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**Preliminary Measurement of Longitudinal Spin Asymmetry $A_1^{^3He}$** DIANA PARNO, Carnegie Mellon University, JEFFERSON LAB E06-014 COLLABORATION — Recent measurements of the nucleon-virtual photon longitudinal spin asymmetry $A_1$ for the proton and neutron have called into question the perturbative QCD prediction that the ratio of polarized-to-unpolarized down-quark PDFs, $\Delta d/d$, approaches 1 at large $x$. As part of Experiment E06-014 in Hall A of Jefferson Lab, double-spin asymmetries were measured in the scattering of a polarized electron beam from a polarized $^3$He target in the deep inelastic scattering region, allowing the eventual extraction of the neutron asymmetry $A_1^n$. We will discuss our analysis of data with beam energies of 5.9 and 4.7 GeV and present preliminary results for the nuclear asymmetry $A_1^{^3He}$ as measured with 4.7-GeV electrons for $0.2 < x < 0.65$ and $2\ \text{GeV}^2 < Q^2 < 5\ \text{GeV}^2$. Once corrections for nuclear effects have been completed, the resulting measurements of $A_1^n$ will provide a test of previous experimental results in advance of anticipated data from upcoming experiments at Jefferson Lab.

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