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Measuring Neutron Beta Decay Correlations with the Nab Experiment JOSHUA HAMBLEN, University of Tennessee at Chattanooga, NAB COLLABORATION COLLABORATION — The Nab experiment aims to make precise measurements of unpolarized free neutron beta decay, specifically the electron-neutrino correlation parameter, a, to a precision of $\delta a/a \leq 10^{-3}$ and the Fierz interference term, b, to $\delta b \approx 3 \times 10^{-3}$. The results will test the unitarity of the CKM matrix as well as offer a glimpse into possible physics beyond the Standard Model. The experiment features a long asymmetric electromagnetic spectrometer that directs the decay products to silicon pixel detectors that will measure the electron energy and proton momentum. These are used to reconstruct the electron-neutrino angle to determine 'a' and the electron energy spectrum, which is used to determine 'b'. The Nab apparatus is currently being commissioned at the Fundamental Neutron Physics Beamline at the Spallation Neutron Source at ORNL. I will present an overview of the experiment as well as a status update.

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