

Dr. Eric J. McElroy – Curriculum Vitae

Personal Information:

Address: College of Charleston, Department of Biological Sciences
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Current Position:

Assistant Professor, Biological Sciences, College of Charleston

Education:

Ph.D., Biological Sciences, August 2008, Ohio University, Athens, OH
Major Advisor: Dr. Stephen M. Reilly

B.S., Biology, May 2003, Ohio Northern University, Ada, OH

Grants & awards:

2008: Ohio Center for Ecology and Evolutionary Studies Research Fellowship (\$7,500)
2006: Charles Stearns Memorial Grant-in-Aid in Herpetology, California Academy of Sciences, Title: “The relationship between limb morphology and foraging mode in lizards” (\$1,305)
2006: Ohio University Student Enhancement Award, Title: “The effects of behavior on undisturbed locomotor performance in lizards” (\$5,682)
2006: Phi Delta Theta Scholarship, Title: “The evolution of locomotion in North American and Australian lizards” (\$1,474)
2006: Graduate Student Senate Research Grant, Ohio University (\$474)
2006-2008: University Doctoral Fellowship, Ohio University (\$27,000)
2003: Ohio Board of Regents Scholarship (\$7,500)

Teaching experience:

College of Charleston, Department of Biological Sciences
Human Physiology (BIOL 201)
Ohio University, Department of Biological Sciences:
Ecology in the 21st Century (BIOS 275)
Comparative Vertebrate Anatomy (BIOS 303)
Human Anatomy (BIOS 301)
Introduction to Ecology and Evolution (BIOS 172)
Animal Behavior (BIOS 473)
Ohio University, College of Osteopathic Medicine:
Human Gross Regional Anatomy

Current & past collaborations:

Peter Aerts (University of Antwerp, Belgium), Audrone Biknevičius (Ohio University), Duncan Irschick (Tulane University), Philip Bergman (University of Arizona), Lance McBrayer (Georgia Southern University), Jay Meyers (Northern Arizona University), Robert Verb (Ohio Northern University), Jeff Willey (Clemson University), Robbie Wilson (University of Queensland, Australia)

Society memberships:

Society of Integrative and Comparative Biology, International Society of Vertebrate Morphology

Reviewer for:

Functional Ecology, Lizard Ecology (Book), Biological Journal of the Linnean Society, Zoology, Journal of Experimental Biology, Proceedings of the Royal Society B

Service:

2008: Organismal Physiology Search Committee, College of Charleston
2008: Presentation on Bats to Memminger Middle School Students
2007: Vice President, Biological Sciences Graduate Student Organization, Ohio U.
2006-2007: Graduate Student Liaison for Ohio U. Wildlife Club
2005 - 2007: Mineral (OH) Salamander Project. Ohio Department of Transportation
2005: Mentor, Athens High School Talented and Gifted Program.

Undergraduates supervised: * denotes Honors Thesis

- College of Charleston (6): Anna Baur*, Kristen Johnson*, Erin Fannin, Allyson Wilson, Shea Diaz, Melissa Strickland
- Ohio University (7): Grant Beaman, Kristen Stover, Caitlyn Cato, Bailey Miles, Emily Bevis, Alex Fotis*, Jodi Mrosko

Publications: * denotes undergraduate co-author

- (10) Biknevcicius AR, **McElroy EJ**, Johnson SD, Bennett MB, Reilly SM. In Prep. Primitive, Protected and Predominately Pendular: Locomotor Dynamics of Echidnas and Hedgehogs,
- (9) Biknevcicius AR, Reilly SM, **McElroy EJ**, Bennett MB. In Prep. Symmetrical Gaits and Center of Mass Mechanics in Small-Bodied, Primitive Mammals.
- (8) Reilly SM, Biknevcicius AR, Bennett MB, **McElroy EJ**, White TD. Accepted Pending Revisions. Abdominal muscle function during locomotion in Australian possums: insights to basal mammalian conditions and eutherian-like tendencies in *Trichosurus*. *Journal of Morphology*.
- (7) Reilly SM, **McElroy EJ**, White TD. 2009. Abdominal muscle function in ventilation and locomotion in new world opossums and basal eutherians: Breathing and running with and without epipubic bones. *Journal of Morphology*. 270:1014-1028.
- (6) **McElroy EJ**, Reilly SM. 2009. The relationship between limb morphology, kinematics, and force during running: the evolution of locomotor dynamics in lizards. *Biological Journal of the Linnean Society*. 97: 634–651
- (5) **McElroy EJ**, Hickey KH*, Reilly SM. 2008. Correlated evolution of locomotor biomechanics, gait, and foraging mode in lizards. *Journal of Experimental Biology*. 21: 1029-1040.
- (4) **McElroy EJ**, Marien C*, Meyers JJ, Irschick DJ. 2007. Does display behavior send information about status badges and male quality in the ornate tree lizard, *Urosaurus ornatus*? *Ethology*. 113:1113-1122.
- (3) Reilly SM, **McElroy EJ**, Biknevcicius AR. 2007. Posture, gait, and ecological relevance of the locomotor costs and cost savings in tetrapods. *Zoology*. 110: 271-289.
- (2) **McElroy EJ**, Meyers JJ, Reilly SM, Irschick DJ. 2007. Dissecting the roles of behaviour and habitat on the locomotion of a lizard (*Urosaurus ornatus*). *Animal Behaviour*. 73: 359-365.
- (1) Reilly SM, **McElroy EJ**. 2006. Tuataras and salamanders show that walking and running are ancient features of lumbering tetrapod locomotion. *Proceedings of the Royal Society of London B*. 273: 1563-1568.

Presentations:

- (13) 2009. **McElroy, E.J.** Limb morphology and ground reaction forces in lizards: forelimbs vs. hindlimbs. Society of Integrative and Comparative Biology, Boston, Massachusetts.
- (12) 2009. Biknevcicius, A.R., **McElroy, E.J.**, Johnson, S.D., Bennett, M.B., Reilly, S.M. Primitive, protected and pendular: locomotor dynamics of echidnas and hedgehogs. Society of Integrative and Comparative Biology, Boston, Massachusetts.
- (11) 2009. Reilly, S.M., **McElroy, E.J.**, and White, T.D. Abdominal motor patterns in mammalian locomotion: hypaxial muscle function with and without epipubic bones. Society of Integrative and Comparative Biology, Boston, Massachusetts.
- (10) 2008. **McElroy, E.J.** Differential role of the Forelimbs vs. the Hindlimbs in Running Lizards Society of Integrative and Comparative Biology Regional Meeting, Clemson University.
- (9) 2008. **McElroy, E.J.** and Reilly, S.M. “Linking lizard legs and locomotion: morphology, gait, and whole-body mechanics in terrestrial locomotion” Society of Integrative and Comparative Biology, San Antonio, Texas.
- (8) 2008. Reilly, S.M., White, T.D. and **McElroy, E.J.** “Testing the generality of the cross-couplet locomotor system in marsupials” Society of Integrative and Comparative Biology, San Antonio, Texas.
- (7) 2007. Biknevcicius, A.R., **McElroy, E.J.**, White, T.D., Hancock, J.A. and Reilly, S.M. “Whole body mechanics in small primitive mammals” 8th International Congress of Vertebrate Morphology, Paris, France.
- (6) 2007. **McElroy, E.J.** Marien, C*, Irschick, D.J., and Meyers, J.J. Does display behavior send information about status badges and male quality in the ornate tree lizard, *Urosaurus ornatus*” Society of Integrative and Comparative Biology, Phoenix.

- (5) 2006. **McElroy, E.J.** and Reilly, S.M. "The evolutionary relationship between foraging mode and locomotor functional morphology in lizards" Society of Integrative and Comparative Biology, Orlando.
- (4) 2006. Reilly, S.M. and **McElroy, E.J.** "Tuataras and Salamanders show that walking and running biomechanics are ancient features of terrestrial locomotion" Society of Integrative and Comparative Biology, Orlando.
- (3) 2005. **McElroy, E.J.** and Reilly, S.M. "Preliminary analysis of locomotor consequences of foraging mode in lizards" Society of Integrative and Comparative Biology, San Diego.
- (2) 2004. **McElroy, E.J.**, Biknevicius, A.R., and Reilly, S.M. "Locomotor Dynamics in Lizards: Gait, Morphology, and Mechanics" 7th International Congress of Vertebrate Morphology, Boca Raton, FL.
- (1) 2003. **McElroy, E.J.** "Transitional Locomotion in *Alligator* and *Caiman*" Ohio Northern University Biological Sciences Seminar, Ada, OH.