



2017
CTI Fellows' Finale
Celebration

CTI Teacher Leadership Meeting

Wednesday, January 11, 2017

UNC Charlotte Center City









Teacher Open House

Thursday, February 23, 2017

Charlotte Museum of History

HOUSE



**THURSDAY,
FEBRUARY 23, 2017**

5:30PM - 7:30PM

**CHARLOTTE MUSEUM OF HISTORY
3500 SHAMROCK DR, CHARLOTTE, NC 28215**

**LEARN HOW YOU CAN BECOME A CTI FELLOW
AND JOIN 2017 CTI SEMINARS**

OPEN TO FULL-TIME CMS CLASSROOM TEACHERS

**PLEASE REGISTER BY
MONDAY, FEBRUARY 20, 2017
AT CHARLOTTETEACHERS.ORG**

SEMINARS 2017

Using Mathematics to Understand Social Issues

Anthony Fernandes, Mathematics and Statistics, UNC Charlotte

Media and Minorities: Unpacking Stereotypes

Debra C. Smith, Africana Studies, UNC Charlotte

Chemical Interactions in the Body

Erland Stevens, Chemistry, Davidson College

Memorials, Memories, and American Identity

Emily Makas, Architectural and Urban History, UNC Charlotte

Doing Science: Hands-On Learning in the Laboratory

Susan Trammell, Physics and Optical Science, UNC Charlotte

Cultivating Visual Literacy

Maggie McCarthy, German Studies and Film, Davidson College

The Rise (and Fall) of Democracies around the World

Shelley Rigger, Political Science, Davidson College

From Self to Students: Canvassing Art to Explore Identity

Adriana Medina, Reading and Elementary Education, UNC Charlotte

Christopher Lawing, Programming, Bechtler Museum of Modern Art

Spring Orientation

Thursday, April 20, 2017

Discovery Place

















Charlotte Knights Baseball Game

June 2017

Duke Energy Suite





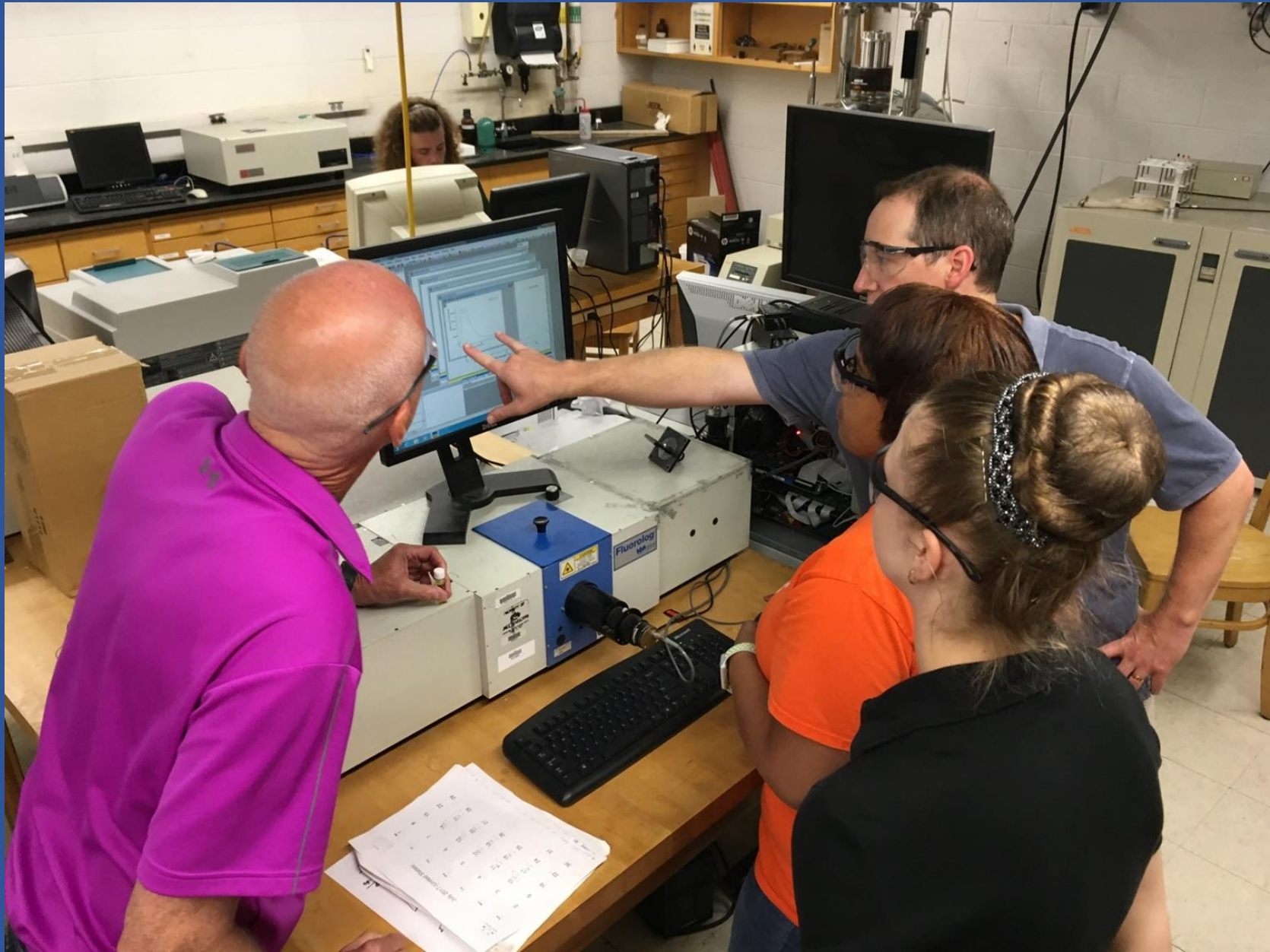


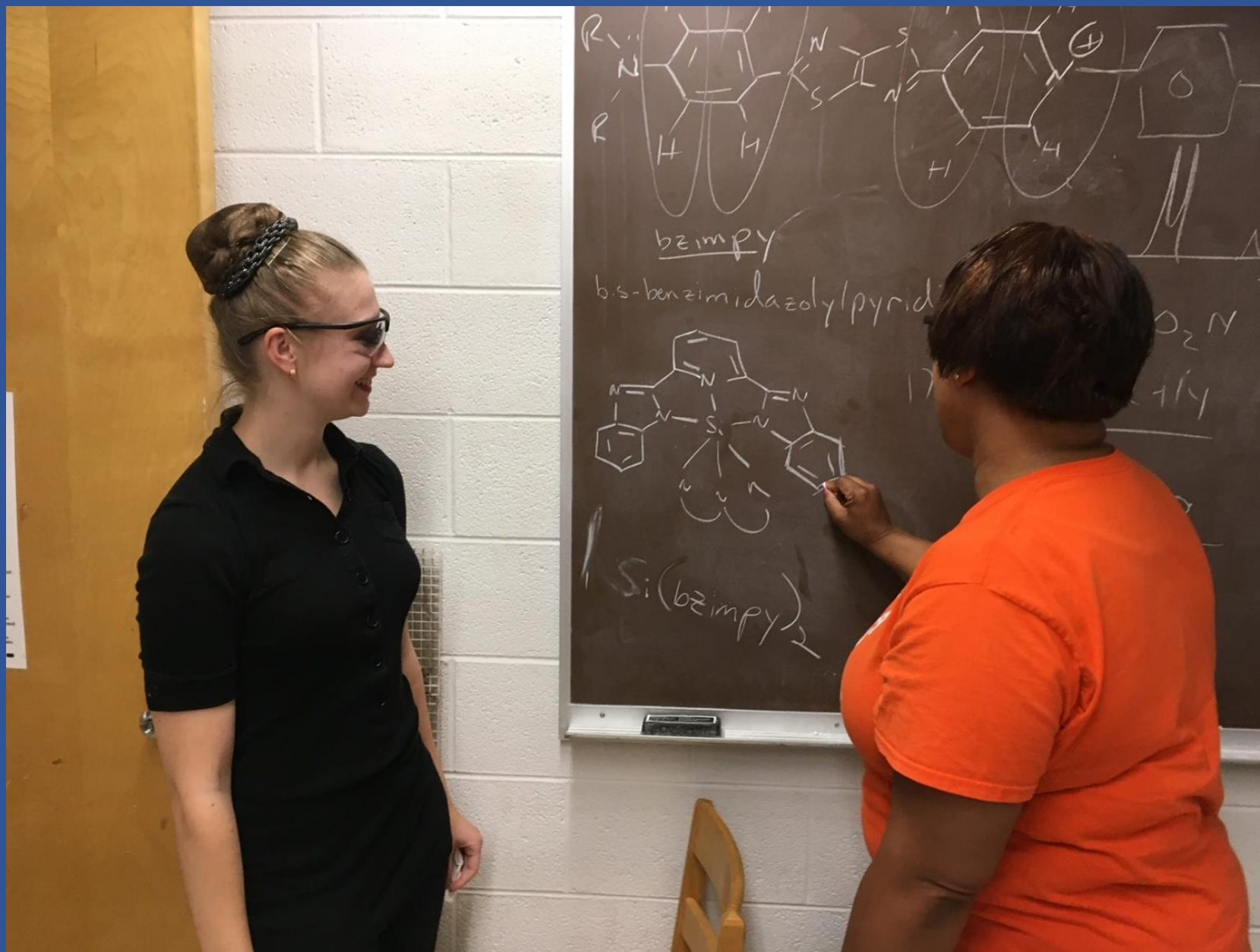


Summer Research Experience for Teachers

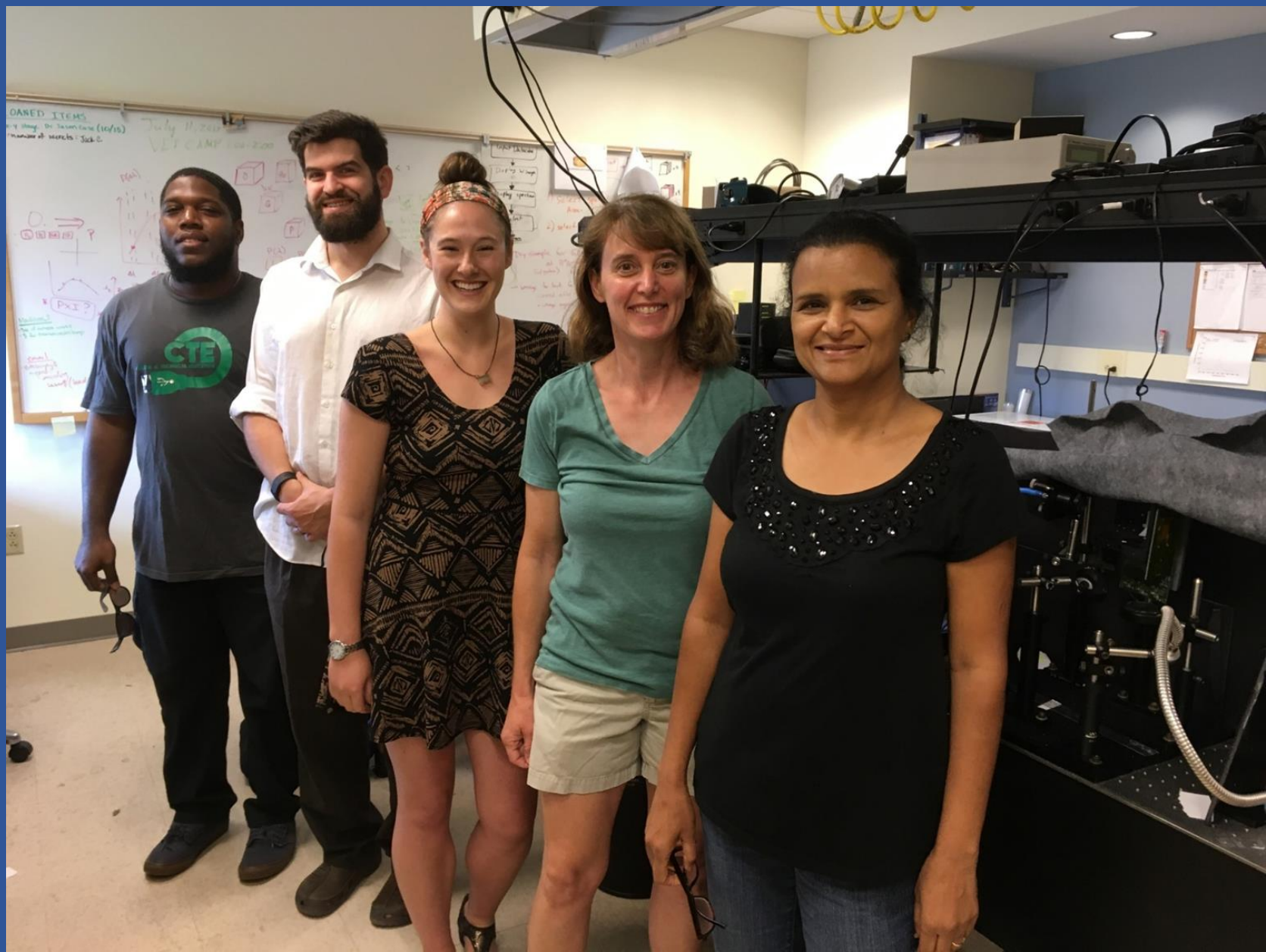
June, July and August 2017

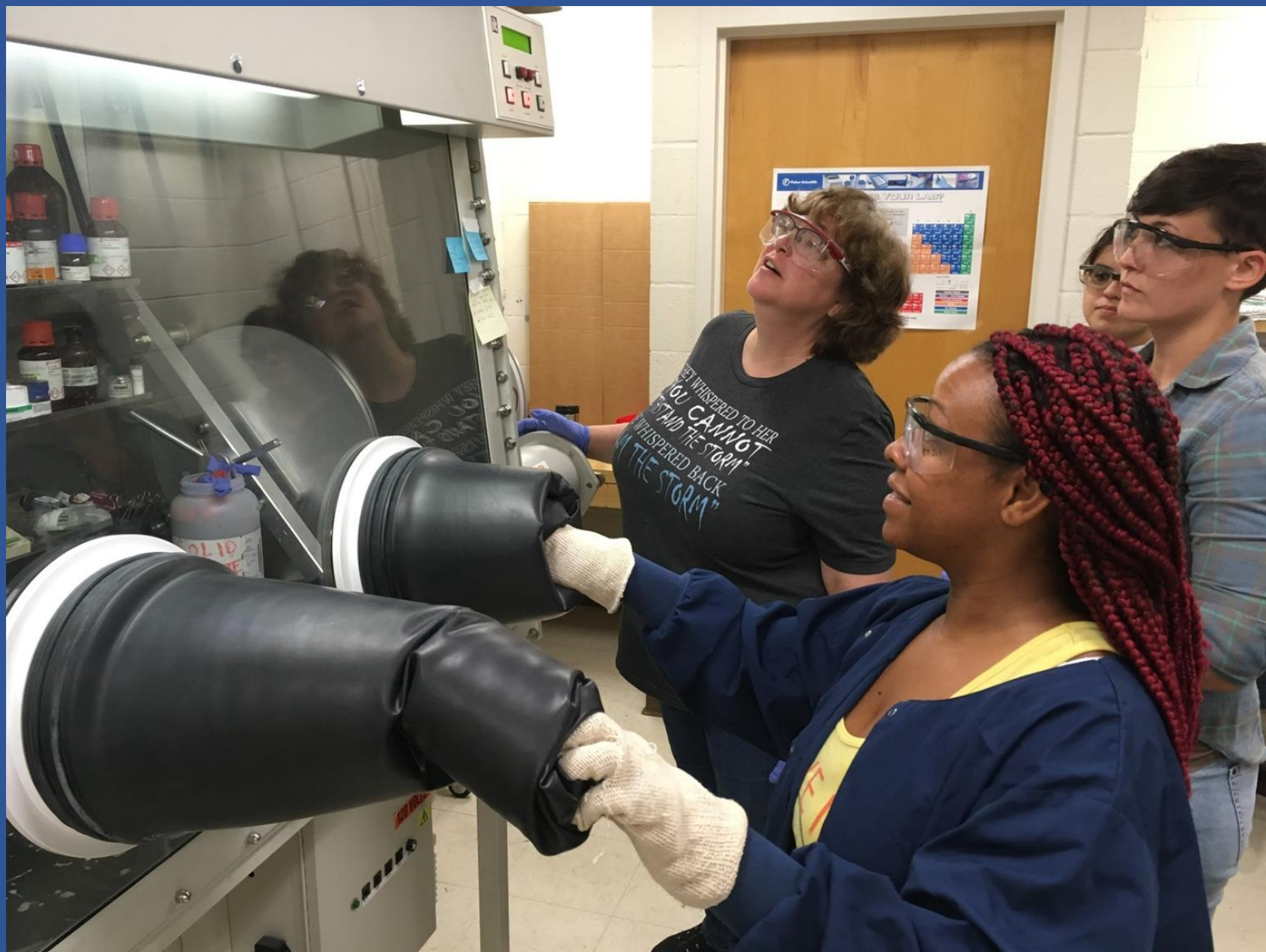
UNC Charlotte and Davidson College

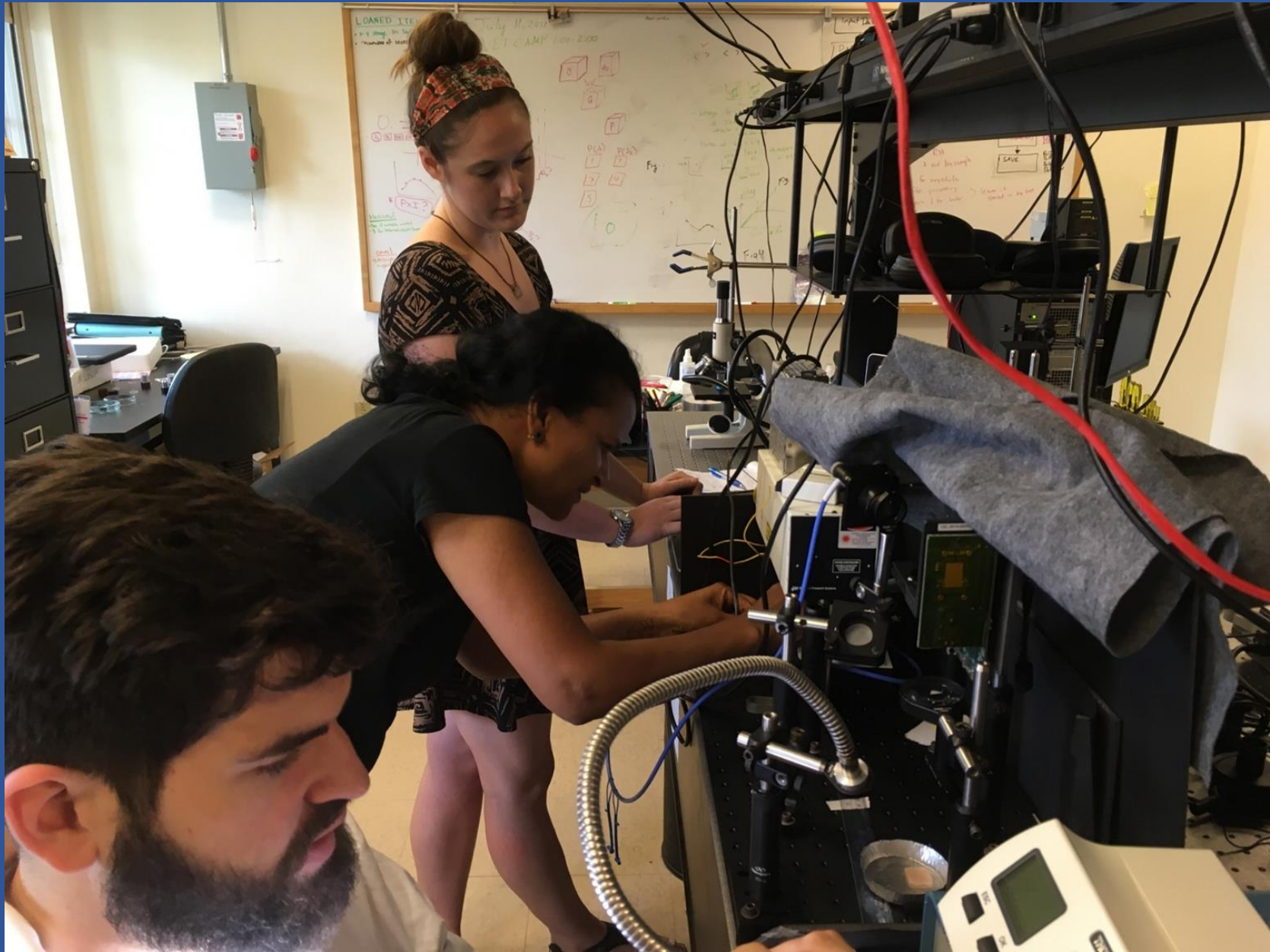


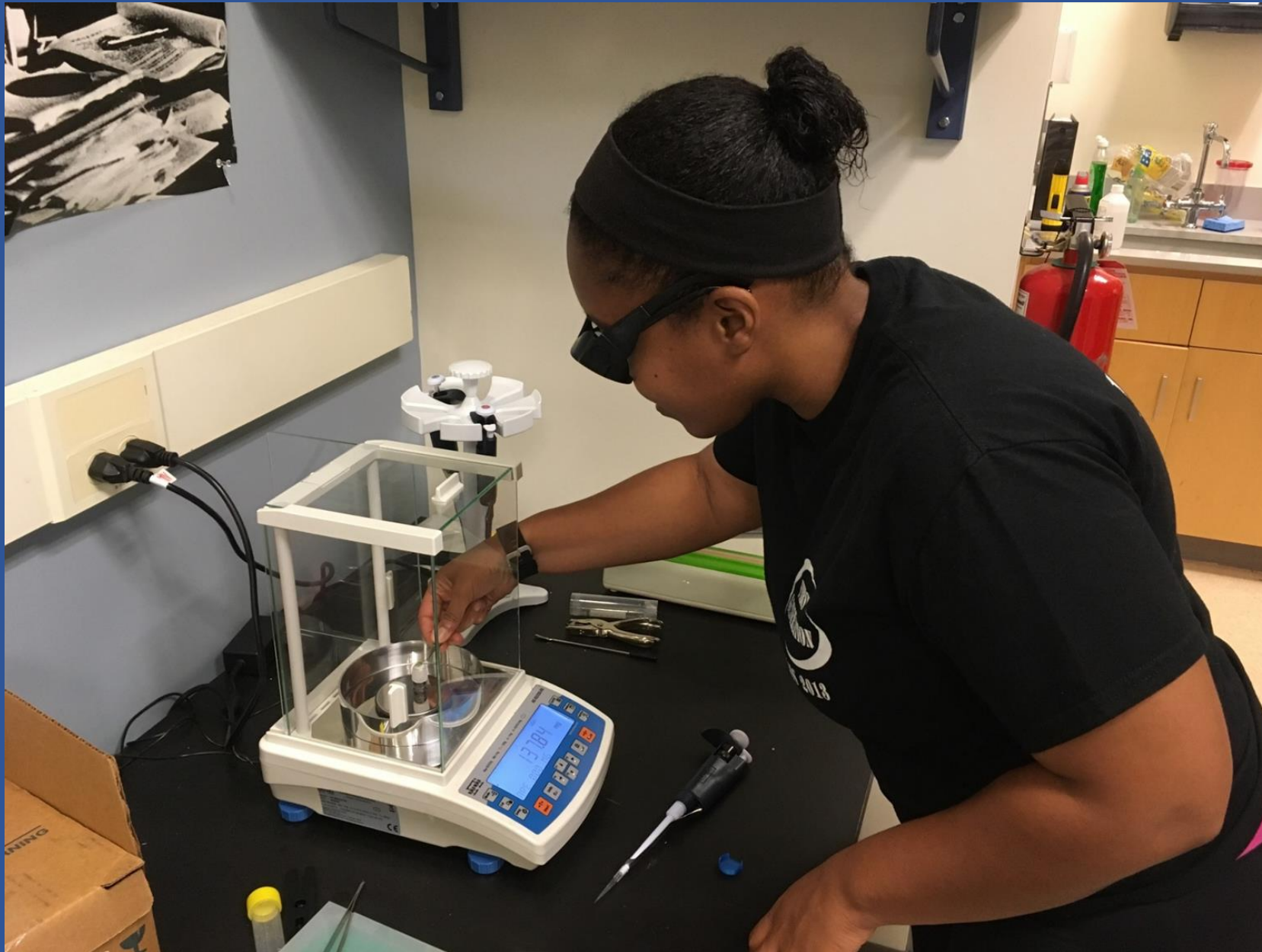














Equal Justice Workshop

Tuesday, August 15, 2017

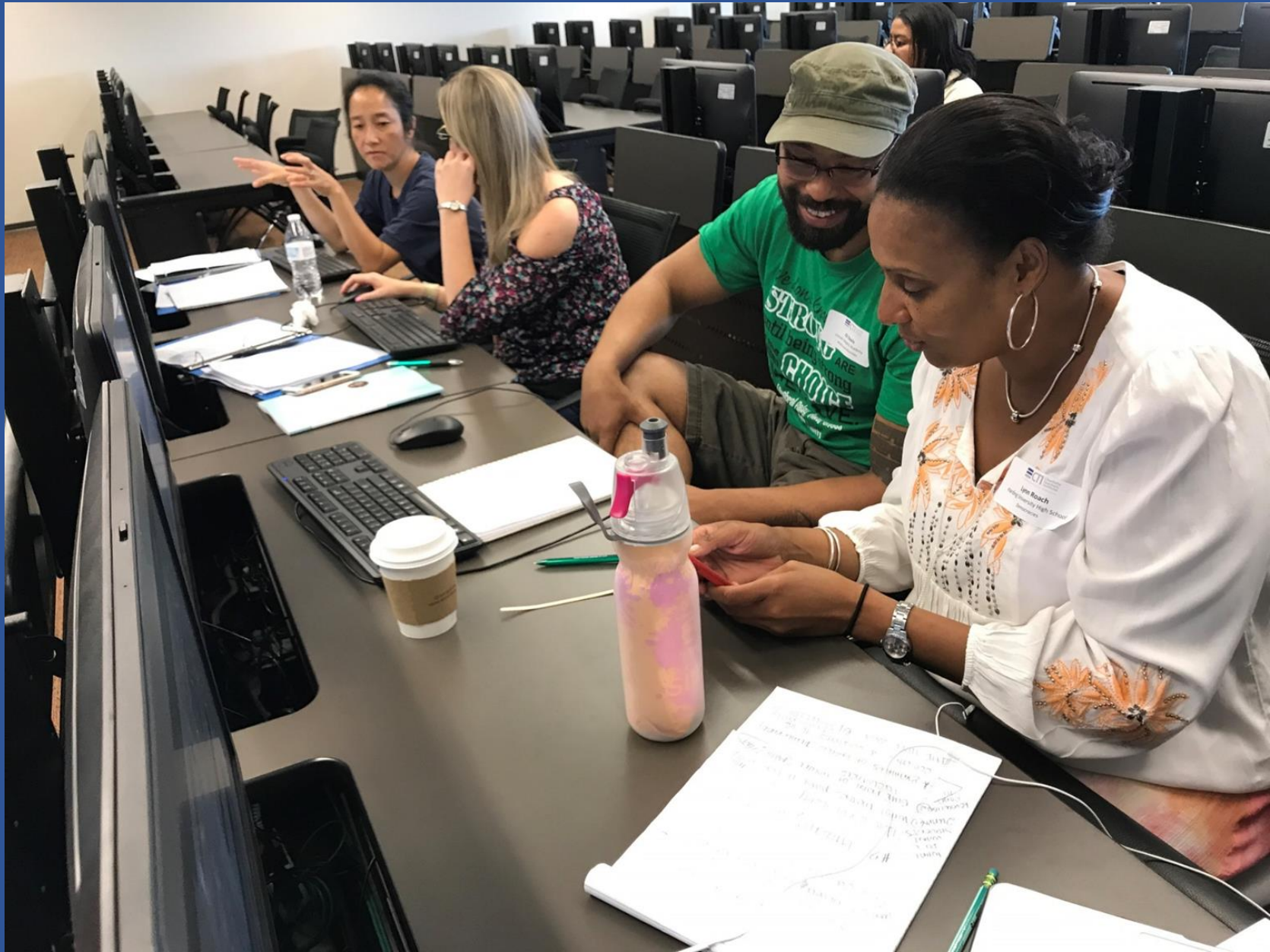
Greenspon Center for Peace and Social Justice,
Queens University

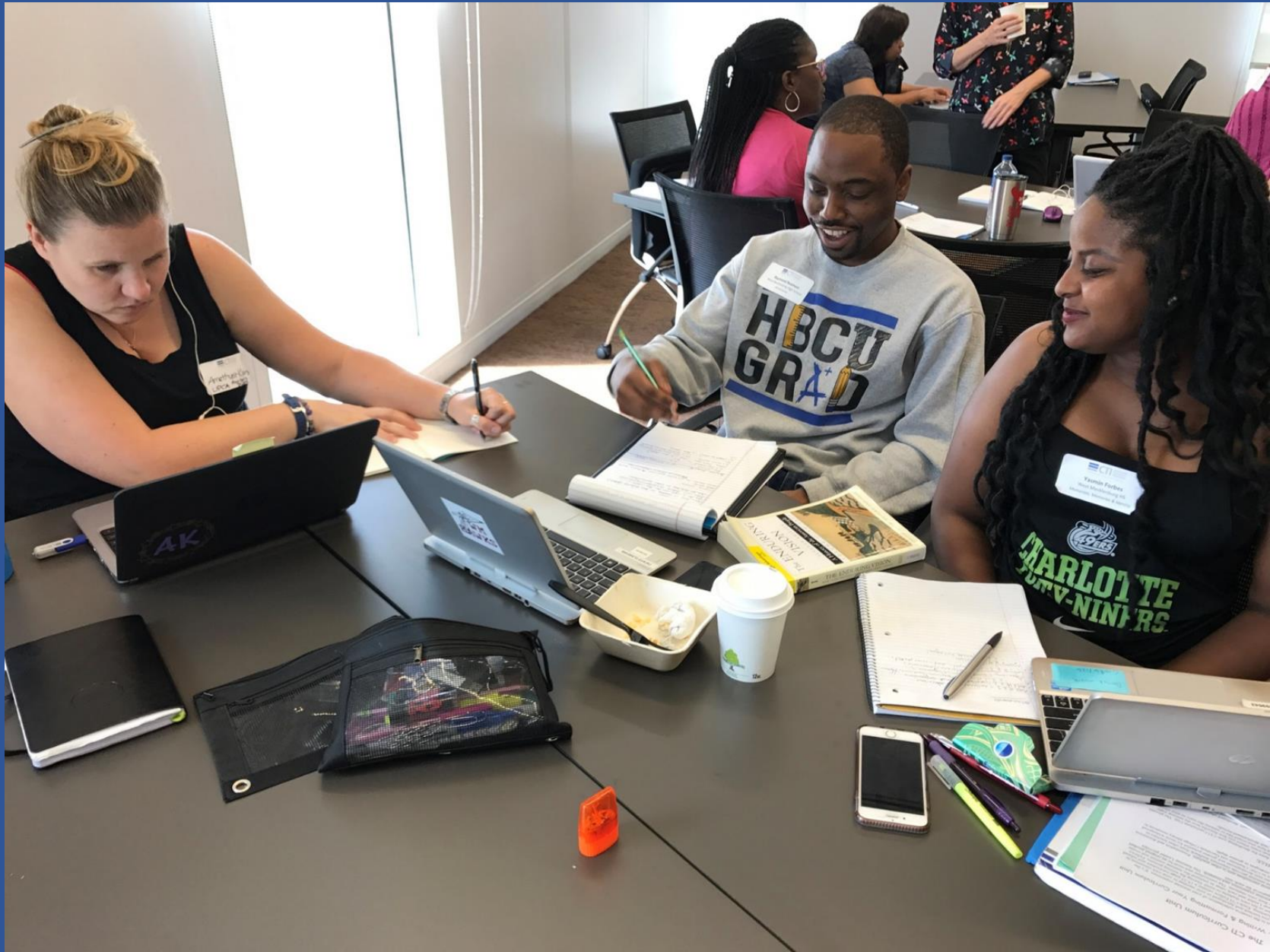


Curriculum Unit Writing Jams

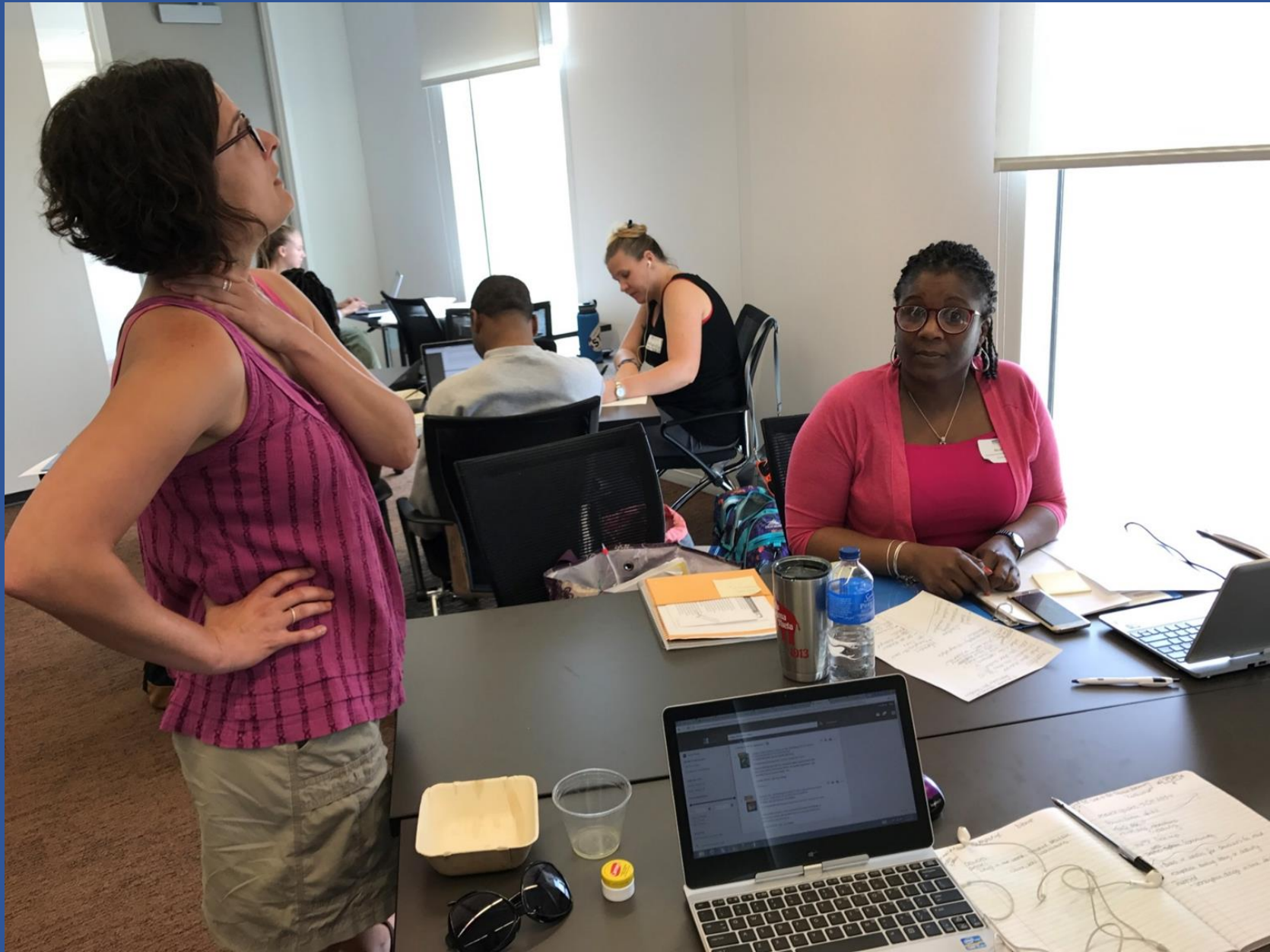
May, September and October 2017

UNC Charlotte Center City







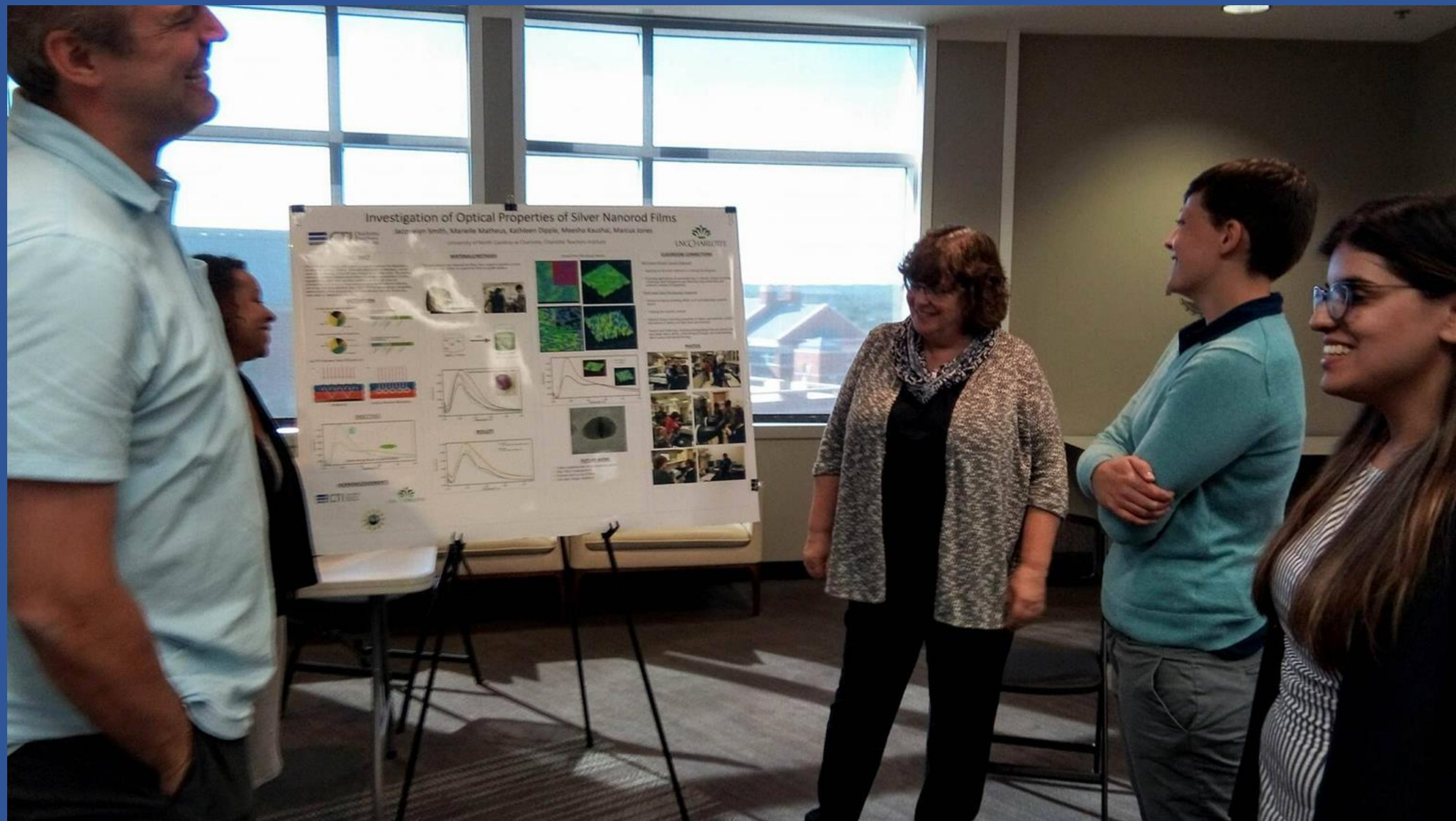


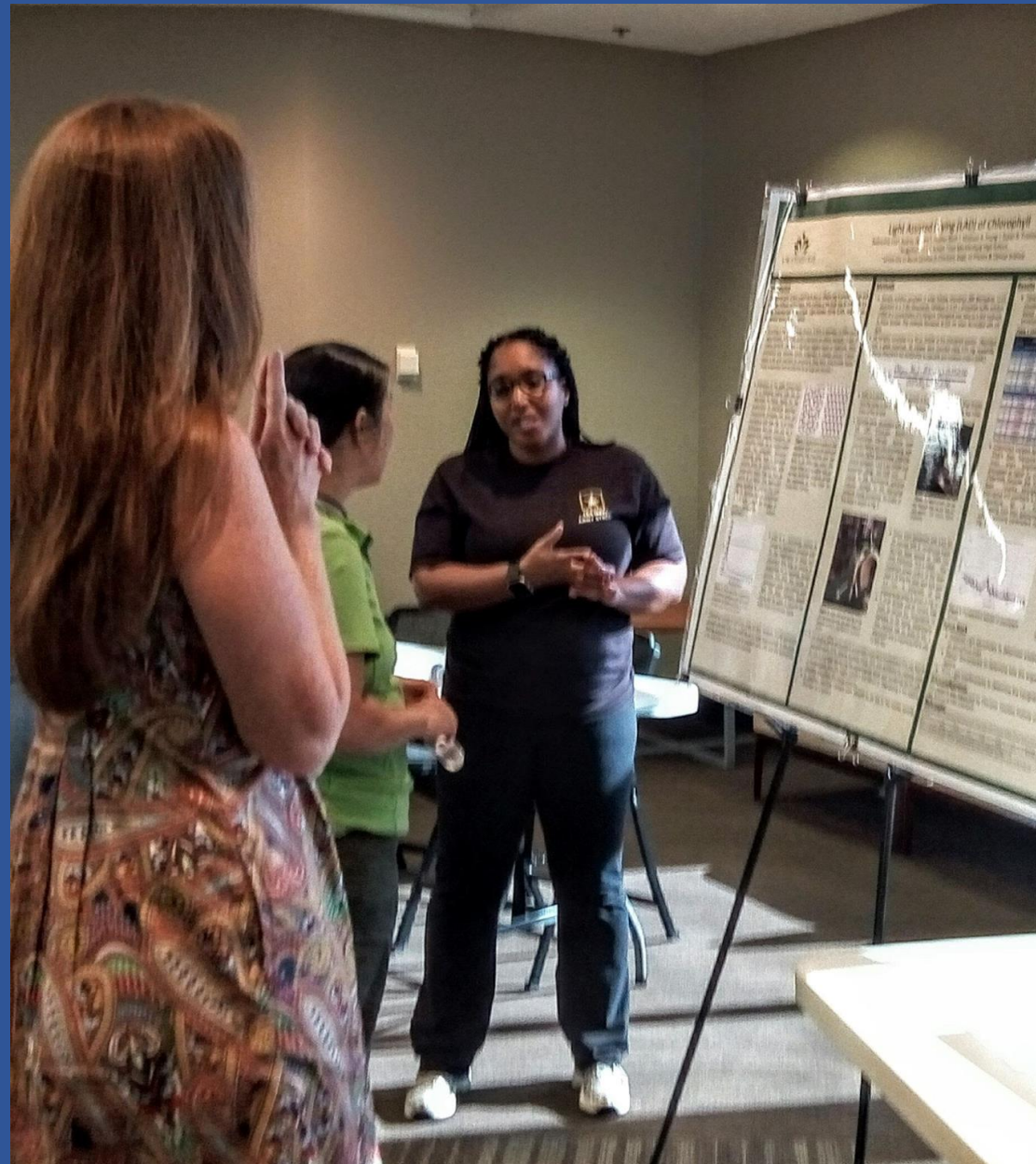
CTI Science Research Reception

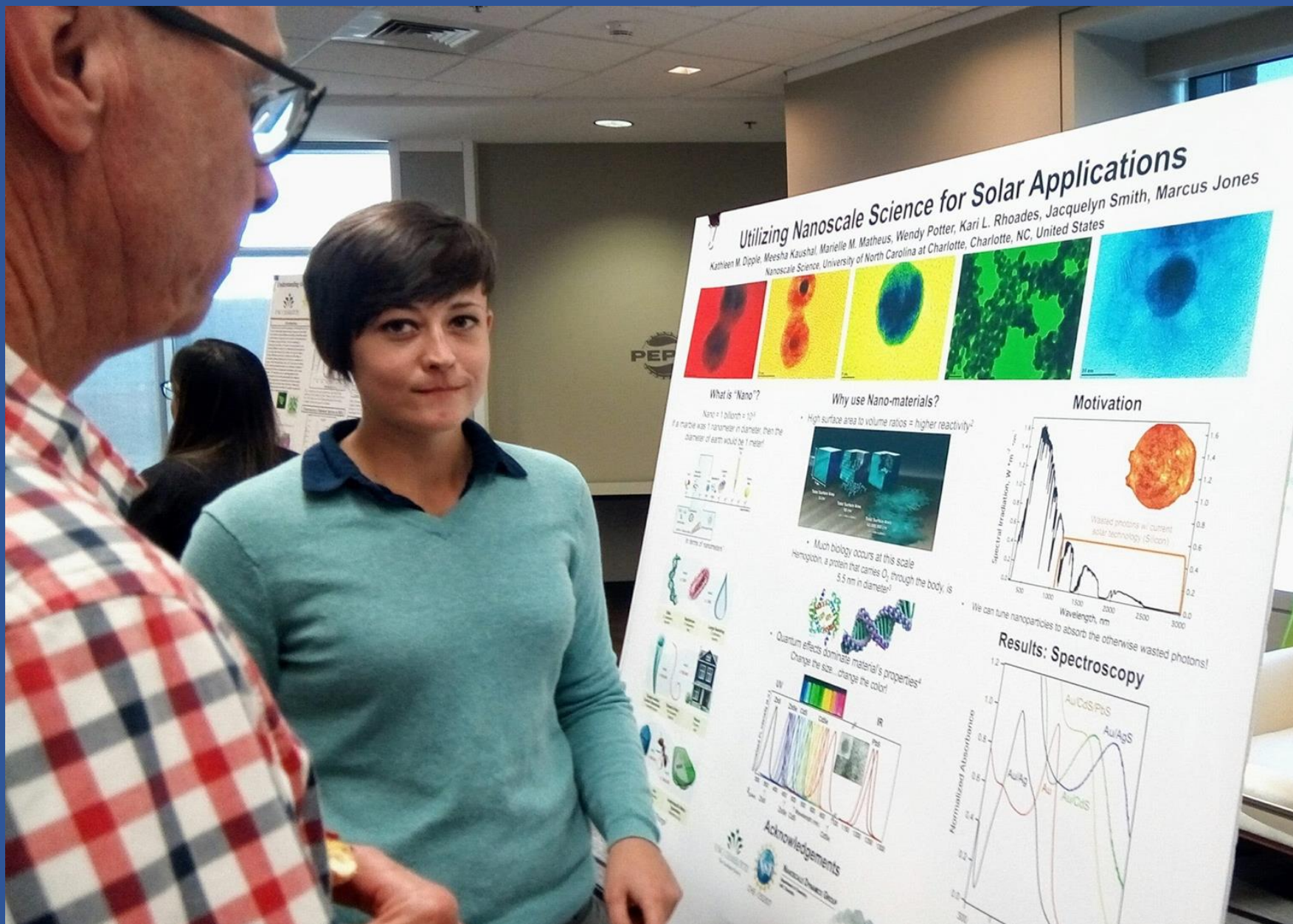
Thursday, September 7, 2017

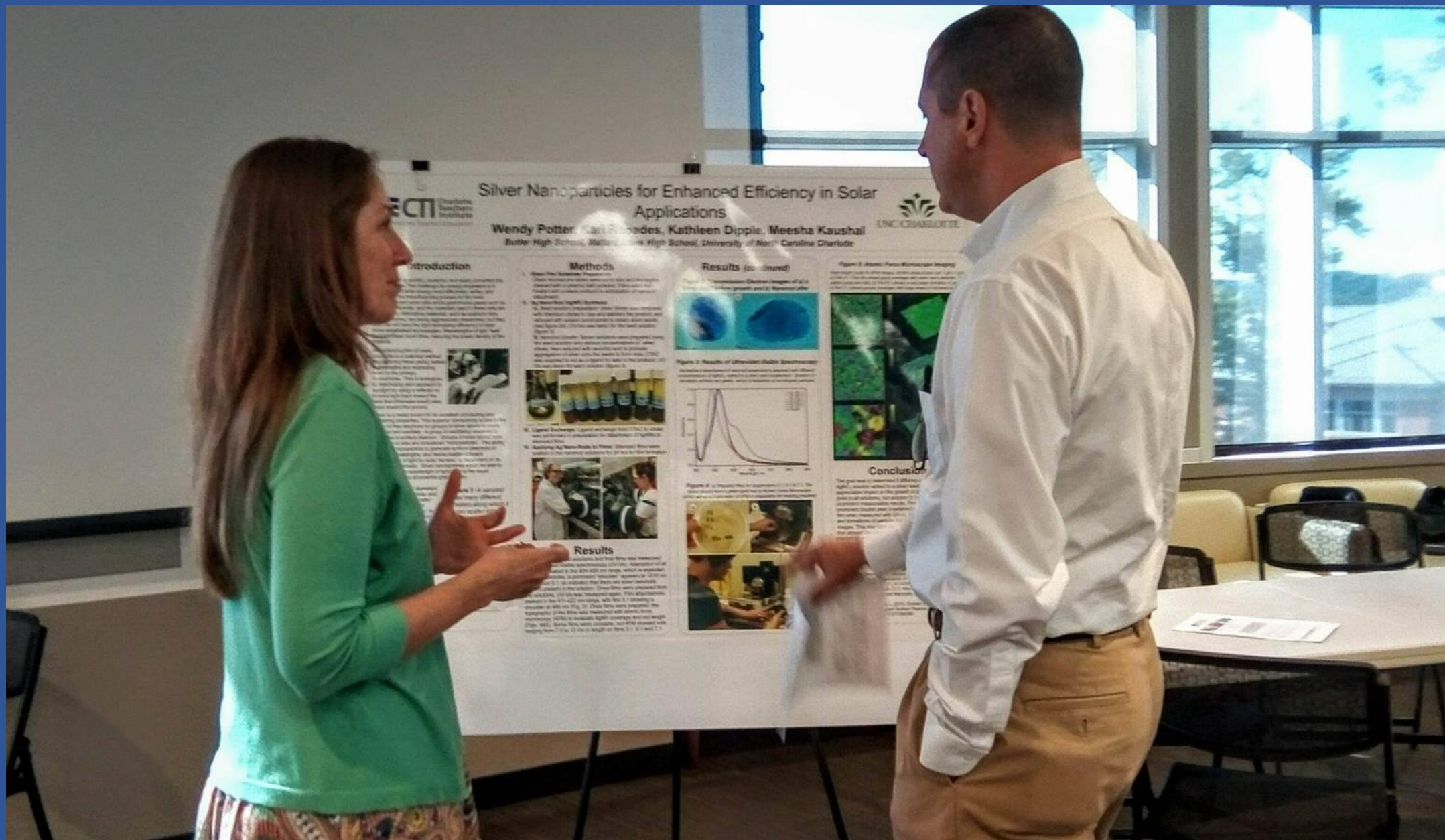
Halton Reading Room, Atkins Library

UNC Charlotte









Silver Nanoparticles for Enhanced Efficiency in Solar Applications

Wendy Potter, Karl Rhodes, Kathleen Dipple, Meesha Kaushal
Butler High School, Mallard High School, University of North Carolina Charlotte



Introduction

Silver nanoparticles (AgNPs) have been shown to enhance the efficiency of solar cells. The mechanism of action is believed to be due to the surface plasmon resonance (SPR) of the AgNPs, which can enhance the absorption of light by the solar cell.



The SPR of the AgNPs can be tuned by varying the size and shape of the particles. In this study, we synthesized AgNPs of different sizes and shapes and tested their effect on the efficiency of a solar cell.

The results of our study show that AgNPs of a certain size and shape can significantly enhance the efficiency of a solar cell. This suggests that AgNPs could be used as a cost-effective way to improve the performance of solar cells.

Methods

1. Synthesis of Silver Nanoparticles
Silver nanoparticles were synthesized using the seed-mediated growth method. This involves the growth of small "seed" particles followed by the addition of a larger "seed" solution to grow larger particles.



2. Characterization of Silver Nanoparticles
The size and shape of the AgNPs were characterized using transmission electron microscopy (TEM). The SPR of the AgNPs was also characterized using UV-Vis spectroscopy.



Results

The results of our study show that AgNPs of a certain size and shape can significantly enhance the efficiency of a solar cell. This suggests that AgNPs could be used as a cost-effective way to improve the performance of solar cells.

Results (continued)



Figure 1: TEM images of AgNPs. The images show the size and shape of the AgNPs. The particles are spherical and have a diameter of approximately 10-20 nm.

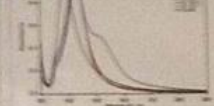


Figure 2: UV-Vis spectra of AgNPs. The graph shows the SPR of the AgNPs. The SPR peak is at approximately 400 nm, which is characteristic of spherical AgNPs.



Conclusion

The results of our study show that AgNPs of a certain size and shape can significantly enhance the efficiency of a solar cell. This suggests that AgNPs could be used as a cost-effective way to improve the performance of solar cells.



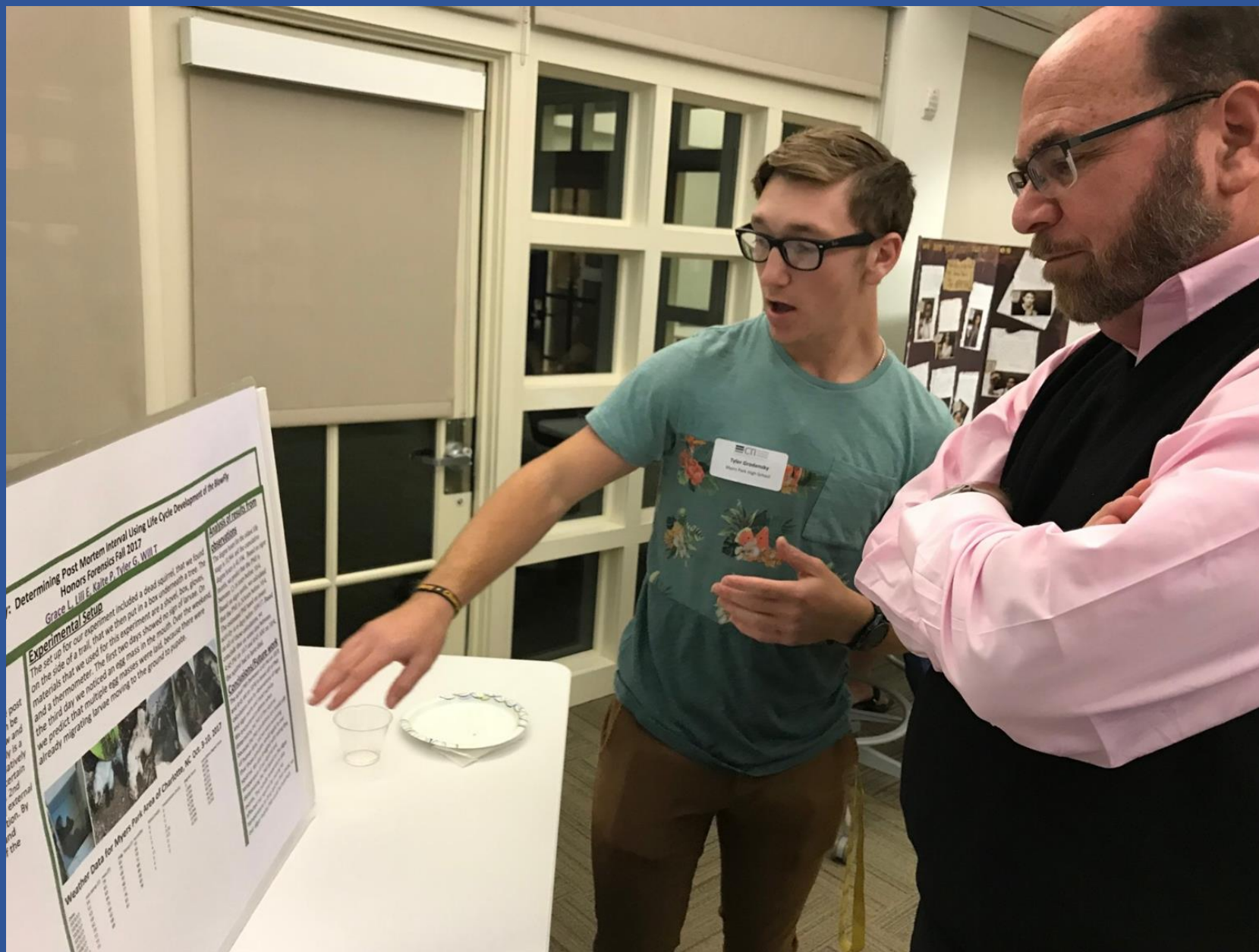
The results of our study show that AgNPs of a certain size and shape can significantly enhance the efficiency of a solar cell. This suggests that AgNPs could be used as a cost-effective way to improve the performance of solar cells.

Evening for Educators

Tuesday, October 17, 2017

Discovery Place Education Studio













CTI Seminars

Fall Seminar Meetings

August-November, 2017

UNC Charlotte
Davidson College
Bechtler Museum of Modern Art
Levine Museum of the New South















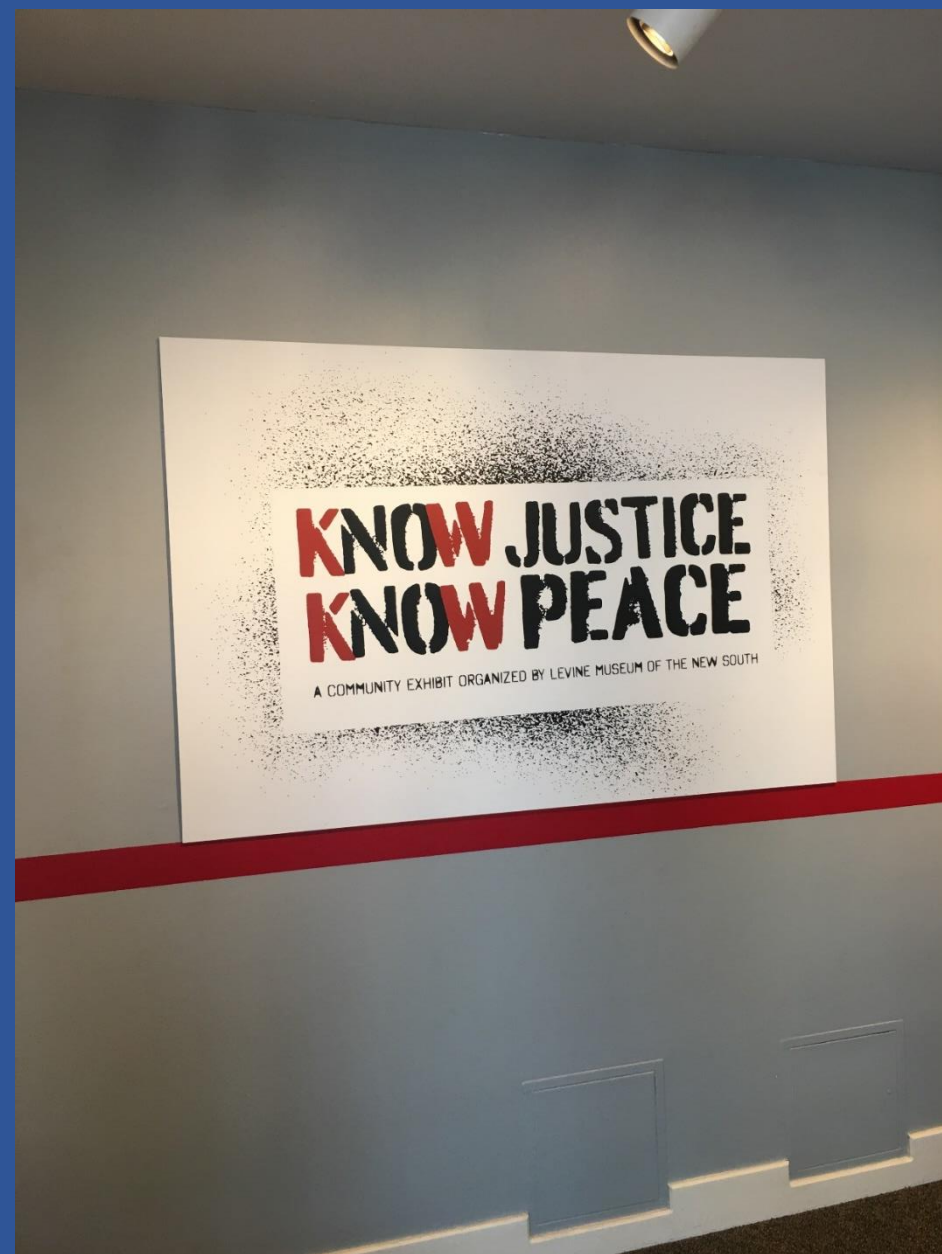


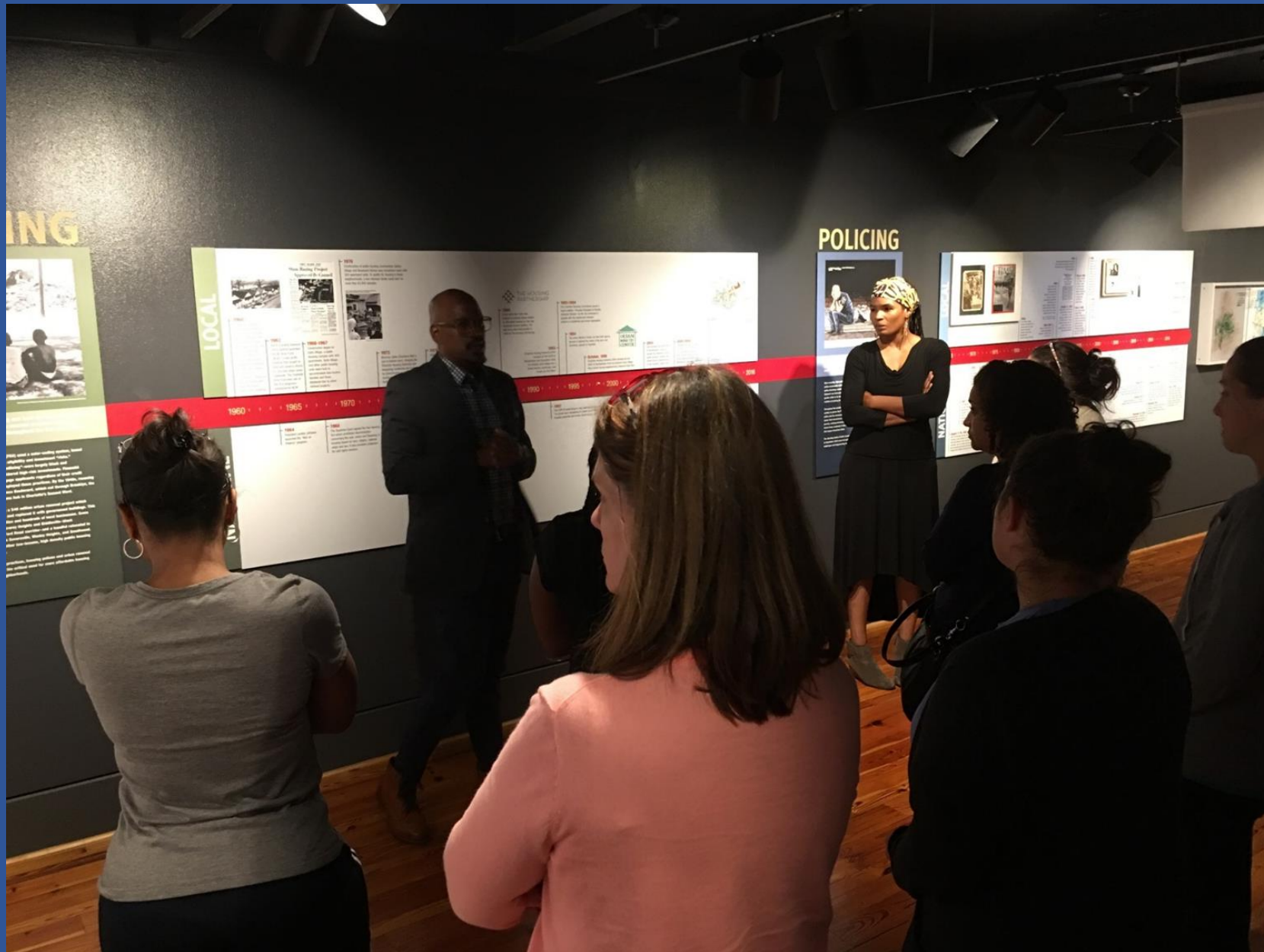














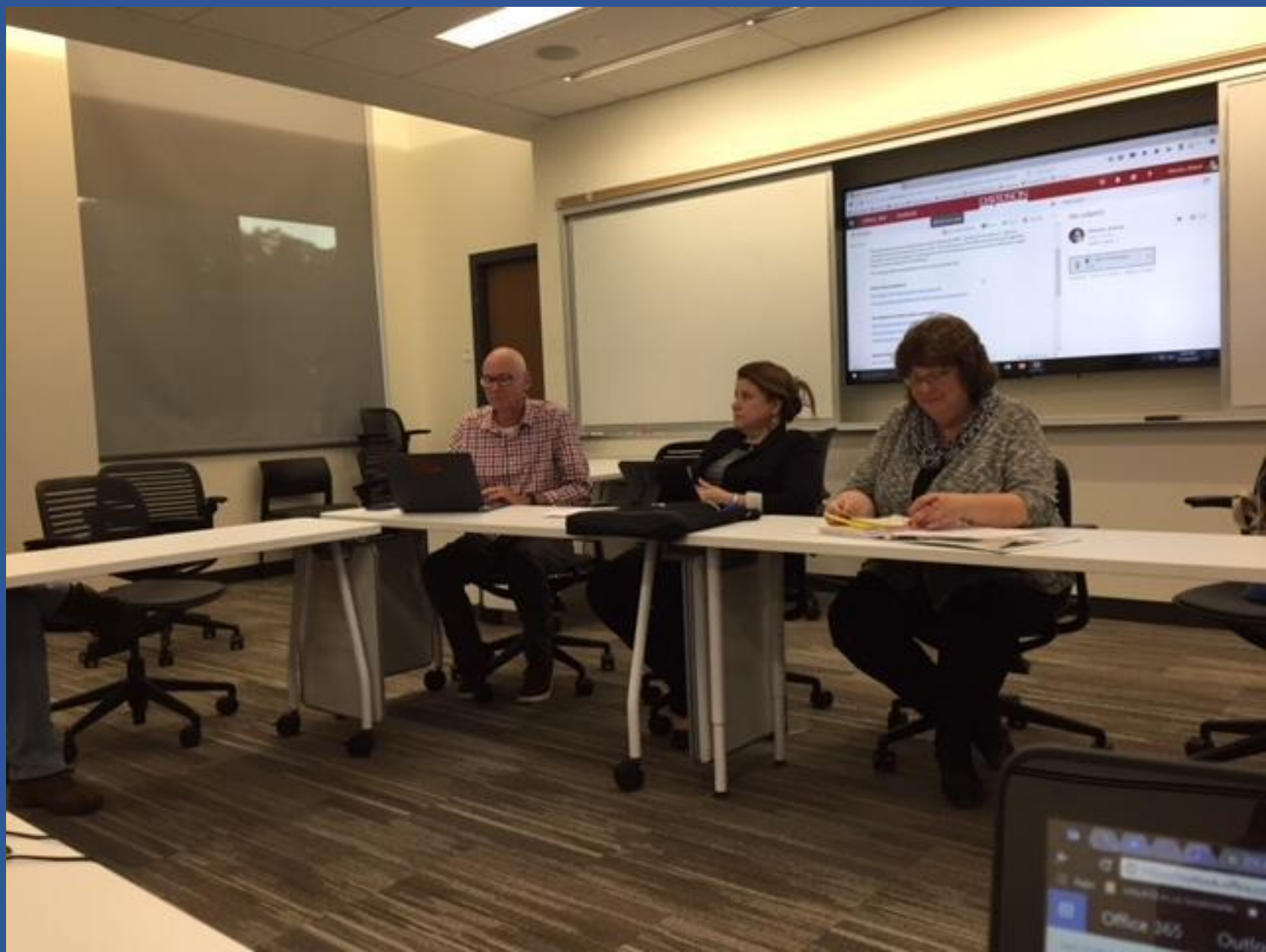








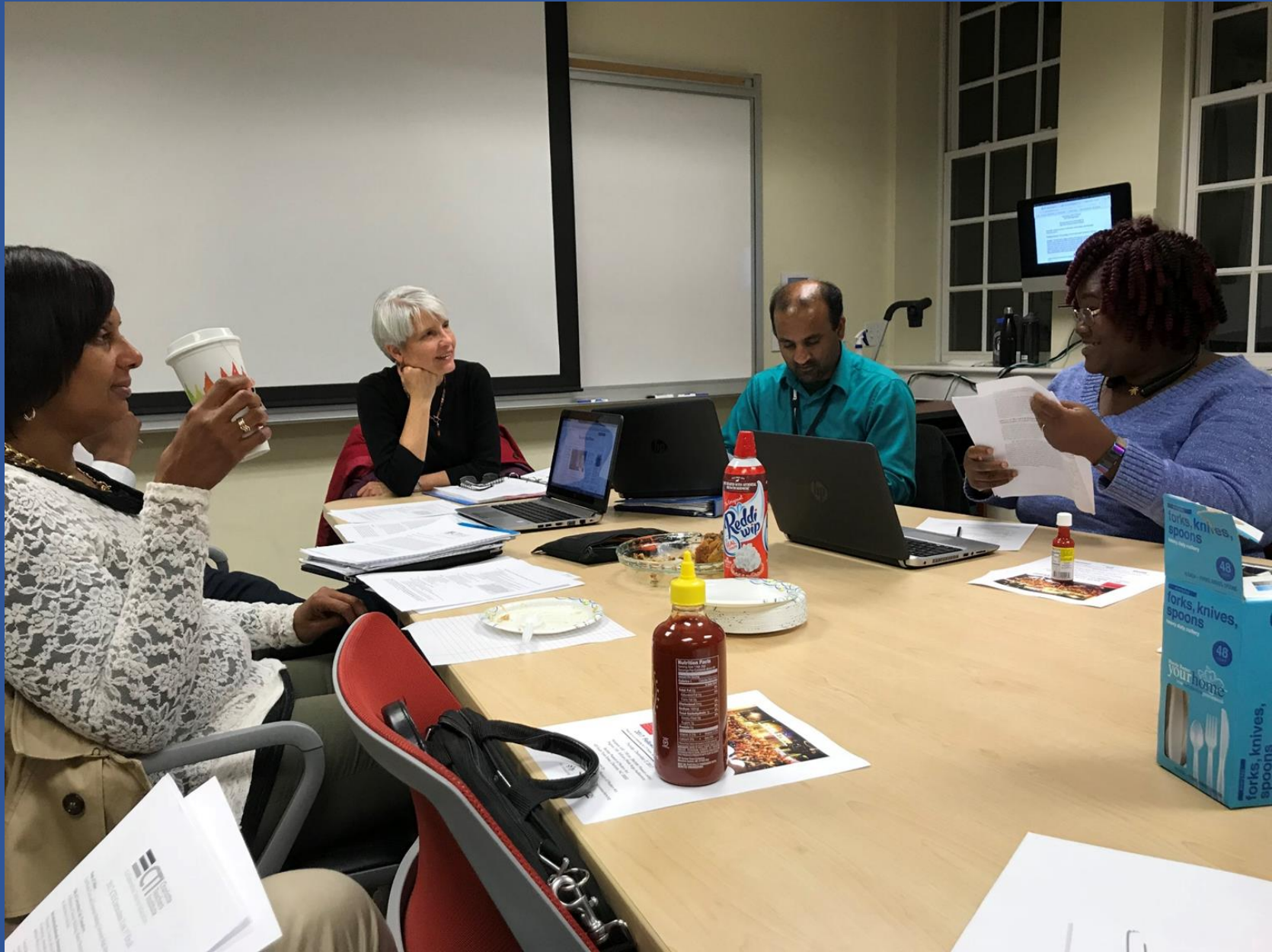




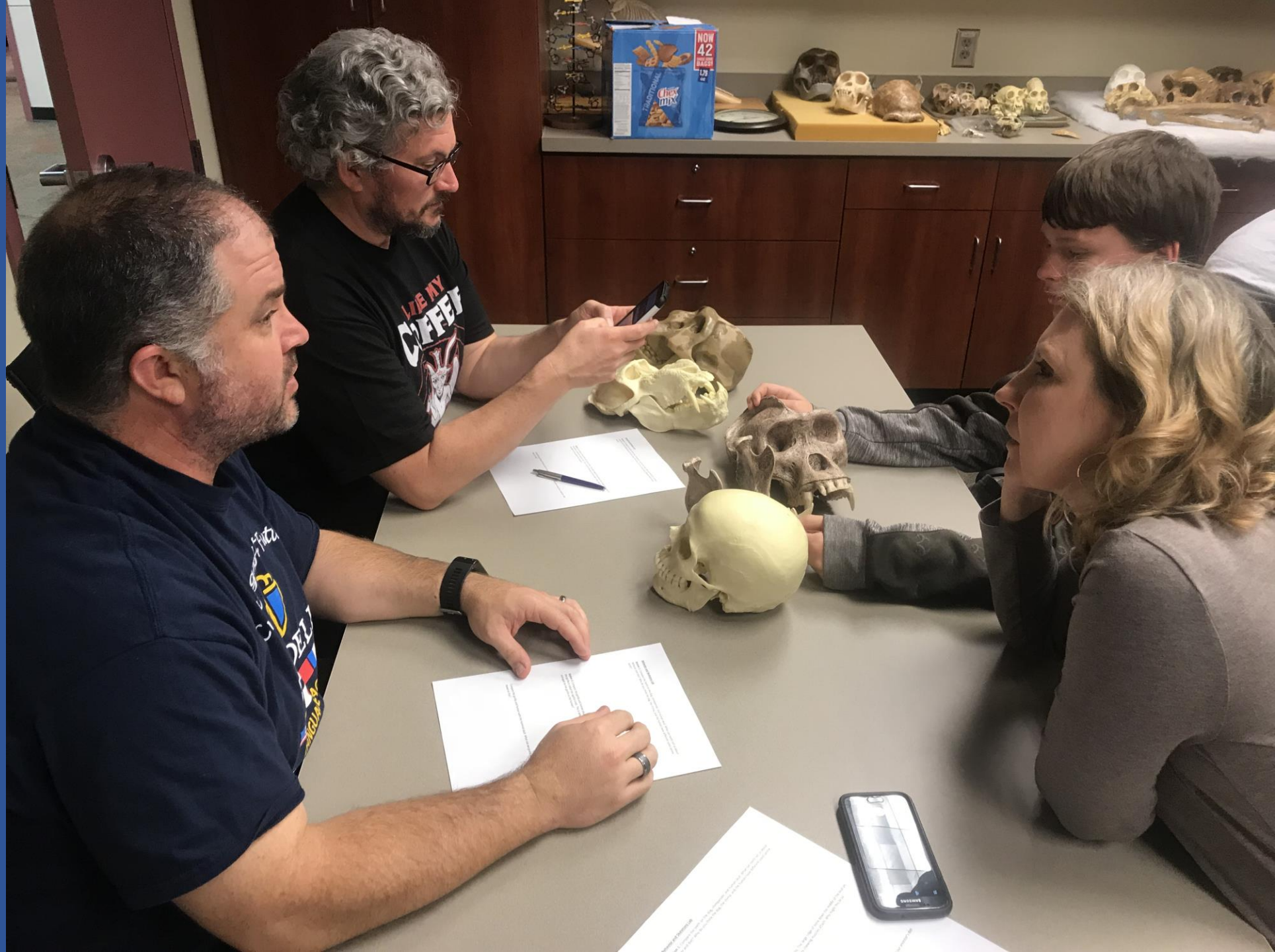


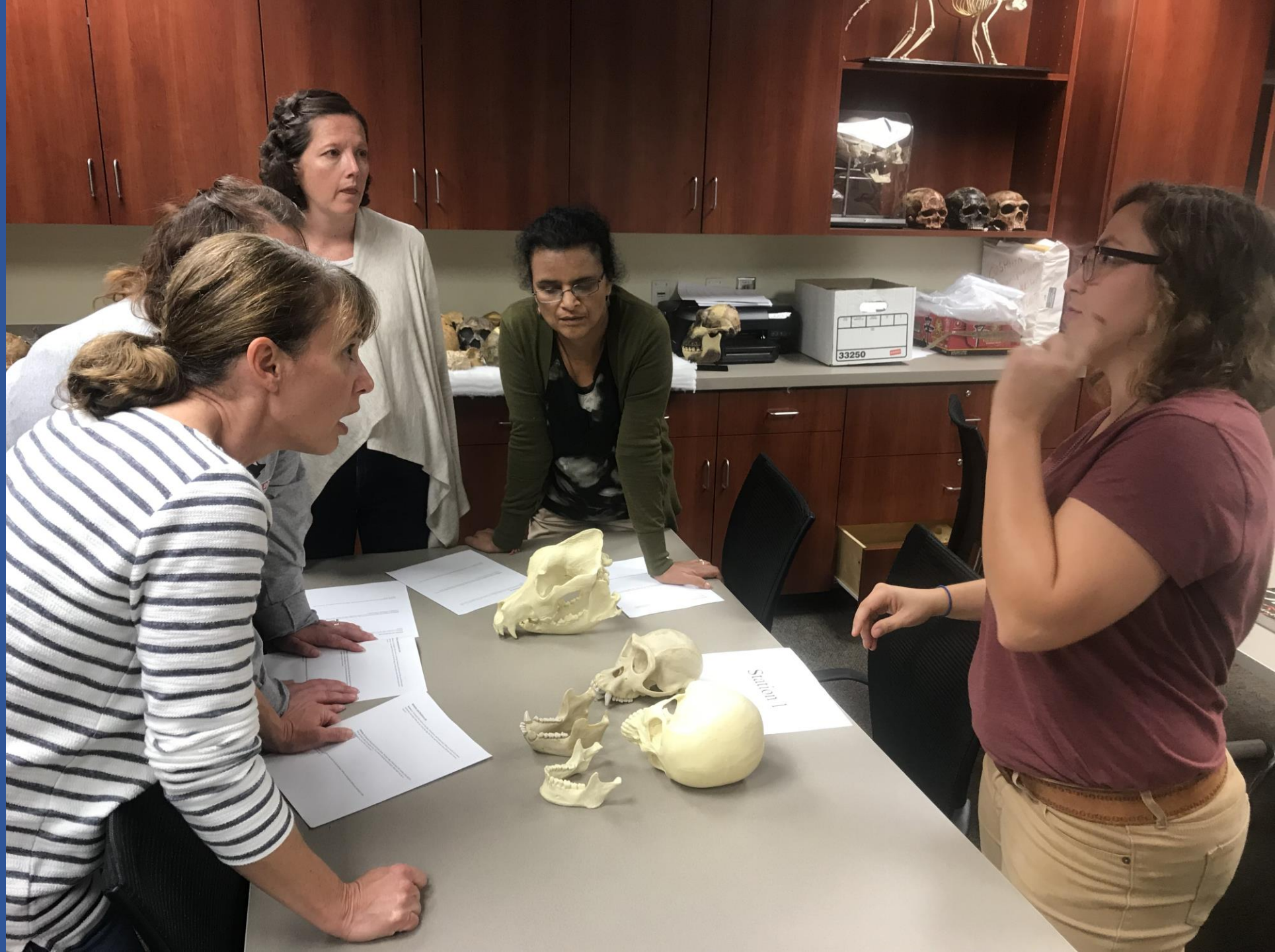




















Strengthening Teaching in Charlotte-Mecklenburg Schools

