Esmée Q. Kuiper
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RESEARCH INTERESTS

As the earth responds to challenges imposed by climate change, understanding biogeochemical cycling grows increasingly important. Microbes are key mediators of such processes. By studying microbial life and its interactions with the environment, I hope to characterize these crucial microbial communities. To this end, I am interested in both culture-independent (metabolomic, metagenomic, transcriptomic) and culture-dependent (microscopy, growth analysis, biological assays, etc) methods.

EDUCATION

Ph.D., Earth and Planetary Sciences
Northwestern University
Advisor: Dr. Magdalena Osburn
Expected 2028

Bachelor of Science, Earth and Environmental Sciences *with distinction*
University of Michigan
December 2022

PROFESSIONAL EXPERIENCE

Summer Intern
Marine Biological Laboratory, Ecosystems Center, Ruff Lab
June 2023 - August 2023

Investigated microbial diversity in the Eastern Tropical North Pacific Oxygen Minimum Zone. Used techniques such as PCR, qPCR, CARD-FISH, and SEM.

Research Assistant
University of Michigan, Earth and Environmental Sciences, Geomicrobiology Lab
September 2022 - June 2023

Studied relationships between *Microcystis* and associated microbes. Used techniques and programs including PCR, solid-phase extraction, Gram staining, liquid and solid culturing, and RStudio.

Research Assistant
University of Michigan Medicine, Pathology Department, Lieberman Lab
October 2019 - May 2022

Worked with Dr. Mark Schultz to characterize the Niemann-Pick disease type C phenotype and to test drug therapies in patient fibroblasts, human induced pluripotent stem cells, and mouse models.

TECHNICAL SKILLS

Polymerase chain reaction (end-point, quantitative, real-time), metabolite extraction, DNA extraction (manual), R coding language, western blotting, Adobe creative systems, confocal microscopy, immunofluorescence staining

HONORS AND AWARDS

Camp Davis Field Studies Award
2023
NATG/USGS Cooperative Field Training Nominee
2022
University Honors
2019 - 2022

SERVICE AND EXTRACURRICULARS

Sexual Assault Prevention and Awareness Center
University of Michigan
September 2020 - December 2022

New England Literature Program
University of Michigan (Alton Bay, NH)
May 2022 - June 2022

PUBLICATIONS AND PRESENTATIONS

Schultz, M. L., Schache, K. J., Azaria, R. D., Kuiper, E. Q., Erwood, S., Ivakine, E. A., Farhat, N. Y., Porter, F. D., Pathmasiri, K. C., Cologna, S. M., Uhler, M. D., & Lieberman, A. P. (2022). Species-specific differences in NPC1 protein trafficking govern therapeutic response in Niemann-Pick Type C disease. JCI Insight, 7(23). https://doi.org/10.1172/jci.insight.160308

Kuiper, E. Q., Azaria, R. D., Lieberman, A. P., Schultz, M. L. (2020). Species-specific differences in NPC1 protein trafficking govern therapeutic response in Niemann-Pick Type C disease. Protein-Folding Disease Symposium, University of Michigan. *Poster.*

Kuiper, E. Q., Fawaz, M., Azaria, R. D., Schwendemen, A., Lieberman, A. P., Schultz, M. L. (2020). Apo-A1 Mimetics Reduce Sphingomyelin in Niemann-Pick Type A disease models. Undergraduate Research Opportunity Program Symposium, University of Michigan. *Poster.*