**Physics Seminar**

**Joshua Magee**

The College of William and Mary

*“Qweak : Parity Violating Electron Scattering on Hydrogen and Aluminum"*

Abstract

The Qweak experiment completed data taking at Jefferson Laboratory in 2012, with the aim of making the \_rst experimental determination of the proton's weak charge, QpW, which is the neutral-weak analog of the proton's electric charge. The experiment measured the small parity-violating asymmetry in elastic electron-proton scattering at forward angles and low momentum-transfer (Q2 = 0:026 GeV2), allowing direct extraction of QpW. One key piece of the experiment is accounting for the target thin aluminum windows, which provided about

30% of the measured signal. This correction required careful measurements of both scattering rate and the \_rst measurement of the parity-violating asymmetry on aluminum. An experimental overview will be provided, along with preliminary analysis and future implications to Standard Model physics. Emphasis will be placed on the aluminum target background correction, including the parity-violating asymmetry measurement in aluminum.

**Monday, July 6, 2015**

**11:00 am**

**CEBAF Center Conference Room L102**