

Abstract Submitted  
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**Measuring  $G_E^n$  at High Momentum Transfer** ROBERT FEUERBACH, Thomas Jefferson National Accelerator Facility, GEN COLLABORATION, HALL A COLLABORATION — A precision measurement of the electric form-factor of the neutron,  $G_E^n$ , at  $Q^2$  up to  $3.5 \text{ GeV}^2$  was recently completed in Hall A at the Thomas Jefferson National Accelerator Facility (Jefferson Lab). The ratio of the electric to magnetic form-factors of the neutron,  $G_E^n/G_M^n$ , was measured through the beam-target asymmetry  $A_\perp$  of electrons quasi-elastically scattered off neutrons in the reaction  ${}^3\overline{H}e(\vec{e}, e'n)$ . The experiment took advantage of recent developments of the electron beam and target, as well as two detectors new to Jefferson Lab. The measurement used the accelerator's 100% duty-cycle high-polarization (typically 84%) electron beam and a new, hybrid optically-pumped polarized  ${}^3\overline{H}e$  target which achieved in-beam polarizations in excess of 50%. A medium acceptance (80msr) open-geometry magnetic spectrometer (BigBite) detected the scattered electron, while a newly constructed neutron detector observed the released neutron. An overview of the experiment and the experimental motivation will be discussed, in particular the large range of predictions from modern calculations for  $G_E^n$  at this relatively high  $Q^2$ . Finally, the analysis progress and preliminary results will be presented.

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