ARIANNA KRINOS QUINN

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EDUCATION

Ph.D. in Biological Oceanography, **MIT**/**WHOI** Joint Program — June 2019 - present, *expected 2024*

- **Thesis Supervisors**: Dr. Harriet Alexander & Dr. Mick Follows
- **Dissertation Title**: *Decoding divergence in marine protistan communities: from strain diversity to basin biogeography*

B.S. in Computer Science, **Virginia Tech**, overall GPA: 3.96, Minor: Mathematics, *summa cum laude* — 2015-2019
B.S. in Biological Sciences, **Virginia Tech**, in-major GPA: 4.00 — 2015-2019
B.S. in Computational Modeling and Data Analytics, **Virginia Tech** — 2015-2019

PUBLICATIONS, *authors contributed equally, +peer-reviewed, #mentored student

First-author is A.I. Krinos

Krinos, A.I., S.K. Shapiro, W. Li#, S. Haley, S. Dyhrman, S. Dutkiewicz, M.J. Follows, and H. Alexander (2024). Intraspecific differences in thermal acclimation impact the ecological niche of coccolithophores. *bioRxiv*, submitted to *Ecology Letters*. [*bioRxiv* Submitted Version Link]

Krinos, A.I., R.M. Bowers, R.R. Rohwer, K.D. McMahon, T. Woyke, and F. Schulz (2024). Time-series metagenomics reveals changing protistan ecology of a temperate dimictic lake. Accepted at *Microbiome*.

Krinos, A.I., M. Mars Brisbin, S.K. Hu, N.R. Cohen, T. Rynearson, M.J. Follows, F. Schulz, and H. Alexander (2024). Missing microbial eukaryotes and misleading meta-omic conclusions. *bioRxiv,* in review at *Nature Microbiology*.

Krinos, A. I., Cohen, N. R., Follows, M. J., & Alexander, H. (2023). Reverse engineering environmental metatranscriptomes clarifies best practices for eukaryotic assembly. *BMC Bioinformatics*.+

Krinos, A.I., Hu, S.K., Cohen, N.R., and Alexander, H. (2021). `EUKulele`: Taxonomic annotation of the unsung eukaryotic microbes. *Journal of Open Source Software*, 6(57), 2817, https://doi.org/10.21105/joss.02817+

Krinos, A.I.*, Maurais, A.E.* (2019). Parameter and Uncertainty Estimation for a Model of Atmospheric CO_2 Observations. *SIAM Undergraduate Research Online*, 12.+

Krinos, A.I.* and Maurais, A.E.* (2019). Nuggets of Wisdom from Destinations Doomed Due to Dragon Dominion. *UMAP Journal*. Access.

Maurais, A.E.* and Krinos, A.I.* (2018). Better to Marry Renewables than to Burn Fossil Fuels in Border States. *UMAP Journal*. Access.

Krinos, A.I., Farrell, K.J., Daneshmand, V., Subratie, K.C., Figueiredo, R.J., and Carey, C.C. (2019). Including variability in air temperature warming scenarios in a lake simulation model highlights uncertainty in predictions of cyanobacteria. *bioRxiv*, 734285.

Collaborative works including A.I. Krinos

Cohen, N.R., A.I. Krinos, H. Alexander, R.M. Kellogg, R. Chmiel, D.M. Moran, M.R. McIlvin, P. Lopez, J.A. Breier, M.V. Jakuba, R. Johnson, and M.A. Saito. Protistan ecophysiology across geochemical gradients of the western North Atlantic Ocean revealed with an autonomous underwater vehicle. *bioRxiv*, in review at *Nature Communications*.

M. Mars Brisbin, A. Schofield, M. McIlvin, Krinos, A.I., H. Alexander, and M.A. Saito. Vitamin B12 conveys a protective advantage to phycosphere-associated bacteria at high temperatures. *ISME Communications*.+

Gleich, S.J., S.K. Hu, A.I. Krinos, and D.A. Caron (2023). Protistan community composition and metabolism in the North Pacific Subtropical Gyre: Interactions of mesoscale eddies and depth. *Environmental Microbiology*.+

Alexander, H., Hu, S.K., Krinos, A.I., Pachiadaki, M., Tully, B.J. and Reiter, T. (2023). Eukaryotic genomes from a global metagenomic dataset illuminate trophic modes and biogeography of ocean plankton. *mBio*.+

Cohen, N.R., Alexander, H., Krinos, A.I., Hu, S.K., and Lampe, R.H. (2022). Marine microeukaryote metatranscriptomics: sample processing and bioinformatic workflow recommendations for ecological applications. *Frontiers in Marine Science*.+

Weissman, J. L., Dimbo, E. R. O., Krinos, A. I., Neely, C., Yagues, Y., Nolin, D., ... & Fuhrman, J. A. (2021). Estimating the maximal growth rates of eukaryotic microbes from cultures and metagenomes via codon usage patterns. *bioRxiv*.

Tully, B. J., Buongiorno, J., Cohen, A. B., Cram, J. A., Garber, A. I., Hu, S. K., Krinos, A.I.... & BVCN Instructor Consortium. (2021). The Bioinformatics Virtual Coordination Network: An Open-Source and Interactive Learning Environment. In Frontiers in Education (p. 394). Frontiers.$^{+}$

Walke, J.B., Becker, M.H., Krinos, A.I., Burzynski, E.A., Santiago, C., Umile, T.P., Minbiole, K.C., Belden, L.K. (2020). Seasonal changes and the unexpected impact of environmental disturbance on skin bacteria of individual amphibians in a natural habitat. *FEMS Microbiology Ecology*. https://doi.org/10.1093/femsec/fiaa248^{+}

Farrell, K.J., Ward, N.K., Krinos, A.I., Hanson, P.C., Daneshmand, V., Figueiredo, R.J., Carey, C.C. (2020). Ecosystem-scale nutrient cycling responses to increasing air temperatures depend on lake trophic state. *Ecological Modelling*, 430, 109134. https://doi.org/10.1016/j.ecolmodel.2020.109134^{+}

Carey, C.C., Ward, N.K., Farrell, K.J., Lofton, M.E., Krinos, A.I., McClure, R.P., Subratie, K.C., Figueiredo, R.J., Doubek, J.P., Hanson, P.C., Papadopoulos, P., Arzberger, P. (2019). Enhancing collaboration between ecologists and computer scientists: lessons learned and paths forward. *Ecosphere 10*(5). https://doi.org/10.1002/ecs2.2753^{+}

Nagle, L., Brown, S., Krinos, A.I., & Ahearn, G.A. (2018). Ocean acidification: effects of pH on ^{45}Ca uptake by lobster branchiostegites. *Journal of Comparative Physiology B*. https://doi.org/10.1007/s00360-018-1173-2^{+}

PUBLICATIONS IN PREPARATION, *authors contributed equally, +peer-reviewed, #mentored student

Krinos, A.I., Q. Perian$^{\#}$, S.K. Shapiro, M.J. Follows, and H. Alexander. Comparing the role of common and variable genes in the thermal tolerance of seven coccolithophore strains. *In preparation.*

Mars Brisbin, M., Krinos, A.I., Costa, A., and Alexander, H. Transcriptional responses to nutrient limitation in the bloom-forming phytoplankton *Phaeocystis pouchetii. In preparation.*

SHORT-TERM APPOINTMENTS

Joint Genome Institute, Lawrence Berkeley National Laboratory (advisor: Dr. Frederik Schulz) June-Sept 2022
- Implemented topic modeling algorithm for taxonomic prediction in eukaryotes
- Wrote benchmarked code in Python, Julia, and R to create and evaluate strain-specific metagenome-assembled genomes
- Applied population genetic approaches to explore strain diversity in algal populations

Joint Genome Institute, Lawrence Berkeley National Laboratory (advisor: Dr. Tanja Woyke, Dr. Frederik Schulz, Dr. Robert Bowers) Jan-Mar 2021
- Applied genomic approaches to identify microbial eukaryotes in a eutrophic lake
- Implemented network correlation algorithm to explore putative interactions between eukaryotes and prokaryotes

Geophysical Fluid Dynamics Laboratory, NOAA (advisor: Dr. Charles Stock) Summer 2018
- Designed and wrote agent-based models in Python and Julia to explore population ecology of economically-relevant blue crab in Chesapeake Bay
- Used statistically-downscaled global climate model output to drive projected futures in a marine resource

Advanced Computing and Information Systems Lab., Univ. of Fla. (advisor: Dr. R. Figueiredo) Summer 2017

SELECTED PRESENTATIONS *presenting author, +invited, #mentored student

Krinos, A.I.*, S.G. Leles, S.K. Shapiro, Q. Perian $^{\#}$, N.M. Levine, M.J. Follows, and H. Alexander. Transcriptome data enable physiological model customization and illumine phytoplankton thermal response. Ocean Sciences Meeting, New Orleans, LA, February 2024.

Krinos, A.I.*. Connecting marine microbial genetic diversity and ocean biogeography. University of Tampa Integrative Biology Seminar, Tampa, FL, January 2024.$^{+}$

Krinos, A.I.*. Intraspecific thermal observations inform phytoplankton ecosystem models. CBIOMES Collaboration Meeting, (*virtual*), October 2023.

Krinos, A.I., Q. Perian$^{\#}$, S.K. Shapiro, M.J. Follows, and H. Alexander. Shared genes and thermal response among *Gephyrocapsa huxleyi* strains. Advances in Coccolithophore Research Annual Meeting, Bergen, Norway (*hybrid delivered virtually*), September 2023.

Krinos, A.I.*. Intraspecific thermal observations inform phytoplankton ecosystem models. WHOI Biology Department Seminar, Woods Hole, MA, USA (*hybrid delivered in-person*), August 2023.

Krinos, A.I.*, M. Mars Brisbin, S.K. Hu, N.R. Cohen, T. Rynearson, M.J. Follows, F. Schulz, and H. Alexander. Missing microbial eukaryotes and misleading meta-omic conclusions. New Lineages of Life Symposium, JGI Genomics of Earth & Environment Annual Meeting, Berkeley, CA, USA (*hybrid delivered virtually*), August 2023.

Krinos, A.I.*. Leveraging large datasets to discover protistan diversity across scales. Computational Science Graduate Fellowship Annual Program Review, Washington, DC, USA, July 2023.$^{+}$

Krinos, A.I.*, S.K. Shapiro, W. Li$^{\#}$, S. Dutkiewicz, M.J. Follows, and H. Alexander. Intraspecific differences in thermal acclimation impact the ecological niche of coccolithophores. Phycological Society of America Meeting, Providence, RI, USA, June 2023.

Krinos, A.I.*, S.K. Shapiro, W. Li$^{\#}$, S. Dutkiewicz, M.J. Follows, and H. Alexander. Intraspecific differences in thermal acclimation impact the ecological niche of coccolithophores. CBIOMES Annual Meeting, New York City, NY, USA, June 2023.

Krinos, A.I.*, S.K. Shapiro, W. Li$^{\#}$, S. Dutkiewicz, M.J. Follows, and H. Alexander. Intraspecific differences in thermal acclimation impact the ecological niche of coccolithophores. ASLO Aquatic Sciences Meeting, Palma de Mallorca, Spain, June 2023.

Krinos, A.I.*. Phytoplankton diversity across scales: from strain identity to wrangling assemblage-level taxonomy. Northeastern Marine Science Center Seminar, Nahant, MA, USA, April 2023.

Krinos, A.I.*, S.K. Shapiro, M.J. Follows, and H. Alexander. Thermal acclimation experiments highlight intraspecific differences in the flexibility of *Emiliania huxleyi* to thermal stimuli. International Society of Evolutionary Protistologists (ISEP) Virtual Meeting, January 2023.

Krinos, A.I.*. Hello, my name is *Emiliania*: an omic exploration into annotating marine protists. Bucknell University Biology Department Seminar, Lewisburg, PA, USA, October 2022.$^{+}$

Krinos, A.I.*, N.R. Cohen, S.K. Hu, R.J. Gast, M.J. Follows, S.T. Dyhrman, and H. Alexander. Exploring the ecology of marine cryptophytes with metatranscriptomics. Gordon Research Seminar and Conference on Marine Microbes, Les Diablerets, Switzerland, May-June 2022. Poster.

Krinos, A.I.*, S.K. Hu, M.A. Saito, S.K. Shapiro, M.J. Follows, H. Alexander, and F. Schulz. Exploring thermal controls on coccolithophores with multi-omic tools. Advances in Coccolithophore Research Meeting, Virtual hosted from Bergen, Norway, June 2022.

Krinos, A.I.*, N.R. Cohen, S.K. Hu, M.J. Follows, and H. Alexander. Meta-transcriptomics in the multi-omic pursuit of truth in marine protists. University of Georgia Department of Marine Science Seminar, Savannah, GA, USA, March 2022.

Krinos, A.I.*, S.K. Shapiro, M.J. Follows, and H. Alexander. Thermal acclimation experiments and genetic analysis highlight intraspecific differences in *Emiliania huxleyi*. CBIOMES Collaboration Virtual Meeting, Simons Foundation, February 2022.

Krinos, A.I.*, S.K. Shapiro, M.J. Follows, and H. Alexander. Thermal acclimation experiments and genetic analysis highlight intraspecific differences in *Emiliania huxleyi*. Fifth Workshop on Traits-Based Approaches to Ocean Life, Knoxville, TN, USA, January 2022.

Krinos, A.I.*, N.R. Cohen, M.J. Follows, and H. Alexander. Daily patterns in expression in Western Antarctic Peninsula metatranscriptomes. CBIOMES Collaboration *Virtual* Annual Meeting, Simons Foundation, Virtual, June 2021.

Krinos, A.I.*, N. Cohen, M. Follows, and H. Alexander. ***euk***`rhythmic`: leveraging the metatranscriptomic landscape to reproducibly detect and describe marine protistan communities. WHOI Biology Department Seminar, Virtual, May 2021.

Krinos, A.I.*, N.R. Cohen, M.J. Follows, and H. Alexander. eukrhythmic: leveraging the metatranscriptomic landscape to reproducibly detect and describe marine protistan communities. Association for the Sciences of Limnology and Oceanography Aquatic Sciences Meeting, Virtual, May 2021.

Krinos, A.I.*, N.R. Cohen, M. Saito, M.J. Follows, and H. Alexander. ***euk***`rhythmic`: Applying Metatranscriptome Methodology to Marine Eukaryotes. CBIOMES Collaboration *Virtual* Annual Meeting, Simons Foundation, Virtual, June 2020.

Krinos, A.I.*, M.J. Follows, and H. Alexander. Single-cell transcriptomics: The Next Frontier For Eukaryotic Algae. Microbiome Symposium, University of Rhode Island, January 2020.

Krinos, A.I.*, K. Dixon, A. Ross, and C. Stock. Understanding spatial effects of climate change on Chesapeake Bay blue crab using statistical downscaling and agent-based modeling. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, San Juan, Puerto Rico, February 2019.

Krinos, A.I.*, D.M. Medina, M.C. Hughey, J.B. Walke, Z. Gajewski, L.S. Sarment, and L.K. Belden. An evaluation of the predictive potential of gene sequences for antifungal capacity of amphibian skin bacterial isolates. Society for Integrative and Comparative Biology Annual Meeting, Tampa, FL, January 2019.

Krinos, A.I.* and A.E. Maurais*. Parameter and Uncertainty Estimation for a Model of Atmospheric CO_2 Observations. Department of Mathematics Annual Research Presentations, Blacksburg, VA, May 2018. ***Layman Prize Award***.

Krinos, A.I.*, R.J. Figueiredo, P.C. Hanson, A.L. Hetherington, K. Subratie, J.T. Sukumar, and C.C. Carey. Numerical simulation modeling coupled to the GRAPLEr distributed computing platform provides insight into lake water quality responses and land use change. Pacific Rim Applications and Grid Middleware Assembly (PRAGMA) 32nd Bi-Annual Meeting, Gainesville, FL, April 2017. ***Best Student Poster Award***.

Krinos, A.I.*, and G.A. Ahearn. Effect of pH on uptake of calcium by crustacean gills. Society for Integrative and Comparative Biology Annual Meeting, New Orleans, LA, Jan. 2017.

Krinos, A.I.*, M. Billah, P. Valayamkunnath, and V. Sridhar. Hydroclimatology of the New River Basin for effective land and water management. Amer. Soc. of Agricultural & Biological Engineers Annual International Meeting, Orlando, FL, July 2016.

SELECTED ABSTRACTS

Hu, S.K.*, R. Anderson, A.I. Krinos, H. Alexander, M. Pachiadaki, V.P. Edgcomb, M. Serres, S. Sylva, C.R. German, S. Lang, J. Seewald, and J.A. Huber. The Elusive Ecological Roles of Microeukaryotes at Deep-Sea Hydrothermal Vents. Ocean Sciences Meeting, New Orleans, LA, February 2024.

Mars Brisbin, M.*, A.I. Krinos, S.K. Shapiro, P. Lopez, M.R. McIlvin, A. Costa, M.A. Saito, and H. Alexander. Augmenting a multi-decade time series with multiple meta-omics to uncover molecular mechanisms behind changing phytoplankton bloom dynamics in Massachusetts Bay. Ocean Sciences Meeting, New Orleans, LA, February 2024.

Farrell, K.J.*, C.C Carey, A.I. Krinos, N.K. Ward, P.C. Hanson, R.J. Figueiredo, V. Daneshmand, K. Subratie. GRAPLEr Platform Accelerates Whole-Ecosystem Simulation Modeling to Increase Understanding of Climate Change Impacts on Lake Nutrient Cycling. Ecological Society of America Annual Meeting, New Orleans, LA, Aug. 2018.

Carey, C.C.*, R.J. Figueiredo, P.C. Hanson, A.L. Hetherington, A.I. Krinos, K. Subratie, and J.T. Sukumar. Ensemble-based simulation modeling reveals non-linear water quality responses to climate and land use change scenarios in a eutrophic lake. Ecol. Society of America Annual Meeting, Portland, OR, Aug. 2017.

Beaulieu, Stace, et al., including A.I. Krinos. Building a data science curriculum and community for ocean scientists, engineers, and students using The Carpentries model. AGU Fall Meeting 2020. AGU, 2020.

Freilich, Mara, et al., including A.I. Krinos. Hurricane Dorian Impacts on Northeast US Shelf Marine Hydrography and Ecosystem. Ocean Sciences Meeting 2020. AGU, 2020.

SELECTED AWARDS

BioGeoSCAPES Early-Career Fellow, NSF *AccelNet* Initiative — $5,000, August 2023 - 2025

Computational Science Graduate Fellowship, U.S. Department of Energy — >$400,000, March 2019 - 2023

Teaching Development Fellowship, MIT Teaching and Learning Lab — $2,100, 2023 - 2024

Grassle Fund Grant, Woods Hole Oceanographic Institution — $7,400, July 2022
Proposal: Contextualizing *Emiliania huxleyi* thermal acclimation experiments with coastal metatranscriptomic surveillance

Graduate Teaching Award, MIT Graduate Student Council — April 2023

Tom Cavalier-Smith Early Career Prize, International Society of Evolutionary Protistologists — January 2023

Ocean Venture Fund Grant, Woods Hole Oceanographic Institution — $9,600, March 2020
Proposal: Identifying strain-specific differences in thermal acclimation of *Emiliania huxleyi*

Communicating Your Science and Engineering Essay Contest, Annual Prize Winner, Krell Institute — April 2022
One winner chosen each year for a general-audience scientific essay on their research to be published in *DEIXIS*

Travel Award, Workshop on Traits-Based Approaches to Ocean Life, Knoxville, TN — ≈$1,000, January 2022

Travel Award, International High-Performance Computing Summer School, Atlanta, GA — ≈$1,250, July 2023

Outstanding Winner, International Mathematical Competition in Modeling $10,000, April 2018 & 2019
Part of a team of two that won this international competition (approximately 15 winners per year of thousands of teams; 10,670 in 2018) in 2018 and 2019 (team from Virginia Tech)

Senior Undergraduate Research Award, Virginia Tech College of Science April 2019
One award granted within Virginia Tech's College of Science to a graduating senior with outstanding undergraduate research

Outstanding Senior, Virginia Tech Department of Computer Science February 2019

Senior Excellence Award, Virginia Tech Division of Computational Modeling and Data Analytics March 2019

Phi Sigma Biological Sciences Honor Society inductee May 2018

Phi Beta Kappa Honor Society inductee May 2019

Senior Excellence Award, Virginia Tech Division of Computational Modeling and Data Analytics March 2019

Ernest F. Hollings Scholarship, NOAA $30,000 internship, tuition, conference funds, 2017 - 2019

Barry Goldwater Scholarship, Goldwater Scholarship Foundation $7,500, March 2018

Astronaut Scholarship, Astronaut Scholarship Foundation $20,000, 2017 & 2018

Northrup Grumman and General Electric Women's Network Scholarships, Society of Women Engineers $5,000, 2016 & 2017

Eleanor Davenport Leadership Scholarship, Virginia Tech Engineering $28,000, 2015 - 2019

William C. McAllister Leadership Scholarship, Virginia Tech Engineering $5,500, March 2018

Luther and Alice Hamlett Research Grant, Virginia Tech Academy of Integrated Science $3,000, December 2017

Nominations: 2023 Outstanding UROP (MIT Undergraduate Research) Mentor Award

TEACHING EXPERIENCE

Teaching Assistant and Lecturer, 12.715 Environmental Bioinformatics, MIT-WHOI Joint Program [Course Evaluations] Fall 2023

Instructor, MIT-WHOI Summer Math Review: *R Programming* August 2023

Contributing Instructor, WHOI Blue Economy January Course (Undergraduate Level) January 2023

Teaching Assistant, Software Carpentries course in `R` and the shell June 2023

Teaching Assistant, 7.470 Biological Oceanography (Graduate Level) *led recitation sessions and assisted students with project development* [Course Evaluations] Spring 2022

Guest Lecturer, 7.470 Biological Oceanography, MIT-WHOI Joint Program: Phytoplankton blooms, Sverdrup and current discourse February 2022

Contributing Instructor, WHOI Blue Economy January Course (Undergraduate Level) January 2022

Guest Lecturer, 12.715 Environmental Bioinformatics, MIT-WHOI Joint Program: Workflow development, `Snakemake`, and reproducibility November/December 2021

Instructor, Software Carpentries course in `R` October 2021

Teaching Assistant, Marine Phytoplankton Physiology & Ecology Seminar Fall 2021

Instructor, Software Carpentries course in `Python` and the shell June 2021

Instructor, MIT-WHOI Summer Math Review: *Data Analysis* August 2021

Instructor, Falmouth Summer Academy: *Mathematical Ecology, "Counting Critters"* August 2021

Instructor, MIT HSSP (Educational Studies Program): *Population Models and Demography* July-August 2021

Teaching Assistant, Marine Biological Laboratory Summer Course: *Physiology and Transcriptomics* June 2021

Instructor, Software Carpentries course in `R` and the shell November 2020

Instructor, MIT HSSP (Educational Studies Program): *Bayesian Pattern Analysis in Biology*, 6 weeks — Summer 2020

Instructor, Rainstorm: Emiliania huxleyi *and their viruses* — June 2020

Instructor, MIT-WHOI Summer Math Review: *Probability and Statistics* — July 2020

Teaching Assistant, Software Carpentries course in `Python` and the shell — June 2020

Teaching Assistant, Biology Orientation Seminar — Fall 2017

Peer Educator, Honors Reading Seminar, Virginia Tech — Spring 2017

Peer Educator, Honors First-Year Seminar, Virginia Tech — Fall 2016

Instructor, Bioinformatics Virtual Coordination Network — Summer 2020

CURRICULUM DEVELOPMENT

MIT Courses: Developed plan for Phytoplankton Physiology and Ecology reading group including weekly lecture content and discussion questions

Independent Courses: HSSP (Population Dynamics and Bayesian Statistics), Falmouth Academy (math-environmental science interdisciplinary course)

Problem Sets: Contributor to problem bank, MIT 18.02 (Multivariable Calculus) and 18.06 (Linear Algebra): sustainability-related word problems

PEDAGOGICAL ENGAGEMENT

Communicating Ocean Science: Completed course in pedagogy at WHOI focused on active learning and communicating science to a broad audience; included science teaching outreach at the fourth grade and community college levels. Based on teaching content from UC Berkeley and the MIT Teaching and Learning Lab.

Kaufman Teaching Certificate Program: Completed course in pedagogy at MIT with the Teaching and Learning Lab including practical microteaching sessions.

Earth, Atmospheric, and Planetary Sciences Pedagogy Seminar: Participated in January (2022) term seminar course on pedagogy and active learning in the Earth sciences.

Honors Service Learning: Completed pedagogy course at Virginia Tech aimed at teaching in diverse communities; included classroom content as well as service at Giles County, VA Head Start center.

Future PUI Faculty Workshop: Selected for a three-day workshop on pedagogy, student engagement, and research resources at primarily undergraduate institutions (PUIs) at Bucknell University.

ADVISED UNIVERSITY STUDENTS

Research Advisees

Quinn Perian, MIT '26 — 2023-present

Weixuan Li, Southern U of Sci and Tech (Shenzhen, China) '23; MIT Special Student (Mechanical Engineering) — 2022-2023

Celeste Nobrega, Wheaton College '22 — Summer 2021

Amy Zhong, MIT '23 — Summer 2020

Other Academic Advising Programs

Total of 10 students advised in MIT-WHOI Joint Program (prospective and graduate students)

SYNERGISTIC ACTIVITIES & OUTREACH

Participant, WHOI K-12 Education Planning Retreat — April 2024

Invited Panelist, Experienced TA Panel at MIT TA Days — August 2023

Graduate Student Representative, EAPS Department Diversity, Equity, and Inclusion Committee — 2023-2024

Member, Undergraduate Recruitment Working Group, Woods Hole Oceanographic Institution — 2022-2024

Participant, International High-Performance Computing Summer School, selective summer program in advanced computing held in Atlanta, GA, USA July 2023

Lead Chair, Contributed Session, Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, Palma de Mallorca, Spain June 2023

Participant, Inclusive Teaching in Phycology Workshop, Providence, RI, USA June 2023

Participant, Simons Foundation CBIOMES Collaboration Workshop on Zooplankton Modeling, Dedham, MA, USA April 2023

Software Carpentries Instructor certified August 2020

Co-President, Broader Impacts Group, WHOI 2021 - present

Chair, Graduate Student Advisory Group for MIT Earth, Atmospheric, and Planetary Science (EAPS) and College of Computing Faculty Search December 2022-April 2023

K-12 Outreach with the Broader Impacts Group at WHOI 2021 - present

Orientation Coordinator, Dept. of Earth, Atmospheric, and Planetary Science (EAPS), MIT 2021

Mentoring Coordinator, EAPS Department, MIT 2021 - 2022

Mentor, MIT-WHOI Joint Program Applicant Support Knowledgebase 2021 - present

Invited Panelist, MIT Science Policy - Oceans & Climate November 2019

Letters to a Pre-Scientist 2019 - 2024

Falmouth Academy Science and Engineering Fair Judge 2021

Mashpee Middle-High School Science and Engineering Fair Judge 2022 - 2023

CovEducation Mentor for elementary school students 2020 - 2021

Engineers' Forum Magazine at Virginia Tech: writer and Editor-in-Chief (2018-2019) 2015 - 2019

Presenter and Instructor, Virginia Tech Kindergarten to College Program 2018 - 2019

Weekly Outreach and Teaching, Giles County, VA Head Start Pre-Kindergarten Program 2019

Writing Center Coach, Virginia Tech 2018 - 2019

Virginia Tech Department of Computer Science Ambassador 2017 - 2019

Blog Contributor, MIT Graduate Education 2021 - present

Blog Contributor, The Ripple, MIT Educational Studies Program 2020

SKILLS

Programming Languages: R, MATLAB, Python, Java, C, Fortran, Shell Scripting

Other Computing Skills: High-Performance Computing systems, SLURM scheduler, Adobe Illustrator, LaTeX, Git

Laboratory Skills: RNA/DNA extraction; Polymerase chain reaction; gel electrophoresis; scintillation counting; isotope experiments; invertebrate dissection; spectrophotometry; basic analytical water chemistry; algal culturing

Teaching Certifications: Certified Software Carpentries instructor, Kaufman Teaching Program Certificate

ACADEMIC REVIEW

mSystems, *Microbiology Spectrum*, *ISMEj*, *Nature Communications*, *Environmental Microbiology*, *Scientific Reports*, *PNAS*