

**Mariah Culpepper**  
**cmariah034@gmail.com**

**Education**

**Duke University**

Expected May 2026

Bachelor's of Science in Biology and Computer Science

Certificate of Science and the Public

GPA: 3.75

**Research Experience**

**Duke University Biomedical Engineering**

February 2024 - Present

*Hickey Lab*

- Building an atlas that aims to analyze spatial-omics in tumor progression
- Differentiating diseased cells and healthy cells within various tissues
- Synthesizing research in the field of immunoengineering for applications in bioinformatics

**Broad Institute of MIT and Harvard**

June 2023 - August 2023

*Broad Summer Research Program, Undergraduate Student Researcher*

*Center for the Development of Therapeutics, Biochemistry/Biophysics*

- One of the 24 selected nationwide for the Broad Summer Research Program (BSRP)
- Optimization of the ATTO647 acceptor dye and facilitated the successful integration of SpyTag/SpyCatcher used in high-throughput screening assay for cancer drug discovery
- Skills in pipetting, SDS-PAGE, LC-MS/MS, serial dilution, bacterial expression, and purification
- Advancement of scientific communication and literacy skills

**Work Experience**

**The Center for Global Women's Health Technologies at Duke University**

October 2023 - Present

*Biomedical Engineering Trainer – IGNITE Maker's Program*

- Serving as a mentor in a year-long health project for high school students from public schools in Durham
- Developing students' skills in the biomedical engineering design process in ways that can work towards building solutions in their communities

**Samuel DuBois Cook Center of Social Equity**

October 2022 - September 2023

*Research Assistant*

- Create educational slides for Inequality Studies classes taught at Duke University
- Design infographics for the Cook Center's social media platforms
- Curate resources for a book on stratification economics and disability

**The IRIS Collaborative**

December 2022 - January 2023

*Winter Intern*

- Affiliated with various organizations in developing public health outreach campaigns
- Prepare infographics for awareness on Black maternal health
- Projects:
  - World Health Organization: Global Strategy to Accelerate the Elimination of Cervical Cancer
    - Gather invitees for a conference on cervical cancer prevention
  - HELA100: The Henrietta Lacks Initiative
    - Updating the HELA100 website for accuracy and relevancy

## **Family Responsibilities**

2018 - 2022

- Perform as a long-time primary caregiver for grandmother with Alzheimer's
- Administer bedside and personal care, such as ambulation, taking care of nutritional needs, and personal hygiene assistance

## **Leadership Experience**

### **Threads of Love and Care (TLC), Duke University**

#### *Co-Founder*

- Student-run crochet club focused on donating made goods to local hospitals in the Raleigh-Durham area
- Hold club meetings that teach peers the basics of crochet and how to use these skills to grow a community outside of Duke

### **NAACP Duke Chapter, Duke University**

July 2023 - Present

#### *Healthcare Committee Member*

- Coordinate events that promote advocacy as well as the convergence of social justice and health on campus
- Sponsor free STI Testing for undergraduate students twice a year

### **Project Tadpole, Duke University**

April 2023 - Present

#### *Engineering Mentor*

- Increasing the accessibility of adaptive toys for children with disabilities
- Teach peers soldering techniques in toy modifications for accessibility
- Projects:
  - Texturized Hand Placement Board for the Mariposa School in Durham, NC
  - Designing and updating ADA-compliant braille signs around Duke University

*Member of The National Society of Black Engineers & American Chemical Society*

## **Awards and Scholarships**

**Dean's List with Distinction, Spring 2024**

May 2024

**ABRCMS Student Travel Award, American Association for Microbiology**

November 2023

**SACNAS NiDSTEM Conference, funded by Oregon State University**

September 2023

**Monica Chibuogu Nneji Foundation Scholar**

July 2022

**Patrick Beaver Scholar**

May 2022

**Jacquelyn and Thomas Mate Scholar**

May 2022

**North Carolina Spectrum News High School Scholar**

January 2022

## **Presentations**

Culpepper, M., Chirino, V., Raffier, C., Lemke, C. (2023). *Optimization of HTS Assay Development with Integration of SpyTag/SpyCatcher Technology*. Poster Presentation at Annual Biomedical Research Conference for Minoritized Scientists 2023, Phoenix, AZ.

Culpepper, M., Chirino, V., Raffier, C., Lemke, C. (2023). *Optimization of HTS Assay Development with Integration of SpyTag/SpyCatcher Technology*. Poster Presentation at Broad Institute, Cambridge, MA.

Culpepper, M., Chirino, V., Raffier, C., Lemke, C. (2023). *Optimization of HTS Assay Development with Integration of SpyTag/SpyCatcher Technology*. Oral Presentation at Broad Institute, Cambridge, MA.

## **Skills**

Python | R | Java | Data Visualization | GitHub | Scientific Communication | Health Equity | Ethical Research | Bacterial Transformation | Protein Purification | Cell Culture | Assay Development | Research Writing | Computer-Aided Design (CAD) | Soldering