

# Quentin D. Read

Postdoctoral Researcher

## Contact information

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## Postdoctoral research

**National Socio-Environmental Synthesis Center (SESYNC)**, Annapolis, MD *2018-present*  
Department of Forestry; Ecology, Evolutionary Biology, & Behavior Program  
Funded by NSF EAGER grant: “Intraspecific trait variation and community structure at a continental scale”  
Advisors: Dr. Phoebe Zarnetske (MSU) and Dr. Sydne Record (Bryn Mawr College)

**Michigan State University**, East Lansing, MI *2016-2018*  
Department of Forestry; Ecology, Evolutionary Biology, & Behavior Program  
Funded by NSF EAGER grant: “Intraspecific trait variation and community structure at a continental scale”  
Advisors: Dr. Phoebe Zarnetske (MSU) and Dr. Sydne Record (Bryn Mawr College)

## Education

**University of Tennessee**, Knoxville, TN *2011-2016*  
Ph.D., Ecology and Evolutionary Biology  
Advisor: Dr. Nathan Sanders

**University of North Carolina**, Chapel Hill, NC *2005-2009*  
B.S. with highest distinction, Environmental Science

## Skills

Processing and analyzing data in R, including STAN, JAGS, GIS libraries, and RMarkdown  
Parallel computing in Unix environment  
Using GitHub for collaborations  
Synthesizing data and theory, both in ecology and beyond  
Fluent in spoken and written German; communicate effectively in spoken and written Spanish

## Publications

**Read, Q. D.**, J. M. Grady, P. L. Zarnetske, S. Record, B. Baiser, J. Belmaker, M.-N. Tuanmu, A. Strecker, L. Beaudrot, and K. M. Thibault. 2018. Among-species overlap in rodent body size distributions predicts species richness along a temperature gradient. *Ecography*. DOI: 10.1111/ecog.03641

**Read, Q. D.**, B. Baiser, J. M. Grady, P. L. Zarnetske, S. Record, and J. Belmaker. 2018. Tropical bird species have less variable body sizes. *Biology Letters* 20170453. DOI: 10.1098/rsbl.2017.0453

**Read, Q. D.**, J. A. Henning, A. T. Classen, and N. J. Sanders. 2018. Aboveground resilience to species loss but belowground resistance to nitrogen addition in montane plant communities. *Journal of Plant Ecology*. DOI: 10.1093/jpe/rtx015

Read, Q. D., J. A. Henning, and N. J. Sanders. 2017. Intraspecific variation in traits reduces ability of trait-based models to predict community structure. *Journal of Vegetation*

*Science*. DOI: 10.1111/jvs.12555

- Hendershot, J. N.\*, **Q. D. Read**, J. A. Henning, N. J. Sanders, and A. T. Classen. 2017. Consistently inconsistent drivers of patterns of microbial diversity and abundance at macroecological scales. *Ecology*. DOI: 10.1002/ecy.1829
- Read, Q. D.**, S. M. Hoban, M. B. Eppinga, J. A. Schweitzer, and J. K. Bailey. 2016. Accounting for the nested nature of genetic variation across levels of organization improves our understanding of biodiversity and community ecology. *Oikos* 125:895-904. DOI: 10.1111/oik.02760 *Editor's Choice*.
- Welshofer, K. B., P. L. Zarnetske, N. K. Lany, and **Q. D. Read**. 2018. Short-term responses to warming vary between native vs. exotic species and with latitude in an early successional plant community. *Oecologia*. DOI: h10.1007/s00442-018-4111-9
- Butler, E. E., A. Datta, ..., **Q. D. Read**, ..., and P. B. Reich. 2017. Mapping local and global variability in plant trait distributions. *Proceedings of the National Academy of Sciences*. DOI:10.1073/pnas.1708984114
- Van Nuland, M. E., R. C. Wooliver, A. A. Pfennigwerth, **Q. D. Read**, I. M. Ware, L. Mueller, J. A. Fordyce, J. A. Schweitzer, and J. K. Bailey. 2016. Plant-soil feedbacks: connecting ecosystem ecology and evolution. *Functional Ecology*. DOI: 10.1111/1365-2435.12690
- Yoon, S. A.\* and **Q. D. Read**. 2016. Consequences of exotic host use: impacts on Lepidoptera and a test of the ecological trap hypothesis. *Oecologia*. DOI: 10.1007/s00442-016-3560-2
- Schussler, E. E., **Q. D. Read**, G. Marbach-Ad, K. Miller, and M. Ferzli. 2015. Preparing biology graduate teaching assistants for their roles as instructors: an assessment of institutional approaches. *CBE-Life Sciences Education* 14:1-11. DOI: 10.1187/cbe.14-11-0196
- Read, Q. D.**, L. C. Moorhead, N. G. Swenson, J. K. Bailey, and N. J. Sanders. 2014. Convergent effects of elevation on functional leaf traits within and among species. *Functional Ecology* 28:37-45. DOI: 10.1111/1365-2435.12162 *nominated for the British Ecological Society's Haldane Prize for Young Investigators*
- Gorman, C. E., **Q. D. Read**, M. E. Van Nuland, and others. 2013. Phylogenetic similarity aboveground leads to community similarity belowground through conservatism of functional traits. *Annals of Botany Plants* plt049. DOI: 10.1093/aobpla/plt049 *Editor's Choice*.
- Van Nuland, M. E., E. N. Haag, J. A. Bryant, **Q. D. Read**, and others. 2013. Fire promotes pollinator visitation: implications for ameliorating declines of pollination services. *PLoS One* 8:e79853. DOI: 10.1371/journal.pone.0079853
- Soltoff, B. D., A. S. Powell, **Q. D. Read**, and J. S. Clark. 2012. Evidence from individual inference for high-dimensional coexistence: long term experiments on recruitment response. *PLoS One* 7:e30050. DOI: 10.1371/journal.pone.0030050

\* first author is an undergraduate whom I mentored

### **In review/revision/accepted**

- Grady, J. M., **Q. D. Read**, S. Record, and P. L. Zarnetske. Body size and the niche. *Teaching Issues and Experiments in Ecology*, in revision.
- Record, S., K. M. Dahlin, P. L. Zarnetske, **Q. D. Read**, S. L. Malone, K. Gaddis, J. M. Grady, J. Costanza, M. Hobi, A. Latimer, S. Pau, A. M. Wilson, A. O. Finley, and S. Ollinger. Remote sensing of geodiversity and biodiversity. Book chapter *in* Remote Sensing of Biodiversity: Using spectral signals to understand the biology and biodiversity of plants, communities, ecosystems and the tree of life. J. Cavender-Bares, J. Gamon, and P. Townsend, eds. In review.
- Dahlin, K. M., P. L. Zarnetske, **Q. D. Read**, L. Twardochleb, A. Kamoske, K. S. Cheruvellil, and P. Soranno. Interactions between biodiversity and ecosystem function among terrestrial

and aquatic realms. *Frontiers in Ecology and the Environment*, in review.

Zarnetske, P. L., Q. D. Read, S. Record, K. Gaddis, S. Pau, M. Hobi, S. L. Malone, J. K. Costanza, K. M. Dahlin, A. Latimer, A. M. Wilson, J. M. Grady, S. Ollinger, A. O. Finley. Connecting biodiversity and geodiversity across scales with remote sensing. *Global Ecology and Biogeography*, in review.

### **In preparation**

**Read, Q. D.**, P. L. Zarnetske, S. Record, J. M. Grady, A. M. Wilson, A. O. Finley, A. Latimer, J. K. Costanza, K. Gaddis, K. M. Dahlin, M. Hobi, S. Ollinger, S. Malone, and S. Pau. Geodiversity predicts beta-diversity across spatial and ecological scales. MS in prep.

**Read, Q. D.**, J. Jain, A. O. Finley, B. Baiser, N. K. Lany, P. L. Zarnetske, and S. Record. A hierarchical model combining phylogenetic and spatial information to impute missing trait values and explain variation among individuals. MS in prep.

Prager, C. M., J. A. Henning, X. Jing, **Q. D. Read**, N. J. Sanders, and A. T. Classen. The interaction between climate and multiple dimensions of plant diversity regulates ecosystem carbon exchange along an elevational gradient. *Journal of Ecology*, in prep.

Henning, J. A., **Q. D. Read**, N. J. Sanders, and A. T. Classen. Nitrogen, neighbors, and the ghosts of neighbors past shape the colonization patterns and plant-soil feedbacks of cooccurring root-colonizing fungal symbionts. *Ecology*, in prep.

Chisholm, C., **Q. D. Read**, D. Dimitrov, C. Antón-Fernández, R. Astrup, C. Rahbek, and N. J. Sanders. Functional traits predict growth response and competition in Norwegian boreal forests. MS in prep.

Grady, J. M., **Q. D. Read**, N. Rüger, P. L. Zarnetske, and S. Record. Asymmetric competition and energy equivalence in forests. MS in prep.

### **Teaching and mentoring**

**Co-Instructor**, Michigan State University

Fisheries & Wildlife 893: Metacommunity Ecology

Spring 2017

**Graduate Teaching Assistant**, University of Tennessee

Ecology & Evolutionary Biology 406: Models in Biology

Spring 2016

Ecology & Evolutionary Biology 484: Conservation Biology

Spring 2015, Spring 2016

Biology 250: General Ecology

Fall 2012, Spring 2013, Spring 2014

Biology 130: Introduction to Biodiversity

Fall 2011, Spring 2012

### **Guest lectures and workshops**

**Michigan State University**

Designed graduate teaching module: "Using NEON data to test macroecological hypotheses."

Spring 2018

**Rocky Mountain Biological Laboratory**

Designed and led workshop on graphing with R and ggplot

July 2015

Co-led panel discussion on writing scientific papers

July 2015

Designed and led workshops on advanced topics in statistics with R

July 2014

**University of Tennessee**

Guest lecture (led a mock trial), Conservation Biology

Spring 2015

Guest lecture on biogeochemistry, General Ecology

Fall 2012 and Spring 2014

Guest lecture on climate change and communities, General Ecology

Spring 2013

### **Curriculum development**

**Research assistantship, University of Tennessee**

Fall 2013

Assisted Dr. Elisabeth Schussler creating recommendations to improve training and

professional development for graduate teaching assistants, leading to a publication.

***Curriculum Reform in Undergraduate Biology Education, University of Tennessee 2013-2014***

Member of panel developing and reforming curriculum of undergraduate introductory biology courses

**Mentoring**

***Michigan State University***

Mentored 2 undergraduates through Summer Research Opportunities Program and High Performance Computing Center *Summer 2017*

***Rocky Mountain Biological Laboratory***

Mentored 8 undergraduates through RMBL and NSF programs *2012-2015*

***University of Tennessee***

Mentored 3 undergraduate laboratory assistants *2013-2015*

**Honors and awards**

University of Tennessee Science Alliance graduate award, for exemplary accomplishments as a graduate student, 2015 (\$3000)

Outstanding Outreach and Community Service award, UT-Knoxville Department of Ecology and Evolutionary Biology, Spring 2014 (awarded for leadership of Darwin Day)

Dr. Jean H. Langenheim Endowed Graduate Fellowship in the Ecology and Evolution of Plants, Rocky Mountain Biological Laboratory, 2013-2014 (\$6000)

Honorable Mention, National Science Foundation Graduate Fellowship, 2013

Dr. Lee R. G. Snyder Memorial Fellowship, Rocky Mountain Biological Laboratory, 2012

**Travel awards**

NSF travel grant to deliver biology education seminar at Notre Dame, March 2015

UTK Graduate Student Senate and EEB departmental travel awards to attend short course in Sweden, June 2013

**Presentations**

**Read, Q. D.**, S. Record, K. M. Dahlin, P. L. Zarnetske, S. L. Malone, K. Gaddis, J. M. Grady, J. K. Costanza, M. L. Hobi, A. M. Latimer, S. Pau, A. M. Wilson, A. O. Finley, and S. Ollinger. "Measuring geodiversity to explain biodiversity: what is the effect of spatial grain and spatial 'consciousness?'" US-International Association of Landscape Ecology, April 2018.

**Read, Q. D.**, J. M. Grady, P. L. Zarnetske, S. Record, B. Baiser, J. Belmaker, M.-N. Tuanmu, A. Strecker, L. Beaudrot, and K. M. Thibault. "Intraspecific variation reflects drivers of rodent community assembly across the National Ecological Observatory Network." Ecological Society of America, August 2017.

"Individual variation in organismal traits: predicting patterns in space and time from local to global scales." Michigan State University Department of Forestry, Hanover Forest Science Seminar Series, September 2016.

**Read, Q. D.**, N. J. Sanders, and A. T. Classen. "A globally replicated experiment shows that long-term environmental filters constrain plant response to increased temperature and loss of foundation species." Ecological Society of America, August 2015.

"C3UBE undergraduate biology curriculum reform." University of Notre Dame, Biology Education Seminar, Notre Dame, IN, March 2015.

"Roots, leaves, and soils facing global change." Rocky Mountain Biological Laboratory

Seminar, Crested Butte, CO, June 2014.

“Plant traits & interactions altered by warming at different elevations.” Oak Ridge National Laboratory, Environmental Sciences Division, Oak Ridge, TN, January 2014.

## **Research visits, short courses, working groups, and conferences**

### **Research visits**

Jason McLachlan laboratory, University of Notre Dame

Fall 2014, Fall 2015

### **Short courses**

Boreal Forest Ecology, Swedish University of Agricultural Sciences, Umeå, Sweden June 2013

Fundamentals of Ecosystem Ecology, Cary Institute of Ecosystem Studies, Millbrook, NY January 2012

### **Working groups and conference sessions**

Organized oral session at Ecological Society of America 2017 meeting titled “Challenges and opportunities for investigating ecological communities across space and time: insights from coordinated research networks.”

Organized meeting with collaborators at National Ecological Observatory Network headquarters; gave presentation to NEON staff, Boulder, CO, January 2017.

### **Reviewer experience**

Peer-reviewed manuscripts for the following journals: *Journal of Biogeography*, *Oikos*, *Ecological Applications*, *Ecology*, *Journal of Ecology*, *Global Ecology and Biogeography*, *Plant Ecology*, *Ecological Monographs*, *Ecology Letters*, *Annals of Botany Plants*, *Methods in Ecology and Evolution*, *Ecography*, *Biotropica*, *Functional Ecology* (3 times), *Journal of Plant Ecology*, *PeerJ* (2 times), *Ecology and Evolution*, *PLoS One*, *Ecosphere*, *New Phytologist* (2 times), *Global Change Biology* (3 times)

### **Volunteering and outreach**

#### **Michigan State University**

Organized event and gave presentation on citizen science opportunities for MSU Science Festival 2018

Gave public research talk, Biology On Tap 2017

#### **Rocky Mountain Biological Laboratory**

Volunteered at Kids Nature Camp 2015

#### **University of Tennessee**

Volunteered at Tennessee State Science Olympiad 2015

Led Darwin Day, student-run science education event 2014

Coordinated advertising for Darwin Day 2013

Discussed my research and assisted 7<sup>th</sup>-grade students with climate change research projects 2012, 2013

Volunteered at Boo at the Zoo, a public outreach event 2011, 2012

Created a field guide with 2<sup>nd</sup>-grade students 2011

### **Relevant work experience**

#### **Wildlife Office, Kaibab National Forest, USDA Forest Service, Williams, AZ**

Wildlife intern May 2011-July 2011

#### **Institute for Tropical Ecosystem Studies, UPR-Rio Piedras, Puerto Rico**

Seedling census volunteer January 2011-April 2011

#### **Lab of Dr. Jim Clark, Duke University, Durham, NC**

Research technician Summer 2008 and May 2010-January 2011

**Smithsonian Conservation Biology Institute**, Front Royal, VA

Ecology intern

*January-April 2010*

**North Carolina Botanical Garden**, Chapel Hill, NC

Conservation and Land Management intern

*June-November 2009*

**Morehead Planetarium and Science Center, UNC-Chapel Hill**, Chapel Hill, NC

Summer camp counselor, educator, exhibit staffer

*May 2006-May 2008*

### ***Undergraduate research***

**Biology Department, University of North Carolina**

*Spring 2009*

“Morphological and anatomical characteristics of a *Pertica*-like plant of the Lower Devonian of northern New Brunswick, Canada,” with Dr. Patricia Gensel

**Coweeta Hydrologic Laboratory, U.S. Forest Service LTER site**

*Fall 2008*

project conducted for undergraduate field site program at Highlands Biological Station

“Soil and tree ring chemistry changes in an oak forest,” with Dr. Jennifer Knoepp

### ***Undergraduate honors and awards***

LeClair Award for excellence in plant studies, May 2009

Phi Beta Kappa, Spring 2008