Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

High Luminosity Spin-Polarized Target for the SpinQuest Experiment JOSHUA HOSKINS, University of Virginia — The SpinQuest collaboration will measure the sea quark Sivers asymmetry using Drell-Yan production from the 120 GeV proton beam of the Fermilab Main Injector incident on transversely polarized proton and deuteron targets. Measuring a nonzero Sivers asymmetry would provide strong evidence for nonzero orbital angular momentum of sea quarks. The use of both polarized hydrogen and deuterium targets will provide an independent extraction of the u_bar and d_bar contributions in the range of $0.1 < x < 0.5$. In order to provide high figure-of-merit measurements of the sea quark Sivers functions, high luminosity, transversely polarized targets are required. The polarized target system constructed by UVA-LANL consists of a 5T, split-coil, superconducting magnet and uses a 140 GHz microwave source to provide highly polarized protons and deuterons via dynamic nuclear polarization (DNP). The expected average target polarization for SpinQuest is 80% and 32% for the hydrogen and deuterium targets, respectively. A brief overview of the SpinQuest experiment and a survey of the high luminosity polarized target will be presented.

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Date submitted: 26 Jun 2019 Electronic form version 1.4