



U40 UNDER U40 2025



Last year, we proudly launched the inaugural *Nuclear News* 40 Under 40 list to shine a spotlight on the exceptional young professionals driving the nuclear sector forward as the nuclear community faces a dramatic generational shift. We weren't sure how a second list would go over, but once again, our members resoundingly answered the call, confirming what we already knew: The nuclear community is bursting with vision, talent, and extraordinary dedication.

Now, we are thrilled to present the second annual *NN* 40 Under 40. This year's honorees represent a new cohort of leaders whose innovation and drive are positively transforming the industry. From pioneering advanced reactor technologies and strengthening the fuel supply chain to shaping nuclear policy and adapting nuclear technology for marine or space applications, these 40 individuals are

making tangible and meaningful impacts across every sector.

The nuclear industry is facing a potential boom, fueled in part by the energy and ambition of those entering the field. This list celebrates those professionals who embody the future of nuclear—a future that is safe, sustainable, and essential for addressing global challenges. They are not only excelling in their technical and professional fields but are also actively engaging the public, spreading the positive message of nuclear, and mentoring the next wave of scientists and engineers.

Reviewing the incredible pool of qualified nominees this year was once again a challenging but inspiring task for the *NN* staff. We are excited to share this new list of 40 talented individuals who are making their mark on the nuclear community.

Join us in celebrating the 2025 *Nuclear News* 40 Under 40!



Syed Bahauddin Alam

Alam is a rising star in the field of digital twins, cybersecurity, and foundational models, which led to his appointment to the NASEM Committee on AI Foundation Models and being named as a national AI leader in his organization's response to the White House AI Action Plan. His research integrates first-physics principles with empirical data-driven ML methods, contributing to predictive algorithms for real-time virtual sensing for inaccessible locations.

When you reflect on your career so far, which achievement stands out most? Being appointed to the National Academies Committee on AI Foundation Models and named a national AI leader in UIUC's response to the White House AI Action Plan.

What is your secret talent that few people know? I enjoy cooking, and I can sing (though that's debatable).

Age: 38

Title: Assistant professor, University of Illinois–Urbana-Champaign

Hometown: Chandgaon, Chattogram, Bangladesh

Who has been your greatest influence? My mother, Reena Jahan, and my father, Syed Moinuddin Alam. My mother taught me to work hard, stay humble, and remain grounded, and my father taught me resilience.

What was your first job, and what did it teach you? At Nokia Siemens Networks in Bangladesh, I learned that sometimes you need to sacrifice something valuable to reach a bigger goal.

What is your favorite food or restaurant? Traditional Bangladeshi food—it always brings me home.

If you had a theme song, what would it be? “Waka Waka (This Time for Africa);” I just find it uplifting.



Yasir Arafat

Arafat is the cofounder and chief technical officer of Aalo Atomics. Before that, he led the MARVEL microreactor program at INL and was an engineer on the eVinci microreactor program and the AP1000 reactor at Westinghouse.

Where did you grow up? I grew up as a Burmese refugee in Bangladesh. My early years were in Chittagong, and later I moved to Dhaka for high school before eventually emigrating to the United States.

What was your first job, and what did it teach you? In high school in Dhaka, I tutored middle school students to support myself and my brother. It taught me discipline, responsibility, and the value of passing knowledge forward. I also discovered that the best way to learn is to teach, something that's helped me at every stage of my career.

If you had a theme song, what would it be? “Cornfield Chase” by Hans Zimmer (from the

Age: 39

Title: CTO, Aalo Atomics

Hometown: Burmese refugee in Bangladesh

Interstellar soundtrack). I gravitate toward instrumental music. It helps me quiet my mind and find balance before tackling complex problems.

What's the best career advice you have received? My first mentor at Westinghouse, Ed Lahoda, told me, “Don't fall in love with your creations.” As engineers, when we become too attached, we try to force them into the world even if they don't belong. The real discipline is knowing when to let go and move on to build what the world truly needs.

What's on your bucket list? Achieve criticality by July 4, 2026; build a factory that produces 100-plus reactors a year and then replicate it around the world; be the best father I can be to my soon-to-arrive son; one day, see Earth from space.



Amanda Bachmann

Bachmann is a standout leader in nuclear fuel cycle modeling and simulation known for her technical excellence, adaptability, and commitment to community building. Through impactful roles in ANS and U.S. WIN, she has championed student support and industry growth, earning recognition as a trusted, passionate advocate for nuclear innovation.

What did you want to be when you grew up? I dreamed of being a famous singer as a kid. When I decided to go with a more practical career, I thought about doing something in medicine. My mom was a pharmacist, so I grew up learning about different medical topics, and practicing medicine seemed like fun puzzles that helped people feel better.

When you reflect on your career so far, which achievement stands out most? For the last few years I've been volunteering with the Illinois High School Science Bowl. Two students who have been participating for a few years have decided that they want to study nuclear engineering in college (at one of my alma maters!)

Age: 28

Title: Nuclear engineer, Argonne National Laboratory

Hometown: Tampa, Fla.

because they've been able to meet me and learn about nuclear energy and nuclear engineering. Knowing that what I do impacts the next generation in a positive way is the greatest achievement I can have.

What is your secret talent that few people know? I do a lot of crafting, mostly crocheting and knitting.

Who has been your greatest influence? Prof. Jamie Coble got me involved in research when I was an undergraduate student, which helped me discover that I wanted to go to grad school and have a career in research. Those opportunities taught me a lot of technical content and skills and also helped me learn other things, like when you're a little scared of what's in front of you then you're probably going in the right direction.

What is the top song on repeat on your Spotify right now? I really enjoy musical theater, with "Defying Gravity" and "For Good" from *Wicked* as personal favorites.



Fabiola Cappia

Cappia describes herself as just a "small-town woman with a passion for nuclear fuels now leading the largest inert hot cell in the U.S." She leads a team of nearly 80 technicians, researchers, and engineers at INL's Hot Fuel Examination Facility. Her leadership in the DOE's Accident Tolerant Fuel program and high burnup fuel research has addressed critical data gaps and strengthened the U.S. nuclear fleet.

What did you want to be when you grew up? Many things. First an archeologist, then a doctor, but I have always loved math and physics, so engineering was the natural choice.

When did you first "discover nuclear"? I grew up with it—my village is very close to a research center for the European Commission, the JRC

Age: 37

Title: Fuels postirradiation examinations division director, Idaho National Laboratory

Hometown: Orino, Varese, Italy

in Ispra—which had a research reactor. In high school, I visited Politecnico di Milano and saw a presentation about a major in nuclear engineering, and I knew that was my path.

When you reflect on your career so far, which achievement stands out most? A couple, I would say. I had a pretty sharp transition from postdoc to staff and was put in charge of the entire Accident Tolerant Fuel postirradiation planning and execution. I more than doubled the business volume that came in to INL in that area. Later, I led the team that prepared HFEF to receive and conduct PIE on the LWR

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commercial fuel that we received in December 2023. It was not an easy task as we had not been doing that kind of work since 2005(ish), so the know-how had to be rebuilt.

What is your favorite food or restaurant? My heart remains at home, in Italy. Whenever I go back home, my family and I go to a restaurant on

the lake that specializes in seafood; I miss that the most.

What's on your bucket list? I really want to climb all nine of the Idaho 12ers. I started with Borah Peak a couple of years ago and then I had a back injury. I hope to heal completely soon and resume my endeavor.

Lane Carasik



Carasik is a valuable member of the nuclear scientific community known for technical contributions that include developing unique capabilities for high-fidelity computational fluid dynamics, providing detailed datasets for experimental validation, and pioneering work in molten salt heat transfer in nuclear and fusion energy systems. Among his accolades are the DOE Office of Science Early Career Award, a National Academy of Science Kavli Fellow, and an ASME Rising Star in

Age: 33

Title: Assistant professor, Virginia Commonwealth University

Hometown: Marietta, Ga.

Mechanical Engineering Award. Carasik is also a dedicated mentor and advocate for parity in STEM and is a co-founder of ANS Cares.

When you reflect on your career so far, which achievement stands out most? This is a very hard question because I have both my personal achievements and those of my students. My

CONGRATULATIONS, Lane Carasik!

Virginia Commonwealth University (VCU) College of Engineering proudly celebrates **Lane Carasik, Ph.D.**, assistant professor of mechanical and nuclear engineering, for being named to the Nuclear News "**40 Under 40 list**" of industry influencers and future leaders in nuclear energy.

Dr. Carasik's research in **fusion and nuclear energy, isotope production and advanced instrumentation** exemplifies VCU's commitment to innovation and impact. His leadership and mentorship are inspiring the next generation of engineers working to advance energy independence and security for the United States.

Congratulations, Dr. Carasik.
Your work is shaping the future of nuclear engineering!



VCU College of Engineering



Lane Carasik, Ph.D., assistant professor, Department of Mechanical & Nuclear Engineering

students' achievements would have to be my first three earning their Ph.D.s (Arturo, Connor, and Vulcanoff). My personal achievement is my DOE Early Career Research Award under Fusion Energy Sciences.

What is a long-term career or personal goal?

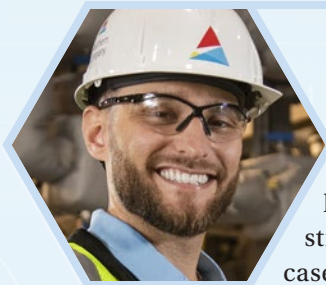
Right now, my long-term career goal is having a large enough career impact to become a NASEM member. To me, this means I've made a lasting positive impact on the students and early-career researchers.

What is your secret talent that few people know? I was really good at Texas Hold'em at one point.

What's the best career advice you have received?

Split between these two: (1) Dr. Eric Loewen (an ANS past president) recommended I try to intern at a utility, a reactor vendor, a national laboratory, and the NRC. I got three of the four and I learned a lot of what I wanted to do. (2) "Follow things to their logical conclusion" was extremely important advice, as I've gone through the junior/early-career part of my life.

What's on your bucket list? A long beach vacation on one of the Caribbean islands.



Brandon Chisholm

Chisholm has nearly 10 years of experience developing RIPB safety cases and licensing bases, including the demonstration of various elements of RIPB safety cases for multiple non-LWR technologies. He led multiple Licensing Modernization Project efforts—each of which have resulted in NRC guidance that all commercial non-LWR license applications with the NRC are using. Chisholm is also one of a few molten salt reactor experts in the world; has been contributing to the design, testing, and safety case development for TerraPower's Molten Chloride Fast Reactor technology since 2016; and is currently developing the safety basis for the Molten Chloride Reactor Experiment.

What did you want to be when you grew up?

When I was in kindergarten, I couldn't decide whether being an astronaut or a welder was cooler, so I decided that I would be a "space welder."

When did you first "discover nuclear"? In 11th grade, I had to pick a topic and prepare a debate. I chose to argue that nuclear energy is dangerous, but as I started researching the track record of nuclear power, I actually reversed course and

Age: 31

Title: Senior research engineer, advanced nuclear, Southern Company

Hometown: Raleigh, N.C.

ended up delivering a passionate argument for the safety and public health benefits of nuclear.

When you reflect on your career so far, which achievement stands out most?

It's been really fulfilling to see the adoption of the regulatory modernization methodologies and approaches that I've played various roles in developing and getting endorsed to enable their use. For example, both of the construction permit applications for the two different ARDP efforts implement the LMP and TICAP approaches—which I have been either supporting or leading since working on my graduate degrees.

What is your favorite food or restaurant?

I love In-N-Out Burger—a controversial opinion in Texas.

What is the top song on repeat on your Spotify right now?

My daughter is one and a half, so all my top songs are from Ms. Rachel. "I'm So Happy" is probably the current #1, but it always depends on the day.

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Mihai Diaconeasa

Diaconeasa is recognized internationally for his work in nuclear safety and risk analysis. The recipient of the 2023 ANS David Okrent Award for Nuclear Safety and the DOE's Distinguished Early Career Award, he developed ADS-IDAC, the first dynamic PRA platform integrating hardware and human reliability modeling validated through international benchmarks. He is involved in major private and DOE-funded projects, including the ARPA-E GEMINA program and X-energy's Xe-100 PRA model under the ARDP, investigating innovative methods for risk-informed safety analysis to support advanced reactor design and licensing activities.

What did you want to be when you grew up?

I was always fascinated by the contrails left behind by commercial jets cruising at high altitudes. It sparked my dream of becoming a pilot. That dream evolved into a passion for exploring and describing the world using mathematical equations.

When did you first "discover nuclear"? My first exposure to nuclear came from stories

Age: 37

Title: Associate professor and associate department head of nuclear engineering, NCSU

Hometown: Slatina, Romania

about the Chernobyl accident and in particular its long-lasting consequences.

Who has been your greatest influence or your personal MVP? It's hard to name just one professional influence, but my educational and research paths have been shaped most by Ali Mosleh, B. John Garrick, and George Apostolakis. My MVP is easy: my wife, Agatha. She has always been there to support me, to share in a lifetime of continuous learning, and to philosophize with me.

What's the best career advice you have received? "If you are asked to do something, commit only if you can do your best; otherwise, it's fine to say no." This advice from one of my middle school teachers has guided me to be intentional with my commitments and to pursue excellence in the work I take on.

What's on your bucket list? I want to complete the flying hours for a private pilot license and fly solo.



Jeremy Harrell

Jeremy Harrell is the CEO of ClearPath, a leading conservative clean energy advocacy organization. He has expanded its policy impact across nuclear, carbon capture, clean manufacturing, and international deployment. A frequent national commentator and congressional witness, Harrell has led reforms in energy permitting and chaired the U.S. Nuclear Industry Council, driving innovation and bipartisan progress in American energy policy.

What is a long-term career or personal goal?

All the policy work is for naught if we do not build new reactors in this country. I've had the pleasure of attending a handful of new nuclear ground-breakings in the past 18 months that give me confidence in the industry's future.

Age: 39

Title: CEO, ClearPath

Hometown: Cincinnati, Ohio

More importantly, I want to visit at least five newly placed-in-service U.S. reactors before I turn 50.

What is your secret talent that few people know? From 10 to 18, I competitively played Magic: The Gathering with my dad. We would travel across the Midwest to compete in junior tournaments, and I competed twice in the national championship tournament. Those experiences were instrumental in my relationship with my dad and for thinking strategically.

Who has been your greatest influence? My dad, Gary Harrell. He is a testament to the American dream. He grew up in a single-parent

home in North Little Rock, Ark., with next to nothing and a limited support system. He is a Persian Gulf War Operation Desert Storm veteran and was an ER doctor for 30 years. His hard work ensured my sisters and I were provided every opportunity a kid could ever ask for, and I am always motivated to not squander that privilege.

If you had a theme song, what would it be? “Centerfield” by John Fogerty. This fall, I am juggling professional demands, coaching my 8-year-old daughter’s softball team, and my 5-year-old son is taking up baseball for the first time. “Put me in coach/ I’m ready to play” amps me up in both facets of my life.



Kyle Hartig

Hartig helps lead the \$26.4 million NNSA Consortium for Nuclear Forensics, connecting 16 universities and 7 labs to train future national security experts. His innovative reactor-sharing and VR platforms expand hands-on access, earning top honors from ANS and the Institute of Nuclear Materials Management. At UF he secured a Reactor Sharing Program grant that opened the UF Training Reactor not only to minority-serving institutions but also to students from other

Age: 39

Title: Associate professor, University of Florida

Hometown: Los Osos, Calif.

Florida campuses, shaping the next generation of nuclear security leaders.

When did you first “discover nuclear”? With my dad at Diablo Canyon and experience as a navy submarine reactor operator, nuclear was part of my upbringing.

Continued

Congratulations, Jeremy!

Jeremy Harrell and ClearPath are developing and advancing policies that accelerate innovations to reduce global energy emissions.

CLEAR
PATH



When you reflect on your career so far, which achievement stands out most? Building my lab at UF and seeing the students I mentor and advise achieve their education and career goals stands out most. They graduate exceptionally prepared and make an immediate impact in their first roles.

What is your secret talent that few people know? While it's not quite a "secret talent," I enjoy brewing my own beer and weightlifting.

What's the best career advice you have received? I keep two ideas close. Adm. William

McRaven's focus on small, disciplined wins reminds me to build momentum in research with daily progress, early deliverables, and clear checklists. President Dwight D. Eisenhower's insight that planning matters more than the plan pushes me to run scenarios and premortems so our team can adapt when data or sponsors change.

What's on your bucket list? As an avid backpacker, I have always wanted to hike the John Muir Trail; however, I also would love to backpack in some unique places like Patagonia, Peru, or Iceland.



Jimmy Hughes

Hughes leads safety systems for UCOR, overseeing 500-plus staff and a \$40 million budget at one of America's most complex nuclear cleanup sites. From laborer to chief safety officer, he earned national EPA recognition for transforming the K-25 site—now home to Kairos Power's Hermes I reactor.

What did you want to be when you grew up? A cowboy. The "ride for the brand" mindset is something I still carry to this day.

When did you first "discover nuclear"? I am a fourth-generation Oak Ridger—my great-grandfather helped build K-25, my grandfather ran it, my father maintained it, and I cleaned it up to honor its legacy and make way for the nuclear future.

Age: 38

Title: Chief safety officer, United Cleanup Oak Ridge

Hometown: Clinton, Tenn.

Who has been your greatest influence? My father always has worked harder than anyone I know. He always gives sound advice, and even when he knows you'll be upset with it, he doesn't sugarcoat it. He ensured his children had the right tools, skills, and abilities to be successful regardless of the path they chose.

What was your first job, and what did it teach you? Grocery store clerk. The customer can make or break your experience, either making a day enjoyable or making it last an entire month.

What's the best career advice you have received? Knowing the right answer is not nearly as important as being able to implement it and receive buy-in.



Jake Jurewicz

Jake is pioneering new ways to build and finance nuclear power plants for faster, cost-effective deployment. Blue Energy plants are prefabricated in shipyards, modularly installed onsite, and incorporate NRC-approved advanced nuclear reactors in monopiles submerged in water. He has earned national praise for his technical acumen and entrepreneurship—reshaping how nuclear energy is built.

Age: 33

Title: CEO and cofounder, Blue Energy

Hometown: North suburbs of Chicago, Ill.

When did you first "discover nuclear"? In the third grade I spent a lot of time reading books that had cross-sectional illustrations of big engineered systems. One such book just showed cross sections of power plants, and I remember being obsessed with trying to understand how the nuclear plant worked, because it seemed the most mysterious. This was also about the time I

got to tour the Zion nuclear power plant before it was decommissioned.

What is your secret talent that few people know? I used to be a competitive water skier.

Who is your personal MVP? For Blue Energy, the Venture Global LNG founders and leadership team. They persevered in building a global-scale energy company and knew which risks to take and which to avoid in order to succeed in the highly competitive market of energy commodities.



Kate Kelly

From submarines to microreactors, Kelly's impact at BWXT is undeniable as she's led complex projects across defense and space, applying Lean and Six Sigma methodologies to achieve data-driven improvements. As director of space and emerging programs for BWXT Advanced Technologies, Kelly led the company's space nuclear programs, growing revenue from \$15 million to \$50 million and expanding the customer base.

What did you want to be when you grew up? I always wanted to be a doctor, but in college I didn't enjoy studying biology.

When you reflect on your career so far, which achievement stands out most? Over the last few years at BWXT Advanced Technologies, we've had numerous FOAK contract awards, delivered complex hardware, and innovated groundbreaking technologies for space and terrestrial microreactor applications. It's a great privilege to work with and lead these talented

What was your first job, and what did it teach you? I was a construction draftsman and building information modeler for my father's architecture firm. It taught me how to interface with clients and engineers and that the simple practical things can lead to the greatest delays and cost overruns.

If you had a theme song, what would it be? "Pink Pony Club" by Chappell Roan—Chappell clearly has founder mentality.

Age: 35

Title: President, BWXT Advanced Technologies LLC

Hometown: Pittsburgh, Pa.

teams, but it's been made even more special being a parent and seeing professional growth in parallel with that of my precocious 2.5-year-old and a sweet 2-month-old.

Who has been your greatest influence and your personal MVP? My biggest influence is my parents, who set the standard for a dual-career couple long before it was common. My personal MVP is my spouse, Patrick, who is the biggest enabler and supporter of any of my career achievements.

What is your favorite food or restaurant? A meal cooked in my home for close friends or family.

What is the top song on repeat on your Spotify right now? Unfortunately, probably the Cocomelon rendition of "Wheels on the Bus," thanks to my toddler.



Hilary Lane

Hilary is reshaping nuclear policy and industry outreach through her leadership at NEI. She spearheaded a groundbreaking microreactor licensing proposal, cutting timelines from multiple years to six months. Now leading cross-sector engagement, she connects nuclear with AI, petrochemical, data

Age: 39

Title: Senior director, strategic partnerships, NEI

Hometown: A small town in central Maryland

center industries, and beyond—accelerating deployment and broadening nuclear energy's footprint.

Continued

When did you first “discover nuclear”? I was born into it! My entire family works in the industry, and I discovered the halls of the NRC when I was about five years old. Little did I know then, I would one day end up working there myself.

What’s the best career advice you have received? When I worked at the NNSA, former administrator Tom D’Agostino gave the young, entry-level employees a list of recommendations

on how to succeed in a federal bureaucracy. I still have this list with me to this day, coffee stains and all! It served me well during my time at the NNSA and the NRC.

What’s on your bucket list? I’m working on seeing every national park in the United States. I’m about one-third of the way there—although I’m giving myself grace if I don’t make it to American Samoa!



Youho Lee

Lee leads nuclear fuel materials research at Seoul National University. His rapid rise—from KAIST student to UNM faculty to SNU professor—reflects his exceptional initiative. He has built a research group of 21 members and secured high-impact programs

Age: 39

Title: Associate professor, Seoul National University

Hometown: Korea

and funding portfolios that advance nuclear materials research. His work on Cr-coated accident tolerant fuel and his integrative approach linking materials to systems is innovative.

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POWERING PARTNERSHIPS AND DRIVING IMPACT



Congratulations, Hilary Lane!
Nuclear News 40 Under 40 honoree.

As Senior Director of Strategic Partnerships at the Nuclear Energy Institute, Hilary is recognized for her leadership in building alliances with new-to-nuclear investors and customers, and expanding opportunities for clean, reliable energy.

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CONGRATULATIONS

Kate
Kelly



**Congratulations to Kate Kelly on being named to
Nuclear News 40 under 40!**

For nearly 14 years, Kate has been instrumental in BWXT's ability to deliver advanced reactors and cutting-edge space technologies to our customers. As the new president of Advanced Technologies, she is poised to lead BWXT into the next era of innovative nuclear solutions.

On behalf of our nearly 10,000 employees around the globe, congratulations Kate!

www.bwxt.com



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When you reflect on your career so far, which achievement stands out most? I am grateful to have built a globally recognized university research group in nuclear fuel materials at Seoul National University, together with dedicated students and colleagues.

Who has been your greatest influence? I am fortunate to have had many great advisors and mentors. Professors Hee Cheon No and Jeong Ik Lee first opened my eyes to research during my undergraduate years. My doctoral advisor, the late Prof. Mujid Kazimi at MIT, shaped how

I see nuclear engineering in perspective. My colleague and friend Prof. Mike Short at MIT continues to inspire me with his unique and genuine way of working and living. I learn a lot from my colleagues at Seoul National University—they are the best teachers I have each day.

What is the top song on repeat on your Spotify right now? I keep K-pop on repeat.

What's on your bucket list? A month in Europe with no emails.

Ross Lorberbaum



Lorberbaum advanced from engineer to VP at Paragon Energy Solutions, leading its CoreVision division in neutron flux monitoring. He's driven innovation in detection systems for advanced reactors while managing legacy product lines. In his role, Ross has

Age: 39

Title: Vice president, CoreVision, Paragon

Hometown: Dallas–Fort Worth, Texas

proven to be an outstanding leader and with his team is shaping a critical area for the future of the nuclear industry.

Congratulations to our 2025 Nuclear News 40 Under 40 honoree!



Syed Bahauddin Alam
Assistant Professor

Joining our 2024 honorees...
all a part of the outstanding faculty at Illinois!

Katy Huff



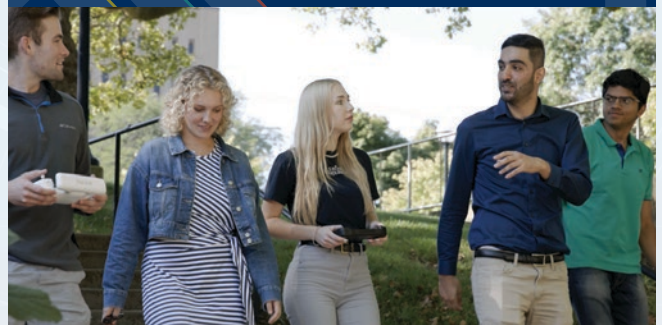
April Novak



Congratulations, Majdi Radaideh!

NERS proudly celebrates Majdi Radaideh for being recognized among the 2025 "40 Under 40" cohort. His outstanding contributions to integrating machine learning and data science into nuclear reactor analysis inspire our community and exemplify the University of Michigan's commitment to interdisciplinary research and the development of advanced technologies.

We are honored to see our faculty shaping the future of nuclear. **Congratulations, Majdi—and GLOW BLUE!**



What did you want to be when you grew up?
I aspired to be a professional jazz saxophonist.

When you reflect on your career so far, which achievement stands out most? Helping others rise has been my proudest achievement, whether mentoring other professionals or leading teams through transformation. The greatest impact comes when you support others and watch their success ripple far beyond your own.

What is a long-term career or personal goal?
I am committed to advancing the nuclear industry as a cornerstone of global energy while

helping develop leaders who will sustain that progress. My goal is to leave behind both enduring innovation and empowered people.

What was your first job, and what did it teach you? My first job was playing saxophone in a jazz trio. It taught me the value of practice, consistency, and positive energy.

If you had a theme song, what would it be?
My theme song is ever-changing but right now would be “The Taste of Ink” by The Used. It’s all about owning the moment, striving for impact, and rocking hard while doing it!



Matt Loszak

As cofounder and CEO of Aalo Atomic, Loszak is leading the development of the Aalo Pod, a 50 MWe microreactor, drawing inspiration from the MARVEL project at INEL. Prior to working on Aalo, Loszak founded two successful software companies, scaling his last one to 150 employees and selling it for a nine-figure exit.

When did you first “discover nuclear”? Growing up in Ontario, we had a lot of coal power plants. They caused 62 smog days per year and I had pretty bad asthma attacks. When we shut those down and went all-in on nuclear, smog days went to zero and my asthma went away. I thought this was incredible, and I studied nuclear in my engineering physics degree at university.

Age: 35

Title: Cofounder and CEO, Aalo Atomic

Hometown: Toronto, Ontario, Canada

When you reflect on your career so far, which achievement stands out most? Launching and growing Aalo Atomic.

What is a long-term career or personal goal?
To make mass-manufactured nuclear plants a reality.

What is your secret talent that few people know? I can make the sound of an annoying goose with only a blade of grass.

Who has been your greatest influence? Richard Feynman and Henry Kaiser.

What was your first job? I taught windsurfing at a summer camp.



Daniel Moneghan

Moneghan is principal investigator for Project MARIE under the ARPA-E CURIE initiative working in collaboration with TerraPower, ORNL, Southern Company, and Deep Isolation, developing a software tool to support the design optimization of reprocessing facilities. At EPRI, he founded the Advanced Reactor Fuels Task Group and launched key fuel cycle research. His work standardizing cost estimation and advancing

Age: 32

Title: Senior technical leader in advanced nuclear technology, EPRI

Hometown: All over

storage collaboration is a key part of advancing new nuclear.

Where did you grow up? All over the place. I was born in Massachusetts, moved to Texas

Continued

within a year, went back to Massachusetts one street over when I was four, then down to Virginia for a couple years, back up to Connecticut, down to Virginia again, and then I graduated high school.

When you reflect on your career so far, which achievement stands out most? Being the PI on a major government project within a few years of starting my career feels pretty awesome! Project MARIE let me build relationships with ORNL, TerraPower, Southern Company, and Deep Isolation while producing tools to support

design and development of reprocessing and the workforce to enable it.

Who is your personal MVP? They would have to be John Bardeen, Walter Brattain, and William Shockley. They invented the transistor, which turned humanity from a smart group of organics into a species with exponentially growing processing power.

What is your favorite food? Impossible to select, but New England lobster, fresh off the boat and into the pot tastes amazing.



Katie Mummah

Mummah is a rising leader in nuclear science, recognized for her work in fuel cycle simulation, safeguards, and science communication. She earned an ANS Presidential Citation and the Wisconsin Initiative for Science Literacy Award for Communicating Ph.D. Research to the Public; received first place among student papers at an Institute of Nuclear Materials Management Meeting; and has volunteered in many society committees, including the leading the ANS Student Sections Committee through COVID. Her mentorship and ability to communicate technical ideas continue to shape and strengthen the nuclear community.

What did you want to be when you grew up? A meteorologist. I did get a minor in atmospheric sciences.

When did you first “discover nuclear”? I met two female nuclear engineers from Constellation at Fermilab’s STEM Career Expo while I was in high school. They helped me see how nuclear engineering included many of the qualities I was looking for in a college major and eventual career: climate impact; interesting technical and sociopolitical challenges; and a small, supportive community.

Age: 30

Title: R&D engineer, LANL

Hometown: Wheaton, Ill.

When you reflect on your career so far, which achievement stands out most? I loved being the chair of the Student Sections Committee of ANS, because it allowed me to be a near-peer mentor to so many students. I’ve had such great mentors, so I’ve always wanted to pay it forward.

What is a long-term career or personal goal? I want to do a stint as an IAEA nuclear safeguards inspector.

What was your first job, and what did it teach you? I was an optical astronomy intern at Fermilab after my junior year of high school. My biggest takeaways were about the value of mentorship and a strong network. Also, I got to learn some Python!

What is the top song on repeat on your Spotify right now? “Breakfast in Hell” by Slaid Cleaves.

Continued

Congratulations



Fabiola Cappia

Director, Fuels Post-Irradiation Examination Division
Nuclear News 40 Under 40 Honoree



Mauricio Tano-Retamales

Modeling and Simulation Scientist, Reactor Systems and Heat Transport
Nuclear News 40 Under 40 Honoree

INL congratulates Fabiola Cappia and Mauricio Tano-Retamales for being named to Nuclear News' 40 Under 40 class.

These exceptional professionals have made significant contributions to the field of nuclear energy and research.

Fabiola Cappia is the director of the Fuels Post-Irradiation Examination division. She manages the operations of the Hot Fuel Examination Facility, overseeing post-irradiation examinations of nuclear fuels and materials, and ensures research continuity and innovation.

Mauricio Tano is a modeling and simulation scientist in the Reactor Systems and Heat Transport group. He is the principal investigator in several high- and intermediate-

fidelity modeling and simulation efforts for advanced nuclear reactors, including stakeholder engagement supporting reactor design, advanced reactor demonstration, and validation experiments. Tano's work is supported by INL supercomputers, housed at the Collaborative Computing Center, which provide the high performance computing power necessary to achieve solutions to advanced nuclear science and technology challenges.

Fabiola and Mauricio are changing the world's energy future. Want to join them? **Check out [INL.gov/careers](https://www.inl.gov/careers)**

*Battelle Energy Alliance manages INL for the
U.S. Department of Energy's Office of Nuclear Energy*





Will Payne

Payne has over 10 years of nuclear experience in engineering, operations, and outage management. He rose through the ranks quickly due to his technical expertise, leadership qualities, and dedication to improving nuclear plant operations and performance. Payne earned his senior reactor operator license, became the outage manager of Plant Hatch, and is now the outage manager for the whole of Southern Nuclear.

When did you first “discover nuclear”? At a very young age. My dad is a nuclear engineer and worked at Plant Hatch his entire career, so I talked about nuclear power with him all the time. I really liked learning about the science behind how nuclear power works and the concept of clean energy.

What is a long-term career or personal goal? I really enjoyed watching the action as Vogtle-3 and -4 finished construction and began commercial operation. One day, I would love the

Age: 36

Title: Fleet outage manager, Southern Nuclear

Hometown: Vidalia, Ga.

opportunity to be part of another new nuclear project and be able to see the final result.

What is your favorite food or restaurant? I have always loved Italian food, and my standard for any Italian restaurant is their lasagna. Whenever I go to a new Italian place, I order the lasagna and see how it measures up.

What’s the best career advice you have received? To be open to new opportunities even if they aren’t on the “road map” and to be willing to fix things and solve problems. Both of these have gotten me out of my comfort zone and into new experiences that led me to new career opportunities.

What’s on your bucket list? My bucket list includes travel to lots of locations in Europe. I want to go see the Louvre and Normandy in France in particular.



Lauren Peacock

As an architect of the next generation, Lauren leverages expertise in nuclear modeling to pioneer high-fidelity digital twin simulators. With 15-plus years of experience and 30-plus global projects—including AP1000 and SMR simulators—she’s driving innovation in control room design and cybersecurity.

When did you first “discover nuclear”? My parents graduated from University of Maryland as engineers, and I knew when I was accepted to UMD that I wanted to study engineering as well. It was one of very few universities in the U.S. with a nuclear engineering program, complete with its own reactor on campus. I remember thinking how mysterious the concept of nuclear power was. When the nuclear engineering program was shut down in 2003, I stayed in a close discipline, chemical engineering.

When you reflect on your career so far, which achievement stands out most? Honestly, as

Age: 38

Title: Senior engineer, GSE Solutions

Hometown: Annapolis, Md.

cheesy as it sounds, it would be making it onto *Nuclear News’s* 40 Under 40 list. More than recognition, it serves as a powerful reminder that taking risks and embracing complex challenges always pays off. This achievement feels like the high-energy start of the next great phase in my career.

What is your secret talent that few people know? I am an accomplished seamster. When I’m not immersed in highly technical documentation or complex engineering challenges, I’m deep into creative projects, often designing and tailoring complex costumes and props for theater, conventions, and more. This hobby is the perfect counterbalance that keeps me sharp and prevents creative burnout from all that intense problem-solving.

Continued



Ashley Saunders
Environmental Programs
and Stewardship Manager/
Chief Regulatory Officer



Jimmy Hughes
Chief Safety and
Security Officer

Cleanup Today for a Nuclear Tomorrow™

UCOR congratulates Ashley Saunders and Jimmy Hughes for being named to the “Nuclear News 40 Under 40” Class of 2025. Both are leaders in our company completing award-winning environmental risk reduction for the U.S. Department of Energy’s Oak Ridge Office of Environmental Management—driving industry-leading reindustrialization, conservation, and historic preservation wins in the Oak Ridge Corridor.

Amentum-led UCOR’s cleanup success has created the nation’s first “Nuclear Innovation Hub” at the East Tennessee Technology Park, and is the blueprint for cleanup at other legacy sites to deliver DOE Secretary Wright’s “Manhattan Project 2.0” and rapidly deploy the commercial nuclear capacity to meet energy and AI demands.

Our highly skilled workforce continues to solve complex cleanup challenges that are enabling America’s commercial nuclear renaissance.

Want to join our team? Learn more at [ucor.com](https://www.ucor.com)

UCOR 
United Cleanup Oak Ridge LLC



Who has been your greatest influence and personal MVP? My mother is absolutely my greatest influence and personal MVP. She's the definition of a strong, intelligent, and fiercely

independent woman. As a highly successful electrical engineer, and single mother, she was always the ultimate role model.



Hannah Pell

Pell led the License Amendment Request for TMI-2 with EnergySolutions, coordinating with the NRC and state of Pennsylvania to initiate historic reviews and preserve cultural heritage. With Constellation, she supported multiple SLRs and restart efforts at the Crane Clean Energy Center and has represented the U.S. internationally at the IAEA.

When did you first "discover nuclear"? I've known nuclear my whole life; my dad worked at Three Mile Island for more than 30 years in radiation protection and I&C. I saw how he carried the pride of his work everywhere and the nuclear community he'd built around him over

Age: 31

Title: Regulatory specialist, Crane Clean Energy Center, Constellation

Hometown: Elizabethtown, Pa.

the years. As a second-generation TMI worker, I work to carry things on in his memory as we restart the unit.

When you reflect on your career so far, which achievement stands out most? The first license amendment request that I wrote was a first-of-a-kind submitted to the NRC. It supported the Section 106 review process required by the National Historic Preservation Act for the TMI-2 decommissioning project, given the significance of the TMI-2 accident in nuclear history. The process



Constellation Congratulates Hannah Pell on Being Selected for the *Nuclear News* 40 Under 40



Hannah Pell
Regulatory Specialist
Crane Clean Energy Center

resulted in codified, ongoing preservation efforts that ensure the TMI-2 historical record will continue to be supplemented, even through active decommissioning of the facility to its ultimate license termination.

What is your secret talent that few people know? I play oboe and English horn with

several central Pennsylvania-based community ensembles.

What is the top song on repeat on your Spotify right now? “right where you left me” by Taylor Swift.



Christopher Perfetti

Perfetti developed groundbreaking sensitivity analysis algorithms for Monte Carlo transport, advancing nuclear criticality safety. His research interests include reactor physics, criticality safety, sensitivity and uncertainty analysis, code validation, Monte Carlo methods for radiation transport, reactor fuel cycles, and isotope production. Perfetti has served as the chair of the ANS Reactor Physics Division and has led major conferences like PHYSOR 2024 and M&C 2025.

When you reflect on your career so far, which achievement stands out most? I am most proud of my work developing algorithms for generalized and depletion perturbation theory in Monte Carlo radiation transport codes. Developing such algorithms had been an unsolved problem in the nuclear engineering

Age: 39

Title: Associate professor, University of New Mexico

Hometown: Clearwater, Fla.

methods development community for more than 50 years. These new methods have opened up entirely new fields of opportunity for better understanding the sources of uncertainty in reactor design and nuclear fuel cycles, developing more rigorous benchmark measurements, and calibrating uncertain cross-section or physics data.

What is your secret talent that few people know? I do not have an especially great memory, but I am unusually good at memorizing digits of pi. I also memorized 200 digits of e during a three-hour bus ride to a mathematics competition in high school.

Continued

Congratulations Chris & Catherine

for being recognized among the **40 Under 40**
shaping the **future of nuclear energy!**

We proudly celebrate our employees who are making an impact through their leadership, innovation and dedication to the industry.



Christopher Wagener
Senior Fuel Business Director
16 years of service



Westinghouse



Westinghouse
Electric Company



@WECNuclear



Catherine Prat
AP1000® Project Engineering Lead
13 years of service

Who has been your greatest influence? There are too many great influences to just pick one. Bill Martin, Brad Rearden, and Samim Ang-haie all come to mind, but if I had to narrow it down to two, I would say Ed Dugan and Forrest Brown. In graduate school, Brown set the

standard of research excellence that I aspire to in all of my work, and during my undergraduate days, Dugan set the standard of compassion and dedication for students that I aspire to achieve as a professor.



Catherine Prat

Prat has led the licensing and deployment of AP1000 reactors worldwide, including at Sanmen and Vogtle. As lead engineer at Westinghouse, she now drives innovation across AP1000, AP300, fuels, and eVinci micro-reactors. An ANS board member and past YMG chair, she helped steer ANS through COVID's virtual programming, mentors the next generation of nuclear professionals, and is supporting the development of ANS's certification program.

What did you want to be when you grew up?

When I was in elementary school, I wanted to be a lawyer—getting paid to argue sounded like a dream! But then I discovered engineering in sixth grade through the Future City program, and I knew that I would be an engineer.

When you reflect on your career so far, which achievement stands out most? I was the Nuclear Island Initial Test program lead for Vogtle-3 while pregnant with my son, Diego. I managed the largest testing evolution—hot

Age: 34

Title: Project engineering lead, Westinghouse

Hometown: Pittsburgh, Pa.

functional testing—remotely, while on bedrest, coordinating shifts of 30-plus test engineers, designers, and craft. It was certainly a more exciting time than most have on bedrest!

What is your secret talent that few people know? I have an eidetic memory.

What is your favorite food or restaurant?

Xiaolongbao (soup dumplings) from Jia Jia's in Shanghai.

If you had a theme song, what would it be?

"Confident" by Demi Lovato.

What's the best career advice you have received?

Don't be afraid to say "yes" to the random assignment, to the task outside of your comfort zone. Continually challenge yourself and take the leap of faith, because you may land somewhere beyond your wildest dreams.



Majdi Radaideh

Radaideh has advanced reactor physics, AI, and autonomous control through his work at the University of Illinois, MIT, ORNL, and now the University of Michigan. He is advancing AI/ML research in nuclear applications, including surrogate modeling, multifidelity neural networks, and more. His research has earned him numerous early-career awards, such as the DOE-NE Distinguished Early Career Award, Mark Mills Award, MCD Young Member's Research Achievement Award, and HFICD Ted Quinn Early Career Award.

Age: 34

Title: Assistant professor, University of Michigan

Hometown: Irbid, Jordan

When did you first "discover nuclear"?

Toward the end of high school we studied a chapter on nuclear physics. At that time, the field of nuclear engineering was emerging in Jordan.

When you reflect on your career so far, which achievement stands out most? There are several things on a personal career level, but probably the most meaningful are the messages I receive from my current and former students

from time to time. They express how lucky they feel that our paths crossed — whether it's because they landed a job they love, were admitted to the school they wanted, or learned something valuable from me during our interactions.

Who has been your greatest influence? This has varied at different stages of my life and career, but I would say that, science-wise, it is Carl Friedrich Gauss, and sports-wise, it is Dwyane Wade, as I used to play basketball.

What is your favorite food or restaurant? I love seafood—especially salmon, a taste I developed after coming to the United States. As a Jordanian, however, I might be called disloyal for not putting *mansaf* (our traditional dish) at the very top of my list, though it definitely comes next.

What's the best career advice you have received? Staying healthy and getting 7–8 hours of sleep will always make you more productive. Work never ends but health might!

Quinn Reynolds

Reynolds is a vice president in Sargent & Lundy's Nuclear Power Group, leading engineering services to the existing and new nuclear fleet. He has a reputation for excellence in quality engineering deliverables and is motivated by growing the younger generation of the nuclear industry.

What did you want to be when you grew up? I wanted to be a professional soccer player for DC United.

When did you first “discover nuclear”? My dad worked for the NRC in leadership and executive roles, and I have always looked up to him and his career.

When you reflect on your career so far, which achievement stands out most? I was the responsible engineer on the DC Cook reactor controls & instrumentation system and worked closely with American Electric Power to design, install, test, and turnover the complex digital control system. The team's engineering and capital projects management and technical rigor was codified and emulated on all future

Age: 37

Title: Vice president, Nuclear Power Group, Sargent & Lundy

Hometown: Middletown, Md.

projects at DC Cook. It directly resulted in S&L digital upgrade projects across the U.S. to benefit from the comprehensive process used to ensure successful installation, testing, and turnover while reducing overall project costs.

What is a long-term career or personal goal? Drive sustainability of the nuclear industry through successful partnerships with utilities, reactor and equipment vendors, and constructors when upgrading existing units, designing new nuclear facilities, and supporting the restart of nuclear plants.

What is your secret talent that few people know? “I’m mixed-handed: I play soccer with both feet equally; I golf righty (but putt lefty); and I bat lefty.”

What's on your bucket list? Travel to England for a Manchester United game with my wife and kids.

Continued



Jordan Rice

Rice leads risk-informed engineering across her fleet, maintaining PRA models and shaping NRC and NEI regulatory frameworks. Her leadership has transformed outage performance and strengthened engineering programs, and her exceptional people skills and willingness to challenge the status quo are invaluable. A mentor and innovator, she built a successful student co-op and intern pipeline, inspiring future engineers while driving excellence and collaboration across the organization.

When did you first “discover nuclear”? Since my father is a Navy Nuke who transitioned to commercial nuclear power, part of me wants to joke that it was in my blood. My first personal discovery was my college senior design project to design and build a pressurized flow loop modeled after a pressurized water reactor.

When you reflect on your career so far, which achievement stands out most? Supporting the

Age: 36

Title: Risk informed engineering director, Southern Company

Hometown: Alabama

student program for many years and now seeing those who converted to full-time employees crushing it as engineers across the fleet.

What was your first job, and what did it teach you? My first job was working as a file clerk at a doctor’s office. This taught me that even repetitive, tedious, and mundane work can be improved and enjoyable with the right mindset.

What is your favorite food or restaurant? Any Mexican restaurant with queso, tacos, and margaritas.

If you had a theme song, what would it be? “Dog Days Are Over” by Florence + The Machine, because I try to leave the stressful stuff behind me and hit every day running.



Ashley Saunders

Saunders leads a 200-person team driving end-state cleanup through strategic integration and environmental stewardship. She oversees regulatory and historic preservation efforts at Oak Ridge, spearheading land reuse, environmental programs, and national partnerships that shape the future of environmental management in nuclear decommissioning.

What did you want to be when you grew up? A photographer. That passion has since become a lifelong hobby.

When you reflect on your career so far, which achievement stands out most? I am most proud of my role as UCOR’s chief strategy officer and having the opportunity to develop the strategic road map for our company. It has been extremely rewarding to see that strategy play out through the establishment of the Nuclear Innovation Hub here in Oak Ridge.

Age: 39

Title: Environmental programs and stewardship manager and chief regulatory officer, UCOR

Hometown: Chattanooga, Tenn.

What is your secret talent that few people know? I don’t know if it’s a “talent,” but my other hobby is birding. It’s also a way for me to express my love for photography.

What is the top song on repeat on your Spotify right now? My husband, daughter Hazel (3), and I all love the remake of a Disney song from my childhood, “I2I” from *A Goofy Movie*—fellow Millennials will know it! It’s fun to see Hazel enjoy a song we grew up with.

What’s the best career advice you have received? “Manage your environment and make your own luck.” This is a Ken Rueter saying that has always resonated with me because it helps you reframe a challenging situation and to take excuses off the table, instead of seeing circumstances as being out of your control.



Dillon Shaver

Shaver leads Argonne's NEAMS Center of Excellence for thermal fluids, coordinating CFD efforts across major DOE programs. A developer of Nek5000, NekRS, and Cardinal, he's an expert in high-fidelity simulation. His work earned the ASME Lewis Moody and R&D100 awards, setting technical standards in advanced reactor modeling. Shaver has coordinated computational fluid dynamics efforts supporting multiple DOE programs, including the Natrium ARDP, the Advanced Reactor Technologies Fast Reactor Campaign, multiple GAIN vouchers, and the Versatile Test Reactor.

When did you first "discover nuclear"? In my sophomore year of undergrad I took an "Intro to Nuclear Phenomena" course and had a very passionate professor. Before that I was

Age: 38

Title: Group manager, Fluid Dynamics, ANL

Hometown: Dansville, N.Y.

planning to major in mechanical or aeronautical engineering.

What is a long-term career or personal goal?

Immediately after graduating, I spent a year at RPI as teaching faculty. I think I'd like to return to that before I retire.

What is the top song on repeat on your Spotify right now? Lately I've been listening to "Wish You Were Here" by Pink Floyd.

What's on your bucket list? I'd just like to spend more time in the Adirondacks in upstate New York. It has some challenging hikes and it's the most beautiful landscape in the world, especially in the fall.



Forrest Shriver

Shriver, CEO of Sentinel Devices, develops AI-driven, cybersecurity-focused I&C solutions for nuclear operations. A Ph.D. graduate at 25, his research with ORNL led to patent-pending technology. Sentinel Devices, recognized among Georgia's Top 40 Most Innovative Companies, enables offline machine learning for fault detection and cybersecurity in nuclear operations. Shriver has active contracts with the Nuclear Regulatory Commission, the Air Force as well as multiple industry-leading nuclear vendors.

What did you want to be when you grew up? I always knew I wanted to be a cutting-edge scientist; I started reading my father's biomedical textbooks before I even really started taking serious science classes in middle school.

When did you first "discover nuclear"? I first discovered nuclear in my undergraduate "Modern Physics" course, when our professor covered how nuclear reactions directly lead to energy generation and the concepts/mechanisms of self-sustaining reactions. I was pretty much instantly captured by the idea of nuclear power.

Age: 29

Title: CEO, Sentinel Devices

Hometown: Brownsville, Texas

When you reflect on your career so far, which achievement stands out most? Getting my Ph.D. at 25 was a very proud moment for me. Also, working on AI for nuclear in 2016 when there was very little interest in applying AI inside of the nuclear industry. I ended up working with ORNL and building my models on its world-leading supercomputers, allowing me to develop models that could give a supercomputer-level answer in milliseconds without running a supercomputer.

Who has been your greatest influence? Tighe Smith, the CNO of Paragon, is a mentor and friend. I remember the exact moment I first met him. He gave me advice that I still use, and he's continued to give me advice that has helped get me to where I am today.

What's on your bucket list? My number-one item is to go to space.

Continued



Vlad Sobes

Sobes is advancing reactor physics, focusing on problems in nuclear data with a particular interest in the application of AI/ML algorithms, sensitivity analysis, and transport modeling. He leads design efforts for UTK's Flexible Neutron Source and contributes internationally through OECD NEA, IAEA, and ANS. His leadership in nuclear data working groups is driving innovation in modeling, standards, and experimental design.

What is a long-term career or personal goal?

A graduate student once challenged me to come up with a set of principles for our research group. Currently, the third principle is, "Work on interesting problems. For I believe that no world-changing results were ever achieved by uninterested people. Corollary: Don't begin working on problems that you are not interested in. Find another problem to work on." It is my long-term goal to continue to live by this principle.

Age: 35

Title: Charles P. Postelle Professor in Nuclear Engineering, University of Tennessee-Knoxville

Hometown: Nikolaev, Ukraine

What is your secret talent that few people know? I used to throw the javelin (track and field) in college.

Who has been your greatest influence? Ben Forget, for teaching me how to run a university research group; Luiz Leal, for teaching me nuclear data and how to be a lifelong mentor; Pablo Ducru, for teaching me how to be a scientific collaborator; Wes Hines, for teaching me how to lead an organization; and all the graduate students working with me.

What is your favorite food or restaurant? Justin Spencer at Canadian Nuclear Laboratories once told me that there is something primal in our DNA with respect to sharing a meal with others. So, it's more interesting for me who you eat with than what you eat. Same thing for travel: travel to see people rather than places.



Tyler Steiner

Steiner is the nuclear lead for the fission surface power project at NASA Glenn Research Center. His past research includes irradiation tests to verify the thermal performance of freeze-tolerant working fluids in a fission surface power-relevant radiation environment. He increased NASA radiation modeling capability by growing radiation transport code users at GRC and leads a multicenter, multiagency team to set direction of technology maturation for reactor and core components of SNP systems.

What did you want to be when you grew up?

I wanted to be a firefighter. The local station would keep its garage doors open occasionally. I would ask my mom to drive past the station so I could get a glimpse of the trucks. Even now, firefighters seem like superheroes, and what kid doesn't want to grow up to be a superhero?

Age: 30

Title: Nuclear engineer for space power systems, Thermal Energy Conversion Branch, NASA Glenn Research Center

Hometown: Hazleton, Pa.

When you reflect on your career so far, which achievement stands out most? This might be cliché, but being selected for the *Nuclear News* 40 Under 40 stands out. Last year's cohort included people I look up to and admire professionally and personally. I am incredibly honored, grateful, and happy to have been selected.

What is your secret talent that few people know? I absolutely love running. I have run four marathons, and I don't plan to stop.

What was your first job, and what did it teach you? My first job was at a Burger King. As with most first jobs, I learned the values of time management, discipline, dependability, and flexibility. Also, I learned how to make a perfect 10-oz. Whopper in 22 seconds.



Mauricio Tano-Retamales

Age: 33

Title: Modeling and simulation scientist, INL

Hometown: Mendoza, Argentina

Tano-Retamales led development of Pronghorn, a reactor modeling tool aiding next-gen nuclear plant design. At INL, he advanced turbulence modeling, reactor physics, and uncertainty quantification. His COVID-era AI work at Houston Methodist Hospital significantly reduced mortality. He also developed a fatigue risk assessment method and contributed to molten salt reactor research.

What did you want to be when you grew up?

I dreamed of becoming a professional soccer player. Like many kids in Argentina, *fútbol* was everything to me.

When did you first “discover nuclear”? When I was 14 I found a book in my hometown library: *Introduction to Nuclear Engineering* by John Lamarsh (2nd ed.). That book opened a whole new world for me.

When you reflect on your career so far, which achievement stands out most? Working at INL

stands out as a major milestone. Being part of the effort to demonstrate the next generation of advanced nuclear reactors is both exciting and deeply meaningful to me.

Who has been your greatest influence?

Enrico Fermi has been a huge influence on me. I admire his deep understanding of reactor physics and the elegant simplicity with which he explained complex concepts.

What is the top song on repeat on your Spotify right now?

I’m a big fan of folk music. I don’t have a single favorite, but any good folk tune can lift my spirits and keep me focused.

What’s on your bucket list? I want to write a book on modern modeling and simulation methods for advanced nuclear reactors. It’s a way to give back to the field and help the next generation of engineers.



Derica Taylor

Age: 32

Title: Mechanical engineer, nuclear equipment qualifications, Element Nuclear Huntsville

Hometown: Woodville, Ala.

As a project engineer, Taylor specializes in qualification of nuclear safety-related items under 10 CFR 50 Appendix B. She advanced from technician to engineer, contributing to major projects for Westinghouse, GE Hitachi, and NuScale Power. Her leadership ensures regulatory compliance and high-quality results across multiple complex initiatives.

What did you want to be when you grew up?

I was totally a science kid and wanted to be a paleontologist from the time I was five.

When did you first “discover nuclear”? I’ve grown up around nuclear my whole life. My dad was a nuclear engineer and worked for the Army Corps of Engineers for over 20 years before retiring. My path into nuclear wasn’t intentional, but like father like daughter, I suppose.

When you reflect on your career so far, which achievement stands out most? Honestly, being on this list is a huge achievement for me and stands out the most.

Who is your personal MVP? Greg Mason has always been in my corner, and Bobby Hardy has been a personal mentor for me for my entire career here at Element. My partner, Jacob, keeps me focused and talks through engineering problems with me (on a giant whiteboard and everything). And of course, my dad, who has apparently been subconsciously influencing me since I was a kid.

What was your first job, and what did it teach you? My first job was at McDonald’s when I was

Continued

16. It taught me how to thrive in a high-pressure environment, communicate effectively with a team, and stay focused on delivering a great customer experience, all while balancing school responsibilities. It was my first real introduction to professionalism and accountability.

What's the best career advice you have received? Via my colleague Don Fuhrman, engineering is a team sport. You need to be able to bounce ideas off others and take constructive criticism when it's given.



Stefano Terlizzi

Terlizzi leads advanced reactor modeling at Penn State and INL. He developed the first multiphysics simulation predicting hydrogen redistribution in microreactors and led NEAMS-based modeling of the MARVEL reactor. He founded Penn State's CREA lab and plays a key role in modernizing reactor physics education and DOE-supported initiatives.

Age: 35

Title: J. Brennan Early Career Professor, Penn State; joint appointee, INL

Hometown: Turin, Italy

What did you want to be when you grew up? I dreamed of building rockets for space exploration. I've always been fascinated by the idea of exploring the universe and the possibility colonizing Mars.

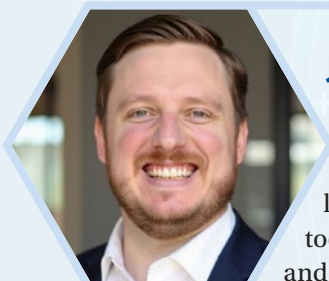
When you reflect on your career so far, which achievement stands out most? I'm very proud to serve as a faculty member at Penn State with a joint appointment at INL. Both institutions have a strong history of fostering a civilian application of nuclear engineering, and I enjoy the opportunity to work with bright, enthusiastic people.

What is a long-term career or personal goal? Mentoring the next generation of reactor physicists and nuclear engineers while contributing to fulfilling the promises of advanced reactor designs.

What is your secret talent that few people know? I'm a pretty decent soccer goalkeeper, and I try to play whenever I can.

What's the best career advice you have received? "Keep doing your work with integrity, and your time will come."

What's on your bucket list? Attending one of the upcoming FIFA World Cup matches. Hopefully Italy will qualify for it!



Jerrold Vincent

Jerrold Vincent is cofounder and CFO of Nuclearn, where he applies AI to streamline nuclear operations. He helped design tools that reduce repetitive engineering tasks and improve safety, planning, and compliance. With 15+ years in the industry, he bridges technical innovation with financial strategy to deliver practical, secure solutions for utilities.

When you reflect on your career so far, which achievement stands out most? Leaving the comfort of a job at a utility to build Nuclearn. It was the riskiest and hardest thing I've done in my career.

Age: 33

Title: Cofounder and CFO, Nuclearn

Hometown: Poway, Calif.

What is your secret talent that few people know? I'm very competitive in all of my hobbies. Long before Nuclearn, I became deeply engrossed in competitive *Rocket League* (a video game where you play soccer with rocket cars) and ranked in the top 1,500 out of over 40 million active players.

What is the top song on repeat on your Spotify right now? "Bicycle Race" by Queen—my kids request it constantly. Solo, "Chop Suey!" by System of a Down tops the list.

What's the best career advice you have received? Early in my career, I was waiting outside a meeting room to make a presentation to a group of executives and owners at Palo Verde. That presentation was to secure project funding to work on advanced analytics and machine learning use cases. I was 26, not very

experienced, and as nervous as one could be. My director, Ann Orr, a longtime APS leader and mentor, looked at me and said, "Isn't this fun? You only get so many of these opportunities. Regardless of how it goes, you're going to remember this. Enjoy it." I think about that advice every time I am facing something high-stakes.



Christopher Wagener

Wagener has led business development at Westinghouse with \$600 million in PWR fuel sales and nearly \$1 billion in order entries in 2025. He secured the first contracts for 24-month cycles using high-enrichment and high-burnup fuel, advancing long-term fuel strategies across the U.S. PWR fleet and shaping future international deployment.

When did you first "discover nuclear"? My senior year in high school I took a class called "Modern Problems" for which I wrote a paper

Age: 38

Title: Senior fuel business director, Westinghouse

Hometown: Plymouth, Minn.

on why we should be building more nuclear plants to support climate goals.

When you reflect on your career so far, which achievement stands out most? I had the privilege of creating a new commercial organization at Westinghouse and I am proud of the team. What they have accomplished, both in terms of

Continued

Congratulations, Jerrold Vincent 40 Under 40 Honoree

Nuclearn celebrates our Co-Founder & CFO, Jerrold Vincent.

His focus is simple: help nuclear teams get critical work done—faster, traceably, and within governance—through secure, human-guided AI.

Proudly built by nuclear professionals—for nuclear professionals.



Nuclearn

www.nuclearn.ai



personal growth and business accomplishments, is by far the greatest achievement of my career.

What was your first job, and what did it teach you? My first job was nuclear design engineer at Westinghouse, where I learned what it meant to be in nuclear power and how we each have a personal responsibility to keep the plants running safely.

What is your favorite food or restaurant? Anything Italian—a good homemade pasta or a wood-fired pizza is always my first choice.

What is the top song on repeat on your Spotify right now? I am proud father to four wonderful kids, ages 0 to 6. Ever since watching *The Super Mario Bros Movie*, AC/DC's "Thunderstruck" is played on repeat in my house.



Patrick White

White is a recognized expert in nuclear policy and regulation. He has testified before Congress on commercial fusion energy, led high-impact workshops on NRC reform, authored key industry reports on HALEU, and been the NRC Graduate Fellow at MIT. Active on ANS standards and presidential committees, he advances regulatory clarity and supports early-career professionals across the nuclear sector.

Age: 35

Title: Group lead for fusion safety and regulation, Clean Air Task Force

Hometown: Shaker Heights, Ohio

When you reflect on your career so far, which achievement stands out most? Testifying before the Senate Energy and Natural Resources Committee on fusion energy in September 2024.

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What is your secret talent that few people know? I bake a fantastic loaf of sour-dough bread.

What was your first job, and what did it teach you? I was a first-shift bagel baker at a Bruegger's Bagels in Cleveland, Ohio. I learned that the first

part of success is just showing up every day—even if you have to get there at 4:30 a.m.

What's the best career advice you have received? You usually won't be the smartest person in the room, but you will be the best at something. Find out what that is and focus on it. That will be your own path to success.



Trevor Williams

Williams leads Customer Success for Curtiss-Wright's I&C division, leveraging his experience as an engineer, manufacturing supervisor, and account manager. A certified PMP with a background in electrical engineering and business, he's delivered products to every U.S. utility and visited 27 plant sites. He presents at industry events, mentors STEM students, and serves on the Eastern Idaho PMI board.

What did you want to be when you grew up? Professional athlete or rodeo clown.

When did you first "discover nuclear"? During a summer internship at the Materials and Fuels Complex at INL. My office was just a stone's throw from EBR-II and a short drive from the historic EBR-I. These landmarks sparked my curiosity and deepened my appreciation for the field. From day one, I recognized the potential to make a meaningful impact and build a rewarding career in the nuclear industry.

What is a long-term career or personal goal? One of my goals is to visit every operating

Age: 38

Title: Program manager, Customer Success, Curtiss-Wright

Hometown: Pocatello, Idaho

nuclear power plant in the United States. Each plant I visit offers a unique glimpse into the technology, culture, and people that power our energy future.

What is your secret talent that few people know? One of my lesser-known talents is learning languages. I'm fluent in English and Portuguese, but my linguistic skills don't stop there. I also speak Rocky Mountain Elk, Merriam Turkey, and Mallard.

What is your favorite food or restaurant? Pizza and good barbecue are at the top of my list. When it comes to pizza, Lou Malnati's in Chicago stands out. As for barbecue, I've sampled it from all over the country, but Sparks Barbecue in Rexburg, Idaho, is hard to beat.

If you had a theme song, what would it be? Right now, I would say "Good Day" by Forrest Frank. The lyrics remind me that even in the chaos, there's purpose and joy to be found.



Aşkın Güler Yiğitoğlu

Yiğitoğlu leads risk and reliability research at ORNL, advancing PRA methods for complex nuclear systems. She developed the first reliability database for molten salt reactors and real-time digital twin models for reactor availability. Her work supports SMR deployment, fusion design, and energy storage reliability.

Age: 39

Title: Advanced systems risk and reliability analyst, ORNL

Hometown: Tekirdağ, Türkiye

When did you first "discover nuclear"? In fifth grade, I came across a newspaper article about Chernobyl. The images of the reactor building

Continued

and the discussion of its impact on northern Türkiye captured my attention.

When you reflect on your career so far, which achievement stands out most? One is being recognized as a 2016 George Apostolakis Fellow at the 13th International Conference on Probabilistic Safety Assessment and Management. My research on aging assessment of passive components was selected as one of the most promising early-career contributions in the field of risk assessment.

More recently, our research on real-time generational risk assessment has drawn interest from utilities and advanced reactor designers, helping lower barriers for both the current fleet and advanced reactors—which I find deeply rewarding.

What is your secret talent that few people know? One of my lesser-known talents is playing

the cello. I enjoy performing some of my favorite Bach minuets along with pieces from various film genres. Although I wasn't born with a natural gift for music, my mathematical mindset, persistence, and nearly a decade of practice have allowed me to develop my skills.

What is your favorite food or restaurant? My favorite cuisine is Turkish, and I have a particular fondness for Mediterranean food overall, especially when it's enjoyed with family and friends.

What's the best career advice you've received? The best career advice I received came from my mentor, George Flanagan, who boasts an inspiring nearly half-century career at ORNL. He taught me to always consider the long-term impact of my research.

What's on your bucket list? I hope to travel to all the world's Blue Zone regions.



Fan Zhang

Zhang advances nuclear cybersecurity and robotics for safer, more efficient plant operations. A frequently invited IAEA expert, she pioneered data-driven cyber defense for nuclear power plants and leads the iFAN Lab. Her outreach, ANS leadership, and invited role at the EU-US FOE Symposium highlight her impact across research, education, and policy.

What did you want to be when you grew up? I always wanted to be a professor. I'm incredibly grateful and happy that I'm living my dream, educating students and advancing research that makes a difference.

When did you first "discover nuclear"? When I was in high school I saw it highlighted in the news as a clean energy source with no pollution using only a small amount of fuel.

Age: 33

Title: Assistant professor, Georgia Institute of Technology

When you reflect on your career so far, which achievement stands out most? On the research side, I developed cyber-attack detection solutions that fuse both IT and OT information using machine learning to enhance cybersecurity; the paper I published on this has been cited over 400 times.

Mentoring students is the most important achievement to me, however. Seeing their own achievements and moments when they share how my mentorship shaped their research and personal growth mean the world to me.

Who has been your greatest influence? My students: Their curiosity, resilience, creativity, and growth constantly inspire me to be a better educator and researcher. In life, I would say my mom. She is a great artist and a dedicated teacher, always learning, radiating positivity, and with the kindest heart you've ever seen. Her creativity and compassion have deeply influenced the way I approach both life and work. ☒



Askin Guler Yigitoglu

*Advanced Systems Risk and Reliability Analyst
Fusion and Fission Energy and Science
Nuclear News 40 Under 40 Honoree*

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ORNL congratulates Askin Guler Yigitoglu for being named to Nuclear News' 40 Under 40 class of 2025. These honorees are shaping the future of nuclear science and technology, proving that the next era of energy will be brighter than ever.

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