

## John David Curlis, Jr.

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### Education

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- 2018– **Ph.D. in Ecology and Evolutionary Biology**  
*University of Michigan, Ann Arbor, MI*  
Thesis: Evolutionary drivers of color signals in reptiles  
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

\*directly mentored student    †undergraduate student    ‡graduate student

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#### In Preparation

19. **JD Curlis** and HL Crowell<sup>‡</sup> (co-first authors), AR Davis Rabosky. Color change in fluid-preserved museum specimens. In prep. for: *Zoology*.
18. **JD Curlis** and T Renney\*<sup>†</sup> (co-first authors), AR Davis Rabosky, TY Moore. Batch-Mask: An automated workflow using Mask R-CNN to identify and isolate biological specimens for color analysis. In prep. for: *Methods in Ecology and Evolution*.
17. **JD Curlis**, R Scott<sup>‡</sup>, E Evans<sup>‡</sup>, M Cawthorn, R Chandler, L McBrayer, J Roberts. Biodiversity between buildings: Results of a two-year vertebrate survey on a university campus. In prep. for: *Southeastern Naturalist*.

#### In Review

16. L Wilson<sup>‡</sup>, G Lonsdale<sup>‡</sup>, **JD Curlis**, EA Hunter, CL Cox. Predator-based selection and the impact of edge sympatry on components of coral snake mimicry. *Evolutionary Ecology* (under review after invited resubmission).
15. DJ Nicholson<sup>‡</sup>, RJ Knell, TWK Garner, WO McMillan, LK Neel<sup>‡</sup>, Z Degon<sup>†</sup>, M DuBois<sup>†</sup>, X Ortiz-Ross<sup>†</sup>, AK Chung<sup>‡</sup>, **JD Curlis**, T Thurman, CL Cox, ML Logan. Behavioral shifts lead to rapid morphological change in novel environments. *The American Naturalist* (under review).

14. AA Rosso<sup>‡</sup>, ML Logan, B Casement<sup>†</sup>, AK Chung<sup>‡</sup>, **JD Curlis**, E Folfas<sup>†</sup>, M Gallegos<sup>†</sup>, LK Neel<sup>‡</sup>, DJ Nicholson<sup>‡</sup>, C Williams<sup>†</sup>, WO McMillan, CL Cox. Gene expression and physiology respond plastically to temperature change in a tropical ectotherm. *The American Naturalist* (under review).

### In Print

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<sup>‡</sup>, ML Logan, DJ Nicholson<sup>‡</sup>, C Miller<sup>‡</sup>, AK Chung<sup>‡</sup>, I Maayan<sup>‡</sup>, Z Degon<sup>†</sup>, M DuBois<sup>†</sup>, **JD Curlis**, Q Taylor<sup>†</sup>, 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<sup>‡</sup>, TJ Renney<sup>†</sup>, 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<sup>†</sup>, C Obialo<sup>†</sup>, **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<sup>‡</sup>, DJ Nicholson<sup>‡</sup>, AJ Stokes<sup>†</sup>, CL Miller<sup>‡</sup>, AK Chung<sup>‡</sup>, **JD Curlis**, KM Keegan, AA Rosso<sup>‡</sup>, I Maayan<sup>‡</sup>, E Folfas<sup>†</sup>, CE Williams<sup>†</sup>, B Casement<sup>†</sup>, MA Gallegos Koyner<sup>†</sup>, DJ Padilla Perez<sup>‡</sup>, CH Falvey<sup>†</sup>, SM Alexander<sup>†</sup>, KL Charles, ZA Graham<sup>‡</sup>, 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<sup>‡</sup>, DJ Nicholson<sup>‡</sup>, ML Logan, AK Chung<sup>‡</sup>, **JD Curlis**, ZM Degon<sup>†</sup>, 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<sup>†</sup>, S Richardson<sup>†</sup>, AK Chung<sup>‡</sup>, **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<sup>†</sup>, B Casement<sup>†</sup>, AK Chung<sup>‡</sup>, **JD Curlis**, Z Degon<sup>†</sup>, M DuBois<sup>†</sup>, C Falvey<sup>†</sup>, Z Graham<sup>‡</sup>, E Folfas<sup>†</sup>, M Gallegos<sup>†</sup>, LK Neel<sup>‡</sup>, DJ Nicholson<sup>‡</sup>, DJ Padilla Peréz<sup>‡</sup>, X Ortiz-Ross<sup>†</sup>, AA Rosso<sup>‡</sup>, Q Taylor<sup>†</sup>, TJ Thurman, C Williams<sup>†</sup>, 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<sup>†</sup>, WK Muhic<sup>†</sup>, 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<sup>‡</sup>, **JD Curlis**, CT Kinsey<sup>‡</sup>, 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<sup>‡</sup>, DB Miles, AK Chung<sup>‡</sup>, 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<sup>†</sup>, E Zetkovic<sup>†</sup>, 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<sup>†</sup>, R Davis<sup>†</sup>, 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

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7. **JD Curlis**, P Cerda<sup>‡</sup>, AR Davis Rabosky, M Grundler<sup>‡</sup>, I Holmes<sup>‡</sup>, B Sealey<sup>‡</sup>, C Whitcher<sup>†</sup>, M Grundler<sup>‡</sup>, E Westeen<sup>‡</sup>. 2020. Geographic distribution note: *Rhadinella kinkelini* (Kinkelin's Graceful Brownsnake). *Herpetological Review*, 51(4): 783.
6. **JD Curlis**, P Cerda<sup>‡</sup>, AR Davis Rabosky, M Grundler<sup>‡</sup>, I Holmes<sup>‡</sup>, B Sealey<sup>‡</sup>, C Whitcher<sup>†</sup>, M Grundler<sup>‡</sup>, E Westeen<sup>‡</sup>. 2020. Geographic distribution note: *Bromeliophyla bromeliacia* (Bromeliad Treefrog). *Herpetological Review*, 51(4): 768.
5. **JD Curlis**, P Cerda<sup>‡</sup>, AR Davis Rabosky, M Grundler<sup>‡</sup>, I Holmes<sup>‡</sup>, B Sealey<sup>‡</sup>, C Whitcher<sup>†</sup>, M Grundler<sup>‡</sup>, E Westeen<sup>‡</sup>. 2020. Geographic distribution note: *Sibon dimidiatus* (Slender Snail Sucker). *Herpetological Review*, 51(4): 783.
4. G. Lonsdale<sup>‡</sup>, **J. D. Curlis**, TW Brown<sup>†</sup>, T Martin. 2020. Natural history note: *Oedipina tomasi* (El Cusuco Worm Salamander) predation. *Herpetological Review*, 51(2): 293.
3. **JD Curlis**, MA Hirst<sup>‡</sup>, MD Baiz<sup>‡</sup>. 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<sup>†</sup>, **JD Curlis**, G Lonsdale<sup>‡</sup>, C Thorpe<sup>†</sup>, A Hoad<sup>†</sup>. 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<sup>†</sup>. 2017. Geographic distribution note: *Agalychnis spurrelli* (Gliding Leaf Frog). *Herpetological Review*, 48(3): 582–583.

## Grants, Fellowships, & Funding

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2021	Edwin H. Edwards Scholarship in Biology [\$12,770] <i>University of Michigan Department of Ecology and Evolutionary Biology</i>
2019–2021	STRI Short-term Fellowship [2-time recipient, total \$4,250] <i>Smithsonian Tropical Research Institute</i>

- 2019–2021 Charles F. Walker Scholarship [2-time recipient, total \$7,058]  
*University of Michigan Museum of Zoology*
- 2019 Tinker Field Research Grant [\$2,200]  
*University of Michigan Center for Latin American and Caribbean Studies*
- 2019 Rackham Pre-Candidate Research Grant [\$1,500]  
*University of Michigan Rackham Graduate School*
- 2019 Departmental Research Award [\$250]  
*University of Michigan Department of Ecology and Evolutionary Biology*
- 2019 Rackham Conference Travel Grant [\$1,300]  
*University of Michigan Rackham Graduate School*
- 2018–2019 Rackham Conference Travel Grant [2-time recipient, total \$2,100]  
*University of Michigan Rackham Graduate School*
- 2018–2019 Departmental Travel Award [2-time recipient, total \$800]  
*University of Michigan Department of Ecology and Evolutionary Biology*
- 2017 Theodore Roosevelt Memorial Fund [\$2,500]  
*American Museum of Natural History*
- 2016 Margaret Walton Scholarship [\$400]  
*Mountain Lake Biological Station, University of Virginia*
- 2015–2017 Graduate Student Professional Development Fund [5-time recipient, total \$2,927]  
*Georgia Southern University College of Graduate Studies*

## Awards

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- 2019 Program in Biology Teaching Excellence Award  
*University of Michigan*
- 2018 Program in Biology Teaching Excellence Award  
*University of Michigan*
- 2017 Jack N. Averitt Award for Excellence in Graduate Research [\$1,000]  
*Georgia Southern University*

## Conference Presentations

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- 2020 **World Congress of Herpetology**, Dunedin, New Zealand  
*Oral Presentation*: Experimentally testing the evolutionary drivers of a colorful signal in *Anolis* lizards.
- 2019 **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 in Division of Ecology and Evolution
- 2017 **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      **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 and Mentoring Experience**

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### *Courses Taught*

- 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*

### *Undergraduate Student Mentoring*

- 2021      **Haley Martens**  
*Undergraduate Thesis, University of Michigan*  
Comparing anti-predator behaviors of coral snakes and their mimics
- 2020–2021    **Meilyn Ward, Nicole Tseung, Teagan Walsh, Haley Martens**  
*Undergraduate Research Opportunity Program (UROP), University of Michigan*  
Using ethograms to quantify snake anti-predator behavior
- 2018–2021    **Timothy Renney**  
*Undergraduate Research Opportunity Program (UROP), University of Michigan*  
Creating and applying a neural network to isolate snakes in photographs
- 2017–2018    **Kyle Sweeney**  
*Georgia Southern University*  
Analyzing anole dewlap size and color
- 2016      **Chinonye Obialo**  
*Georgia Southern University*  
Scoring snake specimens for the presence/absence of color traits

## Research & Curatorial Assistantships

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- 2021 **UMMZ Division of Birds Curatorial Assistant**  
*University of Michigan Museum of Zoology (UMMZ)*  
Preparing, cataloguing, and organizing bird specimens
- 2020–2021 **UMMZ Division of Reptiles & Amphibians Curatorial Assistant**  
*University of Michigan Museum of Zoology (UMMZ)*  
Organizing and curating the Digital Image Catalogue  
Assisting with diceCT scanning and staining/destaining snake specimens  
Quantifying visible/UV color in preserved reptile/amphibian specimens
- 2016–2017 **Vertebrate Biodiversity Survey Research Assistant**  
*Georgia Southern University*  
Searching for and documenting all vertebrate species on campus

## Volunteer, Internship, & Outreach Experience

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- 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* campus  
Led guided natural history walks and gave natural history focused lectures to student groups and eco-tourists in Monteverde, Costa Rica.
- 2017 **Presenter** at Sustainability Showcase, *Georgia Southern University*  
Gave poster presentation on results of the Georgia Southern Vertebrate Biodiversity Survey to the public.
- 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

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- 2021 **Texas, USA**, Assistant  
Collecting and preparing snake specimens for museum accession  
Taking museum-grade voucher photographs of all specimens captured
- 2017– **Gamboa and Lake Gatún, Panama**, Project Leader  
Capturing *Anolis* lizards, measuring morphological/physiological traits  
Transplanting lizards to islands and monitoring populations  
Conducting behavioral experiments on lizards  
Quantifying light environments
- 2019 **BFREE Field Station, Belize**, Assistant  
Capturing reptiles and amphibians, measuring morphological traits  
Taking museum-grade voucher photographs of all specimens captured

- 2018 **Cusuco National Park, Honduras**, Project Leader  
Creating, deploying, and monitoring clay-model snakes
- 2018 **San Luis, Monteverde, Costa Rica**, Project Leader  
Planning, directing, and conducting a survey of reptiles and amphibians
- 2016 **Missouri and New Mexico, USA**, Project Leader  
Capturing and measuring *Sonora* snakes  
Salvaging roadkill reptiles and preparing them for museum accession
- 2015–2016 **West Palm Beach, Florida, USA**, Project Leader  
Capturing *Leiocephalus* lizards, measuring sprint speed and bite force
- 2015 **Charlotte, North Carolina, USA**, Assistant  
Mist-netting and banding Northern Cardinals in an urban setting
- 2014 **Costa Rica**, Study Abroad Student, Project Leader, and Assistant  
Capturing *Anolis* lizards, measuring morphological traits and sprint speeds  
Testing behavioral responses of iguanas to predator sounds  
Capturing toads, measuring endurance, estimating immune function
- 2014 **Palm Coast, Florida, USA**, Assistant  
Capturing *Anolis* lizards, measuring morphological traits
- 2012 **San Salvador, Bahamas**, Study Abroad Student and Project Leader  
Capturing brittle stars, recording phototactic behavioral responses

### Workshop Participation

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- 2020 **Speciation-based Delimitation** at *University of Michigan*  
Led by L. Lacey Knowles, Jeet Sukumaran, Arnaud Beecheler
- 2020 **Reproducible Data Analysis with R** at *University of Michigan*  
Led by Pat Schloss
- 2020 **Research Computing on the Great Lakes Cluster** at *University of Michigan*  
Led by Ken Weiss, Charles J. Antonelli, John Thiels
- 2019 **Wilderness First Aid Training** at *University of Michigan*  
Led by Brendan Byrne

### Reviewer Service

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*Journal of Natural History*  
*Journal of Herpetology*

### Membership in Professional Societies

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Society for Integrative and Comparative Biology  
Society for the Study of Evolution