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Type: **Talk**

## Jets in p+A and e+A Collisions - From RHIC to the EIC

*Thursday 4 August 2022 11:00 (25 minutes)*

The use of jets as a probe in p+A and e+A collisions allows access to the interaction of the hard-scattered partons with the nuclear environment and is sensitive to a wide range of scales. Recent advances in the use of jet substructure offer the potential for an even more finely-grained understanding of this interaction. Measurements of jets and jet substructure in these systems will provide unprecedented access not only to nuclear PDFs and saturation, but spin-orbit correlations in the nucleon through measurements of the Sivers and Collins asymmetries and how these observables can be modified in a nucleus. The sPHENIX detector currently under construction at Brookhaven National Laboratory's Relativistic Heavy Ion Collider (RHIC) is designed to significantly advance studies of the microscopic nature of nuclear matter. The Electron Ion Collider (EIC), to be built by JLab and BNL, will be unique in colliding polarized electrons off polarized protons and light nuclei, providing the capability to study multi-dimensional tomographic images of protons and nuclei, and collective effects of gluons in nuclei. In this talk we will both present an overview of jet and jet substructure measurements at RHIC and highlight the complementarity between p+A collisions at RHIC and e+A collisions at the future EIC.

### Preferred track

Jets & QCD at High Scales

### Subfield

Nuclear experiment

### Attending in-person?

Yes

### On behalf of collaboration?

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**Session Classification:** Hadron spectroscopy / Jets

**Track Classification:** Jets and QCD at high scales