

UNIVERSITY OF NOTRE DAME  
DEPARTMENT OF PHYSICS  
COLLEGE OF SCIENCE

***SPECIAL***  
**NUCLEAR SEMINAR**

**Speaker:** **Dr. Andrew Steiner**  
**University of Washington**

**Title:** ***Constraining the EOS of Dense Matter  
and the Nucleon-Nucleon Interaction  
from Neutron Star Observations***

**Date:** **Friday, June 21 2013**

**Time:** **2:00pm EST**

**Place:** **Nieuwland Science Hall Room 124**

\*Refreshments will be served prior to the seminar in room 124.

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ALL INTERESTED PERSONS ARE CORDIALLY INVITED TO ATTEND

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Neutron stars provide an exciting laboratory for the physics of matter at extreme densities. In particular, neutron star mass and radius measurements are providing novel constraints on the nuclear symmetry energy, the properties of neutron-rich nuclei, the nucleon-nucleon interaction, and the equation of state of dense matter. I will review these radius measurements and their systematic and statistical uncertainties and show how these constraints arise from a Bayesian analysis of the data. Radius observations are not yet sufficient to determine the composition of the neutron star core, and I will describe a handful of other types of neutron star observations which have interesting connections to nuclear physics and the EOS of dense matter.