

Abstract Submitted  
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**The Symmetry Energy, Nuclei, and Neutron Stars** ANDREW STEINER, LANL and JINA/NSCL at MSU — The isospin symmetry energy, also known as the nuclear symmetry energy, is one of the key bridges between the description of heavy nuclei and neutron stars. Correlations among several observables that are connected to the symmetry energy will be discussed including the neutron skin thickness in heavy nuclei, the pressure of neutron-rich matter, the degree of isospin diffusion in intermediate-energy heavy-ion collisions, the radii of 1.4 solar mass neutron stars, and the threshold density for the direct Urca process. Particular attention will be paid to the critical density for the direct Urca process and how it can be modified by the isospin dependence of the symmetry energy. Connections to present neutron star observations and cooling data will be discussed.

Andrew Steiner  
LANL and JINA/NSCL at MSU

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