

DR. KAITLYN M. MURPHY (SHE/HER)

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PROFESSIONAL APPOINTMENTS

2023 – Present **NSF Postdoctoral Fellow**, Middle Tennessee State University, Biology
Advisor: Dr. Donald Walker

Sept – Nov 2023 **Journal of Experimental Biology Travelling Fellow**, University of
Queensland (Australia), School of the Environment
Advisors: Prof. Craig Franklin, Dr. Rebecca Cramp

EDUCATION

Ph.D. Auburn University, Biological Sciences Aug 2018 – July 2023
Dissertation topic: “The influence of environmental variation on the microbiome during
early-life stages of reptiles”
Advisors: Dr. Daniel Warner, Dr. Mary Mendonça

BSc. Iowa State University, Biology Aug 2015 – May 2018
Graduated Cum Laude with Honors
Minored in Animal Ecology
Studied abroad with The School for Field Studies, Tanzania, Africa
Thesis: “Nest temperatures predict nest emergence of painted turtle (*Chrysemys picta*)
offspring”
Advisor: Dr. Fredric Janzen

RESEARCH PUBLICATIONS

(* indicates undergraduate researcher)

PEER-REVIEWED PUBLICATIONS

7. **Murphy, K.M.**, Liles, M.R., Higgins, K., & Warner, D.A. (2024). Methods for sampling and manipulating the microbiome of reptile eggs. *FEMS Microbiology Ecology*. Submitted.
6. Moss, R.A.*, **Murphy, K.M.**, Gardner, S., T. Watkins, M.M., Finger Jr., J.W., Kelley, M.D., Elsey, R.M., Warner, D.A., & Mendonça, M.T. (2023). Exposure to ecologically relevant estrogen levels do not influence morphology or immune parameters in hatchling American alligators (*Alligator mississippiensis*). *Comparative Biochemistry and Physiology Part C: Toxicology and Pharmacology*, 275, 109767.
5. **Murphy, K.M.**, Lee, S.*, Wilson, A.E., Warner, D.A. (2023). The microbiome as a maternal effect: A systematic review on vertical transmission of microbiota across taxa. *Integrative and Comparative Biology*, icad031.
4. **Murphy, K.M.**, Watkins, M.M.*, Finger Jr., J.W., Kelley, M.D., Elsey, R.M., Warner, D.A., & Mendonça, M.T. (2022). Xenobiotic estradiol-17 β alters the gut microbiome of hatchling

- American Alligators (*Alligator mississippiensis*). *Environmental Microbiology*. 24(12), 6336-6347.
3. **Murphy, K.M.**, Radder, R.S., Shine, R., & Warner, D.A. (2020). Lizard embryos prioritize posthatching energy reserves over increased hatchling body size during development. *Physiological and Biochemical Zoology*, 93(5), 339-346.
 2. **Murphy, K.M.**, Bodensteiner, B.L., Delaney, D.M., Strickland, J.T., & Janzen, F.J. (2020). Nest temperatures predict nest emergence of painted turtle (*Chrysemys picta*) offspring. *Chelonian Conservation and Biology: Celebrating 25 Years as the World's Turtle and Tortoise Journal*, 19(1), 72-77.
 1. Jesudoss Chelladurai, J., **Murphy, K.**, Snobl, T., Bader, C., West, C., Thompson, K., & Brewer, M.T. (2016). Molecular epidemiology of *Ascaris* infecting pigs in Iowa, USA. *The Journal of Infectious Diseases*, 215(1), 131-138.

IN-PREPARATION (Manuscripts available upon request)

4. **Murphy, K.M.**, Goodhill, C.*, Ho, C.H.S.*, Cramp, R.L., Franklin, C.E. (2023). Effect of chronic exposure to low aquatic oxygen levels on hypoxia and thermal tolerance in an Australian freshwater fish.
3. **Murphy, K.M.**, Johnson, M.R., Norris, M.C., & Warner, D.A. (2023). Maternal spatial variation alters both microbiota and offspring phenotypes in an oviparous lizard.
2. **Murphy, K.M.**, Preston, K.*, Mendonca, M.T., & Warner, D.A. (2023). Maternal influence of microbiota on offspring via diet in an oviparous lizard.
1. Johnson, M.R.*, **Murphy, K.M.**, & Warner, D.A. (2023). The effect of eggshell microbiota on embryo development and hatchling phenotypes in an oviparous lizard.

OTHER PUBLICATIONS

2. Hinde K, CEG. Amorim, CN Anderson, E Armstrong, M. Beasley, AF Brokaw, L Brubaker-Wittman, J Brunstrum, N Burt, M Casillas, A Chen, T Chestnut, R Coffman, PK Connors, M Dasari, J Dietrick, CF Ditelberg, J Drew, L Durgavich, B Easterling, K Faust, J Gabrys, Y Haridy, C Henning, I Hecht, A Hilborn, M Janz, C Josefson, EK Karlsson, L Kauffman, J Kissel, M Kissel, J Kobylecky, J Krell, DN Lee, KM Lesciotto, KL Lewton, JE Light, J Martin, R. Moore, A Murphy, **K. Murphy**, W Nickley, A Núñez-de la Mora, O Pellicer, V Pellicer, AM Perry, J Popescu, E Rocha, M Rubio-Godoy, C Rudzis, M Sarma, SG Schuttler, M Sinnot, AC Stone, B Tanis, A Thacher, N Upham, J Varner, F Villanea, J Weber, M Wilson, E Willcocks. (2023). Compendium of the 11th Annual March Mammal Madness Tournament 2023. *Proceedings of the Noble Zoological Society Series C Performance Sciences*, 2, 1-161.
1. McKibben T.W.*, **Murphy, K.M.**, & Schwartz, T.S. (2022). Acquisition and development of the gut microbiome in lizards. *Auburn University Journal of Undergraduate Scholarship*.

PRESENTATIONS

(* indicates undergraduate researcher)

INVITED

- 2023 **Murphy, K.M.** The influence of environmental variation on the microbiome during early-life stages of reptiles. *Georgia Southern University, Statesboro, GA.*

- 2023 **Murphy, K.M.**, Lee S.M.*, Wilson, A.E., & Warner, D.A. The microbiome as a maternal effect: A meta-analysis on vertical transmission of microbiota. *SICB (The Society for Integrative and Comparative Biology) Conference*, Austin, TX.

CONFERENCE PRESENTATIONS

- 2023 McKibben, T.*, **Murphy, K.M.**, Schwartz, T.S. Does Maternal Transfer or Early Life Diet Affect the Gut Microbiome in Brown Anole Lizards. *SICB (The Society for Integrative and Comparative Biology) Conference*, Austin, TX.
- 2022 **Murphy, K.M.**, Watkins, M.M.*, Finger Jr., J.W., Kelley, M.D., Elsey, R.M., Warner, D.A., & Mendonça, M.T. Xenobiotic estradiol-17 β alters the gut microbiome of hatchling American Alligators (*Alligator mississippiensis*). Tennessee Herpetological Society, Clarksville, TN.
- 2022 **Murphy, K.M.**, Preston, K.*, Mendonça, M.T., & Warner, D.A. Maternal influence of microbiota on offspring via diet in an oviparous lizard. *JMIH (Joint Meeting of Ichthyologists and Herpetologists)*, Spokane, WA.
- 2022 **Murphy, K.M.**, Preston, K.*, Mendonça, M.T., & Warner, D.A. Maternal influence of microbiota on offspring via diet in an oviparous lizard. *SICB (The Society for Integrative and Comparative Biology) Conference*, virtual.
- 2021 **Murphy, K.M.**, Higgins, K., Liles, M.R., & Warner, D.A.,. Methods for sampling and manipulating the microbiome of reptile eggs. *SICB (The Society for Integrative and Comparative Biology) Conference*, virtual.
- 2019 **Murphy, K.M.**, Watkins, M.M.*, Finger Jr., J.W., Kelley, M.D., Elsey, R.M., Warner, D.A., & Mendonça, M.T. Xenobiotic estradiol-17 β and the microbial gut communities of hatchling American Alligators (*Alligator mississippiensis*). *ALAPARC (Alabama Partners in Amphibian and Reptile Conservation) Conference*, Nauvoo, AL.

POSTER PRESENTATIONS

- 2023 Norris, M.C., **Murphy, K.M.**, Alford, A.*, Berger, L.A.*, Butts, L.*, Harrington, M.B*, Knutson, S.N*, Rogers, J.M.*, Warner, D.A. Experimental test of the environmental matching hypothesis in island populations of the brown anole. *SICB (The Society for Integrative and Comparative Biology) Conference*, Austin, TX.
- 2023 Glenn, K.L.*, Lindsey, A.*, Norris, M.C., **Murphy, K.M.**, Warner, D.A. Habitat Use of Hatchling Lizards Across Different Environments. *SICB (The Society for Integrative and Comparative Biology) Conference*, Austin, TX.
- 2023 Alford, A.*, Norris, M.C., **Murphy, K.M.**, Butts, L.*, Harrington, M.B*, Warner, D.A. The influence of the developmental environment on anti-predator behaviors in hatchling lizards. *SICB (The Society for Integrative and Comparative Biology) Conference*, Austin, TX.
- 2020 **Murphy, K.M.**, Watkins, M.M.*, Finger Jr., J.W., Kelley, M.D., Elsey, R.M., Warner, D.A., & Mendonça, M.T. Xenobiotic estradiol-17 β and the microbial gut communities of hatchling American Alligators (*Alligator mississippiensis*). *SICB (The Society for Integrative and Comparative Biology) Conference*, Austin, TX.
- 2019 **Murphy, K.M.**, Bodensteiner, B.L., Delaney, D.M., Strickland, J.T., & Janzen, F.J. Nest temperatures alter survival and emergence of Painted Turtle offspring (*Chrysemys picta*). *SICB (The Society for Integrative and Comparative Biology) Conference*, Tampa, FL.
- 2018 **Murphy, K.M.**, Bodensteiner, B.L., Delaney, D.M., Strickland, J.T., & Janzen, F.J. Post-hatching nest temperatures and delayed emergence from nests of neonatal painted turtles (*Chrysemys picta*). *Senior Honors Thesis Poster Presentation*, Ames, IA.

- 2017 **Murphy, K.M.**, Bodensteiner, B.L., Delaney, D.M., Strickland, J.T., & Janzen, F.J. Post-hatching nest temperatures and delayed emergence from nests of neonatal painted turtles (*Chrysemys picta*). *SACNAS (Society for the Advancement of Chicanos/Hispanics and Native Americans in Science) Conference*, Salt Lake City, UT.
- 2017 **Murphy, K.M.**, Meseck, J., Jesudoss Chelladurai, J., Bader, C., and Brewer, M.T. Trophozoite killing assays for *Tritrichomonas foetus* parasites. *Iowa State University Undergraduate Research Symposium*, Ames, IA.
- 2017 **Murphy, K.M.**, Meseck, J., Jesudoss Chelladurai, J., Bader, C., and Brewer, M.T. Trophozoite killing assays for *Tritrichomonas foetus* parasites. *Research in the Capitol Event*, Des Moines, IA.
- 2016 **Murphy, K.M.**, Jesudoss Chelladurai, J., Bader, C., and Brewer, M.T. Trophozoite killing assays for *Tritrichomonas foetus* parasites. *Iowa State University Summer Research Symposium*, Ames, IA.

FELLOWSHIPS, GRANTS & AWARDS

(total awarded: \$24,720 USD)

FELLOWSHIPS

- 2023 Journal of Experimental Biology (JEB) Travelling Fellowship, University of Queensland (Australia), Prof. Craig Franklin and Dr. Rebecca Cramp
- 2020 National Science Foundation Graduate Research Fellowship Program (NSF GRFP), Honorable Mention
- 2017 National Science Foundation Research Experience for Undergraduates (NSF REU), Iowa State University, Dr. Fredric Janzen

RESEARCH GRANTS

- 2021 The Eppley Foundation for Research Grant, Title: “Maternal and environmental effects on the offspring microbiome: Ecological and evolutionary implications in an egg-laying lizard” (\$19,000)
- 2020 Dean Metter Memorial Award, Society for the Study of Amphibians and Reptiles, Title: “The influence of habitat type on the gut, cloacal and eggshell microbiomes in *Anolis sagrei*” (\$600)
- 2019 Auburn University Museum of Natural History Grant (\$400)
- 2019 IUCN-SSC Crocodile Research Specialist Group Student Research Assistance Scheme Grant, Title: “Xenobiotic Estradiol-17 β and the microbial gut communities of juvenile American alligators (*Alligator mississippiensis*)” (\$1,000)
- 2019 Fund for Excellence Undergraduate Research Award, Mentor (\$720)
- 2016 Iowa State University Honors Summer Research Grant (\$1,000)
- 2015 Turtle Camp Research and Education in Ecology (TREE) Program for High School Students, Iowa State University, Dr. Fredric Janzen (\$600)

TRAVEL GRANTS & AWARDS

- 2023 Auburn University Graduate Student Council Travel Fellowship (\$400)
- 2022 Tennessee Herpetological Society Niemiller Travel Award (\$100)
- 2021 Auburn University College of Mathematics and Science Travel Award (\$400)
- 2018 Charlotte Magnum SICB Student Travel Support (3x, 2018 – 2022)
- 2017 Iowa State University Student Affairs Undergraduate Travel Fund (\$500)

2017 College of Liberal Arts & Sciences Undergraduate Travel Fund (\$500)

AWARDS & SCHOLARSHIPS

- 2023 Kenneth Ottis Distinguished Graduate Fellowship, Department of Biological Sciences, Auburn University (\$500)
- 2021 The Joseph Kirby Farrington Memorial Award (for academic excellence), Department of Biological Sciences, Auburn University (\$500)
- 2018 Cardinal Key Honor Society, Iowa State University
- 2017 College of Liberal Arts & Sciences Study Abroad Scholarship, Iowa State University (\$500)
- 2017 Diane Brandt Fund Scholarship, Department of Ecology, Evolution, and Organismal Biology, Iowa State University (\$1,000)
- 2017 Charles Drewes Memorial Scholarship, Department of Ecology, Evolution, and Organismal Biology, Iowa State University (\$1,000)
- 2015 President's Award for Competitive Excellence, Iowa State University
- 2015 Cardinal Leadership Scholar Award, Iowa State University
- 2015 Christina Hixson Opportunity Award, Iowa State University
- 2012 Google Science Fair Participant, Abraham Lincoln High School, Title: "Implementation of behavioral performance scales on monitoring Philippine crocodile (*Crocodylus mindorensis*) training at Omaha's Henry Doorly Zoo"

TEACHING & MENTORING EXPERIENCE

INSTRUCTOR (# of semesters)

- 2022 Alabama Prison Arts and Education Project, Tutwiler Prison, Wetumpka, AL
Topic: Herpetology (slides available upon request)
- 2022 BIOL 101: Introductory Biology, Office of Inclusion, Equity, and Diversity, Auburn University, Auburn, AL (1)
- 2017 BIOL 110: Department of Ecology, Evolution, and Organismal Biology, Iowa State University, Ames, IA (1)
- 2016 Summer Safari Camp Instructor, Education Department, Blank Park Zoo, Des Moines, IA

TEACHING ASSISTANT (# of semesters)

- 2018 – 2023 Department of Biological Sciences, Auburn University, Auburn, AL
BIOL 3060 Ecology (3), BIOL 5240 Animal Physiology (6), BIOL 6600 Biomedical Physiology (6)
- 2021 – 2023 Office of Inclusion, Equity, and Diversity, Auburn University, Auburn, AL
Biological Sciences Tutor (2)
- 2017 Department of Ecology, Evolution, and Organismal Biology, Iowa State University, Ames, IA undergraduate TA for BIOL 101 (1)

TUTOR (# of semesters)

- 2021 – 2023 Department of Biological Sciences, Auburn University, Auburn, AL
BIOL 2501 Human Anatomy and Physiology I (2), BIOL 2511 Human Anatomy and Physiology II (2)

PROFESSIONAL CONFERENCES

CZI-CABANA Microbiome Bioinformatics with QIIME2 Workshop, October 2020
2020 SUCCEED (Symposium for the College of Sciences and Mathematics Career Development) Conference, February 2020

PROFESSIONAL AFFILIATIONS

2020 – 2023 **Graduate Women in Science** (National)
2018 – 2023 **The Herpetologists' League**
2018 – 2023 **SSAR** (Society for the Study of Amphibians and Reptiles)
2018 – 2023 **SICB** (The Society for Integrative and Comparative Biology)
2016 – 2023 **Tri-Beta National Biological Honors Society**
2019 – 2020 **American Society of Ichthyologists and Herpetologists**
2019 – 2020 **Society for the Study of Evolution**
2017 – 2019 **SACNAS** (Society for the Advancement of Chicanos/Hispanic and Native Americans in Science)

PROFESSIONAL SERVICE

2022 – 2023 COSAM (College of Science and Mathematics) Colloquium committee member, Auburn University
2020 – 2021 Morning-Talk Coordinator, Biological Sciences Graduate Student Council, Auburn University
2020 – 2021 Social Media Chair, Graduate Women in Science Program, Auburn, University
2019 – 2020 Treasurer, Graduate Women in Science Program, Auburn University
2016 – 2018 Ambassador, The Women in Science and Engineering Program, Iowa State University
2016 – 2018 Biology Education Success Teams (BEST) Peer Mentor, Department of Ecology, Evolution, and Organismal Biology, Iowa State University

PEER REVIEWER

Ecology (1) Journal of Herpetology (1) Asian Herpetological Research (1)
Tennessee Journal of Herpetology (1) FEMS Microbiology Ecology (1) Animals (1)
Journal of Experimental Biology – A (1) Proceedings of the Royal Society B: Biological Sciences (1)

PUBLIC OUTREACH EXPERIENCE

2023 Speaker, Skype a Scientist, Kirn Middle School, Council Bluffs, IA
2023 Event Speaker, College Quest, College of Sciences and Mathematics, Auburn University, Auburn, AL
2023 Mentor, Student-Teacher Education in Ecological Research (STEER) program, Auburn University, Auburn, AL

- 2022 Volunteer, Open-House Event at Auburn University Museum of Natural History, Auburn University, Auburn, AL
- 2022 Event Speaker, Destination STEM, College of Sciences and Mathematics, Auburn University, Auburn, AL
- 2022 Event Speaker, Science Café, Auburn University, Auburn, AL
- 2022 Guest Speaker, Title: Grant Writing, “Morning Talk” by Biological Sciences Graduate Student Council, Auburn University, Auburn, AL
- 2022 Guest Speaker, Conservation Biology Club, Auburn University, Auburn, AL
- 2022 Guest Speaker, Auburn Day School (AL’s first STEM preschool), Auburn, AL
- 2021 – 2023 Author for “Art in Bio” column, Integrative and Comparative Biology Journal (<https://integrativeandcomparativebiology.wordpress.com/>)
- 2021 – 2022 Counselor, Summer Sciences Institute, College of Sciences and Mathematics, Auburn University, Auburn, AL
- 2020 Poster Judge, College of Sciences and Mathematics Undergraduate Research Fair, Auburn University, Auburn, AL
- 2020 Junior Division Science Fair Judge, Greater East Alabama Regional Science and Engineering Fair, Auburn University, Auburn, AL
- 2019 – 2022 Author, “Anole Annals” blog page (<https://www.anoleannals.org/author/kaitlynmurphy/>)
- 2019 – 2022 Event Speaker, “Spring into Science” event, Graduate Women in Science, Auburn University, Auburn, AL
- 2019 – 2022 Event Speaker, “Junior Mad Scientist” event, Graduate Women in Science, Auburn University, Auburn, AL
- 2019 – 2022 Counselor for “Curious Curators” Camp, Auburn University Museum of Natural History, Auburn, AL
- 2019 Event Speaker, Auburn Public Library STEM Storytime, Auburn, AL
- 2019 Event Supervisor, Alabama State Science Olympiad, Auburn University, Auburn, AL – Anatomy and Physiology
- 2011 – 2015 Youth Volunteer, Omaha’s Henry Doorly Zoo and Aquarium, Omaha, NE