

CURRICULUM VITAE

Timothy J. Muir

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EDUCATION

- Ph.D. (August 2009) Zoology, Miami University, Oxford, OH
Dissertation: *Mechanisms and phylogenetic breadth of urea-induced hypometabolism*
- M.S. (August 2007) Zoology, Miami University, Oxford, OH
Thesis: *Osmotic and metabolic responses to dehydration and urea-loading in a terrestrially hibernating frog*
- B.A. (June 2003) Biology, Kalamazoo College, Kalamazoo, MI
Senior project: *Factors affecting levels of oxygen in leatherback turtle nests*

PROFESSIONAL POSITIONS

- 2015-present Associate Professor of Biology, Augustana College, Rock Island, IL
- 2011-2013 Dr. Larry P. Jones Fellow in the Natural Sciences, Augustana College, Rock Island, IL
- 2009-2015 Assistant Professor of Biology, Augustana College, Rock Island, IL
- 2003-2009 Graduate Assistant, Miami University, Oxford, OH
- 2003-2004 Laboratory Coordinator, Laboratory for Ecophysiological Cryobiology, Miami University, Oxford, OH

GRANTS AND AWARDS

- 2012 Sigma Xi Grant in Aid of Research awarded to my student collaborator Manisha Kumar ('13)
- 2012 Recipient of the Dr. Larry P. Jones Endowed Fellowship in the Natural Sciences (Augustana College)
- 2011 Inaugural recipient of the Dr. Larry P. Jones Endowed Fellowship in the Natural Sciences (Augustana College)
- 2009 Promotion to full member of Sigma Xi Research Society
- 2009 Department of Zoology Graduate Research Award (Miami University)
- 2007 Completed the Preparing Future Faculty program, Center for Enhancement of Learning and Teaching at Miami University (selected to participate through a competitive application process)
- 2006 American Physiological Society Abstract Travel Award
- 2005-2006 Miami University Doctoral-Undergraduate Opportunities for Scholarship (DUOS) Award (Mentored Brian Dishong)
- 2005 Elected as student member of Sigma Xi Scientific Research Society
- 2002 Howard Hughes Medical Institute Fellowship (Kalamazoo College)

TEACHING EXPERIENCE

Course Instructor *Becoming Biologists* (BIOL 150; Winter '10-11; Augustana College)
Cell Biology (BIOL 210; Spring '10, '15, Fall '12, Winter '13-14; Augustana College)
Comparative Physiology (BIOL 360; Fall '09, '10, '11, '13; Augustana College)
Human Physiology (BIOL 362; Fall '14, Winter '09-10, '10-11, '12-13, '14-15 Spring '12, '13 '14; Augustana College)
Winter Biology (BIOL 464; Spring '11, '13, '14, Fall '11; Winter '14-15; Augustana College)
Principles of Human Physiology (ZOO 161; Spring '09; Miami University)

MENTORED UNDERGRADUATE RESEARCH

2012-2014 Collaborative research with Augustana College undergraduate Jimmy Wiebler ('14). Jimmy's research investigates the organismal and metabolic responses to brief chilling in hatchling turtles.

2010-2013 Collaborative research with Augustana College undergraduate Manisha Kumar ('13). Manisha's research investigates how seasonal energy use of an ectothermic animal is affected by environmental temperature. She is also part of a project researching the organismal and metabolic responses to brief chilling in hatchling turtles.

2009-2011 Collaborative research with Augustana College undergraduate Curt Perschnick ('12). Curt's research was focused on the organismal and metabolic responses to brief chilling in hatchling turtles.

2009 Mentored Miami University undergraduate Jennifer Krzmarzick. Jennifer's research was focused on biochemical responses to brief chilling in hatchling turtles.

2004-2006 Mentored Miami University undergraduate Brian Dishong as part of the DUOS program. Brian's research was focused on the energetics of overwintering in hatchling painted turtles.

2003-2007 Collaborative field research at Crescent Lake Wildlife Refuge with Dr. John B. Iverson (Earlham College) and Earlham College students Dan Green, Mollye Nardi, John Wagner, Tiauna Washington, David Wolfson, Hassan Salem, Rebecca Prosser, Evan Dalton.

PROFESSIONAL AFFILIATIONS

American Physiological Society
Ecological Research as Education Network
Sigma Xi Scientific Research Society
Society for Integrative and Comparative Biology

PUBLIC OUTREACH & MEDIA COVERAGE

Featured in the article, "[Into the woods: a familiar trail, seen anew](#)", in Radish magazine, November 2013
Research was featured on the WQAD [Channel 8 news](#) at 6 pm on 19 June 2013
Research was featured on the front page of [17 March 2013 issue](#) of the Quad City Times
Presented "Animals in Winter" with Manisha Kumar ('13) to the residents of the Lighthouse at Silvis (IL), an assisted-living community for seniors
Guest science teacher at The McGuffey Foundation School (K-8th grade)
Represented the Laboratory for Ecophysiological Cryobiology at the annual "Ice Fest" in Hamilton, OH
Served as a museum liaison to visiting high-school students and their teachers at the Hefner Zoology Museum at Miami University
Presented the "Local Herpetofauna of Crescent Lake National Wildlife Refuge" at the CLNWR open house in Ellsworth, NE
Member of "Science Alliance" between Miami University and Talawanda Public Schools

PROFESSIONAL SERVICE

Judge for Best Student Poster at the 2012 meeting for the Society for Integrative and Comparative Biology held in Charleston, SC
Served as an outside reviewer for the Meritorious Teaching Award in Herpetology: 2011
Serve as an expert reviewer for:
American Journal of Physiology – Regulatory, Integrative, and Comparative Physiology
Functional Ecology
Journal of Comparative Physiology B
Journal of Experimental Biology
Journal of Experimental Zoology A
Journal of Herpetology
Physiological and Biochemical Zoology
The Ecology and Conservation of Diamondback Terrapin (book)

INSTITUTIONAL SERVICE

2015-present	Chair of the Institutional Animal Care and Use Committee
2014-present	Faculty mentor for the Augustana College football team
2013-present	Member of task force for Ethical and Responsible Conduct report to the Higher Learning Commission
2012-2014	Member of the Student Research Committee
2011-2014	Assistant Professor representative on Faculty Senate

- 2010-present Member of the Symposium Day Committee
 2010-present Member of the Institutional Animal Care and Use Committee
 2010-2012 Member of the Athletics Committee
 2009-present Have written letters of recommendation on behalf of 91 Augustana students

JOURNAL ARTICLES (PEER REVIEWED)

- Muir TJ, Dishong BD*, Lee RE, Costanzo JP 2013. Differential energy use by terrestrially hibernating hatchling turtles (*Chrysemys picta*) exposed to cold, mild, or warm winter conditions. *Journal of Thermal Biology*. 38:324-330.
- Kiss AJ, Muir TJ, Lee RE, Costanzo JP 2011. Seasonal variation in the hepatoproteome of the dehydration- and freeze-tolerant wood frog, *Rana sylvatica*. *International Journal of Molecular Sciences*. 12:8406-8414.
- Muir TJ, Costanzo JP, Lee RE 2010. Urea-induced hypometabolism in the hibernating wood frog (*Rana sylvatica*) is not reflected in isolated mitochondria. *Journal of Comparative Physiology B*. 180:1183-1189.
- Muir TJ, Costanzo JP, Lee RE 2010. Brief chilling to subzero temperature increases cold hardiness in the hatchling painted turtle (*Chrysemys picta*). *Physiological and Biochemical Zoology*. 83:174-181.
- Muir TJ, Costanzo JP, Lee RE 2010. Evidence for urea-induced hypometabolism in isolated organs of dormant ectotherms. *Journal of Experimental Zoology*. 313A:28-34.
- Muir TJ, Costanzo JP, Lee RE 2008. Metabolic depression induced by urea in organs of the wood frog, *Rana sylvatica*: effects of season and temperature. *Journal of Experimental Zoology*. 309A:111-116.
- Muir TJ, Costanzo JP, Lee RE 2007. Osmotic and metabolic responses to dehydration and urea-loading in a terrestrially-hibernating frog. *Journal of Comparative Physiology B*. 177:917-926.
- Iverson JB, Baker PJ, Muir TJ, Dishong BD* 2006. *Chrysemys picta bellii* density and biomass. *Herpetological Review*. 37:341.

IN PREPARATION

- Wiebler JM*, Kumar M*, Muir TJ. Daily sub-zero thermal fluctuations elicit the cold-conditioning response in a vertebrate ectotherm.
- Muir TJ, Kumar M*, Dishong BD*, Iverson, JB. Modeling energy use by hatchling turtles: effects of temperature, thermal variance, and subzero survival strategy.

*Denotes undergraduate student author

INVITED PRESENTATIONS

- 2012 Saving energy by accumulating urea; Rivier University, Nashua, NH
- 2012 Animals in Winter; Lighthouse at Silvis, Silvis, IL
- 2010 Saving energy by accumulating urea; Southern Illinois University-Edwardsville, Edwardsville, IL
- 2005 Hypometabolism induced by urea in a terrestrially hibernating frog; Kalamazoo College, Kalamazoo, MI

CONTRIBUTED PRESENTATIONS AT PROFESSIONAL MEETINGS

- Kumar M*, Wiebler JM*, Muir TJ 2013. Characterizing the cold-conditioning response in a vertebrate ectotherm. ISEPEP5, London, ON.
- Bowne DR, Doran A, Bloch CP, Druckenbrod DL, Dosch J, Fredricksen TS, Garneau D, Genet KS, Kish PA, Kolozsvary MB, Kuserk FT, Lindquist ES, Mankiewicz C, March JG, Muir TJ, Murray KG, Simmons JA, Urban R, Zimmermann C 2013. Population structure of freshwater turtles across North America: an Ecological as Research Education Network (EREN) collaborative project. Ecological Society of America, Minneapolis, MN.
- Muir TJ, Dishong BD*, Costanzo JP, Lee RE 2012. Energy use in terrestrially hibernating hatchling turtles (*Chrysemys picta*) is extremely sensitive to overwintering temperature. SICB, Charleston, SC (Abstract: *Integrative and Comparative Biology* 52:e300)
- Kiss AJ, Muir TJ, Lee RE, Costanzo JP 2011. Comparative iTRAQ™ based mass-spectrometry used to identify seasonal variation in the hepatoproteome of the dehydration- and freeze-tolerant wood frog *Rana sylvatica*. Ohio Physiological Society, Cincinnati, OH.
- Muir TJ, Costanzo JP, Lee RE 2010. Urea-induced hypometabolism in the hibernating wood frog (*Rana sylvatica*) is not reflected in isolated mitochondria. APS, Denver, CO (Abstract: *The Physiologist* 53: 39-40).
- Muir TJ, Costanzo JP, Lee RE 2008. A comparative study of urea-induced hypometabolism in ectothermic animals. SICB, Boston, MA (Abstract: *Integrative and Comparative Biology* 49: e278)
- Muir TJ, Costanzo JP, Lee RE 2007. Urea-induced metabolic depression varies seasonally in isolated organs of the wood frog. SICB, San Antonio, TX (Abstract: *Integrative and Comparative Biology* 47: e211).
- Muir TJ, Costanzo JP, Lee RE 2006. Hypometabolism is correlated with hyperuremia in a terrestrially-hibernating frog. APS, Virginia Beach, VA (Abstract: *The Physiologist* 49: C1-28).
- Dishong BD*, Muir TJ, Costanzo JP, Lee RE 2005. Influence of temperature on overwintering energetics in the hatchling painted turtle, *Chrysemys picta*. SICB, Orlando, FL (Abstract: *Integrative and Comparative Biology* 45: 1125).
- Muir TJ, Costanzo JP, Lee RE 2005. Hypometabolism induced by urea in a terrestrially-hibernating frog. SICB, Orlando, FL (Abstract: *Integrative and Comparative Biology* 45: 1170).
- Muir TJ, Costanzo JP, Lee RE 2004. Brief cold conditioning increases freeze tolerance and chill tolerance in hatchling painted turtles. SICB, San Diego, CA (Abstract: *Integrative and Comparative Biology* 44: 610).
- Sotherland P, Wallace B, Spotila J, Ralph C, Muir T* 2004. Tidal movement of the water table and its effect on oxygen levels in leatherback turtle (*Dermochelys coriacea*) nests at Parque Nacional Las Baulas, Costa Rica. Proceedings of 24th Annual Sea Turtle Symposium.

*Denotes undergraduate student author