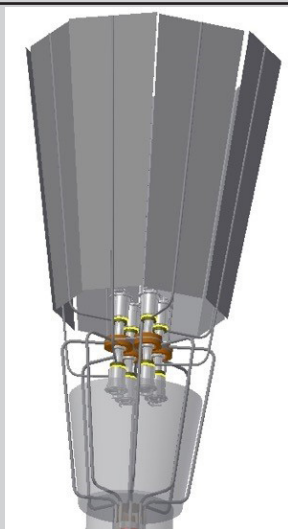


# Computer Science Seminar

## Nuclear Engineering and Computer Science FOR SPACE (and for Earth)

Andrew Fallgren  
Los Alamos National Laboratory



Micro reactors are a new category of small reactors (1KW to 10MW electric) that are transportable and are of significant interest for a variety of applications. Over the past 3 years, a scalable micro reactor prototype for NASA was developed, built, and tested by Los Alamos and NASA Glenn Research center. The ability to accurately model and simulate small nuclear reactors was critical in our ability to successfully license and carry out this experiment, and is critical for further development of this class of reactors. Many challenges arise in the adequate simulation of these reactors including algorithm development, memory and CPU usage, and usage on High Performance Computing machinery. This talk will cover how the engineering and computer science aspects interact to provide unique challenges in this

area.

**Bio:** Andrew Fallgren is a research and development engineer at Los Alamos National Laboratory, where he works in the Nuclear Engineering and Nonproliferation Division. In his time at the lab Mr. Fallgren has worked on a variety of projects that involve both nuclear engineering and computer science including: working on user interface design and implementation for legacy software; agent based modeling of nuclear treaty verification; and reactor design, modeling, and prototyping. Mr. Fallgren received his B.S. in Nuclear Engineering 2010 and his M.S. in Computer Science in 2016 both from Missouri S&T.

**Date: September 17, 2018**

**Time: 10:00-10:50 am**

**209 Computer Science Building**

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