

Julie Jung

PhD Candidate, Boston University

Biology Research Building 511 · 5 Cummington Mall · Boston, MA 02215

✉ jungjulie2@gmail.com 🌐 [jamjulie](https://jamjulie.com) 🐦 [jamjuliejung](https://twitter.com/jamjuliejung) 🌐 jungjulie.com | Updated: September 11, 2020

EDUCATION

Boston University

Boston, MA

Ph.D. Candidate in Biology

Expected Feb 2021

M.A. in Biology

2018

“DEVELOPMENTAL CHANGE IN VIBRATION SENSING & VIBRATION-CUED HATCHING DECISIONS IN RED-EYED TREEFROGS”

Williams College

Williamstown, MA

B.A. with Honors in Biology & Environmental Science

2015

“THE INFLUENCE OF LAND MANAGEMENT PRACTICES ON ABUNDANCE & DIVERSITY OF FALL-BLOOMING ASTERACEAE & THEIR POLLINATORS”

PUBLICATIONS (intern/undergrad co-authors^u)

Journal Articles

- (1) Jung J., S.J. Kim^u, S.P. Arias^u, J.G. McDaniel, K.M. Warkentin. 2019. “How do red-eyed treefrog embryos detect snake attacks? Assessing the role of vestibular mechanoreception.” *Journal of Experimental Biology*. [Full text](#). †

† Media coverage in [Inside JEB](#). † Short list for [JEB's 2019 Outstanding Paper Prize](#).

- (2) Warkentin K.M., J. Jung, L.A. Rueda Solano, J.G. McDaniel. 2019. “Ontogeny of escape-hatching decisions: discrimination among vibrational cues changes developmentally as predicted from costs of sampling and false alarms.” *Behavioral Ecology and Sociobiology*. 73:51. [Full text](#).
- (3) Warkentin K.M., J. Cuccaro-Diaz^u, B.A. Guell, J. Jung, S.J. Kim^u, K.L. Cohen. 2017. “Developmental onset of the escape-hatching response in red-eyed treefrogs depends on cue type.” *Animal Behaviour*. 129:103-112. [Full text](#).
- (4) Jung J., S.J. Serrano-Rojas^u, K.M. Warkentin. *In Review*. “Multimodal mechanosensing for escape-hatching decisions of red-eyed treefrogs.”

Book Chapters

- (5) Warkentin K.M., J. Jung, J.G. McDaniel. *In Press*. “Research approaches in mechanosensory-cued hatching and the iterative development of playback methods for red-eyed treefrog embryos.” *Biotremology: Physiology, Ecology, and Evolution*. P.S.M. Hill, V. Mazzoni, N. Stritih Peljhan, M. Virant-Doberlet, A. Wessel (Eds.). Springer Nature.

Manuscripts in Preparation

- (6) Jung J., J.G. McDaniel, K.M. Warkentin. *In prep*. “Ontogeny of predation risk assessment and escape-hatching decisions based on ambiguous cues in red-eyed treefrogs”
- (7) B.A. Guell, J. Jung, J.C. Diaz^u, K.M. Warkentin. *In prep*. “Ontogeny of risk-cue sampling and hatching performance in the red-eyed treefrog, *Agalychnis callidryas*.”

HONORS, AWARDS, & GRANTS

Short list for JEB's 2019 Outstanding Contribution Award	2020
Ewha-Luce International Seminar, Clare Booth Luce Foundation (\$5,000)	2019
Teaching Fellow Peer Mentor, Boston University (\$2,000)	2018 & 2019
Biology Department Travel Award, Boston University (\$700)	2017 & 2018
Charlotte Magnum Student Support Scholarship, SICB (\$300)	2016 & 2017
NSF GRFP Honorable Mention	2016
Biology Conference Travel Award, Williams College (\$500)	2015
Thomas G. Hardie III Prize in Environmental Studies, Williams College (\$500)	2015
NSF REU, Cary Institute of Ecosystem Studies (\$7,600)	2014
Environmental Studies Department Class of 1960 Scholar, Williams College	2014 - 15
Dean's List, Williams College	2013 - 15
Steel Family Scholarship for Teaching, Williams College (\$212,000)	2011 - 15
Seoul National University Scholarship (\$2,000)	2011
Steve and Linda Wight Scholarship, The College Preparatory School (\$172,000)	2007 - 11

INVITED TALKS

8. **Boston University** Feb 13, 2020
"Some research insights + personal path into Animal Behavior & Ecology." Guest Speaker in BI225 Behavioral Biology. Boston, MA.
7. **Vassar College** Nov 13, 2019
"Multimodal mechanosensing for escape-hatching decisions of red-eyed treefrog embryos." Guest Speaker in Biology Department Seminar Series. Poughkeepsie, NY.
6. **Ewha Woman's University** Jul 4, 2019
"Vibration-cued escape hatching in red-eyed treefrogs." ELIS Expanding Horizons. Seoul, South Korea.
5. **Smithsonian Tropical Research Institute** Jun 19, 2019
"Vibration-cued escape hatching in red-eyed treefrogs." Frog Talk Series. Gamboa, Panama. [Slides](#).
4. **Boston University** Mar 6, 2019
"Developmental change in vibration & vibration-cued hatching decisions in red-eyed treefrogs." EBE Chalk Talk Series. Boston, MA.
3. **Brookline High School** Nov 12, 2018
"Escape hatch!" Guest Speaker in *Drawing for Understanding in Field Science*. Boston, MA.

2. Boston University

Sep 25, 2018

“How do embryos sense vibrations? + personal path into Animal Behavior & Ecology.” Guest Speaker in BI225 Behavioral Biology. Boston, MA. [Slides](#).

1. Boston University

Feb 8, 2017

“How do red-eyed treefrog embryos detect snake attacks? Assessing the role of vestibular mechanoreception.” EBE Chalk Talk Series. Boston, MA. [Slides](#).

CONFERENCE PRESENTATIONS (intern/undergrad co-authors^u)

18. **Jung J.**, S.J. Serrano-Rojas^u, and K.M. Warkentin. 2020. [Talk](#). Multimodal mechanosensing enables treefrog embryos to escape egg predators. *Animal Behavior Society Virtual Meeting*

17. Serrano-Rojas, S.J.^u, **J. Jung**, and K.M. Warkentin. 2020. [Poster](#). Multimodal mechanosensing for escape-hatching decisions of red-eyed treefrogs. *Society for Integrative and Comparative Biology Meeting*, Austin, TX.

16. C. Fouilloux^u, **J. Jung**, A.M. Ospina^u, R. Snyder^u, K.M. Warkentin. 2019. [Poster](#). Developmental changes in mechanosensory cue use in red-eyed treefrog embryos. *European Society for Evolutionary Biology*, Turku, Finland.

15. **Jung J.**, B.A. Guell, K.M. Warkentin. 2019. [Poster](#). Inner ear development across onset and improvement of escape-hatching ability in red-eyed treefrogs: a confocal and μ CT analysis. *ELIS Expanding Horizons*, Seoul, South Korea.

14. **Jung J.**, B.A. Guell, K.M. Warkentin. 2018. [Poster](#). Inner ear development across onset and improvement of escape-hatching ability in red-eyed treefrogs: a confocal and μ CT analysis. *Society for Integrative and Comparative Biology Meeting*, San Francisco, CA.

13. **Jung J.**, J.G. McDaniel, K.M. Warkentin. 2018. [Talk](#). 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.

12. Edwards, J., **J. Jung**, L. Davis^u, 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.

11. **Jung J.**, J.G. McDaniel, K.M. Warkentin. 2017. [Poster](#). 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.

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

9. Kim, S.J.^u, **J. Jung**, S.M. Perez Arias^u, J.G. McDaniel, K.M. Warkentin. 2016. [Poster](#). Is ear function necessary for vibration-cued hatching in red-eyed treefrogs? *Animal Behavior Society Meeting*, Columbia, MO.

8. **Jung J.**, S.J. Kim^u, 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.

7. Kim, S.J.^u, **J. Jung**, S.M. Perez Arias^u, 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.
6. Warkentin, K.M., Cohen, K.L., Diaz, J.C.^u, Guell, B.A., **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.
5. **Jung J.**, S.J. Kim^u, 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.
4. **Jung J.**, 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.
3. 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.
2. **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.
1. **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. †

† Media coverage in [The Millbrook Independent](#).

RESEARCH PROJECTS

5. *Boston University & Smithsonian Tropical Research Institute* 2015 - 20
 - + **Advisors:** Drs. Warkentin (Biol) and McDaniel (Mech Engineering), Boston University
 - + **Project:** Integrated vibration playback experiments with morphological and functional studies of sensory systems across ontogeny to test hypotheses of ontogenetic adaptation and developmental constraint for vibration-cued early-hatching behaviors in red-eyed treefrog embryos.

† Media coverage in [National Geographic](#), [New York Times](#), [Science Magazine](#), [The Verge](#), [Live Science](#), [IFLScience!](#), [Mongabay](#), & [Popular Science](#).
4. *Hopkins Memorial Forest* 2014 - 15
 - + **Advisor:** Dr. Edwards (Biol), Williams College
 - + **Project:** (i) Constructed spatial distribution maps showing the density and diversity of ever species within the study area. (ii) Recorded timelapse videos to capture and analyze pollination events on select stems.

† Media coverage in [Northern Woodlands Podcast](#).
3. *Center for Environmental Studies* 2012
 - + **Advisor:** Dr. Racela (Envi Sci), Williams College
 - + **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.

2. *Cary Institute of Ecosystem Studies* 2014
- + **Advisor:** Dr. Schmidt (Biol), Texas Tech University
 - + **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.
1. *US Department of Agriculture* 2008 - 11
- + **Advisor:** Dr. 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.

MENTORSHIP OF UNDERGRADUATE & INTERN RESEARCH

- + UROP Interns: A. Almanzar (2016 - 17), A. Chaiyasarikul (2015 - 16), S. Kim (2015 - 16).
- + Research for Credit Program: C. Lam (2019 - 20), A. Chissick (2017 - 18), K. Motter (2017 - 18).
- + Undergraduate Volunteers: A. Chitoor (2018 - 19), C. Terry (2018).

TEACHING EXPERIENCE

Boston University

- + Teaching Fellow for *Animal Behavior* (remote class) 2020
- + Guest lecture in *Behavioral Biology* 2020
- + Teaching Fellow Peer Mentor 2018 - 20
- + Teaching Fellow for *Animal Behavior* 2019
- + Guest lecture in *Behavioral Biology* 2019
- + Teaching Fellow for *Introduction to R: Software for Statistical Computing* 2018
- + Teaching Fellow for *Introduction to Biology: Ecology & Evolution* 2017
- + Teaching Fellow for *Vertebrate Zoology* 2015

Vassar College

- + Guest lecture in Biology Department Seminar Series 2019

Brookline High School

- + Guest lecture in *Drawing for Understanding in Field Science* 2018

Smithsonian Tropical Research Institute

- + Teaching Assistant for *Statistical Computing Using R* 2018

Williams College

- + Teaching Assistant for *Introduction to Environmental Science* 2014 - 15
- + Teaching Assistant for *Ecology* 2015
- + Teaching Assistant for *Calculus* 2014

TERC Education Research Non-Profit

2013 - 14

+ **Advisors:** Drs. Puttick & Drayton

+ **Project:** 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.

Cape Cod Sea Camps

+ Overnight Camp Counselor (for incoming 9th grade girls)

2014

Maria Mitchell Association

+ Environmental Education Instructor

2013

Greylock Elementary School

+ Science Teacher for the 5th grade

2011 - 13

TECHNICAL SKILLS

R for Everything

+ Data preparation (cleaning and wrangling) and statistical analysis/exploratory visualization with R Markdown (advanced dplyr and ggplot2 package applications)

+ Reproducible and replicable presentation and paper generation with R Markdown

+ Version control using Git and Github with Rstudio

+ Website development and management with R blogdown, Hugo, and Netlify

Other (non-R) Technical Skills

+ Matlab

+ Python

+ Ruby

+ L^AT_EX

+ Excel

+ Powerpoint

+ Photoshop

+ Illustrator

+ ImageJ

+ SYSTAT

+ JMP Pro

+ Prism

+ Raven

+ Audacity

NON-TECHNICAL SKILLS

Spoken Languages

+ Spanish (conversational)

+ English (fluent)

+ Korean (native)

Certifications

+ SSI: Advanced Open Water Diver, Enriched Air Nitrox

+ Red Cross CPR & First Aid

SERVICE

Freelance Graphic Design and Illustration

+ Tidymodels team, RStudio

Peer reviews of manuscripts for journals

- + *Journal of Insect Physiology* (1)
- + *Scientific Reports* (1)
- + *Animal Behaviour* (1)
- + *Biological Journal of the Linnean Society* (1)

Society Memberships

- + *American Association for the Advancement of Science*
- + *Society for Integrative and Comparative Biology*
- + *Sigma Xi*
- + *Animal Behavior Society*

Poster Judge

- + Boston University Biology Graduate Student Symposium
- + Boston University Freshman Interdisciplinary Gender & Sexuality Studies Class.

Laboratory Safety Coordinator

- + Warkentin Lab, Boston University

Notetaker for Students with Documented Disabilities

- + Biology Department, Disability Support Services, Williams College

PUBLIC OUTREACH

Scientific Media Consultant

2019 & 2020

- + National Geographic Little Kids Magazine (May/June 2020)
- + [Inside JEB](#) (Oct 2019)

Lesson Plan Teaching Assistant

2017

- + Richard J. Murphy Boston Public School, 7th grade
- + Contributed to revisions of lesson plan and assisted in leading course material and class assignments based on my lab's research conducted in the field working with red-eyed treefrogs and embryo behavior (with NSF-RET teacher)

Volunteer

2016

- + Boston University BIOBUGS Outreach Program
- + Exposed high school students to hands-on biology experiments, sophisticated scientific equipment, interaction with graduate students, & the Boston University campus