# REU... but for TYC students and faculty?

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Chesapeake Section & NC Section of AAPT Fall 2024 Meeting Jefferson Lab, VA



## Start of Collaboration...

Seth Reiman, former student at Durham Tech

- Researched with Dr. Diane Markoff at NCCU in Spring 2023
- Researched with Dr. Matousek at Duke during Summer 2023
  - Published Paper in Proceedings of Science "Measuring Transversity in Di-Hadron Correlations with the ePIC Detector"
- Currently a student at University of Michigan



Dr. Diane Markoff, Professor at NC Central University

- Met Dr. Markoff back in graduate school at Virginia Tech through acquaintance in early 2010s.
- Started a dialogue of making a pathway for Durham Tech to NCCU.
- Spearheaded the NP-RENEW Grant started in 2024



## Grant

- Dr. Diane Markoff at NC Central University
- Dr. Reyco Henning at University of NC, head of TUNL DEI committee





NP-RENEW Grant: Expanding the NCCU Participation in Experimental, Low-Energy, Nuclear Physics Research at TUNL – this grant supports undergraduates and post bacs that are underrepresented in physics (two-year college students, students of color, LGBTQ+, women, and even TYC faculty members).

TUNL PIER plan (Promoting Inclusive and Equitable Research)- included promoting participation by regional community college faculty to expand opportunities for TUNL research.

## The Students...

- Durham Tech had 2 students attend
  - Arthur Davis- now at UNC Chapel Hill studying Math and Physics
  - Mack Bertrand- now at University of Rochester studying Physics and Music Composition



Arthur Davis Barbeau Group Supervised by Charlie Determination of scintillator detector response used in quenching factor measurements at the Tandem lab.



Mack Bertrand Barbeau Group Supervised by José Colon Riviera Used Geant4 to simulate a liquid scintillator detector exposed to a Co-60 source.





LENA the Laboratory for Experimen



## Me

- Only Full-time Physics Instructor at Durham Tech
- LENA (Laboratory of Experimental Nuclear Astrophysics) Research Group
- Advisor- Dr. Art Champagne, UNC-Chapel Hill
- Used Computational Fluid Dynamics in AutoCad to look at fluid flow for cooling the targets.
- Advised a graduate student, Evan, on a camera mount to see the spot size on the target.



## **Overall Good Experience**

### Students:

- Gained research and programming skills
- Met other students who are in the TUNL REU program
- Made connections with faculty and students at UNC, Duke, NCCU, and NCSU.
- They walked away still interested in Nuclear Physics. Yay!
- One has been asked to come back next summer, if they are interested!

#### Me:

- Gained new skills working with AutoCad
- Insight to discuss with students and bring into the classroom
- Helped where I was needed with graduate students
- Gender Minorities Luncheon
- Conversations with undergrad and graduate students
  - Discussions about teaching career with graduate students
- Learning to get back into the swing of research and the community after 10 years absent.
- Have two new ID badges and another office ③
- Creating a pathway for students to navigate and network.

# Thank you!

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- Diane Markoff <u>dmarkoff@NCCU.EDU</u>
- Reyco Henning <u>rhenning@unc.edu</u> (questions about the PIER program)





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