

# Andrea Reynolds

Department of Marine Sciences  
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## Education

*Doctor of Philosophy, Marine Science* July 2019 - Present  
University of Georgia (UGA), Athens, GA

*Bachelor of Science, Biochemistry & Biotechnology* Graduated May 2018  
Minnesota State University Moorhead (MSUM), Moorhead, MN

- GPA 3.71, *Magna Cum Laude*, Dean's List 6 semesters

## Research Experience

*Graduate Research Assistant, UGA* Spring 2020 – Present  
Under the direction of Dr. Adrian Burd

- Developing statistical models to predict the particulate carbon flux out of the surface ocean using machine learning algorithms

*Graduate Research Assistant, UGA* Summer 2019 – Spring 2020  
Under the direction of Dr. Amanda Spivak

- Collected environmental samples on the Sapelo Island, GA salt marshes contributing to the GCE-LTER

*Soil microbiome of the Regional Science Center, MSUM* Summer 2018  
Under the direction of Dr. Sara Anderson

- Funded by the Minnesota Environmental and Natural Resources Trust Fund
- DNA extraction, PCR, agarose gel electrophoresis, sequencing of 16s rRNA gene

*Microbial community profile differences between two tanks of fermented wort, MSUM* Spring 2018  
Under the direction of Dr. Michelle Tigges and Dr. Sara Anderson

- DNA extraction, PCR, agarose gel electrophoresis, sequencing of 16s rRNA gene

*Adaptations of non-pigmented Antarctic bacteria subjected to UV radiation, MSUM* Spring 2018  
Under the direction of Dr. Michelle Tigges

- Led and managed team-based research questions on Antarctic bacteria
- Developed methods to determine UV radiation vulnerability

*Evaluating dissolved organic matter profiles and microbial compositions of the Buffalo and Red Rivers between fall and spring seasons, MSUM* Fall 2017 to Spring 2018  
Under the direction of Dr. Michelle Tigges

- Funded by the Judith A. Strong Research Grant
- Water filtration and collection of dissolved organic matter (DOM)

*Elucidating small leucine-like peptides in marine dissolved organic matter using liquid chromatography mass spectrometry, Research Experience for Undergraduates (REU) at the University of Texas Marine Science Institute (UTMSI)* Summer 2017  
Under the direction of Dr. Zhanfei Liu

- Funded by the National Science Foundation
- Water filtration and collection of DOM

- Applied use of LC/MS, MS/MS & ion mobility to determine if leucine-like peptides were present in the Gulf of Mexico.

*Improving the Drug Antipyrine: Synthesis of N1-Acylation Analogs of Pyrazolone*, MSUM

Spring 2017

Under the direction of Dr. Craig Jasperse

- Organic synthesis involving acylation of N1 on pyrazolone using three acyl chloride substrates (toluyl, benzoyl & acetyl).

### **Presentations**

*Building a machine learning model to predict particulate carbon flux out of the surface ocean*

- Oral presentation to be given at UGA Marine Sciences Symposium November 6<sup>th</sup>, 2020

*Adaptations of non-pigmented Antarctic bacteria subjected to UV radiation*

- Poster presentation given at the MSUM Student Academic Conference Spring 2018

*Microbial community profile differences between two tanks of fermented wort*

- Poster presentation given at the MSUM Student Academic Conference Spring 2018

*Elucidating small leucine-like peptides in marine dissolved organic matter using liquid chromatography mass spectrometry*

- Oral presentation given at UTMSI Symposium Summer 2017

*Improving the Drug Antipyrine: Synthesis of N1-Acylation Analogs of Pyrazolone*

- Poster presentation given at the MSUM Student Academic Conference Spring 2017

### **Related Employment**

Minnesota State University Moorhead

September 2018 – June 2019

Laboratory Services Specialist

- Communicated with faculty on needs of the lab
- Trained and managed undergraduate workers
- Prepared appropriate reagents for use in general chemistry labs
- Prepared agar plates for use in microbiology labs
- Maintained organization of prep and stock rooms

Minnesota State University Moorhead

August 2017 – May 2018

Level I Certified Tutor

- Communicated with students on areas of struggle
- Organized study schedules and learning plans
- Reviewed homework assignments to clarify mistakes
- Maintained records of students' progress

### **Skills & Certifications**

- Bacterial cell culture
- Protein extraction/purification
- DNA extraction/purification/sequencing
- Polymerase Chain Reaction (PCR)
- H<sup>1</sup> & C<sup>13</sup> NMR analysis
- Proficient in R
- Machine Learning
- Data Analysis
- Gas/Liquid Chromatography
- Mass Spectrometry
- Ion Mobility
- Conversational Spanish
- CRLA level 1 tutoring certification
- CIRTL Teaching Seminar (in progress)

## **Scholarships & Grants**

- Recipient of Graduate School Research Assistantship 2019 - 2023 (UGA)
- Recipient of Kenneth R. Skjegstad Biosciences Scholarship 2017 - 2018 (MSUM)
- Recipient of the Judith A. Strong Research Grant 2017 - 2018 (MSUM)
- Recipient of Upper-Class Scholarship 2016 - 2018 (MSUM)

## **Professional Activities**

Marine Science Graduate Student Association at UGA

- Treasurer managing the distribution and collection of funds for departmental activities (Fall 2020 to Present).
- Social Chair organizing events and outreach to engage new and current department members (Fall 2019 to Summer 2020).

Tri-Beta Honors Society at MSUM

- Volunteer in engagement activities involving plant sales and highway cleanups
- Engaged K-12 students in science experiments