

**Proposal Number:** LOI12-14-002 **Hall: C**

**Title:** Tensor Asymmetry  $A_{zz}$  in the  $x>1$  Region

**Contact person:** E. Long

**Beam time request:**

Days requested for approval: 39 days  
Tune up included in beam request:

**Beam characteristics:**

Energy: 11 GeV  
Current: 100nA  
Polarization: No

**Targets:**

Nuclei: ND<sub>3</sub>  
Rastering: Yes  
Polarized: Yes

**Spectrometers:**

SHMS: Yes  
HMS: Yes  
Other (BigBite, etc.):

**Special requirements/requests:**

JLab/Uva solid polarized target with ND<sub>3</sub>.

**Technical Comments:**

This experiment utilizes the same apparatus and techniques as the conditionally approved b1 experiment C13-12-011. The comments in the TAC report for that experiment also apply to this experiment.

The requirement to understand and mitigate time-dependent systematic effects may be less as the asymmetry  $A_{zz}$ , at least for  $x>1$ , is expected to be larger than for b1. However, measuring with  $\Delta A_{zz} < 0.10$  still requires a systematic control of the raw asymmetry to better than 1%. This is still challenging with a target polarization that is cycled on and off about once a day. Furthermore, at  $x>1$ , short range structure enhances inclusive cross sections in nuclei relative to deuterium. This will reduce the dilution factor for  $x>1$  measurements, reducing the raw

asymmetries to levels where understanding and controlling systematic errors will still be important.