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The Nab experiment<sup>1</sup> CHRISTOPHER CRAWFORD, University of Kentucky, NAB COLLABORATION — Neutron decay is a clean semi-leptonic process which depends on the vector  $G_V$  and axial-vector  $G_A$  coupling constants. The ratio  $\lambda = G_A/G_V$ , which can be extracted from various correlations in decay products of the neutron, is important for determination of  $V_{ud}$  in unitarity tests of the CKM matrix, and to test extensions of the standard model. The goal of the newly funded Nab experiment is to measure the electron-neutrino decay correlation a with a relative uncertainty of  $10^{-3}$ , and the Fierz interference term b with an overall uncertainty of  $3 \times 10^{-3}$ . This experiment uses a new technique to determine the electron-neutrino angle from the energy of the electron and proton, detected in coincidence. We will present the physical design and projected sensitivity of this experiment.

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