

# ROBERT M. COX, PH.D.

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## Education

1999-2005	Ph.D. Ecology and Evolution	Rutgers, The State University of New Jersey New Brunswick, NJ
1995-1999	B.A. Biology	College of the Holy Cross Worcester, MA

## Research Appointments

2007-present	Postdoctoral Researcher Dartmouth College, Hanover NH Advisor: Dr. Ryan Calsbeek Research: <i>Natural selection, sexual selection and sexual conflict in anoles</i>
2005-2006	Postdoctoral Researcher The Ohio State University, Columbus OH Advisor: Dr. Joseph Williams Research: <i>Physiological ecology of water balance in birds and reptiles</i>
1999-2005	Graduate Student and Research Assistant Rutgers, The State University of New Jersey, New Brunswick NJ Advisor: Dr. Henry John-Alder Thesis: <i>Proximate and ultimate causes of sexual size dimorphism in lizards</i>
1998-1999	Undergraduate Senior Research College of the Holy Cross, Worcester MA Advisor: Dr. William Healy Research: <i>Sex ratio bias and behavior of northern red-spotted newts</i>

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### Teaching Appointments

2006	Lecturer EEOB 400: Evolution	The Ohio State University Evolution, Ecology & Organismal Biology
2000-2002	Head Teaching Assistant BIO 102: General Biology	Rutgers, The State University of New Jersey Supervisor: Dr. Diana Martin
1999-2000	Teaching Assistant BIO 101-2: General Biology	Rutgers, The State University of New Jersey Supervisor: Dr. Diana Martin
1998-1999	Lab Teaching Assistant General Biology	College of the Holy Cross Supervisor: Paul Lyons

### Grants and Awards

2005	Best Student Paper Award, Division of Ecology and Evolution Society for Integrative and Comparative Biology Annual Meeting
2005	Harold & Ann Aines Endowed Fellowship in Animal Sciences Rutgers University
2003	Southwestern Research Station Student Support Grant (\$800) American Museum of Natural History
2003	Grant-In-Aid of Research (\$1,000) Society for Integrative and Comparative Biology
2003	Pre-Dissertation Travel Award (\$2,500) Graduate School-New Brunswick, Rutgers University
2001	Theodore Roosevelt Memorial Grant (\$760) American Museum of Natural History

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### Peer-Reviewed Publications

1. **Cox, R.M.**, and H.B. John-Alder. 2007. Increased mite parasitism as a cost of testosterone in male striped plateau lizards, *Sceloporus virgatus*. *Functional Ecology* 21: 327-334.
2. **Cox, R.M.**, and H.B. John-Alder. 2007. Growing apart together: The development of contrasting sexual size dimorphisms in sympatric *Sceloporus* lizards. *Herpetologica* 63: 245-257.
3. John-Alder, H.B., **R.M. Cox**, and E.N. Taylor. 2007. Proximate developmental mediators of sexual size dimorphism: case studies from squamate reptiles. *Integrative & Comparative Biology* 47:258-271.
4. **Cox, R.M.**, A. Muñoz-Garcia, M.S. Jurkowitz, and J.B. Williams. (2007)  $\beta$ -Glucocerebrosidase activity in stratum corneum of house sparrows following acclimation to high or low humidity. *Physiological and Biochemical Zoology* (in press).
5. Muñoz-Garcia, A., **R.M. Cox**, and J.B. Williams. (2007) Changes in cutaneous water loss and skin lipids of house sparrows (*Passer domesticus*) following acclimation to high or low humidity. *Physiological and Biochemical Zoology* (in press).
6. **Cox, R.M.** 2006. A test of the reproductive cost hypothesis for sexual size dimorphism in Yarrow's Spiny Lizard, *Sceloporus jarrovi*. *Journal of Animal Ecology* 75: 1361-1369.
7. **Cox, R.M.**, V. Zilberman, and H.B. John-Alder. 2006. Environmental sensitivity of sexual size dimorphism: Laboratory common garden removes effects of sex and castration on lizard growth. *Functional Ecology* 20: 880-888.
8. **Cox, R.M.**, and H.B. John-Alder. 2005. Testosterone has opposite effects on male growth in lizards (*Sceloporus* spp.) with opposite patterns of sexual size dimorphism. *Journal of Experimental Biology* 208:4679-4687.
9. **Cox, R.M.**, S.L. Skelly, A. Leo, and H.B. John-Alder. 2005. Testosterone regulates sexually dimorphic coloration in the Eastern Fence Lizard, *Sceloporus undulatus*. *Copeia* 2005: 597-608.
10. **Cox, R.M.**, S.L. Skelly, and H.B. John-Alder. 2005. Testosterone inhibits growth in juvenile male Eastern Fence Lizards (*Sceloporus undulatus*): Implications for energy allocation and sexual size dimorphism. *Physiological and Biochemical Zoology* 78: 531-545.
11. **Cox, R.M.**, S.L. Skelly, and H.B. John-Alder. 2003. A comparative test of adaptive hypotheses for sexual size dimorphism in lizards. *Evolution* 57:1653-1669.

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### Published Book Chapters

1. **Cox, R.M.**, M.A. Butler, and H.B. John-Alder. 2007. The evolution of sexual size dimorphism in reptiles. In: *Sex, Size and Gender Roles: Evolutionary Studies of Sexual Size Dimorphism*. Edited by D.J. Fairbairn, T. Szekely, and W.U. Blanckenhorn. Oxford University Press.
2. John-Alder, H.B., and **R.M. Cox**. 2007. Development of sexual size dimorphism in lizards: Testosterone as a bipotential growth regulator. In: *Sex, Size and Gender Roles: Evolutionary Studies of Sexual Size Dimorphism*. Edited by D.J. Fairbairn, T. Szekely, and W.U. Blanckenhorn. Oxford University Press.

### Manuscripts Currently in Review

1. **Cox, R.M.**, M.M. Barrett, and H.B. John-Alder. Effects of food restriction on growth, energy allocation and sexual size dimorphism in Yarrow's spiny lizard, *Sceloporus jarrovii*. Submitted to *Canadian Journal of Zoology*.
2. Carsia, R.V., **R.M. Cox**, M.M. Barrett, and H.B. John-Alder. Adrenal steroidogenesis in reptiles: Insights from dispersed adrenocortical cells from *Sceloporus* lizards. In *Recent Advances in Non-Mammalian Adrenal Gland Research*. Edited by A. Capaldo.

### Manuscripts Currently in Preparation

1. **Cox, R.M.**, V. Zilberman, and H.B. John-Alder. Testosterone stimulates blue throat coloration in Yarrow's spiny lizard, *Sceloporus jarrovii*. In preparation for *Journal of Herpetology*.
2. **Cox, R.M.**, L. Kratochvil and H.B. John-Alder. Sexual selection and the evolution of Rensch's rule for sexual size dimorphism in reptiles. In preparation for *Journal of Evolutionary Biology*.
3. **Cox, R.M.** and R.Calsbeek. Sexual dimorphism, sexually antagonistic selection, and the ghost of conflict past. In preparation for *Journal of Evolutionary Biology*.
4. Carsia, R.V., **R.M. Cox**, P.J. McIlroy, and H.B. John-Alder. Ovarian influence on adrenocortical cell function in the striped plateau lizard, *Sceloporus virgatus*. In preparation for *General and Comparative Endocrinology*.
5. Carsia, R.V., **R.M. Cox**, M.M. Barrett, and H.B. John-Alder. Effects of food restriction on adrenocortical cell function in Yarrow's spiny lizard, *Sceloporus jarrovii*. In preparation for *General and Comparative Endocrinology*.

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6. McPhearson, P.T., K.F. Bennett, **R.M. Cox**, L. Jiang, M.I. Palmer, and P.J. Morin. Mutualism or slavery? Determining community dynamics in experimentally warmed food webs. In preparation, Journal TBD.

### Contributed Papers and Posters (as presenting author)

1. *2008 Annual Meeting of the Society for Integrative and Comparative Biology*  
Experimental egg removal reveals costs of reproduction in a lizard, *Anolis sagrei*. To be presented in San Antonio, TX. January 2-6, 2008.
2. *2007 Annual Meeting of the Society for Integrative and Comparative Biology*  
Increased mite parasitism as a cost of testosterone in male Striped Plateau lizards, *Sceloporus virgatus*. Phoenix, AZ. January 6, 2007.
3. *2007 Annual Meeting of the Society for Integrative and Comparative Biology*  
 $\beta$ -Glucocerebrosidase activity in stratum corneum of house sparrows following acclimation to high or low humidity. Phoenix, AZ. January 5, 2007.
4. *2006 Annual Meeting of the Society for Integrative and Comparative Biology*  
Effects of sex and castration on growth of Yarrow's Spiny Lizard (*Sceloporus jarrovi*) are reduced or absent in laboratory common garden. Orlando, FL. January 5, 2006.
5. *2005 International Workshop: The Evolution of Sexual Size Dimorphism*  
Energetic costs of reproduction and the evolution of sexual size dimorphism. Monte Verità, Switzerland. August 25, 2005.
6. *2005 Northeastern Ecology and Evolution Conference*  
Does female reproductive investment constrain growth and promote male-larger sexual size dimorphism in Yarrow's Spiny Lizard, *Sceloporus jarrovi*? Pennsylvania State University, State College, PA. March 19, 2005.
7. *2005 Northeastern Ecology and Evolution Conference*  
Testosterone regulates sexually dimorphic coloration in the Eastern Fence Lizard, *Sceloporus undulatus*. Pennsylvania State University, State College, PA. March 19, 2005.
8. *2005 Annual Meeting of the Society for Integrative and Comparative Biology\**  
Does female reproductive investment constrain growth and promote male-larger sexual size dimorphism in Yarrow's Spiny Lizard, *Sceloporus jarrovi*? San Diego, CA. January 7, 2005.  
\*Awarded "Best Student Paper" in the Division of Ecology and Evolution.
9. *2005 Annual Meeting of the Society for Integrative and Comparative Biology*  
Testosterone regulates sexually dimorphic coloration in the Eastern Fence Lizard, *Sceloporus undulatus*. San Diego, CA. January 5, 2005.

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### Contributed Papers and Posters (cont.)

10. *2004 Northeastern Ecology and Evolution Conference*  
Testosterone inhibits growth in juvenile male Eastern Fence Lizards (*Sceloporus undulatus*): Implications for energy allocation and sexual size dimorphism. University of Connecticut, Storrs, CT. March 27, 2004.
11. *2004 Northeastern Ecology and Evolution Conference*  
Phrynosomatid lizards as a model system for integrative studies of growth and sexual size dimorphism. University of Connecticut, Storrs, CT. March 27, 2004.
12. *2004 Annual Meeting of the Society for Integrative and Comparative Biology*  
Energetic mechanisms for testosterone-mediated growth inhibition in male Eastern Fence Lizards (*Sceloporus undulatus*). New Orleans, LA. January 6, 2004.
13. *2003 Annual Meeting of the Society for Integrative and Comparative Biology*  
Ontogenetic and mechanistic studies of growth and sexual size dimorphism in lizards. Toronto, ON. January 8, 2003.
14. *2002 Annual Meeting of the Society for Integrative and Comparative Biology*  
A comparative test of adaptive hypotheses for sexual size dimorphism in lizards. Anaheim, CA. January 4, 2002.
15. *2001 Rutgers-Princeton-Penn Ecology and Evolution Graduate Student Symposium*  
A comparative test of adaptive hypotheses for sexual size dimorphism in lizards. Princeton University, Princeton, NJ. November 14, 2001.

### In the news

- “Lizards, Sex, and Size: Selective Pressures Affecting Sexual Dimorphism in Lizards.”  
By David Pickens, pp. 2-4, in: *Cross-Section: The Magazine of Research Across the Disciplines at the Graduate School-New Brunswick*. Winter 2005.  
[http://gsnb.rutgers.edu/publications/cs\\_2005.pdf](http://gsnb.rutgers.edu/publications/cs_2005.pdf)
- “Can Testosterone Inhibit Growth?”  
By Kathryn Phillips, p. iii, in: *Journal of Experimental Biology, Inside JEB*, vol. 208, December 2005.  
<http://jeb.biologists.org/cgi/reprint/208/24/iii.pdf>

## **ROBERT M. COX, PH.D.**

### **Professional Service as Reviewer**

Australian Journal of Zoology  
Behavioral Ecology and Sociobiology  
Biological Journal of the Linnean Society  
Biology Letters  
Canadian Journal of Zoology  
Copeia  
Evolution  
Functional Ecology  
Herpetologica  
Hormones and Behavior  
Journal of Herpetology  
Physiological and Biochemical Zoology  
Physiology and Behavior  
Proceedings of the Royal Society B: Biological Sciences  
Western North American Naturalist

### **Professional Service for Societies and Meetings**

2006-2007     Judge for “Best Student Paper/Poster” Awards at Annual SICB Meetings  
                  - Division of Comparative Endocrinology  
                  - Division of Comparative Physiology and Biochemistry  
                  - Division of Ecology and Evolution

### **Professional Society Memberships**

American Society of Ichthyologists and Herpetologists

Society for Integrative and Comparative Biology  
                  - Division of Comparative Endocrinology  
                  - Division of Comparative Physiology and Biochemistry  
                  - Division of Ecology and Evolution

Society for the Study of Amphibians and Reptiles

Society for the Study of Evolution

## ROBERT M. COX, PH.D.

### References (research)

- Dr. Henry John-Alder  
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### References (teaching)

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