

Abstract Submitted  
for the DNP13 Meeting of  
The American Physical Society

**Fermilab Experiment-906/SeaQuest: Exploring Nucleon Structure through the Drell-Yan Process** BRYAN RAMSON, University of Michigan, SEAQUEST COLLABORATION — SeaQuest will investigate the large light-flavor asymmetry in the nucleon sea first experimentally observed by the CERN New Muon Collaboration (NMC) and further investigated by Fermilab Experiment-866/NuSea. Through the Drell-Yan process produced in collisions between 120 GeV protons provided by the Fermilab Main Injector and fixed hydrogen and deuterium targets, SeaQuest will measure the ratio of  $\bar{d}(x_t)$  and  $\bar{u}(x_t)$  at momentum fractions in the interval  $0.11 \leq x_t \leq 0.45$ . At this beam energy, Drell-Yan production is enhanced roughly by a factor of seven while background  $J/\psi$  production is reduced by the same factor relative to the rates of NuSea's 800 GeV beam. This leads to an enhanced precision by roughly a factor of 50. Additionally, the lower center-of-mass energy and higher precision of the SeaQuest experiment will allow for an enhanced investigation of parton energy loss through cold nuclear matter and significantly improve measurement of the modification of sea quark densities in the nuclear environment. SeaQuest had an initial two month commissioning run in March and April of 2012. Results from the commissioning run and an update on the recently undertaken two year second run will be presented.

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Date submitted: 01 Jul 2013

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