

John Lee Boyette

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EDUCATION

The Pennsylvania State University State College, PA
Doctor of Philosophy (*in progress*) August 2022 – present
Program: Intercollege Graduate Degree Program in Ecology GPA: 4.00/4.00
Advisor: C. Guilherme Becker

University of Alabama Tuscaloosa, AL
Doctor of Philosophy (*incomplete – transferred to PSU*) August 2021 – July 2022
Department: Biological Sciences GPA: 4.00/4.00
Advisor: C. Guilherme Becker

Berry College Rome, GA
Bachelor of Science Awarded: May 2020
Majors: Biology, Animal Science *summa cum laude*
Minor: Chemistry GPA: 3.96/4.00

PUBLICATIONS

- **Boyette J.L.**, R.C. Bell, M.K. Fujita, K.N. Thomas, J.W. Streicher, D.J. Gower, R.K. Schott. Molecular evolution of non-visual opsin genes across environmental, developmental, and morphological transitions in frogs. Submitted to *Molecular Biology and Evolution*. Preprint available at *bioRxiv*. November 2022.
- Peters, S., J. Wilson, **J.L. Boyette**. Differential expression of IGF1, IGFBP5, MSTN and MYH1 across different age classes in American Quarter Horses. 2020. *Journal of Equine Veterinary Science* 94: 103226.

PRESENTATIONS

- **Boyette J.L.** Searching for evidence of immune adaptation in frog specimens collected before and after Bd emergence. *Amphibian Disease Conference*. Nashville, TN, November 2023. Oral Presentation.
- **Boyette J.L.**, R.C. Bell, M.K. Fujita, K.N. Thomas, J.W. Streicher, D.J. Gower, R.K. Schott. Evolution of Non-Visual Opsin Genes Across Ecological Transitions in Frogs. *Joint Meeting of Ichthyologists and Herpetologists*. Norfolk, VA, July 2023. Oral presentation.
- ***Boyette J.L.**, R.C. Bell, M.K. Fujita, K.N. Thomas, J.W. Streicher, D.J. Gower, R.K. Schott. Evolution of Non-Visual Opsin Genes Across Life History Transitions in Frogs. *Society for Integrative and Comparative Biology*, Online. January 2021. Oral Presentation.
***awarded Marvalee and David Wake Award for best student presentation**
- **Boyette J.L.**, R.K. Schott, R.C. Bell. Evolution of Non-visual Opsin Genes Across the Frog Tree of Life. *National Museum of Natural History NSF REU Poster Session*. Washington, D.C., August 2019. Poster Presentation.

SCHOLARSHIPS, AWARDS, & RECOGNITION

- National Science Foundation: GRFP 2023 • Award Offered
- Smithsonian Institution Fellowship Program: Graduate Student Fellowship 2023 • \$8,000
- RIBBiTR NSF Biology Integration Institute: Exploratory Project Grant 2022 • \$15,000
- Huck Institutes: Ecology IGDP Graduate Assistantship 2022 • \$56,902
- Penn State Ecology: Graham Award 2022 • \$8,000
- Penn State Ecology: Travel Award 2022 • \$750
- Alabama Audubon Society: Walter F. Coxe Research Grant 2022 • \$1,500

- University of Alabama: Aquatic Biology Enhancement Assistantship 2021 • \$52,388
- National Science Foundation: GRFP 2021 • Honorable Mention
- Society of Integrative and Comparative Biology: Marvalee and David Wake Award 2021
- National Science Foundation: REU 2019 • \$6,000
- Berry College: Presidential Scholarship 2016-2020 • \$101,976
- Department of Animal Science: Elrod Scholarship 2017-2018 • \$5,000
- Leadership Fellows Scholarship 2016-2020 • \$18,000
- Scouts BSA: Eagle Scout 2013

MENTORSHIP

University of Alabama NSF REU Co-advisor, Summer 2022

- Served as co-advisor for the UA Department of Biological Science's NSF REU program
- Met with my advisee on a weekly basis to help them design an independent research project, develop a research poster, and practice science communication skills

Peters Lab Manager, August 2019 – May 2020

- Recruited, trained, and mentored six undergraduate peers

OUTREACH & COMMUNITY ENGAGEMENT

Meet a Bama Biologist: Virtual Outreach, October 2021

- Created a presentation including an overview of amphibian biology and a version of my "Frog Powers!" activity, adapted for a virtual setting
- Presented for two 5th grade classrooms at Holt Elementary School in Tuscaloosa, AL

"Frog Powers!" Outreach Day: National Museum of Natural History, July 2019

- Designed and facilitated an interactive activity introducing museum guests to environmental adaptations in frogs and encouraging them to form hypotheses based on natural observation

Leadership Fellows, August 2016 – May 2020

- Participated in four year scholarship program involving monthly leadership learning workshops, small-group mentorship of underclassman, and community service partnerships
- One of eight students in the class of 2020 recognized for outstanding campus leadership

Solidarity Week Committee, 2018 and 2019

- Helped found "Solidarity Week," an annual initiative featuring workshops, panels, and guest speaker events that acknowledge and celebrate campus diversity
- Organized 2018 and 2019 "Table Talk Dinner," a free banquet encouraging students to engage in discussions regarding diversity and discrimination on campus and beyond

RESEARCH EXPERIENCE

Remote Research Intern: Evolution of non-visual opsin genes in frogs California Academy of Sciences, summer 2020

Advisors: Ryan K. Schott, Postdoctoral Researcher & Rayna C. Bell, Principal Investigator

- Expanded initial eye transcriptome sampling to include 84 frog species and supplemented with genomic data from 15 frog species, bringing total project sampling to 99 species
- Quantified selection acting on non-visual opsin genes across life history transitions in frogs
- Explored non-visual opsin and associated gene expression patterns in unpublished and published amphibian skin transcriptomes

**NSF REU Intern: Evolution of non-visual opsin genes in frogs
Smithsonian National Museum of Natural History, summer 2019**

Advisors: Ryan K. Schott, Postdoctoral Researcher & Rayna C. Bell, Principal Investigator

- Used eye transcriptomes from 48 frog species to identify and extract non-visual opsin genes expressed in frog eyes
- Created phylogenetic trees for 12 non-visual opsin genes
- Inferred selective pressure acting on each gene and tested for variation in selection between discrete lifestyle classes (e.g. nocturnal vs. diurnal)

**Peters Lab: MHC Class II diversity among wild and domestic ruminant populations
Berry College Department of Animal Science**

Lab Manager, August 2019 – May 2020 • Research Assistant, October 2018 – May 2019

Advisor: Sunday Peters, Associate Professor

- Mentored 6 undergraduate lab members, overseeing training and scheduling
- Collected blood samples from 3 cattle breeds and 4 sheep breeds
- Collected tissue samples from white tailed deer in a local wildlife management area
- Isolated and amplified nucleic acid from blood and tissue samples

PROFESSIONAL EXPERIENCE

Animal Health Technician: Summerville Veterinary Clinic, August 2017 – May 2019

- Implanted microchips, restrained small animals for Xray imaging, administered vaccinations, prepped surgeries, administered and monitored anesthesia, drew blood, completed in-house lab work, filled medical prescriptions, acted as initial point of contact for clients and patients

Assistant Trail Staff Director: Scouts BSA Northern Tier, summer 2018 •

Brigade Leader, summer 2017 • Wilderness Guide, summer 2016

- Assisted with management of 20 guides; including scheduling, organization and oversight of work projects, facilitation of post-trip debriefs and performance evaluations
- Trained 16 wilderness guides in skills required to lead extended backcountry trips
- Led 11 crews on canoe trips ranging from 6-9 days in the Ontario backcountry