Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Investigating the EMC effect in highly-virtual nucleons at Jefferson Lab's Hall B CALEB FOGLER, Old Dominion University, CLAS COLLABORATION COLLABORATION — We are measuring how the quark-structure of the bound proton varies with its initial momentum to directly determine how and why the structure of bound protons differs from free ones. We will do this using Deep Inelastic Electron Scattering (DIS) from a bound proton in deuterium, detecting the backward spectator neutron to "tag" the initial momentum of the struck proton. This will help resolve the 35-year-old enigma of the EMC effect. We constructed and installed a Backward Angle Neutron Detector (BAND) just upstream of the existing CLAS12 spectrometer at Jefferson Lab to detect the backward spectator neutrons at scattering angles between 160 and 170 degrees. We detect the scattered electron with CLAS12 and the recoiling neutron with CLAS12 at intermediate angles or by BAND at backward angles, thereby "tagging" the DIS scattering off the proton in the deuteron. I will present the BAND detector and preliminary results from the Spring 2019 experimental runs.

Caleb Fogler
Old Dominion University

Date submitted: 02 Jul 2019 Electronic form version 1.4