

ERIN MAYBACH

Ph.D. Student, Dyhrman Microbial Oceanography Group
Earth and Environmental Sciences
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RESEARCH INTERESTS

My research focuses on the intricate world of marine microbes in the context of a dynamically changing ocean. Specifically, I am interested in the physiological ecology of these microscopic organisms and their crucial role in biogeochemical processes.

EDUCATION

Columbia University

Graduate School of Arts and Sciences August 2023 - Present
Ph.D. Student - Earth and Environmental Sciences

School of Professional Studies August 2021 - May 2023
Post-Baccalaureate Certificate - Ecology, Evolution, and Environmental Biology

University of Chicago Marine Biological Laboratory July - August 2022
Advanced Research Training Course: Strategies and Techniques of Analyzing Microbial Population Structures (STAMPS)

Harvard University 2020
Online coursework and verified certificates: *Data Science: R Basics*; *The Health Effects of Climate Change*

Elon University May 2020
B.S. - Dance Science, Minor in Exercise Science (*Cum Laude*)

SELECTED AWARDS, HONORS & GRANTS

Columbia University
Dean's Fellowship 2023
E3B Post-Baccalaureate Research Grant 2022

University of Chicago
Marine Biological Laboratory Alumni ROCs Award 2022

Elon University
Engagement Scholar 2016-2020
President's List Honoree 2016-2020
Kappa Omicron Nu Academic Honors Fraternity 2017-2020
Phi Eta Sigma Academic Honors Fraternity 2016

Joffrey Ballet School Professional Trainee Scholarship

2016-2018

RESEARCH PROJECTS

Metagenomics Workshop

January 2023

The New York Genome Center, the Institute for Comparative Genomics, and Richard Gilder Graduate School at American Museum of Natural History

Designed microbial ecology studies using high-throughput sequencing technology. Analyzed amplicon and metagenomic sequence data in Unix and R. Incorporated ecological data into result evaluation and visualizations.

Kmer diversity in streamlining cyanobacteria with KHill

April 2022 - May 2023

Advised by Shahid Naeem and Dean Bobo, *Columbia University*

Directed and executed 'omics workflows to quantify kmer diversity and effective genome count across bacterial genomes. Adapted a novel assembly-free bioinformatics program to fit environmental metagenomic samples.

CO₂-N₂O-CH₄ forest succession meta-analysis

August 2022 - May 2023

Collaboration with Savannah Cooley, *Columbia University*

Performed meta-analysis of remote sensing data to investigate forest regrowth and response to methane and nitrous oxide exposure. Managed gate-check criteria for data collection.

BioInform

September 2022 - Present

Received the *University of Chicago's Marine Biological Laboratory Alumni ROCs Award*

Founded a web-based community platform fostering inter-departmental collaboration between scientists, professionals, and institutions through the lens of bioinformatics. Developed open discussion forums, resource centers, and educational tools for STEM educators, using HTML, JavaScript, and CSS.

TECHNICAL SKILLS

Programming: Python (proficient), R (proficient), Unix (proficient), Perl (familiar), HTML5 (familiar), CSS (familiar), JavaScript (familiar)

Bioinformatics workflows: DADA2, QIIME, BioBakery, KHill, and more

Lab experience: Meta-analysis, remote sensing, data processing, wet lab skills: physiology, biology, and anatomy

PROFESSIONAL EXPERIENCE

National Science Foundation Science and Technology Center for Chemical Currencies of a Microbial Planet (C-CoMP)

August 2023- Present

Graduate researcher

American Museum of Natural History, New York, NY

January 2023 - May 2023

Bioinformatics working group member

Fresh Bowl, New York, NY June - August 2019
Sustainability Tech Startup Communications Intern
Sustainable Startups Representative at the United Nations Global Action Climate Summit

UCHealth Steadman Hawkins, Denver, CO June - August 2018
Intern in orthopedic surgery and outpatient rehabilitation
Intern with Colorado Ballet rehabilitation and injury prevention

Joffrey Ballet School, New York, NY 2016-2018
Professional Trainee

Paris Marais Ecole de Danse, Paris, France 2017
Professional Ballet Trainee
Trained with original members of the Martha Graham Dance Company

VOLUNTEER & COMMUNITY OUTREACH

Women in Science at Columbia University (WISC) August 2021 - Present
Research mentorship program and organization member

Boston Medical Reserve Corps January - July 2021
Emergency Responder in the COVID-19 pandemic

The Village Project 2017-2018
After-school STEM education program serving K-8 grade students in Elon, NC

RELEVANT SKILLS

Languages: French (fluent), German (conversational)
Field skills: PADI Open Water Dive Certification, PADI Enriched Air Certification, Avalanche safety, Wilderness safety