

Tuesday

Mar. 6th

At 2:45pm



**Studying Quark Gluon Plasma in
Intermediate to Small Collision
Volumes via Particle Correlations**

Abstract:

A late development in the study of Relativistic Heavy Ion Collisions has been the observation of apparent hydrodynamic flow in the collisions of "small" species, where at least one of the projectiles has only one, or just a few, nucleons. This flow shows many of the same properties and QGP signals previously found in A+A collisions, where the number of nucleons, A, is large for both projectiles in the collision which I will review. The signal seems to be present in many other systems such as p+Pb, p+Au, d+Au, and He+Au at RHIC/ LHC energies, and even in rare p+p collisions at the LHC. Such signals appear in events where the produced particle multiplicity is large. However, the question arises whether such small volumes should also quench jets in the same way as previously observed in A+A. So far no experimental evidence has been seen for this, but it is unclear how strong the quenching could be and thus whether it may be hidden in the current uncertainties. A key step will be to study the behavior of the quenching in intermediate to small sized systems to see how or if the signal turns off. I present a summary of this situation including recent PHENIX analyses which address this question and the outlook for this and other similar QGP studies in the near future.

**CYCLOTRON
COLLOQUIUM**

**Dr. Justin
Frantz**

**Associate
Professor**

**Department of
Physics**

Ohio University

**CYCLOTRON
INSTITUTE**

Room 228

Refreshments will be
served at 2:30pm



**TEXAS A&M
UNIVERSITY**