

## Dylan T Simpson

Graduate Program in Ecology & Evolution  
Rutgers University  
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### EDUCATION

- (candidate) PhD in Ecology & Evolution, Rutgers University, New Brunswick, NJ  
*advisor: Rachael Winfree*
- 2016-2018 MS in Biology, College of William & Mary, Williamsburg, VA  
*advisor: Matthias Leu*
- 2012-2016 BS in Environmental Science, Western Washington University, Bellingham, WA  
*magna cum laude*  
*advisor: Rebecca Bunn*

### PUBLICATIONS (\*undergrad co-authors)

- 2022 Aldercotte, AH, **DT Simpson**, R Winfree. Crop visitation by wild bees declines over an eight-year time series - a dramatic trend, or just dramatic between-year variation? *Insect Conservation and Diversity*. [doi.org/10.1111/icad.12589](https://doi.org/10.1111/icad.12589).
- 2022 **Simpson, DT**, L Weinman, M Genung, M Roswell, M Teague, and R Winfree. Many bee species, including rare species, are important for function of entire plant-pollinator networks. *Proceedings of the Royal Society B* 289: 20212689. [doi.org/10.1098/rspb.2021.2689](https://doi.org/10.1098/rspb.2021.2689)
- 2019 **Simpson, DT**, MS Teague\*, JK Weeks\*, BZ Kaup, O Kerscher, and M Leu. Habitat amount, quality, and fragmentation associated with prevalence of the tick-borne pathogen *Ehrlichia chaffeensis* and occupancy dynamics of its vector, *Amblyomma americanum*. *Landscape Ecology* 34: 2435-2449. [doi.org/10.1007/s10980-019-00898-5](https://doi.org/10.1007/s10980-019-00898-5)
- 2019 Bunn, RA, **DT Simpson**, LS Bullington, Y Lekberg, and DP Janos. Revisiting the ‘direct mineral cycling’ hypothesis: Arbuscular mycorrhizal fungi colonize leaf litter, but why? *ISME* 13: 1891-1898. [doi.org/10.1038/s41396-019-0403-2](https://doi.org/10.1038/s41396-019-0403-2)
- 2019 **Simpson, DT**, MS Teague\*, JK Weeks\*, AD Lewis\*, PM D’Addio\*, JD Moore\*, JA Thompson\*, RT Canella\*, AC Harris\*, BZ Kaup, O Kerscher, and M Leu. Broad, multi-year sampling effort highlights complex dynamics of the tick-borne pathogen *Ehrlichia chaffeensis*. *Journal of Medical Entomology* 56(1): 162-168. [doi.org/10.1093/jme/tjy171](https://doi.org/10.1093/jme/tjy171)

### ORAL PRESENTATIONS

- 2022 **DT Simpson** and R Winfree. *Isolation-by-distance suggests low effective population density in bumble bees*. Ecological Society of America.

- 2020 Winfree, R, **DT Simpson**, J Reilly. *Mutualist networks and biodiversity-ecosystem function research*. Ecological Society of America, invited presentation
- 2019 **Simpson, DT**, LR Weinman, MA Genung, M MacLeod, R Winfree. *More pollinators are important to function in communities, relative to monocultures*. Ecological Society of America
- 2018 **Simpson, DT** and M Leu. *Investigating the spatiotemporal distribution of a tick-borne pathogen*. Invited presentation: Virginia Master Naturalists
- 2017 **Simpson, DT**, M Leu, et al. *Investigating heterogeneity of Ehrlichia chaffeensis prevalence*. Ecological Society of America; Virginia Academy of Sciences

### AWARDS AND HONORS

- 2018 *Distinguished Thesis*; William & Mary
- 2017 *Outstanding Teaching Assistant*; William & Mary
- 2017 *Best Student Presentation*; Entomology Section, Virginia Academy of Sciences
- 2016 *Presidential Scholar*; Western Washington University
- 2016 *Outstanding Poster Award*; Western Washington University

### GRANTS AND SCHOLARSHIPS

- 2022 \$700 – *School of Graduate Studies Travel Award*; Rutgers University
- 2021 \$2000 – *Charlie Kontos Memorial Grant*; Rutgers University
- 2021 \$5000 – *Core Facilities Utilization Grant* (co-PI); Rutgers University
- 2020 \$1300 – *Theodore Roosevelt Memorial Fund*; American Museum of Natural History
- 2019 \$32,204 – *Graduate Fellowship*; Rutgers EOAS Institute
- 2018 \$26,500 – *Excellence Fellowship*; Rutgers School of Env. and Bio. Sciences
- 2017 \$350 – *Arts & Sciences Graduate Research Grant*; College of William & Mary
- 2017 \$200 – *Student Travel Grant*; Ecological Society of America
- 2017 \$500 – *Graduate Research Grant*; College of William & Mary
- 2016 \$350 – *Graduate Research Grant*; College of William & Mary
- 2016 \$4000 – *Recruitment Fellowship*; College of William & Mary
- 2015 \$2000 – *Thomas Graham Memorial Scholarship*; Huxley College of the Environment
- 2015 \$500 – *Undergraduate research grant*; Western Washington University

### TEACHING

Fundamentals of Ecological and Environmental Modeling – teaching assistant 2021 - present

- Upper-level undergraduate course at Rutgers University
- Covers basics of mathematical modeling in ecology, with an emphasis on mapping ecological concepts and principles to mathematical models
- Provide personalized feedback and one-on-one support to students

Plant Diversity and Evolution – teaching assistant 2020 - present

- Upper-level undergraduate course at Rutgers University

- Covers macroevolutionary patterns of global plant diversity, with a lab emphasizing the identification and description of major plant families and their member species
- Developed and led remote lab activities, provide student support

Advanced Ecological Data Analysis – guest instructor and teaching assistant 2020, 2021

- Graduate-level course at Rutgers University
- Covers the use of many statistical methods common in ecology, building on the basics learned in undergraduate biostats
- Wrote and presented lectures, and designed accompanying exercises, on maximum likelihood, model selection, and Bayesian methods

Conservation Ecology – guest instructor 2019

- Upper-level undergraduate course at Rutgers University
- Selected readings and led discussions

General biology – teaching assistant 2016-2018

- Undergraduate course at William & Mary
- Led laboratory exercises in topics ranging from field ecology to zebra fish ontogeny

Statistics – workshops and lectures (various times)

- Introduction to frequentist stats (for undergraduates)
- Introduction to Bayesian modeling (for graduate students)
- Introduction to R
- Occupancy Modeling: Theory and Application (for mixed undergrad/grad)
- Spatial autocorrelation and spatially explicit linear models (for mixed undergrad/grad)

**MENTORSHIP**

Mentor for Aaron Scheiner, at Rutgers University 2020-2021

- Aaron and I collaborated on a project for the Xerces Society, modeling firefly species distributions
- Together we performed preliminary analyses focused on identifying firefly diversity hotspots and identifying biases in large, amalgamated datasets
- I trained Aaron in fundamentals of species distribution modeling and intermediate coding in R
- Aaron is now a PhD student in applied mathematics at Northwestern University

Honors thesis committee member for Olivia Spencer, William & Mary 2018-2020

- Provided training in study design and field techniques
- Assisted with successful summer research fellowship application
- After working with me, Olivia continued the project for her honors thesis, including supervising her own field team
- Olivia is now a PhD student with Dr. Erica Smithwick at Penn State

**SERVICE**

- Have served as a referee for...
  - o Ecology

- Ecology Letters
- Journal of Animal Ecology
- Functional Ecology
- Rutgers' Ecology & Evolution Diversity, Equity & Inclusion committee (2020-2021)
  - Collaborated in amendments to the Rutgers Grad Program in Ecology & Evolution's admissions process, to increase transparency and accessibility
  - Helped to organize and host informational outreach events, with the aim of reducing informal barriers to entry and ultimately to diversify the pool of grad school applicants and the field of ecology as a whole
- Rutgers' Ecology & Evolution Graduate Student Association
  - President (2021 – present)
  - Treasurer (2019 – 2021)
- Rutgers AAUP-AFT
  - Executive Council Member (2021 – present)
  - Department representative (2019 – present)

## **OUTREACH**

- Guest lesson on pollination for 3rd graders at Princeton Academy of the Sacred Heart
- Guest instructor on pollination and community ecology for the Environmental Stewards program, a continuing education course through Rutgers University and Duke Farms
- Led workshop on tick ecology and safety for the York County Park Service, in York County VA