

Rebecca O'Brien

Department of Fish and Wildlife Conservation, Virginia Tech

Education

May 2018-present—PhD student, Fish and Wildlife Conservation. Virginia Tech. Blacksburg, VA (Advisors William Hopkins and Ashley Dayer)

May 2018—MS. Biology University of North Carolina. Chapel Hill, NC. (Advisor Karin Pfennig)

May 2012—B.A. Environmental Science. Colorado College, Colorado Springs, CO. Graduated *cum laude*.
Dean's List: 2008, 2009, 2011, 2012. GPA: 3.75

Research

2015-2018— *Variation and Diversification in the Sexual Signals of the Plains Spadefoot Toad, Spea bombifrons*

- Designed and implemented protocol for field and laboratory studies to explore the causes of diversification in sexual signals of *Spea bombifrons*.

2012—*The Ants Go Marching*

- Performed an independent research project study of the population dynamics of ants and aphids in desert yucca communities.

2011—*The Other Side of Invasive: A study of niche partitioning between native and non-native bee species*

- Designed and implemented a sampling protocol to investigate temporal and resource niche partitioning between native and invasive bee species in rural Paraguay.

Work Experience

2015-2018—Researcher, University of North Carolina, Chapel Hill

- Designed and implemented protocol for sampling *Spea bombifrons* calls and collecting genetic data
- Navigated the permitting process for collection of biological specimens with multiple state agencies
- Worked independently to survey for *Spea bombifrons* and *Spea multiplicata* (spadefoot toads) in adverse weather
- Genotyped toe clips to distinguish hybrid and pure-bred species
- Designed and implemented protocol for lab experiments to build on field results

2015—Giant Garter Snake Research Technician. United States Geologic Survey. Dixon, CA.

- Trapped and hand-captured *Thamnophis gigas* (giant garter snakes)
- Measured snakes and assessed reproductive status
- Inserted intracoelomic and subcutaneous PIT tags
- Radiotracked in terrestrial and aquatic habitats
- Cared for captive snakes including feeding and administering medication

2014—Bat Research Technician. Indiana State University Cherokee National Forest, TN.

- Radio tracked threatened *myotis septentrionalis* (northern long eared bats) to roost sites and performed emergence counts
- Surveyed bat populations using mist nets and Anabat ultrasonic echolocation monitors
- Collected tissue and fur samples, attached wing bands, assessed age, health, and reproductive status

2013(winter)—Pit Viper Radio Telemetry Technician. University of Rhode Island. Hong Kong SAR

- Performed visual encounter and mark and recapture surveys for *Trimeresurus albolabris*
- Safely captured and handled vipers, Burmese pythons, and various large elapids and colubrids
- Anesthetized vipers to collect caudal blood samples and scale clips
- Inserted subcutaneous PIT-tags
- Radiotracked vipers through forested, mountainous terrain

2013 (summer) — Aquatic Restoration and Bear Management technician. Yosemite National Park, CA.

- Performed visual encounter surveys for endangered *Rana sierrae* (Sierra Nevada yellow-legged frogs)
- Removed invasive trout from remote alpine lakes and streams using gill nets and electrofishing techniques
- Radiotracked problem black bears and practiced hazing techniques to negatively condition bears.

2012-2013—Education Outreach Intern. Lava Beds National Monument, CA

- Prepared and presented talks and media regarding the ecology, history, and geology of the Lava Beds area
- Assisted the resource management team with the collection of data loggers, cave vandalism surveys, bat surveys, and white-nose syndrome control
- Prepared press releases for park events

Teaching

- BIOL 278L—*Animal Behavior Lab* Graduate TA. University of North Carolina. Spring 2017- Spring 2018
- BIOL 101L—*Principles of Biology Lab* Graduate TA. University of North Carolina. Fall 2016 and Summer 2017
- EV 212—*Energy: Environmental Thermodynamics and Energetics*. Post-bachelor's TA. Colorado College, Colorado Springs, CO Fall 2012
- FIW4344—*Herpetology* Guest lecture Virginia Tech 2019, 2020, 2021
- BIOL131—*Ecology and Adaptation* Guest lecture Radford University 2021

Mentorship

- Adair McNear—Post-bachelor's research assistant at University of North Carolina. 2018
- Rachel Keen—Undergraduate research assistant at University of North Carolina. 2017-2018
- Priya Desai—Undergraduate research assistant at University of North Carolina. Summer 2017
- Emma Karlok—Undergraduate research assistant at University of North Carolina. 2017
- Hannah Slep—Undergraduate research assistant at University of North Carolina. 2016-2017
- Elliott Schenker—Undergraduate research assistant at University of North Carolina. 2016-2017
- Led reading group with group of undergraduates 2019-present
- Silas Beers—Undergraduate research assistant at Virginia Tech 2020-2021
- Emma Fralin—Undergraduate research assistant at Virginia Tech 2020-2021
- Alyssa Selhorst—Undergraduate research assistant at Virginia Tech 2020-2021
- Margot Breiner —Undergraduate research assistant at Virginia Tech 2020-2021
- Austin Holloway—Undergraduate research assistant at Virginia Tech 2020- present
- Elizabeth Davis—Undergraduate research assistant at Virginia Tech 2020-present

Publications

- **Stirman***, R and Pfennig, K (2019) “*Competitively Mediated Changes in Male Toad Calls Can Depend on Call Structure.*” Behavioral Ecology. 10.1093/beheco/arz085
- **O'Brien, R**; Hopkins, WA; Dayer, AA (2021) “*Understanding landowner decisions regarding access to private land for conservation research*” Conservation Science and Practice
- **O'Brien, R**; Groffen, J; Dayer, AA; Hopkins, WA (2021) “*Breeding Behavior of the Eastern Hellbender in Natural Environments*” In prep

*Married name, subsequently decided to maintain maiden name

Presentations

- O'Brien, R; Hopkins, WA; Ashley, AA. (July, 2020) Understanding landowner decisions regarding access to private land for biological conservation research. North American Congress for Conservation Biology. Remote.
- O'Brien, R.; Ashley, D; Hopkins, W (2019 June 17). Landowner Perspectives Regarding Science, Conservation, and the Eastern Hellbender. Poster presentation for the Biennial Hellbender Symposium. Blacksburg, VA.
- O'Brien, R. (2019 May 10). Landowner perspectives on Hellbenders and Conservation in the Copper Creek Area. Presentation for the Copper Creek Committee Meeting. Abingdon, VA.
- “Sexual Signal Diversity in Spadefoot Toads” Lunch Bunch Seminar Series, Spring 2017.
- O'Brien, R and Pfennig, K. “*Variable Mating Signal Divergence Across a Zone of Sympatry in the Plains Spadefoot Toad, *Spea bombifrons**” In prep for submission to Evolution.
- O'Brien, R (2018) “Variation and Diversification in the Sexual Signals of Spadefoot Toads” (Master's thesis). Proquest Dissertations and Theses.
- O'Brien, R (2012). “The Ants Go Marching” (Unpublished undergraduate thesis). Colorado College, Colorado Springs, CO.
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Grants and Awards

- 2021—Richard Hunter Cross, Jr. Endowed Scholarship (\$1000)
- 2021—Burd S. McGinnes Fellowship (\$500)
- 2020—Fish and Wildlife Graduate Student Association Travel Grant (\$600)
- 2019—The Barn Group fellowship (\$1,000)

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- 2018—E.E. Williams Research Grant (\$1,000)
- 2018—Interfaces of Global Change Fellowship (\$40,000)
- 2017—Sigma Xi Grants in Aid of Research (\$715)
- 2016—Graduate Professional Student Federation Travel Grant (\$400)
- 2015—Doctoral Merit Assistantship (Total award value of \$47,500)
- 2011—Venture Grant (\$1,000)
- 2012—Venture Grant (\$1,000)

Service

- 2022—Interfaces of Global Change Sustainability Chair
- 2019—Fish and wildlife graduate student association web master
- 2019—Interfaces of Global Change Professional Development Chair
- 2018—Reviewer, Southeastern Association of Fish and Wildlife Agencies Journal
- 2017-2018—Member sustainability Council for the University of North Carolina
- 2017—Designed and distributed evolution lesson plans for K-12 through the SciRen program
- 2016-2018—Writer for *The Pipettepen*, a weekly science blog
- 2015-2016—Volunteer North Carolina Museum of Natural History Raleigh, NC.