

## MICHAEL W. SEARS, PH.D.

---

Department Of Biological Sciences  
Clemson University • Clemson, SC 29630  
Email: [thermalecology@gmail.com](mailto:thermalecology@gmail.com)  
Web: <http://www.thermalecology.com>

### EDUCATION

---

#### *Degrees*

Ph.D., University of Pennsylvania, *Ecology & Evolutionary Biology* 2001  
B.S., Rhodes College, *Biology* 1993

#### *Academic honors*

National Science Foundation Postdoctoral Fellowship in Biological Informatics 2002-2004  
National Science Foundation Graduate Research Trainee 1999-2000  
National Science Foundation Research Experience for Undergraduates 1991  
Rhodes College University Scholarship 1989-1993

### PROFESSIONAL EXPERIENCE

---

#### *Academic Positions*

Associate Professor, Department of Biological Sciences, Clemson University 2015-present  
Assistant Professor, Department of Biological Sciences, Clemson University 2012-2015  
Assistant Professor, Department of Biology, Bryn Mawr College 2009-2012  
Assistant Professor, Department of Zoology, Southern Illinois University 2005-2009  
Post-doctoral Fellow, Department of Biology, University of Nevada, Reno 2004-2005  
Post-doctoral Fellow, Department of Life Science, Indiana State University 2002-2004

#### *Other Positions*

Editorial Board, *Physiological and Biochemical Zoology* 2014-2019  
Editorial Board, *Integrative and Comparative Biology* 2012-2017  
Editorial Board, *Public Library of Science ONE* 2013-present  
Editorial Board, *Temperature* 2014-2015  
Chair-elect, *Division of Ecology and Evolution*,  
Society for Integrative and Comparative Biology 2013-2014  
Chair, *Division of Ecology and Evolution*,  
Society for Integrative and Comparative Biology 2015-2017  
Divisional Program Officer, Society for Integrative and Comparative Biology 2009-2012

## GRANTS AND FUNDING

---

### *Pending*

**National Science Foundation.** Collaborative Research: Testing a novel theory of thermoregulation during biotic interactions in spatially explicit landscapes. PI with Michael Angilletta (Arizona State University), 2016. Requested amount: \$514,889.00.

### *Funded proposals and other funding*

**National Science Foundation.** Meeting: Beyond the Mean: Biological Impacts of Changes in Temperature Variation, SICB, Portland, Oregon, January 2016 (\$15,475). Co-PI with H. Arthur Woods (University of Montana) and Michael Dillon (University of Wyoming), 2015-2016.

**National Science Foundation.** Research in Biological Sciences: From Genomes to phenomes--exploring function across scales (\$351,682), 2015-2018. Co-PI with Victoria Corbin (Clemson).

**National Science Foundation.** Graduate Research Fellowship Program to Michael Carlo, doctoral advisee (\$161,000), 2015-2018.

**Company of Biologists.** Scientific Meeting Grant: "Beyond the mean: Biological impacts of changes in temperature variation" (£2,000), 2015-2016. Co-PI with Michael Dillon (University of Wyoming) and H. Arthur Woods (University of Montana).

**Society for Integrative and Comparative Biology** (\$1,750 divisional support; \$18,920 cost share from SICB), 2016. Society-wide symposium, "Beyond the mean: Biological impacts of changing patterns of temperature variation". Co-organizer with Michael Dillon (University of Wyoming) and Arthur Woods (University of Montana).

**National Science Foundation.** Collaborative Research: Testing a novel theory of thermoregulation during biotic interactions in spatially explicit landscapes. PI with Michael Angilletta (Arizona State University), 2014. **Invited for full competition, but not funded.**

**National Science Foundation.** IOS Preliminary Proposal: Collaborative Research: Testing a novel theory of thermoregulation during biotic interactions in spatially explicit landscapes. (PI with Michael Angilletta), 2013. **Invited for full competition, but not funded.**

**National Science Foundation.** IOS Preliminary Proposal: Toward a theory of thermoregulation in complex landscapes: testing spatially-explicit models with large-scale field experiments. PI with Michael Angilletta (Arizona State University), 2012. **Invited for full competition, but not funded.**

**Howard Hughes Medical Institute** (\$1,000,000) Capstone Award for Undergraduate Science Education. Co-authored with Peter Brodfuehrer and Gregory Davis (Bryn Mawr College), 2012.

**National Science Foundation** (\$25,222) Research Opportunity Award: "Incorporating Physiological Variation in Mechanistic Range Models for Ecological Forecasting", named investigator to work with Michael Angilletta at Arizona State University (authored by MW Sears), 2012-2013.

**National Science Foundation** (\$200,000) Transforming Undergraduate Education in Science (Type-1 grant), Collaborative Research: "Science of Information: Bringing Many Disciplines Together", co-PI with Deepak Kumar (lead at Bryn Mawr) and Mark Ward (Purdue University). 2012-2013.

**National Science Foundation** (\$25,000,000), funded collaborator, 2009-2012

Science Technology Center: Center for the Science of Information (A multi-institution center including Purdue University, Bryn Mawr College, Howard University, Massachusetts Institute of Technology, Princeton University, Stanford University, University of California-Berkeley, University of California-San Diego, and the University of Illinois at Urbana-Champaign).

**Society for Integrative and Comparative Biology** (\$2000), 2011.

Symposium, "A synthetic approach to the response of organisms to climate change: The role of thermal adaptation"

**National Science Foundation** (\$49,250), 2009-2010.

Starter Grant: "Testing simulation models of animal movement under thermoregulatory constraint"

**National Science Foundation** (\$240,000). PI with Michael Angilletta (Indiana State University) and Co-PI William Mitchell (Indiana State University). 2006-2008.

Collaborative Research: "Toward a spatially-explicit theory of the cost of thermoregulation"

**National Science Foundation** (\$15,000), Co-PI with Michael Angilletta, 2003.

Symposium: "The evolution of thermal reaction norms for growth rate and body size for ectotherms"

**National Science Foundation** (\$100,000), 2002-2004.

Postdoctoral Fellowship in Biological Informatics: "Quantitative mapping of the thermal environments of small animals across scales"

## PUBLICATIONS

---

*Note:* As of 8/7/2016, my publications have been cited 1921 times, achieving an h-index of 20, a g-index of 39, and an e-index of 37.05 (using Harzing's *Publish or Perish* software).

*In preparation*

**Sears MW**, O Levy, MJ Angilletta. Fractal dimension of landscape features drives activity of terrestrial ectotherms (for *Ecology Letters*).

**Sears, MW**. Evidence for selective advantages of body size in free-ranging sagebrush lizards, *Sceloporus graciosus* (for *Ecology and Evolution*).

Sears MW, MJ Angilletta. The role of thermal heterogeneity on competitive interactions among individuals: A review of concepts and a model (for *American Naturalist*)

*Peer-reviewed publications* (\* undergraduate co-author)

Riddell EA, E Apanovitch, J Odum\*, **MW Sears**. Physical calculations of resistance to water loss improve predictions of species range models. *Ecological Monographs*, *accepted*.

**Sears MW**<sup>†</sup>, Angilletta MJ, MS Schuler, J Borchert, K Dilliplane\*, M Stegman\*, T Rusch\*, W Mitchell. 2016. Configuration of the thermal landscape determines thermoregulatory performance of ectotherms. *Proceedings of the National Academy of Science USA*, 113:10595-10600.

Pincebourde S, C Murdoch, M Vickers, **M Sears**. Fine-scale microclimatic variation can shape the

- responses of organisms to global change in both natural and urban environments. *Integrative and Comparative Biology* 56:45-61
- Riddell EA, **MW Sears**. 2015. Geographic variation of resistance to water loss within two species of lungless salamanders: implications for activity. *Ecosphere* 6: art86.
- Wone BWM, P Madsen, ER Donovan, MK Labocha, **MW Sears**, CJ Downs, D Sorensen, JP Hayes. 2015. A strong response to selection on mass-independent maximal metabolic rate without a correlated response in basal metabolic rate. *Heredity* 114: 419-427
- Sears MW**, MJ Angilletta. 2015. Costs and benefits of thermoregulation revisited: both the heterogeneity and spatial structure of temperature drive energetic costs. *American Naturalist* 185: E94-E102. **Recommended by Faculty of 1000.**
- Caruso NM, **MW Sears**, DC Adams, KL Lips (2014) Widespread reductions in body size of salamanders in response to climate change. *Global Change Biology* 20:1751-1759.
- Bogosian V III, EC Hellgren, **MW Sears**, RW Moody (2012) High resolution niche models via a correlative approach: comparing and combining correlative and process-based information. *Ecological Modelling*, 237-338:63-73.
- Niehaus AC, MJ Angilletta, **MW Sears**, CE Franklin, RS Wilson (2012) Predicting the physiological performance of ectotherms in fluctuating thermal environments. *Journal of Experimental Biology*, 215:694-701. **Recommended by Faculty of 1000.**
- Sears MW**, MJ Angilletta (2011) Responses of organisms to climate change: a synthetic approach to the role of thermal adaptation. *Integrative and Comparative Biology* 51: 662-665.
- Angilletta, MJ, **MW Sears** (2011) Grand Challenges: Coordinating theoretical and empirical efforts to understand the linkages between organisms and environments. *Integrative and Comparative Biology* 51: 653-661.
- Sears MW**, E Raskin\*, MJ Angilletta (2011) The world is not flat: Defining relevant thermal landscapes in the context of climate change. *Integrative and Comparative Biology* 51: approach: 666-675.
- Schuler MS, JJ Storm, **MW Sears**, BS Cooper, BH Williams, MJ Angilletta (2011) Isopods failed to acclimate their thermal sensitivity of locomotor performance during predictable or stochastic cooling. *Public Library of Science ONE* 6:e20905.
- Schuler MS, MJ Angilletta, **MW Sears** (2011) Food availability does not affect the preferred body temperature of Yarrow's spiny lizard. *Journal of Thermal Biology* 36:112-115.
- Buckley L, M Urban, M Angilletta, L Crozier, L Rissler, **M Sears** (2010) Can mechanism inform species' distribution models? *Ecology Letters* 13: 1041-1054. **Recommended by Faculty of 1000. Cited in IPCC WGII AR5 Chapter 4.**
- Sears MW**, JP Hayes, M Banta, D McCormick. (2009) Out in the cold: physiological capacity influences behavior in deer mice. *Functional Ecology* 23: 774-783.
- Wone B, **MW Sears**, M Labocha, E. Donovan, JP Hayes (2009) Genetic variances and covariances of metabolic traits in *Mus musculus* and a genetic test of the aerobic capacity model for the evolution of endothermy *Proceedings of the Royal Society of London B* 276: 3695-3704. **Highly Saved. Highly Cited.**
- Angilletta MJ, **MW Sears**, R Pringle\*. (2009) The spatial dynamics of nesting behavior: lizards shift microhabitats to construct nests with beneficial thermal properties. *Ecology* 90: 2933-2939. **Highly Saved. Highly Cited.**
- Sears MW**, J Diffendorfer, KL Lips, JR Mendelson III (2008) Amphibian declines and issues of inference: response to Parmesan and Singer. *Public Library of Science Biology* 14 April 2008.

- Lips KR, J Diffendorfer, JR Mendelson III, **MW Sears** (2008) Riding the wave: Climate change, disease, and amphibian declines. *Public Library of Science Biology* 6: 441-454. **Cited in IPCC WGII AR5 Chapter 4.**
- Angilletta MJ, RS Wilson, AC Niehaus, PL Ribeiro, **MW Sears**, CA Navas (2007) Urban physiology: city ants possess high heat tolerance. *Public Library of Science One*, 2: e258.
- Tull JC, **MW Sears** (2007) Moist seeds increase rodent trap success. *Western North American Naturalist* 67: 520-523.
- Sears MW**, JP Hayes, CS O'Connor, K Geluso, J Sedinger (2006) Individual variation in thermogenic capacity affects above-ground activity of high altitude deer mice. *Functional Ecology*, 20: 97-104.
- Sears MW** (2005) Geographic variation in the life history of the sagebrush lizard: the role of thermal constraints on activity. *Oecologia* 143: 25-36.
- Sears MW** (2005) Resting metabolic expenditure as a potential source of variation in growth rates of the sagebrush lizard. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 140: 171-177.
- Angilletta MJ, **MW Sears** (2004) The evolution of thermal reaction norms for growth rate and body size in ectotherms: an introduction to the symposium. *Integrative and Comparative Biology* 44: 401-402.
- Sears MW**, MJ Angilletta (2004) Body size clines in *Sceloporus* lizards: proximate mechanisms and demographic constraints. *Integrative and Comparative Biology* (formerly *American Zoologist*) 44: 433-442.
- Angilletta MJ, **MW Sears**, TD Steury (2004) Temperature, growth rate, and body size in ectotherms: fitting pieces of a life history puzzle. *Integrative and Comparative Biology* 44: 498-509.
- Angilletta MJ, CE Oufiero, **MW Sears** (2004) Thermal adaptation of maternal and embryonic phenotypes in a geographically widespread ectotherm. *Proceedings of the Third International Conference of Comparative Physiology and Biochemistry, International Congress Series* 1275: 258-266.
- Sears MW**, MJ Angilletta (2003) Life history variation in the sagebrush lizard (*Sceloporus graciosus*): phenotypic plasticity or local adaptation? *Ecology* 84:1624-1634.
- Angilletta MJ, **MW Sears** (2003) Is parental care the key to understanding endothermy in birds and mammals? *American Naturalist* 162: 821-825.
- Angilletta MJ, **MW Sears**, RS Winters (2001) Seasonal variation in reproductive effort and its consequences for offspring size in the lizard *Sceloporus undulatus*. *Herpetologica* 57: 365-75.
- Angilletta MJ, **MW Sears** (2000) The metabolic cost of reproduction in an oviparous lizard. *Functional Ecology* 14:39-45.
- Kesler DH, T Moore\*, **M Sears\***, J Scherer\*, R Pardiek\*, R Reardon\* (1994) Two larval odonate communities of the Edward J. Meeman Biological Station in western Tennessee. *Journal of the Tennessee Academy of Sciences* 69: 59-62.

#### Reports to agencies

- Fitzgerald LA, Allen T, Chan LM, Chopp J, Dixon JR, Ferguson G, Gluesenkamp A, Hibbitts TJ, Hill D, Hill MT, Howard R, Leavitt DJ, Miles DB, Painter CW, Pifer E, Ryberg WA, **Sears M**, Snell HL (2012). The Research Program on *Sceloporus arenicolus*: Integration of findings, gaps in knowledge, and priorities for conservation oriented research. Report to Center of Excellence in Hazardous Materials Management (CEHMM), Carlsbad, NM.

- Fitzgerald LA, **MW Sears**, C.W. Painter (2005) Inter-dune dispersal of sand dune lizards (*Sceloporus arenicolus*) in the Mescalero Sands Ecosystem. Annual Report to the New Mexico Fish and Game.
- Sears MW**, DD, Murphy, CR Tracy (2002) Effects of off-road use on communities of lizards and small mammals in the Mojave desert. Clark County Multiple Species Habitat Conservation Plan Annual Report.

#### *Media coverage*

- Mullen, Brian. 2014. Study: Salamanders shrinking due to climate change. Many major media sources picked up this story (see list here: <http://blogs.clemson.edu/discovery/2014/03/25/study-salamanders-shrinking-due-to-climate-change/>).
- Pennisi, E. 2012. Computational Biology: Virtual Hot Spots. *Science* 336:172-174.
- Revkin, A. 2008. Link to Global Warming in Frogs' Disappearance Is Challenged. New York Times (Science Section). <http://www.nytimes.com/2008/03/25/science/25frog.html>
- Hotz, R. 2007. Brazil's Urban Ants May Predict Reaction To Warming Trends. *The Wall Street Journal*. <http://online.wsj.com/news/articles/SB117751355408682083>

## **Presentations**

---

#### *Invited Seminars and Symposia*

- Sears MW (2016) Moving from Micro to Macro: Scaling Interactions Between Organisms and Microclimates to Predict Species Ranges. Invited Seminar, Department of Biological Sciences, Virginia Tech.
- Sears MW (2016) The role of thermal heterogeneity on competitive interactions among individuals: A review of concepts and a model. Symposium titled, "Beyond the Mean: Biological Impacts of changing patterns of temperature variation" at the SICB Annual Meeting, Portland OR.
- Sears MW (2016) Moving from Micro to Macro: Scaling Interactions Between Organisms and Microclimates to Predict Species Ranges. Invited Seminar, School of Life Sciences, Arizona State University.
- Sears MW (2016) Moving from Micro to Macro: Scaling Interactions Between Organisms and Microclimates to Predict Species Ranges. Invited Seminar, Department of Ecology, University of Georgia.
- Sears MW (2014) Moving from Micro to Macro: Scaling Interactions Between Organisms and Microclimates to Predict Species Ranges. Seminar, Savannah River Ecology Laboratory, Aiken, SC.
- Sears MW (2014) Moving from Micro to Macro: Scaling Interactions Between Organisms and Microclimates to Predict Species Ranges. Departmental Seminar, Clemson University, Clemson, SC.
- Angilletta MJ, LB Buckley, TH Keitt, A Leache, O Levy, MW Sears (2014) The new thermal biology: building a predictive theory for real problems. Keynote address at International workshop HETEROCLIM: The response of organisms to climate change in heterogeneous environments held 10-14 June 2014 in Loches, France.

- Sears, MW (2014) What do we really mean by a unified theory and how can agents get us there? Gordon Conference on Unifying Ecology Across Scales: The Role of Nutrients, Metabolism, and Physiology, University of New England.
- Sears MW (2014) Scaling the consequences of behavioral thermoregulation from the home ranges of individuals to species distributions. 5th International Symposium on the Physiology and Pharmacology of Temperature Regulation (PPTR), Kruger National Park, South Africa.
- Sears MW (2014) Organismal responses to climate reconsidered, a spatial perspective. Seminar, Department of Biological Sciences, University of South Carolina.
- Sears MW (2013) Rethinking organismal responses to climate, a spatial perspective. Seminar, Department of Biology, College of Charleston.
- Sears MW (2013) Rethinking responses of organisms to climate, a spatial perspective. Seminar, Computational Ecology and Epidemiology Group, University of Georgia.
- Sears MW (2012) Challenges for predicting the responses of organisms to changing climates. Invited Seminar, Department of Biology, Ohio University.
- Sears MW (2012) Predicting species responses to changing climates: insights from the physiology and behavior of individuals. Invited Seminar, Department of Biology, Georgia Southern University.
- Sears MW (2012) Spatial modeling of bioenergetic landscapes: Relevance for *Sceloporus arenicolus*. Research Integration Workshop on *Sceloporus arenicolus*. Texas Cooperative Wildlife Collection, Texas A&M University, College Station, TX.
- Sears MW (2011) Challenges for predicting the responses of organisms to changing climates. Invited Seminar, Villanova University.
- Sears MW (2011) The Promise and Perils of Predicting Species Ranges in a Changing World. Invited talk, Cramer Seminar Series, Dartmouth College.
- Sears MW (2011) Challenges for understanding the responses of organisms to climate change: Addressing thermal heterogeneity through space and time. Invited seminar, The Ecosystems Center, Marine Biological Laboratory at Woods Hole, MA.
- Sears MW (2011) The Promise and Perils of Predicting Species Ranges in a Changing World. Invited seminar, Temple University.
- Angilletta MJ, MW Sears, Lauren Buckley. 2011. The yin and yang of thermal adaptation: physiological and behavioural plasticities in a warming world. Plenary seminar, Annual Meeting of the Society of Experimental Biology, Glasgow, Scotland.
- Angilletta MJ, MW Sears, Lauren Buckley. 2011. Behavioral responses to climate change. Research Experience for Undergraduate Seminar Series, Sevilleta Long Term Ecological Research Station, University of New Mexico.
- Sears MW, E Raskin\*, MJ Angilletta (2011) The world is not flat: defining the thermal landscape...again. Symposia talk for "A Synthetic Approach to the Response of Organisms to Climate Change: The Role of Thermal Adaptation" at the SICB Annual Meeting, Salt Lake City, UT.
- Angilletta MJ, MW Sears (2011) The role of evolutionary theory in predicting responses to environmental warming. Symposia talk for "A Synthetic Approach to the Response of Organisms to Climate Change: The Role of Thermal Adaptation" at the SICB Annual Meeting, Salt Lake City, UT.
- Sears MW (2010) The world is not flat: Implications for managing the impacts of climate change. Ecolunch seminar series, University of Pennsylvania.

- Sears MW (2010) Going on the Academic Job Market: Advice from faculty members. Academic Career Conference series sponsored by Career Services and the Vice Provost for Education at the University of Pennsylvania.
- Sears MW, MJ Angilletta (2010) Adaptation of thermal reaction norms along a latitudinal gradient: implications for the responses of species ranges to climate. Invited talk in symposium entitled, "Does Biology (physiology, ecology, evolution) Matter in Predicting How Species' Distributions Will Respond to Climate Change?" at the 95th Annual Meeting of the Ecological Society of America held in Pittsburgh, PA.
- Sears MW (2010) Why Good Models of Species Ranges Fail: Relationships of Individuals with Landscapes...It's Complicated. Ecology and Evolution Seminar Series, Rutgers University
- Sears MW (2010) Toward a spatially-explicit theory of behavioral thermoregulation, or how I gave up lizards for electrons. MathBio Seminar Series, Swarthmore College.
- Angilletta MJ, MW Sears (2009) Invited seminar, Darwin's Living Legacy: A Conference on Evolution and Society in Alexandria, Egypt.
- Sears MW (2009) The promise and perils of modeling species ranges: Why good models fail. Symposia speaker, 10th Annual Bioscience Research & Technology Review Day, University of Maryland.
- Sears MW (2009) What can individual movements of thermoregulating organisms tell us about species response to climate change? Seminar, Department of Biology, St. Joseph's University, Philadelphia, PA.
- Sears MW (2009) Turning up the heat on lizards: integrating principles of dispersal and thermoregulation to better understand responses to climate. Seminar, Department of Biology, Rhodes College, Memphis, TN.
- Sears MW (2008) Integrating animal dispersal and thermoregulation: theoretical considerations and practical applications. Seminar, Department of Biology, Bryn Mawr College, Philadelphia, PA.
- Sears MW (2008) Spatial aspects of thermoregulation: theoretical, experimental, and natural perspectives. Seminar, Department of Biological Sciences, Clemson University.
- Sears MW (2008) Integrating animal dispersal and thermoregulation: theoretical considerations and practical applications. Seminar, Sevilleta Longterm Ecological Research Field Station, University of New Mexico.
- Lips K, J Diffendorfer, J Mendelson, M Sears (2007). Amphibian population declines, disease, and climate change. Organized Oral Session: Climate Change and Disease Ecology: Challenges to the Restoration and Maintenance of Suitable Pestilence. Ecological Society of America, Annual Meeting to be held in San Jose, CA.
- Sears MW (2007) Evaluating and refining tests of the cost-benefit model of thermoregulation: a spatially-explicit perspective. Seminar, Department of Biology, University of Nevada, Reno.
- Sears MW (2007) Animal movements and thermoregulation: a spatially-explicit perspective. NCEAS working group on Dynamic Species Ranges, Santa Barbara, CA.
- Sears MW (2006) Evaluating tests of the cost-benefit model of thermoregulation: perspectives from space. Seminar, Center for Ecology, Southern Illinois University, Carbondale.



- Sears MW (2006) Toward a spatially-explicit view of the thermal ecology of lizards. Seminar, Herpetology Group, Washington University at St. Louis.
- Sears MW (2006) Toward a spatially explicit theory of thermoregulation. Seminar, Center for Ecology, Southern Illinois University, Carbondale.
- Sears MW (2005) Flatland revisited, or what it really means to be a small thermoregulating ectotherm. Seminar, Department of Biology, University of California, Riverside.
- Sears MW (2005) The influence of thermal resources on the ecology of lizards: from individuals to landscapes. Seminar, Department of Zoology, Southern Illinois University, Carbondale.
- Sears MW (2005) Constructing spatially-explicit maps of operative temperatures for small ectotherms. Seminar, Department of Ecology and Organismal Biology. Indiana State University.
- Angilletta, M.J, CE Oufiero, MW Sears (2004) Maternal behavior and embryonic physiology: conflict or compromise? From the symposium titled, "Thermal Biology of Reptiles and Amphibians," held at the Third International Conference of Comparative Physiology and Biochemistry. Ithala, S. Africa.
- Sears MW (2004) The influence of thermal resources on the ecology of lizards: from individuals to landscapes. Seminar, Kellogg Biological Station, Michigan State University.
- Sears MW, MJ Angilletta, CE Oufiero & WP Porter (2004) Getting back to nature: ecological influences on patterns of growth and body size in squamate reptiles. Symposium: The evolution of thermal reaction norms for growth rate and body size for ectotherms. Society for Integrative and Comparative Biology, Annual Meeting held New Orleans, LA.
- Angilletta MJ, MW Sears, TD Steury (2004) Temperature, growth rate, and body size in ectotherms: fitting pieces of a life history puzzle. Symposium: The evolution of thermal reaction norms for growth rate and body size for ectotherms. Society for Integrative and Comparative Biology, Annual Meeting held in New Orleans, LA.
- Sears MW (2001) Phenotypic plasticity of life history in the sagebrush lizard. Seminar, Department of Life Sciences, Indiana State University.

*Contributions at meetings* (\* undergraduate co-author)

- Carlo MA, MW Sears. (2016) Warming nest temperatures impact survival and growth of Eastern fence lizards (*Sceloporus undulatus*). SICB Annual Meeting , Portland OR.
- Apanovitch EK, EA Riddell, MW Sears. (2016) Stressed to the limit: Implications of geographic variation of stress across the range limit of a lungless salamander, *Plethodon metcalfi*. SICB Annual Meeting , Portland OR.
- Rush TW, MW Sears, MJ Angilletta (2016) Beyond lethality – costs of varying thermal resources under the perceived risk of predation. SICB Annual Meeting , Portland OR.
- Riddell EA, J Odum\*, MW Sears (2016) Improved measurements of skin resistance to water loss using first principles. SICB Annual Meeting , Portland OR.
- MM Rutledge\*, MA Matlack\*, EA Riddell, MW Sears (2015) Mechanisms of skin resistance to water loss rates in *Plethodon* salamanders across various body sizes. Annual Meeting of the Ecological Society of America, Baltimore, MD.

- M Nielsen\*, MT Stewart\*, E Apanovitch, E Riddell, MW Sears. Using the stress response along an elevational gradient to understand habitat suitability for the Southern gray-cheeked salamander, *Plethodon metcalfi*. Annual Meeting of the Ecological Society of America, Baltimore, MD.
- EA Riddell, EK Apanovitch, **MW Sears** (2015) Acclimatization of skin resistance to water loss within a lungless salamander: Implications for activity. Annual Meeting of the Ecological Society of America, Baltimore, MD.
- EK Apanovitch, EA Riddell, **MW Sears** (2015) Geographic variation of stress across range limits in the terrestrial salamander, *Plethodon metcalfi*. Annual Meeting of the Ecological Society of America, Baltimore, MD.
- M Carlo, EA Riddell, **MW Sears** (2015) Sublethal warming in the nest affects embryo physiology and post-hatching phenotypes in the Eastern fence lizard (*Sceloporus undulatus*). Annual Meeting of the Ecological Society of America, Baltimore, MD.
- EA, Riddell, **M Sears** (2015) Geographic variation of skin resistance to water loss within two species of lungless salamanders: implications for activity. Southeastern Ecology and Evolution Conference held at the University of Georgia. **Best Graduate Student Talk.**
- J Odum\*, E Riddell, M Sears (2015) Using boundary layer resistance to understand how salamanders interact with their environment: a criticism of agar models. Southeastern Ecology and Evolution Conference held at the University of Georgia. **Best Undergraduate Poster**
- M Carlo, E Riddell, **M Sears** (2015) Sublethal warming in the nest affects embryo physiology and post-hatching phenotypes in the Eastern fence lizard (*Sceloporus undulatus*). Southeastern Ecology and Evolution Conference held at the University of Georgia. **Best Graduate Poster.**
- M Carlo, **M Sears** (2015) Can lizard embryos survive climate warming? Thermal constraints on the physiology of developing Eastern fence lizards. *Southeastern Ecology and Evolution Conference held at the University of Georgia.* **Best Rapid Research Talk.**
- E Apanovitch, E Riddell, **M Sears** (2015) Rising Stress: Investigating salamander stressors across range limits using elevation and latitude as climate change proxies. Southeastern Ecology and Evolution Conference held at the University of Georgia.
- M Matlack\*, M Rutledge\*, E Riddell, M Sears (2015) Mechanisms of skin resistance to water loss rates in *Plethodon* salamanders across various body sizes. Southeastern Ecology and Evolution Conference held at the University of Georgia.
- EA Riddell, J Plaskon\*, EK Apanovitch, **MW Sears.** (2015) Reciprocal transplant of salamanders reveals potential local adaptation of acclimatization of water loss rates. Annual Meeting of the Society for Integrative and Comparative Biology in West Palm Beach, FL. **Huey Award Finalist, Division of Ecology and Evolution.**
- M Nielsen\*, MT Stewart\*, E Apanovitch, E Riddell, MW Sears. Using the stress response along an elevational gradient to understand habitat suitability for the Southern gray-cheeked salamander, *Plethodon metcalfi*. 10th Annual ACC Meeting of the Minds Undergraduate Research Conference held at North Carolina State University.
- MA Carlo, EA Riddell, **MW Sears** (2015) Sublethal warming of embryo temperatures affects post-hatching phenotypes in the Eastern fence lizard (*Sceloporus undulatus*). Annual Meeting of the Society for Integrative and Comparative Biology in West Palm Beach, FL.
- EK Apanovitch, EA Riddell, **MW Sears** (2015) Rising Stress: Investigating *Plethodon metcalfi* stressors across range limits using elevation and latitude as climate change proxies. Annual Meeting of the Society for Integrative and Comparative Biology in West Palm Beach, FL.

- MW Sears** (2015) Thermal constraints on activity revisited: Can spatially-explicit estimates of activity predict growth rates of ectotherms? Annual Meeting of the Society for Integrative and Comparative Biology in West Palm Beach, FL.
- MW Sears**, O Levy, MJ Angilletta (2014) Thermal heterogeneity of landscapes drives potential activity of ectotherms. International workshop HETEROCLIM: The response of organisms to climate change in heterogeneous environments held 10-14 June 2014 in Loches, France.
- MW Sears**, O Levy, MJ Angilletta (2014) Fractal dimension of landscape features drives activity of terrestrial ectotherms. Annual Meeting of the Society for Integrative and Comparative Biology in Austin, TX.
- E Riddell, **MW Sears** (2014) High and Dry: Responses of Evaporative Water Loss Along an Elevational Gradient for Two Species of Lungless Salamanders. Annual Meeting of the Society for Integrative and Comparative Biology in Austin, TX. **Huey Award Finalist, Division of Ecology and Evolution.**
- Rusch TW, **MW Sears**, GF Ray, TL Merlino, MJ Angilletta (2014) Beyond lethality—use of thermal resources under the perceived risk of predation. Annual Meeting of the Society for Integrative and Comparative Biology in Austin, TX.
- Caruso N, **M Sears**, D Adams, K Lips (2013) Widespread declines in body size in Appalachian Plethodontid salamanders. The 98th Annual Meeting of the Ecological Society of America in Minneapolis, MN.
- Sears MW** (2013) Extending models of the thermal niche: Predicting activity from the dispersal of individuals through thermally-structured landscapes. Annual Meeting of the Society of Integrative and Comparative Biology to be held in San Francisco, CA.
- Riddell E, **Sears MW** (2013) Extending thermal games of predator-prey interactions in a spatially-explicit context. Oral presentation accepted for the Annual Meeting of the Society of Integrative and Comparative Biology to be held in San Francisco, CA.
- Rusch T, **Sears M**, Angilletta M. (2013) Competition for thermal resources between males in complex landscapes. Annual Meeting of the Society of Integrative and Comparative Biology to be held in San Francisco, CA.
- Sears MW**, MJ Angilletta, LB Buckley (2012) Responses of species to climate change: the role of thermal adaptation of thermal reaction norms. Annual Meeting of the Society of Integrative and Comparative Biology held in Charleston, SC.
- Wang C\*, **MW Sears** (2012) Challenges of modeling the environments of animals: Features of geospatial datasets bias predictions of thermal heterogeneity. Annual Meeting of the Society of Integrative and Comparative Biology held in Charleston, SC.
- Sears MW** (2010) Spatial arrangements of thermal habitat mediate competition for space. Annual Meeting of the Society of Integrative and Comparative Biology held in Seattle, WA.
- Bogosian V III, EC Hellgren, **M Sears**, RW Moody (2010) Application of ecological niche modeling to translocation efforts. Annual Meeting of The Wildlife Society, Snowbird, UT.
- Sears MW** (2009) Implications of habitat selection and dispersal for the responses of small ectotherms to climate change. Annual Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Sears MW**, T Polnaszek, KS Artita (2009) Optimal decision rules for movement under activity-mortality tradeoffs for small ectotherms in thermally-structured landscapes. Annual Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Angilletta MJ, **MW Sears**, M Schuler, WA Mitchell, T Rouche (2009) Testing models of behavioral thermoregulation in a spatially-explicit context: a large-scale field experiment. Annual

- Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Artita KS, T Polnaszek, **MW Sears** (2009) Strategies for optimization in behavioral and ecological research using evolutionary computation. Annual Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Polnaszek T, KS Artita, **MW Sears** (2009) Should I stay or should I go? Optimal decisions for attack and flight during predator-prey interactions. Annual Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Schuler MS, JJ Storm, **MW Sears**, BS Cooper, BH Williams, MJ Angilletta (2009) Acclimation of thermal physiology in predictable and stochastic environments: a test of optimality theory. Annual Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Bockoven A, M Amarello, **MW Sears** (2009) Implications of tradeoffs between crypsis and thermoregulation for the evolution of animal coloration. Annual Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Smith JJ, **MW Sears** (2009) The implications of body size for habitat selection as a consequence of behavioral thermoregulation. Annual Meeting of the Society of Integrative and Comparative Biology held in Boston, MA.
- Becker SN, K Lips, **M Sears** (2009) Hanging out with the cool frogs: Operative and body temperature effects on population response to disease. Ecological Society of America, Annual Meeting held in Albuquerque, NM.
- Sears MW**, KS Artita, T ShROUT (2008) Using evolutionary algorithms to predict optimal navigational decisions through thermally-structured habitats. Society for Integrative and Comparative Biology, Annual Meeting held in San Antonio, TX.
- Sears MW**, MJ Angilletta (2008) Evaluating the costs of thermoregulation: using movement and spatial arrangement of thermal resources to define cost curves for small lizards. Society for Integrative and Comparative Biology, Annual Meeting held in San Antonio, TX.
- Bogosian V III, EC Hellgren, **MW Sears**, RW Moody (2009) Translocation of Texas horned lizards: Can niche modeling save the horny toad? Annual Meeting of The Wildlife Society, Monterey, CA.
- JJ Smith, **MW Sears** (2008) Perspectives of scale: the influence of body size, thermoregulation, and movement on the potential for interspecific interactions. Society for Integrative and Comparative Biology, Annual Meeting held in San Antonio, TX.
- Wone, B, **MW Sears**, MK Lobocho, ER Donovan, JP Hayes (2008) Heritability and genetic trends for metabolic traits in laboratory mice. Society for Integrative and Comparative Biology, Annual Meeting held in San Antonio, TX.
- Niehaus, AC, MJ Angilletta, **MW Sears**, CE Franklin, RS Wilson. (2008) Growing up in an unstable environment: Consequences of diel thermal variation to developing anurans. Society for Integrative and Comparative Biology, Annual Meeting held in San Antonio, TX.
- Logan M\*, **MW Sears**, M Angilletta (2008) Being a mom isn't always so hot: the effects of reproductive status on thermoregulatory behavior in squamate reptiles. Society for Integrative and Comparative Biology, Annual Meeting held in San Antonio, TX.
- Sears MW** (2007) Exploring the influence of micro-scale spatial arrangements of surface temperatures on animal movements under climate change scenarios. Ecological Society of America, Annual Meeting to be held in San Jose, CA.
- Sears MW** (2007) Proceed with caution: invalidating tests of the cost-benefit model of thermoregulation with spatially-explicit movement simulations. Society for Integrative and Comparative Biology, Annual Meeting held in Phoenix, AZ.

- Hayes JP, **MW Sears**, CS O'Connor, M Banta (2006) Out in the cold: physiological performance influences individual behavior in deer mice. Society for Integrative and Comparative Biology, Annual Meeting held in Orlando, FL.
- Sears MW**, JP Hayes, K Geluso, CS O'Connor (2005) Physiological correlates of behavior: does maximal oxygen consumption influence activity in free-ranging deer mice? Society for Integrative and Comparative Biology, Annual Meeting held in San Diego, CA.
- Sears MW**, GS Bakken, MJ Angilletta, L Fitzgerald (2005) Using artificial neural networks to model the operative temperatures of small animals in a spatially-explicit context. Society for Integrative and Comparative Biology, Annual Meeting held in San Diego, CA.
- Sears MW**, KE Nussear, ET Simandle, CR Tracy (2002) Size, color, and position *do* matter: the influence of physical attributes on the performance of operative temperature models. Society of Ichthyologists and Herpetologists, Annual Meeting in Kansas City, MO.
- Sears MW**, AE Dunham (2002) The influence of thermal heterogeneity on life history variation among elevationally separated populations of sagebrush lizards. Society for Integrative and Comparative Biology, Annual Meeting held in Anaheim, CA.
- Sears MW**, MJ Angilletta (2001) Phenotypic plasticity of life history in the sagebrush lizard (*Sceloporus graciosus*). Society for the Study of Amphibians and Reptiles, Annual Meeting held in Indianapolis, IN.
- Angilletta MJ, **MW Sears** (2001) Latitudinal variation in the growth efficiency of lizard embryos. Society for the Study of Amphibians and Reptiles, Annual Meeting held in Indianapolis, IN.
- Sears MW**, MJ Angilletta (2000) The effect of water supplementation on hatchling growth in the sagebrush lizard (*Sceloporus graciosus*). Ecological Society of America, Annual Meeting held in Park City, UT.
- Sears MW** (2000) Sources of variation in growth in the sagebrush lizard. Penn-Princeton Colloquium held at the University of Pennsylvania, Philadelphia, PA.
- Sears MW** (2000) Metabolic expenditure as a proximate source of variation in growth in the sagebrush lizard (*Sceloporus graciosus*). Society for Integrative and Comparative Biology, Annual Meeting held in Atlanta, GA.
- Angilletta MJ, **MW Sears** (2000) Intraspecific variation in the energy budgets of lizard embryos. Society for Integrative and Comparative Biology, Annual Meeting held in Atlanta, GA.
- Angilletta, MJ, **MW Sears** (1999) The metabolic cost of reproduction in an oviparous lizard. Society for Integrative and Comparative Biology, Annual Meeting held in Denver, CO.
- Methratta ET, R Sherwood, **MW Sears**, C Cubbage (1997) Meta-analysis of positive interactions in marine systems. Benthic Ecology Meeting, Portland, Maine.
- Sears MW** (1992) Variation in lipid composition among juvenile and adult mosquitofish (*Gambusia affinis*) from contrasting environments. Pew Midstates Consortium for Undergraduate Research Symposium held in St. Louis, MO.
- Sears MW**, T Hill (1990) Non-denaturing electrophoresis of cellulases in the Oomycete fungus, *Achlya ambisexualis*. Tennessee Academy of Sciences, Western Division Annual Meeting held in Memphis, TN.

## SYNERGISTIC ACTIVITIES

---

Invited Participant in Macrophysiology Workshop in San Francisco, CA. January 2013.

Member of Program Committee for the Society of Integrative and Comparative Biology. Term from

2009-2012.

Invited member for the Symposium Committee for the annual meeting of the Wildlife Society. 2012.

Member of the Tri-College (Bryn Mawr, Haverford, Swarthmore) Working Group on Environmental Studies charged with the goal of creating a shared environmental studies concentration/minor. 2010-2012.

Symposium organizer, "Responses of organisms to climate change: a synthetic approach to the role of thermal adaptation", for the 2011 Annual Meeting of the Society for Integrative and Comparative Biology in Salt Lake City, UT.

Judge for Best Student Paper and Best Postdoctoral Presentation at the Annual Meeting of the Ecological Society of America. 2011.

Member of the Environmental Studies Steering Committee at Bryn Mawr College. 2009-2012.

Member of the Environmental Studies Curriculum Subcommittee at Bryn Mawr College. 2011.

Member of the search committee for an environmental biologist at Haverford College. Fall 2011.

Ad hoc proposal reviewer for IOS and DEB at the National Science Foundation. 2010-2011, 2013.

Served on 6 panels for the Divisions of Environmental Biology and Integrative Organismal Systems at the National Science Foundation during 2010-2012 in Washington, D.C.

Associate Editor for the journal *Herpetologica*. 2006 to 2009.

Served on Panel for the Biological Informatics Postdoctoral Fellowship Program of the National Science Foundation. 2006 and 2008 in Washington, D.C.

Working group entitled, "Mechanistic distribution models: Energetics, fitness, and population dynamics." Four week-long meetings to be held during 2007-2011. Co-sponsored by the National Center for Ecological Analysis Synthesis (NCEAS) and the National Evolutionary Synthesis Center (NESCent).

Reviewer for an international postdoctoral fellowship for National Science Foundation, January 2007.

Ecosystem Modeling Workshop of the Hovsgol GEF Study Area. Held May 14-24, 2006 at Hustain Nuruu, Mongolia. Sponsored by GEF/World Bank.

Nomadic Pastoralism and Climate Change in Inner Asia. Held May 25-26, 2006 at Ulaanbaatar, Mongolia. Sponsored by GEF/World Bank.

Seminar Committee, Department of Biological Sciences, Clemson University. 2013-2014.

## STUDENT ADVISEMENT

---

### *Current graduate advisees*

Eric Riddell, doctoral candidate, Influences of predation risk on thermoregulatory behavior.

Michael Carlo, doctoral candidate beginning 8/13.

Evan Apanovitch, doctoral candidate beginning 8/13.

### *Current committees*

Vanessa Young, doctoral candidate, Clemson University.

Ian Edhlund, doctoral candidate, Clemson University.

Christopher Mayerl, doctoral candidate, Clemson University.

Kelly Diamond, masters candidate, Clemson University.  
Travis Rusch, doctoral candidate, Arizona State University.

*Past undergraduate advisees*

*Sandy Kawano, doctoral candidate, Clemson University.*

Jessica Arbon ('14), Bryn Mawr College, undergraduate independent research (beginning spring/summer '12), Selection on physiology in free-ranging fence lizards.

Abby Hochman ('13), Bryn Mawr College, undergraduate independent research (beginning spring '12), Tradeoffs between predation and crypsis mediated through coloration in fence lizards.

Congwen Wang ('13), Bryn Mawr College, undergraduate independent research, Costs and benefits of animal coloration with regard to thermoregulation and predation.

Madison Schaeffer ('11), Bryn Mawr College, undergraduate independent research, Testing models of animal movement in *Tribolium*.

Evan Raskin ('10) Haverford College, undergraduate independent research, The influence of spatial heterogeneity on animal movements.

Monica Stegmann ('10) Haverford College, NSF Research Experience for Undergraduates & undergraduate independent research, Validation of a new methodology to predict operative environmental temperatures.

Kathy Dilliplane ('10) Bryn Mawr College, NSF Research Experience for Undergraduates. Field tests of models that predict the costs of behavioral thermoregulation.

Michael Logan ('07), SIUC, undergraduate independent research. Topic: "Thermoregulatory behavior of squamate reptiles with respect to reproduction."

Sara Owusu ('09), SIUC, undergraduate independent research, funded through the Illinois Louis Stokes Alliance for Minority Participation & McNair Scholars programs. Topic: "Heritability of correlated metabolic traits in white footed mice."

*Past graduate advisees*

Tim Polnaszek, Masters candidate. Title: "Prediction of optimal decisions for attack and flight during predator-prey interactions using evolutionary programming techniques." (currently a Ph.D. candidate at the University of Minnesota)

Alison Bockoven, Masters candidate. Topic: "Influence of tradeoffs between crypsis and thermoregulation on the evolution of coloration in lizards" (currently a Ph.D. candidate at the Texas A&M University)

*External committee member*

Travis Rusch (2015) The influences of competition and predation on thermoregulation. Ph.D., Arizona State University.

Elliot Quinn (2010) The role of energy expenditure in resource acquisition and energy allocation in free-ranging North American red squirrels (*Tamiasciurus hudsonicus*). Ph.D., McGill University.

*Past graduate committees:*

Sandy Kawano, PhD, Clemson University (2015) Evaluation of the functional capabilities of fins and limbs for moving on land: insights into the invasion of land by tetrapods.

- Sam Crickenberger, PhD Clemson University (2014). Range Limits, Range Shifts, and Lower Thermal Tolerance in the Tropical Barnacle *Megabalanus coccopoma*.
- Sara Becker, Masters, Southern Illinois University. Topic: "Microhabitat use of frogs in the tropics with respect to chytrid disease"
- Jamie Jordan, Ph.D. candidate, Indiana State University. Title: "Interplay between habitat selection and predator avoidance in eastern fence lizards"
- Roberto Brenes, Ph.D. candidate, Southern Illinois University. Title: "Ecological role of tadpoles in tropical montane streams of central Panama"

*Student funding and awards while under my advisement*

- Alison Bockoven. 2008-2009. SIU Master's Fellowship, \$25107.
- Tim Polnaszek. 2008-2009. SIU Master's Fellowship, \$25107.
- Eric Riddell. 2013. Highlands Biological Field Station Richard Bruce fellow. \$4000.
- Eric Riddell. 2013. National Science Foundation Graduate Research Fellowship Honorable Mention.
- Eric Riddell. 2013. \$500. Sigma XI GIAR.
- Eric Riddell. 2014. National Science Foundation Graduate Research Fellowship Honorable Mention.
- Evan Apanovitch. 2013. National Science Foundation Graduate Research Fellowship Honorable Mention.
- Eric Riddell. 2014. Highlands Biological Field Station GIAR \$4000.
- Evan Apanovitch. 2013. Highlands Biological Field Station GIAR \$2000.
- Eric Riddell. 2015. Gaige Award, American Society of Ichthyologists and Herpetologists, \$500.
- Eric Riddell. 2015. Highlands Biological Field Station GIAR \$4000.
- Michael Carlo. 2015. Gaige Award, American Society of Ichthyologists and Herpetologists, \$500.
- Michael Carlo. 2015-2018. National Science Foundation Graduate Research Fellowship, \$161,000.
- Eric Riddell. 2015-2016. Wade Steakhouse Fellowship, \$10000.
- Eric Riddell. 2016-2017. Wade Steakhouse Fellowship, \$10000.

## TEACHING EXPERIENCE

---

*Clemson University, 2012-present.*

Department of Biological Sciences

*Courses Taught:* Comparative Physiology, Comparative Physiology Lab; Integrative Biology Reading Group; Individual Based Modeling; Biology in the News; Biogeography of Climate Change; Evolution.

*Bryn Mawr College, 2009-2012*

Department of Biology

*Courses Taught:* Ecology with Lab, Computational Methods with Lab, Biological Investigations, Introduction to Environmental Studies, Senior Seminar

*Courses developed and submitted to the curriculum:* Evolutionary Ecology



*Southern Illinois University, 2006-2009.*

Department of Zoology

*Courses taught:* Organismal Functional Biology, Comparative Physiology, Senior Seminar, Evolutionary Ecology, Biophysical and Physiological Ecology, Computational Methods for Ecological Modeling, Advanced Computational Methods for Ecological Modeling

*Courses developed and submitted to the curriculum:* Evolutionary Ecology, Computational Methods for Ecological Modeling

*Guest lecturer, Herpetology.* Taught a lecture on body size clines in reptiles.

*Indiana State University, 2004.*

Department of Life Sciences

*Guest Lecturer, Anatomy and Physiology*

Taught a lecture on cellular respiration covering glycolysis, the Krebs cycle, and the electron transport chain.

*University of Nevada, Reno, 2000.*

Department of Biology

*Guest Lecturer, Herpetology*

Taught a series of three lectures covering the life cycles, life history, and reproductive physiology of amphibians and reptiles.

*University of Pennsylvania, 2000.*

School of Arts & Sciences, Department of Biology

*Guest Lecturer, Introductory Biology*

Taught two lectures covering behavioral and physiological thermoregulation, and the structure and function of muscles.

*University of Pennsylvania, 1999.*

School of Arts & Sciences, Department of Biology

*Guest Lecturer, Introductory Ecology*

Taught a lecture on the physiological ecology of ectotherms.

*University of Pennsylvania, 1995-1999.*

School of Arts & Sciences, Department of Biology

*Teaching Fellow:*

Taught laboratories for Introductory Cellular Biology (2 semesters), Introductory Organismal Biology (1 semester). Led weekly one-hour recitations for Vertebrate Physiology (1 semester), Human Biology for Non-majors (1 semester), Introductory Ecology (1 semester), and Conservation Biology (1 semester). For all courses, wrote and graded exams, led review sessions, held office hours for individual tutoring, and aided with grade assignment.

*University of Pennsylvania, 1996-1998.*

College of General Studies, Department of Biology

*Teaching Assistant:*

Taught laboratory sections for Introductory Cellular Biology (2 semesters) and Introductory Organismal Biology (2 semesters).

*University of Pennsylvania, 1996.*

School of Arts & Sciences, Department of Biology

*Head Teaching Assistant, Introductory Organismal Biology*

Coordinated sixteen laboratory sections and supervised eight teaching assistants. Fulfilled administrative duties for the lecture portion of the course. Prepared teaching assistants for weekly laboratory sessions. Wrote and graded student examinations. Aided with grade assignment.

## **PROFESSIONAL AFFILIATIONS**

---

*Society for Integrative and Comparative Biology*

*Ecological Society of America*

*Sigma Xi*

## **JOURNAL REFEREE**

---

*Oecologia* (2000, 2008, 2009), *Journal of Herpetology* (2001, 2004, 2005), *Evolution* (2002, 2012), *Copeia* (2002-2003, 2008), *Journal of Wildlife Management* (2002), *Herpetological Monographs* (2003, 2004), *Herpetologica* (2004, 2006, 2007, 2010), *Integrative and Comparative Biology* (2004, 2012, 2013), *Journal of Animal Ecology* (2005, 2006, 2010), *Physiological and Biochemical Zoology* (2006, 2009, 2010), *Acta Zoologica Sinica* (2006), *American Naturalist* (2007, 2008, 2010, 2012, 2013), *Herpetological Reviews* (2007), *Functional Ecology* (2007, 2009-2013), *Biological Journal of the Linnean Society* (2007, 2009), *Ecology* (2007, 2009, 2012), *Ecological Applications* (2010), *Ecography* (2008), *Comparative Biochemistry and Physiology* (2008), *Evolutionary Ecology* (2008, 2013), *Biological Conservation* (2008), *Current Zoology* (2008), *PLoS ONE* (2009, 2011, 2013), *Animal Behavior* (2010), *Journal of Comparative Physiology* (2011), *Science* (2011, 2013), *Behavioral Ecology* (2012), *Herpetological Journal* (2012), *Animal Behavior* (2012), *Conservation Physiology* (2014), *Ecology Letters* (2014)