Julie Jung

CONTACT INFORMATION

36 Long Avenue
Apartment #1
Allston, MA 02134

Cell: + 1 (510) 439-7614
E-mail: jungjulie2@gmail.com
Website: http://jungjulie.com
Github: https://github.com/jamjulie

EDUCATION

Boston University, Boston, MA (GPA: 3.94)
Ph.D. Candidate in Biology, expected 2021
M.A. in Biology, January 2019
Dissertation: *The Ontogeny of Vibration-cued Early Hatching in Red-Eyed Treefrogs*
Advisors: Drs. Karen M. Warkentin (Biology) & James G. McDaniel (Mechanical Engineering)

Williams College, Williamstown, MA
First Generation College Graduate
B.A. *with Honors* in Biology & Environmental Science, Minor in Maritime Studies, June 2015
Senior Biology Honors Thesis: *The Influence of Land Management Practices on the Abundance and Diversity of Fall-Blooming Asteraceae and Their Pollinators*
Advisor: Dr. Joan Edwards (Biology)

HONORS, AWARDS, AND GRANTS

Teaching Fellow Peer Mentor, Boston University, 2018 ($1,000)
Biology Department Travel Award, Boston University, 2018 ($300)
Biology Department Travel Award, Boston University, 2017 ($400)
Charlotte Magnum Student Support Scholarship, SICB, 2016 & 2107 ($300)
NSF GRFP Honorable Mention, 2016
Williams College Biology Conference Travel Award, 2015 ($500)
Tom Hardie Prize in Environmental Studies, Williams College, 2015 ($500)
NSF REU, Cary Institute of Ecosystem Studies, 2014 ($7,600)
Environmental Studies Department Class of 1960 Scholar, Williams College, 2014 - 15
Dean's List, Williams College, Fall 2013 - Spring 2015 (all semesters)
Steel Family Scholarship for Teaching, Williams College, 2011 - 15 ($212,000)
Seoul National University Scholarship, Williams College, 2011 ($2,000)
National Merit Commendation, The College Preparatory School, 2011
Steve and Linda Wight Scholarship, The College Preparatory School, 2007-2011 ($172,000)

RESEARCH INTERESTS

Behavioral Ecology Bioacoustics/vibrations (biotremology), optimal decision theory, optimal foraging theory, vestibular systems, neuroethology, phenotypic plasticity, automated behavioral assays.

Developmental Sensory Biology Neuroimaging across ontogeny, embryo morphology and histology, confocal, micro-CT, immunohistochemistry, in-situ hybridization, transgenic techniques, cloning and cell culture, ultimate and proximate mechanisms of vibration sensing.

SKILLS

Computing Languages: R (fluent), Matlab (proficient), Python (proficient), Ruby (proficient)

Other Computing Skills: LaTeX, Git & Github, MS Excel & Powerpoint, Adobe Photoshop & Illustrator CS6, SYSTAT, JMP Pro, Prism, Raven, Audacity.

Certifications: SSI Advanced Open Water Diver, SSI Open Water Diver, SSI Enriched Air Nitrox, Red Cross CPR, First Aid, Lifeguard, U.S. citizen.

Languages: Korean (fluent), English (fluent), Spanish (highly proficient).

Misc. Skills: salsa dancing; rock & ice climbing; nature photography.

Publications

Warkentin K.M., **J. Jung**, L.A.R. Solano, J.G. McDaniel. 2018. Ontogeny of escape-hatching decisions: discrimination among vibrational cues changes developmentally as predicted from costs of sampling and false alarms. (Under review in *Animal Behaviour.*)

Warkentin K.M., J.C. Diaz, B.A. Guell, **J. Jung**, S.J. Kim, K.L. Cohen. 2017. Developmental onset of the escape-hatching response in red-eyed treefrogs depends on cue type. *Animal Behaviour.* 129:103-112. `https://doi.org/10.1016/j.anbehav.2017.05.008`

Jung J. and K.A. Schmidt. 2014. Anthropogenic noise: The effects of road noise on eavesdropping systems of the eastern chipmunk. *Undergraduate Ecology Research Reports* (and *in preparation* for submission to *Israel Journal of Ecology and Evolution*).

Manuscripts in Preparation

Jung J., S.J. Kim, S.P. Arias, J.G. McDaniel, K.M. Warkentin. How do red-eyed treefrog embryos detect snake attacks? Assessing the role of vestibular mechanoreception. (*in preparation* for submission to *Journal of Experimental Biology.*)

Jung J., M. Guo, J.G. McDaniel, K.M. Warkentin. An analysis of long gaps in the temporal patterns of vibrations as presented to red-eyed treefrog egg clutches and embryos. (*in preparation* for submission to *Behavioral Ecology.*)

Jung J. and K.M. Warkentin. Inner ear development across onset and improvement of escape-hatching ability in red-eyed treefrogs: a confocal and CT analysis. (*in preparation* for submission to *Journal of Experimental Biology.*)

C. Fouilloux, **Jung J.**, A.M. Ospina, R. Snyder, and K.M. Warkentin. Parsing motion and tactile cues in vibration playback. (*in preparation* for submission to *Undecided Journal.*)

Invited Talks

Sept 25, 2018. *How do embryos sense vibration?* Guest Speaker in BI225 *Behavioral Biology* at Boston University, Boston, MA.

Feb 8, 2017. *How do red-eyed treefrog embryos detect snake attacks? Assessing the role of vestibular mechanoreception.* EBE Chalk Talk Series at Boston University, Boston, MA.

Conference Presentations

Jung J., B.A. Guell, K.M. Warkentin. 2018. `Poster PDF.` Inner Ear Development Across Onset and Improvement of Escape-Hatching Ability in Red-Eyed Treefrogs: a Confocal and CT Analysis. *Society for Integrative and Comparative Biology Meeting,* San Francisco, CA.

Jung J., J.G. McDaniel, K.M. Warkentin. 2018. `Talk Slides.` Ontogenetic Adaptation in Information Use for Escape-Hatching Decisions: Older Embryos Selectively Accept More False Alarms. *Society for Integrative and Comparative Biology Meeting,* San Francisco, CA.

Edwards, J., **J. Jung**, L. Davis, and D. Smith. 2017. Poster. The Influence of Land Management Practices on the Abundance and Diversity of Fall-Blooming Asteraceae and Their Pollinators. *Entomological Society of America Meeting,* Denver, CO.

Jung J., J.G. McDaniel, K.M. Warkentin. 2017. `Poster PDF.` Ontogeny of vibration-cued escape-hatching in red-eyed treefrogs: two reasons older embryos hatch more. *Society for Integrative and Comparative Biology Meeting,* New Orleans, LA.

Jung J., J.G. McDaniel, K.M. Warkentin. 2017. `Poster PDF.` Ontogeny of vibration-cued escape-hatching in red-eyed treefrogs: two reasons older embryos hatch more. *BGSA Symposium,* Boston, MA.

Kim, S.J., **J. Jung**, S.M. Prez Arias, J.G. McDaniel, K.M. Warkentin. 2016. Poster. Is ear function necessary for vibration-cued hatching in red-eyed treefrogs? *Animal Behavior Society Meeting* , Colombia, MO.

Jung J., S.J. Kim, B.A. Guell, K.L. Cohen, K.M. Warkentin. 2016. Poster. Ontogeny of escape hatching in red-eyed treefrogs: onset of response to flooding and attack cues. *Society for Integrative and Comparative Biology Meeting,* Portland, OR.

Kim, S.J., **J. Jung**, S.M. Prez Arias, J.G. McDaniel, K.M. Warkentin. 2016. Poster. Shake and roll: testing the ontogenetic correlation of vibration-cued hatching and otic mechanoreception in red-eyed treefrogs. *Society for Integrative and Comparative Biology Meeting,* Portland, OR.

Warkentin, K.M., Cohen, K.L., Diaz, J.C., Guell, B.A., and **J. Jung**. 2016. Talk. Development of embryo behavior: Hatching mechanisms, performance, and decisions in red-eyed treefrogs. *Society for Integrative and Comparative Biology Meeting,* Portland, OR.

Jung J., S.J. Kim, B.A. Guell, K.L. Cohen, K.M. Warkentin. 2016. Poster. Ontogeny of escape hatching in red-eyed treefrogs: onset of response to flooding and attack cues. *BGSA Symposium,* Boston, MA.

J. Jung, J. Edwards. 2015. Talk and `Poster.` The influence of land management practices on the abundance and diversity of fall-blooming Asteraceae and their pollinators. *Williams College Honors Thesis Symposium,* Williamstown, MA.

Perez, D.J., **J. Jung**, K.A. Schmidt. 2015. Poster. Anthropogenic noise: The effects of road noise on eavesdropping systems of the eastern chipmunk *Ecological Society of America,* Baltimore, MD.

Jung J. and K.A. Schmidt. 2015. Poster. Consider the chipmunk: road noise effects on eavesdropping systems in eastern chipmunks. *Emory University Laney Graduate School STEM Symposium,* Atlanta, GA.

Jung J. and K.A. Schmidt. 2014. Talk. Consider the chipmunk: road noise effects on eavesdropping systems in eastern chipmunks. *Undergraduate Research Symposium,* Millbrook, NY.

Teaching / Curriculum Development Experience

Teaching Fellow Peer Mentor, Boston University, 8/18 - Present
Mentored four first year graduate teaching fellows to help develop good teaching practices through multiple forms of support.

Teaching Assistant, Gamboa, Panama, 7/18 - 8/18
Helped Dr. Justin Touchon teach a 4-week workshop on Statistical Computing using R for undergraduate interns at the Smithsonian Tropical Research Institute research station in Gamboa.

Teaching Fellow, Boston University, 8/15 - present
1 semester for BS730 Introduction to R: software for statistical computing; 1 semester for BI302 Vertebrate Zoology; 1 semester for BI107 Ecology and Evolution. Positions involved lecturing to 2 weekly lab sections of 25-30 students from 1-3 hours, conducting long-term field studies, grading weekly homework assignments, lab reports, and exams.

Teaching Assistant, Williams College, 2/14 - 6/15
2 semesters for ENVI102 Introduction to Environmental Science; 1 semester for BIOL203 Ecology; 1 semester for MATH103 Calculus. Positions had varying levels of involvement - from making lesson plans, preparing quizzes, and grading homework assignments to driving students to field sites and inputting lab data.

Intern, TERC in Cambridge, MA, 12/13 - 2/14
Helped to develop a high school capstone course in Ecological Environmental Science, focusing on curricula materials involving biology and climate-science, as part of the Life Sciences Initiative at TERC, a non-profit organization dedicated to education research and evaluation.

Science Teacher, Greylock Elementary School in North Adams, MA, 9/11 - 12/13
Encouraged hands-on science learning in a classroom of 17 fifth graders through the Williams Elementary Outreach Program. Worked closely with classroom teachers to run weekly hour-long lessons on adaptation.

Research Experience

Dissertation Research, Boston University, 6/15 - Present
Advisors: Professors Karen Warkentin (Biology) and J. Greg McDaniel (Mechanical Engineering).

Project: vibration-cued early-hatching behaviors in red-eyed treefrog embryos.

Honors Thesis Research, Williams College Department of Biology, 8/14 - 6/15
Advisor: Professor Joan Edwards. Project: (i) Constructed spatial distribution maps showing the density and diversity of ever species within the study area. (ii) Set out timelapse videos to capture and analyze pollination events on select stems.

REU, Cary Institute of Ecosystem Studies in Millbrook, NY, 5/14 - 8/14
Advisor: Professor Kenneth Schmidt. Project: (i) Recorded and edited chipmunk, titmouse, and veery vocalizations. (ii) Designed, set up, and conducted giving-up density and playback experiments examining road noise effects on eavesdropping systems in the *Tamias striatus-Baeolophus bicolor* dyad.

Research Assistant, Williams College Center for Environmental Studies, 5/12 - 9/12
Advisor: Jason Racela. Project: (i) Analyzed samples of local water to test for quality and ion balance. Maintained instruments and databases. (ii) Gained experience with atomic absorption spectroscopy, scanning electron microscopy, ion chromatography.

Research Assistant, US Department of Agriculture in Albany, CA, 9/08 - 6/11
Advisor: Dr. Susan B. Altenbach. Project: (i) Helped design an RNAi construct to silence the expression of genes that trigger allergies to US bread wheat Butte 86. (ii) Dissected wheat embryos. (iii) Used PCR to confirm stable transformation and inheritance of transgenes in embryo samples. (iv) Maintained greenhouses.

Society Memberships; Service and Outreach

Reviewer, *Animal Behaviour*, 9/18 - Present

Volunteer Teacher, Ms. O'Garro's 7th grade Math class at the Murphy K-8 School in Dorchester, MA, 2017 - 2018

American Association for the Advancement of Science, Member, 2016 - Present

Society for Integrative and Comparative Biology, Graduate Student Member, 2015 - 2018

Sigma Xi, Associate Member, 2015 - 2016

Volunteer Teacher, "BIOBUGS" program for high-school students in Boston, MA, 9/15 - Present
Laboratory Safety Coordinator, Warkentin Lab, Boston University, 1/15 - Present

Research Experiences for Teachers, Collaboration with high school teachers to develop lessons for secondary students based on red-eyed treefrog research, 6/15 - Present

Undergraduate Students Mentored

Carina Terry, cterry@bu.edu, volunteer, 9/2018 - 1/2019

Avital Emunah Chissick, avitalc@bu.edu, volunteer, Research for Credit Program, 11/2017 - 6/2018

Kaylee Elizabeth Motter, kmotter@bu.edu, volunteer, Research for Credit Program, 10/2017 - 6/2018

Adeline Paola Almanzar, almanzar@bu.edu, volunteer, Research for Credit Program, UROP student, 9/2016 - 8/2017

Alina Chaiyasarikul, alinac@bu.edu, volunteer, UROP student, 9/2015 - 8/2016

Su Jin Kim, sujink@bu.edu, Research for Credit Program, UROP student, 6/2015 - 5/2016