CURRICULUM VITAE

JUSTIN CHARLES TOUCHON

jtouchon@bu.edu
http://people.bu.edu/jtouchon

Home Address:
456 Beacon St. #3
Boston, MA 02115
(617) 413-2685

Work Address:
Department of Biology
Boston University
5 Cummington St.
Boston, MA 02215
(617) 353-6988

PERSONAL

Birth date: June 5, 1978
Citizenship: United States of America
Languages: English, Spanish

EDUCATION

Ph.D.: 2002-2009, Boston University, Department of Biology - Ecology, Behavior, and Evolution
B.S.: 1996-2000, Willamette University, Major: Biology, Minor: Chemistry

RESEARCH INTERESTS

I am interested in the ways that organisms respond to abiotic and biotic environmental variation, and more generally in herpetology, predator-prey interactions, phenotypic plasticity and aquatic ecology. I take a multidisciplinary approach to these topics, employing studies of ecology, animal behavior, developmental plasticity, and quantitative genetics.

Dissertation Title: "Developmental ecology and reproductive mode plasticity of a Neotropical treefrog: Interacting abiotic and biotic environmental effects over three life stages"

PUBLICATIONS

Touchon, J.C. and Warkentin, K.W. Short- and long-term effects of the abiotic egg environment on viability, development and vulnerability to predators of a Neotropical anuran. *In Review, Functional Ecology*

Touchon, J.C. and Warkentin, K.M. Negative synergism of rainfall patterns and predators affects frog egg survival. *Journal of Animal Ecology*. **78**(4): 715–723.

Touchon, J.C. and Warkentin, K.M. 2008. Reproductive mode plasticity: Aquatic and terrestrial oviposition in a treefrog. *Proceedings of the National Academy of Sciences*. **105**(21):7495–7499.

*** Cover Article**

*****This work was covered in the Boston Globe newspaper and on livescience.com, sciencedaily.com, physorg.com, and many other science websites, as well as on foxnews.com and the weekly NPR broadcast, 'Science Fridays'.

Touchon, J.C. and Warkentin, K.M. 2008. Fish and dragonfly nymph predators induce opposite shifts in color and morphology of tadpoles. *Oikos*. **117**(4):634–640.

Gomez-Mestre, I., **Touchon, J.C.,** Saccoccio, V.L., and Warkentin K.M. 2008. Genetic variation in pathogen-induced early hatching of toad embryos. *The Journal of Evolutionary Biology*. **21**(3): 791–800.

Gomez-Mestre, I., **Touchon, J.C.,** and Warkentin K.M. 2006. Amphibian embryo and parental defenses and a larval predator reduce egg mortality from water mold. *Ecology*. **87**(10):2570–2581.

*** Cover Article**

Touchon, J.C., Gomez-Mestre, I., and Warkentin, K.M. 2006. Hatching plasticity in two temperate anurans: responses to a pathogen and predation cues. *Canadian Journal of Zoology*. **84**(4):556–563

Touchon, J.C., Holmer, H.K., Moore, C., McKee, B.L., Frederickson, J., and Meshul, C.K. 2005. Apomorphine-induced alterations in striatal and substantia nigra glutamate following unilateral loss of striatal dopamine. *Experimental Neurology*, **193**(1):131–140.

Touchon, J.C., Moore, C., Frederickson, J., and Meshul, C.K. 2004. Lesion of subthalamic or motor thalamic nucleus in 6-hydroxydopamine treated rats: effects on striatal glutamate and apomorphine-induced contralateral rotations. *Synapse*, **51**(4):2887–298.

Robinson, S, Freeman, P., Moore, C., **Touchon, J.C.,** Krentz, L. and Meshul, C.K. 2003. Acute and subchronic MPTP administration differentially affects striatal glutamate synaptic function. *Experimental Neurology*, **180**(1):73–86.

MANUSCRIPTS IN PREPARATION

Touchon, J.C. and Warkentin, K.W. Plastic responses to interacting abiotic and biotic factors: temperature alters expression of predator-induced color and morphology in a Neotropical treefrog tadpole.

Touchon, J.C. and Robertson, J.M. Quantitative genetics of developmental plasticity in *Dendropsophus ebraccatus*.

Robertson, J.M. and **Touchon, J.C.** Heritability of dorsal patterns in *Dendropsophus ebraccatus*.

Touchon, J.C., Gomez-Mestre, I., Hughey, M.C., MacDonald, W., and Warkentin, K.W. Synergism of pollutants and water mold increase egg mortality in *Bufo americanus*.

Touchon, J.C., Urbina-Gonzalez, J. and Warkentin, K.W. Aquatic and terrestrial hatching plasticity of *Dendropsophus ebraccatus* embryos.

Touchon, J.C., Casey, C.M., and Warkentin, K.W. Predator induced changes to *Dendropsophus ebraccatus* swimming and behavior.

Touchon, J.C., Worley, J., and Warkentin, K.W. Oviposition site choice in a Neotropical treefrog, *Dendropsophus ebraccatus*.

Touchon, J.C., Casey, C.M., Worley, J., and Warkentin, K.W. Abiotic environmental cues for reproductive activity in two Neotropical treefrogs.

FUNDED RESEARCH PROPOSALS

2007-2008	Smithsonian Institute Predoctoral Fellowship "Evolution of reproductive mode: phenotypic plasticity and selection on aquatic and terrestrial breeding in a Neotropical treefrog"	($18,000)
2007	Boston University Graduate Research Abroad Fellowship "Exploring the evolution of terrestrial reproduction: Oviposition plasticity and selection on aquatic and terrestrial breeding in a Neotropical treefrog"	($10,000)
2005-2006	National Science Foundation Doctoral Dissertation Improvement Grant "Interacting effects of abiotic and biotic risks across the complex life cycle of a Neotropical treefrog"	($12,000)
2006	Animal Behavior Society Student Research Grant "Reproductive mode variation in a Neotropical treefrog"	($1000)
2005	American Society of Ichthyologists and Herpetologists Gaige Award "Does an embryo's environment alter later tadpole interactions with predators?"	($500)
2004	Smithsonian Tropical Research Institute Short-term Fellowship "How the weather changes predation: phenotypic plasticity and complex environmental interactions in the embryonic life-stage of the neotropical treefrog, *Hyla ebraccata*"	($3,000)

OTHER GRANTS AND AWARDS

2009	Frank A. Belamarich Award for Most Outstanding Doctoral Dissertation (Boston University, Department of Biology)	
2009	Outstanding Biology Department Teaching Fellow Award	
2008	Society for the Study of Evolution Travel Grant	($700)
2008	Boston University George Bernard Jr. Travel Award	($1500)
2007	Boston University Graduate Student Organization Travel Grant	($500)
2006	American Society of Ichthyologists and Herpetologists Travel Award	($250)
2005	Boston University Graduate Student Organization Travel Grant	($300)
2004	Ecological Society of America Applied Ecology Travel Award	($750)
2004-2008	Boston University Traveling Scholar Award	
2003	National Science Foundation Predoctoral Fellowship Honorable Mention	
2000	Willamette University Alumni Scholar	
1996	Willamette University, Honors at Entrance	
1997-2000	Phi Eta Sigma Member, Willamette University	
1995	Eagle Scout, Boy Scouts of America	

CONFERENCE PRESENTATIONS

ORAL PRESENTATIONS

Touchon, J.C. "Reproductive Mode Plasticity in the Treefrog *Dendropsophus ebraccatus*." 2009 American Society of Ichthyologists and Herpetologists Joint Meeting, Portland, OR, July, 2009.

Touchon, J.C. and Warkentin, K.M. "Morphological responses to abiotic and biotic factors: temperature effects on predator-induced phenotypes in a Neotropical treefrog tadpole." Society for Integrative and Comparative Biology Annual Meeting, Boston, MA, January, 2009.

Touchon, J.C. and Warkentin, K.M. "Reproductive mode plasticity in the treefrog *Dendropsophus ebraccatus*." 6th World Congress of Herpetology, Manaus, Brazil, August, 2008.

Touchon, J.C. "Plasticity and selection for reproductive mode: a treefrog that breeds in water and on land." 2007 Animal Behavior Society Annual Meeting, Burlington, VT, July, 2007.

Touchon, J.C. and Warkentin, K.M. "Long-term effects of short-term variation: how egg environment changes tadpole phenotype and survival." 2006 American Society of Ichthyologists and Herpetologists Joint Meeting, New Orleans, LA, July, 2006.

Touchon, J.C. and Warkentin, K.M. "Interacting risks: rainfall reliability and egg predation in the Neotropical treefrog, *Hyla ebraccata*." 2005 American Society of Ichthyologists and Herpetologists Joint Meeting, Tampa, FL, July, 2005.

Gomez-Mestre, I., **Touchon, J.C.**, and Warkentin, K.W. "Embryo defenses against water mold infection in wood frogs, American toads, and spotted salamanders." 2005 American Society of Ichthyologists and Herpetologists Joint Meeting, Tampa, FL, July, 2005.

Touchon, J.C. "Plastic responses to physical environment affect predator-prey interactions." 89th Annual Meeting of the Ecological Society of America, Portland, OR, August, 2004.

Touchon, J.C. "How eggs die: multiple causes of embryo mortality in the neotropical treefrog, *Hyla ebraccata*." Northeast Ecology and Evolution Conference, Storrs, CT, March, 2004.

POSTER PRESENTATIONS

Worley, J. and **Touchon, J.C.** "Reproductive mode plasticity under conflicting egg predation and desiccation risk." 2009 American Society of Ichthyologists and Herpetologists Joint Meeting, Portland, OR, July, 2009.

Touchon, J.C., and Warkentin, K.M. "Reproductive mode variation in a neotropical treefrog: the leaf-breeding *Hyla ebraccata* lays eggs in water." 2006 American Society of Ichthyologists and Herpetologists Joint Meeting, New Orleans, LA, July, 2006.

Touchon, J.C., Vonesh, J.R., and Warkentin, K.M. "Variation in larval predation risk across breeding sites of two hylid frogs." 2005 American Society of Ichthyologists and Herpetologists Joint Meeting, Tampa, FL, July, 2005.

Touchon, J.C. "How eggs die: multiple causes of embryo mortality in the neotropical treefrog, *Hyla ebraccata*." American Society of Ichthyologists and Herpetologists Joint Meeting, Norman, OK, May, 2004.

Meshul., C.K., Robinson, S., Freeman, P., Moore, C., **Touchon, J.C.**, Frederickson, J. and Krentz, L. 2003. Striatal Glutamate Synaptic Function is Differentially Affected Following Acute vs Subchronic MPTP: Implications for Animal Models of Parkinson's Disease. *10th International Conference on* In Vivo *Methods, Monitoring Molecules in Neuroscience* 209-211.

Touchon, J.C., Moore, C., and Meshul, C.K. 2002 Lesion of subthalamic or motor thalamic nucleus in 6-OHDA treated rats: effects on apomorphine-induced contralateral rotations and striatal glutamate levels. *Soc. Neurosci. Absts*. (#518.4).

Meshul, C.K. , Kamel, D., Freeman, P., Robinson, S., Moore, C, Krentz, L., and **Touchon, J.C.** 2001 Loss of Dopamine Affects Striatal Glutamatergic Function: Correlation of Microdialysis and Immunocytochemistry. *9th International Conference on* In Vivo *Methods*, 297-299.

INVITED SEMINARS

Touchon, J.C. "Developmental ecology and reproductive mode plasticity of a Neotropical treefrog: Interacting environmental effects over three life-stages." Tufts University Environmental Research Group, Medford, MA, February, 2009.

Touchon, J.C. "Developmental ecology and reproductive mode plasticity of a Neotropical treefrog: Interacting environmental effects over three life-stages." Smithsonian Tropical Research Institute, Panama City, Panama, November, 2008.

Touchon, J.C. "Ecology and development meet behavior: plasticity across the life-cycle of *Dendropsophus ebraccatus*." Colby College Biology Department Colloquium Series, Waterville, ME, February, 2008.

Touchon, J.C. "Evolution of reproductive mode: phenotypic plasticity and selection on aquatic and terrestrial breeding in a neotropical treefrog." 2007 Smithsonian Tropical Research Institute Research Symposium, Panama City, Panama, June, 2007.

Touchon, J.C. "Ecology and Development Meet Behavior: Environmental Effects on Development and Predator-Prey Interactions Across the Complex Life Cycle of a Neotropical Treefrog." Boston University Ecology, Behavior and Evolution Department Seminar, Boston, MA, March, 2006.

Touchon, J.C. "Developmental plasticity effects across a complex life-cycle in a neotropical treefrog: implications for conservation and evolution." Smithsonian Tropical Research Institute, Panama, October, 2004.

PRIOR RESEARCH EXPERIENCE

Laboratory Research Assistant. Dr. Charles K. Meshul, Associate Professor OHSU Dept. of Behavioral Neuroscience, January 2001-July 2002

- Lesioned brain regions in rat models to simulate Parkinson's Disease. Built from scratch *in vivo* microdialysis probes for absorption of neurotransmitters from the brain. Performed immunocytochemistry stains on brain tissue.
- Streamlined and implemented surgery procedures for use by future research assistants.

Salmonid Habitat Stream Surveyor. Confederated Tribes of the Grand Ronde, Summer 2000

- Surveyed remote streams on the Grand Ronde Indian Reservation.

Undergraduate Thesis. "Chemoreception of roughskin newts (*Taricha granulosa*) and learning behavior by northern leopard frog (*Rana pipiens*) and bullfrog (*R. catesbeiana*) larval prey."

- Tested the ability of two species of tadpoles to detect the chemical cues of a potential predator species, before and after physical or visual contact with the predator.

UNDERGRADUATE/INTERN MENTORSHIP

Julie Worley, Portland State University, Portland, OR. Summer 2008
"Oviposition site choice in a Neotropical treefrog, *Dendropsophus ebraccatus*."

Caitlin Casey, Boston University, Boston, MA. Summer 2008 – June 2009. I was the principal advisor on Caitlin's Work for Distinction senior thesis project.
"Predator induced changes to *Dendropsophus ebraccatus* swimming and behavior."

Jenny Urbina, University of Amsterdam, Summer 2007.
Jenny assisted me as well as conducted her own independent research under my tutelage.

In addition, I have worked with 4-8 undergraduates each year in Boston. I have endeavored to involve undergraduates in both local work on amphibians in MA, as well as doing analysis and measurements from experiments conducted in Panama.

TEACHING EXPERIENCE

Teaching Fellow. Boston University, September 2002-present
- Taught 2 sections of BI 107: Introductory Biology during fall 2002 and fall 2003.
- Taught 2 sections of BI 302: Vertebrate Zoology each spring 2003-2009.
- Wrote and delivered two original 45-60 minute lectures per week.
- Facilitated labs and dissections, wrote and graded all exams, assisted students outside of class.
- Oversaw 3-6 undergraduate assistants per year.

Guest Lecturer. Boston University, Ecology class, April 2009
- Gave a one-hour lecture on developmental ecology

Guest Lecturer. School for International Training, Barro Colorado Island, Panama, November 2005
- Taught a two-hour course on tropical herpetology

Field Course Instructor. Gamboa Field Course, Gamboa, Panama, August 2006-2008.
- Gave a 30 minute lecture in Spanish about my research to 20 Latin American biology students each year.
- Helped four-six Latin American students implement a small experiment, including experimental design and setup, data collection, data analysis, and preparation of a 15 minute powerpoint presentation.

Laboratory Assistant. Willamette University, Spring 2000
- Invited by Dr. Barbara Stebbins-Boaz to serve as lab assistant for "Principles of Biology" course.
- Set up and clean up of equipment for laboratory sessions and practicals.
- Introduced labs, answered student questions, demonstrated techniques, and corrected assignments.

PUBLIC OUTREACH AND POPULAR PRESENTATIONS

Touchon, J.C. and Hughey, M.C. Introduced amphibian biology and research to several classes of 3rd, 4th and 5th grade students from Boston, MA. April, 2008.

Touchon, J.C. "An Introduction to Amphibians." Gave a one-hour lecture to 7th grade biology classes at the Harbor School, Dorchestor, MA, May 2006.

Touchon, J.C. "Developmental plasticity effects across a complex life-cycle in a neotropical treefrog." Nerd Nite, The Midway Café, Jamaica Plains, MA, December 2005.

Touchon, J.C. "Fun Facts Featuring Frog Fatalities." 1st ever Nerd Nite, The Midway Cafe, Jamaica Plains, MA, March 2004.

SERVICE AND PROFESSIONAL AFFILIATIONS

Invited reviewer for *Oecologia*, *Naturwissenschaften*, *Biology Letters*, *Behavioral Ecology*, *Behavioral Ecology and Sociobiology*, *Copeia*, *Biological Conservation*, *Acta Herpetologica*, *Herpetological Conservation and Biology* and *The Herpetological Journal*.

Member: Animal Behavior Society (since 2001), American Society of Ichthyologists and Herpetologists (since 2003), Ecological Society of America (since 2004) and Society for the Study of Evolution (since 2008).

PROFESSIONAL REFERENCES

Dr. Karen Warkentin (dissertation advisor)
Boston University
Department of Biology
5 Cummington St.
Boston, MA 02215 USA
Phone: (617) 358-2385
Fax: (617) 353-6340
Email: kwarken@bu.edu

Dr. Christopher Schneider
Boston University
Department of Biology
5 Cummington St.
Boston, MA 02215 USA
Phone: (617) 358- 5566
Fax: (617) 353-6340
Email: cschneid@bu.edu

Dr. Mary Jane West-Eberhard
Smithsonian Tropical Research Institute
Unit 9100, Box 0948
DPO AA 34002-9998
USA
Phone: + 507 212-8000 (in Panama)
Fax: +507 212-8148 (in Panama)
Email: mjwe@sent.com