

JESSIE RACK
jessie.rack@gmail.com

EDUCATION

University of Connecticut, Storrs, CT August 2010 – May 2016
Ph.D. in Ecology & Evolutionary Biology. Dissertation: “Antipredator Adaptations of Spotted Salamander Larvae across a Geographic Gauntlet of Predation Risk.”

Slippery Rock University, Slippery Rock, PA January 2007 – May 2010
B.S. in Biology. 4.00 GPA

West Virginia University, Morgantown, WV August 2000 – May 2005
B.A. in Music, minor in Creative Writing. Graduated summa cum laude.

LEADERSHIP

Director of Education, Maine TREE Foundation January 2021 - present
State coordinator of Project Learning Tree, a standards-aligned, place-based curriculum focused on forests; lead the design, development, and implementation of education programs and services, including Maine TREE’s annual Forests of Maine Teachers’ Tour and an ongoing Zoom workshop series on engaging learners remotely; write grants collaboratively to support programs; strengthen educational partnerships throughout Maine and across all programs of Maine TREE.

President, Pima County Master Naturalists, 2019 - 2021
Served on the Board of Directors of the Pima County Chapter of the AZ Master Naturalists; prepared the agenda and led board meetings and events; planned the annual member retreat.

Instructor, Green Academy, UA Community and School Garden Program, 2018 - 2020
Planned and co-facilitated monthly professional development workshops for teachers in the Tucson Unified School District.

Instructor, STEM-AZing Teacher Professional Development, UA Community and School Garden Program, June 18-20, 2019

Led workshops and helped facilitate this 3-day professional development workshop for Arizona STEM teachers. Workshops developed for this event include: AZ Science Standards; worms; seed adaptations; garden ecosystems; and phenology mandalas.

Instructor, Biosphere 2 STEM Teacher Professional Development: Light, June 6 - 7, 2019.
Led workshops for Arizona STEM Teachers on transpiration, light, and using your school garden as a teaching tool.

Naturalist, Medomak Family Camp, Summer 2017; Summer 2018, guest instructor Summer 2019.
Designed interactive, hands-on nature activities tailored by age group for campers ages 3-17. Adapted teaching materials and methods to meet campers’ varying needs. Led weekly family-oriented interpretive field trips to a local bog to teach about its unique ecology.

Co-Organizer, Mary George Freshmen Research Conference, Princeton University, 2016 - 2018

This biannual freshman research conference allows outstanding freshmen to present their previous semester's research projects.

Workshop Leader, Higher Ed-Ventures, Princeton Writing Program, Princeton University, Spring 2018

Led a professional development workshop for colleagues on how to teach students to read and understand scientific literature.

Grading Scientific Writing Workshop Leader, McGraw Center for Teaching and Learning, Princeton University, Spring 2017; Spring 2018

Led workshops for teaching assistants in the sciences and engineering on how to grade student writing in their field.

Leader, Faculty Working Group, Princeton Writing Program, Fall 2017.

Collaborated with colleagues to mentor new faculty by providing feedback and support through their first semester.

Interpretive Naturalist, Williamstown Rural Lands Foundation, Summer 2016

Ran the Dietze Interpretive Center, engaging with visitors of all ages. Developed and implemented a "Junior Field Naturalist" program, which encouraged curiosity about nature and taught children the foundations of scientific inquiry. Designed educational signage for a public "Wetland Walk."

Organizer and Leader, EEB Book Club, 2014-2016; 2020- present

Lead a popular science book club, in which we read and evaluated books by scientists and nonscientists.

Graduate Student Symposium Organizing Committee, UConn EEB Department 2010-2014

Planned and organized this event for graduate students to present their research to the university. Tasks included securing funding, scheduling opening and keynote speakers, ensuring all speaking spots were filled, moderating sessions, and emceeing the symposium itself.

Secretary, Graduate Student Association, UConn EEB Department, 2012-2013

Kept meeting minutes and attendance, managed email communication and provided regular updates to the GSA's webpage.

President, Beta Beta Beta National Biological Honors Society, Lambda Lambda Chapter of Slippery Rock University, 2008-2010.

Ran meetings, planned and executed outreach events, organized group trips.

TEACHING & MENTORING EXPERIENCE

Program Coordinator, Supporting Environmental Education and Communities (SEEC) Program, University of Arizona Community and School Garden Program, 2018 - 2020

Designed and implemented an environmental education outreach program that aimed to increase interest in science, technology, engineering, arts, mathematics (STEAM) and social science among K-12 students in the Tucson Unified School District (TUSD). I provided direct service to partnered classrooms, teaching lessons on plant science, animal ecology, and earth systems, and guiding students through independent garden-based research projects.

Lecturer, Princeton Writing Program, Princeton University, 2016 - 2018.

Taught a writing seminar that I designed entitled “Sensory Communication.” In this course, my students wrote about the theories and complexities of animal communication systems, used scientific studies of potential human pheromones to intervene in the philosophical free will-determinism debate, and constructed a research paper targeting an intersection of human sensory communication and culture.

Ecology Instructor, Wildland Studies Program, Iceland, July 2018

Instructed 16 undergraduate students from across the US and Canada in an “Arctic Ecosystems” field course in Iceland, worth 10 semester credits at their respective universities. Led field explorations and delivered lectures on topics such as science communication, ecology, and Iceland’s glacial history.

Assistant Director, University Writing Center, University of Connecticut, 2015 – 2016.

Served on a leadership team for a large, hybrid writing center and writing-in-the-disciplines program that combined tutoring, writing workshops, research, and support for writing across the curriculum. Tutored student writing and contributed to training, managing, and assessing tutors. Co-facilitated 2-day orientation. Ran campus-wide Personal Statement writing workshops. Maintained social media presence, including Twitter and Facebook.

Independent Study Co-Leader, University Writing Center, University of Connecticut, 2016.

Oversaw six undergraduate Writing Center tutors in a Science Writing independent study in which we collected preliminary data on writing in the STEM departments at UConn. The objective of the study was to investigate existing writing practices across the university to improve STEM tutoring practices at the Writing Center.

Tutor, University Writing Center, University of Connecticut, 2014 – 2015.

Tutored student writing of freshman to graduate-level writers of all disciplines at any stage of the writing process. Specific training on First Year Experience (FYE) writers and second language writers.

Teaching Assistant, Limnology, University of Connecticut, Fall 2011.

Worked with students on major independent research projects and helped assess project grades. Wrote and delivered a lecture on the behavior of aquatic organisms. Attended lectures and supported professor during labs.

Teaching Assistant, Biology 1102: Foundations of Biology, University of Connecticut, Fall 2010; Spring 2011

Taught two sections of biology labs for non-majors, primarily freshmen. Each lab included a brief lecture, a description and demonstration of the hands-on component, and assisting and supervising students. Graded weekly quizzes and short student essays.

RESEARCH EXPERIENCE

University of Connecticut, Storrs, CT

August 2010 - May 2016

Graduate Research

Dissertation research on the behavioral ecology of predator-prey interactions in salamanders. Conducted fieldwork across New England, collecting amphibian larvae and egg masses, sampling ponds, and completing predator surveys. Collected, managed, analyzed, and interpreted amphibian behavioral data using spreadsheets, databases, and statistical software. Followed standardized survey and sample protocols in both the field and laboratory

Slippery Rock University, Slippery Rock, PA

August 2009 - May 2010

Undergraduate Research Assistant: Aquatic Research Facility

Designed independent research project: "Behavioral responses to olfactory cues in the convict cichlid, *Amatitlania nigrofasciata*." Performed animal care and maintenance of fish.

Indiana University, Bloomington, IN

June - August 2008

Research Experience for Undergraduates (REU) Participant

Recipient of highly competitive REU appointment. Conducted independent research at the Center for the Integrative Study of Animal Behavior. Project title: "Sexual dimorphism of electrocommunication signals across populations of the weakly electric fish, *Apteronotus albifrons*."

FELLOWSHIPS AND AWARDS

2019 American Association for the Advancement of Sciences IF/THEN Ambassadorship
Prestigious national award honoring women in STEM fields to serve as high-profile role models to middle school girls. Fewer than 10% of applicants were selected for this program, which seeks to increase diversity & representation of female scientists in the media. \$5000 award plus multiple opportunities to represent women in STEM.

2015 American Association for the Advancement of Science Mass Media Fellowship
10-week internship at National Public Radio in Washington D.C., plus \$5,000 for living expenses.

2012 National Science Foundation Graduate Research Fellowship
\$32,000 annual stipend plus \$12,000 annual cost-of-education allowance to the University of Connecticut, for three years (2012-2015).

University of Connecticut Fellowships:

2014 Doctoral Dissertation Fellowship
\$2,000 award.

- 2010 Outstanding Scholar Fellowship
Three-year fellowship equivalent to a half-time graduate assistantship for the academic year plus a \$2,000 summer stipend.
- 2004 Waitman Barbe Creative Writing Award, West Virginia University
Won a university-wide undergraduate writing award for a creative fiction piece entitled “This Perpetual Wandering.”

ACADEMIC PUBLICATIONS

- Rack, JM** and MC Urban. In prep. Tradeoffs between evolved antipredator and competitive traits shape prey responses to predators across a latitudinal gradient.
- Rack, JM** and MC Urban. In prep. Antipredator responses of larval spotted salamanders to Eastern newt chemical cues vary over the landscape.
- Ho, WW, **JM Rack** and GT Smith. 2013. Divergence in androgen sensitivity contributes to population differences in sexual dimorphism of electrocommunication behavior. *Hormones and Behavior* 63(1):49-53.

GRANTS AND SCHOLARSHIPS

- 2013 Ralph M. Wetzel Fund to the University of Connecticut’s Department of Ecology and Evolutionary Biology and Connecticut State Museum of Natural History Award (\$400)
- 2012 Ralph M. Wetzel Fund to the University of Connecticut’s Department of Ecology and Evolutionary Biology and Connecticut State Museum of Natural History Award (\$275)
- 2011 Ralph M. Wetzel Fund to the University of Connecticut’s Department of Ecology and Evolutionary Biology and Connecticut State Museum of Natural History Award (\$1200)
- 2011 Sigma Xi Grants-in-Aid of Research (\$400)
- 2009 Beta Beta Beta Alumni Scholarship (\$1000)
- 2009 William R. Sigmund PJAS Scholarship (\$200)
- 2008 Slippery Rock University Faculty/Student Research Grant (\$1710)
- 2008 Frank A. Pugliese “Rock” Scholarship (\$1200)
- 2000 West Virginia University Presidential Scholarship (Cost of attendance for four undergraduate years.)

SELECTED PANELS AND PRESENTATIONS

- 2021 *Workshop*, Rack, J. “Maine Project Learning Tree and Fresh Takes on Engaging Remote Audiences.” Maine Environmental Education Association Annual Conference, Remote.
- 2021 *Invited Panelist*, “Alumni Panel: Nonacademic Jobs.” University of Connecticut Department of Ecology & Evolutionary Biology Graduate Student Symposium, Remote.
- 2020 *Talk*; Rack, J. and M. Swanson. “Using Non-Formal Environmental Education to Enhance Outcomes in High School Environmental Science” North American Association for Environmental Education Annual Conference, Remote.

- 2020 *Invited Talk*; Rack, J. “Schoolyard Ecosystems: Doing Environmental Education in School Gardens” March for Science AZ – Brains and Brews Series, Tucson, AZ
- 2019 *Workshop*, Rack, J., Larsen, T., and B. Baldwin. “School Gardens as Educational Tools: Creating Living Laboratories with your School or Community Garden.” Arizona Association for Environmental Education Annual Conference, Prescott, AZ
- 2019 *Invited Panelist*, “How Do You EE? Intersectionality and Inclusivity in Working with Diverse Communities in Arizona.” Arizona Association for Environmental Education Annual Conference, Prescott, AZ
- 2016 *Invited Talk*, Rack, J. “Predator-Prey Interactions and Chemical Signaling in Amphibians.” Massachusetts College of Liberal Arts, North Adams, MA
- 2013 *Talk*; Rack, J. “Tetrodotoxin: chemical defense or chemical cue?” University of Connecticut Ecology & Evolutionary Biology Department Graduate Student Symposium, Storrs, CT
- 2013 *Talk*; Rack, J. “Do *Ambystoma maculatum* larvae evolve to recognize local predator cues?” Annual meeting of the Society for Integrative and Comparative Biology, San Francisco, CA
- 2012 *Talk*; Rack, J. “Behavioral responses of *Ambystoma maculatum* larvae to predator chemical cues on a geographic scale.” University of Connecticut Ecology & Evolutionary Biology Department Graduate Student Symposium, Storrs, CT
- 2010 *Talk*; Rack, J and SC Beeching. “Behavioral response to olfactory cues in the convict cichlid, *Amatitlania nigrofasciata*.” Penn State-Behrend-Sigma Xi: Undergraduate Research Conference, Erie, PA
- 2010 *Talk*; Rack, J and SC Beeching. “Behavioral response to olfactory cues in the convict cichlid, *Amatitlania nigrofasciata*.” Slippery Rock University Symposium for Student Research, Slippery Rock, PA
- 2009 *Poster*; Rack, J, WW Ho and GT Smith. “Sexual dimorphism of electrocommunication signals across populations of the weakly electric fish, *Apteronotus albifrons*.” Annual meeting of the Society for Integrative and Comparative Biology, Boston, MA
- 2008 *Talk*; Rack, J, WW Ho and GT Smith. “Sexual dimorphism of electrocommunication signals across populations of the weakly electric fish, *Apteronotus albifrons*.” Indiana University’s 2008 Research Experience for Undergraduates in Animal Behavior, Bloomington, IN

PROFESSIONAL DEVELOPMENT & CERTIFICATIONS

National Geographic Certified Educator Program, National Geographic. April - June 2020

A 30-hour course that recognizes pre-K through 12 formal and informal educators committed to inspiring the next generation of explorers, conservationists, and changemakers. empowering students to be informed decision-makers equipped to solve meaningful challenges in their communities and beyond.

Arizona Master Naturalists, Pima County Chapter. January - May 2019.

Training to become an Arizona Master Naturalist involves a 60-hour training course on topics from natural history to sustainability and cultural connections, as well as a commitment to volunteer 60 hours a year to local community partners in need of citizen science, stewardship, or educational assistance.

Project Learning Tree, Sustainable Forestry Institute. Northern Arizona University, January 26-27, 2018.

Hands-on, interdisciplinary environmental education workshop on conservation, forests, plant science, and sustainability.

Local Phenology Leader Training, National Phenology Network. August - November 2018.

The Local Phenology Leader program trains volunteers to coordinate the implementation of the Nature's Notebook citizen science project with students and the general public. Nature's Notebook tracks the phenology of local plants and animals and provides data to a national database. I use this program with several classes in the SEEC Program.

Project WILD, Association of Fish and Wildlife Agencies. Northern Arizona University, November 3-4, 2018

Two-day teacher-training workshop on implementing an interdisciplinary conservation and environmental education program involving wildlife.

MEDIA APPEARANCES

“How do Animals Survive in the Desert?” *CBS Mission Unstoppable*, CBS Television. April 17, 2021. Featured on an episode of the nationally-syndicated television show “Mission Unstoppable” to share my science career and knowledge of animals in the desert with middle school girls. <https://youtu.be/k06bd2-1fjQ>

“Cultivating with Kids,” *Arizona Illustrated*, Arizona Public Media. January 24, 2021. Featured on an episode exploring the UA's Community & School Garden Program and how we had adapted to engaging students post-pandemic. <https://tv.azpm.org/p/zfeature/2021/1/24/187926-cultivating-with-kids/>

Science Will Save the World, YouTube. Spring – Fall 2021

Self-produced thirteen episodes of a YouTube science show aimed at educating and engaging students at home during the pandemic with participatory science lessons and creature features. <https://www.youtube.com/channel/UCoLY7k8wOA0Pkav0-aKuCuA/videos>

“Us in Flux: Conversations - Ecology, Naturalism, and Communities with Kij Johnson and Jessie Rack.” Arizona State University's Center for Science and the Imagination Web Series. April 20, 2020.

Spoke with author Kij Johnson about the science behind her short story, “An Attempt at Exhausting My Deck” for ASU's *Us in Flux*; is a series of short stories and virtual gatherings that explore themes of community, collaboration, and collective imagination in response to transformative events. <https://youtu.be/6u2q6D92ZZQ>

SELECTED SCIENCE JOURNALISM

- 2016 [Building a More Diverse Forest](#). *Connecticut Woodlands Magazine*. Winter 2016, 80(4), 18-21.
- 8/12/2015 “Dining Like Darwin: When Scientists Swallow Their Subjects,” *The Salt*, National Public Radio.
<http://www.npr.org/sections/thesalt/2015/08/12/430075644/dining-like-darwin-when-scientists-swallow-their-subjects>
- 8/12/2015 “Not Everybody Likes Kissing,” *Shots*, National Public Radio.
<http://www.npr.org/sections/health-shots/2015/08/12/431664215/not-everybody-likes-kissing>
- 7/30/2015 “Scientists Urge Ban on Salamander Imports to U.S. To Keep Fungus at Bay,” *The Two-Way*, National Public Radio.
<http://www.npr.org/sections/thetwo-way/2015/07/30/427472578/scientists-urge-ban-on-salamander-imports-to-u-s-to-keep-fungus-at-bay>
- 6/29/2015 “Why You Should Thank a Caterpillar for Your Mustard and Wasabi,” *The Salt*, National Public Radio.
<http://www.npr.org/sections/thesalt/2015/06/29/418518152/why-you-should-thank-a-caterpillar-for-your-mustard-and-wasabi>
- 6/26/2015 “Save Wildlife, Save Yourself?” *Goats and Soda* blog, National Public Radio.
<http://www.npr.org/sections/goatsandsoda/2015/06/26/416858166/save-wildlife-save-yourself>

DIGITAL AND CREATIVE PUBLICATIONS

- 2018 – pres. Writer: *Imaginary Papers* blog, from Arizona State University’s Center for Science and the Imagination.
This collaboration explores the interdisciplinary space between science and the humanities, focusing on the intersection of poetry and science. My recent pieces include a [Science Fiction Frames analysis](#) of the science behind the horror movie *The Descent*, and [“Some of us are born in orbit”](#), about artificial intelligence and poetry.
- Spring 2018 “The Scorpion and the Stars,” (poem) in *The Avocet*
- 2012 - 2015 Science blogger: *I Spell it Nature*.
Each post features a poem inspired by the natural world and explains the science behind what the poet observes and describes.
<http://www.ispellitnature.wordpress.com>
- 2014- 2015 Blog Writer for *The World Energy Foundation*
Blog posts include topics such as renewable energy, humanitarianism, and Environmental concerns.
- 2012 “Road Trip, 2006,” (poem) in *Long River Review*, University of Connecticut Press.

2005 “Clarity,” (poem) in *Calliope*, West Virginia University Press.

OUTREACH AND SERVICE

Maine Big Night Amphibian Crossing Project, UMaine, Spring 2021

Adopted a stretch of highway to monitor on rainy spring nights, collecting data on the amphibian migration.

Arizona Master Naturalists, Pima County Chapter, Spring 2019 - 2021

Volunteered in various roles in the organization, including as president-elect and as a writer for monthly newsletter.

Arizona Master Naturalists, Pima County Chapter, Spring 2019 - 2021

Volunteered in various roles in the organization, including as president-elect and as a writer for monthly newsletter.

Sky Island Alliance, Summer 2020 – December 2020

Volunteer with Border Wall study, which uses camera traps to identify animal species present along the Arizona-Mexico border in order to assess the impact of the border wall.

Tucson Food Share, Summer 2020 – December 2020

Volunteer weekly to distribute donated groceries to community members in need.

Pima County Parks and Recreation, Spring 2019 – December 2020

Volunteer to lead interpretive hikes and educate the public at environmental education outreach events.

Arizona-Sonora Desert Museum: Buffelgrass Project, April - December 2019.

Volunteer to coordinate with local groups to give talks about invasive buffelgrass.

AAAS Mass Media Fellowship Reviewer, Spring 2019

Reviewed applications for the 2019 cohort of the AAAS Mass Media Fellowship; ranked candidates and reported on applications

Conserve Wildlife NJ: Amphibian Crossing Project. February 2017 - June 2018

Volunteered at nighttime amphibian road crossings, helping breeding amphibians cross the road and collecting data for NJ's Wildlife Conservation Corps. These data have been used to inform New Jersey's wildlife legislature.

Stony Brook Millstone Watershed Association, Pennington, NJ, January 2017 - June 2018

Conducted bluebird nest monitoring; monitored trails as a trail guardian.

Hiring Committee, Princeton Writing Program Annual Lecturer Search, 2016-2018

Screened applications, conducted phone interviews, and assessed candidates for disciplinary diversity and potential to succeed as Writing Program lecturers.

Friends of Hopewell Valley Open Space, Hopewell, NJ, 2016-2017

Assisted the Stewardship Director with the creation of a forest management plan for restoring old-growth characteristics to a local forest property. Helped map the spread of invasive wisteria on a local conserved property.