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Recent Developments in Transverse Spin Physics at RHIC

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For decades, an enduring conundrum has been the origin of large azimuthal asymmetries in the production of hadrons from interactions involving a single beam of transversely spin-polarized protons. While the origins remain a mystery, theoretical and experimental engagement of this challenge has unlocked tantalizing opportunities for new insight into nucleon structure and more expansive formulations of pQCD, e.g. including transverse-momentum dependent parton densities (TMDs). The RHIC experiments continue this exploration through measurements of observables sensitive to the transversity, Sivers, and Collins functions in high-energy polarized-proton collisions. Recent breakthroughs may illuminate further longstanding questions: Do hadronic interactions paint the same picture as those seen in semi-inclusive deep-inelastic scattering? How do TMDs evolve with changing kinematics? Beyond existing probes, future measurements will enable even wider frontiers in understanding pQCD and nucleon structure.