

Abstract Submitted
for the DNP15 Meeting of
The American Physical Society

Neutron Transverse Spin Structure using BigBite and Super BigBite Spectrometers in Jefferson Lab's Hall A¹ ANDREW PUCKETT, University of Connecticut — The Super BigBite Spectrometer (SBS), currently under construction for experiments in Jefferson Lab's Hall A, is a novel magnetic spectrometer designed for the detection of charged and neutral particles at forward scattering angles with large solid angle and momentum acceptance at the highest luminosities achievable using JLab's 11 GeV electron beam. Originally designed to facilitate precision measurements of nucleon electromagnetic form factors at large momentum transfers, the capabilities of SBS also make it suitable for the investigation of the nucleon's three-dimensional spin structure in semi-inclusive deep-inelastic scattering (SIDIS). The precision study of novel polarization phenomena such as target transverse single-spin asymmetries (SSA) in SIDIS, requires measurements with high statistical precision and wide coverage of the 4-dimensional kinematic phase space of the SIDIS process. This talk will present an overview of approved JLab experiment E12-09-018, that will use the SBS, the existing BigBite spectrometer and an upgraded high-luminosity polarized ³He target to map the transverse spin structure of the neutron in the valence region with unprecedented precision.

¹Supported by the US Department of Energy Office of Science

Andrew Puckett
University of Connecticut

Date submitted: 06 Jul 2015

Electronic form version 1.4