

## Bethany L. Williams PhD

### *Curriculum Vitae*

Updated February 2025

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## CURRENT POSITION

*University of Missouri St. Louis, Department of Biology*

August 2023-present

NSF Postdoctoral Research Fellowship in Biology

## PREVIOUS POSITIONS

*The Ohio State University, School of Environment and Natural Resources*

June 2023-July 2023

Instructional Design Associate Specialist

- Assisted with the development of a new aquatic science course.
- Worked directly with Ohio State's Stone Laboratory faculty and staff to develop materials to guide curriculum development and research.

## ACADEMIC QUALIFICATIONS

2023      PhD Environment and Natural Resources  
The Ohio State University,  
Columbus, OH, USA  
Dean's Distinguished Fellowship

2018      M.S. Biology,  
Miami University  
Oxford, OH, USA

2016      B.S. Marine Biology,  
University of North Carolina Wilmington  
Wilmington, NC, USA  
Summa cum laude  
University Honors in Marine Biology

## PEER-REVIEWED PUBLICATIONS

### Published:

- Williams, B.,** Pintor L., Gray, S., 2025. Intraspecific Variation in Color and Carotenoids Across Environmental Extremes in an African Cichlid (accepted at *Evolutionary and Ecological Physiology*).
- Williams, B.,** Pintor, L., Gray S., 2025. Intraspecific Variation in the Effects of Aromatase Inhibition on Reproductive Behaviors in an African Cichlid fish (accepted at *Journal of Experimental Biology*).
- Coffin, J. L., **Williams, B.,** Tobler, M., 2024. Genetics and resource availability shape divergence in life history and behavior between locally-adapted populations of Atlantic mollies (*Poecilia mexicana*, Poeciliidae), *Biological Journal of the Linnean Society*: 143 (4): <https://doi.org/10.1093/biolinnean/blae113>.
- Williams, B.,** Pintor L., Tiarks, J., Gray S., 2024. Multiple Stressors Disrupt Sex Hormone and Fitness Outcomes: Effects of Hypoxia and Turbidity on an African Cichlid Fish. *Conservation Physiology*. <https://doi.org/10.1093/conphys/coae066>
- Williams, B.,** Pintor L., Gray S., 2024. Multiple Stressors Lead to Complex Responses in Reproductive Behaviors in an African cichlid. *Current Zoology*. <https://doi.org/10.1093/cz/zoae033>
- Williams, B.,** Wiebler, J., Lee, R., Costanzo, J., 2018. Nitric oxide metabolites in hypoxia, freezing, and hibernation of the wood frog, *Rana sylvatica*. *Journal of Comparative Physiology B*: 188(6):957-966.
- Nguyen, Y., Reeves, R., Hossfeld, C. M., Karditzas, A., **Williams, B.,** Hayes, B., Price, C., Sherwood, K., Smith, C., and Simons, R. 2015. Understanding Wales: Nationalism and Culture. *Colonial Academic Alliance Undergraduate Research Journal*: 4(7):1-20.

### In Preparation:

- Williams, B.,** Kline, I., Moosman, O., Surendran, N., Arias Rodriguez, L., Kelley, J., Tobler, M. Effects of Acute Hypoxia Exposure on Gene Expression in an Extremophile Fish
- Williams, B.,** Tobler, M., Multiple Stressor Tolerance: Lessons to Be Learned from Extremophiles. Review.

## GRANTS

- |      |                                                                                                                                                                                   |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2023 | National Science Foundation, Postdoctoral Fellowship in Biology: <i>The Evolution of Multiple Stressor Tolerance: From Genes to Whole Organism Performance</i> . <b>\$240,000</b> |
| 2021 | Company of Biologists, Travelling Fellowship: <i>The Effect of Multiple Stressors on Carotenoid Physiology in an African Cichlid</i> . <b>£2409</b>                               |
| 2021 | The Society for Integrative and Comparative Biology, Grant in Aid of Research: <i>Hormonal Control of Male Reproductive Behavior in an African Cichlid</i> . <b>\$1000</b>        |

- 2020 The Ohio State University, International Research and Scholarship Grant: *The Effects of Parasites on Reproductive Traits in an African Cichlid*. **\$3500**
- 2020 The Ohio State University, SEEDS: The CFAES Research Competitive Grants Program: *The Effects of Parasites on Reproductive Traits in an African Cichlid Fish*. **\$5000**
- 2019 Sigma Xi, Grant in Aid of Research: *The Effect of Hypoxia on Reproduction and Color in an African Cichlid*. **\$1000**
- 2019 The Ohio State University, School of Environment and Natural Resources, Mini-Grant: *Effects of Human-Induced Environmental Stressors on Sexually-Selected Traits and Their Fitness Consequences in an East African Cichlid*. **\$300**
- 2017 Miami University, Academic Challenge Grant: *The Role of Nitric Oxide in the Winter Biology of the Wood Frog, Rana sylvatica*. **\$1,500**
- 2016 University of North Carolina Wilmington, CSURF Travel Grant. **\$505**
- 2015 University of North Carolina Wilmington, CSURF Supplies Grant. **\$287**

## PRESENTATIONS

- 2024 **Williams, B.**, Tobler, M., International Conference of Poeciliids Biologists. San Marcos, TX. Multiple Stressors and Extreme Environments: Hydrogen Sulfide and Hypoxia Tolerance in Poeciliids.
- 2024 **Williams, B.**, Humboldt University of Berlin, Germany, Invited Talk: Understanding the Effects of Multiple Stressors in Extreme Environments.
- 2024 **Williams, B.**, That Science and Nature Show, UMSL Radio, Guest Speaker: Down the Rabbit Hole- Conspiracy Theories.
- 2023 **Williams, B.**, Ecology on Tap. Columbus, OH. Presentation: New beginnings: A froggy view on winter.
- 2022 **Williams, B.**, Pintor, L., Toomey, M., Gray, S., Society of Integrative and Comparative Biology. Austin, TX. Presentation: A tale of two populations: the effects of multiple stressors on cichlid color.
- 2022 **Williams, B.**, The Ohio State Fair, Land & Living Stage, Columbus Ohio, Presentation: Fish and their changing environment.
- 2022 **Williams, B.**, Pintor, L., Gray, S., International Congress on the Biology of Fish, Montpellier, France. Presentation: Hormonal responses to multiple stressors and their behavioral consequences.
- 2022 **Williams, B.**, Pintor, L., Gray, S., The Ohio State University, College of Food Agriculture and Environmental Sciences Poster Competition: Hormonal responses to multiple stressors and their behavioral consequences.
- 2021 **Williams, B.**, Pintor, L., Gray, S., The University of Tulsa, Department of Biological Sciences. Invited Speaker: The effects of multiple stressors on courtship traits in an African cichlid.
- 2021 **Williams, B.**, Pintor, L., Gray, S., Society for Experimental Biology. Virtual Conference, Presentation: The effect of multiple stressors on courtship behavior in an African cichlid.
- 2021 **Williams, B.**, Pintor, L., Gray, S., Society of Integrative and Comparative Biology. Virtual Conference, Presentation: The effects of hypoxia and turbidity

- on male courtship behavior.
- 2019 **Williams, B.**, Atkinson, T., Oldham, R., Hrabak, Taylor K., Pintor L., Gray, S., Sensorium. Urbana, IL. Poster: Linking vision, color signals, and mate choice in an African cichlid.
- 2018 **Williams, B.**, Atkinson, T., Oldham, R., Hrabak, T., Pintor, L., Gray, S., Sensorium. West Lafayette, IN. Poster: How do cichlids *see* a changing world?
- 2018 **Williams, B.**, Lee, R., Costanzo, J., Ohio Amphibian and Reptile Conference. Columbus, OH. Poster: Wood frogs (*Rana sylvatica*) increase NO metabolites in preparation for and in response to winter-associated stresses.
- 2018 **Williams, B.**, Lee, R., Costanzo, J., Midwest Ecology and Evolution Conference. Hickory Corners, MI. Poster: Wood frogs (*Rana sylvatica*) increase NO metabolites in preparation for and in response to winter-associated stresses.
- 2016 **Williams, B.**, Williard, A., Association of Southeastern Biologists. Concord, NC. Poster: The effect of acclimation temperature on anaerobic metabolism in exercising yellow-bellied sliders (*Trachemys scripta scripta*).
- 2016 **Williams, B.**, Williard, A., CSURF Spring Showcase of Student Research and Creative Scholarship. Wilmington, NC. Poster: The effect of acclimation temperature on anaerobic metabolism in exercising yellow-bellied sliders (*Trachemys scripta scripta*).

## TEACHING EXPERIENCE

### *The University of Missouri, St. Louis*

2025 Lecturer—Graduate Seminar: Conservation Physiology in Practice (BIO6889)

### *The Ohio State University, Stone Laboratory*

2023 Lecturer—Introduction to Aquatic Biology (EEOB1930)

### *The Ohio State University, School of Environment and Natural Resources*

2022 Teaching Assistant—Applied Vertebrate Physiological Ecology (ENR5358)

2022 Teaching Assistant – Dynamics of Ecosystem Restoration (ENR5560)

2021 Teaching Assistant – Sustainability Metrics (ENR3900)

### *Miami University, Department of Biology*

2017 Teaching Assistant – Human Physiology (BIOL305)

2017 Teaching Assistant – Biological Concepts: Structure (BIOL116)

2016 Teaching Assistant – Biological Concepts: Ecology, Evolution, Genetics, and Diversity (BIOL115)

## SERVICE AND OUTREACH

### **Peer Reviewer:**

*Journals:* Conservation Physiology | Ecology and Evolution | Journal of Fish Biology | Journal of Animal Ecology | Animal Behavior

*Judge:* University of Missouri St. Louis, Three Minute Thesis (2024)

*Grants:* The Ohio State University, CFAES Internal Grants Program Graduate Panel (2021) | University of Missouri St. Louis, Harris Research Center Grants Committee (2024-2025)

### Community Service:

- 2024 Collaborative Laboratory Internship and Mentoring Blueprint (CLIMB) Mentor
- Served as a mentor to a local St. Louis high school student for a six-week paid internship program.
- 2021-present Letters to a Pre-Scientist
- Served as a pen pal to one middle school student a year to help inspire students to see STEM as a potential career path.
- 2022-2023 Columbus Zoo Adult Volunteer
- Served as a volunteer in animal contact areas including Reptile Lab, Kangaroo Walkabout, Touch tank, and Stingray Bay (~65 hours/year).
  - Interacted with zoo guests to increase their knowledge of animals and conservation practices.
- 2020-2022 SENR Mentoring Program
- Took part in a panel for undergraduates considering graduate school.
  - Mentoring program within the School of Natural Resources at the Ohio State University
  - Mentored one undergraduate student each semester.
  - Met with students several times throughout semester to provide informal guidance on research, graduate school, and career goals.
- 2020 Meet a Scientist: Bloom Carroll Science Fair Mentoring
- Worked with a high school student to help develop their high school science fair project.
  - Provided guidance on designing and executing experiments according to the scientific method.
- 2018-2022 Water Across the World
- During summer field seasons in Uganda, provided conservation education relating to biodiversity and water quality for children through hands on work collecting and assessing water quality data in the Lake Nabugabo region which is subject to intense agriculture and wetland removal.
  - Assisted in conducting half-day workshops for local teachers.
- 2017 “Ice cream” for Graduate School Panel
- Helped create and participated in a workshop to increase retention and participation of underrepresented groups in STEM. As part of this workshop, we led a panel that provided information about preparation for graduate school.
- 2015 Terrapin Tally
- Participated in a citizen science initiative to collect count data on diamondback terrapins (*Malaclemys terrapin*) in North Carolina.
- 2012-2016 Tutoring of refugees
- Once a week, tutored refugees from Myanmar ranging from preschoolers to highschoolers in a range of subjects, with an emphasis on increasing their fluency in English.

## SCHOLARSHIP AND AWARDS

2022	Ohio State CFAES Poster Competition, Third Place (\$150) The Ohio State University
2021	SICB Division of Behavior Best Student Presentation Finalist Society for Integrative and Comparative Biology
2018-2023	Dean's Distinguished Fellowship (\$31,476 x 3 years) The Ohio State University
2016	Graduate School Scholar Assistantship (\$19,367) Miami University
2016	Best Honors Poster CSURF Showcase (\$50) University of North Carolina Wilmington
2015	King Mackerel Tournament Undergraduate Research Fellowship (\$1,500) University of North Carolina Wilmington
2015	UNCW Study Abroad Scholarship (\$1,250) University of North Carolina Wilmington
2014	The Preyer Family Scholarship (\$1,500) University of North Carolina Wilmington
2013-2016	Teal Scholarship (\$12,700) University of North Carolina Wilmington
2012-2016	Seahawk Soar Scholarship (\$21,000) University of North Carolina Wilmington
2012-2016	Carolyn and Martin Rabunsky Scholarship (\$29,414) University of North Carolina Wilmington

## PROFESSIONAL DEVELOPMENT

2024-2025	<p>Certificate in University Teaching University of Missouri St. Louis</p> <ul style="list-style-type: none"> <li>• The focus of the program is on professional development in teaching. I have completed the topics of Foundations of Higher Education unit, and am currently completing the Professional Development in Higher Education, Teaching with Technology, and a Capstone unit.</li> <li>• During these Units I engaged in regular workshops, attended teaching related professional conferences, shadowed a mentor in my discipline, created artifacts to utilize in my teaching, developed a teaching philosophy, maintained a teaching reflection journal, and received feedback on observations of my teaching.</li> </ul>
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2024-2025

Synthesis Skills for Early Career Researcher Fellowship  
Long Term Ecological Research Network

- As part of this ongoing project, I am learning the technical (e.g., data discovery, data harmonization, reproducible coding) and interpersonal skills (e.g., building and facilitating a diverse team and communicating results) needed to complete a team-science synthesis project using long-term ecological data.
- I am using long-term data to answer the following question: do long-term changes in temperature and/or DO correlate with changes in body size, population abundance, total community abundance, and/or community diversity of fish?