Gabrielle Armin

Education

Graduate School of Oceanography | University of Rhode Island (URI-GSO) | 2020-2025

- Ph.D. in Oceanography
- Dissertation titled "Quantifying Links between Phytoplankton Physiology and the Environment"

Department of Environmental Engineering Sciences | University of Florida (UF) | 2016-2020

- B.S. in Environmental Engineering
- Minor in Sustainability Studies

Research and Academic Experiences

Graduate Research Assistant | URI-GSO | Quantitative Microbiology Group | 2020-2025

- Systematically developed several cellular models to quantify the impact of a changing environment to phytoplankton physiology yielding **four** first/co-first author, peer-reviewed publications
- Innovatively incorporated cellular models into ecosystem models to evaluate the impact of phytoplankton cellular responses to climate regulation and ecosystem health
- Spearheaded a collaboration between European and American scientists to understand how warming in freshwater systems affect phytoplankton at the cellular level by novelly utilizing mesocosm experimental results to further validate a cellular quantitative model
- Added valuable model results to validate experimental and field observations of collaborators globally leading to **five** additional peer-reviewed publications
- Participated on research cruise, NES-LTER AR77, perform CTD and XBT casts, Stingray operation, Chlorophyll and biomass sample prep

Scientific Research Diver | URI-GSO | Research Diving | 2022-2025

- Support ongoing underwater research projects, ensuring the success of a variety of URI experiments and environmental monitoring
- Led a team on weekly proficiency dives to maintain their certifications and practice scientific diving skills

Undergraduate Research Assistant | UF | Howard T. Odum Wetland Ecology Lab | 2019-2020

- Assisted in strenuous fieldwork in freshwater swamps along the Swannee River, collecting environmental media for an ongoing experiment assessing the impact of saltwater intrusion to soil microbes
- Oversaw a lab-based experiment characterizing microorganism gas release which provided essential data to a Ph.D. student's dissertation

Undergraduate Research Assistant | UF | Sustainable Materials Management Lab | 2019-2020

- Project manager of multiple waste composition studies across Florida counties with the research aim of characterizing the waste stream to inform future policies, such as plastic bans and increased education materials on composting, that help divert waste from Florida landfills

Publications

1. Felcmanová K, Inomura K, Nishimura Y, Lukeš M, Kotabová E, Šetlík J, Gao M, **Armin G**, Yoshizawa S, Halsey K, and Prášil O. (2025) Niche participation of Prochlorococcus ecotypes by distinct macromolecular allocations and light tolerances. Under review in *Science Advances*.

2. Inomura K, Nishimura Y, **Armin G**, Letscher R , Liang Z, Pasquier B, Lønborg C, Deutsch C, and Yoshizawa S. (2025) Evaluating the ecological benefits of light harvesting by microbial rhodopsin in the global surface ocean. *In revision for Nature Communications*.

3. **Armin G**, Boros G, Kis M, Burányi M, Horváth H, Krassován K, Masuda T, Bernát G, and Inomura K. (2025) The effect of temperature on phytoplankton physiology; a mesocosm and modeling study. Under review in *Microbiology Spectrum.*

4. Gao M, Andrews J, **Armin G**, Chakraborty S, Zehr JP**,** Inomura K. (2024) Rapid mode switching facilitates the growth of *Trichodesmium*: A model analysis. *iScience* 27:109906.
5. **Armin G**, Kim J, Inomura K. (2023) Saturating growth rate against phosphorus concentration explained by macromolecular allocation. *mSystems* 8:00611–23. *A figure from this paper was used in Nature Review Microbiology, 23, 239–255 (2025).
6. 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.
7. Masuda T, Inomura K, Gao M, **Armin G**, Kotabová E, Bernát G, Lawrenz 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.
8. Kim J, **Armin G**, Inomura K. (2022) Saturating relationship between phytoplankton growth rate and nutrient concentration explained by macromolecular allocation. *Current Research in Microbial Sciences* 3:100167.
9. **Armin G**, Inomura K. (2022) Modeling the elemental stoichiometry and silicon accumulation in diatoms. *Current Research in Microbial Sciences* 3:100164.
10. 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.
11. 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* 16:2398–2405.
12. 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.
13. 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.
14. **Armin G,** Inomura K. (2021) Modeled temperature dependencies of macromolecular allocation and elemental stoichiometry in phytoplankton. *Computational and Structural Biotechnology Journal* 19:5421–5427.

Presentations

1. **Armin G**, (2024). Invited speaker. Aquatic Ecology Seminar Series. Swiss Federal Institute of Aquatic Science and Technology.
2. **Armin G,** (2024). Invited Guest lecturer. School of Earth, Environmental and Marine Sciences, The University of Texas - Rio Grande Valley.

3. **Armin G**, (2024). GSO Miniboat Program: A multidisciplinary program to engage communities with ocean science. *Ocean Sciences Meeting*. Poster presentation.
4. **Armin G**, (2024). Quantifying temperature dependencies of elemental stoichiometry and macromolecular allocation in marine phytoplankton. *Ocean Sciences Meeting*. Oral presentation.
5. **Armin G,** (2022) Saturating relationship between phytoplankton growth rate and nutrient concentration explained by macromolecular allocation. *RI C-AIM Research Symposium.* Poster presentation.
6. **Armin G,** (2022) Modeling Silica Accumulation in Diatoms. *Ocean Sciences Meeting*. Oral presentation.

Selected Teaching, Mentoring, and Leadership Experience

Writing Center Coordinator and Tutor | URI | Graduate Writing Center (GWC) | 2024-2025

- Created and led writing workshops, groups, and lectures reaching hundreds of graduate students across URI
- Managed administrative tasks and four writing tutors, smoothly maintaining an efficient and helpful organization
- Prepared monthly reports for Graduate School administrators, highlighting the successes of the previous month and suggesting solutions for emerging problems
- Collaborated with faculty to develop individualized lectures for their classes and led lectures for their students on a variety of writing topics

Writing Center Tutor | URI | Graduate Writing Center (GWC) | 2023-2025

- Met individually (300+ hours) with graduate students across 15+ URI departments to review, critique, and strengthen writing pieces, leading to a number of publications, awarded fellowships, and funded proposals

Senior Project Mentor | South Kingstown Public High School | 2024-2025

- Advised student on development, implementation, and presentation of a coastal species abundance assessment, introducing the student to marine science and fostering appreciation for local ecosystems

Graduate Mentor | URI-GSO | 2021-2025

- Eased the transition into graduate school for five first-year URI-GSO students, assisting in finding housing, picking classes, and guiding students through degree milestones
- Developed and presented learning materials for new labmates (graduate and postdoctoral students), orienting them to model procedures and lab expectations
- Provided feedback on presentations, publications, and proposals of labmates

Grader Student Grader | Carbon Cycle Modeling, URI-GSO | 2023

- Attended lectures and assisted students with coding issues. Held weekly office hours, met with students individually, and graded students' assignments.

Teaching Assistant | Introduction to Engineering, UF | 2021-2025

- Lectured and led hands-on activities weekly related to the study of and careers associated with environmental engineering to first-year students

Student Representative on the Community Building Committee | URI-GSO | 2023-2025

- Organized and led open student listening sessions and acted as a bridge between students and administrators
- Formulated and issued a survey on housing and food insecurity among graduate students, quantifying the major problems students face on URI-GSO campus

Community Outreach Experience

Outreach Scientist | URI-GSO Public Engagement Office | 2021-2025

- Led field trips and classroom programs for public K-12 schools across Rhode Island, increasing environmental literacy and interest in marine science among a range of students
- Creatively engaged students in oceanographic lessons and activities in Rhode Island's Bradley Schools, private schools that accommodate students with psychiatric/behavioral needs that cannot be met in traditional schools

- Led professional development days to identify and present lessons/activities to educators that align with state curricula and STEMx initiatives and engage Rhode Island students using a combination of open source tools and hands-on experiments.

Miniboat Program Educator | URI-GSO Public Engagement Office | 2021-2025

- Engaged elementary, middle, and high school students in underrepresented communities of Rhode Island in oceanographic lessons and activities while aiding students in the construction of a MiniBoat that was later released into the Gulf Stream on a research cruise.
- Connected Rhode Island students with students in Canada, England, and Portugal via zoom after the vessels landed and led discussions in the importance of global collaboration to tackle ocean conservation and protection
- Advised a group of middle school participants in the creation of a scientific poster which they later presented at Ocean Sciences 2024

Tabling Representative | URI-GSO Public Engagement Office | 2021-2025

- Represented URI-GSO and interacted with visitors of varied cultural and educational backgrounds discussing local oceanography issues (e.g. offshore wind, harmful algal blooms) and career options
- Highlighted events: Mystic Aquarium's Women in Science Day (2 years), Providence Junior STEM Day, Portsmouth Middle School STEM Night, The Ocean Scientist is in! at Roger Williams Zoo

Camp Counselor | InnerSpace Center | 2024

- Created lessons and activities regarding physical oceanography for middle and high school-aged participants
- Introduced and led students through a variety of field sampling techniques aboard a small research vessel

Aquarist and Educator | Save the Bay | 2018

- Maintained healthy habitats in aquariums
- Educated visitors on important ocean issues and steps to contribute to ocean conservation in their daily lives

Ecological Monitor and Educator | Florida Springs Institute | 2018-2019

- Conducted fish counts and ecological monitoring in freshwater springs in northwest Florida
- Represented the organization at events, encouraging and demonstrating how residents can help protect their drinking water

Awards and Certifications

- Awarded/invited participant of ECO-DAS Symposium (2025)
- Henry S. Farmer Award in Biological Oceanography (2022, 2024)
- URI Tuition Scholarship (2023-2024)
- Co-authored paper received "Research Paper Award 2023" of the Microbes and Environments (2023)
- **NSF Cyberteams CAREER Student Funding Award** (2023)
- Certified Mental Health First Aider (2024)
- Certified through URI's Diversity and Inclusion Badge Program (2023)
- Certified AAUS Scientific Research Diver (2022)
- UF Presidential Scholar (2016-2020)
- Florida Academic Scholar (2016-2020)