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## Jets at RHIC: The intersection of high-energy and nuclear physics DANIEL MAGESTRO, The Ohio State University

30 years ago, the observation of streams of high transverse momentum  $(p_T)$  particles (jets) from fragmenting partons produced in high energy proton collisions helped to uncover the parton substructure of hadrons. In high energy heavy-ion collisions, jets have emerged as a tomographic tool of the hot and dense matter formed in the collision. Bjorken first suggested that jets might be suppressed in nuclear collisions, due to energy loss of the outgoing parton traversing the dense medium. At RHIC jets have been studied via azimuthal correlations of high- $p_T$  hadrons, and a series of correlation measurements that support the energy loss picture has provided strong evidence for the predicted phase of partonic matter at high energy densities. I will present an overview of jet and di-jet measurements at RHIC, emphasizing new studies of azimuthal correlations that provide strong constraints on the nature of the medium formed in the collision. I will also discuss future directions of jet studies, both at RHIC and at LHC, where a substantial increase in collision energy will open up a new frontier of jet physics in nuclear collisions.