

# Griffin M. McDaniels

Department of Biological Sciences, University of Arkansas  
Science and Engineering Hall, room 601 – 850 W. Dickson St., Fayetteville, AR 72701  
[gmmcdaniels@gmail.com](mailto:gmmcdaniels@gmail.com) | [griffinmcdaniels.github.io](https://griffinmcdaniels.github.io)

## EDUCATION

---

### **Ph.D. Coursework, Biology 2020 - 2023**

University of Arkansas, Fayetteville, AR

### **M. S., Biology 2018**

Jacksonville State University, Jacksonville, AL

*Thesis title:* "The Phenology of the Symbiotic Association between *Ambystoma maculatum* and *Oophila amblystomatis* using Molecular Techniques"

*Committee:* James Rayburn, Chris Murdock, George Cline (Chair)

### **B. S., Zoology: Ecology, Evolution, & Behavior 2015**

Auburn University, Auburn, AL

## TEACHING AND OUTREACH

---

**Graduate Teaching Assistant**, *University of Arkansas 2020-2023*: Principals of Biology, Human Anatomy, Global Change Biology

**Adjunct Lecturer**, *Jacksonville State University 2018-2019*: Intro to Biology II, Human A&P, Ecology lab

**Graduate Teaching Assistant**, *Jacksonville State University 2015-2018*: Intro to Biology I & II, Human A&P I & II, Ecology lab

**Outreach Volunteer**, *JSU Field Schools/Little River Canyon 2015-2019*: 25+ talks, displays, presentations to the public

**National Parks Service Annual BioBlitz Leader** at Little River Canyon National Park, AL, 2016-2018

**Outreach Assistant**, Alabama Natural Heritage Foundation, 2015

## RESEARCH

---

### **Graduate Research, 2020-2023 | University of Arkansas**

Phylogenomics and Environmental Niche analysis in the Western Rattlesnake Complex

Geometric morphometrics of head shape variation in Whiptail lizards

### **Field Assistant for Thesis, 2018-2019 | Jacksonville State University**

Development of eDNA primers and survey for *Necturus* in AL waterways

### **Undergraduate Research Mentor 2017-2018 | Jacksonville State University**

Co-led development of undergraduate research project on snake mouth bacteria, presented at ASB 2018 and ALAPARC 2019

### **Field Assistant for Thesis, 2016 | Jacksonville State University**

Collection of invasive Apple Snails in AL and survey for trematode and nematode parasite

### **Field Assistant for Alabama Natural Heritage Foundation 2016 | Auburn University**

Sample collection along Paint Rock River, AL for eDNA survey of Hellbender

### **Field Technician for the Alabama Natural Heritage Foundation 2014 | Auburn University**

Line-distance transect survey for Gopher Tortoise burrows in Conecuh National Forest and Geneva State Forest

### **Undergraduate Research Assistant 2014 | Auburn University**

Trapping small herpetofauna and aquatic turtles for long-term population assay and mark-recapture study on Auburn Campus

### **Undergraduate Research Assistant 2013 | Auburn University, Drug Development and Discovery Department**

Group leader: Protein Synthesis for staphylococcal diseases and production of Green Fluorescent Protein with Tobacco-etch Virus

## PUBLICATIONS

---

**McDaniels, G. M.,** K. T. McDaniels, G. R. Cline, C. A. Murdock, and J. R. Rayburn. **2020.** The Phenology of the symbiotic association between *Ambystoma maculatum* and *Oophila amblystomatis* using molecular techniques. Journal of Herpetology 54(4) 485-491. doi: 10.1670/19-143

**McDaniels, G. M.,** K. T. McDaniels, G. R. Cline. **2020.** *Ambystoma maculatum* (Spotted salamander) Polyembryony. Herpetological Review 51(3) 554.

## ORAL PRESENTATIONS

---

**McDaniels, G. M.,** K. T. McDaniels, G. R. Cline, C. A. Murdock, and J. R. Rayburn. **2020.** Phenology of the symbiotic relationship between *Ambystoma maculatum* and *Oophila amblystomatis* using molecular techniques. -American Fisheries Society symposium on eDNA, Little Rock, AR

**McDaniels, G. M.,** K. T. McDaniels, G. R. Cline, C. A. Murdock, and J. R. Rayburn. **2019.** Phenology of the symbiotic relationship between *Ambystoma maculatum* and *Oophila amblystomatis* using molecular techniques. -Association of Southeastern Biologists, Memphis, TN

**McDaniels, G. M.,** G. R. Cline. **2018.** A broader approach to the ecology and timing of the symbiosis between the Spotted Salamander (*Ambystoma maculatum*) and a unicellular green alga. - Jacksonville State University (JSU) Student Symposium.

## POSTER PRESENTATIONS

---

Canturbury, D., S. Elliott, K. T. McDaniels, and **G. M. McDaniels.** **2019.** Preliminary study of culturable bacteria from the mouths of individuals from the family Natricinae in Northern Alabama. -Alabama Partners in Amphibian and Reptile Conservation, Nauvoo, AL.

**McDaniels, G. M.,** and G. R. Cline. **2018.** Putative effects of recent drought on reproductive ecology of several reptile and amphibian populations in Northeast Alabama. -Southeastern Partners in Amphibian Conservation conference, Helen, GA.

**McDaniels, G. M.,** and G. R. Cline. **2017.** Clutch Data and Hatchling Morphometrics in the Queen Snake, *Regina septemvittata*. - Student Symposium, Jacksonville State University, Jacksonville, AL.

**McDaniels, G. M.,** and G. R. Cline. **2016.** An eDNA approach to investigating the ecology and timing of the endosymbiotic relationship between the Spotted Salamander (*Ambystoma maculatum*) and green algae. -Southeastern Partners in Amphibian Conservation, Nauvoo, AL.

## SKILLS

---

- Lab and Cell Procedures: DNA isolation, eDNA filtration and extraction, media prep, plate streaking. PCR, primer design
- Museum specimen preparation and preservation
- Safe wildlife trapping and handling, including venomous snake certification (through Rattlesnake Conservancy, 2018)
- Data organization and visualization
- Uni- and multivariate statistics
- Geometric morphometric analysis of shape
- Programming in Unix, R, and Python
- ArcGIS Pro
- Remote cluster computing
- Genomic sequence data organization and manipulation

## PROFESSIONAL SERVICE AND SYNERGY

---

- Part of two-person team developing Course-based Undergraduate Research Experience (CURE) labs for Ecology at JSU
- Served on Biology Department Head search committee & organized graduate student participation at JSU
- Part of two-person team that organized and lobbied graduate teaching assistant contract revision and pay increase with Dean of School of Science at JSU
- Trained new Biology GTAs for JSU Biology Department, 2016 to 2019
- Interviewed by NASA to promote STEM jobs and jobs within National Park Service
- Co-advised undergraduate independent research projects on salamander communities and snake mouth bacterial flora
- Wrote lab exercises and materials for Introduction to Biology Labs

## WORKSHOPS ATTENDED

---

|      |  |
|------|--|
| 2021 | Introduction to SNP Data Analysis via Cyverse: AG2PI   |
| 2020 | Geometric morphometrics in R by Cori Black, Southeastern Fishes Council  |
| 2018 | Venomous snake handling course level 1 certification by the Rattlesnake Conservancy  |
| 2018 | Genetic and genomic tools for herpetological conservation. 2018. Southeastern Partners in Amphibian and Reptile Conservation, Helen, GA. |
| 2016 | FrogWatch USA. Auburn Chapter at Jacksonville State University Campus  |

## GRANTS, HONORS AND AWARDS

---

|      |  |               |
|------|--|---------------|
| 2020 | Doctoral Academy Fellowship, University of Arkansas Graduate College.....                | (\$44,000.00) |
| 2019 | Kinsaul Travel Grant for Excellence in STEM Research, Jacksonville State University..... | (\$500.00)    |
| 2018 | Kinsaul Travel Grant for Excellence in STEM Research, Jacksonville State University..... | (\$500.00)    |
| 2018 | Best Biology Presentation, Jacksonville State University Student Symposium               |               |
| 2016 | Kinsaul Travel Grant for Excellence in STEM Research, Jacksonville State University..... | (\$500.00)    |
| 2016 | Best Graduate Poster, Jacksonville State University Student Symposium                    |               |
| 2014 | Inducted into Tri-Beta Honor Society, Auburn University Chapter                          |               |
| 2012 | Outstanding Freshman award in Biological Sciences, Auburn University, Biology Department |               |
| 2011 | Spirit of Auburn Scholarship, Auburn University.....                                     | (\$34,000.00) |

## References

---

|                   |  |  |
|-------------------|--|--|
| Dr. Chris Murdock | Professor, Jacksonville State University               | <a href="mailto:murdock@jsu.edu">murdock@jsu.edu</a>     |
| Dr. James Rayburn | Professor, Jacksonville State University               | <a href="mailto:jrayburn@jsu.edu">jrayburn@jsu.edu</a>   |
| Dr. Lori Hensley  | Professor & Chair, Jacksonville State University       | <a href="mailto:lhensley@jsu.edu">lhensley@jsu.edu</a>   |
| Dr. Sarah Wofford | Teaching Faculty, Florida State University Panama City | <a href="mailto:sw22ba@fsu.edu">sw22ba@fsu.edu</a>       |
| Mr. Brian Becker  | Instructor & Academic Coach, University of Arkansas    | <a href="mailto:bmbecker@uark.edu">bmbecker@uark.edu</a> |