

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES
COLLOQUIUM

Friday, April 5
3:00 – 4:00 PM
Maria Sanford, Room 101

**NUCLEAR WEAPONS AND NONPROLIFERATION:
STUDENT RESEARCH AND OPPORTUNITIES
IN THE SCIENCE OF NATIONAL SECURITY**

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NNSA'S NEVADA NATIONAL SECURITY SITE

Abstract: Nuclear security is in the news more now than since the earliest days of the cold war, and the rise of new nuclear states and non-state actors attempting to obtain nuclear materials has shifted the way the world views nuclear threats. Two of the most important priorities in the U.S. are (i) ensuring the safety, security, and effectiveness of the nuclear weapons stockpile and (ii) working to prevent and counter nuclear weapons proliferation. In this presentation, we will introduce the Stockpile Stewardship and Defense Nuclear Nonproliferation missions of the National Nuclear Security Administration (NNSA), which comprise one of the largest scientific and R&D enterprises in the world. While the number of mathematicians and statisticians working in nuclear security is dwarfed by the number of physicists, chemists, and engineers, there are many exciting opportunities for students of all scientific and engineering backgrounds to contribute to the most important technical problems in nuclear security, from analyzing data in weapons-related experiments to modeling of hydrodynamics and other physical processes to the large-scale data science needed for monitoring the movement of nuclear materials. The NNSA laboratories and sites all maintain vibrant internship programs for undergraduate and graduate students in the mathematical sciences, and we will present the results of some recent student work in the NNSA enterprise as well as provide information on upcoming research opportunities.

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