

William H. Kirkpatrick

PhD Candidate – DuRant Lab
University of Arkansas Dept. of Biology

Education

University of Arkansas, Fayetteville, AR (August 2019 – *Present*)

Ph.D. in Biological Sciences; Advisor: Dr. Sarah DuRant

University of Tennessee, Knoxville, TN (August 2015 – May 2019)

B.S. in Ecology and Evolutionary Biology; Minor: Secondary Education

Publications

Kirkpatrick WH, Sauer EL, Carroll RL, Davis C, Fuhlendorf S, Cohen JM, DuRant SE. 2025. Critical reproductive behaviors in Scaled Quail and Northern Bobwhite are affected by thermal variability and mean temperature. *Journal of Thermal Biology*, 127, 104054.

Kirkpatrick WH, Sheldon KS. 2022. Experimental increases in temperature mean and variance alter reproductive behaviours in the dung beetle *Phanaeus vindex*. *Biology Letters* **18**: 20220109. <https://doi.org/10.1098/rsbl.2022.0109>.

McGee MR, Edwards DA, **Kirkpatrick WH**, Greeney HF, & Sheldon KS. 2018. Breeding behavior of the Gray-Breasted Flycatcher (*Lathrotriccus griseipectus*) in Southwestern Ecuador. *Ornitología Neotropical*, 29(1), 367-370.

In Progress

Kirkpatrick WH & DuRant SE. 2025. Thermal variation and mean temperature differentially affect breeding behavior in two cavity nesting birds across temporal scales.

Kirkpatrick WH & DuRant SE. 2025. Parental care during incubation shapes post hatch offspring development in two passerine birds.

Oral Presentations

Kirkpatrick WH & DuRant SE. Adult behavior influences avian offspring development while both are influenced by novel temperatures. American Ornithological Society Meeting – St. Louis, Aug 14, 2025.

Kirkpatrick WH & DuRant SE. Adult behavior influences avian offspring development while both are influenced by novel temperatures. The Society for Integrative and Comparative Biology Conference – Atlanta, Jan 6, 2025.

Kirkpatrick WH & DuRant SE. Parental care shapes offspring growth and is influenced by environmental temperature in two passerines. The Society for Integrative and Comparative Biology Conference: Marlene Zuk Best Student Presentation Competition – Seattle, Jan 4, 2024.

Kirkpatrick WH & DuRant SE. Environmental temperature influences Eastern Bluebird breeding behavior. Bella Vista Bluebird Society Annual Meeting – Bella Vista, AR, Oct 29, 2022.

Kirkpatrick WH & Sheldon KS. The impacts of climate warming on the breeding behavior of the rainbow scarab dung beetle *Phanaeus vindex*. URSA Symposium, Apr 5, 2019.

Poster Presentations

Kirkpatrick WH & DuRant SE. Thermal variation and averages oppositely affect breeding behavior of two cavity nesting birds. The Society for Integrative and Comparative Biology Conference - Austin, Jan 6, 2023. *Winner – Div. of Animal Behavior Best Student Poster*.

Kirkpatrick WH, Carroll RL, Davis CA, Fuhlendorf SD, and DuRant SE. Thermal variability and mean temperature affect the nesting environment and incubation behavior in two quail species. North American Ornithological Conference - Web, Aug 13, 2020.

Kirkpatrick WH & Sheldon KS. The impacts of climate warming on the breeding behavior of the rainbow scarab dung beetle *Phanaeus vindex*. Ecological Society of America Conference - Louisville, Aug 13, 2019.

Kirkpatrick WH & Sheldon KS. The impacts of climate warming on the breeding behavior of the rainbow scarab dung beetle *Phanaeus vindex*. EURēCA Conference, Apr 17, 2019.

Kirkpatrick WH, McGee MR, Edwards DA, Greeney HF, Sheldon KS. Secrets of a rare bird: Breeding behavior of the Gray-breasted Flycatcher (*Lathrotriccus griseipectus*) in Ecuador. Ecology & Evolutionary Biology Undergraduate Symposium, Apr 26, 2018.

Kirkpatrick WH, McGee MR, Edwards DA, Greeney HF, Sheldon KS. Secrets of a rare bird: Breeding behavior of the Gray-breasted Flycatcher (*Lathrotriccus griseipectus*) in Ecuador. EURēCA Conference, Apr 18, 2018.

Fellowships/Honors/Awards

- **2023** Kimberly G. Smith Award in Biological Sciences – U of Arkansas (\$1,000)
- **2023** Research Grant – Bella Vista Bluebird Society (\$2,000)
- **2023** Adkins-Regan Award (Best Student Poster) – SICB (\$250)
- **2022** Harold and Margaret Hedges Scholarship in Ornithology – U of Arkansas (\$3,750)
- **2021** Research Grant – North American Bluebird Society (\$2,500)
- **2021** Research Grant – Bella Vista Bluebird Society (\$1,000)
- **2021** Graduate Research Fellowship (3yrs) – National Science Foundation (\$138,000)
- **2021** National Scholar Award – U of Arkansas
- **2019** Doctoral Academy Fellowship (4yrs), U of Arkansas (\$48,000)
- **2019** EEB Outstanding Undergraduate Research Award – U of Tennessee
- **2019** Undergraduate Research Symposium Honorable Mention – U of Tennessee
- **2018** Undergraduate Research Grant – U of Tennessee (\$2,000)
- **2015** Volunteer Scholarship (4yrs) – U of Tennessee (\$12,000)

Research Experience

Project: Differentiating influences of environmental temperature averages and variation on breeding behavior and offspring physiological development in Eastern Bluebirds (*Sialia sialis*) and Tree Swallows (*Tachycineta bicolor*) – PhD Dissertation

- Started and maintained a 200-box nest box system with Dr. Sarah DuRant
- Collaborated with local agencies including City of Fayetteville Parks, Northwest Arkansas Land Trust, and the University of Arkansas Division of Agriculture
- Banded birds, took physiological measurements of nestlings, monitored parental behavior via thermal loggers
- Analyzed results in R using linear mixed effects model selection
- Presented results at the Society for Integrative and Comparative Biology Conference (2023 – poster & 2024-25 – talk)
- Developed and implemented an experimental field study
- Data analysis and writing in progress (see Publications)

Project: Breeding behavior in response to environmental temperature of Scaled Quail (*Callipepla squamata*) and Northern Bobwhite (*Colinus virginianus*)

- Developed novel questions with an existing dataset provided by advisor
- Conducted analyses in R using linear mixed effects model selection
- Presented preliminary findings at the American Ornithological Society (2020 – poster)
- Results in review at the Journal of Thermal Biology (see Publications)

Project: Experimental manipulation of environmental temperature to examine climate warming's effects on breeding behavior in Rainbow Scarab dung beetles (*Phanaeus vindex*)

- Developed project with Dr. Kimberly Sheldon and received an undergraduate research grant to conduct field work
- Maintained a field site and collected behavioral/thermal data
- Presented results at University of Tennessee sponsored conferences (EURēCA and EEB – poster; URSA – talk) and the Ecological Society of America Conference (2019 – poster)
- Published results in Biology Letters (see Publications)

Project: Breeding behavior of the Gray-Breasted Flycatcher (*Lathrotriccus griseipectus*) in Southwestern Ecuador

- Conducted video review data collection and collation and basic analyses
- Presented results at University of Tennessee events (EURēCA and EEB Symposiums – posters)
- Published results in *Ornitología Neotropical* (see Publications)

Teaching Experience

- **DEEP (Disease Ecology and Ecophysiology) Seminar Leader:** Spring, Fall 2023, Spring, Fall 2024
- **U of Arkansas Teaching Assistant:** Comparative Physiology – Spring 2025
- **U of Arkansas Teaching Assistant:** Human Physiology Lab – Fall 2020, Spring 2021
- **U of Arkansas Teaching Assistant:** Principles of Biology Lab – Fall 2019, Spring 2020, Fall 2024
- **Oak Ridge High School Student Teacher** (Oak Ridge, TN) – Fall 2018
 - o Courses taught: 9th Grade Honors Biology, 9th Grade STEM
- **Muse Childrens Museum Educator** (Knoxville, TN) – Spring 2016-Fall 2018
 - o Programs taught: Ocean Camp (4-6th Grade), Hot Wheels Physics (1st-5th Grade)

Outreach

- U of Arkansas Birdsafe Initiative (2021-2025)
 - o DuRant Lab: We participated in monitoring of avian window strikes on campus in collaboration with the Cornell Lab of Ornithology. I led undergraduate volunteer groups in avian collections on the University of Arkansas campus during Spring and Fall migrations.
- Washington Elementary Field Days (Kindergarten/1st Grade; 2023, 2024)
- Botanical Gardens Field Trips (2nd Grade; 2024)
- Woolsey Wet Prairie BlueGreen Infrastructure/Nestbox Research Events (2022-2024)
- Eastern Band of the Cherokee Nation Summer Research Experience (2019)

Mentoring

- Salvador Barraza Delbarco, *REU Summer 2024*: assisted in conceptualization and execution of a field experiment in Summer 2024; presenting results for a poster at SICB 2025
- Wyatt Boehm, *University of Arkansas Honors Student*: assisted writing a received undergraduate research grant; currently analyzing immune data from developing Eastern Bluebird nestlings for his honor's thesis
- Will Wilson, *REU Summer 2023*: collected immune data from Eastern Bluebird nestlings; developed a draft of an NSF GRFP Research Proposal
- Chris Carter, *REU Summer 2022*: collected and analyzed initial immune data from Eastern Bluebird nestlings; presented findings in a poster at SICB 2022; developed a draft of an NSF GRFP Research Proposal
- Julianna McCauley, *University of Arkansas Honors Student*: assisted writing a funded undergraduate research grant; current graduate student at Oklahoma State University

References

- **Dr. Sarah DuRant** (Graduate Advisor), Associate Professor, Department of Biological Sciences, University of Arkansas, 601 Science and Engineering, Fayetteville, AR 72701, sedurant@uark.edu
- **Dr. Brett DeGregorio**, (PhD Committee Member) Associate Professor, Leader – Michigan Fish and Wildlife Cooperative Research Unit, Michigan State University, Natural Resources Bldg. 480 Wilson Road, East Lansing, MI 48824, degreg12@msu.edu
- **Dr. Kimberly Sheldon**, (Undergraduate Advisor) Associate Professor, Department of Ecology and Evolutionary Biology, University of Tennessee, 569 Dabney Hall, 1416 Circle Dr, Knoxville, TN 37996, ksheldon@utk.edu