

# Molly Simonis

## Curriculum Vitae

University of Oklahoma  
730 Van Vleet Oval  
Department of Biology Room 314  
Norman, OK 73019

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### Positions

2022-present Intelligence Community Postdoctoral Fellow  
University of Oklahoma Department of Biology, Norman, Oklahoma

### Education

2018-2022 PhD in Environmental Sciences  
Wright State University  
Dissertation Advisors: Dr. Megan Rúa and Dr. Lynn Hartzler  
Dissertation Title: Evaluating energy-based trait shifts and population level impacts of big brown bats (*Eptesicus fuscus*) with long-term exposure to *Pseudogymnoascus destructans*

2016-2018 MS in Biological Sciences  
Wright State University  
Thesis Advisor: Dr. Volker Bahn  
Thesis Title: Monitoring Ohio Bat Communities and Populations using Mobile Acoustics

2014-2015 GIS Certificate  
Sinclair Community College

2005-2009 BS in Environmental Biology  
University of Dayton

### Research Interests

Disease ecology, ecoimmunology, ecology, comparative physiology, trait shifts, natural history, environmental change, environmental disturbance, bats and other small mammals, zoonotic pathogens, spatiotemporal research, quantitative ecology

### Current Funding

2023 University of Oklahoma Data Institute for Societal Change Postdoc Fellowship  
*Quantifying bat cellular immunity under multiple stressors in western North America* (\$5,000 PI: **Simonis**)

2022 Intelligence Community Postdoctoral Fellow; ORISE  
*Modeling cross-species zoonotic infection dynamics in Neotropical bats* (\$202,000 PIs: **Simonis**, Becker)

### Previous Funding

2020 American Museum of Natural History's Theodore Roosevelt Memorial Fund. (\$1,500)  
2019 Midwest Bat Working Group John O. Whitaker Travel Award (\$200)  
2019 Wright State University's Graduate Student Assembly Professional Development Grant (\$200)

- 2019 Wright State University's Graduate Student Assembly Original Works Grant (\$496)
- 2019 Wright State University, Department of Biological Sciences Biology Award for Research Excellence (\$833)
- 2018 Sigma Xi Grants in Aid of Research (\$1,000)
- 2018 Wright State University's Graduate Student Assembly Professional Development Grant (\$200)
- 2018 Soroptimist International of the Americas Midwestern Region Virginia M. Wagner Educational Grant 2017 (\$1200)
- 2017 Wright State University, Department of Biological Sciences Biology Award for Research Excellence (\$2000)

### **Other Awards**

- 2021 Poster Teaser Award, Ecology and Evolution of Infectious Disease Conference (€300 for books)
- 2021 Graduate Student Artistic Poster Award, Midwest Ecology and Evolution Conference 2021 (\$50)
- 2021 Comparative & Evolutionary Physiology Section Research Recognition Award, American Physiological Society (\$500)
- 2016 Robert F. Heidelberg Wildlife Conservation Award, Brukner Nature Center (\$500)
- 2010 Environmental Biology Internship Achievement Award of Excellence, University of Dayton

### **Peer Reviewed Publications (ORCID: [0000-0001-5937-4494](https://orcid.org/0000-0001-5937-4494); [Google Scholar](#); †student mentee)**

Becker, DJ; Sandoval-Herrera, NI; **Simonis, MC**; & Sánchez, CA (*in press*). Bioaccumulation and foraging behavior. In: Fenton, B & Russo, D (eds). A Natural History of Bat Foraging: Evolution, Physiology, Ecology, Behavior, and Conservation. Elsevier.

Dmitriy V. Volokhov, DV; Lock, LR; Dyer, KE; DeAnglis, IK; Andrews, BR; **Simonis, MC**; Stockmaier, S; Carter, GG; Downs, CJ; Fenton, MB; Simmons, NB; Becker DJ. (2023). Expanded diversity of novel hemoplasmas in rare and undersampled Neotropical bats. *One Health* 17, 100633.

**Simonis, MC**; Hartzler, LK; Campbell, J; Carter, TC; Cooper, LN; Cross, K; Etchison, K; Hemberger, T; King, RA; Reynolds, R; Samar, Y<sup>†</sup>; Scafini, MR; Stankavich, S; Turner, GG; Rúa, MA (2023) Long-term capture records of *Eptesicus fuscus* in the eastern USA before and after white-nose syndrome. *Data in Brief*, 49: 109353.

**Simonis, MC**; Hartzler, LK; Turner, GG; Scafini, MR; Johnson, JS; & MA Rúa (2023). Long-term exposure to an invasive fungal pathogen decreases *Eptesicus fuscus* body mass with increasing latitude. *Ecosphere*, 14(2), e4426.

**Simonis, MC**; Bahn, V; & BKG Brown (2020). Mobile bat acoustic routes indicate cavity roosting species undergo compensatory changes in community composition following white-nose syndrome. *Acta Chiropterologica*, 22(2), 315-326.

**Simonis, MC**; Crow, RA; & MA Rúa. (2018) Case study: Methods and observations of overwintering *Eptesicus fuscus* with white-nose syndrome in Ohio, USA. *Journal of Wildlife Rehabilitation*, 38(3), 11-16.

**Simonis, MC;** Crow, RA; & D Oexmann. (2015) Mapping patient intake: a geospatial analysis of admitted wildlife rehabilitation patients. *Journal of Wildlife Rehabilitation*, 35(3), 21-27.

### **Publications in Advanced Stages (†student mentee)**

**Simonis, MC;** Hartzler, LK; Turner, GG; Scafani, MR; Johnson, JS; Rúa, MA (*in revision*). Capture rates of a less susceptible bat host species increase following fungal pathogen invasion. Submitted to *Ecology and Evolution*.

**Simonis, MC;** Becker, DJ. A general framework for modeling pathogen transmission in co-roosting host communities. In preparation for submission to *The American Naturalist*.

**Simonis, MC;** MA Rúa; & Hartzler, LK. Big brown bat (*Eptesicus fuscus*) energy expenditures during torpor are additive and increase with long-term pathogen exposure. In preparation for submission to *Conservation Physiology*.

**Simonis, MC;** Hartzler, LK; Turner, GG; Scafani, MR; Johnson, JS; Rúa, MA. Juvenile *Eptesicus fuscus* growth and capture rates decrease following fungal pathogen invasion. In preparation for submission to *Conservation Biology*.

**Simonis, MC;** Dyer, K; Lock, LR; Demory, B; Nunes, JM; Fenton, MB; Simmons, NB; Becker, DJ. Micronuclei intensity informs agricultural intensification, food guilds and stress in bats. In preparation for submission to *Science of the Total Environment*.

**Simonis, MC;** Dyer, KE; Allira, M; Demory, B; Zubayr, J<sup>†</sup>; Johnston, D<sup>†</sup>; Lock, LR; Chumchal, MM; Becker, DJ. The relationship between mercury concentrations in fur and feces in *Tadarida brasiliensis*. In preparation for submission to *Science of the Total Environment*.

### **Invited Talks and Seminars**

2023	Austin Peay State University Biology Seminar Series, Virtual
2022	Ecology and Evolutionary Biology Seminar, University of Oklahoma, Virtual
2022	Mississippi Bat Working Group Annual Meeting, Virtual
2019	Biological Sciences Seminar, Wright State University, Dayton, OH
	2019 Institutional Animal Care and Use Committee, Wright State University, Dayton, OH
	2018 Annual Ohio Wildlife Rehabilitators Conference, Newark, OH
2016	Dayton Regional Stem School, Dayton, OH
	2016 Annual Wildlife Conservation Research Presentation, Brukner Nature Center, Troy, OH

### **International and National Conference Talks and Posters (†presentation by mentee)**

2023 <sup>†</sup>	National Association for Research in Science Teaching, Chicago, IL
2023	Society for Integrative and Comparative Biology Annual Meeting, Austin, TX
2023 <sup>†</sup>	Society for Integrative and Comparative Biology Annual Meeting, Austin, TX
	2022 International Bat Research and North American Society for Bat Research Joint Conference, Austin, TX
2022	Ecology and Evolution of Infection Disease Conference, Atlanta, GA.
2022	Society for Integrative and Comparative Biology Annual Meeting, Virtual
2021	Ecology and Evolution of Infection Disease Conference, Virtual
2021	White-nose Syndrome National Webinar, Virtual
2021	Experimental Biology, Virtual

2020 Ecological Society of America Annual Meeting, Virtual  
 2020 White-nose Syndrome National Webinar, Virtual  
 2019 North American Society for Bat Researchers, Kalamazoo, MI  
 2019 Ecological Society of America Annual Meeting, Louisville, KY  
 2018 North American Society for Bat Research, Puerto Vallarta, Mexico.  
 2018 Ecological Society of America Annual Meeting. New Orleans, LA

**Regional and Local Presentations (\*includes student mentee coauthor; †presentation by student mentee)**

2021 College of Science and Math Festival of Research, Wright State University, Dayton, OH  
 2021 Ecosseminar, Wright State University, Dayton, OH  
 2021 Midwest Bat Working Group Annual Meeting, Virtual  
 2021 Midwest Ecology and Evolution Conference Virtual  
 2021 Ohio Bat Working Group Annual Meeting, Virtual  
 2020 Jim Runkle Woods Symposium, Wright State University, Virtual  
 2020 Ecosseminar, Wright State University, Virtual  
 2019\* Jim Runkle Woods Symposium, Wright State University, Dayton, OH  
 2019† Jim Runkle Woods Symposium, Wright State University, Dayton, OH  
 2019† Biological Sciences Seminar, Wright State University, Dayton, OH  
 2019 Ohio Physiological Society Annual Meeting, Dayton, OH  
 2019 College of Science and Math Festival of Research, Wright State University, Dayton, OH  
 2019† College of Science and Math Festival of Research, Wright State University, Dayton, OH  
 2019† College of Science and Math Festival of Research, Wright State University, Dayton, OH  
 2019 Midwest Bat Working Group Annual Meeting, Chicago, IL  
 2019 Ecosseminar, Wright State University, Dayton, OH  
 2019 Ohio Bat Working Group Annual Meeting, Columbus, OH.  
 2018 North American Joint Bat Working Group Meeting & Colloquium on the Conservation of Mammals in the Southeastern U.S. Roanoke, VA  
 2018 Ohio Natural History Conference 2018. Cleveland, OH  
 2018 Ohio Bat Working Group Annual Meeting, Columbus, OH  
 2017 Ecosseminar, Wright State University, Dayton, OH  
 2017 Annual Ohio Wildlife Rehabilitators Conference. Newark, OH.  
 2015 Annual Ohio Wildlife Rehabilitators Conference, Columbus, OH  
 2015 Honors Symposium, Sinclair Community College, Dayton, OH

**Guest Lectures**

2023 *Parasite Impacts on Hosts*; University of Oklahoma, BIOL 4633/5633 Ecology and Evolution of Infectious Diseases  
 2022 *Conservation and Disease*; Wright State University, BIO 4800/6800 Conservation Biology (Virtual)  
 2021 *Conservation and Disease*; Wright State University, BIO 4800/6800 Conservation Biology  
 2020 *Conservation and Disease*; Wright State University, BIO 4800/6800 Conservation Biology (Virtual)  
 2019 *Conservation and Disease*; Wright State University, BIO 4010/6010 Disease Ecology

2018 *Conservation and Disease*; Wright State University, BIO 4010/6010  
Disease Ecology

### **Teaching Experience**

2023 BIOL 5990 Social Network Analyses in Ecology, Evolution, and Behavior  
2020-2021 BIO 4000 Exercise Physiology Laboratory  
2020 BIO 1150 Organisms and Ecosystems Laboratory  
2020 BIO 3110 Clinical Microbiology Laboratory  
2019 BIO 3050 Animal Physiology  
2017-2018 BIO 3450 Concepts in Biology ECE/MCE  
2017-2020 BIO 1050 Biology of Food Laboratory  
2017 BIO 2310 Evolution and Ecology Laboratory  
2016 BIO 1120 Cells and Genes Laboratory

### **Service**

2023 Kentucky Bat Blitz Volunteer and Participant  
2023 CODE Workshop R for Ecologists Instructor  
2023 CODE Workshop Introduction to qGIS Instructor Assistant  
2023 Global Union of Bat Diversity Networks Participant (database and immunity committees) and Leader (bat stress committee)  
2022 Ohio Bat Blitz Volunteer and Participant  
2021 Midwest Bat Working Group Virtual Planning Team Co-Leader  
2020-2022 Wright State University COVID Taskforce Academic Reopening Subcommittee Graduate Student Representative  
2019 Workshops on Mechanobiology and Natural History of Bats (developed & implemented by Lisa N Cooper)  
2019 Trotwood Madison Junior High Science Fair Judge  
2019 Dayton Regional STEM School Science Fair Judge  
2019 Wright State College of Math and Science Innovation Weekend Mentor  
2019 Data Carpentry Ecology Workshop in R Coordinator and Helper  
2019 Dayton Regional STEM School Science Fair Judge  
2018-2021 Ecoseminar Coordinator Wright State University  
2018-2020 Lincoln Community Center After School Program Volunteer  
2018-2021 Brukner Nature Center Wildlife Rehabilitation Unit Volunteer  
2018 Wright State University Women in STEMM Mentor

### **Other Professional Experience**

2022 *Contracted Data Manager*, US Fish and Wildlife Service, Bloomington, IN  
2018-2019 *Graduate Research Assistant* Wright State University, Dayton, OH  
2016-2022 *Graduate Teaching Assistant* Wright State University, Dayton OH  
2014-2018 *Wildlife Research Fellow* Brukner Nature Center, Troy OH  
2013-2014 *Veterinary Technician* Family Pet Animal Hospital, Chicago IL  
2012-2014 *Emergency Veterinary Technician and Assistant* Chicago Veterinary Emergency and Specialty Center (now MedVet), Chicago IL  
2010-2012 *Veterinary Assistant* Troy Animal Hospital and Bird Clinic, Troy OH  
2009 *Intern* Brukner Nature Center, Troy OH

### **Grant Reviewer**

2019 Wright State University Graduate Student Assembly Original Works Grants  
2018 Wright State University Graduate Student Assembly Original Works Grants

**Manuscript Referee (number of manuscripts reviewed in parentheses)**

Biological Invasions (1)  
Frontiers in Immunology (1)  
Journal of Fish and Wildlife Management (1)  
Journal of Wildlife Rehabilitation (1)  
Plos ONE (1)  
Science of the Total Environment (1)

**Press and Media**

“Experimental Biology 2021: Q&A with Molly Simonis” *Lifelines by Dr. Dolittle* May 5, 2021  
“On the path to understanding the effects of white-nose syndrome” *Lifelines by Dr. Dolittle*  
September 23, 2019  
“Natural Cause” *Wright State University Newsroom* May 10, 2017

**Professional Affiliations**

Ecological Society of America  
Kentucky Bat Working Group  
Midwest Bat Working Group  
Ohio Bat Working Group  
North American Society for Bat Research  
Society for Integrative and Comparative Biology  
Southern Bat Diversity Network