



Department of
Engineering Physics
UNIVERSITY OF WISCONSIN-MADISON

INSTITUTE FOR
N**CLEAR**
ENERGY SYSTEMS



Presents:

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Nuclear Nonproliferation and Security in a Changing World

Abstract: Global nuclear energy development gives many reasons to ensure its pursuit: climate change, energy security, growth of electricity demand, and socio-political factors. While the impact is big, so are the impeding issues commonly associated with nuclear power, such as waste and proliferation and security of nuclear materials. In a fast-paced world, the approach to nuclear nonproliferation and security demands dynamic solutions. In this seminar, I will discuss the novel technologies aimed at securing nuclear materials, starting with the reactors using antineutrino-based monitors, detecting nuclear materials at the borders using active interrogation methods, and enabling innovation through interdisciplinary research. Computational and experimental results of most recent efforts, implications in nuclear policy and proposed path forward for future developments will be presented.

Biography: Prof. Anna Erickson earned her M.S. and Ph.D. in Nuclear Science and Engineering from Massachusetts Institute of Technology in 2008 and 2011, respectively. She is an Associate Professor of Nuclear and Radiological Engineering and an adjunct professor in the School of Aerospace Engineering at Georgia Institute of Technology. Her research is focused on bridging a critical gap between the reactor engineering and nuclear nonproliferation communities by integrating theoretical reactor analysis and design and experimental detection. Dr. Erickson is the Director of the Consortium for Enabling Technologies and Innovation, a \$25M Consortium sponsored by DOE National Nuclear Security Administration and composed of twelve institutions of higher education (IHE) and twelve national laboratories with an objective to create a research and education environment to support cross-cutting technologies for nuclear nonproliferation. She is a co-author of *Active Interrogation in Nuclear Security: Science, Technology, and Systems*, published by Nature Springer in 2018, and over a hundred of journal publications, conference proceedings and presentations.

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