

RORY S. TELEMECO

PERSONAL DATA

Auburn University, Department of Biological Sciences
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EDUCATION

Iowa State University of Science and Technology (ISU), Ames, IA, USA

Ph.D. in Ecology and Evolutionary Biology, August 2014

Advisor: Fredric Janzen

Dissertation: Here be Dragons: Functional Analyses of Thermal Adaptation and Biogeography of Reptiles in a Changing World.

University of Central Oklahoma (UCO), Edmond, OK, USA

M.S. in Biology (with honors), May 2009, E.C. Hall Scholar (highest-ranked graduate)

Adviser: Troy Baird

Thesis: Are Reproductive Life-History Traits of Australian Three-line Skinks Fixed or Phenotypically Plastic?

University of Central Oklahoma, Edmond, OK, USA

B.S. in Biology (*Summa Cum Laude*), December 2006, Class Marshall (highest-ranked graduate)

ACADEMIC POSITIONS

Postdoctoral Scholar, Auburn University, Auburn, AL (2016 – present)

Postdoctoral Scholar, University of Washington, Seattle, WA (2014 –2016)

Resident Scientist, Herbert Hoover High School, Des Moines, IA (2013–2014)

Teaching Assistant, Iowa State University, Ames, IA (2010)

Teaching Assistant, University of Central Oklahoma, Edmond, OK (2008–2009)

Instructor, Upward Bound, University of Central Oklahoma, Edmond, OK (2009)

Visiting Scholar, University of Sydney, Sydney, NSW, Australia (2007–2008)

HONORS

Herpetologist's League Graduate Research Award (Runner up)	2015
Wake Award for Phylogenetics and Comparative Biology (Finalist)	2015
Billings Award for Physiological Ecology (Honorable Mention)	2013
SSAR Henri Seibert Award for Morphology/Physiology	2012
Herpetologists League Graduate Research Award	2011
UCO Jackson College of Graduate Studies E.C. Hall Scholar	2009
UCO Outstanding Biology Graduate Student	2009
Herpetologists League Graduate Research Award	2008

Lothar Hornuff Field Biology Award	2007
UCO Department of Biology Outstanding Biology Senior	2007
UCO Department of Biology Academic Achievement Award	2007
Beta Beta Beta Frank G. Brookes Award	2007
Class Marshall for the UCO College of Math and Science	2006
Oklahoma Academy of Science- Best Oral Presentation in Biology	2006
Oklahoma Academy of Science- Third Best of Academy Oral Presentation	2006
UCO Biology Department Scholarship	2006
Vivian Sadler Field Scholarship	2006
Julian and Irene Rothbaum Award	2006
Chesapeake Energy Corporation Scholar	2005
National Dean's List	2004–2006
UCO Environmental Education Award	2003, 2004
Ethel Derrick Zoology Award	2003
President's Honor Role	2002–2008
Freshman Achievement Scholar	2002
Oklahoma City University Prairie to Peaks Scholar	2000

PUBLICATIONS

16 peer-reviewed publications, 12 first author

Citations = 221, h-index = 7, i10 index = 6

- Telemeco, R.S.**, B. Fletcher*, O. Levy, A. Riley*, Y. Rodriguez-Sanchez*, C. Smith*, C. Teague*, A. Waters*, M.J. Angilletta, and L.B. Buckley. 2016. Lizards fail to plastically adjust nesting behavior or thermal tolerance as needed to buffer populations from climate warming. *Global Change Biology*. Early view published online. DOI: 10.1111/gcb.13476.
- Gangloff, E.J., K.G. Holden, **R.S. Telemeco**, L.H. Baumgard, A.M. Bronikowski. 2016. Hormonal and metabolic responses to upper temperature extremes in divergent life-history ecotypes of a garter snake. *Journal of Experimental Biology*. 219: 2944-2954. DOI: 10.1242/jeb.143107.
- Telemeco, R.S.**, E.J. Gangloff, G.A. Cordero, T.S. Mitchell, B.L. Bodensteiner, K.G. Holden, S.M. Mitchell, R.L. Polich, and F.J. Janzen. 2016. Reptile embryos lack the opportunity to thermoregulate by moving within the egg. *American Naturalist*. 188: E13-E37. DOI: 10.1086/686628.
- Dillon, M.E., H.A. Woods, G. Wang, S.B. Fey, D.A. Vasseur, **R.S. Telemeco**, K. Marshall, and S. Pincebourde. 2016. Life in the frequency domain: The biological impacts of changes in climate variability at multiple time scales. *Integrative and Comparative Biology*. 56: 14-30. DOI: 10.1093/icb/icw024
- Smith, C. †*, **R.S. Telemeco** †, M.J. Angilletta, J.M. VandenBrooks. 2015. Oxygen supply limits the heat tolerance of lizard embryos. *Biology Letters* 11: 20150113. DOI: 10.1098/rsbl.2015.0113
- Telemeco, R.S.** 2015. Sex determination in the southern alligator lizard (*Elgaria multicarinata*, Anguinae). *Herpetologica*. 71: 8–11. DOI: 10.1655/Herpetologica-D-14-00033

- Telemeco, R.S.** and E.A. Addis. 2014. Temperature has species-specific effects on corticosterone in alligator lizards. *General and Comparative Endocrinology* 206: 184-192. DOI: 10.1016/j.ygcen.2014.07.004
- Telemeco, R.S.** 2014. Immobile and mobile life-history stages have different thermal physiologies in a lizard. *Physiological and Biochemical Zoology* 87: 203–215. DOI: 10.1086/674959
- Telemeco, R.S.**, K.C. Abbott, and F.J. Janzen. 2013. Modeling the effects of climate-change induced shifts in reproductive phenology on temperature-dependent traits. *American Naturalist* 181: 637–648. DOI: 10.1086/670051
- Telemeco, R.S.**, D.A. Warner, M.K. Reida, and F.J. Janzen. 2013. Extreme developmental temperatures result in morphological abnormalities in painted turtles (*Chrysemys picta*): A climate change perspective. *Integrative Zoology* 8: 198–209. DOI: 10.1111/1749-4877.12019
- Warner, D.A., M.A. Moody*, **R.S. Telemeco**, and J.J. Kolbe. 2012. Egg environments have large effects on embryonic development, but have minimal consequences for hatchling phenotypes in an invasive lizard. *Biological Journal of the Linnean Society* 105: 25–41.
- Warner, D.A., M.A. Moody*, and **R.S. Telemeco**. 2011. Is water uptake by reptilian eggs regulated by physiological processes of embryos or a passive response to developmental environments? *Comparative Biochemistry and Physiology A* 160: 421–425. DOI: 10.1016/j.cbpa.2011.07.013
- Telemeco, R.S.**, T.A. Baird, R. Shine. 2011. Tail waving in a lizard (*Bassiana duperreyi*) functions to deflect attacks rather than as a pursuit-deterrent signal. *Animal Behaviour* 82: 369–375. DOI: 10.1016/j.anbehav.2011.05.014
- Telemeco, R.S.** and T.A. Baird. 2011. Capital energy fuels production of multiple clutches whereas income energy fuels growth in collared lizards (*Crotaphytus collaris*). *Oikos* 120: 915–921. DOI: 10.1111/j.1600-0706.2010.18809.x
- Telemeco, R.S.**, R. Radder, R. Shine, and T.A. Baird. 2010. Thermal effects on reptile reproduction: Adaptation and acclimation in a montane lizard. *Biological Journal of the Linnean Society*. 100: 642–655.
- Telemeco, R.S.**, M.J. Elphick, and R. Shine. 2009. Nesting lizards (*Bassiana duperreyi*) compensate partly, but not completely, for climate change. *Ecology*. 90: 17–22.

‡: equal contributions, * undergraduate mentee

PDF reprints can be accessed at <https://rory-telemeco.squarespace.com/publications-reprints>

MANUSCRIPTS IN REVISION, REVIEW, OR PREPARATION

- Telemeco, R.S.**, E.J. Gangloff, G.A. Cordero, R.A. Polich, A.M. Bronikowski, and F.J. Janzen (Revision In Review) Physiology at near critical temperatures, but not critical limits, varies between lizards from divergent environments. *Journal of Experimental Biology*.
- Telemeco, R.S.**, and C.R. Feldman (In Preparation, available upon request) Local adaptation and speciation in alligator lizards: An integrative analysis combining morphological, ecological, and molecular evidence. Planned submission to *Evolution*.

- undergraduate mentee

FELLOWSHIPS AND GRANTS

\$110,000 – EPA Science to Achieve Results (STAR) Fellowship	2010–2014
\$32,000 – NSF GK-12 Fellowship	2013–2014
\$27,000 – ISU Ecology and Evolutionary Biology Fellowship	2009
\$22,000 – Fulbright Post-graduate Scholar to Australia	2007
\$15,000 – ISU Miller Fellowship	2009–2011
\$8,000 – UCO Research Assistantship	2008
\$1,000 – Chicago Herpetological Society Research Grant	2010
\$800 – Sigma Xi Grant in Aid of Research	2010
\$500 ea. – ISU EEOB Graduate Student Research Grant	2009, 2011
\$150 – UCO College of Math and Science Book Grant	2008
\$75 – Soc. for Study of Amphib. and Rept. of New Zealand Student Travel Grant	2009

PENDING GRANTS OR FELLOWSHIPS

Smithsonian Institution Fellowship Program (submitted 1 Dec 2016, \$52,000.00)

TECHNICAL SKILLS

Computer programming (proficient in R, functional in Bash, beginner in Python), Statistical analyses (primarily use R), Simulation modeling (primarily use R), Biophysical modeling (R), Species-distribution modeling (R), GIS (R, DIVA GIS, and ArcGIS), Metabolomic analysis (GC-MS), Respirometry (Sable systems), Geometric morphometrics (R and TPS software), Endocrine analyses (EIA and RIA), Standard molecular techniques (DNA and RNA extraction, amplification, quality control, etc.), Thermal physiology experiments, Reptile research (collection, husbandry, incubation, development, anatomy, etc.).

INVITED SEMINARS

California State University, Fresno, Department of Biology	Dec 2016
University of Scranton, Department of Biology	Nov 2016
Pennsylvania State University, Department of Biology	Sep 2016
University of Memphis, Department of Biology	Feb 2016
University of Washington, Department of Biology Postdoctoral Symposium	Feb 2015
University of Washington, Department of Biology	Feb 2014
University of Central Oklahoma, College of Mathematics and Science	Apr 2013

CONFERENCE PRESENTATIONS

Society of Integrative and Comparative Biology Annual Meeting. Oral	2013–2016
Joint Meeting of Ichthyologists and Herpetologists. Oral and Poster	2008, '11, '15
University of Washington, Biology Department Annual Meeting. Oral	2014, 2015
Ecological Society of America Annual Meeting. Oral	2013
7th World Congress of Herpetology. Oral	2012
EPA Fellowship Conference. Poster	2011
Midwest Ecology and Evolution Annual Conference. Oral	2010
Southwestern Association of Naturalists Annual Meeting. Oral	2007, 2009
Second Meeting of the Australasian Societies of Herpetology. Oral	2009
Oklahoma Research Day. Poster	2007, 2008
Oklahoma Academy of Science Technical Meeting. Oral	2006

TEACHING EXPERIENCE

UNIVERSITY OF WASHINGTON, Seattle, WA, USA

- Guest lecturer for **BIO 421**: Ecological and Evolutionary Physiology. Prepared and gave 2 active-learning lectures on Thermal Ecology and Stress Ecophysiology

IOWA STATE UNIVERSITY, Ames, IA, USA

- **HON 321N**: Origin of a Theory: A Guided Tour of Charles Darwin's *On the Origin of Species*, Fall 2012 (Co-created and taught this seminar course for undergraduates with M. Karnatz)
- **HON 322Q**: Life is Plastic, It's Fantastic!, Spring 2012 (Co-created and taught this seminar course for undergraduates with M. Karnatz)
- **BIO 312L**: Ecology Laboratory, Summer 2010

HERBERT HOOVER HIGH SCHOOL, Des Moines, IA, USA

- **Resident Scientist**: (2013–2014) Developed and taught weekly lessons for Earth Science (3 sections) and Botany/Zoology (2 sections). Assisted with AP Environ. Science (1 section). Component of the GK-12 Fellowship

UNIVERSITY OF CENTRAL OKLAHOMA, Edmond, OK, USA

- **Upward Bound Biology**: (Instructor), 2009
- **BIO 1204L**: Gen. Biology Laboratory (taught 3 sections and assisted with 2), 2008-2009
- **BIO 1404/1404L**: Animal Biology (Supplemental Instructor for Lecture and Lab) 2005–2006

PROFESSIONAL SERVICE

PEER REVIEWS

- **Journals:** *African Journal of Herpetology* (2), *Biological Journal of the Linnean Society* (3), *Biology Letters* (4), *Climatic Change* (2), *Ecology and Evolution*, *Evolution* (2), *Global Change Biology*, *Herpetologica*, *Integrative and Comparative Biology*, *Integrative Zoology* (2), *Journal of Experimental Biology*, *Journal of Herpetology*, *Journal of Thermal Biology* (6), *Methods in Ecology and Evolution*, *Oecologia* (2), *Physiological and Biochemical Zoology* (2), *PLoS ONE* (3), *Science Advances*, *Scientific Data*

UNIVERSITY SERVICE

- **UW Department of Biology:** Search Committee postdoctoral member (full-time physiology lecturer, Spring 2015), Research Committee postdoctoral member (2015–2016 academic year).
- **ISU Department of Ecology, Evolution, & Organismal Biology Graduate Student Organization:** President (May 2012–May 2013), Curriculum Committee Chair (Aug 2011–May 2012), Social/Outreach Committee Chair (Aug 2010–July 2011).
- **Midwest Ecology & Evolution Conference:** Committee Member (2009–2010). The committee organized and ran the 2010 MEEC Conference hosted at ISU.
- **βββ National Biological Honor Society:** President ΨM Chapter (2005–2006), Secretary ΨM Chapter (2006–2007).

SOCIETY SERVICE

- **Session Chair:** Society of Integrative and Comparative Biology Annual Meeting (2013, 2014, 2016), 7th World Congress of Herpetology (2012), Midwest Ecology and Evolution Conference (2010)

STUDENTS MENTORED

Graduate Students (peer mentoring): B. Bodensteiner, S. Bouzid, E. Gangloff, L. Ma., K. Pettingill, R. Polich, M. Telemeco, and A. Walton.

Undergraduate Students:

Iowa State: M. Barazowski, B. Bodensteiner, A. Brouillette, M. Moody*, T. Hermesch, E. Hernandez, J. Reneker

University of Washington/Arizona State: A. Arakaki, K. Arshid, K. Bliven, B. Briones Ortiz[◊], K. Brown, J. Bunness, G. Burgin, B. Fletcher^{◊*}, R. Howard, R. Jayyusi, K. Jones, K. Krieger, A. Riley^{◊*}, C. Rotteger, J. Ruff, Y. Rodriguez-Sanchez^{◊*}, A. Savala, L. Semanik, C. Smith^{◊*}, C. Teague^{◊*}, O. Van Vianen, A. Waters^{◊*}

[◊] independent research experience, * mentoring resulted in publication(s)

INFORMAL TEACHING AND OUTREACH

Pacific Science Center, Seattle, WA

- Portal to the Public Science Communication Fellow (November 2014–August 2016)
- “Science and a Movie: Anaconda” led a public discussion and viewing of the movie, “Anaconda” at Seattle’s Central Cinema (June 2016, 2 nights)
- “Meet a Scientist” one on one interaction with visitors (Feb 2016)
- “Scientist on a Stage” program (Feb 2016)
- Assisted with Portal to the Public training (Feb 2016)
- *Grossology* expert (answer the public’s questions about human physiology, Fall 2015)
- Science Café (Feb. 2015) “How do animals respond to global change and will it be good enough?” evening program for adults on the ways in which animals respond to global change.

Reading/Discussion Groups that I organized for students

- Fall 2015 UW: Levins 1968 *Evolution in Changing Environments: Some Theoretical Explorations*
- Winter and Spring 2015 UW: Flatt and Heyland 2012 *Mechanisms of Life History Evolution*
- Spring 2014 ISU: West-Eberhard 2003 *Developmental Plasticity and Evolution*
- Fall 2014 ISU: Coyne and Orr 2004 *Speciation*
- Spring and Summer 2014 ISU: Roff 1993 *Evolution of Life Histories: Theory and Analysis*

Clubes de Ciencia, Mexico, Merida, Yucatan, MX

- Created and led a 1-wk immersive, experiential-learning science “camp” for Mexican undergraduate students entitled “Leapin’ Lizards: Cold-blooded Animals in a Warming World” (July 2015)
- Students designed and implemented 3 experiments relating to thermal biology and behavior over the course of the camp and presented their results as posters for the Clubes de Ciencia symposium

Phoenix Comicon 2015: Science Panelist, Phoenix, AZ

- Sat on two science-education panels for the public in May 2015: “Disasters and Adventures in Science” and “Safe Alien Sex.” Each panel was attended by 300+ people.

Science Center of Iowa, Des Moines, IA

- Animal Kingdom Summer Camp presentation on snake biology for children (July 2013)
- Café Scientifique (March 2013) “Hot Chicks and Cool Dudes, When Sex is More than X and Y” evening program for adults on sex-determination mechanisms and their biological implications in our changing world.

Oklahoma City Zoo and Botanical Gardens, Oklahoma City, OK

- Education Staff/Snooze Leader (2003–2007). Led overnight programs for all ages, and gave public seminars

Our Lady of Guadalupe Summer Camp, Wellston, OK

- Camp Counselor & OLOG Zoo Curator (2002–2006). Supervised, taught, and counseled children from 4th–12th grades, and maintained a small collection of native and exotic animals for use in education programs

Additional Outreach Activities

- Symbi Science Days, Brody and Harding Middle Schools, Des Moines, IA, USA (April 2013 and 2014). Developed hands-on activities/presentations about natural selection for >400 students over 2 days.
- St. Cecilia Elementary School, Ames, IA, USA. September 2012. Co-led a workshop on the biology of reptiles
- Des Moines Central Campus High School, Biotechnology Course. September 2011. Co-led a series of seminars on the biological applications of biotechnology tools
- Agricultural Leadership Camp, Iowa State University, Ames, IA, USA. September 2010 and 2011. Presented seminars on conservation and agricultural impacts on biota
- Science Bound, Iowa State University, Oct 2009, Seminar on turtle biology for high school students

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science (AAAS), Herpetologists League (HL), Society for Integrative and Comparative Biology (SICB), Society for the Study of Evolution (SSE), Society for the Study of Amphibians and Reptiles (SSAR), **βββ** National Biological Honor Society (Tri-Beta), The National Scholars Honor Society, **AX** Academic Honor Society

MEDIA COVERAGE

RADIO

- Iowa Public Radio's "River to River" (Feb. 2013) Discussed sex-determination mechanisms and their biological implications in our changing world.
<http://news.iowapublicradio.org/post/climate-changes-effect-animal-reproduction>
- Public Radio International's "Living on Earth" (May 2013) discussed the results of Telemeco et al. 2013. *Am Nat*. 181: 637–648.
<<http://www.loe.org/shows/segments.html?programID=13-P13-00019&segmentID=5>>

PRINT

- "New Scientist" Issue 2916 (May 2013) Featured Telemeco et al. 2013. *Am Nat* 181: 637–648
<<http://www.newscientist.com/article/dn23486-painted-turtles-set-to-become-allfemale.html>>
- "Huffington Post" (May 2013) featured Telemeco et al. 2013. *Am Nat* 181: 637–648.
<http://www.huffingtonpost.com/2013/05/07/sex-of-turtles-changing-female-climate-change_n_3224368.html>