

# Alexandra Lombardo

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## **EDUCATION**

### **Agnes Scott College, Decatur, GA**

2017-2021

Bachelor of Science in Biochemistry and Molecular Biology, GPA: 3.99, expected May 2021

Honors Thesis: *Sphingolipid Metabolism in Rett Syndrome and Schizophrenia*

## **AWARDS AND HONORS**

### **Received Letitia Pate Evans Academic Scholarship**

\$23,000 per year

Agnes Scott College; Decatur, GA

August 2017-Present

### **Agnes Scott College Dean's Honor List**

2017-Present

### **Applied for and received University of Michigan – SMART Program Award**

Originally \$4,400, altered to \$1,000 due to COVID-19 remote experience

May 2020-August 2020

### **Applied for and received STEM Scholars Program Award**

\$3,200

Funded summer research: *Vesicle Trafficking Mechanisms in Mecp2 Deficiencies*

Agnes Scott College; Decatur, GA

May 2019-August 2019

## **RESEARCH EXPERIENCE**

### **Agnes Scott College, Department of Biochemistry and Molecular Biology, Decatur, GA**

*Undergraduate Research Student, Honors Thesis, August 2020-May 2021*

Supervisor: Jennifer Larimore, PhD and Timothy Finco, PhD

- Design a year-long research project investigating the sphingolipid metabolic pathway in neurodevelopmental disorders in mouse models
- Conduct molecular biology assays to detect altered protein expression regarding sphingolipid metabolites
- Collect, analyze, and interpret data to present findings to lab mates and mentors
- Prepare a manuscript and defend research thesis upon completion of project

**Agnes Scott College, Department of Neuroscience, Decatur, GA**

*Undergraduate Research Student*, May 2019-July 2020

Supervisor: Jennifer Larimore, PhD

- Performed immunofluorescent staining on tissues from mutant mouse prefrontal cortices and hippocampal formations and performed microscopic imaging
- Conducted western blots using homogenates of whole-brain lysates and heavy synaptosomes
- Cultured PC12 cells for pulse-chase analyses
- Generated data sets, analyzed results in ImageJ, and created figures for a manuscript currently in review

**Agnes Scott College, Department of Neuroscience, Decatur, GA**

*Undergraduate Research Student*, January 2019-May 2019

Supervisor: Jennifer Larimore, PhD

- Designed a semester-long research project to investigate Na<sup>+</sup>/K<sup>+</sup> pump expression in a Rett syndrome cell models
- Performed western blots and PCRs and analyzed data in ImageJ
- Interpreted data and presented to lab mates and mentors

**POSTER PRESENTATIONS**

*Endosomal Trafficking is disrupted in Neurodevelopmental Disorders*. Presented at Society for Neuroscience Conference (2019), and Georgia Undergraduate Research Conference (2019)

*Vesicle Trafficking Mechanisms in Mecp2 Deficiencies*. Presented at Agnes Scott College STEM Scholars Summer Symposium (2019) and Agnes Scott College STEM Scholars Program Fall Semester Exhibition (2019)

*The Effects of Mecp2 Mutations and Dysbindin Knockdown on Fxyd1 Protein Expression*. Presented at Agnes Scott College Spring Annual Research Conference (2019) and Agnes Scott College Scotties with Nerves Symposium (2019)\*

\*Selected as runner-up for best presentations

**RESEARCH TALKS**

Ruvimbo Dzvurumi, Samantha Hatcher, **Alexandra Lombardo**, Camryn Smith, Rachel Thompson, Alix Wagner, Jennifer Larimore. *Vesicle Trafficking Mechanisms in Mecp2 Deficiencies*. Presented at Agnes Scott College STEM Scholars Summer Symposium (2019).

**PUBLICATIONS**

Susan Cordero Romero, Ruvimbo Dzvurumi, Alexia Crockett, **Alexandra Lombardo**, Jhodi Webster, Samantha Hatcher, Alix Wagner, Diana Ghebrezadik, Asiya Abawari, Camryn Smith, Lauren Neal, Yommi Tadesse, Molly Beauchamp, Stacey B.B. Dutton and Jennifer L. Larimore. *Endosomal Trafficking is disrupted in Neurodevelopmental Disorders*. (Submitted to Brain Research Bulletin in July 2020).

## **LEADERSHIP EXPERIENCE**

### **El Paso Leadership Network**

*Mentor, September 2020-Present*

- Mentor a high school student through meaningful conversations regarding academic endeavors and college pursuits
- Prepare my mentee for the college application process and their university years ahead through consultations regarding the college search, scholarships, extracurricular activities, ACT/SAT prep, personal statement writing, and study tips

### **Emory University School of Medicine, Atlanta, GA**

*Program Coordinator, Young Physicians Initiative, February 2019-Present*

- Assist in the development and maintenance of a mentorship program between Agnes Scott students and Emory University medical students/residents
- Organize monthly information sessions and patient diagnostic simulations for Agnes Scott undergraduates to receive guidance and a better understanding of health professions

### **Agnes Scott College, Decatur, GA**

*Co-President, Pre-Health Society, December 2018-Present*

- Direct the organization in pursuit of its mission, which is to support, encourage, and provide resources to undergraduate members on their journey to professional/graduate school
- Spearhead various interactive events, volunteer opportunities, and informational workshops each semester as well as delegate responsibilities to other Executive Board members

### **University of Michigan Medical School, Ann Arbor, MI**

*Fellow, Virtual UM-SMART Undergraduate Summer Program, May 2020-August 2020*

Director: Carey Lumeng, MD/PhD

- Participated in UM-SMART seminars to learn more about the MD/PhD application process, career paths for physician scientists, and biomedical science
- Connected with a "Big Sib" student advisor who is currently in the UM-MSTP as well as other UM medical and graduate students to gain insight into the process of becoming a physician-scientist
- Designed a research project, submitted a mock grant proposal, and presented the proposal to UM-MSTP Admissions Committee members and MSTP candidates

### **Vanderbilt University School of Medicine, Nashville, TN**

*Fellow, Virtual Vanderbilt Summer Science Academy, June 2020-July 2020*

Director: Elizabeth Bowman, PhD

- Participated in a weekly seminar series that featured talks on scientific topics of interest, the new MD/PhD curriculum, MD/PhD application process, and research at Vanderbilt

**Agnes Scott College, Decatur, GA**

*SUMMIT Peer Advisor, Office of Academic Advising and Accessible Education, April 2018-December 2018*

- Guided 15 first-year students in successfully navigating the transition into their new academic home by leading monthly workshops, programs, and panels focused on academic growth within STEM
- Utilized my college experiences to help advisees resolve academic difficulties by developing proactivity and organization

**COMMUNITY SERVICE EXPERIENCE**

**Arbor & Agnes Alliance (AAA), Program Founder/Director, August 2019-Present**

- Pioneered a buddy program between Agnes Scott College and Arbor Terrace of Decatur Assisted Living/Dementia Center
- Promote mental health and authentic communication between community young and community elders by organizing weekly in-person visits/activities between buddies

**Arbor Terrace of Decatur Assisted Living/Dementia Center, Volunteer, March 2018-Present**

- Engage with dementia patients by implementing physical and mental exercises to potentially delay the progression of their illness and help them maintain optimal physical, mental, and cognitive function

**Generating Excellence in Math and Science (GEMS) STEM Day, Program Director, January 2018-Present**

- Coordinate an annual, day-long program to engage gifted girls from a local low-income high school in STEM interactive labs, demonstrations, and games on the Agnes Scott College campus with faculty and college students
- Collaborate with Agnes Scott College biology faculty to lead biology activities for program attendees to learn about biological sciences and potential careers, help them explore their interests, and advocate for women in STEM

**SHADOWING EXPERIENCE**

**William Beaumont Army Medical Center, El Paso, TX**

Pathology, July 2018

Completed 50 hours of shadowing WBAMC healthcare professionals, specifically board certified physicians, primarily Jacob Clawson MD in pathology.

**William Beaumont Army Medical Center, El Paso, TX**

Anesthesiology, July 2018

Completed 13 hours of shadowing nurse anesthetist William Whitaker PhD.

**West Valley Medical Clinic, El Paso, TX**

Primary Care, August 2019

Completed 24 hours of shadowing board certified primary care physician Sam Tyson MD.

**SKILLS**

**Language**

English (Native), French (Conversational)

**Software**

Microsoft Office, ImageJ

**Research**

Gel Electrophoresis, Western Blot, PCR, Tissue Sectioning, Immunohistochemistry  
Staining, Cell Imaging, Cell Culture