# Dominique Kelly djkelly0116@gmail.com

## **OBJECTIVE**

Dedicated and driven researcher that utilizes experimental techniques to comprehend biogeochemical cycles in environmental processes, aiming to develop bioenergy solutions and mitigate impacts of climate change.

## **EDUCATION**

Northwestern University, Evanston, IL	Ph.D. May 2029
• Major: Earth and Planetary Sciences	
<ul><li>Smith College, Northampton, MA</li><li>GPA: 3.71</li></ul>	B.A. May 2022
• Major: Environmental Science & Policy   Minor: Biologic Queen Mary University of London, London, England	cal Sciences Study Abroad Fall 2021
RESEARCH EXPERIENCE	
<ul> <li>Intern, Lawrence Livermore National Laboratory, Livermore, CA</li> <li>Maintained co-cultures of strains of bacteria and algae from and other freshwater sources from Antarctica</li> <li>Evaluated the ability of bacteria to extract biologically ava phosphorus limited environment through co-culturing with labeling</li> <li>Analyzed cell density of microbes using an automated cell cytometry, and fluorometry</li> <li>Processed prokaryotic organisms using nanoscale secondar evaluate the carbon and phosphorus composition of sample</li> <li>Extracted DNA for gel electrophoresis and sequencing through the second seco</li></ul>	Jun. 2024 – Sep. 2024 n permanently stratified lakes ilable phosphate from a algae and isotopic carbon density/viability analyzer, flow ry ion mass spectrometry to es ough the sanger technique
<ul> <li>Fellow, Woods Hole Oceanographic Institution, Woods Hole, MA</li> <li>Investigated the biochemical role of alkaline phosphatase en <i>Prochlorococcus</i> through in vitro incubation experiments</li> <li>Maintain <i>Prochlorococcus, Synechococcus,</i> and Antarctic en media and regularly performing culture transfers</li> <li>Perform protein extraction protocol using magnetic beads to analysis using mass spectrometry</li> <li>Design and modify protocols in Opentrons software for aut</li> <li>Determine chlorophyll measurements of <i>Prochlorococcus</i> of Organize data using Google Sheets and Excel and analyzed</li> <li>Author, revise, and present research on cobalt and iron limit scientific conferences</li> </ul>	Sep. 2022 – June 2024 nzymes in cyanobacteria eukaryote cultures by creating o prepare for proteomics omated lab processes using fluorometry I data using Python and R itation in <i>Prochlorococcus</i> to
FIELD EXPERIENCE	
<ul> <li>AT50-10 CLiOMZ Research Vessel Atlantis Cruise</li> <li>Golfito, Costa Rica to San Diego, CA, United States</li> <li>Collaborated with a postdoctoral researcher to grow marine is observe cobalt, iron, zinc, and vitamin B-12 limitation amon</li> <li>Assisted with construction and dissemble of an autonomous deployment and recovery</li> <li>Performed filter cutting and tube labeling for organization to particulate metal analysis</li> <li>Executed filtering large volumes of water on glass microfibe</li> <li>Measured chlorophyll amount using fluorometry</li> <li>Delegated data organization, calculations, and data visualiza</li> <li>Gathered water samples for isotopic measurements</li> </ul>	May – Jun. 2023 microorganism cultures to ag oligotrophic waters underwater vehicle for o prepare for protein, DNA, and er filters using vacuum pump tion into Google Sheets

#### C-CoMP Bermuda Institute of Ocean Sciences Visit

St. George's, Bermuda

- Collected water samples while aboard the Research Vessel Atlantic Explorer, contributing to the Bermuda Atlantic Time-series Study (BATS)
- Measured light visibility using secchi disk and gathered zooplankton samples using a Neuston net on the Research Vessel Stommel
- Utilized a zooplankton scanner to quantify plankton biodiversity through ImageJ
- Collaborated with a team to present experience and achievements

#### **PUBLICATIONS & PRESENTATIONS**

- Kelly, Dominique; Mcllvin, Matt; Steck, Viktoria; Saito, Mak. "Effects of Varying Cobalt, Zinc, & Iron on Alkaline Phosphatase Production in Proteomes of *Prochlorococcus marinus*." American Geophysical Union Ocean Sciences Meeting, Ernest N. Morial Convention Center, New Orleans, Louisiana, February 2024 (poster).
- Kelly, Dominique; Mcllvin, Matt; Saito, Mak. "The Impact of Iron and Cobalt on the Physiology and Enzyme Function of *Prochlorococcus marinus*." Chemical Oceanography Gordon Research Conference, Southern New Hampshire University, Manchester, New Hampshire, July 2023 (poster).
- Kelly, Dominique; Thomason, Rhegan; Goldberg, Hannah; Cobbs, Hope; Gibson IV, Carl; Garcia, Herman. "Discovering Bermuda: C-CoMP BIOS Research Week." National Science Foundation Site Visit, Woods Hole, Massachusetts, June 2023 (poster).
- Capozzi, Nicole; Ahmed, Eyananda; Curtis, Ezra; Grandbois, Olivia; Kelly, Dominique; Kristjansson, Kadin; Morgan, Natalie; Schlecker, Louis; and Wright, Rachel M., "Comparing physiological responses to hot and cold stress in a cnidarian–algal holobiont, Exaiptasia diaphana." Special Studies, Smith College, Northampton, Massachusetts, 2022.
- Kelly, Dominique; Kim, Albert Y.; Baumer, Ben. "Coding the MacLeish Field Station: The "macleish" R Package." Smith College Sigma Xi Chapter Talks, Northampton, Massachusetts, April 19, 2022 (lecture).

### **PUBLIC OUTREACH**

Representative, Hampton University, Hampton, VA Apr. 12-14, 2023

- Executed outreach on marine science related opportunities for undergraduate and recent graduates at Hampton University's Research Symposium with a principal investigator and a Ph.D. graduate student
- Foster potential collaboration with a microbiologist professor for protein extraction on heterotrophic bacteria

Volunteer, Junior Achievement Inspire Career Fair, Boston, MA

- Collaborated with a team to design dynamic activities related to ocean science for students to learn about opportunities at WHOI
- Engaged with over 750 8<sup>th</sup> grade students from disenfranchised communities
- Shared facts, ongoing research, and resources regarding marine mammals and science

Volunteer, New Bedford Middle School, New Bedford, MA

- Cooperated with a Ph.D. graduate student to teach chemical processes using toys and present ocean science research to three classes of 8<sup>th</sup> grade students
- Facilitated curriculum design and planning, lecture presentations, hands-on learning activities and storytelling about personal research and experiences

Nov. 17, 2022

Dec. 9. 2022

## **SCHOLARSHIPS & AWARDS**

National Gem Fellowship Ocean Solutions Challenge Grant C-CoMP Bridge-to-PhD Fellowship Smith College Summer Undergraduate Research Fellowship Smith College McKinley Honors Fellowship Google Explore CSR Award National Oceanic and Atmospheric Administration Hollings Scholarship Program June 2024-2029 May 2023 Sep. 2022 – Sep. 2024 Summer 2021

> Spring 2021 Spring 2021 Summer 2019