Prasad (Assistant Professor at Texas A&M University) presents the Meritorious Section Award presented to ANS SR Past Chair Tinh Tran representing the Savannah River Section (Left picture). The Right picture shows the Section recognition award certificate received by Tinh.


American Nuclear Society

Local Section Meritorious Award

Presented to

ANS Savannah River Local Section

for the categories of

2019 Best Public Information and Education and Section Management

SEAL 2018

American Nuclear Society

Marilyn C. Kray, President

November 17, 2019

Date

2019 Neutrino

Nuclear Trivia

Nuclear Trivia was held on August 21, 2019, at the Carolina Ale House in Augusta.

Future Events:


The Augusta Chronicle

$260,000,000 H-bomb material facilities will be constructed in S. C. near Augusta

Allies facing 'new war'

Aiken-Barnwell site is selected for plant

Grim note is voiced by Gen. MacArthur

Shocked officials seek urgent steps

Plant means big boom for Augusta

Ellenton's residents stunned, but accept news patriotically

Celebrating 70 Years of SRS –A Heritage & A Treasure SRS Museum Nuclear Retiree Drop-In

Thursday, February 6, 2020
6:00 PM - 8:00 PM
SRS Museum
224 Laurens Street SW, Aiken, SC

Join us at the SRS Museum in the 70th anniversary year of the announcement
of the Savannah River Plant (Site).

- • See the exhibits on the history of SRS and the Cold War
- • Find out how to support the Museum & volunteer opportunities
- • Hear how to engage in other outreach opportunities.
- Talks beginning at 6:45 PM with:
- • Holly Watson, ANS SR, Introductions and Overview
- • Walt Joseph, SRS Heritage Foundation Executive Director
- • Carl Fields (SRS retiree and Museum docent)
- • Amanda Bryson, ANS SR Chair, and others

Registration Begins:
January 13, 2020 for Retirees Only; Everyone else January 20, 2020
Cost: $15 per Nuclear Retiree ($12 for a Spouse or a Guest);
$20 Everyone else ($15 for a Spouse or a Guest)
Heavy Hors d'oeuvres (from Newberry Hall)-Beverages provided by ANS-SR .
Donations will be received for SRS Museum & the ANS Benjamin Scholarship
Make reservations through the following link:
https://www.surveymonkey.com/r/TQMR5HX. Alternatively, a request can emailed to ans.savannahriver@gmail.com. Space is limited; register today!

2019 Neutrino

Savannah River Section Hosts ANS Topical Meeting - Technology of Fusion Energy (TOFE 2020)

The ANS Savannah River Section returns April 20-23, 2020 to the Charleston Marriott, near the beautiful Ashley River to co-host the ANS Technology of Fusion Energy (TOFE) 2020 Conference. TOFE 2020 is the 24th edition of the biennial worldwide conference on the technology of fusion energy, and continues the technical exchange covering all topics on fusion energy. ANS SR hosted the PSA 2019 conference at the same venue in April 2019. At TOFE 2020, they co-host the event with Greg Staack, Gregg Morgan, Caryn Butler and others from Savannah River National Laboratory,

The objective of TOFE 2020 is to provide a forum to highlight the latest engineering and scientific advances in both inertial and magnetic confinement fusion, support system development, and power conversion. TOFE 2020 is intended to attract not only veteran fusion experts, but also scientists, engineers and students new to the field. TOFE 2020 is expected to attract over 250 attendees with nearly 50% being international. Tinh Tran and Kevin O'Kula are TOFE 2020 Finance and Publication chairs, respectively, and will be supported by a Section team during the conference in handling registration and other functions.