

Christopher Thawley

curriculum vitae

Davidson College
Department of Biology
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EDUCATION

- PhD**, Ecology, Minor in Statistics, Pennsylvania State University 2016
The causes and consequences of adaptation to a novel invader in the eastern fence lizard
Advisor: Dr. Tracy Langkilde
- MS**, Biological Sciences, University of Alabama 2011
Invasion ecology, genetics, and physiology of two anurans in the southeastern United States
Advisor: Dr. Leslie Rissler
- BS**, Biology and Art (Double major), *magna cum laude*, Davidson College 2004

ACADEMIC POSITIONS

- Visiting Assistant Professor of Biology**, Davidson College Current
- NSF Postdoctoral Fellow**, University of Rhode Island 2017-2019
Broadening Participation of Groups Under-represented in Biology
- Postdoctoral Scholar**, Kolbe Laboratory, University of Rhode Island 2016-2017
- Graduate Teaching Assistant**, Department of Biological Sciences, Pennsylvania State University 2013-2016
- University Graduate Fellow**, Pennsylvania State University 2011-2012
- Graduate Teaching Assistant**, Department of Biological Sciences, University of Alabama 2009-2011

*denotes undergraduate coauthor

PUBLICATIONS

†denotes cover article

- Thawley, C.J.** and J.J. Kolbe. In Revision. Artificial light at night increases growth and reproductive output in *Anolis* lizards. *Proceedings of the Royal Society B*.
- Hall, J.M., T.S. Mitchell, **C.J. Thawley**, J.T. Stroud, and D.A. Warner. In Revision. Adaptive seasonal shift towards investment in fewer, larger offspring: Evidence from field and laboratory studies. *Journal of Animal Ecology*.
- Tylan, C., K. Camacho, S. French, S.P. Graham, M.W. Herr*, J. Jones, G.L. McCormick, M.A. O'Brien*, J.B. Tennessen, **C.J. Thawley**, A. Webb, and T. Langkilde. In Revision. Obtaining plasma to measure baseline glucocorticoid concentrations in reptiles: How quick is quick enough? *General and Comparative Endocrinology*.
- Goldy-Brown, M.*, **C.J. Thawley**, and T. Langkilde. Submitted. Exposure to native ants does not preadapt lizards to the venom of a related invasive ant predator. *Evolutionary Ecology*.
- Thawley, C.J.**, M. Goldy-Brown*, G.L. McCormick, S.P. Graham, and T. Langkilde. 2019. Presence of an invasive species reverses latitudinal clines of multiple traits in a native species. *Global Change Biology* 25:620-628. Featured on [NSF's science360.gov](http://NSF's-science360.gov)
- Thawley, C.J.**, H.A. Moniz*, A.J. Merritt*, A.C. Battles, S.N. Michaelides, and J.J. Kolbe. 2019. Urbanization affects morphology and parasitism but not thermal preferences in *Anolis* lizards. *Journal of Urban Ecology* 5:juy031.

- Maurer, A.S., **C.J. Thawley**, A.L. Fireman, S.T. Giery, J.T. Stroud. 2019. Nocturnal activity of Antigua lizards under artificial light. *Herpetological Conservation and Biology* 14:105-110.
- Del Giudice, M., C.L. Buck, L. Chaby, B.M. Gormally, C.C. Taff, **C.J. Thawley**, M.N. Vitousek, and H. Wada. 2018. What is stress?: A systems perspective. *Integrative and Comparative Biology* 58:1019-1032.
- Thawley, C.J.** and T. Langkilde. 2017. Attracting unwanted attention: generalization of behavioural adaptation to an invasive predator carries costs. *Animal Behaviour* 123:285-291.
- Graham, S.P., N.A. Freidenfelds, **C.J. Thawley**, T.R. Robbins, and T. Langkilde. 2017. Are invasive species stressful? The glucocorticoid profile of native lizards exposed to invasive fire ants depends on the context. *Physiological and Biochemical Zoology* 90:328-337.
- Thawley, C.J.** and T. Langkilde. 2016. Invasive fire ant (*Solenopsis invicta*) predation of eastern fence lizard (*Sceloporus undulatus*) eggs. *Journal of Herpetology* 50:284-288.
- Carlson, B.E., **C.J. Thawley**, and S.P. Graham. 2016. Natural history of the valley and ridge salamander (*Plethodon hoffmani*): demography, movement, microhabitats, and abundance. *Herpetological Conservation and Biology* 11:315-327.
- †Schrey, A.W., T.R. Robbins, J. Lee*, D. Dukes*, A. Ragsdale*, **C.J. Thawley**, and T. Langkilde. 2016. Epigenetic response to environmental change: DNA methylation frequencies and generational transmission vary with invasion status. *Environmental Epigenetics* 2016:1-5.
- †Herr, M.W.* , T.R. Robbins, A. Centi*, **C.J. Thawley**, and T. Langkilde. 2016. Irresistible ants: exposure to novel toxic prey increases consumption over multiple temporal scales. *Oecologia* 181:749-756.
- Newman, J.C.* , **C.J. Thawley**, T. Langkilde. 2014. Red imported fire ant predation on eggs of the eastern fence lizard. *Herpetology Notes* 7:415-418.

BOOK CHAPTERS

- Langkilde, T., **C.J. Thawley**, and T.R. Robbins. 2017. Behavioral adaptations to invasive species: benefits, costs and mechanisms of change. In M. Naguib, J. Podos, L.W. Simmons, L. Barrett, S. Healy, and M. Zuk (Eds.), *Advances in the Study of Behavior* 49:199-235.

TEACHING EXPERIENCE

Instructor , Integrating Concepts in Biology II (BIO 114), Davidson College	2019
Instructor , Animal Behavior (BIOL 429), Penn State University	2016
Instructor , Science Outreach and Communication (BIOL 497F), Penn State University	2015
Teaching Assistant , Biology: Basic Concepts and Biodiversity (BIOL 110), Penn State University	2014
Teaching Assistant , Experimental Field Biology (BIOL 450W), Penn State University	2013
Teaching Assistant , Biology: Populations and Communities (BIOL 220W), Penn State University	2013
Teaching Assistant , Honors Organismal Biology Lab (BSC 120), University of Alabama	2011
Teaching Assistant , Field Zoology (BSC 303), University of Alabama	2010
Teaching Assistant , Organismal Biology Lab (BSC 117), University of Alabama	2009, 2010
EFL Teacher , multiple English academies, Madrid, Spain	2005

INVITED LECTURES:

- *Coping with the Anthropocene: How do lizards respond to environmental change?*, College of Wooster 2019
- *Energy and Nutrients in Ecosystems*, General Biology II (BIO 121), Rollins College 2019

- *Introduction to Bias and Probability*, Seminar in Biostatistics, Davidson College 2019
- *Coping with the Anthropocene: How do lizards respond to environmental change?*, University of Richmond 2018
- *Coping with the Anthropocene: How do lizards respond to environmental change?*, University of Scranton 2018
- *Dealing with rapid environmental change: Lizard life in the Anthropocene*, Loyola Marymount University 2018
- *Adaptation and Heritability*, Principles of Biology Honors (BIO 101H), University of Rhode Island, Active learning section developed with Dr. Bryan Dewsbury 2016
- *Mating systems*, Animal Behavior (BIOL 429), Pennsylvania State University 2012-2014
- *Biological Invasions and Herpetology*, Herpetology (WFS 462), Pennsylvania State University 2013, 2014
- Field Trip Leader, Herpetology (WFS 462), Pennsylvania State University 2013

TRAINING:

- Course-based Undergraduate Research Experiences (CURE) Institute, PI: Erin Dolan 2019
- Graduate School Teaching Certificate, Pennsylvania State University 2015
 - Included two semesters of supervised teaching and one semester Course in College Teaching from Schreyer Institute for Teaching Excellence
- Graduate Certificate in Online Teaching, Pennsylvania State University 2015

MENTORING

- Mentored 17 undergraduate students from Davidson College, Trinity University, the University of Rhode Island, Penn State University, the University of Alabama, and Northeastern University in individual research projects.
- Supervised and mentored groups of 1-3 undergraduate researchers in the field for up to 3 months.
- Coordinated a weekly lab research group for 20 undergraduates covering experimental design, data interpretation, reading scientific literature, and applying to graduate school.
- Collaborated with undergraduate researchers to obtain competitive funding for their research, including a Penn State Summer Discovery Grant (\$5000).
- Mentees have been first authors of two published articles, coauthored two published articles and three natural history notes, and submitted two articles for publication in peer-reviewed journals.
- Mentees have given three and co-authored four national conference presentations.

AWARDS AND HONORS

- Intercollege Graduate Student Outreach Achievement Award, Pennsylvania State University 2016
 - Huck Endowment Travel Award, Pennsylvania State University 2015
 - Conference Registration Award, Carl Gans Fund 2015
 - Ecology Program Travel Grant, Pennsylvania State University 2015
 - Henri Seibert Award for best student paper in Ecology, Society for the Study of Amphibians and Reptiles 2014
 - Excellence in Teaching by a Master's Student, Graduate School, University of Alabama 2011
 - Outstanding Teaching by a Graduate Student, College of Arts & Sciences, University of Alabama 2011
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Outstanding Teaching by a Graduate Student, Dept. of Biological Sciences, University of Alabama	2011
Dean's Merit Award, University of Alabama	2008-2010
Graduate Council Fellowship, University of Alabama	2008-2009

FUNDING

National Science Foundation, Postdoctoral Research Fellowship in Biology (PRFB), "Ecological costs and consequences of artificial light at night." (\$138000)	2017-2019
National Science Foundation, IOS, Senior personnel. "Bright lights, big city: linking the physiological effects and ecological costs of artificial light at night in <i>Anolis lizards</i> ." Full proposal invited, but not submitted due to acceptance of PRFB.	2017
J. Lloyd Huck Dissertation Research Award, Pennsylvania State University (\$5000)	2014
ARCS Scholar Grant, ARCS Foundation (\$15000)	2011-2013
National Science Foundation, REU supplement to LiT – "Ecology and evolution of adaptive responses to rapid global change," DEB 0949483. Co-advisor with Tracy Langkilde (\$7470)	2012
Gaige Award, American Society of Ichthyologists and Herpetologists (\$500)	2010
Walter F. Coxe Research Grant, Birmingham Audubon Society (\$800)	2010
Research Grant, University of Alabama Graduate School (\$600)	2010
Research/Travel Fund Grant, University of Alabama Graduate Student Association (\$200)	2009
Intramural Research Grant, Davidson College Department of Biology (\$560)	2004

SERVICE

OUTREACH:

Lizards on the Loose citizen science project, Fairchild Tropical Botanic Garden	2016-Present
<ul style="list-style-type: none"> Coordinator of a citizen science program reaching over 1100 students in >45 Miami-Dade County schools that serve students from underrepresented groups. Expanded program to use the iNaturalist platform and reach high school students 	
University of Rhode Island	2016-2019
<ul style="list-style-type: none"> <i>Seeds of Success</i>, mentor for a minority student-led STEM organization <i>SMILE program</i>, STEM program for underprivileged public school students 	
Penn State University Outreach, designed and presented assorted programs	2011-2016
<ul style="list-style-type: none"> <i>Exploration-U</i>, a Penn-State organized, community STEM program for K-8th graders, <i>Expanding Your Horizons: STEM Career Day for Girls</i> for 6-8th graders <i>Think Outside the Beaker</i>, a weekly STEM after-school program for 6-8th graders <i>The Great Insect Fair</i>, an annual entomology fair drawing 5000 attendees 	
<i>The Evolving Project</i> STEM activity, USA Science and Engineering Festival	2014, 2016
<ul style="list-style-type: none"> Assisted in design and presentation of iPad app-tivity focused on evolution (>1600 participants) 	
Upward Bound, Penn State University	2014
<ul style="list-style-type: none"> Worked with high school students from low-income families to design and implement a research project 	
Discovery Space of Central PA, State College PA	2012
<ul style="list-style-type: none"> Designed and presented hands-on reptile and amphibian education programs 	

- Rissler Lab CAARE program (group outreach), University of Alabama 2008-2011
- Designed presentations on amphibian and reptile diversity including live animal demonstrations
 - Presented to K-12 students (>1000/year), conservation organizations, teacher workshops, and at public events

ACADEMIC:

- Diversity Committee, College of Environment and Life Sciences, University of Rhode Island 2016-2019
- Climate & Diversity subcommittee, Eberly College of Science, Penn State University 2014-2016
 - Developed best practices for faculty advisor/graduate student relationships
- Graduate Student Representative, Ecology Program Committee, Penn State University 2014-2015
- Volunteer Judge, Penn State Undergraduate Research Exhibition 2012-2016
- Volunteer Judge, Science Fall Undergraduate Poster Session, Penn State University 2015
- Graduate Student/Faculty Liaison, Biology Department, Penn State University 2014-2015
- Frank A. Andersen Award Representative, Ecology Program, Penn State University 2011-2012

PEER REVIEWER:

Nature Ecology & Evolution, Functional Ecology, Ecology and Evolution, PLoS One, Oecologia, Biological Invasions, General and Comparative Endocrinology, Biological Journal of the Linnean Society, Evolutionary Ecology, PeerJ, Journal of Zoology, Ethology, Journal of Herpetology, Austral Ecology, Phyllomedusa, Herpetological Review, Herpetological Conservation and Biology, Journal of North American Herpetology

PROFESSIONAL AFFILIATIONS:

- Society for Integrative and Comparative Biology 2012-2019
- Society for the Study of Amphibians and Reptiles 2010-2019
- American Society of Ichthyologists and Herpetologists 2010-2019

* undergraduate coauthor **CONFERENCE PRESENTATIONS (SELECTED)** † primary presenter

- Thawley, C.J.** and J.J. Kolbe. 2019. Cities in the spotlight: Does tolerance of artificial light at night promote urban invasions? *Evolution annual meeting*. Poster presentation.
- Thawley, C.J.**, J.M. Hall, and J.J. Kolbe. 2019. Turn up the lights in here: Impacts of artificial light at night on anoles. *Society for Integrative and Comparative Biology annual meeting*. Oral presentation.
- Thawley, C.J.** and J.J. Kolbe. 2018. A trick of the light: Impacts of human-produced light at night on anoles. *Joint Meeting of Ichthyologists and Herpetologists*. Oral presentation.
- Thawley, C.J.** and J.J. Kolbe. 2018. Let there be light: widespread use of human-produced light at night by anoles and its consequences. *Anolis Symposium VII*. Oral presentation.
- Thawley, C.J.** and J.J. Kolbe. 2017. Effects of artificial light at night on reproduction in brown anoles (*Anolis sagrei*). *Joint Meeting of Ichthyologists and Herpetologists*. Oral presentation.
- Thawley, C.J.**, A.C. Battles, H.A. Moniz, A. Merritt*, and J.J. Kolbe. 2017. Lizards in the big city: impacts of urbanization on morphology, thermal preference, and parasitism in *Anolis* lizards. *Society for Integrative and Comparative Biology annual meeting*. Oral presentation.
- Thawley, C.J.** and T. Langkilde. 2016. Invasive fire ant predation of Eastern fence lizard (*Sceloporus undulatus*) eggs. *Joint Meeting of Ichthyologists and Herpetologists*. Oral presentation.
- Tylan, C.K., Camacho, S. Graham, M. Herr†*, J. Jones, G. McCormick, M. O'Brien*, J. Tennessen, **C.J. Thawley**, T. Langkilde. 2016. Collecting baseline corticosterone samples in reptiles and

amphibians: is under 3 minutes good enough? *Joint Meeting of Ichthyologists and Herpetologists*. Oral presentation.

Thawley, C.J., M. Goldy-Brown*, G.L. McCormick, S. Graham, and T. Langkilde. 2016. Invasion of a novel predator reverses latitudinal gradients of multiple traits in a native lizard. *Society for Integrative and Comparative Biology annual meeting*. Oral presentation. *Huey Award finalist*.

Herr, M.W.*, T.R. Robbins, A. Centi*, **C.J. Thawley**, and T. Langkilde. 2015. Exposure to novel toxic prey on multiple temporal scales has persistent effects on behavior of eastern fence lizards. *Society for the Study of Amphibians and Reptiles annual meeting*. Oral presentation.

Thawley, C.J., M. Goldy-Brown*, G.L. McCormick, S. Graham, and T. Langkilde. 2015. An invasive predator, the red imported fire ant, alters latitudinal gradients of multiple traits in a native lizard. *Evolution annual meeting*. Oral presentation. *Hamilton Award finalist*.

Thawley, C.J., T.R. Robbins, N.A. Freidenfelds, and T. Langkilde. 2015. Attracting unwanted attention: the costs and benefits of adaptation to an invasive predator. *Society for Integrative and Comparative Biology annual meeting*. Oral presentation. *Huey Award finalist*.

Thawley, C.J., T.R. Robbins, N.A. Freidenfelds, and T. Langkilde. 2014. The costs and benefits of adaptation: A case study using native fence lizards and invasive fire ants. *Joint Meeting of Ichthyologists and Herpetologists*. Oral presentation. *Henri Seibert Award winner*.

Goldy-Brown, M. †*, T. Langkilde and **C.J. Thawley**. 2014. The effects of red imported fire ant venom on whole body performance and hemolysis of Eastern fence lizards, *Sceloporus undulatus*. *Joint Meeting of Ichthyologists and Herpetologists*. Poster.

*undergraduate coauthor

ADDITIONAL PUBLICATIONS

©citizen scientist coauthor

NATURAL HISTORY AND DISTRIBUTIONAL NOTES:

Lapiedra, O. and **C.J. Thawley**. 2019. *Anolis stratulus* (Barred Anole). Nocturnal foraging activity. *Herpetological Review* 50:363.

Thawley, C.J. 2019. *Anolis cristatellus* (Puerto Rican Crested Anole) and *Anolis sagrei* (Brown Anole). Interspecific mating. *Herpetological Review* 50:362.

Simpson, S.E., © S.T. Giery, J.T. Stroud, and **C.J. Thawley**. 2019. *Anolis sagrei* (Brown anole). Predation. *Herpetological Review* 50:362-363.

Barbato, J. © and **C.J. Thawley**. 2018. Geographic distribution: *Anolis distichus*. *Herpetological Review* 49:714.

Campbell, N. ©, **C.J. Thawley**, and J.T. Stroud. 2018. *Anolis cristatellus* (Puerto Rican Crested Anole). Cannibalism. *Herpetological Review*. 49:115-116.

Thawley, C.J. and J.T. Stroud. 2017. Geographic distribution: *Phelsuma grandis*. *Herpetological Review* 48:812.

Thawley, C.J., A.C. Battles, S.N. Michaelides, and J.J. Kolbe. 2017. *Anolis equestris* (Cuban Knight Anole). Prey. *Herpetological Review*. 48:183-184.

Thawley, C.J., M.W. Herr, * and S.P. Graham. 2016. *Pantherophis guttatus* (Red Cornsnake): defensive behavior. *Herpetological Review* 47:151-152.

Thawley, C.J. and F. Graves. 2015. Geographic distribution: *Gyrinophilus porphyriticus*. *Herpetological Review* 46:210.

Thawley, C.J. and F. Graves. 2014. Geographic distribution: *Plestiodon fasciatus*. *Herpetological Review* 45:661.

- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Plestiodon laticeps*. Herpetological Review 45:661.
- Thawley, C.J.** and M.W. Herr*. 2014. Geographic distribution: *Plestiodon laticeps*. Herpetological Review 45:661.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Sceloporus undulatus*. Herpetological Review 45:662.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Pantherophis guttatus*. Herpetological Review 45:665.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Alligator mississippiensis*. Herpetological Review 45:279.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Trachemys scripta scripta*. Herpetological Review 45:281.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Anolis carolinensis*. Herpetological Review 45:282.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Sceloporus undulatus*. Herpetological Review 45:283.
- Thawley, C.J.** 2014. *Coluber constrictor* (North American racer): Egg predation. Herpetological Review 45:142.
- Thawley, C.J.** 2013. Geographic distribution: *Chrysemys picta*. Herpetological Review 44:622-623.
- Thawley, C.J.** 2013. Geographic distribution: *Plestiodon fasciatus*. Herpetological Review 44:626.
- Thawley, C.J.** and B.E. Carlson. 2013. Geographic distribution: *Hyla versicolor*. Herpetological Review 44:621.
- Thawley, C.J.**, G.L. McCormick and S.P. Graham. 2013. Geographic distribution: *Crotalus horridus*. Herpetological Review 44:628.
- Thawley, C.J.**, G.L. McCormick and S.P. Graham. 2013. Geographic distribution: *Heterodon platirhinos*. Herpetological Review 44:476.
- Thawley, C.J.**, G.L. McCormick and S.P. Graham. 2013. Geographic distribution: *Opheodrys aestivus*. Herpetological Review 44:477.
- Thawley, C.J.** 2012. Geographic distribution: *Eleutherodactylus planirostris*. Herpetological Review 43:298.
- Newman, J.C.*, G.C. Brooks*, and **C.J. Thawley**. 2012. Geographic distribution: *Deirochelys reticularia*. Herpetological Review 43:615.
- Thawley, C.J.** and S.P. Graham. 2012. Geographic distribution: *Eurycea chamberlaini*. Herpetological Review 43:296.
- Thawley, C.J.** 2011. Geographic distribution: *Anolis (Norops) sagrei*. Herpetological Review 42:239-240.
- Thawley, C.J.** 2010. Geographic distribution: *Hemidactylus turcicus*. Herpetological Review 41:378.
- Stevenson, D.J., J.G. Palis, A.D. Walde, A.B. Safer and **C.J. Thawley**. 2009. New distributional records for Georgia amphibians and reptiles. Herpetological Review 40: 24.