

John David Curlis, Jr.

Doctoral Candidate, University of Michigan

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www.colorinnature.com

Education

- 2018– **Ph.D. in Ecology and Evolutionary Biology**
University of Michigan, Ann Arbor, MI
Dissertation: The effects of the light environment on the evolution of color signals in squamates
Advisor: Alison R. Davis Rabosky
- 2015–2017 **M.S. in Biology**
Georgia Southern University, Statesboro, GA
Thesis: Evolutionary linkage of mimetic and non-mimetic color traits in a coral snake mimicry complex
Advisor: Christian L. Cox
- 2011–2014 **B.A. in Biology**
Specialization in Biological and Environmental Conservation
University of Virginia, Charlottesville, VA

Peer-Reviewed Publications

In Preparation

26. **JD Curlis**, K Alujević, L Bakewell, SGD Bishop, BC Bock, AK Chung, E Connolly-Randazzo, G Garcia-Costoya, HL Crowell, AC Gopal, ND Gripshover, MA Hirst, J Myers, DJ Nicholson, R Pirani, N Ratia, D Romero, BM Seymoure, J Stapley, CE Williams, PL Wood Jr., KL Wuthrich, CL Cox, ML Logan, WO McMillan, AR Davis Rabosky. Spatial distribution of *Anolis* dewlap morphs reflects differences in light environment. In prep. for *The American Naturalist*.
25. **JD Curlis**, E Connolly-Randazzo, HL Crowell, A Gorris, ND Gripshover, MA Hirst, S Montez, DJ Nicholson, E Reynolds, C Sandall, L Thomas, G Torres, A Zhao, CL Cox, ML Logan, WO McMillan, AR Davis Rabosky. The effect of light environments on female mate-choice in *Anolis apletophallus*. In prep. for *Animal Behaviour*.
24. **JD Curlis** and HL Crowell (co-first authors), G Torres, A Zhou, AR Davis Rabosky. How to leverage fluid-preserved museum specimens for analyses of color. In prep. for *Zoology*.

In Review

23. AA Rosso, ML Logan, B Casement, AK Chung, **JD Curlis**, E Folfas, M Gallegos, LK Neel, DJ Nicholson, C Williams, WO McMillan, CL Cox. Gene expression and physiology respond plastically to temperature change in a tropical ectotherm. Under revision after invited resubmission at *Physiological and Biochemical Zoology*.

22. KRS Hale, **JD Curlis**, GG Auteri, S Bishop, RLK French, LE Jones, KL Mills, BG Scholtens, M Simons, C Thompson, J Tourville, FS Valdovinos. A highly resolved multiplex network reveals the structural role of insects and plants in terrestrial food webs. Under review after invited submission at *Philosophical Transactions of the Royal Society B* (preprint: <https://www.biorxiv.org/content/10.1101/2023.10.05.560934v1>).
21. HL Crowell, **JD Curlis**, H Weller, AR Davis Rabosky (co-first authors). Predators drive the evolution of ultraviolet colouration in snakes. Under revision after invited resubmission at *Nature Communications*.

In Print

20. RM Pirani, CF Arias, K Charles, AK Chung, **JD Curlis**, DJ Nicholson, M Vargas, CL Cox, WO McMillan, ML Logan. 2024. A high-quality genome for the slender anole (*Anolis apletophallus*), an emerging model for field-studies of tropical ecology and evolution. *G3: Genes, Genomes, Genetics*, 14(1): jkad248.
19. DJ Nicholson, RJ Knell, E Folfas, LK Neel, Z Degon, M DuBois, X Ortiz-Ross, AK Chung, **JD Curlis**, TJ Thurman, WO McMillan, TWJ Garner, CL Cox, ML Logan. 2023. Island colonisation leads to rapid behavioural and morphological divergence in *Anolis* lizards. *Evolutionary Ecology*, 37(5): 779–795.
18. DJ Nicholson, RJ Knell, RS McCrea, LK Neel, **JD Curlis**, CE Williams, AK Chung, WO McMillan, TWJ Garner, CL Cox, ML Logan. 2022. Climate anomalies and competition reduce establishment success during island colonization. *Ecology and Evolution*, 12(10): e9402.
17. C Williams, JG Kueneman, DJ Nicholson, AA Rosso, E Folfas, B Casement, MA Gallegos-Koyner, LK Neel, **JD Curlis**, WO McMillan, CL Cox, ML Logan. 2022. Sustained drought, but not short-term warming, alters the gut microbiomes of wild *Anolis* lizards. *Applied and Environmental Microbiology*, 88(19): e00530-22.
16. **JD Curlis**, R Scott, E Evans, M Cawthorn, R Chandler, L McBrayer, J Roberts. 2022. Biodiversity between buildings: Results of a two-year vertebrate survey on a university campus. *Urban Naturalist*, 9(53): 1–38.
15. **JD Curlis** and T Renney (co-first authors), AR Davis Rabosky, TY Moore. 2022. Batch-Mask: Automated image segmentation for organisms with limbless or non-standard body forms. *Integrative and Comparative Biology*, 62(4): 1111–1120.
14. L Wilson, G Lonsdale, **JD Curlis**, EA Hunter, CL Cox. 2022. Predator-based selection and the impact of edge sympatry on components of coral snake mimicry. *Evolutionary Ecology*, 36(1): 135–149.
13. **JD Curlis**, CL Cox, RM Cox. 2021. Sex-specific population differences in resting metabolism are associated with intraspecific variation in sexual size dimorphism of brown anoles. *Physiological and Biochemical Zoology*, 94(4): 205–214.

12. LK Neel, ML Logan, DJ Nicholson, C Miller, AK Chung, I Maayan, Z Degon, M DuBois, **JD Curlis**, Q Taylor, K Keegan, WO McMillan, JB Losos, CL Cox. 2021. Habitat structure mediates vulnerability to climate change through its effects on thermoregulatory behavior. *Biotropica*, 53(4): 1121–1133.
11. **JD Curlis**, AR Davis Rabosky, IA Holmes, TJ Renney, CL Cox. 2021. Genetic mechanisms and correlational selection structure trait variation in a coral snake mimic. *Proceedings of the Royal Society B*, 288(1947): 20210003.
10. CL Cox, J Bowers, C Obialo, **JD Curlis**, JW Streicher. 2021. Spatial and temporal dynamics of exuberant color polymorphism in the southern cricket frog. *Journal of Natural History*, 54(35-36): 2249–2264.
9. ML Logan, LK Neel, DJ Nicholson, AJ Stokes, CL Miller, AK Chung, **JD Curlis**, KM Keegan, AA Rosso, I Maayan, E Folfas, CE Williams, B Casement, MA Gallegos Koyner, DJ Padilla Perez, CH Falvey, SM Alexander, KL Charles, ZA Graham, WO McMillan, JB Losos, CL Cox. 2021. Sex-specific microhabitat use is associated with sex-biased thermal physiology in *Anolis* lizards. *Journal of Experimental Biology*, 224(2): jeb235697.
8. AA Rosso, DJ Nicholson, ML Logan, AK Chung, **JD Curlis**, ZM Degon, RJ Knell, TWJ Garner, WO McMillan, CL Cox. 2020. Sex-biased parasitism and expression of a sexual signal. *Biological Journal of the Linnean Society*, 131(4):785–800.
7. CL Cox, HO Tribble, S Richardson, AK Chung, **JD Curlis**, ML Logan. 2020. Thermal ecology and physiology of an elongate and semi-fossorial arthropod, the bark centipede. *Journal of Thermal Biology*, 94: 102755.
6. CL Cox, S Alexander, B Casement, AK Chung, **JD Curlis**, Z Degon, M DuBois, C Falvey, Z Graham, E Folfas, M Gallegos, LK Neel, DJ Nicholson, DJ Padilla Pérez, X Ortiz-Ross, AA Rosso, Q Taylor, TJ Thurman, C Williams, WO McMillan, ML Logan. 2020. Ectoparasite extinction in simplified lizard assemblages during experimental island invasion. *Biology Letters*, 16(8): 20200474.
5. **JD Curlis**, EC Fisher, WK Muhic, J Moy, M Garro-Cruz, JJ Montero-Ramírez. 2020. A survey of the reptiles and amphibians at the University of Georgia Costa Rica field station in San Luis de Monteverde, Costa Rica. *Check List*, 16(6): 1433–1456.
4. LK Neel, **JD Curlis**, CT Kinsey, CL Cox, LD McBrayer. 2020. Acclimation in the physiological performance of an introduced ectotherm. *Journal of Experimental Biology*, 223(6): jeb201517.
3. ML Logan, **JD Curlis**, AL Gilbert, DB Miles, AK Chung, JW McGlothlin, RM Cox. 2018. Thermal physiology and thermoregulatory behaviour exhibit low heritability despite genetic divergence between lizard populations. *Proceedings of the Royal Society B*, 285(1878): 2018097.
2. **JD Curlis**, R Davis, E Zetkovic, CL Cox. 2017. Condition dependence of shared traits differs between sympatric *Anolis* lizards. *Journal of Experimental Zoology Part A*, 327: 110–118.

1. **JD Curlis**, DC Macklem, R Davis, CL Cox. 2016. Sex-specific antipredator response to auditory cues in the black spiny-tailed iguana. *Journal of Zoology*, 299(1): 68–74.

Natural History & Geographic Distribution Notes

10. A Vivas, **JD Curlis**, K Alujevic, S Fontaine, CE Williams. Natural history note: *Leptodactylus fragilis* (Mexican white-lipped frog) habitat use. In prep. for *Herpetological Review*.
9. L Bakewell, CL Cox, **JD Curlis**. Natural history note: *Anolis equestris* (Cuban Knight Anole) diet. *Herpetological Review* (submitted).
8. **JD Curlis**, MA Hirst, A Curlis, D Curlis. 2022. Natural history note: *Anolis carolinensis* (Green Anole) habitat use. *Herpetological Review*, 52(3): 316–317.
7. **JD Curlis**, P Cerda, AR Davis Rabosky, M Grundler, I Holmes, B Sealey, C Whitcher, M Grundler, E Westeen. 2020. Geographic distribution note: *Rhadinella kinkelini* (Kinkelin's Graceful Brownsnake). *Herpetological Review*, 51(4): 783.
6. **JD Curlis**, P Cerda, AR Davis Rabosky, M Grundler, I Holmes, B Sealey, C Whitcher, M Grundler, E Westeen. 2020. Geographic distribution note: *Bromeliohyala bromeliacia* (Bromeliad Treefrog). *Herpetological Review*, 51(4): 768.
5. **JD Curlis**, P Cerda, AR Davis Rabosky, M Grundler, I Holmes, B Sealey, C Whitcher, M Grundler, E Westeen. 2020. Geographic distribution note: *Sibon dimidiatus* (Slender Snail Sucker). *Herpetological Review*, 51(4): 783.
4. G. Lonsdale, **J. D. Curlis**, TW Brown, T Martin. 2020. Natural history note: *Oedipina tomasi* (El Cusuco Worm Salamander) predation. *Herpetological Review*, 51(2): 293.
3. **JD Curlis**, MA Hirst, MD Baiz. 2019. Second observation of *Dermatemys mawii* in the upper Yucatán peninsula: A new population or an old individual? *The Herpetological Bulletin*, 149: 47–48.
2. TW Brown, **JD Curlis**, G Lonsdale, C Thorpe, A Hoad. 2018. Color change in the gorgetal scales of an anole, *Anolis amplisquamosus* (Squamata: Dactyloidae). *IRCF Reptiles & Amphibians*, 25(2): 127–128.
1. **JD Curlis**, DC Macklem. 2017. Geographic distribution note: *Agalychnis spurrelli* (Gliding Leaf Frog). *Herpetological Review*, 48(3): 582–583.

Awards & Fellowships

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| 2023–2024 | Rackham Predoctoral Fellowship [\$40,176]
<i>Rackham Graduate School, University of Michigan</i> |
| 2023 | Donald W. Tinkle Award [\$5,000]
<i>University of Michigan Museum of Zoology (UMMZ)</i> |
| 2022 | Most Outstanding EEB Graduate Student Publication Award [\$250]
<i>Department of Ecology and Evolutionary Biology, University of Michigan</i> |

2021	Edwin H. Edwards Scholarship in Biology [\$12,770] <i>Department of Ecology and Evolutionary Biology, University of Michigan</i>
2019–2022	STRI Short-term Fellowship [3x recipient, total \$4,250] <i>Smithsonian Tropical Research Institute</i>
2018–2019	Program in Biology Teaching Excellence Award [2x recipient] <i>Program in Biology, University of Michigan</i>
2017	Jack N. Averitt Award for Excellence in Graduate Research [\$1,000] <i>College of Graduate Studies, Georgia Southern University</i>

Grants & Funding

2020–2023	Hinsdale & Walker Scholarship [2x recipient, total \$6,907] <i>University of Michigan Museum of Zoology (UMMZ)</i>
2019–2022	Charles F. Walker Scholarship [3x recipient, total \$9,965] <i>University of Michigan Museum of Zoology (UMMZ)</i>
2019–2023	Departmental Research Award [3x recipient, total \$750] <i>Department of Ecology and Evolutionary Biology, University of Michigan</i>
2019	Tinker Field Research Grant [\$2,200] <i>Center for Latin American and Caribbean Studies, University of Michigan</i>
2019	Rackham Pre-Candidate Research Grant [\$1,500] <i>Rackham Graduate School, University of Michigan</i>
2018–2022	Departmental Travel Award [6x recipient, total \$2,400] <i>Department of Ecology and Evolutionary Biology, University of Michigan</i>
2018–2022	Rackham Conference Travel Grant [4x recipient, total \$3,900] <i>Rackham Graduate School, University of Michigan</i>
2017	Theodore Roosevelt Memorial Fund [\$2,500] <i>American Museum of Natural History</i>
2016	Margaret Walton Scholarship [\$400] <i>Mountain Lake Biological Station, University of Virginia</i>
2015–2017	Graduate Student Professional Development Fund [5x recipient, total \$2,927] <i>College of Graduate Studies, Georgia Southern University</i>

Research & Curatorial Assistantships

2022	UMMZ Division of Fishes Curatorial Assistant <i>University of Michigan Museum of Zoology (UMMZ)</i>
2021	UMMZ Division of Birds Curatorial Assistant <i>University of Michigan Museum of Zoology (UMMZ)</i>
2020–2022	UMMZ Division of Reptiles & Amphibians Curatorial Assistant <i>University of Michigan Museum of Zoology (UMMZ)</i>
2016–2017	Vertebrate Biodiversity Survey Research Assistant <i>Georgia Southern University</i>

Conference Presentations

- 2024 **SICB (Society for Integrative and Comparative Biology)**
Seattle, WA, USA
Oral Presentation: Global change in the sensory landscape: Color signal evolution across changing light environments.
Finalist for Raymond B. Huey Best Student Presentation Award
- 2022 **TiBE (Trends in Biodiversity and Evolution) – The Biology of Colour**
Villa do Conde, Portugal
Oral Presentation: Using spatial distributions and large-scale translocation experiments to understand colour evolution in *Anolis* lizards across changing light environments.
- 2022 **JMIH (Joint Meeting of Ichthyologists and Herpetologists)**
Spokane, WA, USA
Oral Presentation: What makes a morph? Tests of intraspecific variation in phenotypes and genotypes between anoles with divergent dewlap colors.
- 2020 **World Congress of Herpetology**
Dunedin, New Zealand
Oral Presentation: Experimentally testing the evolutionary drivers of a colorful signal in *Anolis* lizards.
- 2019 **SICB (Society for Integrative and Comparative Biology)**
Tampa, FL, USA
Oral Presentation: Evolutionary linkage of mimetic and non-mimetic color traits in a coral snake mimicry complex.
Finalist for Raymond B. Huey Best Student Presentation Award
- 2017 **SICB (Society for Integrative and Comparative Biology)**
New Orleans, LA, USA
Poster Presentation: Spatial variation of mimetic and non-mimetic color polymorphism in the western ground snake.
- 2016 **Evolution**
Austin, TX, USA
Poster Presentation: Condition dependence of shared traits differs between sympatric *Anolis* lizards.
- 2016 **SICB (Society for Integrative and Comparative Biology)**
Portland, OR, USA
Poster Presentation: Sex-specific population differences in metabolism are associated with intraspecific variation in sexual size dimorphism in brown anole lizards.

Teaching Experience

Courses Taught

- 2023 **Biology of Amphibians and Reptiles** (EEB 450)
 Graduate Student Instructor, *University of Michigan*
- 2018–2019 **Introduction to Evolution, Genetics, and Ecology** (BIO 171)
 Graduate Student Instructor, *University of Michigan*
- 2017 **Tropical Field Ecology in Costa Rica** (ECOL 3100)
 Teaching Assistant, *University of Georgia*
- 2017 **Tropical Ecology Lab in Costa Rica** (ECOL 3510)
 Teaching Assistant, *University of Georgia*
- 2017 **Herpetology** (BIOL 5445)
 Teaching Assistant, *Georgia Southern University*
- 2016 **Field Herpetology at Mountain Lake Biological Station** (BIOL 4754)
 Teaching Assistant, *University of Virginia*
- 2015–2016 **Environmental Biology Lab** (BIOL 1210)
 Teaching Assistant, *Georgia Southern University*

Guest Lectures

- 2017 **Principles of Physiology** (BIOL 3131), *Georgia Southern University*
- 2016 **Wildlife Biology** (BIOL 5530), *Georgia Southern University*
- 2016 **Field Biology** (BIOL 3440), *Georgia Southern University*

Mentoring Experience

*student's research in prep. for submission

**student's research published

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- 2023–2024 **Sophia Montez***, **Ashley Gorris***, **Ethan Reynolds***, **Clara Sandall***, **Lydia Thomas***, **Gianna Torres***, and **Anna Zhao***
 Undergraduate assistants, *University of Nevada Reno, University of Michigan*
- 2018–2022 **Haley Martens***
 Undergraduate Research Opportunity Program (UROP) student and undergraduate thesis student, *University of Michigan*
- 2018–2021 **Nicole Tseung**, **Teagan Walsh**, and **Meilyn Ward***
 Undergraduate Research Opportunity Program (UROP) students, *University of Michigan*
- 2018–2021 **Timothy Renney****
 Undergraduate Research Opportunity Program (UROP) student, *University of Michigan*
- 2017–2018 **Kyle Sweeny**
 Undergraduate assistant, *Georgia Southern University*
- 2016 **Chinonye Obialo**
 Undergraduate assistant, *Georgia Southern University*

Outreach & Service

- 2023 **Identification expert** at *University of Michigan Museum of Natural History* ID Day outreach event
Taught public museum visitors about Michigan reptiles, amphibians, and birds and identified animals in photos brought in by public.
- 2023 **Organizing assistant** at *University of Michigan Museum of Natural History* Snake & Salamander Showcase outreach event
Helped organize, facilitate, and provide logistics for EEB 450 students presenting snake and salamander exhibits to public museum visitors.
- 2022 **Snake ambassador** at *Southwestern Research Station* outreach event
Taught Portal, AZ residents and visiting undergraduate class about kingsnakes and facilitated holding and/or touching of captive snakes.
- 2022 **Ambassador** for *Michigan DNA Day*
Taught students about DNA, genomics, and inheritance at Martin Luther King Jr. Senior High School in Detroit, Michigan.
- 2021–2023 **Tour leader** for *University of Michigan Museum of Zoology* undergraduate tours
Led more than eight hundred BIO 173 students on tours of wet collections (including both Div. of Fishes and Div. of Reptiles & Amphibians).
- 2021 **Contributor** to *University of Michigan EEB* “Science Fun Facts” page
Wrote blog post about *Anolis* dewlap color evolution.
- 2021 **Peer mentor** in *University of Michigan EEB* Big Sib/Little Sib Program
Mentored and guided incoming graduate student in EEB department.
- 2019–2021 **Member** of *University of Michigan EEB* Seminar Committee
Helped organize and handled logistics for EEB departmental seminars.
- 2018 **Snake specialist** for *Operation Wallacea*
Led students on herpetological surveys, gave lectures on coral snake biology and mimicry, and served as venomous snake handler/relocator in Cusuco National Park, Honduras.
- 2018 **Resident naturalist intern** at the *University of Georgia Costa Rica* field station
Led bilingual guided natural history walks and natural history focused lectures to student groups and eco-tourists in Monteverde, Costa Rica.
- 2016–2022 **Contributor** to *Anole Annals* (anole.annals.org) blog
Wrote and/or contributed to blog posts about research on *Anolis* lizards.
- 2017 **Presenter** at Sustainability Showcase, *Georgia Southern University*
Gave public poster presentation on results of the Georgia Southern Vertebrate Biodiversity Survey.
- 2016–2017 **Reptile and amphibian ambassador** at STEMfest, *Georgia Southern University*
Taught children about reptiles and amphibians and facilitated holding and/or touching of captive snakes and lizards.
- 2014 **Insect ambassador** at Kid*Vention, *Virginia Discovery Museum*
Taught children about invertebrates and facilitated holding and/or touching of captive insects.

Fieldwork

2023	Naxos, Greece [two weeks]
2022	Southwestern Research Station, Arizona, USA [10 days]
2021	Texas, USA [one week]
2019	BFREE Field Station, Belize [two weeks]
2018	Cusuco National Park, Honduras [two months]
2018	UGACR Field Station, San Luis, Monteverde, Costa Rica [five months]
2017–2022	Gamboa and Lake Gatún, Panama [five trips, total of 10 months]
2016	Missouri and New Mexico, USA [two weeks]
2015–2016	West Palm Beach, Florida, USA [three trips, total of three weeks]
2015	Charlotte, North Carolina, USA [two months]
2014	Costa Rica [six field stations, total of four months]
2014	Palm Coast, Florida, USA [two weeks]
2012	San Salvador, Bahamas [three weeks]

Workshop Participation

2020	Speciation-based Delimitation at <i>University of Michigan</i>
2020	Reproducible Data Analysis with R at <i>University of Michigan</i>
2020	Research Computing on the Great Lakes Cluster at <i>University of Michigan</i>
2019	Wilderness First Aid Training at <i>University of Michigan</i>

Reviewer Service

Evolution
Heredity
Journal of Herpetology
Journal of Natural History
Western North American Naturalist

Membership in Professional Societies

Society for Integrative and Comparative Biology
Society for the Study of Evolution
American Society of Ichthyologists and Herpetologists
Society for the Study of Amphibians and Reptiles

Miscellaneous

2019–2024 **Licensed small watercraft operator** in Lake Gatún and Panama Canal, Panama