



**PURDUE**  
UNIVERSITY®

School of Nuclear Engineering

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**SCHOOL OF NUCLEAR ENGINEERING CHRONICLES**

Legend has it that the unit 'barn' was established in 1942 by physicists M.G. Holloway and C.P. Baker while they were having dinner at the Purdue Memorial Union. They came up with the name because  $10^{-24}\text{cm}^2$  is "as big as a barn" for a nuclear reaction process. Professor Alex Sesonske (School Head, 1966-1973) taught in his class that the term came from the common Midwest expression, "someone was such a bad shot at hunting that they couldn't hit the broad side of a barn," implying that the probability of neutrons passing through nuclei to cause fission is so rare, their aim could be equated to that of bad hunters. Hope you enjoy the news. Boiler up!



## **MESSAGE FROM THE HEAD**

Dear Friends & Family of Nuclear Engineering,

I'm thrilled to share some exciting updates from the School of Nuclear Engineering. Over the past few months, we've made significant strides in research, contributed to groundbreaking innovation, and held influential programs to further nuclear energy education and development in the community. Our students and faculty have achieved remarkable success, with several receiving prestigious awards. Additionally, our alumni continue to shape our School and community with their leadership, public service, and technical achievements in nuclear engineering.

As we reflect on these accomplishments, I'm confident that the upcoming months hold even greater promise, with new opportunities for collaboration, innovation, and continued excellence on the horizon.

Warm Regards and Boiler Up!

Seungjin Kim  
Capt. James F. McCarthy, Jr. and Cheryl E. McCarthy  
Head of the School of Nuclear Engineering  
Purdue University

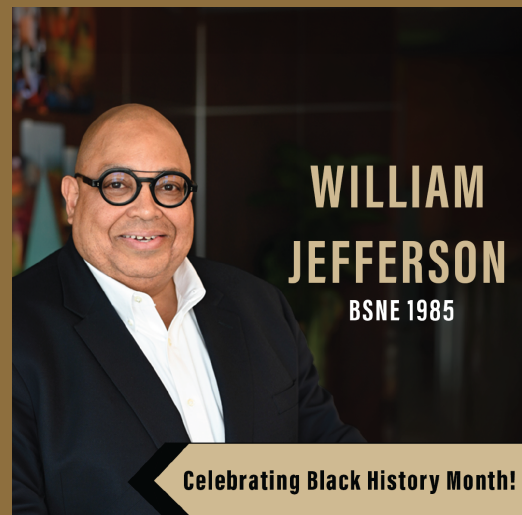
Click [here](#) to visit the school website.



## FEATURED STORIES

### !Celebrating Black History Month

We celebrate and honor the trailblazers who've paved the way for excellence in every field. William (Bill) Jefferson received his BSNE in 1985 and is among the first African-American School of Nuclear Engineering graduates. Bill has a had successful 39-year career and currently serves as the executive vice president of operations and chief safety officer at NiSource, a mid-sized natural gas and electric utility company that also performs power generation with coal, gas, solar, and wind. On Jan. 11, Bill returned to Purdue to share his story with the Minority Engineering Program (MEP) and contribute to NiSource's efforts in engaging and recruiting talented .engineers from Purdue



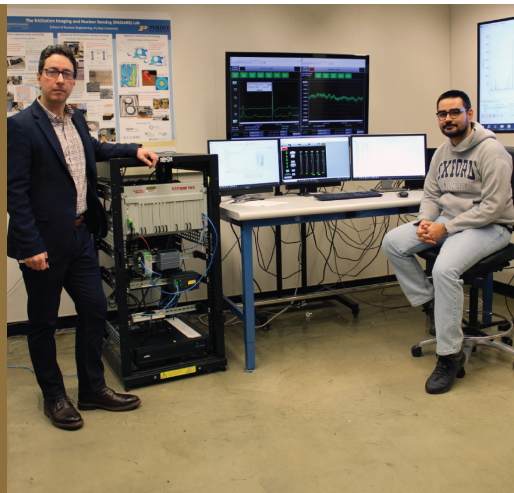
[.Read more of Bill Jefferson's story](#)

## The First-in-the-Nation Digital-Twin



## Research Reactor

Dr. Stylianos Chatzidakis, Assistant Professor at the School of Nuclear Engineering, Associate Reactor Director, and Director of the Nuclear Engineering Radiation Laboratory (NERL), is leading a team of graduate research assistants to create a digital-twin nuclear reactor control system. This digital-twin reactor will serve as a virtual simulation of the PUR-1 research reactor control system. Its main function is to help operators understand real reactor data and feed processed information back to the reactor operator. Once fully developed and tested, Dr. Chatzidakis hopes the technology will scale up to an actual reactor and help with lowering cost, performing predictive maintenance, and doing prognosis and diagnosis in real-time.



[Read more about the First Digital-Twin Research Reactor](#)

## Significant Visits to the Purdue University Reactor Number One (PUR-1)

On Jan. 19, Geri Richmond, the undersecretary for science and innovation at the U.S. Department of Energy, and Ariel Marshall, chief of staff for the undersecretary for science and innovation, toured the PUR-1 reactor to learn how Purdue's technology impacts the future of energy use.



Geri Richmond, the undersecretary for science and innovation at the U.S. Department of Energy

[Read about Geri Richmond's Visit](#)

On Dec. 5th, four U.S. Nuclear Regulatory Commission (NRC) staff members visited PUR-1 and met with Professor Stylianos Chatzidakis and several graduate students to discuss the School's all-digital research reactor.



U.S. Nuclear Regulatory Commission

[Read about the U.S. NRC's Visit](#)

## Dr. Han Gyu Joo Receives the 2023-2024 Outstanding Nuclear Engineer (ONE) Award

Congratulations to Dr. Han Gyu Joo (PhD 1996), the President of Korea Atomic Energy Research Institute (KAERI) and the 2023-2024 Outstanding Nuclear Engineer Award recipient! Dr. Joo has been serving as the President of the Korea Atomic Energy Research Institute (KAERI) since



December last year. He is on leave from his professorship at Seoul National University where he had served as a Professor of Nuclear Engineering for 18 years.

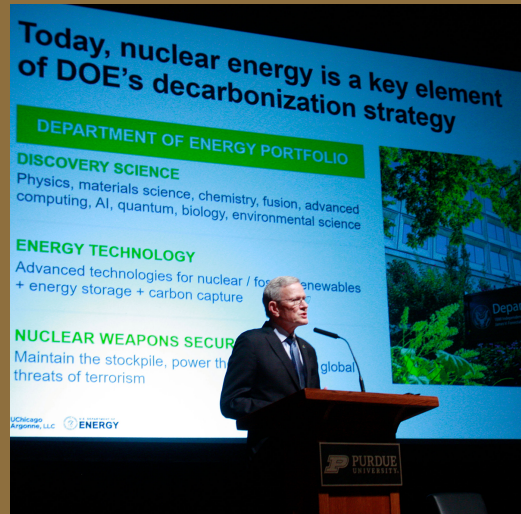
[Read more about Dr. Han Gyu Joo and previous ONE Award recipients](#)



## ANS Nuclear Newswire Features the Atoms for Humanity 2023 Symposium

ANS Nuclear Newswire published "Atoms for Humanity highlights nuclear's clean energy and space exploration roles," in its Feb. 2024 publication. This article details the 2nd Atoms for Humanity Symposium that took place on Oct. 25–26, 2023, at Purdue University's Fowler Auditorium.

[Read Nuclear Newswire's article](#)



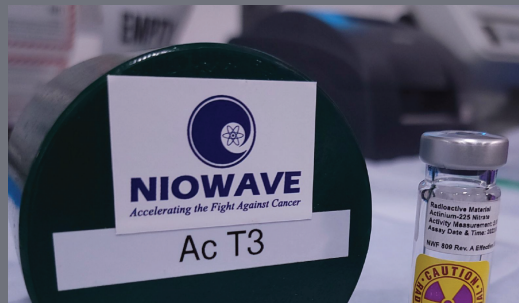
## Student, Faculty, & Alumni Achievements

### Terry Grimm, NE Alumnus and Founder of Niowave, Featured in ANS Nuclear Newswire for Work with Medical Isotopes

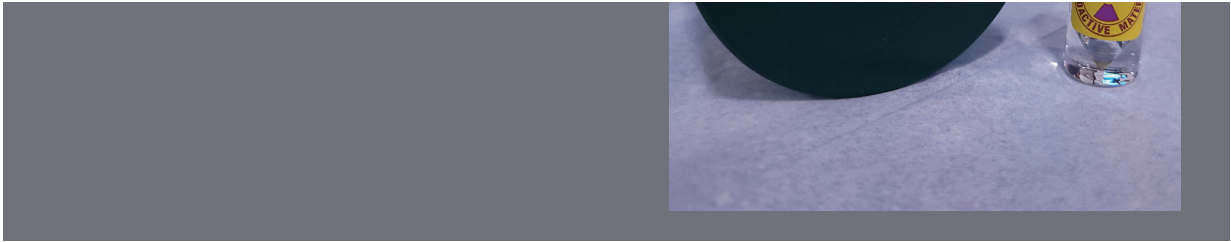
ANS Nuclear Newswire published, "The road to wellness: The task of getting lifesaving medical isotopes to patients," in its Feb. 2-24 publication. This feature article from the February issue looks at the challenges radiopharmaceutical companies like Niowave face in producing and

delivering radioisotopes for medical procedures worldwide. Read how these companies manage shipping logistics, adhere to regulations, and navigate tight schedules due to short half-lives of isotopes to successfully deliver these life-saving isotopes.

[Read full article](#)







## Recent Award Recipients

Faculty, students, and alumni have garnered prestigious accolades, exemplifying our School's commitment to excellence. Join us in celebrating their accomplishments.

[Read more about the School of Nuclear Engineering's awards](#)



## CONTACT & SOCIALS!

School of Nuclear Engineering  
363 North Grant Drive  
West Lafayette, IN, 47907