# Exploring Quark Transversity in Polarized Proton-Proton Collisions at STAR

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A detailed understanding of the proton's properties is incomplete without the knowledge of the transverse spin structure of its constituent quarks, which may be accessed in proton-proton collisions via hadron-in-jet and di-hadron asymmetries. Both observables couple the quark transversity distribution to a spin dependent fragmentation function. For the di-hadron channel it is the collinear interference fragmentation functions, while for the hadron-in-jet channel it is the transverse-momentum-dependent (TMD) Collins function. The fact that these complementary channels probe the same physics, albeit within different theoretical frameworks, provides a unique opportunity to study TMD evolution and test factorization breaking in the TMD formalism. In this talk we present recent results from STAR's midrapidity ($|\eta| < 1$) transverse spin program along with comparisons to model calculations using $\sqrt{s} = 500$ GeV $p^{\uparrow}p$ collisions from 2011 and $\sqrt{s} = 200$ GeV $p^{\uparrow}p$ collisions from 2012 and 2015. The Collins asymmetries from 2012 and 2015 and di-hadron correlations from 2015 represent the most precise $\sqrt{s} = 200$ GeV results released to date. The di-hadron correlations and Collins asymmetries from 2011 constitute the first statistically significant signals reported at $\sqrt{s} = 500$ GeV.