ORAU Story 2025

Further. Together.

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and Director of ORISE

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What's Inside

ORAU integrates academia, government and industry to advance the nation's learning, health and scientific knowledge to build a better world. Through our specialized teams of subject matter experts, decades of experience, and collaborations with our consortium of more than 160 major Ph.D.-granting institutions, ORAU is a recognized leader when the priorities of our federal, state, local and commercial customers require innovative solutions. ORAU manages the Oak Ridge Institute for Science and Education (ORISE) for the U.S. Department of Energy (DOE). ORAU is a 501(c)(3) nonprofit corporation and government contractor.

ORISE is a DOE asset that is dedicated to enabling critical scientific, research and health initiatives of the department and its laboratory system by providing world-class expertise in STEM workforce development, scientific and technical reviews, and evaluation of radiation exposure and environmental contamination. ORISE is managed by ORAU, a federal contractor, for DOE's Office of Science. The single largest supporter of basic research in the physical sciences in the United States, the Office of Science is working to address some of the most pressing challenges of our time.

The financial information provided in this report has been derived from the audited financial statements of the ORAU Corporation and the DOE contract fund for the year ended September 30, 2025. These audited financial statements are presented in separately bound reports.

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Message from the President

In our nearly 80-year history, ORAU has likely never experienced a year quite like 2025. We faced numerous challenges, including budgetary impacts, programmatic shifts, organizational restructures, contractual adjustments, staffing changes, a government shutdown and a leadership transition. Each of these tested our resilience and our resolve. Because of the unwavering dedication and excellence of our people, we have risen to meet these challenges. I am confident that, together, we can continue to overcome these obstacles and build a brighter future for ORAU.

While the federal government was going through a series of changes, ORAU experienced various leadership changes as well. Several of our leaders retired or chose to pursue new opportunities and life endeavors, resulting in a notable shift in top leadership. This transition included my appointment as President and CEO, along with other key leadership changes. Keri Cagle, Ed.D., became ORAU Senior Vice President and Director of ORISE. Ashley Stowe, Ph.D., joined ORAU as Chief Research and University Partnerships Officer. Alan Forbes became Director of Safeguards and Security, and Michelle Goodson was promoted to Director of the ORAU STEM Accelerator.

Collaborating closely with the executive team, we successfully delivered a new strategic plan in my first 90 days as CEO. This strategic plan provides a clear framework to guide our efforts in meeting the evolving needs of federal and state government partners, academic institutions and industry stakeholders, while also supporting our employees and the communities where we do business.

A key component of our strategic plan is what we call the ORAU Brand Story:

"At ORAU, we **Develop**, **Connect** and **Strengthen** the Scientific and Technical Workforce for a Better World."

The ORAU Brand Story is built around the lifecycle of a scientific and technical worker, encompassing four distinct phases:

- **Discover (kindergarten through high school):** ORAU sparks curiosity in young minds through hands-on STEM activities, competitions, educator lesson plans and tools for career exploration, fostering a lifelong love for science and technology.
- **Develop (college and early career):** ORAU equips emerging professionals with internships, research opportunities and training programs, preparing them to thrive in STEM and technical careers.

- **Connect (mid-career professionals):** ORAU connects mid-career professionals with expert networks and collaboration opportunities, fostering innovation and advancing scientific discovery.
- **Support (seasoned professionals):** ORAU supports seasoned professionals in sharing their knowledge and continuing their contributions to STEM and technical excellence.

The thread that is woven through all four phases of the lifecycle is the **Strengthen** phase, which encompasses ORAU's capabilities in worker health and community well-being. In this phase, ORAU safeguards the health and resilience of workers and communities by addressing occupational health challenges, enhancing emergency preparedness, advancing public health research and promoting safer working and living environments.

From sparking curiosity in kindergarten classrooms to supporting professionals at the pinnacle of their careers, ORAU is committed to fostering scientific and technical excellence at every stage of the life cycle. Our dedication to workforce development and worker health creates a ripple effect of positive impact—empowering individuals, strengthening communities and enabling industries to thrive.

Within the pages of *ORAU Story, 2025*, you will see all the ways we have developed, connected and strengthened the scientific and technical workforce, along every phase of the lifecycle in 2025.

ORAU Story 2025, marks **Connection** with profiles of Ashley Stowe, Chief Research and University Partnerships Officer, and Chelsea Hill, manager of Workforce Solutions. Additionally, the *Nuclear Energy Academic Roadmap*, which was developed by the ORAU STEM Accelerator-led Partnership for Nuclear Energy was published in 2025. This document represents the combined expertise and dedication of educators, industry leaders, government agencies and other stakeholders working together to address one of the most pressing challenges facing the nuclear energy sector—building a skilled and resilient workforce.

Several projects funded through ORAU-Directed Research and Development Grants and Thought Leadership Research Awards, which are managed by ORAU's Research and University Partnerships Office, were completed in 2025. These projects included using artificial intelligence to speed up analysis of cytogenetic biodosimetry and calculating the full radiation dose given to cancer patients including treatment and diagnostic scans. Other initiatives explored the feasibility of a peer-to-peer support intervention for men facing cancer, and whether men accept such support, and the economic and environmental benefits of black soldier fly larvae. Thought Leadership Research Awards included a project using social listening to measure online conversations about ultra-processed foods and the development of a framework for food system resilience.

When we discuss the **Development** phase of the scientific and technical worker lifecycle, we proudly point to the ORISE Research Participation Programs and the NASA Postdoctoral Fellowship Program. Several NASA Postdoctoral Fellows are involved in various aspects of the Artemis Missions, which aim to achieve manned spaceflight to Mars. ORISE participants and their research are also featured, along with the recipients of the 2025 ORISE Future of Science Awards. Another story looks at the benefits of leveraging artificial intelligence to advance STEM workforce development.

Under the **Support** phase, we profile Keri Cagle, who was appointed ORISE Director in 2025. The ORISE Peer Review Resource Hub, also featured, aims to enhance the capabilities of peer reviewers and provide more meaningful evaluations for the U.S. Department of Energy and other agencies. A notable highlight is the profile of Leo Francis Talbott, Ph.D., a pioneer in nuclear physics and the first-known ORISE research program participant, whose initial ORISE experience dates to the summer of 1947.

Leading the **Strengthening** phase is a spotlight on the National Supplemental Screening Program, which provides health screenings for former energy workers, and the National Institute for Occupational Safety and Health (NIOSH) Dose Reconstruction Program, which reconstructs radiation doses for former DOE and atomic weapons employees as part of the Energy Employees Occupational Illness Compensation Program Act. Another story focuses on ORAU's efforts to help mitigate the health worker shortage crisis by supporting various educational programs in East Tennessee.

Discovery focuses on ORAU's annual Extreme Classroom Makeover (ECM) and Education Grants program. Since we launched ECM 16 years ago, ORAU has awarded more than $550,000 in technology upgrades to more than 30 East Tennessee schools. The program's success inspired the blueprint for the Extreme Trades Makeover: Future Welders Program, which will award $30,000 in welding equipment or upgrades to three Alabama teachers to encourage high school students to join the U.S. Maritime Industrial Base workforce. ORAU also opened the Museum of Radiation and Radioactivity in Pollard Center, featuring several items from a collection on ORAU's main campus was curated by retired ORAU health physicist Paul Frame, Ph.D., over many years.

ORAU also continued to support important community organizations like the Dollywood Foundation's Imagination Library, Free Clinic of Oak Ridge, Man Up to Cancer and Second Harvest Food Bank of East Tennessee. With the support of our employees, ORAU met its goal for our annual giving campaign, which supports the United Way and Community Shares.

While 2025 had its challenges, there was good news, including a handful of new contracts and the extension of our ORISE and NIOSH contracts through the 2026 fiscal year.

The year concluded with celebrations of Andy Page, former President and CEO, who received the Muddy Boot Award from the East Tennessee Economic Council (ETEC), and Ashley Golden, Ph.D., who received ETEC's Postma Young Professional Award.

Looking forward, we will focus on implementing our strategic plan and our mission and vision:

- **Mission:** ORAU strengthens the nation's workforce by developing scientific and technical workers, connecting talent and expertise, and improving the health, safety, and resilience of the communities where they live and work to achieve scientific discovery and economic growth.
- **Vision:** To be the national leader in advancing scientific and technical workforce development while fostering community health and sustainability for generations to come.

Our resilience was tested in 2025, but we faced every challenge together. With the unwavering support and dedication of our employees, we enter the future poised to continue making a meaningful impact on the workforce, communities and industries we serve.

Meghan Millwood

Meghan Millwood,
ORAU President and CEO

The ORAU STORY

Develop, Connect and Strengthen the Scientific and Technical Workforce for a Better World

ORAU Overviews

610 employees

3 office locations

Oak Ridge, Tennessee; Cincinnati, Ohio; and Arvada, Colorado

Employees in 39 states

FY 2025 revenue: **$434.7M**

Awards & Distinctions

- 2025 Large Business of the Year by the Oak Ridge Chamber of Commerce
- 2025 Veteran Friendly Employer by U.S. Veterans Magazine
- ISO 9001-2015 quality management system certification. ORAU has been ISO 9001 certified since 2013.
- ISO 14001-2015 environmental management certification. ORAU has been ISO 14001 certified since 2005.
- Collected more than 10 tons of recyclables during annual Earth Day event.

ASHLEY GOLDEN, Ph.D.

Ashley Golden was honored with the Postma Young Professional Award from the East Tennessee Economic Council (ETEC) which recognizes and rewards the accomplishments of young professionals who make an impact and foster a community culture. The recipient must significantly contribute to the community or within the federal programs, both of which Golden does.

LEIGHA JUSTICE

Leigha Justice received the Good Scout Award for Anderson County from the Great Smoky Mountain Council of Scouting America. The award recognizes individuals who have made significant contributions to their community and have demonstrated the values of scouting. Justice is active in the community and currently serves on the boards of ORNL Federal Credit Union and ETEC.

MICHAEL HOLTZ

Michael Holtz received the Fight Colorectal Cancer Mike Mancini Hero Award. The award is presented annually to an advocate who is relentless and heroic in the fight against colorectal cancer. It was named for the late Mike Mancini, a tireless advocate and beloved member of the Fight CRC community who connected people, championed survivors, and embodied compassion and resilience.

ANDY PAGE

ORAU former President and CEO Andy Page received the ETEC Muddy Boot Award, which recognizes an individual for significant and long-term contributions to the East Tennessee area with respect to federal government programs and its spin-offs by leveraging the federal presence to create private sector jobs. Page also received the Corridor Champion Award from the Tennessee Valley Corridor for demonstrating extraordinary leadership in advancing the objectives of the organization.

ARCHIE SMART

Archie Smart was named Kerry Trammell Volunteer of the Year by the Oak Ridge Chamber of Commerce. Smart is a member of the chamber's board of directors. The award is presented to individuals who personify the finest spirit of volunteerism to the chamber by giving generously of themselves to improve the community's quality of life.

ORAU's **Impact** in Oak Ridge and *Beyond*

- Nearly 80 years in business in Oak Ridge supporting workforce development, health, education, community and economic development.
- 700,000+ free books for area children through ORAU's sponsorship of Dolly Parton's Imagination Library since 2001.
- 15,727 pounds of waste diverted from local landfills through ORAU Recycling Program in 2025.
- More than $150,000 in education grants for classroom technology and teaching materials for area schools over the past five years.
- More than $1 million contributed to community organizations over the past five years.
- Thousands educated and inspired through the ORAU Museum of Radiation and Radioactivity.
- $125,000 in technology upgrades for area schools through Extreme Classroom Makeover over the past five years.
- More than $500,000 in corporate and employee contributions to the United Way and Community Shares through our employee giving campaign over the past five years.
- $125,000 invested in regional health care, including the Methodist Medical Center Residency Program and Roane State Community College Knox Regional Health Science and Simulation Center.

People and mission drive **Meghan Millwood's** passion for ORAU

She knows it's cliché, but when ORAU President and CEO Meghan Millwood discusses what drives her passion for ORAU, it comes down to one thing: our people.

"That's what I said in the 'Trusted Partners' video, and it really is the people," Millwood said. Trusted Partners is a short-video series in which employees from across the organization share what they are passionate about in the work that they do and what makes them a trusted partner to our customers and other stakeholders.

"I remember back to when I was interviewed before I first came to ORAU. I asked 'why does everyone stick around here for so long?' because that hadn't been my experience with previous employers, and I heard, 'it's the people,'" she said. "At the time they said ORAU was a family. Obviously, we are a business, but still, people care for each other like it's a family."

Millwood added that people come here because they want to do something valuable. "They don't come to ORAU as just another place to get a job. They really see this as something where we're making an impact."

That's part of what led her to begin her career at ORAU 24 years ago and why she applied for the company's top job. She was selected by the ORAU Board of Directors from more than 150 applicants in the summer of 2025 and assumed the role of President and CEO in September, when ORAU was amid one of the most challenging years in our nearly 80-year history. Those challenges included federal budget impacts, programmatic shifts, organizational restructures, contractual adjustments, staffing changes, a government shutdown, and leadership transitions.

She credits a dynamic leadership team and the dedication of all employees for helping ORAU weather the challenges of 2025 and for continuing to do great work for our customers.

Millwood proudly points to ORAU's Brand Story, which was created as part of the strategic planning process during her first 90 days as president and CEO. The company's new Brand Story outlines how ORAU helps scientific and technical workers all through their training, education, and career lifecycle, from kindergarten through retirement and beyond, as the ultimate demonstration of ORAU's impact. "Through our workforce development expertise and our support for workers' health, safety and resilience in the communities where they live and work, we provide touch points of impact through every phase of a worker's career path," she said. This includes everything from developing and connecting them to supporting and strengthening them. While ORAU does a lot of things, these are our sweet spots." (Read more about the ORAU Brand Story on pages 2-5).

Millwood believes ORAU's future is bright, especially with the growth of the nuclear renaissance and Manhattan Project 2.0.

"As a country, we really don't have a pipeline ready for all of the nuclear work that's coming, and there is a lot coming," Millwood said, pointing to all the nuclear-related companies that have come or are coming to Oak Ridge to build and support the next generation of nuclear energy reactors. "We definitely have a role to play in helping shape the nuclear energy workforce."

Millwood said ORAU's Workforce Solutions Team is supplying recruiting and technical placement expertise to leaders and hiring managers at some of the companies moving to the region. Additionally, the Research and University Partnerships Office is expanding membership in ORAU's University Consortium to include community colleges. Five community colleges have been nominated for membership and will be voted on at the 2026 Annual Meeting of the ORAU Council of Sponsoring Institutions.

Membership expansion takes to heart the recommendations made in the Nuclear Energy Academic Roadmap (NEAR). Led by the ORAU STEM Accelerator, NEAR establishes priorities and guidance for expanding the nuclear energy workforce pipeline, including a focus on vocational schools and community colleges.

Millwood adds that supporting the communities in which we do business is also key to ORAU's impact. "We are different from a lot of the contractors here in Oak Ridge because we're a nonprofit organization. That doesn't mean we don't make a profit, but any profit is reinvested in our mission and community."

Millwood mentioned some of the ways ORAU has supported the community, including supporting the Scarboro 85 Monument, which honors the 85 black Scarboro students who made history by desegregating Oak Ridge schools in 1955, and sponsoring Dolly Parton's Imagination Library through which two of Millwood's three sons received free books monthly from birth to age five.

For Millwood, it is the ultimate honor to lead a company like ORAU that has done so much good for so many years. But she's not resting on that reputation. She is keenly focused on and passionate about leading ORAU to an even brighter future.

ORAU Select Business Wins 2025

Managing the Oak Ridge Institute for Science and Education (ORISE)

ORAU will continue to manage ORISE for the U.S. Department of Energy (DOE), as it has since 1992, via a contract extension in 2025. ORISE supports DOE's missions and works closely with other DOE institutions—notably Oak Ridge National Laboratory—to help advance STEM Workforce Development. ORISE also is engaged in scientific and technical resource integration, human subject health and protection surveillance, independent environmental assessment and verification and manages the Radiation Emergency Assistance Center/Training Site.

Training for the nation's health physicists

ORAU Professional Training Programs (PTP) will continue to offer training for scientists, physicians, engineers, educators, regulators, and other personnel in a variety of radiation safety and health physics courses through a contract extension with the Nuclear Regulatory Commission. ORAU's PTP conducts a wide variety of online and in-person health physics and radiation safety training courses, including our noteworthy, five-week Applied Health Physics course.

Training users of the NIH Common Fund Data Ecosystem

ORAU has established a state-of-the-art training center as one of five major centers for the National Institutes of Health (NIH) Common Fund Data Ecosystem (CFDE). NIH Common Fund programs generate a wide range of valuable data sets, tools and knowledge designed to be used by the research community. The CFDE aims to facilitate improved discovery, reuse, integration, and analyses of these research resources to form novel hypotheses for accelerating discoveries in biomedical research. The CFDE Training Center serves as the central hub for training development, coordination and evaluation across CFDE programs and initiatives.

Managing peer review for the Commonwealth of Pennsylvania

ORAU manages scientific peer review for the Commonwealth of Pennsylvania Department of Health's Health Research Office, which includes grant applications for clinical and health services, and biomedical research.

Supporting preparedness at Memorial Sloan Kettering

ORAU has a one-year licensing agreement with Memorial Sloan Kettering Cancer Center to provide ORAU Emergency Manager 360 (EM360), an integrated, online, secure software suite accessible at all levels within an organization. EM360 is designed to assist in resiliency, preparedness, continuity and rapid recovery of services during disasters and other potential disruptions.

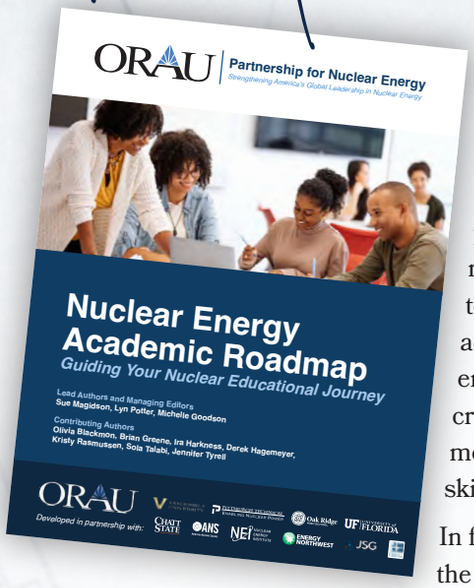
Managing the NIOSH Dose Reconstruction Project

Through a 2025 contract extension, ORAU will continue to manage the National Institute for Occupational Safety and Health (NIOSH) Dose Reconstruction Project, which reconstructs radiation doses for current and former workers of DOE and atomic weapons employers. Since 2002, ORAU and its partners have submitted more than 73,000 dose assessments and conducted more than 202,000 claimant interviews, in addition to thousands of other documents and trips so that workers' claims can be processed.

Maintaining the U.S. Climate Reference Network

ORAU will continue to maintain and expand the U.S. Climate Reference Network (USCRN) through a contract extension with National Oceanic and Atmospheric Administration (NOAA) Atmospheric Research Laboratories (ARL) Atmospheric Turbulence and Diffusion Division (ATDD) and the Cooperative Institute for Satellite Earth System Studies at North Carolina State University. The USCRN is a systematic and sustained network of 144 climate monitoring stations deployed across the contiguous United States, Hawaii, and Alaska.

ORAU releases **'first-of-its-kind blueprint'** for bridging education gaps to strengthen nuclear energy workforce



Small modular reactors, portable nuclear generators, efficient uranium processing, nuclear fuel recycling—these and other technological and scientific advances of the nuclear energy industry today have created a significant need for more well-trained and highly skilled workers nationwide.

In fact, just as 2025 was ending, the U.S. Department of Energy announced a new contract with Tennessee Valley Authority (TVA) for a major step forward in nuclear energy. The new contract will advance the development of the country's first small modular reactor at TVA's Clinch River Nuclear site in Tennessee, and the proposal named ORAU as a nuclear workforce capacity-building partner based on our long-standing expertise in workforce development.

Earlier in the year, ORAU published the *Nuclear Energy Academic Roadmap* (NEAR) with the aim of helping meet the national demand for a highly skilled and well-trained nuclear workforce. NEAR offers a first-of-its-kind blueprint to strengthen pathways into nuclear careers, enhance educational infrastructure and inspire a new generation of leaders in the field.

NEAR is a collaborative initiative of the Partnership for Nuclear Energy (PNE), an ORAU-led comprehensive think tank comprised of leading universities, community colleges and technical skill training organizations, industries producing nuclear reactors large and small, professional industry organizations, national research laboratories and government agencies.

"By bringing together voices from across academia, industry and government, we've created a document that is not only comprehensive but also uniquely positioned to address challenges and opportunities in nuclear education and workforce development," said Michelle Goodson, director of the ORAU STEM Accelerator (OSA).

The U.S. Department of Energy projects the nuclear energy sector will require more than 375,000 skilled workers by 2050 to sustain ongoing nuclear power operations and continue next-generation reactor deployment.

NEAR is organized around four strategic priority areas:

- Enhancing nuclear career awareness
- Supporting pipeline and pathway development
- Identifying financial support, resources and programs
- Optimizing academic resources through collaboration

NEAR was released during the Nuclear Energy Conference and Expo in Atlanta in September 2025. The document was developed with the support of Lori Brady, senior director of human resources and workforce development at the Nuclear Energy Institute. Lead authors are ORAU's Goodson; Sue Magidson, CRESP, Ph.D., candidate and executive consultant at Vanderbilt University; and Lyn Potter, Ed.D., department head of engineering systems at Chattanooga State Community College.

The Nuclear Energy Conference and Expo was one of 15 conferences or meetings where Goodson was a presenter or panelist on nuclear energy workforce capacity-building, giving ORAU a growing platform to share expertise in this critical area.

Additionally, in July 2025, OSA convened 14 nuclear engineering academic institutions from ORAU's University Consortium to begin an inventory of currently available professional development programming in nuclear engineering and related fields and discussed education and training opportunities and barriers.

"That meeting and NEAR offer a proactive approach to securing and retaining qualified workers," Goodson said. NEAR's focus on comprehensive workforce capacity-building seeks to cultivate a robust and skilled talent pool for the nuclear energy sector.

"This is not just a document, it's a blueprint for our future," she said. "By bridging educational gaps and creating clear pathways for emerging talent, we are investing in the next generation of nuclear professionals who will drive innovation, ensure safety and contribute to sustainable energy solutions."

Scan to learn more

https://www.orau.org/nuclear-energy-academic-roadmap/index.html

Ashley Stowe: Leading at the epicenter of the nuclear energy *renaissance*

Despite being known historically as the "secret city," it's no secret that Oak Ridge, Tennessee, is a hub for nuclear science and research. That's one of the things Ashley Stowe, Ph.D., has been excited about in his new role as ORAU's chief research and university partnerships officer.

"This is the birthplace of nuclear," Stowe explained. "It is quickly becoming the epicenter of the nuclear renaissance as we think about where we are today and moving forward with the diversity of missions across Oak Ridge."

Stowe joined ORAU in April 2025.

"My career includes research and development, university partnerships, a lot of engineering hiring and career development opportunities," said Stowe. "I ran Y-12's National Nuclear Security Agency Minority Serving Institutions Partnerships Program, their intern program, and there was enough space to work on other things I wanted to work on."

Stowe made connections with professionals, scientists and researchers at universities and other labs, leading to rich opportunities for collaboration. As an inventor and researcher, throughout his career, he and his colleagues worked on quantum computing, hydrogen-powered vehicles, radiation-detection equipment, and virtual and augmented reality. He also holds 20 patents.

In addition to research collaborations and university partnerships, at ORAU, Stowe's purview includes the ORAU STEM Accelerator (OSA), which was created to solve the nation's STEM workforce challenges. OSA is initially focused on strengthening the nuclear energy workforce. This work is happening in conjunction with the nuclear renaissance; and because of Oak Ridge's history with nuclear energy, the location is incredibly appropriate.

"Oak Ridge basically created the nuclear industry, from the Manhattan Project and the graphite reactor at Oak Ridge National Laboratory to the work of Admiral Rickover and the nuclear navy," explained Stowe. "And ORAU originally trained many of the early scientists and researchers who fueled that industry, through our Oak Ridge Institute of Nuclear Studies graduate research programs, a mission that endures today."

A few years ago, the ORAU board made the recommendation to create the ORAU STEM Accelerator and then pointed it at nuclear first. "What started a couple of years ago with a lot of work that was quietly happening behind the scenes," said Stowe, "is now springing to the forefront." There are many drivers for this happening all across the region and the country. It is everything from the president's executive orders around a nuclear renaissance, to Tennessee Governor Bill Lee's thrust to build a nuclear workforce and lead the nation here in Tennessee, and the establishment of the Oak Ridge Corridor Development Corporation—an economic development corporation that encompasses the city of Oak Ridge, Anderson County, Roane County and all of the commercial and government missions.

All the activity and momentum in the nuclear energy space give ORAU the opportunity to gather information about the workforce capability needs of all stakeholders and allow ORAU to take the lead in meeting those needs. To that end, ORAU published the *Nuclear Energy Academic Roadmap*, which makes recommendations for building the capacity of the nation's nuclear energy workforce. Additionally, Michelle Goodson, Director of the ORAU STEM Accelerator, is co-chair of the Tennessee Nuclear Network Workforce Development team, which will work on collaboration and coordination of nuclear energy education and training opportunities across the state.

"The Manhattan Project 2.0, the nuclear energy renaissance, is already here in Tennessee," Stowe said. "It's an exciting time to work at ORAU and contribute to the growth of the nuclear energy industry here."

Advancing health, resilience and innovation:

Select ORAU research contributions in 2025

ORAU has been a leader in advancing scientific research, public health initiatives and community resilience for nearly 80 years. Through collaboration, innovation and thought leadership, ORAU's Research and University Partnerships Office (RUPO) and various other ORAU programs continue to deliver impactful solutions to complex national challenges through research. In 2025, our research efforts focused on diverse topics ranging from bioeconomy solutions to food system resilience. Below, we explore five key research projects that demonstrate ORAU's commitment to enabling transformative scientific and technical development.

Deploying black soldier flies for the bioeconomy

Black soldier flies (BSF) are emerging as a transformative solution in the bioeconomy, addressing challenges such as waste management, sustainable agriculture and environmental remediation. The larvae of BSF can digest and efficiently convert organic waste into nutrient-rich biomass, which can be harvested for use in fish and livestock feed and other applications. Additionally, the residual materials left by larvae serve as a sustainable alternative to chemical fertilizers.

Holly Holt, Ph.D., ORAU research specialist, collaborated with Charity Owings, Ph.D., from the University of Tennessee, and Jeffery Tomberlin, Ph.D., from Texas A&M University on an ORAU-Directed Research and Development (ODRD) grant project. Their work aimed to advance basic BSF research through laboratory experiments and identify emerging BSF applications through a literature review. Experiments studied the health of BSF larvae reared in the presence stressors that could be found in organic waste streams, such as heavy metals. Studies evaluated larval survival, biomass, gene expression, gut microscopy and volatile chemical production. The results will help make industrial production processes more efficient.

In the literature, burgeoning publication rates and economic projections herald an increasingly interdisciplinary research and development landscape for BSF. Clustering analysis identified seven topical themes, ranging from aquaculture to materials science. Meanwhile, identification of emergent terms in the literature points to areas of dynamic growth. To further identify opportunities, gaps and needs in this area, the research team aims to conduct semi-structured interviews with research and industry participants.

Scan to learn more

https://blubrry.com/oraufurthertogether/150632163/superheroes-of-the-insect-world-an-orau-directed-research-and-development-grant-conversation/

Radiation therapy research: advancing cancer treatment

While radiation therapy is a vital part of cancer treatment protocols, accurately measuring the total biological radiation dose received by patients continues to be a challenge. ORAU's radiation epidemiology team, led by Clinical Physicist Dray Gentry, addresses this disparity through research funded by an ODRD grant.

Gentry's research focuses on using AI to accelerate cytogenetic biodosimetry, the gold standard for measuring radiation exposure. By analyzing chromosomal abnormalities in blood samples, Gentry, in collaboration with Chet Ramsey, Ph.D., adjunct professor in the University of Tennessee Department of Nuclear Engineering, developed an AI model that dramatically reduces analysis time to about four seconds for each analysis (compared to what can take several minutes for a human being). This breakthrough has significant implications for emergency response to radiation accidental overexposure and cancer treatment monitoring.

Additionally, Gentry's research aims to estimate the total biological radiation dose cancer patients receive, accounting for planned radiation therapy and additional exposure from imaging scans. This comprehensive understanding enhances patient care and aligns with priorities set by the National Cancer Institute. ORAU's innovative partnerships and cutting-edge studies continue to push the boundaries of cancer research, improving clinical outcomes and advancing scientific discovery.

Scan to learn more

https://www.orau.org/blog/programs/radiation-therapy-research-project-keeps-orau-on-the-cutting-edge-of-cancer-research.html

Gaining insight into ultra-processed foods through social listening

Low diet quality in the United States remains a pressing public health issue, contributing to chronic conditions such as heart disease, diabetes and even mortality. In fact, ultra-processed foods, which tend to be convenient, affordable and heavily marketed, have become dietary staples. ORAU Health Education Specialist and Nutritionist Diane Krause, MS-MPH, CPH, RDN, used social listening tools to analyze public conversations about ultra-processed foods on platforms like X to gain more insights into this issue.

Krause's findings, published in a 2025 white paper, revealed significant public interest in reducing ultra-processed food consumption but highlighted confusion in distinguishing processed (that is, minimally altered food for preservation, such as canned vegetables) from ultra-processed foods (that is, extensively modified foods with additives, flavorings and industrial ingredients, such as chips and soda). Notably, federal, state and local health agencies have minimal presence in these discussions, underscoring the need for clear and well-communicated information to fill this gap.

An ORAU team focused on health and resiliency strategy is uniquely positioned to support agencies and organizations in developing tailored health education and communication campaigns that resonate with diverse audiences. Combining formative research, cultural competency and actionable strategies, ORAU helps improve health outcomes at both individual and systemic levels. By focusing on driving dietary behavior change through effective communication, ORAU can contribute to the Make America Healthy Again agenda, empowering communities to make informed nutrition choices.

continued on page 14

Scan to learn more

https://www.orau.org/blog/programs/maha-gaining-insight-into-what-people-think-about-ultra-processed-foods-through-social-listening.html

continued from page 13

Peer-to-peer support for men facing cancer: the Man Up to Cancer initiative

ORAU is addressing a significant gap in cancer care: peer-to-peer support for men facing the disease. In collaboration with Man Up to Cancer, a nonprofit organization dedicated to supporting men with cancer, ORAU conducted a one-year pilot study funded by an ODRD grant. Led by Katherine Chyka, MPH, in collaboration with the University of Pittsburgh, the study explored the feasibility and impact of mentorship programs where seasoned members provide guidance to newer members.

Early findings revealed that men are open to both formal and informal support, often connecting over shared hobbies and interests beyond cancer type. The study also found that successful mentorship doesn't require overly prescriptive training, as pairs adapt their approach to individual needs. This flexibility demonstrates the importance of tailoring support to personal circumstances.

With data analysis complete, ORAU and its research partners are preparing a peer-reviewed publication and planning an expansion of the study. By addressing this crucial void, ORAU's research has the potential to improve mental health and clinical outcomes for men battling cancer, further advancing health and resilience for diverse populations.

Scan to learn more

https://www.orau.org/blog/programs/whats-going-on-with-men-facing-cancer.html

Building resilience in regional food systems

Food security is an important national issue, increasingly threatened by supply chain disruptions and biological hazards, like plant diseases. In partnership with the U.S. Department of Agriculture (USDA), ORAU is suggesting a plan to make our food systems stronger and better prepared for challenges. This plan involves creating a group of experts from universities, government agencies and local communities to work together. They will use advanced tools powered by AI to study risks and analyze data in real time. By combining their knowledge and tools, they aim to create strategies that work for specific regions and can also be expanded across the whole country.

In their white paper, "Strengthening Regional Food System Resilience: A Framework for Risk Assessment and Emergency Preparedness," ORAU experts Kevin Farris, MAEd; Matthew Schnupp, MSPH, BSN, RN, PMP; Jennifer Burnette, MPH; and Rachel Vasconez, MBA, MPH, outline strategies for embedding resilience into USDA programs and policies that play out at the regional level in communities across the United States. By suggesting the implementation of a sustainable structure in USDA guidelines, ORAU's proposal aims to safeguard agricultural systems from vulnerabilities, reduce the impacts of food disruptions and strengthen communities.

Scan to learn more

https://www.orau.org/blog/programs/orau-proposes-framework-for-strengthening-regional-food-system-resilience.html

Driving Innovation and Resilience Through Research

ORAU's 2025 research initiatives showcase our dedication to tackling society's most pivotal challenges. Whether it's unlocking the potential of black soldier flies, advancing cancer treatments, supporting men with cancer through peer mentorship, utilizing social listening to encourage healthier eating habits, or developing frameworks to strengthen food system resilience, ORAU is driving innovation to build a healthier and more resilient future.

ORAU Consortium

Through partnerships with our 161-member University Consortium, ORAU works with government agencies, national laboratories and private industry to advance scientific research and other critical missions. Consortium membership includes access to unique vehicles for funding research, professional growth and development opportunities, as well as fruitful collaborations, including the ORAU-Directed Research and Development Program, Ralph E. Powe Junior Faculty Enhancement Awards, and the ORAU Annual Meeting of the Council of Sponsoring Institutions.

Air Force Institute of Technology
Alabama A&M University
Appalachian State University
Arizona State University
Arkansas State University
Auburn University
Augusta University
Berea College
Carnegie Mellon University
Catholic University of America
City College of New York
Clark Atlanta University
Clemson University
College of Charleston
College of William and Mary
Colorado State University
Columbia University
Des Moines University
Drexel University
Duke University
East Carolina University
East Tennessee State University
Eastern Kentucky University
Embry-Riddle Aeronautical University
Emory University
Fayetteville State University
Florida A&M University
Florida Atlantic University
Florida Institute of Technology
Florida International University
Florida State University
George Mason University
George Washington University
Georgia Institute of Technology
Georgia State University
Howard University
Idaho State University
Illinois Institute of Technology
Indiana University Bloomington
Indiana University Indianapolis
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Jackson State University
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Marymount University
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Michigan Technological University
Middle Tennessee State University
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Missouri University of Science and Technology
Navajo Technical University
North Carolina A&T State University
North Carolina State University
Oakland University
Ohio State University
Ohio University
Oklahoma State University
Penn State University
Portland State University
Purdue University
Rice University
Rutgers University
Saint Louis University
South Carolina State University
Southern Illinois University at Carbondale
Southern Methodist University
Southern University and A&M College
Spelman College
Syracuse University
Temple University
Tennessee State University
Tennessee Technological University
Texas A&M University
Texas A&M University-Kingsville
Texas Christian University
Texas Southern University
Texas Tech University
Thomas Jefferson University
Tufts University
Tulane University
Tuskegee University
University at Albany
University of Alabama
University of Alabama at Birmingham
University of Alabama in Huntsville
University of Arizona
University of Arkansas
University of California - Davis
University of Central Florida
University of Cincinnati
University of Colorado Boulder
University of Colorado Denver
University of Delaware
University of Florida
University of Georgia
University of Houston
University of Kentucky
University of Louisiana at Lafayette
University of Louisville
University of Maryland
University of Maryland, Baltimore County
University of Maryland, Eastern Shore
University of Massachusetts Lowell
University of Memphis
University of Miami
University of Michigan
University of Mississippi
University of Missouri
University of Missouri - St. Louis
University of Nebraska Medical Center
University of Nevada, Reno
University of New Mexico
University of North Carolina at Chapel Hill
University of North Carolina at Charlotte
University of North Texas
University of Notre Dame
University of Oklahoma
University of Oklahoma Health Sciences Center
University of Pittsburgh
University of South Alabama
University of South Carolina
University of South Dakota
University of South Florida
University of Southern Mississippi
University of Tennessee
University of Tennessee at Chattanooga
University of Tennessee Health Science Center
University of Texas at Arlington
University of Texas at Austin
University of Texas at Dallas
University of Texas at El Paso
University of Texas at San Antonio
University of Texas Permian Basin
University of Texas Rio Grande Valley
University of the District of Columbia
University of Toledo
University of Tulsa
University of Utah
University of Virginia
University of West Georgia
University of Wisconsin-Madison
Utah State University
Vanderbilt University
Villanova University
Virginia Commonwealth University
Virginia Tech
Wake Forest University
Washington University in St. Louis
Wayne State University
Western Carolina University
Western Kentucky University
Western Michigan University
Wichita State University
Yale University

The human touch:

Chelsea Hill has a passion for recruiting the perfect S&T workforce candidates

The use of artificial intelligence is sometimes feared for its potential to replace humans in the workplace. For Chelsea Hill, however, there's no danger in that happening in the work she does. She brings a passion and discernment to her team's recruiting work that simply can't be duplicated by a machine.

"I don't want to speak for every industry because we work in a very specialized sectors but for our customers and the positions we fill, that's not how we use AI," said Hill, manager of ORAU Workforce Solutions, on an episode of Further Together, the ORAU Podcast.

ORAU Workforce Solutions specializes in scientific and technical staffing support, placing highly qualified professionals to fulfill mission-critical project and business requirements for our government clients.

"Recruiting is a personal business, and it requires a human touch if done correctly and always will," Hill said.

While AI can help recruiters write intriguing job descriptions and messages to candidates, AI cannot replace the human decision making that comes from reading resumes, asking the right questions, and engaging in conversations that reveal the personalities of candidates being recruited.

Hill gave the example of a recruiting candidate who is leaving the military after 20 years of service, has a stellar resume and is a candidate for multiple software developer openings at two different working areas at a customer site. One hiring manager is extremely laid back and lets their employees work independently. The other hiring manager is more structured and holds a daily stand-up meeting to set priorities for their team every day. Hill says that after talking with the candidate to understand their needs, she's more likely to place the candidate in the more structured of the two environments to help them ease the transition to the civilian workforce.

"That's something that AI software can't do—speak with a candidate and make a judgement about where a candidate is going to thrive," Hill said.

WHO IS CHELSEA HILL?

Hill's resume is loaded with experience recruiting for a variety of job types.

She is a boomerang employee who began her professional journey at ORAU straight out of college and during the Great Recession.

"I was on the job hunt for quite a long time," she said. "That's why I have such a heart for recruitment, placement and connecting with candidates. ORAU took me in, and I worked at Oak Ridge National Laboratory helping administer internship programs."

After a couple of years, she left ORAU to work in a medical and health care environment. She did some medical sales, then moved into a marketing role with a large healthcare provider, which led to a position in human resources.

After six years she went to work for a housing and modular home manufacturer. Hill is grateful for the variety of roles she has recruited for during her career.

Her experience has prepared her to recruit candidates for nearly any environment. Hill returned to ORAU five years ago, starting in recruitment before advancing to a management role leading the Workforce Solutions team.

"I have loved every minute of it," she said. "We have a really special culture at ORAU, and I tell people all of the time that this is the best place I've ever worked, hands down. You'd have to drag me out of here," she said.

HOW DOES WORKFORCE SOLUTIONS WORK?

"Workforce Solutions is a team dedicated to partnering with federal agencies and industry partners to make recruiting faster, easier, and more effective," Hill explained. "Our customers have critical talent needs and there's a real war for that talent. Since COVID, that competition has only intensified. Our job is to simplify the process and help them find the best candidate for every position."

The Workforce Solutions team manages the entire hiring lifecycle, from sourcing and interviewing to job offers and placements, ensuring a seamless experience for both clients and candidates. Their focus is on mission-critical roles, often requiring highly specialized science and technology expertise.

"We have customers that need highly specialized S&T talent," Hill said. "There are only a handful of people in the country who can perform some of these roles. We specialize in finding that niche talent and making the process as smooth as possible for everyone involved.

WHAT ARE CURRENT HIRING TRENDS?

It's not just about highly specialized candidates with advanced degrees. While there will always be a need for high-level technical roles that require advanced degrees and years of experience, Hill noted a growing surge in demand for craft labor. Skills-based hiring has become just as essential, focusing on candidates with specialized expertise in trades such as welding, electrical work, plumbing, HVAC and facilities management.

These positions often require only a two-year degree or certification, yet they are critical to mission success. Beyond craft roles, Hill said there is a huge need for IT and cyber roles as cyber security continues to be a hot topic with other countries targeting the United States's technology infrastructure. "As it relates to cyber crimes, this is a staffing area where candidates are definitely needed," she said.

Engineering also remains a constant need. "For someone coming out of high school with an interest in math, science, or processes, engineering is a great field," Hill said. "There's never going to be a situation where we don't need more engineers in the world."

Hill said there are also great opportunities for people who are interested in making a career change but may not want to pursue another degree program and are open to getting a certification or taking a training class.

"For anyone looking to transition into new career path, especially in fields like nuclear, AI, and data analytics, the opportunities are out there," Hill said. "Through ORAU's STEM Accelerator initiative, we're developing academic roadmaps that support learners from kindergarten all the way through mid-career professionals seeking a change."

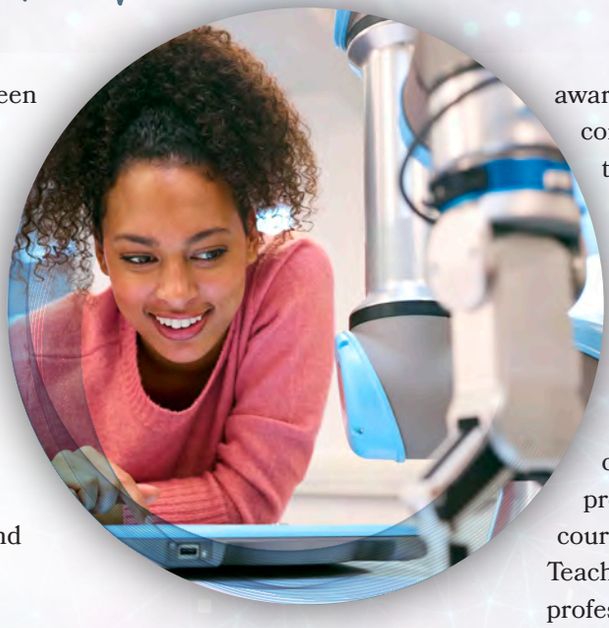
Hill advises career changers to start by identifying their target role, reviewing job descriptions, and assessing their strengths and gaps. "Then, find ways to close those gaps through specialized training or certification," she said. Many certificate programs at universities and community colleges offer minimal cost and maximum payoff. Helping candidates discover fulfilling roles that align with their goals is rewarding. Equally gratifying is supporting the needs of government agencies and industry partners.

For Hill and her team, the true satisfaction comes from successfully bridging both sides—delivering value to individuals and organizations alike. That's where Hill's passion makes the greatest impact.

Scan to learn more

https://orau.org/blog/people/chelsea-hill-on-her-passion-for-recruiting-the-perfect-workforce-candidates.html

How **ORISE** is helping to build the *Foundation* for U.S. global AI dominance



Artificial intelligence (AI) has been described as a new frontier of scientific discovery that has the potential to revolutionize industries. There continues to be debate about and conversations around how to leverage AI's benefits while navigating apprehensions on the use of it. However trends such as massive private sector investments, substantial infrastructure developments, and evolving government strategies send one overarching and very clear message: AI is here to stay. Indeed, since the release of ChatGPT in November 2022, researchers and academics have shown keen interest and excitement about generative AI's potential.

As the only U.S. Department of Energy (DOE) asset with a core mission of preparing the future federal STEM workforce, the Oak Ridge Institute for Science and Education (ORISE) plays a critical role in supporting America's federal strategy to achieve global dominance in AI. It does so by enhancing educator AI training; inspiring students to pursue careers related to AI, machine learning and quantum technologies; and developing a highly skilled supply of STEM professionals who are proficient in using AI technologies to solve even the most complex scientific problems.

AI IN K-12 EDUCATION

An article in Forbes Magazine highlights a staggering statistic from LinkedIn's chief economic opportunity officer who shared that by 2030, AI will fundamentally reshape the labor market causing 70% of the skills required to perform the average job to change. This data point means that today's K-12 students must be prepared to navigate careers and professions that don't yet exist.

Here is where ORISE can help. ORISE excels in both helping teachers incorporate various disciplines into a future-focused curriculum and introducing pre-college students to STEM concepts that will prepare them for a modern workforce.

ORISE STEM Workforce Development Director Dr. Craig Layman says that it all starts with introducing the youngest of students to these concepts as early as possible. "Our ORISE K-12 program staff are committed to engaging both teachers and students from across the nation through a series of in-person and online educational programs and hands-on activities that introduce them to AI principles and capabilities."

In July 2025, ORISE unveiled a new AI section on the ORISE website for improving student and teacher awareness and increasing their comfort level with the AI tools that are likely to be part of their future careers. The content includes four new lesson plans integrating AI tools into the classroom, a comprehensive guidebook on AI tools highlighting student and teacher use cases, a fully asynchronous professional development course called Learning and Teaching with AI, and five professional development sessions on AI in the classroom that were recorded live in July.

"Students who engage with these AI resources will develop critical skills that are increasingly in demand, positioning them for success in future academic and professional endeavors," said Layman. "And teachers will gain valuable insights and practical experience with AI, enabling them to effectively incorporate these technologies into their teaching practices."

During September 2025, ORISE hosted the AI in the Classroom teacher competition and the AI Adventures student competition. The educators were invited to submit a video reel describing successful use of AI in the classroom, while the students were challenged to explore AI adventures (specific to their grade level) and share their findings.

For more than nine years, ORISE's managing contractor ORAU has provided corporate funding for the development of ORISE K-12 resources and competitions such as this year's AI competitions. In FY 25,

those corporate funds directly supported the development of K-12 AI content, further cementing ORISE's authority as a trusted resource for early AI education.

AI IN POST-SECONDARY AND FACULTY RESEARCH EXPERIENCES

The ORISE website also houses the research opportunity catalog known as Zintellect that college students, recent graduates, postdocs and faculty can use to access STEM internship and fellowship programs hosted by DOE and other federal agencies. Zintellect serves as a gateway for students and faculty to get real-world experience in AI, machine learning and quantum technologies.

Future enhancements for Zintellect include various AI features. One effort is to create efficiencies by using AI to help match research opportunity posts with the skill sets of those seeking appointments. For mentors, the match scores might be displayed in a list of recommendations to help inform their final selection. And for applicants, this same information might appear as a "smart" catalog showing the opportunities they match best with based on their resumes. This enhancement would help increase recruit efficiency, offer more accessibility to qualified candidates and reduce the time it takes to make a placement.

"The potential for AI efficiencies is very exciting for us—both in terms of increasing ORISE's reach and for improving the success rate of our appointments," said Layman. "But we continue to explore these enhancement opportunities while also being mindful of limitations and risks that might jeopardize our confidence level. And that caution extends beyond the point of implementation. Once we implement any AI model, ORISE will have scientifically backed methods for evaluating the model's performance and determining whether it adds value to our systems and processes."

AI FOR SUPPORTING HUMAN-DRIVEN DECISION MAKING

AI and machine learning is also being used at ORISE to rapidly analyze large datasets and identify patterns so that human talent can apply judgment and ethical considerations to make strategic decisions. For example, ORISE's STEM Workforce Development Assessment and Evaluation group applies AI to examine sentiment—or the overall positive, negative or neutral feelings and opinions—expressed in open-ended comments collected from the Universal Pre-Post (UPP) Survey. The UPP Survey is administered, via Zintellect, to participants who are either starting or ending their appointments and is designed to gather feedback on various aspects of their experiences with ORISE.

"As you can imagine, these open-ended questions generate an incredible amount of text data, and we want to present the data in a way that our program managers can use it to meaningfully manage their programs and identify any opportunities for continuous improvements," said Layman.

The alternative to AI is to employ automated tools for analyzing text data, but those options are problematic for a variety of reasons, including their inability to interpret idioms, slang, sarcasm, abbreviations, field-specific jargon and even misspellings. As ORISE continues to experiment with these technologies, we find that AI and machine learning can move beyond simple rule-based systems by incorporating the direct human feedback from ORISE subject matter experts.

CONCLUSION

As AI continues to redefine industries and reshape the global workforce, DOE's ORISE stands at the forefront of preparing the next generation of STEM professionals to thrive in this transformative era. By fostering early exposure to AI, machine learning and quantum technology concepts; supporting groundbreaking research; and leveraging AI-driven efficiencies within our own operations, ORISE is not only advancing U.S. capabilities in AI but also reinforcing commitment to ethical, human-centered applications of this technology.

Through strategic investments, collaborative efforts and a forward-thinking approach, ORISE is helping to build the foundation for U.S. global AI dominance—empowering individuals to drive innovation, solve our most difficult problems, and shape a future where AI serves as a force for progress and opportunity.

Future of Science Awards

recognize outstanding scholarship and service among ORISE research program participants

ORISE announced the winners of our fourth annual Future of Science Awards in September 2025. These prestigious awards recognize excellence performed by ORISE program participants in the areas of scientific achievement, professional growth, project contributions and leadership in four categories: undergraduate student and postbaccalaureate, graduate student and post-master's, postdoctoral, and mentor. Each winner received a cash prize of $1,000, an award plaque and recognition from ORISE. The 2025 ORISE Future of Science Awards were presented during a virtual ceremony to the following individuals:

JANOU MILLIGAN

Undergraduate Student and Post-Baccalaureate Award

Janou Milligan participated in the Science Undergraduate Laboratory Internships program at Oak Ridge National Laboratory, followed by the Education Collaboration program from December 2024 to August 2025. With the Environmental Risk and Energy Analysis group, Milligan developed exposure models, used databases and programmed routines that support environmental risk assessment information systems sponsored by the U.S. Department of Energy. Milligan will begin a Ph.D. in data science and engineering at the University of Tennessee, Knoxville, under the Bredesen Center, continuing to work with data sources while exploring innovative applications of AI in plant science and other biosciences.

MARGARET COSTELLO

Graduate Student and Post-Master's Award

Margaret Costello is an ORISE graduate fellow with the U.S. Department of Agriculture Dairy Forage Research Center. Her doctoral research focuses on the dairy cow gastrointestinal microbiome, particularly the development of scalable, noninvasive sampling and processing techniques. She is optimizing methods such as cheek swabs and DNA preservation approaches to provide a cost-effective, less labor-intensive alternative to traditional sampling. Costello seeks to bridge microbiome research with practical applications that benefit both producers and the environment.

KERRI MIAZGOWICZ, Ph.D.

Postdoctoral Award

Kerri Miazgowicz, Ph.D., completed an ORISE fellowship with the Virology Team of the Arborial Disease Branch of the Division of Vector-borne Diseases, located within the National Center for Emerging and Zoonotic Infectious Diseases at the Centers for Disease Control and Prevention. Her research is focused on developing novel diagnostic reagents and assays for the detection of arboviral infections. Miazgowicz will be starting a new fellowship opportunity with the Association of Public Health Laboratories hosted at the North Carolina State Public Health Lab.

SHUANG CUI, Ph.D.

Mentor Award

Shuang Cui, Ph.D., is an assistant professor and Eugene McDermott distinguished fellow in the Mechanical Engineering Department at the University of Texas at Dallas (UT Dallas). She also holds a joint faculty appointment at the National Renewable Energy Laboratory (NREL). Cui received her Ph.D. in mechanical engineering from the University of California, San Diego. Her research focuses on developing advanced materials and systems for energy storage, water harvesting and thermoregulation. Cui has received multiple prestigious honors, including the Recognition of Outstanding Achievement in Research Award from UT Dallas, the President's Award for Exceptional Performance from NREL and Best Reviewer Award from American Society of Thermal and Fluids Engineers. She actively mentors students through the DOE Innovation in Buildings Program, DOE Science Undergraduate Laboratory Internships Program and DOE Jump into STEM competition.

ORISE STEM researchers in *focus*

The Oak Ridge Institute for Science and Education Research Participation Programs enable individuals—whether undergraduate, graduate, postdoctoral or faculty—to conduct collaborative research with national laboratories and partners of federal agencies that are mission focused and have immediate impact on the health, welfare and security of the nation and the world.

DANIEL "DONNY" PERRET, Ph.D.

College/University: Brown University

Program: United States Department of Agriculture Forest Service Pacific Northwest Research Station

Research: Gain a better predictive understanding of how tree species and the forests they form respond to changing climates and disturbances.

REBECCA MASLINE, Ph.D.

College/University: University of California San Diego Jacobs School of Engineering

Program: United States Department of Energy Fusion Energy Services Postdoctoral Research Program

Research: High-fidelity computer simulations of fuel efficiency and helium enrichment in exhaust systems in nuclear fusion devices.

CONNEL CHING'ANDA, Ph.D.

College/University: University of Arizona

Program: United States Department of Agriculture Agricultural Research Service Arid Land Agricultural Research Center

Research: Mitigating aflatoxin fungal infections in Texas corn.

Photo Credit: Dakota Salyer

KALIDAS MAINALI, Ph.D.

College/University: University of California San Diego Jacobs School of Engineering

Program: United States Department of Agriculture Agricultural Research Service Sustainable Biofuels and Coproducts Research Unit

Research: Finding useful ways biofuels can impact the world.

Photo Credit: Stefanie Simon

MEAGAN ROBERTS, MPH

College/University: Meharry Medical College

Program: National Nuclear Security Administration Minority Service Institution Internship Program

Research: Nuclear incident response policy and capacity-building for nuclear and radiological emergency preparedness.

GIOVANA CIACCI ZANELLA, DVM

College/University: Iowa State University

Program: United States Department of Agriculture Agricultural Research Service

Research: Influenza A virus in swine.

To the moon, Mars and beyond:

How ORAU-managed NPP Fellows are supporting NASA's Artemis human space flight missions

NASA's Artemis space flight missions will return human beings to the moon, and one day, allow for the possibility of humans landing on Mars. Artemis fuels the missions of scientists and researchers across the country, and ORAU is part of supporting them.

ORAU manages NASA Postdoctoral Program (NPP) fellowships, offering unique opportunities for highly talented U.S. and non-U.S. scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters or at a NASA-affiliated research institute. These fellowships, awarded annually for up to three years, are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems and astrobiology.

NPP Fellows are researching various aspects of the Artemis missions, including ensuring the health and safety of the astronauts aboard the Orion spacecraft; making preparations for the success of Gateway, the planned space station that will orbit the moon and serve as the gateway to human flight to Mars; and analyzing the environments astronauts will enter on both the moon and Mars.

"When most people think about Artemis and spaceflight, they picture astronauts and rockets," said Desmond Stubbs, ORAU director of interagency science strategy. "But so much is going on behind the scenes, and NASA NPP Fellows are in the thick of that activity. ORAU places fellows directly inside NASA centers. Their research is shaping the health, safety and success of crews bound for the moon and beyond."

Here are just a few examples of how NPP Fellows are supporting the Artemis missions:

- Johnson Space Center in Houston, Texas: NPP Fellows in human physiology and behavioral health help NASA understand how long-duration missions affect the body and mind. Their studies inform countermeasures for Artemis astronauts like nutrition, exercise and even radiation shielding for crews with Orion (deep space) and Gateway (planned lunar-orbiting outpost as part of Artemis) missions.
- Kennedy Space Center in Cape Canaveral, Florida: NPP Fellows advance life-support systems, plant biology and in situ resource utilization. Their work directly supports surface operations for Artemis III, where astronauts will test sustainable living at the lunar south pole.
- Marshall Space Flight Center in Huntsville, Alabama: NPP research in propulsion materials and advanced manufacturing feeds into the Space Launch System (SLS), the rocket carrying the Orion and Artemis crews. Fellows' contributions in metallurgy, composites, and propulsion analysis ensure SLS is safe, reliable and repeatable.
- Ames Research Center in Oakland, California: Ames hosts space biology research, like the LEIA (Lunar Explorer Instrument for space biology Applications) payload, which will study microbial

growth in lunar gravity. Designed with NPP Fellows' input, the LEIA will be placed aboard Artemis II, the first crewed flight around the moon. NPP Fellows at Ames also advance autonomous systems and AI for spacecraft ops.

- Goddard Space Flight Center in Greenbelt, Maryland: Heliophysics and space weather research from NPP fellows is critical to astronaut safety. Their solar storm modeling informs trajectory planning and crew schedules to minimize radiation risk.
- Jet Propulsion Laboratory in La Canada Flintridge, Calif.: While famous for planetary robotics, NPP Fellows at JPL also strengthen navigation, entry-descent-landing and precision communications, which are all capabilities that translate directly to human flight. Their lunar mission systems work will feed into Artemis surface campaigns. This research informs how astronauts will partner with robotic scouts on the moon and Mars.

Stubbs says he is looking forward to seeing how NPP Fellows will be involved in the upcoming Artemis missions.

- Artemis II, currently scheduled for April 2026, is planned to be a 10-day crewed fly-by of the moon in the Orion spacecraft. NPP Fellows' research at Ames Research Center and Johnson Space Center is already baked into health monitoring and life sciences payloads, which contain equipment designed to conduct biological and biomedical research in space.
- Artemis III, currently scheduled for mid-2027, will be the first lunar landing since the Apollo program ended in 1972. NPP Fellows at Kennedy Space Center, the Jet Propulsion Laboratory, and Marshall support surface science, precision navigation and propulsion reliability.

"In addition, NPP planetary science fellows at Goddard and JPL are mapping lunar south pole sites and volatiles. This data will determine where astronauts will make the next giant leap for mankind as NASA plans its next missions to put humans on the moon again," Stubbs said.

ORAU can proudly say NPP Fellows are already on the mission before the Artemis countdowns begin. Their research is embedded in the hardware, procedures and science that keep astronauts alive and productive on the journey back to the moon and beyond.

Not just science fiction: Fountain researches growing crops in space

In the 2015 sci-fi movie, The Martian, astronaut Mark Watney, played by Matt Damon, is inadvertently left behind when his fellow crew members abort a manned mission to Mars during a dust storm. In his effort to survive until he can be rescued, Watney grows potatoes using the crew's biowaste and Martian soil.

While the movie was fiction, for Luke Fountain, Ph.D., a third-year NASA Postdoctoral (NPP) Fellow, determining how astronauts can best grow food in space is a very real problem to be solved. Fountain is based at Kennedy Space Center in Cape Canaveral, Flarida, through the NPP fellowship program that ORAU manages, and he is part of the space crop production team there.

"The whole point of us doing all of this [research] is because we want to grow crops in space, and we want astronauts, particularly on future deep space missions, to be able to support themselves and be less reliant on resupply from Earth," Fountain said.

Fountain's research focus is on nitrogen uptake, which is a critical component of plant growth. Understanding, in a space flight environment, how plants uptake nitrogen, which is contained in human biowaste and other sources, could lead to the development of waste recycling processes for crop production, and allow astronauts to control how nitrogen is distributed to crops.

He added that astronauts understand how to grow plants on the International Space Station, but growing plants on the Moon or Mars has a wide set of variables.

These variables are part of a nine-point framework, called the Bioregenerative Life Support System Readiness Level, designed to assist scientists and manned space flight crew members in overcoming challenges to establish resilient, sustainable crop production in space. The framework was included in a paper, which Fountain co-authored, and was published in the New Phytologist in November 2025.

Getting to Mars and beyond will take a greater understanding of how to feed crew members without relying on resupply from Earth. Fountain and other researchers are working out how to make that happen.

Delivering despite great change: Cagle's first year as **ORISE director**

Since Keri Cagle, Ed.D., was promoted to the role of ORAU Senior Vice President and director of the Oak Ridge Institute for Science and Education (ORISE) in March 2025, she has navigated a year filled with challenges as a government contractor. The year was marked by budget changes, leading to contract adjustments, program shifts and federal staffing changes. ORAU, which manages ORISE for the U.S. Department of Energy (DOE), underwent a leadership transition during this time, further adding to the dynamics. To compound these challenges, the 2026 fiscal year began with a government shutdown.

"It has been a true test of leadership," Cagle said. "We had to make some really hard decisions as an executive team, more than I thought we would ever have to make in such a short period of time."

Despite the challenges, the entire ORISE team continued to serve DOE, our cognizant agency and other sponsors with the quality attention to detail they have come to expect, which resulted in an extension of the ORISE contract.

"That's just a testament to our performance," she said. "I get to take credit for that for ORISE, but it's not me. It's because of all the great people that we have in this company who are delivering outstanding performance."

Cagle says she, her team and all employees are focused on continuing to deliver for our sponsors as they, too, navigate so much change at the federal level.

"We're focused on contractor assurance, making sure we have our ears open to support our customer and their mission needs, and having conversations with them about all the ways we can help," she said. While ORAU has officially been managing the ORISE contract since 1992, the reality is the work we do for DOE and other agencies has been in our DNA from ORAU's beginning in 1946—nearly 80 years—including the management of research participation programs.

Cagle has worked for ORAU for nearly 20 years, rising through the ranks with increasing levels of responsibility from internal auditor to project manager to senior director of ORISE scientific peer review before she was named senior vice president and ORISE director. Because of her extensive knowledge of ORISE and her strong working relationships with contacts at DOE headquarters, Cagle said she felt prepared to take on the role of ORISE director.

"I applied because I am passionate about the work we do under the ORISE contract, and I wanted to lead our efforts to continue delivering strong performance to DOE," she said. "I've always wanted to challenge myself, and I always wanted to be in the position ORISE needed me to be in, to best utilize my skill set to help our customers and employees."

Cagle holds a Doctor of Education in Leadership and Learning from Vanderbilt University, a Master of Science in Organization Leadership from Regis University, and a Bachelor of Science in Business

Management from Tusculum College. Her professional certifications include Project Management Professional, Certified Agile Leader and Certified Internal Auditor. Along with advanced certifications in leadership, project management, and organizational excellence, she is an experienced change agent and collaborative leader, committed to driving innovation and strategic growth across diverse programs.

And, while she has the title of ORISE director, she approaches her role with gratitude and humility.

"I'm still Keri Cagle," she said. "I have this title and I know what my responsibilities are, and I am humbled, honored and blessed to have been selected for this position."

That sense of gratitude, humility and teamwork guides her relationships with ORAU president and CEO Meghan Millwood and the rest of the executive leadership team as well as the entire company.

"Keri and I have worked together for years," Millwood said. "We know each other, we trust each other and we work well together. I have every confidence that Keri has and will continue to lead ORISE with the best interest of our sponsors and our employees in mind."

"Meghan and I grew up in this company," Cagle said. "We have long-standing relationships with each other and people across the organization. We are ingrained in the culture of ORAU," which she said helps them approach leadership from a wide range of points of view.

"I have a seat at the table," she said of her role as an executive leader. "I am mindful of who I am sitting at the table for, and that's for all our employees and customers. I represent them."

ORISE **resource hub** prepares early-career scientists to be peer reviewers

Conceive as a researcher, early in your career, being given the opportunity to connect with more seasoned scientists who could teach you how to effectively evaluate a research proposal and give you an inside look at what it takes to write a strong proposal. That opportunity exists at ORISE for early-career scientists to gain multiple benefits from participating as review panel members in the scientific review process.

ORISE created the Peer Review Resource Hub, a section of the ORISE website dedicated to helping early-career scientists build confidence and knowledge as they learn how to provide valuable reviews to the U.S. Department of Energy (DOE).

The resource hub got its start in the summer of 2024 when a survey was issued to ORISE postdoctoral participants to gauge interest in making such a resource available. "The responses were overwhelmingly positive and provided valuable insights into the features that were most important to the participants," said Sydney Worthington, ORISE senior program specialist for peer review.

Among the categories with the most interest were writing clear and concise evaluations and understanding the grant review criteria. A similar survey was initiated with DOE customers to determine the topics that would contribute most to creating high-quality reviews for the agency.

The resource hub is a work in progress, with three learning modules already published. They include Peer Review Basics for Grant Proposals, Critically Analyzing Grant Submissions, and Writing Clear and Concise Evaluations. The hub will also feature podcasts with seasoned DOE reviewers providing their personal experiences and guidance. As the resource hub evolves, future content may also feature DOE program managers sharing insight on their specific roles in the peer review life cycle, what they look for in a reviewer and how they use evaluations to inform their decision-making.

ORISE's first-known research program participant

inspired generations of **STEM students**

A strong, STEM-capable workforce is critical to the United States' global competitiveness, yet building and strengthening that workforce is an ever-present challenge. For Craig Layman, Ed.D., director of the Oak Ridge Institute for Science and Education's (ORISE) STEM Workforce Development program, the answer is finding and developing people passionate about creating solutions to some of our nation's greatest challenges.

"A STEM-capable U.S. workforce is cultivated in STEM-inspired people," said Layman. "ORISE helps individuals find and develop their passion through hands-on, STEM-based research experiences where they can see what's possible through STEM." Since the late 1940s, ORISE has offered research participation and STEM workforce development programs funded by the U.S. Department of Energy (DOE) and other federal agencies.

"Dr. Leo Francis Talbott [pictured at left] was the very definition of a STEM-inspired individual," said Layman.

Talbott was recognized as a pioneer in the field of nuclear physics, where his achievements brought him national and international recognition, according to a 2021 article about the unveiling of Talbott's portrait at DeSales University. Talbott's name is widely known for his contributions to the design of the radio proximity fuze during World War II, an instrument that has been attributed to helping end that war.

Talbott's name is known because of this device, but "he also holds the distinction of being ORISE's first-known research program participant and an inspiring mentor to a new generation of nuclear physicists," said Layman. ORISE didn't exist by name until 1992; research participation programs were managed by the Oak Ridge Institute for Nuclear Studies, now ORAU.

Talbott was a nuclear physicist and professor at both Catholic University of America and DeSales University. As the first ORISE research program participant, he was placed in the U.S. Atomic Energy Commission's (now DOE) Laboratory Co-Op Faculty Summer Research Program at Clinton Laboratories in Oak Ridge, Tennessee (now Oak Ridge National Laboratory, or ORNL).

According to Layman, Talbott's story is important because DOE funded and ORISE provided him the mentored research experiences that contributed to his greater understanding of the more practical applications of the nuclear science he was teaching. "Through ORISE, his research experiences could extend beyond the university setting and into the technology-rich, STEM-forward world of DOE's national laboratories," said Layman. "That's a dream appointment for a nuclear physicist of his caliber."

During that first ORISE program, June to September 1947, "Talbott would have sat at the research bench alongside some of the greatest minds in nuclear science," said Layman. "He would have performed research on the most exciting technology of the day, including experimental reactors."

In fact, his ORISE research experiences were so valued that he participated in multiple ORISE appointments in the physics division at ORNL from 1949 to 1954 and from 1966 to 1978. "You could say Talbott's time in ORISE programs definitely inspired him," suggested Layman.

What makes Talbott's story impactful is what he did next. He paid forward all that his DOE mentors had invested in him through the ORISE programs, helping ensure the next generation could propel the field of nuclear physics even farther.

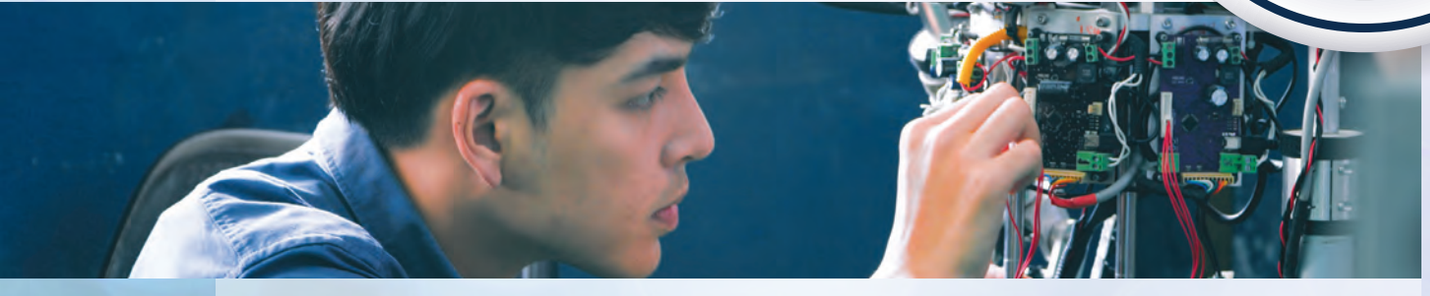
After WWII, Talbott returned to Catholic University and ultimately became the institution's first nuclear physicist and founder of its nuclear program. He was instrumental in the university receiving a grant from DOE to purchase and build a nuclear reactor on Catholic's campus, according to The Catholic University of America Bulletin, July 1957. "It was a full-circle moment for Talbott," said Layman. "The reactor he helped to establish at Catholic was used to teach graduate students about nuclear technology."

Talbott taught at Catholic for 43 years before joining the DeSales University faculty. "While at [DeSales], Talbott brought hands-on experiences to the classroom," The Morning Call wrote in its article about Talbott. "In 1970, he arranged for [ORNL's] mobile radioisotope laboratory to visit the Center Valley campus. For two weeks, students were given access to the laboratory to study the use of radioactive materials and radioisotope instruments." Again, Talbott's experiences, funded by DOE through the ORISE research participation programs "were a valued investment that he paid forward to a new generation of curious students," said Layman.

At ORISE, Talbott will be remembered as the first participant and a significant success story in our enduring history of science education and workforce development missions. For DOE, and their long-standing commitment to funding STEM workforce development programs and inspiring the next generation of STEM professionals, Talbott embodies a strong return on investment. To Layman, that's a great payoff. "With each research participant who comes through an ORISE program, which helps launch their STEM career or inspires them to achieve great things in science, DOE's investment is justified, ORISE's impact is multiplied, and the United States takes another giant leap forward in its global competitiveness."

Scan to learn more

https://orise.orau.gov/people/success-stories/2025/leo-talbott-inspired-the-world-and-future-generations-through-his-passion-for-stem.html



Strengthening America's Energy Workforce:

ORAU's Leadership in Health and Safety Programs

ORAU has been a key organization in ensuring energy industry workers are recognized, supported and cared for, providing leadership in the management of programs that address the health and illness-compensation needs of current and former workers. Through our leadership in the Department of Energy (DOE) National Supplemental Screening Program (NSSP) and the National Institute for Occupational Safety and Health (NIOSH) Radiation Dose Reconstruction Project, and its contributions to the Energy Employees Occupational Illness Compensation Program Act (EEOICPA), ORAU has demonstrated our commitment to helping our federal customers improve the lives of people potentially exposed to hazardous substances during their employment at DOE sites and at nuclear weapons manufacturing employers.

National Supplemental Screening Program

Since 2005, ORAU has managed the NSSP, a program designed to offer medical screenings to DOE former workers who may have been exposed to toxic substances such as beryllium, asbestos, radiation or other hazards. The NSSP is part of the DOE Former Worker Medical Screening Program, established by Congress in 1993 to address occupational illnesses related to workplace exposures.

With more than 25,000 former workers enrolled from more than 80 DOE sites across the country, the NSSP has proven to be a vital resource for identifying health conditions linked to workplace hazards. ORAU's management ensures that screenings are accessible nationwide, eliminating the need for participants to travel to their former work sites. Experienced staff obtain individual detailed work and medical histories. Screenings are then tailored to each participant's work history and may include a physical exam, spirometry (lung-function testing), chest X-ray, diagnostic lab tests and a specialized test for beryllium sensitivity. The program's participant-centered approach assures confidentiality and personalized support, with urgent findings promptly communicated to ensure timely medical attention.

ORAU's expertise in occupational health and program management has been instrumental in the success of the NSSP. By collaborating with trusted partners such as Acuity, CORITY, National Jewish Health and the University of Colorado, ORAU leverages specialized expertise to deliver comprehensive screenings. Beyond individual benefits, the NSSP contributes to occupational health research by analyzing aggregated, de-identified data to identify trends and inform worker protections. Additionally, the program raises awareness about EEOICPA, providing DOE former workers with information about potential benefits, when appropriate, based on exam results.

NIOSH Radiation Dose Reconstruction Project

Since its inception in 2002, the NIOSH Radiation Dose Reconstruction Project has played a crucial role in adjudicating claims filed under EEOICPA. ORAU leads the team, which includes NV5/Dade Moeller and MJW Technical Services, Inc., in reconstructing radiation doses for current and former workers at DOE sites and Atomic Weapons Employers. This work supports the compensation of energy workers who developed cancers that may have been due to their occupational radiation exposure.

ORAU's contributions to the project are extensive, with more than 73,000 preliminary radiation dose assessments completed since the project began. Health physicists and other experts from the ORAU team conduct interviews, analyze historical records and generate searchable databases to reconstruct dose histories. The team has also evaluated Special Exposure Cohort (SEC) petitions, which may grant automatic compensation to workers diagnosed with specific cancers linked to workplace exposures at specific qualifying sites during specific periods of time.

In addition to dose assessments, ORAU has conducted more than 202,000 interviews, indexed more than 210,000 documents into searchable databases and matched more than 541,000 documents to individual claims since 2002. These efforts ensure that claims are evaluated fairly and accurately, using the best available science. ORAU's work not only facilitates compensation for affected workers but also preserves the operational history of the nation's nuclear weapons complex through technical documentation.

A Legacy of Excellence in Worker Health and Safety

Through our management of the NSSP, contributions to the NIOSH Radiation Dose Reconstruction Project and support of EEOICPA, ORAU has established ourselves as a leader in strengthening worker health and safety. These programs collectively demonstrate ORAU's dedication to helping our federal customers address the challenges faced by energy workers potentially exposed to hazardous substances, providing them with access to screenings, compensation and resources to navigate complex claims processes.

ORAU's work not only impacts individual workers and their families but also contributes to broader occupational health research and policy development. By leveraging partnerships, innovative approaches and a participant-focused model, ORAU ensures that workers who played a vital role in national security are recognized, supported and referred for care and benefits when indicated.

As ORAU continues our mission, we remain steadfast in our commitment to improving the lives of energy workers and honoring their legacy with integrity and compassion. Through collaboration, expertise and a deep understanding of the human impact of occupational health programs, ORAU exemplifies our role as a trusted partner in strengthening worker health and safety.

Easing the health care worker shortage:

ORAU committed to **making a difference** wherever we can

According to a 2025 study by Ringo, a health care workforce technology company, the United States will need to hire 2.3 million health care workers just this year to meet the needs of the country's aging population. By 2030, the U.S. will face a shortage of 49,000 primary care physicians. Additionally, nearly one-third of nurses working today are older than 50, and significant numbers of nurses are expected to retire over the next five to 10 years.

Meanwhile, enrollments for nursing programs and medical schools are declining. Enrollment in entry-level baccalaureate nursing programs decreased by 1.4% in 2024, ending a 20-year period of growth in programs for registered nurses, according to the American Association of Colleges of Nursing. Master's degree and doctoral degree programs in nursing are also seeing decreases. Similarly, medical school enrollments have decreased by 1.2% for 2024-25, the third year of decline in a row.

As degree program enrollments decrease, health care workers are leaving the industry for a variety of reasons, including retirements, burnout, stress, income dissatisfaction and policy barriers, much of which was accelerated by the 2020 COVID-19 pandemic.

The effects of this shortage can be felt in every corner of the health care industry and in society.

"A strained health care workforce compromises access to essential services, exacerbates access to quality health care issues for everyone and diminishes the ability to respond effectively to public health emergencies and crises," said Brenda Blunt, ORAU senior director of health and resiliency strategy, who is a trained health care professional. "Addressing this shortage is essential to building a resilient, accessible, and sustainable health care system that supports the well-being of individuals, communities and the nation. ORAU is uniquely positioned to drive innovative solutions, leveraging partnerships, research and workforce development initiatives to tackle this pressing challenge."

Solving the health care worker shortage is critical to the overall health of the nation. ORAU's vision is to be the national leader in advancing scientific and technical workforce development while fostering community health and sustainability for generations to come.

ORAU has offered our expertise and support to make a difference wherever we can in increasing the numbers of health care workers in East Tennessee.

ORAU has supported the launch of the Family Medicine Residency Program at Covenant Health Methodist Medical Center (MMC) in our own community of Oak Ridge in East Tennessee.

When MMC created the Methodist Family Medicine Residency Program in 2024, ORAU donated funds to help launch the program and sponsor one of the patient rooms in a new residency clinic. The Methodist Family Medicine Residence Program is designed to produce new family medicine physicians who are trained in cutting-edge medical practices and compassionate care through hands-on training.

The ultimate hope is that as these physicians complete the program, they will set up a family medicine practices in the East Tennessee region with a ready-made patient clientele, seeing the patients that they've already built health care relationships with through the residency clinic.

ORAU also supported construction of the Knox Regional Health Science Education Center, a 130,000-square-foot

facility near Parkwest Medical Center in Knoxville, Tennessee. A ribbon-cutting and sneak peek event was held in September 2025. The first students are expected to enroll in the spring semester of 2026.

The facility will house health science programs offered by Roane State Community College in Oak Ridge and the Tennessee College of Applied Technology, Knoxville. The health science education center is the new home of existing nursing, EMS, sleep study and respiratory health programs, and programs in cardiovascular technology, health care administration and public health will be added.

"Both the Family Medicine Residence Program at MMC and the Knox Regional Health Science Education Center will help prepare students to be a vital part of our future health care workforce, further strengthening the economy of East Tennessee," Blunt said.

ORAU's long-standing expertise in workforce capacity-building in STEM (science, technology, engineering and mathematics) careers as well as public health and health care gives us a unique understanding of the overall landscape and the ability to do our part to meet the need for more health care workers.

"ORAU works with government agencies, academic institutions and private organizations to tackle critical challenges in systems," explained Blunt. "By partnering with colleges, universities and K-12 schools, ORAU can help build educational programs that inspire interest in health care careers and create pathways to increase the number of trained professionals."

By supporting and strengthening innovative education programs as well as offering expertise in workforce planning, resilience building and adaptability, ORAU can help ensure that health care professionals are supported and empowered to meet the demands of tomorrow. A resilient health care workforce is the foundation of a healthier, stronger and more secure future.

REAC/TS drives development of *new capability* to treat radiation injuries in a mass casualty event

In 2025, the ORISE Radiation Emergency Assistance Center/ Training Site (REAC/TS) completed and deployed a project that had been in the works for two years—the creation of rapidly deployable medical kits that could treat hundreds of radiation-injured and combined-trauma patients following a major nuclear incident.

REAC/TS subject matter experts founded an expansive working group to address this challenge. The group, which included interagency, academic and international relief specialists, developed a roadmap and medical justification for expanding and improving acute medical interventions, including rapidly deployable medical kits, for potential radiation incident survivors.

REAC/TS collaborated with the military's Defense Logistics Agency, the U.S. Department of State, United States Agency for International Development, and other international government agencies and subject matter experts to perfect the packaging, documentation and logistical support for the kits.

Working group guidelines recommended positioning key medical resources at community reception centers in affected areas that could address gross decontamination and early radiation dosimetry and provide effective early medical intervention with limited medical professional presence.

REAC/TS team members worked closely with the U.S. Department of Energy National Nuclear Security Administration Office of Nuclear Incident Preparedness and Collaboration to translate the working group's concepts into a physical product that could be used to care for patients.

Early in 2025, demonstration kits were available for presentations to key medical leaders, and by the summer of 2025, enough kits were deployed in forward locations to treat at least 7,500 radiation-injured patients as well as 7,500 casualties with significant thermal burns. The concepts and protocols developed for these kits are widely applicable to United States and international civil response, humanitarian, national disaster and military organizations. REAC/TS team members continue to advise other agencies on this emerging capability while striving to further improve on the design and clinical support for its employment.

Empowering Minds, Transforming Futures:

Extreme Classroom Makeover **2025**

Thanks to ORAU's Extreme Classroom Makeover competition, Halls High School in Knox County, Tennessee, has taken a significant step forward in STEM education with a state-of-the-art upgrade to its biology lab in 2025.

The $25,000 Extreme Classroom Makeover grade prize, awarded to science department chair and biology/anatomy teacher Abby Rase [pictured above], has equipped the lab with cutting-edge technology, creating new opportunities for hands-on learning and innovation.

Rase's application featured a compelling video showcasing outdated and broken tools in the lab, alongside her vision for revitalizing the science program to better serve students and foster future growth. Her commitment to elevating STEM education earned her the top prize, enabling her to invest in tools and technologies that will benefit every science class at Halls High.

"Hands-on learning is the best type of learning—especially in a science course," Rase explained. Collaborating with fellow science teachers, she carefully selected the equipment that would make the greatest impact. "Science technology is a really expensive field. We got together and talked about the needs of our students and the needs of our classes and what equipment we would need to develop our science program. This award is allowing us to grow in ways we couldn't before."

With the funding, Rase transformed the lab with resources ranging from pipettes and dissection specimens to advanced digital tools. Among the upgrades are digital microscopes, water distillers, an autoclave (a machine that sterilizes equipment), a centrifuge machine, oxygen sensors, heart rate monitors and more. These enhancements are not only increasing efficiency but also sparking student enthusiasm. "They'll be collecting a lot of data, and now they can load that information directly into their [laptops]. The kids get excited about that stuff," she said, smiling.

To celebrate the transformation, Rase invited ORAU representatives to tour the revamped lab. ORAU President and CEO Meghan Millwood attended the event and highlighted the organization's ongoing commitment to advancing STEM education. "The Extreme Classroom Makeover has been a cornerstone program for ORAU for more than 16 years. In that time, we've supported more than 30 local schools and invested about $550,000 to enhance STEM education," Millwood said. "ORAU has nearly 80 years of history in helping to build the scientific and technical workforce, and programs like this allow us to make a meaningful impact on schools, teachers and students."

The upgraded lab is already inspiring new ideas at Halls High. With high enrollment in anatomy and advanced placement science courses, Rase is considering introducing new offerings, such as microbiology, in the upcoming school year.

Rase encourages other teachers to seize the opportunity provided by ORAU. "If you're a teacher, I highly recommend applying for this competition. It's definitely a game-changer," she said.

Scan to watch
the Halls High biology lab upgrade

https://orau.mediavalet.com/galleries/bdad81e8-f3bd-41bb-873a-d88b99790250_a9e1f09f-fc88-4dcd-8c71-c6e2b31450fe-ExternalUser

Granting Opportunities:

How ORAU's Education Investments Shape Our **Communities**

Eight teachers from Anderson, Roane and Scott Counties in East Tennessee received more than $30,000 in teaching materials and supplies through ORAU's 2025 Education Grants program, providing a major boost to classrooms.

From STEM labs for kindergarteners to robotics for high school students and from spatial learning tools to drones, ORAU has funded innovative equipment and resources to help educators meet evolving state curriculum standards while engaging students in science, technology, engineering and math (STEM). These grants reflect ORAU's commitment to empowering teachers and inspiring the next generation of STEM professionals.

Since its launch in 2002, the ORAU Education Grants program has provided more than $580,000 in resources to local schools, underscoring the organization's mission to support STEM opportunities in the region.

"This year, we are excited to have funded impactful STEM projects for eight teachers," said Meghan Millwood, ORAU President and CEO. "Science and learning lie at the heart of ORAU's mission, and we take pride in supporting East Tennessee teachers by providing grants that enable them to enhance their classrooms with technology and resources designed to inspire students in STEM fields. Strengthening our communities begins with empowering these students to pursue careers in STEM fields. We look forward to seeing the positive impact these initiatives will have."

ORAU 2025 EDUCATION GRANT RECIPIENTS

- **Courtney Bass**, Norwood Elementary School: STEM stations for kindergarten
- **Mark Buckner**, Oak Ridge High School: Robotics equipment
- **Bobbie Clements**, Rockwood High School: Technology for journalism production team
- **Dawn Huckeby**, Robbins Elementary School: STEM activities for school library
- **Kimberly O'Dell**, North and South Clinton Elementary Schools: Drones for STEM programs
- **Ramona Owen**, Norwood Elementary: STEM resources
- **Brandi Poore**, Clinton Elementary School: STEM lab for kindergarten
- **Clark Ward**, Glenwood Elementary School: Spatial reasoning tools

The recipients were selected from a pool of competitive proposals submitted by teachers across Anderson, Campbell, Morgan, Roane and Scott Counties in Tennessee. Each proposal demonstrated a commitment to enhancing STEM education and creating engaging learning experiences for students.

ORAU's Education Grants program continues to be a vital resource for East Tennessee schools, ensuring that educators have access to the tools they need to inspire curiosity, innovation and a passion for STEM. By supporting these initiatives, ORAU is helping to build a promising future for students and the communities they will one day serve.

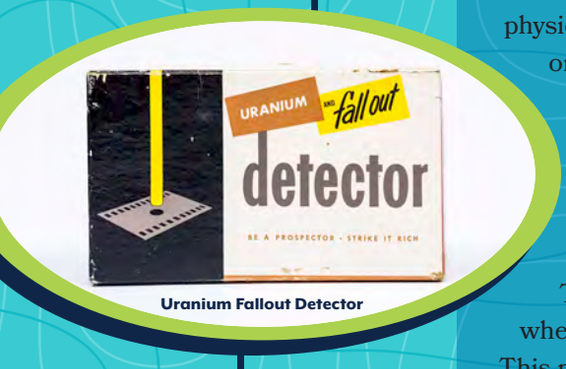
Scan to watch
about one of our ed grant partnerships

https://www.orau.org/blog/video/partnerships-that-matter-orau-and-norwood-elementarys-stem-education-success-story.html

Unlocking History:

ORAU's Museum of Radiation and Radioactivity Opens to the Public


Uranium Glass



Uranium Fallout Detector


Pocket Dosimeters

ORAU's Museum of Radiation and Radioactivity is a treasure trove of artifacts that chronicles more than a century of innovation in radiation science. For decades, this remarkable collection was accessible only to participants in ORAU's Professional Training Programs (PTP) or in pictures and content online, but in 2025, ORAU opened the newly refreshed museum for the public to explore and experience firsthand.

The museum's origins trace back to the 1980s when now-retired ORAU health physicist Paul Frame, Ph.D., began assembling artifacts to enhance hands-on learning and demonstrations in PTP radiation safety training classes. Among the collection's gems are the world's oldest direct reading pocket dosimeter along with many other historical instruments. However, due to security protocols on ORAU's south campus where PTP classes were held, the collection remained in basic glass cases, behind locked doors, unavailable to casual visitors.

The museum's transformation into a public exhibit was made possible when ORAU's PTP relocated to the Pollard Center on ORAU's main campus. This move provided the perfect opportunity to refresh the collection into a museum-quality exhibition to share with the community, students, former nuclear workers and other interested individuals, offering a unique glimpse into the evolution of radiation science and technology.

What began as a modest collection has grown into an expansive archive of more than 1,000 artifacts, spanning the late 1890s to the 1990s. The museum features an especially rich array of items from the 1940s and 1950s—a period Dr. Frame considers the golden age of radiation detection and instrumentation.

More than just an assortment of artifacts, the museum is a fascinating journey through humanity's understanding of radiation and radioactivity. Officially recognized by the Health Physics Society as the repository for historical radiological instruments and devices, the museum has captured the interest of visitors both locally and nationally. ORAU has even partnered with the Manhattan Project National Historical Park to host regular Ranger Talks, further enriching the visitor experience.

Visitors to the Museum of Radiation and Radioactivity can explore a wide range of exhibits that showcase the intersection of science, history and culture. Some of the highlights include the following:

Scan to watch
this behind-the-scenes video!

https://orau.mediavalet.com/galleries/bdad81e8-f3bd-41bb-873a-d88b99790250_bd2b7260-e94d-4b84-9f17-bf54e6a56ac0-ExternalUser

- A vintage shoe-fitting fluoroscope: A device that helped store clerks fit consumers with shoes by using an X-ray of their feet, demonstrating the blend of science and commerce in the mid-20th century.
- Turn-of-the-century "quack cures": Products marketed as remedies for ailments ranging from backaches to cancer, offering a glimpse into the early misconceptions surrounding radiation.
- Artifacts from Hiroshima, Japan: Items recovered from Hiroshima after the atomic bomb ended World War II, serving as a poignant reminder of the power and consequences of radiation science.
- Civil defense products: Relics from the Cuban Missile Crisis era, showcasing the role of radiation in Cold War preparedness.

Since 1999, the Museum of Radiation and Radioactivity has been available online, attracting hundreds of thousands of unique visitors from around the world. Now, with its doors open to the public, ORAU has unlocked this extraordinary collection for guests to explore in person, gaining a deeper appreciation for the history and impact of radiation science.

See the collection online, request a visit and find the next public event here.

https://orau.org/health-physics-museum/index.html

Shoe-Fitting Fluoroscope

Radioactive Eye Applicator

Cloisonné Jewelry

Thomas Radioactive Cone Stamps

Radium Playing Cards

STEM-Powered Summers

We are dedicated to inspiring K-12 students and educators to explore the limitless possibilities of science, technology, engineering and math (STEM). Through dynamic programs and activities offered free by ORAU and ORISE in Oak Ridge, Tennssee, we provide hands-on experiences and real-world applications that build a strong foundation for STEM education while fostering curiosity and innovation.

During the summer, we go beyond traditional classroom learning by offering innovative opportunities designed to spark curiosity and deepen understanding. From mastering artificial intelligence and coding to solving mysteries through forensic chemistry, our free courses and activities captivate young minds and empower educators to expand their knowledge and their curricula across STEM disciplines. These experiences challenge participants to think critically, explore creatively and engage with cutting-edge topics. Here are a few of 2025's highlights of ORAU and ORISE STEM Summer Programs:

A.I. MINI-ACADEMY

Middle school students participated in an engaging two-day program designed to introduce them to artificial intelligence (AI). Through exciting and challenging activities, they explored AI concepts, uses and applications. The program aimed to equip students with skills and knowledge to help them thrive in a technology-driven future and become tomorrow's leaders.

CODER'S QUEST

Coder's Quest provided upper elementary students with an exciting opportunity to explore the world of computer coding. Throughout the day, students learned and practiced new skills while testing their understanding through a variety of activities. The program challenged their minds with a mix of indoor and outdoor exercises and interactive play.

CAD DESIGN & 3D PRINTING MINI-ACADEMY

The ORAU CAD Design & 3D Printing Mini-Academy is a one-day workshop for high schoolers and offers a dynamic, hands-on approach to understanding the fundamentals of Computer-Aided Design (CAD) and digital fabrication. Through practical exercises, students learned to navigate CAD software and bring their creations to life, gaining practical skills that could inspire future careers in technology and engineering.

FORENSIC CHEMISTRY

During a two-day program, middle school students explored forensic chemistry through an engaging hands-on experience. Presented with a mystery to solve, they collected and analyzed evidence using techniques such as chromatography, fingerprinting, shoe imprinting and fiber analysis. The program provided a dynamic introduction to forensic science while fostering critical thinking and problem-solving.

MATH EXPLORATION

Math can be fun! Math Exploration gave young students the chance to spend an education-filled day packed with games and challenges to practice their skills, build confidence and collaborate with peers. Participants walked away with new-found excitement about numbers.

WILDLY FUN ANIMAL OBSERVERS

In this one-hour workshop, teachers discovered an interactive program that gives students opportunities to put their skills of scientific observation to the test as they investigate a selection of unique biofacts (animal skins, bones, feathers and more!) to figure out how each animal uses them to eat, move and defend themselves.

Mystery in the Classroom: A Forensic Chemistry Workshop

Mystery in the Classroom, a half-day workshop, equipped teachers to engage middle school and high school students through the captivating world of forensic chemistry. Participants learned how to design and implement a classroom mystery that can be unraveled through the collection and analysis of evidence, bringing the intrigue of forensic science into their curriculum.

SCIENTIFIC STUDIO

Who doesn't enjoy a good art project? Scientific Studio was an invitation for teachers to learn how to integrate scientific concepts into engaging art-based activities. From experimenting with solubility and light refraction to creating gravity art, educators learned how to enhance STEAM (science, technology, engineering, art and mathematics) learning through interactive assignments in this half-day teacher professional development workshop.

WHAT'S ALL THE BUZZ ABOUT? YOU WON'T BEE-LIEVE THE DIFFERENCE A DAY CAN MAKE!

Helping educators create low-prep, high-impact lesson plans is what this one-day summer session was all about. Teachers covered a lot of ground as they learned everything from binary code to model rocketry. They even left with their own Goddard Rocket that they built themselves with simple materials like foam rubber, plastic straws, rubber bands and zip ties.

Appalachian STEM Academy

Every summer, ORAU partners with the Appalachian Regional Commission (ARC) to host the Appalachian STEM Academy, an enriching, all-expenses-paid residential STEM learning experience designed for students and teachers from the Appalachian region. The academy offers tailored experiences for middle and high school students and even a program for STEM teachers.

Scan to learn more

https://www.orau.org/blog/education/empowering-appalachia-through-stem.html

Select Leadership Distinctions, published works and presentations

Adayabalam Balajee, Ph.D., Terri Ryan, Maria Escalona: co-authors, "a 30-year cytogenetic follow-up study on a thyroid cancer patient after internal radioiodine therapy," *Cytogenetic and Genome Research*. December 2025.

Donna Cragle, Ph.D.: peer reviewer, *American Journal of Industrial Medicine*

Manon Fleming: member, Children's Museum of Oak Ridge Board of Directors

Cathy Fore: presentation: "Strategic Research Workshop," University-Industry Demonstration Partnership (UIDP) HBCU Engage Partnerships to Expand Research Capabilities workshop, March 2025; member, Tennessee State University Research, Economic and Community Development Foundation Board of Directors.

Cathy Fore and Tracy Curtright: presentation: "Making the Most of Basic Ordering Agreements," UIDP Chicago Conference, September 2025.

Dray Gentry, Maria Escalona, Terri Ryan, Adayabalam Balajee, Ph.D.: poster, "Energy and Dose Dependent Dicentric Chromosome Formation in Proton Therapy," Particle Therapy Cooperative Group Annual Conference, June 2025; poster, "Automating Cytogenetic Biodosimetry: A Dual Neural Network Framework for Detecting Dicentric Chromosomes in Giemsa and mFISH Imaging Modalities. Radiation Research Society Annual Conference, September 2025; poster, "Energy and Dose Dependent Dicentric Chromosome Formation in Proton Therapy," Radiation Research Society Annual Conference, September 2025.

David Girardi, Sara Howard, Ph.D., Ashley Golden, Ph.D.: co-authors, "Reconstructing Hanford worker external doses from photons for epidemiology," *Journal of Radiological Protection*, October 2025.

Ashley Golden, Ph.D.: presenter, "Million Person Study—Radiation Risk in the Rocky Flats Cohort of the Million Person Study: Sensitivity Analyses and Comparisons With Other Occupational Cohorts," National Council on Radiation Protection and Measurements Annual Meeting, March 2025; presenter, "ISoRED and RRS Joint Session: Radiation Research Society Introduction," International Society of Radiation Epidemiology and Dosimetry, September 2025; U.S. councilor, International Association of Radiation Research; epidemiology councilor, Radiation Research Society; program committee member, Radiation Research Society; member, Scientific Committee 1 (Health Effects), National Council on Radiation Protection and Measurement; Radiation Research Society liaison, Health Physics Society Intersociety Relations Committee; associate editor, *International Journal of Radiation Biology*; peer reviewer, *Journal of Radiation Research and Health Physics Journal*; board president, Free Medical Clinic of Oak Ridge.

Ashley Golden, Ph.D., Sara Howard, Ph.D.: poster, "Cohort Profile of the Hanford Site Radiation Workers: A Descriptive Update from the Million Person Study," Radiation Research Society Annual Conference, San Juan, Puerto Rico, September 2025; poster, "Updated Mortality of Four United States Uranium Processing Cohorts: Preliminary Standardized Mortality Ratio Results from the International Pooled Analysis of Uranium Workers (iPAUW)," Radiation Research Society Annual Conference, September 2025;
co-author, "Archival records housed at USTUR support radium dial worker dosimetry," *Journal of Radiological Protection*, June 2025.

Michelle Goodson: co-author and managing editor, *Nuclear Energy Academic Roadmap*, ORAU and collaborators, September 2025; panelist, "Global Education Initiatives that Foster Future Nuclear Industry Workforce, Waste Management Conference, March 2025; speaker, "Closing the Workforce Supply and Demand Gap," Oak Ridge Chamber of Commerce, May 2025; co-presenter, "Building a Skilled Workforce for Nuclear Expansion," U.S. Women in Nuclear workshop at the Small Modular Reactors & Advanced Reactors Conference, May 2025; panel moderator, *Nuclear Energy Academic Roadmap,* American Nuclear Society Annual Meeting, June 2025; workshop facilitator, "Oak Ridge Corridor Workforce Strategy," Oak Ridge Corridor Development Corporation Workforce Workshops," June/July 2025; workshop presenter and facilitator, "ORAU STEM Accelerator Partnership for Nuclear Energy University Partners

Workshop," ORAU, July 2025; panel moderator, "Nuclear Workforce Training and Education," East Tennessee Economic Council Nuclear Opportunities Workshop, July 2025; panelist, "Building Bridges to Careers in Nuclear," U.S. Women in Nuclear Annual Meeting, July 2025; panelist, "STEM Outreach and Lasting Impacts," ORNL Joint Nanoscience and Neutron Scattering User Meeting, August 2025; panelist, "Storytelling Roundtable: Students, Sustainability and a Thriving Tennessee," SCORE's Connecting the Dots: The Environments Impact on Student Success, September 2025; panel moderator, "From Siloed to Strategic: Integrating Policy, Education and Industry Workforce Resources," Nuclear Energy Conference and Expo, September 2025; presenter, "Tennessee Update," Nuclear Energy Institute Regional State Consortia Summit, September 2025; workshop participant, "Building Sustainable Nuclear Security Regimes," Stimson Center Workshop, October 2025; co-presenter, "NuJobs: Identification and Assessment of Sample Future Job Titles in the Nuclear Energy Field," American Nuclear Society Winter Meeting, November 2025; panelist, "Innovation and Workforce Readiness Panel," Nuclear Workforce—American-Made Network Convening at National Renewable Energy Laboratory D.C., November 2025, co-chair, Tennessee Nuclear Network Workforce Development Committee; president, Hardin Valley Academy Athletic Council; member, Nuclear Energy Institute (NEI) Workforce Working Group; working group member, NEI Regional State Consortia; member, NEI Planning Committee for NEI/American Nuclear Society CONTE 2027; working group member, U.S., Women in Nuclear Workforce Initiative; member, STEM Educators' Council.

Mike Gregory: member, International Organization for Standardization Technical Committee subcommittee working Group 2; chair, American Society for Quality Certification Council quality process analyst certification subcommittee; member, training content development team, Alliance for Performance Excellence; volunteer examiner, Tennessee Center for Performance Excellence.

Derek Hagemeyer: presenter, "REMS Data Quality Lessons Learned," U.S. Department of Energy Office of Environment, Health, Safety and Security (EHSS) Joint Community of Practice Workshop, September 2025; member, University of Tennessee Board of Advisors for the Nuclear Engineering Department; member, Oak Ridge Public Schools Education Foundation Board of Directors.

Mark Heuer, author: "Impact of the Bowen ratio on surface-layer parameterizations of heat, moisture, and turbulent Fluxes in drylands," *Journal of Applied Meteorology and Climatology*, 64, 549–568, 2025; "The impact of wildfire on the land surface parameters of a semi-arid grassland in the southwestern U.S.," *Agricultural and Forest Meteorology*, 363, 0168-1923, 2025; "Vertical structure of turbulence in the lower atmospheric boundary layer above a deciduous forest in complex terrain," *Agricultural and Forest Meteorology*, 373, Article 110745, 2025.

Michael Holtz, APR, MPRCA: presenter, "Highlights from the American Society of Clinical Oncology Gastrointestinal Cancers Symposium," Fight Colorectal Cancer webinar, February 2025; poster, "Long-Term Side Effects of Platinum-Based Chemotherapy Drugs for People Diagnosed with Colorectal Cancer," American Association for Cancer Research Annual Meeting, April 2025; panelist: "Advocacy in Action," American Cancer Society Postdoctoral Fellows webinar, June 2025; advocate peer reviewer, Cancer Research and Prevention Institute of Texas; advocate peer reviewer, U.S. Department of Defense Congressionally Directed Medical Research Program Peer Reviewed Cancer Research Program; chair, Man Up to Cancer Board of Directors; survivor representative, Tennessee Colorectal Cancer Roundtable Steering Committee.

Sara Howard, Ph.D.: dissertation, *An Epidemiologic Study of Chronic Obstructive Pulmonary Disease in the United States*, University of Tennessee. 2025; co-author, "Burden and predictors of chronic obstructive pulmonary disease occurrence and severity among an occupational cohort of United States Department of Energy former workers," *Public Library of Science One*, May 2025; vice chair, Scholar in Training Committee, Radiation Research Society; Scholar-In-Training Radiation Research Society liaison, Health Physics Society Intersociety Relations Committee; History Committee Scholar in Training Member, Radiation Research Society; peer reviewer, *Respiratory Research Journal*; peer reviewer, *Journal of Health Population and Nutrition*.

continued on page 40

continued from page 39

Sara Howard, Ph.D., Zachariah Hubbell, Ph.D., Ashely Golden, Ph.D., Donna Cragle, Ph.D., Wendy Benade, Jamie Stalker, M.D.: co-authors, "Longitudinal surveillance for chronic health conditions in former United States Department of Energy site workers," *Journal of Occupational and Environmental Medicine*, May 2025.

Sara Howard, Ph.D., Greg Nichols, M.P.H.: co-presenters, "Unlocking Data Insights from Radiation Research: An Overview of the Comprehensive Epidemiologic Data Resource," Veterans Affairs Toxic Exposures Research Working Group, July 2025.

Sara Howard, Ph.D., Greg Nichols, M.P.H., Ashley Golden, Ph.D.: poster, "One Million People and Millions of Data Points—A Practical Implementation of the Data Lifecycle Using the Million Person Study and Comprehensive Epidemiologic Data Resource," National Council on Radiation Protection and Measurements Annual Meeting, March 2025; poster, "The Data Lifecycle and Its Importance to Radiation Epidemiology—A Case Study of Practical Implementation Using the Million Person Study and the Comprehensive Epidemiologic Data Resource," International Society of Radiation Epidemiology and Dosimetry, September 2025.

Melissa Jones: treasurer, Horace Maynard FFA Alumni Chapter

Crystal Levine: president-elect, South Carolina Parent Teacher Association Board of Directors

Nicole Merrifield: chair, Community Reuse Organization of East Tennessee

Chris Nelson, Ed.D., PMP, and Jennifer Tyrell: publication, "Exposure to climate risks and youth engagement with climate change," *Frontiers in Climate*, September 2025.

Greg Nichols, M.P.H.: presenter, "Autonomous Platforms for Casualty Evacuation: State of the Art and Future Directions," Homeland Defense and Security Information Analysis Center (HDIAC), January 2025; presenter, "Beryllium: An Important but Not Well-Known Public Health Issue, National Board of Public Health Examiners "Webinar Wednesday" Series, August 2025; chair, Risk Communication Subcommittee, Beryllium Health and Safety Committee; Occupational Safety Technical Area Lead, Industrial Hygiene, Safety, and Chemical Management Community of Practice, Energy Facility Contractors Group; Tennessee Extension Master Gardener; author: "Assessing Governance and Regulatory Frameworks for Converging Technologies: The Case for Artificial Intelligence in Biological Engineering and Design Technologies," in *Biotechnology and AI, Technological Convergence and Information Hazards*, 217-236, NATOARW 2025.

Jim Sears: member, American Museum of Science and Energy Foundation Board of Directors

Jamie Stalker, M.D., and Zachariah Hubbell, Ph.D.: co-presenters "Two Decades of Experience: Insights from a National Former Worker Medical Surveillance Project," American Occupational Health Conference, Austin, Texas, April 2025.

Ashley Stowe, Ph.D.: member, Children's Museum of Oak Ridge Board of Directors

Jennifer Tyrell: treasurer, Southern Appalachian Science and Engineering Fair; member, Science Education Research Foundation Board of Directors

Wendy West: member, Methodist Medical Center Foundation Board of Directors

T**im Wilson, Ph.D., Randy White and Mark Heuer**: co-authors: "On the application of the hockey-stick transition hypothesis to characterize turbulence within and above a deciduous forest," *Agricultural and Forest Meteorology*, 362, Article 110342, 2025; "On the vertical variability of turbulent heat fluxes within and above a deciduous forest," *Agricultural and Forest Meteorology*, 375, Article 110844, 2025.

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