

# NUCLEAR PHYSICS GROUP

Dept. of Physics & Astronomy  
Georgia State University, Atlanta, GA, USA

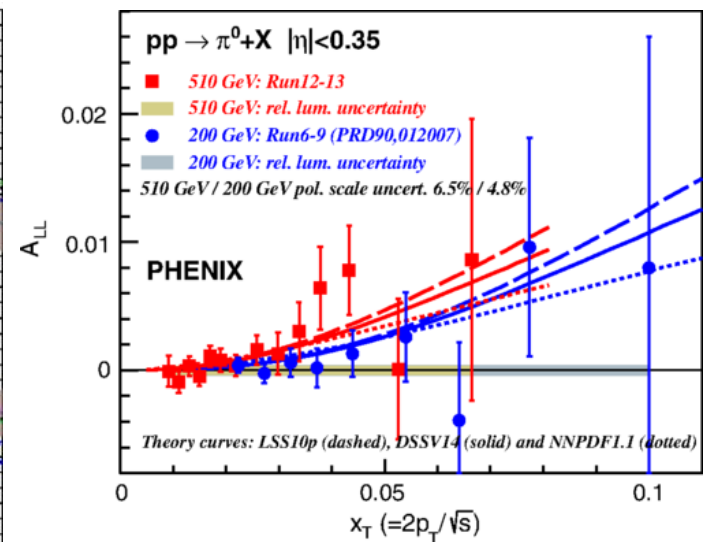
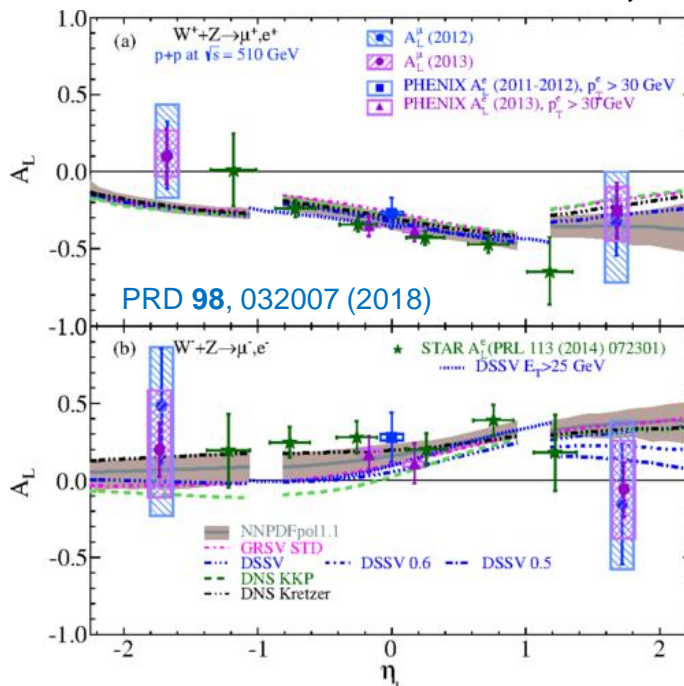


- 3 Faculty (X. He, M. Connors, and M. Sarsour)
- 1 PostDoc (X. Sun), 1 staff (C. Butler)
- 5 graduate and several undergraduate students

## ❖ Carry out research in several facilities: BNL, Fermi, Jlab, NIST and LANL

- Focus on probing QGP and nucleon spin structure

- Recent work on Spin



PRD 93, 011501(R) (2016)  
PRD 90, 012007 (2014)

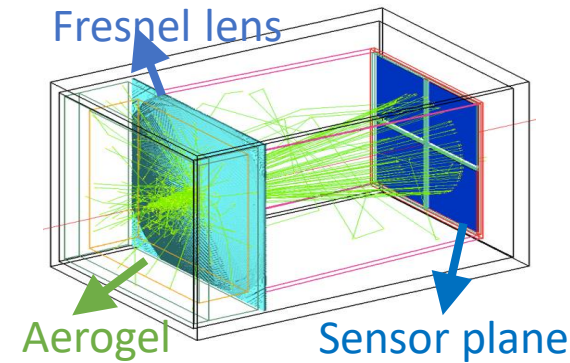
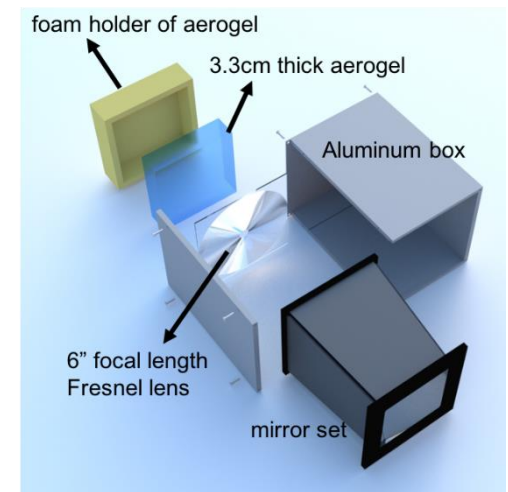
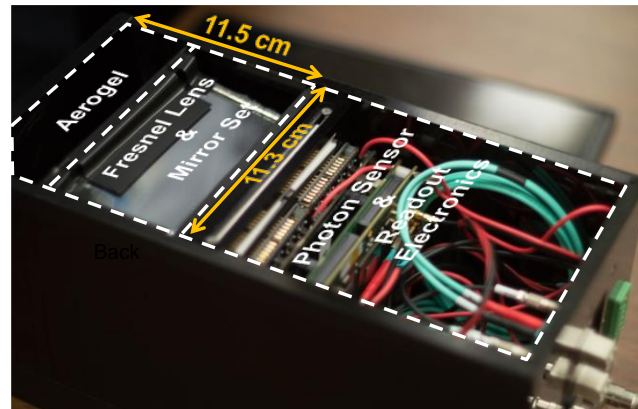
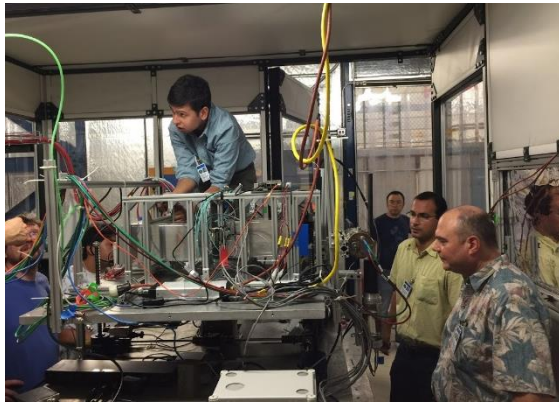
## ❖ Natural fit in COMPASS++/AMBER would be on these measurements:

- Hard exclusive reaction (GPD  $E$ )
- Drell-Yan (meson and nucleon structure)

# EIC: Modular aerogel RICH (mRICH) Detector Development funded by the EIC Detector R&D Program

- Compact PID device with momentum coverage up to 10 GeV/c for  $\pi/K$  and  $e/\pi$  up to 2 GeV/c.
- First aerogel RICH with lens-based focusing (for performance and cost)

## Two times of mRICH Prototype Beam Tests at Fermilab



Examples of cumulative ring images from the second mRICH prototype beam test

