

Amanda Wilson Carter

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EDUCATION

Ph.D. Candidate in Biological Sciences, Illinois State University

NSF Graduate Research Fellow 2012-2017

Advisor: Dr. Rachel Bowden

Dissertation: Integrating natural variation in thermal conditions and maternal steroids into temperature-dependent sex determination

B.S. Virginia Tech, 2011

Wildlife Sciences, minor Biology

Summa cum laude, Phi Beta Kappa

Advisor: Dr. William Hopkins

Thesis: Thermal challenge severity differentially affects wound healing in wood duck (*Aix sponsa*) ducklings

PROFESSIONAL APPOINTMENTS

Post-Baccalaureate Research Fellow

Virginia Tech, 2012

Advisor: Dr. William Hopkins

The influence of incubation recess patterns on incubation period and hatchling traits in wood duck (*Aix sponsa*) ducklings

PUBLICATIONS

Publications have been authored as A.F. Wilson and A.W. Carter
(n=13 published, 1 submitted)

Carter, A.W., T. D. Tuberville, R.T. Paitz, R.M. Bowden. *Submitted*. Sex ratios are substantially altered following a brief exposure to warm temperatures in a reptile. *Submitted to Journal of Animal Ecology*.

Zimmerman, L. M., **A.W. Carter**, L. A. Vogel, R.M. Bowden. *Accepted*. Immunocompetence in a long-lived ectothermic vertebrate is temperature dependent but shows no decline in older adults. *Functional Ecology*. DOI: 10.1111/1365-2435.12867

Carter, A.W., R.M. Bowden, R.T. Paitz. 2017. Seasonal sex ratio shifts are mediated by maternal estrogens and fluctuating incubation temperatures. *Functional Ecology*. 31 (4): 876-884

DuRant, S.E., W.A. Hopkins, L.T. Kirkpatrick, **A.W. Carter**, K. Navara, D.N. Hawley. 2016. Incubation temperature causes skewed sex ratios in a precocial bird. *Journal of Experimental Biology*. 219 (13), 1961-1964

Carter, A.W., R.T. Paitz, K. M. McGhee, R.M. Bowden. 2016. Turtle hatchlings show behavioral types that are robust to environmental manipulations during development. *Physiology & Behavior* 155: 46-55.

Treidel, L.A., **A.W. Carter**, R.M. Bowden. 2016. Temperature experienced during incubation affects antioxidant capacity but not oxidative damage in hatchling red-eared slider turtles (*Trachemys scripta elegans*). *Journal of Experimental Biology*, 219 (4) 561-570

Bowden, R. M., **A. W. Carter**, R. T. Paitz. 2014. Constancy in an Inconstant World: Moving Beyond Constant Temperatures in the Study of Reptilian Incubation. *Integrative and Comparative Biology*, 54 (5), 830-840.

Carter, A. W., W.A. Hopkins, I.T. Moore, S.E. DuRant. 2014. The influence of incubation recess patterns on incubation period and hatchling traits in Wood Ducks (*Aix sponsa*). *Journal of Avian Biology*, 45 (3), 273-279.

DuRant, S.E., **A. W. Carter**, R. J. Denver, G. R. Hepp, and W.A. Hopkins. 2013. Is thyroid hormone an upstream mechanism for incubation temperature-induced phenotypes in birds? *Biology Letters*, 10 (1), 20130950. **Featured on the Journal Cover**

Carter, A. W., S.E. DuRant, G.R. Hepp, W.A. Hopkins. 2013. Thermal challenge severity differentially influences wound healing in wood duck (*Aix sponsa*) ducklings. *Journal of Experimental Zoology: Part A*, 319 (7), 422-429.

DuRant, S.E., W.A. Hopkins, **A. W. Carter**, C. M. Stachowiak, and G.R. Hepp. 2013. Incubation conditions are more important in determining early thermoregulatory ability than post hatch resource conditions in a precocial bird. *Physiological and Biochemical Zoology*, 86, 410-420.

Adelman, J. S., **Carter, A. W.**, Hopkins, W. A., & Hawley, D. M. 2013. Deposition of pathogenic *Mycoplasma gallisepticum* onto bird feeders: host pathology is more important than temperature-driven increases in food intake. *Biology Letters*, 9 (5), 20130594.

DuRant S. E., W. A. Hopkins, **A. F. Wilson**, and G. R. Hepp. 2012. Incubation temperature affects the metabolic cost of thermoregulation in a young precocial bird. *Functional Ecology*, 26 (2), 416-422.

Hawley, D. M., DuRant, S. E., **Wilson, A. F.**, Adelman, J. S. and Hopkins, W. A. 2012. Additive metabolic costs of thermoregulation and pathogen infection. *Functional Ecology*, 26 (3), 701-710.

INVITED PRESENTATIONS

Carter, A.W., R.T. Paitz, K. M. McGhee, R.M. Bowden. 2015. Turtle hatchlings show behavioral types that are robust to environmental manipulations during development. Millikin University, Decatur, IL.

CONFERENCE PRESENTATIONS

Carter, A. W., T.D. Tuberville, R. T. Paitz, R. M. Bowden. 2017. Are heat waves key to understanding TSD in nature? Society for Integrative and Comparative Biology, New Orleans, LA. *Raymond B. Huey Award Finalist*.

- Carter, A. W. 2016. Geospatial analysis of turtle sex ratios. University Symposium, Illinois State University, Normal, IL.
- Carter, A. W., R. M. Bowden, R. T. Paitz. 2016. Can yolk estrogens compound conservation concerns of reptiles? Illinois Lakes Management Association Annual Meeting, Springfield, IL.
- Carter, A. W., R. M. Bowden, R. T. Paitz. 2016. Seasonal variation in sex ratios driven by maternally derived estrogens and fluctuating incubation temperatures. Beta Lambda Chapter of Phi Sigma Annual Research Symposium, Normal, IL. *3rd place Oral Talk Award.*
- Carter, A. W., R. M. Bowden, R. T. Paitz. 2016. Can yolk estrogens affect sex determination when incubation temperatures fluctuate in a species with TSD? Society for Integrative and Comparative Biology, Portland, OR.
- Carter, A.W., R.T. Paitz, K. M. McGhee, R.M. Bowden. 2015. Turtle hatchlings show behavioral types that are robust to environmental manipulations during development. Beta Lambda Chapter of Phi Sigma Annual Research Symposium, Normal, IL. *1st place Oral Talk Award.*
- Carter, A. W., R. M. Bowden, R. T. Paitz. 2015. Does sex vary with season via maternal estrogens when temperatures fluctuate? Society for Integrative and Comparative Biology, West Palm Beach, FL. *Raymond B. Huey Award Finalist.*
- Carter, A. W., L. M. Zimmerman, R. T. Paitz, R. M. Bowden. 2014. How do yolk corticosterone and fluctuating incubation temperatures affect hatchling behavior and physiology? Beta Lambda Chapter of Phi Sigma Annual Research Symposium, Normal, IL. *2nd place Poster Presentation Award.*
- Carter, A. W., L. M. Zimmerman, R. T. Paitz, R. M. Bowden. 2014. How do yolk corticosterone and fluctuating incubation temperatures affect hatchling behavior and physiology? Society for Integrative and Comparative Biology, Austin, TX.
- Carter, A. W., S.E. DuRant, G.R. Hepp, W.A. Hopkins. 2013. Thermal challenge severity differentially influences wound healing in wood duck (*Aix sponsa*) ducklings. Beta Lambda Chapter of Phi Sigma Annual Research Symposium, Normal, IL.
- Carter, A. W., R. T. Paitz, R. M. Bowden. 2013. Consistent individual behaviors important for early survival in juvenile red-eared sliders (*Trachemys scripta*). CISAB Animal Behavior Conference, Bloomington, IN.
- Wilson, A.F., S.E. DuRant, G.R. Hepp and W. A. Hopkins. 2010. Influence of thermoregulation on wound healing in Wood Duck (*Aix sponsa*) ducklings. McNair Scholars & Multicultural Academic Opportunities Program (MAOP) Summer Research Symposium, Virginia Tech, Blacksburg VA.

AWARDS AND HONORS

Outstanding Ph.D. Student of the Year, Illinois State University, 2016
Jack Ward Service Award, 2015
Fulbright Fellowship Finalist to Australia, 2012
Marshall Scholarship, University Nominee (Virginia Tech), 2011

Presentation Awards

Third Place Oral Presentation, Phi Sigma Research Symposium 2016
First Place Oral Presentation, Phi Sigma Research Symposium 2015
Raymond B. Huey Award Finalist, SICB 2015
Second Place Poster Presentation, Phi Sigma Research Symposium 2014

Honors Societies

The Phi Beta Kappa Society
Phi Sigma Biological Sciences Honor Society
Sigma Xi Biological Sciences Honor Society

GRANTS AND FELLOWSHIPS

2012-2017 NSF Graduate Research Fellow

2016 Gaige Award, American Society of Ichthyologists and Herpetologists (\$800)
2016 Beta Lambda Chapter, Phi Sigma Weigel Grant (\$1,000)
2015 Beta Lambda Chapter, Phi Sigma Weigel Grant (\$1,000)
2015 Program Fund on behalf of Phi Sigma (\$2,470)
2015 Illinois Lakes Management Association Scholarship (\$1,000)
2015 Opportunity Fund on behalf of Phi Sigma (\$650)
2014 Program Fund on behalf of Phi Sigma (\$2,600)
2014 Sage Fund on behalf of Phi Sigma (\$400)
2014 Beta Lambda Chapter, Phi Sigma Weigel Grant (\$750)
2013 Beta Lambda Chapter, Phi Sigma Weigel Grant (\$300)
2012 Organismal Biology and Ecology Interdisciplinary Grant (2 awards, \$300 each)

TEACHING

International Education Assistantships

2015 Costa Rica, Rainforest Ecology, Illinois State University
2011 Australia, Sustaining Humans and the Environment, Virginia Tech
2011 Antarctica and Argentina, Sustaining the Fragile Continent, Virginia Tech
2012 American Universities International Programs (AUIP), Marketing Intern
2012-2015 AUIP volunteer curricula development consultant

Teaching Assistantships

2012-2013 Human Anatomy and Physiology, Illinois State University
2009-2010 Wildlife Biology, Virginia Tech

Guest Lecturer

2015 Ecological Physiology of Animals, Illinois State University
2017 Human Ecology, Illinois State University

Seminar Series Organizer

2017 An Integrative Perspective of Climate Change, Illinois State University
An undergraduate and graduate student discussion group

STUDENT MENTORING

Haley Nichols 2015-present *Senior Thesis Student*

Seasonal variation in the production of behavioral types in Trachemys scripta

Poster presentation, Animal Behavior Conference, Indiana University, March 2016

Third Place Poster Award

Exploring underlying mechanisms in seasonal behavioral types of Trachemys scripta

Poster presentation, Phi Sigma Research Symposium, Illinois State University, April 2017

Judge's Choice Award

Colleen Connelly 2017-present

Thermal dynamics of incubation in turtles.

Becca Cohler 2013-2015

The effects of incubation temperature and season on hatchling morphology and pigmentation.

Tyaa Nathaniel 2012-2013

Consistent Individual behaviors important for early survival in Trachemys scripta hatchlings.

PROFESSIONAL SERVICE

Journal Peer Reviewer: *Proceedings of the Royal Society B, Functional Ecology, Zoo Biology, Integrative Zoology, Journal of Animal Ecology*

Graduate Student Representative on Public Relations Committee, School of Biology, ISU 2015-present

Beta Lambda Chapter of Phi Sigma, President 2014-2015, Secretary 2013-2014

Personal and Professional Development for a Career in Science, Organizer 2015

Phi Sigma Research Symposium, Dr. Jaap de Roode keynote speaker, Organizer 2015

OUTREACH

MapGive, Create maps for rural areas worldwide to facilitate rapid disaster relief 2015-Current

ParkLands Foundation and The Nature Conservancy, Habitat Restoration Event, Organizer 2015, 2016

Franklin Farm Prairie Restoration, volunteer 2012-current

ISU High School Research Symposium, judge 2014

Boy Scouts of America, volunteer speaker 2014

PHOTOGRAPHY

University Galleries, Student Annual Exhibit, Normal, IL 2015

Irving S. Tick Award in Photography

National Geographic, Published in Daily Dozen Sept. 23, 2014

Wonders of Oceana, Natural Attractions, 1st Place 2014

References

Dissertation Advisor

Dr. Rachel Bowden. Distinguished Professor. School of Biological Sciences, Illinois State University, Campus Box 4120, Normal, IL 61790. (309) 438-3834. rmbowde@ilstu.edu

Dissertation Committee

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Dr. Joe Casto. Associate Professor. School of Biological Sciences, Illinois State University, Campus Box 4120, Normal, IL 61790. (309) 438-2694. jmcasto@ilstu.edu