

Christopher J. Thawley

205.315.9242

cthawley@gmail.com

Pennsylvania State University
Ecology Program
508 Mueller Laboratory
University Park PA 16801

EDUCATION

PhD candidate in Ecology , Pennsylvania State University Minor in Statistics, Advisor: Dr. Tracy Langkilde	2011-2016
MS , Biological Sciences, University of Alabama Advisor: Dr. Leslie Rissler	2011
BS , Biology and Art (Double major), <i>magna cum laude</i> , Davidson College	2004

PEER REVIEWED PUBLICATIONS

- Thawley, C.J.** and T. Langkilde. In Review. Attracting unwanted attention: generalization of behavioral adaptation to an invasive predator carries costs. *Oecologia*.
- Herr, M.*, T.R. Robbins, *A. Centi*, **C.J. Thawley**, and T. Langkilde. In Review. Irresistible ants: exposure to novel toxic prey increases consumption over multiple temporal scales. *Oecologia*.
- Graham, S.P., N.A. Friedenfelds, **C.J. Thawley**, T.R. Robbins, and T. Langkilde. In Review. Are invasive species stressful? The glucocorticoid profile of native lizards exposed to invasive fire ants depends on the context. *Physiological and Biochemical Zoology*.
- Carlson, B.E., **C.J. Thawley**, and S.P. Graham. In Review. Natural history of the valley and ridge salamander (*Plethodon hoffmani*): demography, movement, microhabitats, and abundance. *Herpetological Conservation and Biology*.
- Thawley, C.J.**, *M. Herr*, and S.P. Graham. In Review. *Pantherophis guttatus*: defensive behavior. *Herpetological Review*.
- Thawley, C.J.** and T. Langkilde. 2015. Invasive fire ant (*Solenopsis invicta*) predation of eastern fence lizard (*Sceloporus undulatus*) eggs. *Journal of Herpetology*. In Press.
- 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.
- Natural History and Distributional Notes:**
- Thawley, C.J.** and F. Graves. 2015. Geographic distribution: *Gyrinophilus porphyriticus*. *Herpetological Review*. 46(2):210.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Plestiodon fasciatus*. *Herpetological Review*. 45(4):661.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Plestiodon laticeps*. *Herpetological Review*. 45(4):661.
- Thawley, C.J.** and *M.W. Herr*. 2014. Geographic distribution: *Plestiodon laticeps*. *Herpetological Review*. 45(4):661.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Sceloporus undulatus*. *Herpetological Review*. 45(4):662.
- Thawley, C.J.** and F. Graves. 2014. Geographic distribution: *Pantherophis guttatus*. *Herpetological Review*. 45(4):665.

- Thawley, C.J.** and *F. Graves*. 2014. Geographic distribution: *Alligator mississippiensis*. Herpetological Review. 45(2):279.
- Thawley, C.J.** and *F. Graves*. 2014. Geographic distribution: *Trachemys scripta scripta*. Herpetological Review. 45(2):281.
- Thawley, C.J.** and *F. Graves*. 2014. Geographic distribution: *Anolis carolinensis*. Herpetological Review. 45(2):282.
- Thawley, C.J.** and *F. Graves*. 2014. Geographic distribution: *Sceloporus undulatus*. Herpetological Review. 45(2):283.
- Thawley, C.J.** 2014. Egg predation: *Coluber constrictor*. Herpetological Review. 45(1):142.
- Thawley, C.J.** 2013. Geographic distribution: *Chrysemys picta*. Herpetological Review. 44(4):622-623.
- Thawley, C.J.** 2013. Geographic distribution: *Plestiodon fasciatus*. Herpetological Review. 44(4):626.
- Thawley, C.J.** and B.E. Carlson. 2013. Geographic distribution: *Hyla versicolor*. Herpetological Review. 44(4):621.
- Thawley, C.J.**, G.L. McCormick and S.P. Graham. 2013. Geographic distribution: *Crotalus horridus*. Herpetological Review. 44(4):628.
- Thawley, C.J.**, G.L. McCormick and S.P. Graham. 2013. Geographic distribution: *Heterodon platirhinus*. Herpetological Review. 44(3):476.
- Thawley, C.J.**, G.L. McCormick and S.P. Graham. 2013. Geographic distribution: *Opheodrys aestivus*. Herpetological Review. 44(3):477.
- Thawley, C.J.** 2012. Geographic distribution: *Eleutherodactylus planirostris*. Herpetological Review. 43(2):298.
- Newman, J.C., G.C. Brooks, and C.J. Thawley*. 2012. Geographic distribution: *Deirochelys reticularia*. Herpetological Review. 43(4):615.
- Thawley, C.J.** and S.P. Graham. 2012. Geographic distribution: *Eurycea chamberlaini*. Herpetological Review. 43(2):296.
- Thawley, C.J.** 2011. Geographic distribution: *Anolis (Norops) sagrei*. Herpetological Review. 42(2):239-240.
- Thawley, C.J.** 2010. Geographic distribution: *Hemidactylus turcicus*. Herpetological Review. 41(3):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(2): 247-249.

*Undergraduate co-authors in *italics*

RESEARCH AND PROFESSIONAL EXPERIENCE

- Graduate Student Researcher**, Ecology IDGP, Penn State University 2011-2016
- Researched the evolutionary ecology of interactions between native fence lizards (*Sceloporus undulatus*) and invasive red imported fire ants (*Solenopsis invicta*)
 - Used transplant experiments to study direct and indirect effects of fire ants on fence lizards
 - Quantified changes in the stress response of fence lizards following fire ant invasion
- Graduate Student Researcher**, Dept. of Biological Sciences, University of Alabama 2008-2011
- Researched the invasion biology of two species of Caribbean anurans (*Osteopilus septentrionalis* and *Eleutherodactylus planirostris*) in the southeastern U.S.
 - Determined populations of origin for both species using genetic techniques and ecological niche models
 - Determined thermal limits of *O. septentrionalis* via lab experiments
- Field Technician**, Joseph W. Jones Ecological Research Center, Newton, GA 2008
- Conducted gopher tortoise surveys using burrow cameras and line transect sampling

- Monitored herpetile populations using drift fences, trapping arrays, and radio telemetry
- Led teams of three in extended, independent field work in isolated locations

AmeriCorps Cape Cod Member, Barnstable, MA 2006-2007

- Performed stranding response and necropsies with Cape Cod Stranding Network
- Served on management projects including invasive species removal and habitat rehabilitation
- Provided over 1700 hours of community service

Lab Technician, Herpetology Lab, Davidson College, Davidson NC 2003-2004

- Coordinated undergraduate researchers engaged in herpetology-based research
- Conducted field and lab research, including animal care and database management
- Planned and coordinated outreach activities for local communities

Research Experience for Undergraduates, under Dr. Steve Mullin, Eastern Illinois University 2003

- Analyzed response of invasive *Xenopus laevis* to native snake (*Thamnophis hammondi*)

RESEARCH GRANTS AND FELLOWSHIPS

J. Lloyd Huck Dissertation Research Award, Pennsylvania State University (\$5000)	2014
ARCS Foundation Grant (\$5000/year)	2011-2013
National Science Foundation REU supplement to LiT - Ecology and evolution of adaptive responses to rapid global change, DEB 0949483. Co-advisor with Dr. 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 and Dept. of Biological Sciences (\$600)	2010
Research and Travel Fund Grant, University of Alabama Graduate Student Association (\$200)	2009
Intramural Research Grant, Davidson College Department of Biology (\$560)	2004

HONORS AND AWARDS

Huck Endowment Travel Award, Pennsylvania State University (\$1500)	2015
Registration Award, Carl Gans Fund (\$170)	2015
Ecology Program Travel Grant, Pennsylvania State University (\$200)	2015
Henri Seibert Award for best student paper in Ecology, Society for the Study of Amphibians and Reptiles (\$200)	2014
Huck Fellowship, Pennsylvania State University (\$8000)	2011-2012
University Graduate Fellowship, Pennsylvania State University (\$17100)	2011-2012
Excellence in Teaching by a Master's Student, Graduate School, University of Alabama (\$1000)	2011
Outstanding Teaching by a Graduate Student, College of Arts & Sciences, University of Alabama (\$500)	2011
Outstanding Teaching by a Graduate Student, Dept. of Biological Sciences, University of Alabama (\$500)	2011
Dean's Merit Award, University of Alabama (\$6000/year)	2008-2010
Graduate Council Fellowship, University of Alabama (\$15000)	2008-2009
Graduate Research Fellowship Program, Honorable Mention, NSF	2004
Phi Beta Kappa, National Honor Society	2004
Beta Beta Beta, Biological Honor Society	2003
John Calvin Dye Scholarship, Davidson College	2000-2004
Boyd Calhoun Hipp Scholarship, Davidson College	2000-2004
Green Earth Campaign Scholarship, Canon Envirothon (\$5000)	2000

TEACHING EXPERIENCE

Instructor , Science Outreach and Communication (BIOL 497F), Penn State University	2015
• Seminar focusing on developing and presenting scientific outreach programs	
• Responsible for development of course program, lectures, and partnerships with local organizations	

- Teaching Assistant**, Biology: Basic Concepts and Biodiversity (BIOL 110), Penn State University 2014
- Independently taught 2 laboratory sections of 24 students each
 - Topics included evolution, biodiversity, population genetics, cellular reproduction, and protein synthesis
- Teaching Assistant**, Experimental Field Biology (BIOL 450W), Penn State University 2013
- Prepared lectures, designed field activities, led discussions, and coordinated overnight field trips
 - Emphasized developing writing skills via focused instruction, intensive writing, and in-depth feedback
- Teaching Assistant**, Biology: Populations and Communities (BIOL 220W), Penn State University 2013
- Independently taught 2 laboratory sections of 24 students each
 - Topics included ecology, evolution, demography, population genetics, and science writing
- Teaching Assistant**, Honors Introductory Organismal Biology Lab (BSC 120), University of Alabama 2011
- Independently taught 2 laboratory sections of 36 students each
 - Topics included systematics, evolution, biodiversity, development, and anatomy
- Teaching Assistant**, Field Zoology (BSC 303), University of Alabama 2010
- Gave lectures, led discussion groups and planned and led overnight field trips
 - Managed service learning partnership at Tuscaloosa Magnet School
 - Topics included vertebrate biodiversity and taxonomy, evolution, and conservation biology
- Teaching Assistant**, Introductory Organismal Biology Lab (BSC 117), University of Alabama 2009,2010
- Independently taught 2 laboratory sections of 36 students each
- Middle School Science Teacher**, grades 6-8, Thornton Friends Middle School, Silver Spring MD 2005-2006
- Designed and implemented curricula for Earth Science, Biology, and Physical Science classes
 - Served as student advisor, physical education and health teacher, and basketball coach
- EFL Teacher**, multiple English academies, Madrid, Spain 2005
- Created original lesson plans for a variety of class sizes and levels
 - Assessed student skill levels and targeted lessons to meet needs and achieve proficiency
- Invited Lectures:**
- *Mating systems*, Animal Behavior (BIOL 429), Pennsylvania State University 2012-2014
 - *Biological Invasions and Herpetology*, Herpetology (WFS 462), Pennsylvania State University 2013,2014
 - Field trips to research sites (2), Herpetology (WFS 462), Pennsylvania State University 2013
- Training:**
- Graduate School Teaching Certificate, Pennsylvania State University 2015
 - TEFL certification, Pass with Distinction, EBC Servicios Linguisticos, Madrid, Spain 2005
- Mentoring:**
- Engaged 11 undergraduate students from Penn State University, the University of Alabama, and Northeastern University in individual research projects. 2010-2015
 - Supervised and mentored groups of 1-3 undergraduate researchers in field research for 4 weeks-3 months 2012-2013
 - Coordinated a weekly lab research group for 20-25 undergraduate students covering topics such as experimental design, data interpretation, how to read scientific literature, and how to apply to graduate school 2013
 - Collaborated with undergraduate researchers to obtain funding for their research, including a Penn State Summer Discovery Grant (\$5000) and from the Eberly College of Science Undergraduate Research Fund
 - Undergraduate and high school mentees have co-authored one published article and 10 natural history notes, submitted two manuscripts, and prepared one manuscript for submission to peer-reviewed journals
 - Undergraduate mentees have co-authored three national conference presentations
 - Assisted one undergraduate mentee in successful completion of Schreyer Honors College Honors Thesis
 - Mentees have gone on to MS programs at Clemson University (Wildlife and Fisheries Science) and Chatham University (Biology), Veterinary Schools at Auburn University and Purdue University, and the Peace Corps
 - Served as Graduate Student Peer Mentor, Huck Institutes of the Life Sciences, Penn State University 2015
- Thawley Curriculum Vitae

CONFERENCE PRESENTATIONS

- 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. *Ecological Society of America annual meeting*. Oral presentation.
- Herr, M., 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. *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.
- Thawley, C.J., T.R. Robbins and T. Langkilde.** 2013. Survival at what cost?: Consequences of a native lizard's adaptations to invasive fire ants. *Society for Integrative and Comparative Biology annual meeting*. Oral presentation.
- Thawley, C.J., B.E. Carlson and S.P. Graham.** 2013. Breaking the demographic mold: How the ridge and valley salamander (*Plethodon hoffmani*) differs from the Eastern red-backed salamander (*P. cinereus*). *NEPARC annual meeting*. Oral presentation.
- Thawley, C.J., T.R. Robbins and T. Langkilde.** 2012. Survival under pressure: adaptive responses of the Eastern fence lizard (*Sceloporus undulatus*) to invasive fire ants (*Solenopsis invicta*), *ALAPARC annual meeting*. Oral presentation.
- Thawley, C.J., T.R. Robbins and T. Langkilde.** 2012. Survival under pressure: lethal and sublethal effects of an invasive predator, the red imported fire ant, on a spiny lizard. *Society for Integrative and Comparative Biology annual meeting*. Oral presentation.
- Thawley, C.J., A. Rodriguez and L.J. Rissler.** 2011. Phylogeography and invasive spread of two Cuban anurans in the southeastern United States. *Joint Meeting of Ichthyologists and Herpetologists*. Oral presentation.
- Thawley, C.J. and S.P. Graham.** 2010. Specimen and tissue collection workshop. *ALAPARC annual meeting*. Oral presentation.
- Thawley, C.J. and S.P. Graham.** 2010. A hundred years of rippin' stumps: Alabama's herpetological legacy. *ALAPARC annual meeting*. Oral presentation.
- Thawley, C.J.** 2010. Predicting biological invasions: Evidence of niche shift as a confounding phenomenon. *University of Alabama Graduate Research and Thesis Conference*. Oral presentation.
- Thawley, C.J.** 2010. Evidence supporting niche shift in two species of invasive frogs. *SEPARC Annual Meeting*. Poster.

Thawley, C.J. 2009. Using ecological niche models to predict the spread of two invasive frog species. *ALAPARC annual meeting*. Oral presentation.

Thawley, C.J., W.J. Johnson and M.E. Dorcas. 2004. Effects of seasonal, meteorological, and directional variables on amphibian capture in terrestrial drift fences. *Association of Southeastern Biologists annual meeting*. Poster.

SERVICE

Outreach:

Penn State University Outreach, designed and presented assorted programs 2011-2015

- *Exploration-U*, a Penn-State organized, community STEM program for K-8th graders,
- *Expanding Your Horizons: STEM Career Day for Girls* for 6-8th graders
- *Think Outside the Beaker*, a weekly STEM after-school program for 6-8th graders
- *The Great Insect Fair*, an annual entomology fair drawing 5,000 attendees

The Evolving Project STEM activity, USA Science and Engineering Festival, Washington DC 2014,2016

- Assisted in design and presentation of iPad app-tivity focused on evolution (>1100 participants)

Upward Bound, Penn State University 2014

- Collaborated with high school students from low-income families to design and implement a research project

Discovery Space of Central PA, State College PA 2012

- 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 public events

Academic:

- Graduate Student Representative, Ecology Program Committee, Penn State University 2014-2015
- Student Peer Mentor, Huck Institutes of the Life Sciences, Penn State University 2015
- Volunteer Manuscript Reviewer for scientists whose first language is not English, Society for the Study of Amphibians and Reptiles 2015
- Volunteer judge, Science Fall Undergraduate Poster Session, Penn State University 2015
- Climate and Diversity subcommittee, Eberly College of Science, Penn State University 2014-2015
 - Developed best practice guidelines for faculty advisor/graduate student relationships
- Graduate Student/Faculty Liaison, Biology Department, Penn State University 2014-2015
- Volunteer judge, Penn State Undergraduate Research Exhibition 2012-2015
- Frank A. Andersen Award Representative, Ecology Program, Penn State University 2011-2012

Reviewer:

- PLoS One, Oecologia, Biological Invasions (x2), General and Comparative Endocrinology, Ethology, Austral Ecology, Herpetological Review, Journal of North American Herpetology, Journal of the Arkansas Academy of Science (x2)

PROFESSIONAL AFFILIATIONS

- Society for the Study of Amphibians and Reptiles 2010-2015
- American Society of Ichthyologists and Herpetologists 2010-2015
- Society for Integrative and Comparative Biology 2012-2015
- Society for the Study of Evolution 2015
- Ecological Society of America 2015