Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Azimuthal Single-Spin Asymmetries of Charged Pions in Jets in $p^{\uparrow}p$ Collisions at STAR KEVIN ADKINS, University of Kentucky, STAR COLLABORATION — The transversity distribution ($h_1(x)$), which describes the transverse spin structure of quarks inside of transversely polarized protons, is only accessible through channels that couple $h_1(x)$ to another chiral odd distribution, such as the Collins fragmentation function ($\Delta D(z, k_T)$). Significant Collins asymmetries of charged pions have been observed in semi-inclusive deep inelastic scattering (SIDIS) data. These SIDIS asymmetries combined with e^+e^- process asymmetries from Belle have allowed for the extraction of $h_1(x)$ and $\Delta D(z, k_T)$. Uncertainties on $h_1(x)$ remain large due to the limited statistics and kinematic reach of the available data. In transversely polarized hadronic collisions, Collins asymmetries may be isolated and extracted by measuring the spin dependent azimuthal distributions of charged pions in jets. This presentation will show the first significant midrapditiy ($|\eta| < 1$) Collins asymmetries measured in $\sqrt{s} = 200$ and 500 GeV $p^{\uparrow}p$ collisions. These results access higher momentum scales than the existing SIDIS data and will allow for a comprehensive study of evolution and factorization of the Collins channel.

Kevin Adkins
Univ of Kentucky

Date submitted: 09 Jan 2015 Electronic form version 1.4