Gabrielle Armin

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EDUCATION

Department of Environmental Engineering Sciences, University of Florida — **Gainesville, Florida, USA**

- *B.S. in Environmental Engineering*; **Overall GPA: 3.71** — Aug 2016 – May 2020
- *Minor in Sustainability Studies*

Graduate School of Oceanography, University of Rhode Island — **Narragansett, Rhode Island, USA**

- *PhD student;* **Cumulative GPA: 3.77** — Aug 2020 - Present

RESEARCH POSITIONS

Graduate Research Assistant — Aug 2020 - Present

University of Rhode Island | *Quantitative Microbiology Lab*

Advisor: Dr. Keisuke Inomura, Assistant Professor at the Graduate School of Oceanography, University of Rhode Island

- Using a Cell Flux Model of Phytoplankton to assess environmental effects on growth rate, allocation of macromolecules, and elemental stoichiometry
- Development of a diatom model to assess the role of silicon in relation to other nutrient cycles in the cell
- Testing and incorporation of the Cell Flux Model of Phytoplankton into a regional ocean ecosystem model

Undergraduate Research Assistant — Jul 2019 – Jan 2020

University of Florida | Howard T. Odum Wetland Ecology Lab

Mentor: Dr. Elliott White, Associate Professor of Earth System Science, Stanford University

- Assisted with lab and fieldwork to evaluate the effect of saltwater intrusion in freshwater wetlands

Undergraduate Research Assistant — Mar 2019 – Jul 2020

University of Florida | Sustainable Materials Management Research Lab

Advisor: Dr. Timothy Townsend, Professor of Environmental Engineering Sciences, University of Florida

- Co-Project Manager of three separate waste composition studies in various Solid Waste divisions of Florida

RESEARCH INTERESTS

Quantitative microbiology, Quantitative coastal microbiology, Global biogeochemical and ecosystems models, phytoplankton physiology, Microbial ecology, Biogeochemistry, Climate Change, Elemental composition in microbial cells, Mathematical modeling, Carbon export, Climate forecasting, Harmful algal blooms

PUBLICATIONS

1. **Armin G,** Inomura K, 2022. Modeling the elemental stoichiometry and silicon accumulation in diatoms. *Current Research in Microbial Sciences*, 3, 100164.
2. **Armin G**, Inomura K. Modeled temperature dependencies of macromolecular allocation and elemental stoichiometry in phytoplankton. *Computational and Structural Biotechnology Journal*. 2021; 19:5421-5427. Available from: https://linkinghub.elsevier.com/retrieve/pii/S200103702100413X DOI: 10.1016/j.csbj.2021.09.028
3. Kim J, **Armin G,** Inomura K, Saturating relationship between phytoplankton growth rate and nutrient concentration explained by macromolecular allocation, 2022, *Current Research in Microbial Sciences*, Volume 3,100167,ISSN 2666-5174,https://doi.org/10.1016/j.crmicr.2022.100167
4. **Armin, G**., Kim, J., Inomura, K., 2023. Saturating growth rate against phosphorus concentration explained by macromolecular allocation. *mSystems* 0, e00611-23.
5. Inomura K, Masuda T, Eichner M, Rabouille S, Zavřel T, Červený J, Vancová M, Bernát G, **Armin G**, Claquin P, Kotabová E, Stephan S, Suggett DJ, Deutsch C, Prášil O (2021) Quantifying *Cyanothece* growth under DIC limitation. *Computational and Structural Biotechnology Journal* 19:6456–6464.
6. Benavides M, Bonnet S, Le Moigne FAC, **Armin G**, Inomura K, Hallstrøm S, Riemann L, Berman-Frank I, Poletti E, Garel M, Grosso O, Leblanc K, Guigue C, Tedetti M, Dupouy C (2022) Sinking Trichodesmium fixes nitrogen in the dark ocean. *ISME Journal*. DOI: 10.1038/s41396-022-01289-6.

7. Gao M, **Armin G**, Inomura K (2022) Low-ammonium environment increases the nutrient exchange between diatom-diazotroph association cells and facilitates photosynthesis and N2 fixation–A mechanistic modeling analysis. *Cells,* 11:2911.
8. Masuda T, Inomura K, Kodama T, Shiozaki T, Kitajima S, **Armin G**, Matsui T, Suzuki K, Takeda S, Prášil O, Furuya K (2022) Crocosphaera as a major consumer of fixed nitrogen. *Microbiology Spectrum* 10:e02177-21.
9. Masuda, T., Inomura, K., Gao, M., Armin, G., Kotabová, E., Bernát, G., Lawrenz-Kendrick, E., Lukeš, M., Bečková, M., Steinbach, G., Komenda, J., Prášil, O., (2023). The balance between photosynthesis and respiration explains the niche differentiation between *Crocosphaera* and *Cyanothece*. Computational and Structural Biotechnology Journal 21, 58–65.
10. Yoshizawa S, Azuma T, Kojima K, **Inomura K**, Hasegawa M, Nishimura Y, Kikuchi M, **Armin G**, Miyashita H, Ifuku K, Yamano T, Marchetti A, Fukuzawa H, Sudo Y, Kamikawa R (2023) Light-driven proton pumps as a potential regulator for carbon fixation in marine diatoms. *Microbes and Environments* 38:ME23015.
11. Velho, A., Cruz, P., Banks-Richardson, D., **Armin, G.,** Zhang, Y., Inomura, K. & Zolotovsky, K. Interactive Visualization of Plankton – Mediated Nutrient Cycling in the Narragansett Bay. *IEEE Oceans Conference (accepted for publication)*.

PRESENTATIONS

1. **Armin G**, Inomura K. (2022) Modeling Silica Accumulation in Diatoms*. Ocean Science Meeting*. Oral presentation.
2. **Armin, G,** Kim J, Inomura K. (2022) Saturating relationship between phytoplankton growth rate and nutrient concentration explained by macromolecular allocation. *RI C-AIM Research Symposium.* Poster presentation.

SYNERGISTIC ACTIVITIES

1. **Mini Boat Program** Summer 2021, Spring 2022/23
   Scientific Outreach Instructor/ Mentor
- Taught students in underrepresented communities in Rhode Island basic oceanographic principles (biological, physical, and chemical) and helped in the construction of a Mini Boat that was released later on a research cruise. Students are able to track the boat and see the data it collects.

2. **Graduate Student Mentor** Summer 2021-Present
- Serve as a mentor to younger students in the lab, Meng Gao and Maggie Bernish. Assisting with scientific writing and quantitative modeling
- Serve as a mentor to Frances Webber and Frankie Lopez, a first-year graduate student at the University of Rhode Island

3. **Carbon Cycle Modeling Course**
   Graduate Student Grader Aug 2023-Dec 2023
- Attended lectures, contributed to discussion and assisted students with coding issues. Held weekly office hours and graded students' assignments.

4. **Science Saturday**
   Graduate Student Volunteer September 2021, 2022
- Prepared activities and informational material related to the research conducted in the Quantitative Microbiology Group and taught visitors about scientific modeling, how to run our model, and the work we do

5. **Mystic Aquarium Women in Science**
   Outreach Scientist at Mystic Aquarium August 2022, 2023
- Interacted with aquarium guests, answering any questions about oceanography/anthropogenic stresses on the ocean

6. **The Ocean Scientist is in!** Summer 2021
   Outreach Scientist at Roger Williams Zoo
7. **Introduction to Engineering**, The University of Florida Aug 2019-Dec 2019
   Teaching Assistant
- Conducted a lecture once a week to a rotating group of aspiring engineers to explain the studies, duties and responsibilities of environmental engineers.

8. **Save the Bay**, Newport, Rhode Island May 2018-Aug 2018
   Aquarist and Educator
9. **Florida Springs Institute** Dec 2018-May 2019
   Ecological Monitor

AWARDS, HONORS, AND CERTIFICATIONS

- NSF Cyberteams CAREER Student Funding Award (2023)
- Certified through URI's Diversity and Inclusion Badge Program
- URI Tuition Scholarship (2023-2024)
- Certified Scientific Research Diver through AAUS (2022)
- Henry S. Farmer Award in Biological Oceanography (2022)
- Graduated *cum laude* (2020)
- University of Florida Presidential Scholar & Florida Academic Scholar (2016-2020)