

Emily V. Kerns

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Ph.D. Candidate	University of Wisconsin-Madison, Madison, WI Department of Integrative Biology, Minor in Genetics Advisor: Dr. Jesse N. Weber Proposed Thesis: <i>Investigating thermal plasticity, ecotype variation, and phenotypic effects of DNA methylation in threespine stickleback</i>	2021 – Present
B.S.	University of North Florida, Jacksonville, FL Biology, Concentration in Coastal and Marine Biology, Minor in Chemistry Advisor: Dr. Matthew R. Gilg Capstone: <i>Investigation of how selection is acting on a hybrid zone of Fundulus grandis and F. heteroclitus</i>	2015 – 2018

PUBLICATIONS

1. Hardy A.L., Gaither M.R., Lotterhos K.E., Greaves S., Cipolla K.J., **Kerns E.V.**, Trujillo A.P., Gilg M.R. Asymmetrical hybridization and environmental factors influence the spatial genetic structure of a killifish hybrid zone. *Evolution*. *In press*.
 2. Bolnick D.I., Barrett R.D.H., Choi E., Eckert L., Hendry A.P., **Kerns E.V.**, Lind Å. J., Milligan-McClellan K., Peichel C.L., Sasser K., Thornton A.R., Wolf C., Steinel N.C., Weber J.N. Destabilized host-parasite dynamics in newly founded populations. *BioRxiv*. Doi: <https://doi.org/10.1101/2024.06.24.600494>
 3. Gilg M.R., **Kerns E.V.**, Gutierrez-Bayona N.E., Kooyomjian C., Hinojosa N.A. Dynamic cohort analysis reveals fluctuating patterns of selection within a hybrid zone between the killifish *Fundulus heteroclitus* and *F. grandis*. *Evolutionary Biology* (2021) Doi: 10.1007/s11692-021-09553-x
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PRESENTATIONS

Oral Presentations

1. **Kerns E.V.**, Weber J.N. How do commonly used methods capture variation in DNA methylation of threespine stickleback (*Gasterosteus aculeatus*)? *Evolution*. July 2024: Montreal, Canada.

2. **Kerns E.V.** Evolutionary Medicine. University of Wisconsin-Madison Evolutionary Biology 410, taught by Dr. Jesse N. Weber. *Guest Lecture*. May 2023: Madison, WI.
3. **Kerns E.V.**, Weber J.N. Does DNA methylation mediate flexible responses in threespine stickleback? *Alaska Stickleback Retreat*. April 2023: Montreal, Canada.
4. Sasser T., **Kerns E.V.**, Weber J.N. Fish in hot water: Thermal tolerance and interacting stressors. *The World's Greatest Eco-Evo Experiment*. February 2022: virtual. *Co-first author presentation
5. Gilg M.R., **Kerns E.V.**, Gutierrez-Bayona N.E., Kooyomjian C., Hinojosa N.A. Dynamic cohort analysis reveals evidence of directional selection in a killifish hybrid zone. *Joint Meeting of Ichthyologists and Herpetologists*. July 2019: Snowbird, UT.

Poster Presentations

1. **Kerns E.V.**, Sasser T., Weber J.N. How do DNA methylation and gene expression mediate plasticity of threespine stickleback (*Gasterosteus aculeatus*)? *Wisconsin Epigenetics Symposium*. October 2022: Madison, WI.
2. **Kerns E.V.**, Sasser T., Weber J.N. How do DNA methylation and gene expression mediate plasticity of threespine stickleback (*Gasterosteus aculeatus*)? *Evolution*. June 2022: Cleveland, OH.
3. **Kerns E.V.**, Cipolla K., Gonzalez D., Gilg M.R. Landscape genetics of a *Fundulus spp.* hybrid zone in northeast Florida. *Joint Meeting of Ichthyologists and Herpetologists*. July 2019: Snowbird, UT.
4. **Kerns E.V.**, Gilg M.R. Hybrid zone analysis of *Fundulus grandis* and *F. heteroclitus*. *Florida Undergraduate Research Conference*. February 2018: Cocoa, FL.

RESEARCH EXPERIENCE

University of Wisconsin-Madison, Advisor: Dr. Jesse N. Weber <i>Ph.D. Candidate</i> , Madison, WI	2021 – Present
United States Forest Service <i>Biological Science Technician (Aquatic Systems)</i> , St. Regis, MT <i>PacFish/InFish Biological Opinion Monitoring Program</i>	2020
US Forest Service, AmeriCorps, Student Conservation Association (SCA) <i>Crew Leader / Biological Science Technician</i> , Tongass National Forest, AK <i>Tongass-Wide Young Growth Study</i>	2019
National Park Service, AmeriCorps, SCA <i>Biological Science Technician (Vegetation)</i> , Redwood National Park, CA	2019

University of North Florida, Advisor: Dr. Matthew R. Gilg
Ecological Genetics Research Assistant, Jacksonville, FL

2016 – 2018

HONORS AND AWARDS

UW-Madison Integrative Biology John Jefferson Davis Travel Award, \$800	2024
William C. Burns & Lemuel F. Fraser Teaching Enrichment Scholarship, \$1,000	2023
National Science Foundation Graduate Research Fellowship Program, <i>Honorable Mention</i>	2022
Rita and Kenneth Hoots Graduate Student Scholarship, \$2,000	2022
UW-Madison Integrative Biology Graduate Summer Research Award, \$7,520	2022
AmeriCorps Education Award, \$1,600	2019
AmeriCorps Education Award, \$1,600	2019
UNF Presidential Diamond Scholarship, \$24,000	2015 – 2018
Florida Bright Futures, \$14,400	2015 – 2018
UNF Undergraduate Research Grant Recipient. <i>Hybrid Zone Analysis of Fundulus grandis and F. heteroclitus</i> , \$1,300	2017
Tennessee Valley Interstellar Workshop Scholarship, \$2,500	2017

TEACHING EXPERIENCE

University of Wisconsin-Madison

Madison, WI

Teaching Assistant

Animal Biology Laboratory Bio/Zoo 102 Lab	2024
Evolutionary Biology Zoo/Bot/Anthro 410 Discussion	2023
Introductory Biology 2 Bio/Bot/Zoo 152 Lab	2021

Delta Teaching Program Courses Completed

Expeditions in Evidence-Based Teaching and Learning	2024
Teaching in Science and Engineering: The College Classroom	2023
Research Mentor Training	2022

University of North Florida

Jacksonville, FL

Supplemental Instructor

General Biology 2 BSC1011C Discussion	2018
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Varsity Tutors

Jacksonville, FL

Tutor

2016 – 2018

VOLUNTEER POSITIONS

University of Wisconsin-Madison

Madison, WI

Wisconsin Evolution

Evolution Coordinating Committee

2024 – Present

Evolution Seminar Series Committee

2024 – 2025

Department of Integrative Biology

Graduate Student Organization Outreach Coordinator

2024 – 2025

Research Mentor

Guided three undergraduate students (2024, 2022 – 2023, 2022) through independent research projects.

Badger Buddies, Biological Interactions Summer Research Program (WISCIENCE)

Professional Development Mentor

2022

Alaska Stickleback Project

Virtual

Graduate Student and Postdoctoral Presentations Co-Organizer

2023 – 2024

PubNavigator: Science Communication Platform

Virtual

Associate Editor

2020 – 2022

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science

2024 – Present

American Society of Naturalists

2024 – Present

Society for the Study of Evolution

2022 – Present

COLLABORATIONS

1. PI: Dr. Daniel Bolnick. Co-author and Supporting Personnel: Dr. Benjamin Flanagan, **Emily V. Kerns**. Reciprocal genetics of recently-evolved vertebrate immunity and helminth counter-adaptation. *NIH R01 Administrative Supplement under Climate Change and Health Notice of Special Interest*. \$382,330.00. Not funded. 2023.
2. UW-Madison Supporters: Dr. Jesse Weber, Dr. Lauren Ritters, **Emily V. Kerns**. University of Alaska Anchorage Supporters: Dr. Matthew Carlson. *UW-Madison Partnership Program in Graduate Excellence Grant*. \$25,000. Not funded. 2023.
3. UW-Madison Supporters: Dr. Jesse Weber, Dr. Lauren Ritters, **Emily V. Kerns**, Bryce Solin. University of Alaska Anchorage Supporters: Dr. Douglas Causey, Dr. Khrys Duddleston. *UW-Madison Minority Supporting Institution Partnership Program Grant*. \$25,000. Not funded. 2022.

WORKSHOPS AND CERTIFICATIONS

Introduction to Equity-Minded Mentorship. <i>Equity in Graduate Education Resource Center</i>	2024
A Practical Approach to Project Management Workshop. <i>UW-Madison Graduate School Office of Professional Development</i>	2023
Implicit Bias Workshop. <i>Fair Play Graduate Student and Postdoc Workshop</i>	2022
Wilderness First Aid. <i>Wilderness Medical Associates International</i>	2019
Shoreline Survival Training. <i>US Forest Service</i>	2019
Boating Safety Course for the State of Florida Lifetime Certification. <i>BoatU.S Foundation</i>	2018