Marisa G. Rodríguez McGehee
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EDUCATION

Bachelor of Biosystems Engineering '22, Auburn University**,** AL
GPA: 3.4

SKILLS

- Fluent in Spanish

EXPERIENCE

Undergraduate Research **Fall '21 - Present**

Advised by Dr. David Blersch, Auburn University

- Working with AU Aquaponics to develop possible thesis for Auburn's Accelerated Bachelor's/Master's Program

Teacher Assistant, **Fall '20, Fall '21**

Statistics for Engineers and Scientists, Dr. Frances O'Donnell

- Assisted students with understanding course topics
- Graded in class assignments and homework

Undergraduate Researcher, **Summer '19**

Advised by Dr. Wei Niu, University of Nebraska-Lincoln

- Part of the Nebraska Summer Research REU program
- Worked with PhD candidate Levi Kramer on engineering carboxylate reductases for activity on dicarboxylates
- Cloned DNA and transformed vectors into *E. coli* host
- Performed Michaelis-Menten analyzations of mutant enzyme activity

Buckman Laboratories Intern, **Summer '18**

West Rock-Mahrt Mill: Pittsview, AL

- Controlled microbicide (Oxamine) releases into mill water
- Monitored microbiological levels in water and clays
- Performed chemical inventory, ordered chemicals, unloaded trucks

Undergraduate Researcher, **Sum. '17-Spring '18, Spring '19, Fall '19- Spring '20**

Advised by Prof. Virginia A. Davis, Auburn University

- Part of team focused on understanding the effects of substrates on algal attachment and growth
- Identified, maintained, and harvested multiple algal cultures
- Prepared custom substrates and performed contact angle measurements and surface energy calculations
- Helped develop test method for *Scenedesmus dimorphus* attachment under static conditions

PUBLICATIONS AND PRESENTATIONS

- L. Kramer, X. Lee, **M. Rodríguez**, M.A. Wilson, J. Guo, W. Niu, Engineering Carboxylic Acid Reductase (CAR) through a Whole-Cell Growth-Coupled NADPH Recycling Strategy, *ACS Synthetic Biology,* Jun. 2020.
- **M. Rodríguez**, D.W. Herring, Z. Karimi, D.M. Blersch, V.A. Davis, Understanding the Growth and Attachment of Algae on Nanocomposites, *Auburn University Journal of Undergraduate Scholarship (AUJUS)*, 2019.
- **M. Rodríguez**, L. Kramer, W. Niu, "Engineering Carboxylate Reductases for Activity on Dicarboxylates," This is Research Student Symposium, University Nebraska-Lincoln, NE, (Aug 2019).
- **M. Rodríguez**, Z. Karimi, D. M. Blersch, V. A. Davis, "Analyzing the Effects of Surface Energy on Algae with Specialized Attachment Mechanisms," This is Research Student Symposium, Auburn U., AL, (April 2019).
- *Published articles and additional presentations can all be accessed through Github website*

HONORS AND AWARDS

- Awarded Top Undergraduate Oral Presentation for the Samuel Ginn College of Engineering (April 2019)
- Awarded one of 20 Auburn University Undergraduate Research Fellowships *(Summer 2017-Spring 2018)*
- Dean's List (Fall 2016, Spring 2017, Spring and Fall 2020, Spring and Fall 2021, Spring 2022)