

Prisca Lim
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EDUCATION

Master of Science in Marine Sciences

Jan 2023-May 2024

University of North Carolina at Chapel Hill, College of Arts & Sciences
Department of Earth, Marine and Environmental Sciences (EMES)

Bachelor of Science in Environmental Science

Aug 2019-Dec 2022

University of North Carolina at Chapel Hill, College of Arts & Sciences
Chemistry Minor; Carolina Research Scholar; Highest Honors & Highest Distinction; GPA: 3.9

EMPLOYMENT

UNC School of Medicine, Research Specialist & Bioinformatician

Mar 2024-Present

Reporting to: Dr Tessa Andermann

- Build reproducible and efficient pipelines for short- and long-read sequencing to profile antibiotic resistance in gut microbiomes
- Analyze complex longitudinal datasets using linear mixed models and multivariate statistical approaches
- Isolate bacterial strains from stool samples to assess antibiotic resistance and tolerance
- Perform DNA extractions and prepare libraries for Illumina and Nanopore sequencing
- Manage lab protocols, supplies, meetings, and BSL-2 biosafety compliance

UNC Institute of Marine Science, Residential Advisor

Aug 2022-Dec 2022

Reported to: Dr Antonio Rodriguez

- Served as residential advisor for the 2022 Morehead City Field Site, supporting the physical and emotional well-being of 11 undergraduate students
- Organized weekly social and networking events
- Provided guidance for research projects and classes

UNC EMES, Lab Manager & Research Assistant

Jun 2021-Aug 2021, Dec 2021-Jul 2022

Reported to: Dr Adrian Marchetti

- Oversaw lab operations including ordering of research supplies, waste management and ensuring lab safety compliance
- Assisted with CHN elemental analysis, RNA and DNA extraction of samples collected during the 2021 EXPORTS Northeast Pacific Ocean field deployment
- Analyzed influence of environmental factors on marine protist composition and productivity across the Galápagos Islands using tools such as PCA, NMDS and WGCNA (weighted gene co-expression network analysis)

SKILLS

Computational: Linux, Shell scripting, Conda, Python, R, QIIME2, Microsoft Suite

Laboratory: DNA & RNA extraction, Illumina and Nanopore library prep, PCR (polymerase chain reaction), gel electrophoresis, elemental (CHN) analysis, chlorophyll extraction, light microscopy, NMR (nuclear magnetic resonance) spectroscopy, flow cytometry

Field: Experience with land-based field surveys (coastal and estuarine environments) and on board research vessels (oceanic)

Scuba: GUE Cave 1 & Tech 1 - Certified in overhead environments and up to 170ft, decompression diving using trimix and hyperoxic gases, use of double tanks and stage bottles, drysuit management

PUBLICATIONS

Lim, P., Seim, H., Torano, O., Neave, E.F., Jang, S.H., Johnson, Z., Haines, S., Gifford, S., Cohen, N., Moreno, C. & Marchetti, A. (2025). Drivers of marine phytoplankton diversity and connectivity in the Galápagos Archipelago spanning an ENSO cycle. *Environmental Microbiology*. <https://doi.org/10.1111/1462-2920.70146>

Lim, P., Paxton, A.B., Taylor, J.C. & Hall, N.S. (2023). Survey of epiphytic microalgae to evaluate risk of ciguatera fish poisoning across natural and artificial reefs in North Carolina. *Frontiers of Marine Science-Marine Molecular Biology and Ecology*. <https://doi.org/10.3389/fmars.2023.1232524>

Jang, S.H., **Lim, P.**, Torano, O., Neave, E.F., Seim, H. & Marchetti, A. (2022). Protistan communities within the Galápagos Archipelago with an emphasis on micrograzers. *Frontiers in Marine Science-Marine Biology*. <https://doi.org/10.3389/fmars.2022.811979>

RESEARCH EXPERIENCE

Master's Thesis Research

Jan 2023-May 2024

Mentor: Dr Adrian Marchetti

- o Investigated phytoplankton ecology and productivity in a highly dynamic upwelling environment, utilizing DNA metabarcoding and isotopic tracer techniques
- o Performed bioinformatics analysis to identify clusters of highly connected phytoplankton and relate them to environmental parameters
- o Published in Environmental Microbiology (first author)

ENEC 694H, Honors Research

Aug 2021-Dec 2022

Mentor: Dr Nathan Hall

- o Researched the influence of different artificial reef materials on the prevalence of toxic dinoflagellate, *Gambierdiscus* species through the use of microscopy and 18S rRNA gene sequencing
- o Obtained funding through WDHOE, the Explorers Club and Honors Carolina
- o Published in Frontiers of Marine Science (first author)

ENEC 698, Capstone Project

Aug 2021-Dec 2021

Mentors: Dr Antonio Rodriguez, Dr Nathan Hall and Dr Janet Nye

- o Evaluated the ecological significance of ponds that formed along the North Core Banks after Hurricane Dorian in 2019
- o Employed HPLC (high performance liquid chromatography), ¹⁴C radiolabeling and microscopy to characterize primary producers in and around the ponds

MASC 395, Undergraduate Research in Marine Science

Jan 2020-May 2021

Mentor: Dr Adrian Marchetti

- o Studied the effect of environmental conditions on phytoplankton composition in the Galápagos Islands through multivariate analysis of metagenomic 18s rDNA sequencing
- o Received SURF and Hill Foundation Internship awards to fund this project
- o Published in Frontiers of Marine Science (second author)

TEACHING, OUTREACH & EXPEDITIONS

Spring 2023

MASC 442: Marine Biology, Teaching Assistant**MASC 504: Biological Oceanography**, Teaching Assistant

Fall 2023

IDST 132L: Data Literacy Lab, Teaching Assistant**UNC EMES DEI Committee**, Graduate Student Representative

Aug 2023-May 2024

PUPCYCLE II

May 2023 - Jun 2023

14 days along California Current studying phytoplankton responses to upwelling dynamics.

Cruise ID: SR2311; Chief Scientist: Dr Adrian Marchetti

GRANTS & AWARDS

2023

Andrew Marion Blackmon Fellowship Fund, \$5000

2022

The Explorers Club Rising Explorer Grant, \$4500

Sherry Reed Memorial Undergraduate Marine Conservation Scholarship, \$1500

Knoble Family Honors Carolina Excellence Fund Honors Thesis Research Award, \$500

2020

Summer Undergraduate Research Fellowship (SURF), \$3000

Mary and Watts Hill, Jr. Student Internship Award, \$2500

PRESENTATIONS

Masters Thesis Defense

March 2024

Drivers of marine phytoplankton diversity and connectivity in the Galápagos Archipelago spanning an ENSO cycle.

Undergraduate Honors Thesis Defense

Nov 2022

Survey of epiphytic microalgae to evaluate risk of ciguatera fish poisoning across natural and artificial reefs in North Carolina.

Morehead City Field Site Undergraduate Capstone Presentation/Webinar

Dec 2021

Ecological Functions and Ecosystem Services of Overwash Ponds on North Core Banks, NC.

Morehead City Field Site Independent Research Symposium/Webinar

Dec 2021

*Influence of artificial reef materials on the prevalence of *Gambierdiscus* spp. and epiphyte composition.*

UNC Celebration of Undergraduate Research

May 2021

Application of DNA Extraction and Sequencing on Phytoplankton Population in Galápagos.

POSTERS

AGU Ocean Sciences Meeting

Feb 2024

Elucidating drivers of marine protist diversity and connectivity in the Galápagos Archipelago using DNA metabarcoding.

World Summit on Island Sustainability

June 2022

Drivers of marine protist diversity and connectivity in the Galápagos Archipelago.

EMES PerkinElmer Student Research Symposium

April 2022

Drivers of marine protist diversity and connectivity in the Galápagos Archipelago.

Awarded 2nd place undergraduate poster

ACC Meeting of the Minds Symposium

April 2022

*Influence of artificial reef materials on the prevalence of *Gambierdiscus* spp. and epiphyte composition.*

State of North Carolina Undergraduate Research & Creativity Symposium

Nov 2022

Analysis of Phytoplankton Composition and Primary Productivity in the Galápagos Islands.