

**William G Ryerson**

Department of Ecology and Evolutionary Biology

University of Connecticut

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**Education**

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- Current      **Ph.D. Candidate**, Ecology and Evolutionary Biology, University of Connecticut, Major Advisor: Dr. Kurt Schwenk  
Dissertation Title: *Why Snakes Flick Their Tongues: A Fluid Dynamics Approach*
- 2008          **M.S.**, Biology, University of South Florida, Advisor: Dr. Stephen Deban  
Thesis Title: *The Role of Abiotic And Biotic Factors In Suspension Feeding Mechanics Of Xenopus Tadpoles*
- 2006          **B.S.**, Marine Science (Marine Biology Concentration) with High Honors, University of Maine, *Magna cum laude*, Advisor: Dr. Kevin Eckelbarger  
Thesis Title: *Friend or Foe: The biology and ecology of a zoanthid (Cnidaria: Anthozoa) associated with Paragorgia sp. at the New England Seamounts*

**Funding**

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- 2014          Predoctoral Fellowship, University of Connecticut, \$5,000
- 2013          Predoctoral Fellowship, University of Connecticut, \$5,000
- 2012          EEB Summer Research Fellowship, University of Connecticut, \$2,500
- 2011          Wetzel Vertebrate Research Fund, University of Connecticut, \$300  
EEB Summer Research Fellowship, University of Connecticut, \$500
- 2010          Wetzel Vertebrate Research Fund, University of Connecticut, \$400  
EEB Summer Research Fellowship, University of Connecticut, \$1,000
- 2002-2006    Presidential Scholar, University of Maine, \$40,000

## **Teaching**

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2009-present *Graduate Teaching Assistant*, University of Connecticut:

Principles of Biology II Lab and Guest Lecturer, Comparative Vertebrate Anatomy Lab and Guest Lecturer, Mammalogy Lab, Principles of Biology for non-majors Lab

2006-2008 *Graduate Teaching Assistant*, University of South Florida:

Biology I Lab, Biology II Lab, General Physiology Lab and Guest Lecturer

## **Service**

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*Grant Reviewer:*

NSERC Discovery Grant, 2012

*Journal Referee:*

Journal of Experimental Zoology Part A

Journal of Morphology

Journal of Comparative Psychology

Journal of Experimental Biology

*University Service:*

2009-2012

Graduate Student Senator, University of Connecticut

2010-2012

President, EEB Graduate Student Association

## **Outreach**

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2010

Snakes, and what is a snake scientist? Talk given at E. Granby High School, East Granby, CT. April 8

2009-2013

Bringing nature into the classroom, with Kurt Schwenk. Windham Clinical Day School (Natchaug Hospital, part of Hartford Health Care), Willimantic, CT.

Multiple dates.

2009

Anatomy Guide, Body Worlds Exhibit. *Museum of Science and Industry*, Tampa, FL. Served as a guide for school groups, elementary through nursing and first-year medical students, to answer questions and engage individuals within the exhibit.

2007-2009

Occasional Instructor. *Lowry Park Zoo*, Tampa, FL. Tour guide for school groups through the zoo and behind-the-scenes programs. Groups varied in age from elementary through high school.

### **Peer-Reviewed Publications**

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1. Ryerson, W.G. and S.M. Deban. 2010. Buccal pumping mechanics of *Xenopus laevis* tadpoles: effects of biotic and abiotic factors. *J. Exp. Biol.* 213, 2444-2452.
2. Ryerson, W.G. and K. Schwenk. 2012. A simple, inexpensive system for digital image particle image velocimetry (DPIV) in biomechanics. *J. Exp Zool.* 317, 127-140 (with cover).
3. Ryerson, W.G. 2013. Jumping in the salamander *Desmognathus ocoee*. *Copeia*. 2013 (3), 512-516.
4. Ryerson, W.G. and S. Horwitz. Sidewinding in the green anaconda, *Eunectes marinus* (in review). *Herp. Review*.
5. Ryerson, W.G., A. Hessel, and L.B. Whitenack. Comparative jumping mechanics in plethodontid salamanders (in review). *J. Exp. Zool.*
6. Hessel, A., W.G. Ryerson, and L.B. Whitenack. The role of the tail in jumping salamanders (in prep).

7. Ryerson, W.G., and K. Schwenk. Kinematics of chemosensory tongue-flicking in garter snakes (*Thamnophis sirtalis*) (in prep).
8. Ryerson, W.G., and K. Schwenk. Kinematics of terrestrial versus aquatic chemosensory tongue-flicking in water snakes (*Nerodia sipedon*) (in prep).
9. Ryerson, W.G., and K. Schwenk. Why snakes flick their tongues: the fluid dynamics of chemical sampling in snakes (in prep)
10. Schwenk, K., and W.G. Ryerson. A fluid-dynamic theory of chemical sampling during tongue-flicking in snakes. (in prep).

#### **Posters and Presentations**

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1. Ryerson, W.G. and Schwenk, K. The medium matters: tongue flicking in air and water in the water snake, *Nerodia sipedon*. Society of Integrative and Comparative Biology Annual Meeting, 2013.
2. Ryerson, W.G. and Schwenk, K. Why snakes flick their tongues: a fluid dynamics approach. Society of Integrative and Comparative Biology Annual Meeting, 2012.
3. Ryerson, W.G. and Schwenk, K. Kinematics of tongue flicking in the garter snake, *Thamnophis sirtalis*. Society of Integrative and Comparative Biology Annual Meeting, 2011.
4. Ryerson, W.G. Jumping in the salamander *Desmognathus ocoee*. Society of Integrative and Comparative Biology Annual Meeting, 2010.
5. Ryerson, W.G. and Deban, S.M. Scaling of suspension feeding in tadpoles. Society of Integrative and Comparative Biology Annual Meeting, 2009.
6. Ryerson, W.G. and Deban, S.M. The effects of viscosity on the buccal pumping mechanism of *Xenopus laevis* tadpoles. Society of Integrative and Comparative Biology Annual Meeting, 2008.
7. Ryerson, W.G. Modulation of prey capture behavior in two species of salamander: *Desmognathus quadramaculatus* and *Plethodon jordani*. University

of South Florida Graduate Research Symposium, 2007.