Please place in same session with other Nab collaboration presentations. for the SES15 Meeting of The American Physical Society

> **Geant4 Simulation of the Nab Experiment**¹ ERIC STEVENS, Univ of Virginia, NAB COLLABORATION — The Nab experiment at the SNS aims to measure a, the electron-neutrino correlation, and b, the Fierz interference term, in free neutron beta decay. The work reported here focuses on a precise Geant4 simulation of the Nab apparatus. Specifically, the goals of this task are to accurately model the magneto-electrostatic spectrometer, the custom segmented silicon detector response, and the overall response function of the system as a whole. Ultimately, the Geant4 code will produce fully realistic synthetic data to compare with measured data on an equal footing. Furthermore, the code has the capability to model the radioactive sources used in preliminary tests at the Ultracold Neutron Source (UCN) at the Los Alamos Neutron Science Center (LANSCE). Current results will be presented.

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