

Abstract Submitted  
for the DNP20 Meeting of  
The American Physical Society

**Measuring COHERENT Elastic Neutrino Nucleus Scattering at the SNS with Germanium**<sup>1</sup> MATTHEW GREEN, North Carolina State University, COHERENT COLLABORATION — Since the COHERENT Collaboration reported the first measurement of Coherent Elastic Neutrino Nucleus Scattering (CE $\nu$ NS) at Oak Ridge National Laboratory's Spallation Neutron Source (SNS) in 2017, its members have been measuring CE $\nu$ NS and other neutrino-nucleus cross section measurements in additional nuclei, including Ar, Na, Fe, and Pb. Recently, COHERENT has started construction of a 16-kg array of low-noise, low-threshold P-Type Point Contact (PPC) germanium detectors to measure the CE $\nu$ NS recoil spectrum at the SNS with the lowest systematic uncertainties to date. We report on the design and physics reach of this detector array, and recent efforts to further constrain systematics through updated measurements of nuclear recoil quenching factors in germanium.

<sup>1</sup>Supported by the Department of Energy and National Science Foundation

Matthew Green  
North Carolina State University

Date submitted: 01 Jul 2020

Electronic form version 1.4