# KATHLEEN LOIS FOSTER, PH.D.

Postdoctoral Research Fellow Department of Biology University of Ottawa 30 Marie Curie Ottawa, ON, Canada K1N 6N5 Email: kfoster@uottawa.ca Website: www.comparativebiomechanics.com

### **Current Position**

• 2016 to present – Postdoctoral Research Fellow, University of Ottawa

## **Education**

- 2016 Ph.D., Evolution, Ecology, and Organismal Biology, University of California, Riverside
- 2010 to 2011 Graduate Student/Teaching Assistant, Clemson University (lab relocated to UCR)
- 2010 B.S. Hon. with Distinction, Marine Biology, University of British Columbia

#### **Publications**

- Foster, K.L., Dhuper, M., and Standen, E.M. *In Revision*. Fin and body neuromuscular coordination changes during walking and swimming in *Polypterus senegalus*. *Journal of Experimental Biology*.
- Foster, K.L. and Higham, T.E. *In Revision*. Skink ecomorphology: forelimb and hind limb lengths correlate with habitat use, but static stability does not. *Journal of Evolutionary Biology*.
- Foster, K.L. and Higham, T.E. 2017. Integrating gastrocnemius force-length properties, *in vivo* activation, and operating lengths reveals how *Anolis* deal with ecological challenges. *Journal of Experimental Biology* 220, 796-806.
- Foster, K.L., Collins, C.E., Higham, T.E., and Garland, T., Jr. 2015. Determinants of lizard escape performance: decision, motivation, ability, and opportunity. In *Escaping from predators: An integrative view of escape decisions*, eds. W.E. Cooper, Jr. and D.T. Blumstein.
- Foster, K.L. and Higham, T.E. 2014. Context-dependent changes in motor control and kinematics during locomotion: modulation and decoupling. *Proceedings of the Royal Society B* 281, 20133331.
- Foster, K.L. and Higham, T.E. 2012. How forelimb and hindlimb function changes with incline and perch diameter in the green anole, *Anolis carolinensis*. *Journal of Experimental Biology* 215, 2288-2300.
- Foster, K.L. and Higham, T.E. 2010. How to build a pectoral fin: Functional morphology and steady swimming kinematics of the spotted ratfish. *Canadian Journal of Zoology* 88, 774-780.

## **Abstracts and presentations**

- **Foster, K.L.** and Standen, E.M. 2018. Fin and body neuromuscular coordination changes during walking and swimming in *Polypterus senegalus*. Oral presentation given at the annual meeting of the Society for Integrative and Comparative Biology, San Francisco, CA.
- **Foster, K.L.** and Standen, E.M. 2017. Neuromuscular function and coordination of fin and body musculature during swimming and walking in *Polypterus senegalus*. Oral presentation given at the annual meeting of the Canadian Society of Zoologists, Winnipeg, Manitoba, Canada.
- **Foster, K.L.** and Higham, T.E. 2017. Comparative neuromuscular function during arboreal locomotion in *Anolis* lizards. Oral presentation given at the annual meeting of the Society for Integrative and Comparative Biology, New Orleans, LA.
- **Foster, K.L.** and Higham, T.E. 2016. Comparative arboreal locomotion of *Anolis* lizards. Oral presentation given at the annual meeting of the Society for Integrative and Comparative Biology, Portland, OR.
- **Foster, K.L.** and Higham, T.E. 2015. Muscle recruitment and mechanics are modulated during arboreal locomotion in *Anolis* lizards. Oral presentation given at the annual meeting of the Society for Experimental Biology, Prague, Czech Republic.
- **Foster, K.L.** and Higham, T.E. 2015. Modulation of muscle function during arboreal locomotion in *Anolis* lizards. Oral presentation given at the annual meeting of the Canadian Society of Zoologists, Calgary, Alberta, Canada.
- **Foster, K.L.** and Higham, T.E. 2015. Modulation of muscle function during arboreal locomotion in *Anolis* lizards. Oral presentation given at Gradfest University of California, Riverside, Riverside, CA.
- **Foster, K.L.** and Higham, T.E. 2015. The mechanical functions of muscle and tendon during arboreal locomotion in *Anolis* lizards. Oral presentation given at the annual meeting of the Society for Integrative and Comparative Biology, West Palm Beach, FL.
- Foster, K.L., Garland, T., Jr., and Higham, T.E. 2015. Ecomorphology of lygosomine skinks: the impact of habitat use on limb length. Poster presentation given at the annual meeting of the Society for Integrative and Comparative Biology, West Palm Beach, FL.
- Foster, K.L. 2014. Presenting your research to judges, teachers, and adults: what to say and how to say it. Invited lecture given at the Pomona Unified School District Science Fair Expo, Riverside, CA.
- Foster, K.L. 2014. Statistics for science fairs: what you need to know about basic graphing and statistics. Invited lecture given at the Riverside County Office of Education Science Fair Expo, Riverside, CA.
- **Foster, K.L.** and Higham, T.E. 2014. Muscle and tendon function in *Anolis* lizards. Oral presentation given at the Southwest Organismal Biology meeting, Irvine, CA.
- **Foster, K.L.** and Higham, T.E. 2014. Context-dependent modulation and decoupling of motor control and kinematics during locomotion in the green anole (*Anolis carolinensis*). Oral presentation given at Genomes to/aux Biomes 2014 Joint meeting of the Canadian Society of

- Ecology and Evolution, Canadian Society of Zoologists, and Society of Canadian Limnologists, Montréal, Canada.
- Foster, K.L. 2013. Analyzing data: why and how to make graphs for science fair projects. Invited lecture at the Coachella Valley Science Fair Expo, Palm Desert, CA.
- Foster, K.L. 2013. Statistics in science: methods, insights, and limitations of statistics in scientific research. Invited lecture at the Coachella Valley Science Fair Expo, Palm Desert, CA.
- Foster, K.L. 2013. Statistics in science: methods, insights, and limitations of statistics in scientific research. Invited lecture at the Riverside County Office of Education Science Fair Expo, Riverside, CA.
- **Foster, K.L.** and Higham, T.E. 2013. Functional mechanisms underlying the relationship between morphology and habitat use in lizards. Symposium presentation given at the International Congress of Vertebrate Morphology, Barcelona, Spain.
- **Foster, K.L.** and Higham, T.E. 2013. Neuromuscular control of arboreal locomotion: how green anoles deal with changes in incline and perch diameter. Oral presentation given at Gradfest University of California, Riverside, Riverside, CA.
- **Foster, K.L.** and Higham, T.E. 2013. Neuromuscular control of arboreal locomotion: how green anoles (*Anolis carolinensis*) deal with changes in incline and perch diameter. Oral presentation given at the annual meeting of the Society for Integrative and Comparative Biology, San Francisco, CA.
- **Foster, K.L.** and Higham, T.E. 2012. How fore- and hindlimb function changes with incline and perch diameter in *Anolis carolinensis*. Oral presentation given at the annual meeting of the Society for Integrative and Comparative Biology, Charleston, SC.
- Foster, K.L. 2011. Biogeography and Phylogeography. Invited lecture for Herpetology (BIOSC 468), Clemson University, Clemson, SC.
- **Foster, K.L.** and Higham, T.E. 2010. Functional morphology and biomechanics of ratfish steady swimming. Oral presentation given at the annual meeting of the Society for Integrative and Comparative Biology, Seattle, WA.
- Foster, K.L. 2009. Flight of the Dr. Seuss fish: Pectoral fin functional morphology of the spotted ratfish (*Hydrolagus colliei*). Oral presentation at Bamfield Marine Sciences Centre, BC, Canada.

# **Teaching Experience**

- **Teaching assistant, Animal Behavior (BIOL 160)**, University of California, Riverside, Spring 2015. Responsible for leading and grading four discussion sections per week.
- Teaching assistant, Functional Anatomy of the Vertebrates (BIOL 161B), University of California, Riverside, Winter 2015. Responsible for instructing and grading two laboratory sections per week.

- Teaching assistant, Functional Anatomy of the Vertebrates (BIOL 161A), University of California, Riverside, Fall 2014. Responsible for instructing and grading two laboratory sections per week.
- **Teaching assistant, Human Physiology (BIOSC 316)**, Clemson University, Spring 2011. Responsible for instructing and grading two laboratory sections per week.
- **Teaching assistant, Comparative Physiology (BIOSC 475),** Clemson University, Fall 2010. Responsible for instructing and grading two laboratory sections per week.
- Teaching assistant, Biomechanics, Biology of Marine Fishes, Bamfield Marine Sciences Centre, Vancouver Island, Canada, Summer 2010 and 2011. Involved in planning and executing laboratory and field activities, assisting students with independent projects, and grading.

## Fellowships and Awards

- 2018 University of Ottawa Conference Travel Grant \$550
- 2015 William S. Hoar Award for best student oral presentation at the 2015 annual meeting of the Canadian Society of Zoologists \$500
- 2015 UC Riverside Dissertation-Year Fellowship for 2015-16 academic year \$38,767
- 2015 UC Riverside Graduate Student Association Travel Award \$600
- 2015 Company of Biologists Travel Grant \$544
- 2015 Canadian Society of Zoologists Travel Grant \$500
- 2015 UC Riverside Graduate Student Association Travel Award \$500
- 2015 UC Riverside Graduate Student Association Travel Award \$400
- 2014 UC Riverside Dissertation Research Grant \$800
- 2014 UC Riverside Earle C. Anthony Travel Award \$900
- 2014 EPCOR Water Ltd. Student Travel Award \$500
- 2014 UC Riverside Vaughan H. Shoemaker Graduate Fellowship \$1500
- 2013 UC Riverside Graduate Student Association Travel Award \$360
- 2013 UC Riverside Graduate Student Association Travel Award \$300
- 2012 UC Riverside Graduate Division Fee Fellowship 2 years totalling \$26,094
- 2011 UC Riverside Newell Travel Award \$800
- 2011 UC Riverside Dean's Distinguished Fellowship five years totalling \$168,323
- 2011 Alberta Innovates Graduate Student Scholarship \$10,000 (declined)
- 2011 NSERC Postgraduate Scholarship D three years totalling \$63,000

- 2011 Bamfield Marine Sciences Centre Graduate Student Scholarship \$2000
- 2011 Clemson University Professional Enrichment Grant \$1000 (declined)
- 2010 Clemson University Professional Enrichment Grant \$566
- 2010 Clemson University teaching/research assistantship \$18,000
- 2010 Clemson University graduate school recruitment fellowship \$7500
- 2009 NSERC Undergraduate Student Research Award \$5625
- 2007-2008 Scotiabank Student Mobility Award \$7000
- 2005-2006 University of British Columbia President's Entrance Scholarship \$4000

#### Field Work

- 2015 Puerto Rico, in the vicinity of El Yunque National Forest
- 2009, 2010, 2011 Bamfield Marine Sciences Centre, Vancouver Island, Canada

### **Academic Service**

- Committee member Community Ecologist tenure-track faculty search committee (2015-2016)
- Committee member Biology Department Outreach Committee (2013-present)
- President Evolution, Ecology, and Organismal Biology Graduate Student Association (2013-2014 and 2014-2015 academic years)
- Co-organizer Evolution, Ecology, and Organismal Biology Lunch Bunch Seminar Series (2014)
- Co-organizer GradFest Recruitment Weekend/Conference for incoming EEOB students (2014)
- Designed website for the Southwest Division of Comparative Biomechanics/Division of Vertebrate Morphology regional meeting of the Society of Integrative and Comparative Biology (meeting date Oct. 26, 2013)
- Part of organization committee for the Southwest Division of Comparative Biomechanics/Division of Vertebrate Morphology regional meeting of the Society of Integrative and Comparative Biology (meeting date Oct. 26, 2013)
- Reviewer for the following journals: Zoology (4), Journal of Morphology (4), Journal of Experimental Biology (3), Biological Journal of the Linnean Society (2), Philosophical Transactions of the Royal Society B: Biological Sciences (1), Comprehensive Physiology (1), Anatomical Record (1), Zoologia (1), Journal of Herpetology (1), Journal of Zoology (1)

# **Volunteer/Outreach Experience**

• Volunteered in a "First Sundays" outreach event, called "Science Day", at the Riverside Metropolitan Museum (2015)

- Volunteer Biology Department representative at UCR's Discover Day undergraduate recruitment event (2015)
- Presenter at the Pomona Unified School District Science Fair Expo (2014)
- Presenter and consultant at the Riverside County Office of Education Science Fair Expo (2014)
- Volunteer Biology Department representative at UCR's Discover Day undergraduate recruitment event (2014)
- Helped organize and participate in a "First Sundays" outreach event, called "Animal Olympics", at the Riverside Metropolitan Museum (2014)
- Assistant judge for Riverside Unified School District science fair (2014)
- Assistant judge for Alcott Elementary School science fair (2014)
- Presenter and consultant at the Coachella Valley Science Fair Expo (2013)
- Presenter and consultant at the Riverside County Office of Education Science Fair Expo (2013)
- Mentor for Grade 8 science students through University of British Columbia's Let's Talk Science program at Britannia high school (2009)
- UBC Tri-mentoring program (2008-2009 school year)
- Assistant Coach for London Rowing Club Summer Program (summer 2006 and 2007)
- Women's coach for Saunders Rowing Team (spring 2006 and 2007)

## **Academic Society Membership**

- Society for Experimental Biology (2015-present)
- Canadian Society of Zoologists (2014-present)
- Society for Integrative and Comparative Biology (2009-present)
- Golden Key International Honours Society (2009-present)