

## NOMATEN Hybrid Seminar

**Location:** NOMATEN seminar room

**Time:** 2 PM

**gotomeeting room (for online):** <https://meet.goto.com/NCBJmeetings/nomaten-seminar>

**Seminar date:** December 10th, 2024

**Title: Approaching Risk Analysis through the Integration of Nuclear Safety and Security**

**Speaker name:** Dr. Jason Harris

**Speaker affiliation:** Purdue University, West Lafayette, USA

**Abstract:** The safety and security of nuclear and radiological materials and their associated facilities share a common objective which is to ensure the protection of the population and the environment from an undue radiological hazard. Historically, many analytical methods have been developed and implemented to support safety- based risk assessment and decision analysis. Adapting and extending risk assessment to nuclear security applications has been limited because of the adaptive nature of adversaries and the lack of historical data of malicious attacks. Given the rising threat of nuclear and radiological terrorism, it is imperative to assess if facilities, such as reactors, universities and medical centers, have the means to fully understand and evaluate the risk of their radioactive sources. In this context, risk assessment is a function of threat, vulnerability and consequences. This presentation will give an overview of nuclear safety and security risk assessment activities in the Harris research group. Dr. Harris will discuss the Potential Facility Risk Index (PFRI), nuclear security culture assessment, and the development of human reliability performance methods and tools in nuclear safety and security integration.

**Bio:** Dr. Jason T. Harris is Professor of Radiological Health Sciences in the School of Health Sciences and Director of the Center for Radiological and Nuclear Security (CRANS) at Purdue University. He also currently serves as the Associate Dean of Graduate Programs and Online Education in the College of Health and Human Sciences. He received his BS in Marine Science and Biology from the University of Tampa, his MS in Nuclear Engineering from the University of Illinois at Urbana-Champaign, and his PhD in Health Physics from Purdue University. Prior to his current position he was Associate Professor and Co-Chair of the Department of Nuclear Engineering and Health Physics at Idaho State University and Associate Director of the Center for Advanced Energy Studies. His research interests are in several areas related to environmental and reactor health physics, radiation detection and measurement, and nuclear security. He has graduated more than 25 MS and PhD students and has served on research committees for nearly 70 MS and PhD students in health physics, nuclear engineering, and physics. He has authored or co-authored over 75 peer-reviewed papers or proceedings, delivered over 100 conference presentations, and has secured nearly \$10 million dollars in competitive external grants and contracts from federal funding agencies, international organizations, and private foundations. He has received several awards including the Health Physics Society Fellow designation and Elda Anderson Award, Fulbright Specialist, and the Purdue University School of Health Sciences Outstanding Young Alumni Award. Dr. Harris is active in the Health Physics Society, American Nuclear Society, the Institute of Nuclear Materials Management, and the International Atomic Energy Agency.