Matthew F. Gladfelter

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EDUCATION

Ph.D. 2021-present, Fisheries, Aquaculture, and Aquatic Sciences; **Minor in Statistics** (GPA: 4.0)
Auburn University - Auburn, Alabama; Advisor: Dr. Alan Wilson
Dissertation: *A multi-faceted approach to examining the role of trace metals in freshwater phytoplankton communities*

M.S. 2021, Fisheries, Aquaculture, and Aquatic Sciences (GPA: 3.68)
Auburn University - Auburn, Alabama; Advisor: Dr. Alan Wilson
Thesis: *Understanding how cyanobacterial communities respond to different dissolved nitrogen forms*

B.S. 2018, Biological Sciences; **Minor in Chemistry** – Graduated with Distinction (GPA: 3.63)
Rowan University – Glassboro, New Jersey

PROFESSIONAL EXPERIENCES

2025	Teaching Assistant (Limnology, Lecture Section) Auburn University – Advisor: Alan Wilson
2023	Teaching Assistant (Limnology, Lecture and Laboratory Sections) Auburn University – Advisor: Alan Wilson
2022	Teaching Assistant (Limnology, Lecture and Laboratory Sections) Auburn University – Advisor: Alan Wilson
2020	Teaching Assistant (Limnology, Lecture and Laboratory Sections) Auburn University – Advisor: Alan Wilson
2016-2018	Undergraduate Research Assistant Rowan University – Advisor: Patrick Crumrine
2017	Research Experiences for Undergraduates (REU) Student University of Virginia's Blandy Experimental Farm – Mentor: Patrick Crumrine

HONORS AND AWARDS

2024	NALMS Student Travel Grant – North American Lake Management Society ($800)
2024	Paul C. Silva Memorial Travel Grant – International Phycological Society ($1000)
2024	Harry Merriwether Memorial Fellowship ($2000)
2023	Featured Researcher – Auburn University Water Resources Center
2023	Auburn University American Fisheries Society subunit Outstanding Student Award ($800)
2022	Best Oral Presentation by a Student, Honorable Mention – 11th US Symposium on Harmful Algae
2022	Auburn University American Fisheries Society subunit Travel Award ($250)

2022 NOAA's National Centers for Coastal Ocean Science Travel Award ($650)
2021 Featured Graduate Researcher – Auburn University Graduate School
2021 Auburn University US Aquaculture Society subunit Travel Award ($135)
2021 Auburn University Presidential Graduate Research Fellowship ($45,000)
2020 Swingle Memorial Award for academic excellence, scholarship, and leadership ($2,000)
2020 Best Presentation in Session - Auburn University College of Agriculture Virtual Poster Showcase ($250)
2019 NOAA's National Centers for Coastal Ocean Science Travel Award ($700)
2018 Best Undergraduate Research Poster – Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry ($300)
2017 Featured Undergraduate Researcher – Rowan University College of Science and Mathematics

PUBLICATIONS

1. Hennessey, A.V., McDonald, M.B., Johnson, P.P., **Gladfelter, M.F.**, Merrill, K.L., Tenison, S.E., Ganegoda, S.S., Hoang, T.C., Torbert, H.A., Beck, B.H., and Wilson, A.E. (2025) Evaluating the tolerance of harmful algal bloom communities to copper. *Environmental Pollution* (In pres).

2. Anantapantula, S., Wittenzellers, S., **Gladfelter, M.F.**, Tenison, S.E., Zinnert, H., Belfiore, A.P., and Wilson, A.E. (2025) Copper sulfate treatment harms zooplankton and ultimately promotes algal blooms: a field mesocosm experiment. *Harmful Algae* **142**: 102800.

3. **Gladfelter, M.F.**, Hennessey, A.V., McDonald, M.B., Ganegoda, S.S., Wang, D., and Wilson, A.E. (2024) Are heavy metals a concern in catfish aquaculture? *Fish Farming News* **1**: 10-12.

4. Baylous, H.R., **Gladfelter, M.F.**, Gardner, M.I., Foley, M., Wilson, A.E., and Steffen, M.M. (2024) Indole-3-acetic acid promotes growth in bloom-forming cyanobacteria via a potential antioxidant response. *Harmful Algae* **133:** 10575.

5. Zinnert, H.M., **Gladfelter, M.F.**, Tenison, S.E., Poe, H.P., Merrill, K.L., Hennessey, A.V., McDonald, M.B., Wang, D., Torbert, H.A., and Wilson, A.E. (2024) Impacts of flue gas desulfurization (FGD) gypsum on water quality and the algal community in catfish aquaculture ponds. *Aquaculture* **581**: 740406.

6. Zinnert, H.M., **Gladfelter, M.F.**, Poe, H.P., Merrill, K.L., Hennessey, A.V., McDonald, M.B., Wang, D., Torbert, H.A., and Wilson, A.E. (2023) Positive and negative impacts of flue gas desulfurization (FGD) gypsum on water quality. *Environmental Management* **348**: 119307.

7. Hamid, A.K., Wilson, A.E., **Gladfelter, M.F.**, Knappenberger, T.J., and Wang, D. (2023) Long-term missing role of small colloids and nanoparticles on the loading and speciation of phosphorus in catfish aquaculture ponds in west Alabama. *Chemosphere* **340**: 139906.

8. Buley, R.P., **Gladfelter, M.F.,** Fernandez-Figueroa, E.G., and Wilson, A.E. (2023) Complex effects of dissolved organic matter, temperature, and initial bloom density on the efficacy of hydrogen peroxide to control cyanobacteria. *Environmental Science and Pollution Research* **30**: 43991-44005.

9. Buley, R.P., **Gladfelter, M.F.,** Fernandez-Figueroa, E.G., and Wilson, A.E. (2022) Can correlation analyses help determine the drivers of microcystin occurrence in freshwater ecosystems? A meta-analysis of microcystin and associated water quality parameters. *Environmental Monitoring and Assessment* **194:** 493.

10. **Gladfelter, M.F.**, Buley, R.P., Belfiore, A.P., Fernandez-Figueroa, E.G., Gerovac, B.L., Baker, N.D., and Wilson, A.E. (2022) Dissolved nitrogen form mediates phycocyanin content in cyanobacteria. *Freshwater Biology* **67**(6): 954-964.

11. Belfiore, A.P., Buley, R.P., Fernandez-Figueroa, E.G., **Gladfelter, M.F.,** and Wilson, A.E. (2021) Zooplankton as an alternative method for controlling phytoplankton in fish pond aquaculture. *Aquaculture Reports* **21**: 100897.

12. Buley, R.P., Kelly, A., Roy, L., Fernandez-Figueroa, E.G., **Gladfelter, M.F.**, Belfiore, A., and Wilson A.E. (2021) Controlling *Microcystis* blooms in Alabama catfish aquaculture. *Alabama Cooperative Extension System* **ANR**-2757.

13. Fernandez-Figueroa, E.G., Buley, R.P, Barros, M.U.G., **Gladfelter, M.F**., McClimans, W., and Wilson, A.E. (2021) Carlson's trophic state index is a poor predictor of drinking of cyanobacterial dominance in drinking water reservoirs. *AWWA Water Science* **3**(2): 1-11.

14. Buley, R.P., Adams, C., Belfiore, A.P., **Gladfelter, M.F.,** Fernandez-Figueroa, E.G., Garner, B., Straus, D.L., and Wilson, A.E. (2021) Field evaluation of seven products to control cyanobacterial blooms in aquaculture. *Environmental Science and Pollution Research* **28**: 29971-29983.

15. Barros, M.U.G., Leitao, J.I.R, Aranha, T.R.B.T., Simsek, S., Buley, R.P., Fernandez-Figueroa, E.G., **Gladfelter, M.F.**, Wilson, A.E. and Capelo-Neto, J. (2020) Icyano: A cyanobacterial bloom vulnerability index for drinking water treatment plants. *Water Supply* **20**(8): 3517-3530.

16. Buley, R.P., Yang, Z., **Gladfelter, M.F.**, and Wilson, A.E. (2019) Controlling blue-algal blooms in aquaculture ponds using hydrogen peroxide. *Fish Farming News* **1**: 3-5.

MANUSCRIPTS IN PREPARATION/REVIEW (* indicates mentored student)

1. **Gladfelter, M.F.**, Steffen, M.M., Baylous, H.R., and Wilson, A.E. Transcriptional response of *Microcystis* and co-occurring bacteria to supplementation of three nitrogen forms.

2. **Gladfelter, M.F.**, Bela, I.G.*, and Wilson, A.E. Influence of trace metal additions on the longevity of algal blooms across a productivity gradient.

3. McDonald, M.B., Hennessey, A.V., Johnson, P.P., **Gladfelter, M.F.**, Merrill, K.L., Tenison, S.E., Ganegoda, S.S., Hoang, T.C., Torbert, H.A., Beck, B.H., and Wilson, A.E Reevaluating copper algaecide dosing to manage water quality: a multiple linear regression approach (In review at Environmental Toxicology and Chemistry)

4. Hennessey, A.V., McDonald, M.B., Johnson, P.P., **Gladfelter, M.F.**, Merrill, K.L., Tenison, S.E., Ganegoda, S.S., Hoang, T.C., Torbert, H.A., Beck, B.H., and Wilson, A.E. Reducing pH improves copper toxicity for harmful algal bloom and off-flavor management

5. McDonald, M.B., Hennessey, A.V., Johnson, P.P., **Gladfelter, M.F.**, Merrill, K.L., Tenison, S.E., Ganegoda, S.S., Hoang, T.C., Torbert, H.A., Beck, B.H., and Wilson, A.E. Repeated low-dose copper algaecide treatments promote beneficial phytoplankton and zooplankton communities

MENTORING OPPORTUNITIES

Tyler Allen	Undergraduate research for credit project	Fall 2024
Ainsley Sullivan	Undergraduate senior research project	Spring 2024
JT Mumber	Undergraduate research for credit project	Fall 2022
Olivia Montoya	NSF Research Experiences for Undergraduates project	Summer 2022
Isabel Bela	NSF Research Experiences for Undergraduates project	Summer 2022
Isabel Bela	Independent undergraduate research project	Spring 2022
Jessica Chan	Undergraduate senior research project	Fall 2021

INVITED SPEAKER OPPURTUNITIES

2024 Auburn University, “How climate change is impacting lakes”. STEM Summer Bridge Program. Auburn, Alabama

2024 Auburn University, “Nutrient cycling and Stoichiometry”. Limnology Course. Auburn, Alabama

2022 Rowan University, “Understanding how cyanobacterial communities respond to different dissolved nitrogen forms”. Department of Environmental Science Seminar Series. Glassboro, New Jersey.

2017 Rowan University, “Timing is everything: the impact of time since urbanization on aquatic turtle population structures”. School of Earth and Environment’s Fall Colloquium. Glassboro, New Jersey.

PRESENTATIONS AND POSTERS (# indicates presenter, * indicates mentored student)

2024 **Gladfelter, M.F.#**, Johnson, P.P., Mollica, A.C., Merrill, K.L., McDonald, M.B., Hennessey, A.V., Ganegoda, S.S., Agreda-Lopez, G., and Wilson, A.E. Iron and manganese cycling in relation to phytoplankton communities of monomictic subtropical

lakes. North American Lake Management Society Annual Meeting, Lake Tahoe, CA/NV. (Oral Presentation)

2023 Bela, I.G.#*, **Gladfelter, M.F.**, and Wilson, A.E. Prevalence of trace metal limitation on algal growth across a range of productivities. Auburn University School of Fisheries, Aquaculture, and Aquatic Sciences Student Research Symposium, Auburn, AL. (Oral Presentation)

2023 Bela, I.G.#*, **Gladfelter, M.F.**, and Wilson, A.E. Prevalence of trace metal limitation on algal growth across a range of productivities. Auburn University Student Research Symposium, Auburn, AL. (Poster)

2022 **Gladfelter, M.F.#**, Steffen, M.M., Baylous, H.R., and Wilson, A.E.. Transcriptional response of *Microcystis* and co-occurring bacteria to supplementation and starvation of three nitrogen forms 11th US Symposium on Harmful Algae, Albany, NY. (Oral Presentation; Best Oral Presentation, Honorable Mention)

2022 **Gladfelter, M.F.#**, Buley, R.P., Fernandez-Figueroa, E.G., Belfiore, A.P., and Wilson, A.E. The diazotroph, *Raphidiopsis*, dominates after reduced and oxidizes nitrogen additions. Arkansas Water Resources and Watersheds Conference, Fayetteville, AR. (Poster)

2022 **Gladfelter, M.F.#**, Buley, R.P., Belfiore, A.P., Fernandez-Figueroa, E.G., Gerovac, B.L., Baker, N.D., and Wilson, A.E. Available dissolved nitrogen form mediates pigment content in cyanobacteria. Arkansas Water Resources and Watersheds Conference, Fayetteville, AR. (Oral Presentation)

2021 **Gladfelter, M.F.#**, Buley, R.P., Belfiore, A.P., Fernandez-Figueroa, E.G., Gerovac, B.L., Baker, N.D., and Wilson, A.E. Available dissolved nitrogen form mediates pigment content in cyanobacteria. ASLO Aquatic Sciences Meeting. (Oral Presentation; Virtual Conference)

2021 **Gladfelter, M.F.#**, Buley, R.P., Belfiore, A.P., Fernandez-Figueroa, E.G., Gerovac, B.L., Baker, N.D., and Wilson, A.E. Available dissolved nitrogen form mediates pigment content in cyanobacteria. 10.5 US Symposium on Harmful Algae. (Oral Presentation; Virtual Conference)

2021 **Gladfelter, M.F.#**, Buley, R.P., Belfiore, A.P., Fernandez-Figueroa, E.G., Gerovac, B.L., Baker, N.D., and Wilson, A.E. Available dissolved nitrogen form dictates pigment content in cyanobacterial cells. Auburn University Student Research Symposium. (Oral Presentation; Virtual Conference)

2020 **Gladfelter, M.F.#**, Buley, R.P., Belfiore, A.P., Fernandez-Figueroa, E.G., and Wilson, A.E. Nitrogen form dictates uptake and use in cyanobacterial communities. Auburn University College of Agriculture Virtual Poster Showcase.
(Poster; Virtual Conference; Best in Session)

2020 **Gladfelter, M.F.#**, and Wilson, A.E. Dissolved nitrogen-form dictates uptake and metabolic efficiency in phytoplankton. Auburn University School of Fisheries, Aquaculture, and Aquatic Sciences Student Research Symposium. (Oral Presentation; Virtual Conference)

2019 **Gladfelter, M.F.#**, Steffen, M.M., and Wilson, A.E. Changes in supportive bacteria assemblages in response to nutrient form and concentration in cyanobacterial communities. 10th US Symposium on Harmful Algae, Orange Beach, AL. (Oral Presentation)

2018 **Gladfelter, M.F.#**, and Crumrine, P. Timing is everything: the impact of time since urbanization on aquatic turtle population structures. Hudson-Delaware Chapter of the Society for Environmental Toxicology and Chemistry Glassboro, NJ (Poster; 1st Place undergraduate poster)

2018 **Gladfelter, M.F.#**, and Crumrine, P. Timing is everything: the impact of time since urbanization on aquatic turtle population structures. Rowan University STEM Symposium Glassboro, NJ. (Poster)

2017 **Gladfelter, M.F.#**, Hoeler, T., Lindert, K., and Crumrine, P. Effects of urbanization on aquatic turtles in Southern New Jersey. Rowan University STEM Symposium, Glassboro, NJ. (Poster)

2017 **Gladfelter, M.F.#**, Hoeler, T., Lindert, K., and Crumrine, P. Effects of urbanization on aquatic turtles in Southern New Jersey. East Coast Chapter of the Ecological Society of America meeting, Galloway, NJ. (Poster)

LEADERSHIP POSITIONS

2023 - 2024	Treasurer, Auburn University Graduate Water Resources Club
2023	Symposium co-chair for 2023 Auburn University NRT Climate & Water Research Symposium. Auburn, AL.
2022	Student activities planning committee for 2022 11th US Symposium on Harmful Algae. Albany, NY.
2022- 2023	President, Auburn University Graduate Water Resources Club
2019	Planning committee for 2020 Auburn University School of Fisheries, Aquaculture, and Aquatic Sciences Student Research Symposium. Auburn, AL.
2019	Graduate planning committee for 2019 10th US Symposium on Harmful Algae. Orange Beach, AL.
2018	Planning committee for 2019 Auburn University School of Fisheries, Aquaculture, and Aquatic Sciences Student Research Symposium. Auburn, AL.

OUTREACH

2024	Educated incoming Auburn University undergraduates about how the WilsonLab samples algae in the field and examines them under microscopes as part of the Auburn STEM Summer Bridge Program.
2024	Educated Auburn University undergraduates about water quality before they left for a Study Abroad trip to Belize
2023	Volunteer presenter at Lee County Water Festival.
2021	Spoke to board of directors of the Jule Collins Smith Museum about managing their aesthetics pond that was dealing with an algal bloom.
2021	Spoke to undergraduate students at SUNY Brockport about REU programs, applying to graduate school, and shared my graduate school experience.
2021	Shared experiences of being a graduate student and how to join a research lab during COSAM Undergraduate Research Opportunities Fair.
2020	Volunteer presenter for Jr. Mad Scientist Event put on by Auburn University's Graduate Women in Science.
2019	Participated in daylong fishing event with local youth program helping teach children both how to fish and how to respect nature and their surroundings.

2019	Participated in daylong Auburn Fisheries Day that involved helping visitors with activities as well as shared current research and related interests.
2017	Led summer camp lesson for 3rd-6th grade students for 1 day as part of REU program.
2016 - 2018	Freely shared information about Rowan University project to public including why we were in their neighborhood/park and the relevance of the project.

References

Dr. Alan Wilson
Professor of Fisheries, Aquaculture, and Aquatic Sciences, Auburn University
Email: wilson@auburn.edu

Dr. Morgan Steffen
Associate Professor of Biological Sciences, James Madison University
Email: steffemm@jmu.edu

Dr. Eve Brantley
Professor and Extension Specialist of Crop, Soil, and Environmental Sciences, Auburn University
Email: brantley@auburn.edu