

# Quentin D. Read

Using big open data to understand how humans influence the natural world

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## ***Professional appointments***

- 2021– **Agricultural Research Service, U.S. Department of Agriculture**, Raleigh, NC (North Carolina State University)  
Applied consulting statistician, Southeast Area
- 2018-2021 **National Socio-Environmental Synthesis Center**, Annapolis, MD (University of Maryland)  
2019–2021 Data scientist  
2018-2020 Postdoctoral fellowship: “Food waste and the environment”  
Mentor: Dr. Mary Muth (RTI International, Research Triangle Park, NC)
- 2016-2018 **Michigan State University**, East Lansing, MI  
Postdoctoral researcher, Department of Forestry; Ecology, Evolutionary Biology, & Behavior Program  
“Intraspecific trait variation and community structure at a continental scale”  
Advisors: Dr. Phoebe Zarnetske (MSU) and Dr. Sydne Record (Bryn Mawr)  
Visiting scholar, University of Notre Dame, laboratory of Jason McLachlan

## ***Current roles and responsibilities***

- Support USDA researchers in the Southeast area by designing experiments, processing and visualizing data, and doing statistical analyses
- Develop and teach statistics and data science lessons in virtual and in-person format: see [SEASStats statistical training page](#) for lesson text and slides
- Promote modern statistical approaches and best practices for open and reproducible science at USDA
- Co-write manuscripts and presentations; formally review five-year plans of all research units in the Southeast area

## ***Education***

- 2011-2016 **University of Tennessee**, Knoxville, TN  
Ph.D., Ecology & Evolutionary Biology  
Dissertation: “Individual variation in plant traits drives species interactions, ecosystem functioning, and responses to global change”  
Advisor: Dr. Nathan Sanders
- 2005-2009 **University of North Carolina**, Chapel Hill, NC  
B.S. with highest distinction, Environmental Science

## ***Skills and languages***

- Data processing, visualizing, and analysis in R, including tidyverse and data.table
- Developing R packages
- Bayesian modeling with Stan
- Spatial analysis and modeling with GDAL and R
- Working knowledge of Python and Julia
- Bash scripting
- Creating static webpages with Markdown and Jekyll

- High-performance parallel computing using Linux server
- Using git/GitHub for version control and remote collaborations
- Fluent in spoken and written German; communicate effectively in spoken and written Spanish

## Grants

2019      “Connecting local, regional, and continental scale drivers to biodiversity across NEON through the lens of intraspecific trait variation and disturbance.” NSF Macrosystems Biology, NEON-Enabled Science (senior personnel)      \$536,800

## Publications

OA = open access; \* = first author is an undergraduate whom I mentored

- 2023      Cowger, C., **Q. D. Read**, L. Clark, and Y. Dong. 2023. Optimal timing of fungicide application to manage *Fusarium* head blight in winter barley. *Plant Disease*. DOI: 10.1094/PDIS-01-23-0021-RE.
- Fett, R., A. M. Gillen, **Q. D. Read**, S. Patel, and J. Koebernick. 2023. Evaluating the accuracy and efficiency of test weight instruments for soybean (*Glycine max* L.) research. *Agrosystems, Geosciences & Environment*. DOI: 10.1002/agg2.20354. (OA)
- Mengistu, A., J. D. Ray, H. M. Kelly, **Q. D. Read**, R. J. Smith, N. Bellaloui, and L. A. Schumacher. 2023. Charcoal rot severity and soybean yield responses to planting date, irrigation, and genotypes. *Plant Disease*. DOI: 10.1094/PDIS-06-22-1329-RE.
- Zollota, S., P. Perez, J. Allen, T. Argenti, **Q. D. Read**, and M. S. Asuncion. 2023. Are ants good organisms to teach elementary students about invasive species in Florida? *Insects* 14:118. DOI: 10.3390/insects14020118. (OA)
- Nestle, R., J. Palacios, A. S. David, **Q. D. Read**, and G. S. Wheeler. 2023. The Brazilian peppertree biological control agent *Pseudophilothrips ichini* (Thysanoptera: Phlaeothripidae) displays a flexible feeding strategy between foliage and reproductive tissues. *Biological Control* 105:159. DOI: 10.1016/j.biocontrol.2023.105159.
- Gurung, M., F. Rosa, B. Yelvington, N. Terry, **Q. D. Read**, B. D. Piccolo, B. Moody, P. Tripp, H. E. Pittman, B. L. Fay, T. J. Ross, J. D. Sikes, J. B. Flowers, R. Fox, T. LeRoith, R. Talatala, F. Bar-Yoseph, and L. Yeruva. 2023. Evaluation of a plant-based infant formula containing almonds and buckwheat on gut microbiota composition, intestine morphology, metabolic and immune markers in a neonatal piglet model. *Nutrients* 15:383. DOI: 10.3390/nu15020383. (OA)
- McMillan, E. A., M. E. Berrang, **Q. D. Read**, S. Ramasetti, A. K. Richards, N. W. Shariat, and J. G. Frye. 2023. Buffered peptone water formulation does not influence growth of pESI positive *Salmonella* serovar Infantis. *Journal of Food Protection* 86:100033. DOI: 10.1016/j.jfp.2022.100033.
- 2022      Allan, M. C., **Q. D. Read**, and S. D. Johanningsmeier. 2022. Impact of sweetpotato starch structures, thermal properties, and granules sizes on sweetpotato fry textures. *Food Hydrocolloids* 2022:108377. DOI: 10.1016/j.foodhyd.2022.108377.
- Winzeler, H. E., P. R. Owens, **Q. D. Read**, Z. Libohova, A. Ashworth, and T. Sauer. 2022. Topographic wetness index as a proxy for soil moisture in a hillslope catena: flow algorithms and map generalization. *Land* 11:2018. DOI: 10.3390/land11112018. (OA)
- Prager, C. M., A. T. Classen, ... **Q. D. Read**, ... and N. J. Sanders. 2022. Integrating natural gradients, experiments, and statistical modelling in a

distributed network experiment: an example from the WaRM Network. *Ecology and Evolution* 12:e9396. DOI: 10.1002/ece3.9396. (OA)

Islam, Md. S., P. McCord, **Q. D. Read**, L. Qin, A. E. Lipka, S. Sood, J. Todd, and M. Olatoye. 2022. Accuracy of genomic prediction of yield and sugar traits in *Saccharum* spp. hybrids. *Agriculture* 12:1436. DOI: 10.3390/agriculture12091436. (OA)

Zimba, K. J., **Q. D. Read**, M. Haseeb, R. L. Meagher, and J. C. Legaspi. 2022. Potential of silicon to improve biological control of fall armyworm (*Spodoptera frugiperda*) on maize. *Agriculture* 12:1432. DOI: 10.3390/agriculture12091432. (OA)

Swanwick, R. H., **Q. D. Read**, S. M. Guinn, M. A. Williamson, K. L. Hondula, and A. J. Elmore. 2022. Dasymetric population mapping based on US Census data and 30-m gridded estimates of impervious surface. *Scientific Data* 9:523. DOI: 10.1038/s41597-022-01603-z. (OA)

Kamoske, A. G., K. M. Dahlin, **Q. D. Read**, S. Record, S. P. Serbin, S. C. Stark, and P. L. Zarnetske. 2022. Towards mapping biodiversity from above: Can fusing lidar and hyperspectral remote sensing predict taxonomic, functional, and phylogenetic tree diversity in temperate forests? *Global Ecology and Biogeography*. DOI: 10.1111/geb.13516.

McIntyre, J. S., C. L. Butts, and **Q. D. Read**. 2022. Computational fluid dynamics modeled air speed through in-shell peanuts in drying wagons compared to experimentally measured air speed. *Journal of the American Society of Agricultural and Biological Engineers* 38:489-507. DOI: 10.13031/aea.14771.

Mason, R. E., J. M. Craine, N. K. Lany, ... **Q. D. Read**, ... and A. J. Elmore. 2022. Evidence, causes, and consequences of a global decline in terrestrial ecosystem nitrogen availability. *Science* 376:eabh3767. DOI:10.1126/science.abh3767

Featured in >40 news outlets (see [Altmetric page](#))

Response by Olff et al. DOI: 10.1126/science.abq7575

Rebuttal to response DOI:10.1126/science.abq8690

**Read, Q. D.**, K. L. Hondula, and M. K. Muth. 2022. Biodiversity effects of food system sustainability actions from farm to fork. *Proceedings of the National Academy of Sciences* 119, e2113884119. DOI:10.1073/pnas.2113884119.

featured in [New Scientist](#), [Medium](#), [Anthropocene Magazine](#), and [La Presse](#)

Sthapit Kandel, J., G. V. Sandoya, W. Zhou, **Q. D. Read**, B. Mou, and I. Simko. 2022. Identification of quantitative trait loci associated with bacterial leaf spot resistance in baby leaf lettuce. *Plant Disease*. DOI: 10.1094/PDIS-09-21-2087-RE.

Rewcastle, K. E., J. A. Henning, **Q. D. Read**, R. E. Irwin, N. J. Sanders, and A. T. Classen. 2022. Plant removal across an elevational gradient marginally reduces rates, substantially reduces variation in mineralization. *Ecology* 103, e03546. DOI: 10.1002/ecy.3546.

2021

Dahlin, K. M., P. L. Zarnetske, **Q. D. Read**, L. Twardochleb, A. G. Kamoske, K. S. Cheruvilil, and P. A. Soranno. 2021. Linking terrestrial and aquatic biodiversity to ecosystem function across scales, trophic levels, and realms. *Frontiers in Environmental Science*, 9, 217. DOI:10.3389/fenvs.2021.692401. (OA)

Prager, C. M., X. Jing, J. A. Henning, **Q. D. Read**, P. Meidl, S. Lavorel, N. J. Sanders, M. Sundqvist, D. A. Wardle, and A. T. Classen. 2021. Climate and multiple dimensions of plant diversity regulate ecosystem carbon exchange along an elevational gradient. *Ecosphere*. DOI:10.1002/ecs2.3472. (OA)

Marston, L. T., **Q. D. Read**, S. Brown, and M. K. Muth. 2021. Reducing water scarcity by reducing food loss and waste. *Frontiers in Sustainable Food Systems*

5. DOI:10.3389/fsufs.2021.651476. (OA)

**Read, Q. D.** and M. K. Muth. 2021. Cost-effectiveness of four food waste interventions: is food waste reduction a “win-win?” *Resources, Conservation & Recycling* 168, 105448. DOI:10.1016/j.resconrec.2021.105448.

Metson, G. S., A. Chaudhary, X. Zhang, B. Houlton, A. Oita, N. Raghuram, **Q. D. Read**, L. Bouwman, H. Tian, A. Uwizeye, and A. J. Eagle. 2021. Nitrogen and the food system. *One Earth* 4:3-7. DOI:10.1016/j.oneear.2020.12.018.

2020

Grady, J. M., **Q. D. Read**, S. Record, N. Rüger, P. L. Zarnetske, A. I. Dell, S. P. Hubbell, S. T. Michaletz, A. Shenkin, and B. J. Enquist. 2020. Life history scaling and the division of energy in forests. *bioRxiv* 2020.06.22.163659. DOI:10.1101/2020.06.22.163659. (preprint)

**Read, Q. D.**, S. Brown, A. D. Cuéllar, S. M. Finn, J. A. Gephart, L. T. Marston, E. Meyer, K. A. Weitz, and M. K. Muth. 2020. Assessing the environmental impacts of halving food loss and waste along the food supply chain. *Science of the Total Environment* 712:136255. DOI:10.1016/j.scitotenv.2019.136255. (OA)

**Read, Q. D.**, P. L. Zarnetske, S. Record, J. M. Grady, A. M. Wilson, A. O. Finley, A. M. Latimer, J. K. Costanza, K. D. Gaddis, K. M. Dahlin, M. L. Hobi, S. V. Ollinger, S. L. Malone, and S. Pau. 2020. Beyond counts and averages: relating geodiversity to dimensions of biodiversity. *Global Ecology and Biogeography*. DOI: 10.1111/geb.13061.

Record, S., K. M. Dahlin, P. L. Zarnetske, **Q. D. Read**, S. L. Malone, K. D. Gaddis, J. M. Grady, J. Costanza, M. L. Hobi, A. M. Latimer, S. Pau, A. M. Wilson, S. V. Ollinger, A. O. Finley, and E. Hestir. Remote sensing of geodiversity as a link to 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. Springer International. DOI: 10.1007/978-3-030-33157-3

2019

Muth, M. K., C. Birney, A. Cuéllar, S. M. Finn, M. Freeman, J. N. Galloway, I. Gee, J. A. Gephart, K. Jones, L. Low, E. Meyer, **Q. D. Read**, T. Smith, K. A. Weitz, and S. Zoubek. 2019. A systems approach to assessing environmental and economic effects of food loss and waste interventions in the United States. *Science of the Total Environment* 685:1240-1254. DOI:10.1016/j.scitotenv.2019.06.230. (OA)

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. 2019. Towards connecting biodiversity and geodiversity across scales with satellite remote sensing. *Global Ecology and Biogeography*. DOI:10.1111/geb.12887. (OA)

Henning, J. A., **Q. D. Read**, N. J. Sanders, and A. T. Classen. 2019. Fungal colonization of plant roots is resistant to nitrogen addition and resilient to dominant species losses. *Ecosphere*. DOI:10.1002/ecs2.2640. (OA)

2018

Grady, J. M., **Q. D. Read**, S. Record, P. L. Zarnetske., B. Baiser, K. Thorne, and J. Belmaker. 2018. Size, niches, and the latitudinal diversity gradient. *Teaching Issues and Experiments in Ecology*, Vol. 14, Figure Set 1. [http://tiee.esa.org/vol/v14/issues/figure\\_sets/grady/abstract.html](http://tiee.esa.org/vol/v14/issues/figure_sets/grady/abstract.html) (OA)

**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. (OA)

**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 a montane plant community. *Journal of Plant Ecology*. DOI:10.1093/jpe/rtx015.
- 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:10.1007/s00442-018-4111-9.
- 2017 **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. (OA)
- 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.
- 2016 **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*.
- 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.
- 2015 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. (OA)
- 2014 **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*
- 2013 Gorman, C. E., **Q. D. Read**, M. E. Van Nuland, and others. 2013. Species identity influences belowground arthropod assemblages via functional traits. *Annals of Botany Plants* plto49. DOI:10.1093/aobpla/plto49. *Editor's Choice*. (OA)
- 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. (OA)
- 2012 Clark, J. S., B. D. Soltoff, A. S. Powell, and **Q. D. Read**. 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. (OA)

#### Accepted/in revision/in review/submitted

Taliercio, E., D. Eickholt, **Q. D. Read**, T. Carter, N. Waldeck, and B. Fallen. The impacts of parental choice and intrapopulation selection for seed size on the uprightness of progeny

- derived from interspecific hybridization between *Glycine max* and *Glycine soja*. *Crop Science*, in revision.
- Jia, Y. and **Q. D. Read**. Bacteria disinfection of rice seeds by ultraviolet light irradiation in a biosafe flow cabinet. *Plant Health Progress*, in revision.
- Adeli, A., J. P. Brooks, D. Miles, T. Misna, **Q. D. Read**, and J. N. Jenkins. Effectiveness of combined biochar and lignite with poultry litter on soil carbon sequestration and soil health. *Open Journal of Soil Science*, accepted.
- Osei-Owusu, K. A., **Q. D. Read**, and M. Thomsen. Opportunities for eliminating food loss and waste and associated energy and environmental footprints in Europe. *Environmental Science & Technology*, submitted.
- Yeh, H.-Y., J. G. Frye, C. R. Jackson, **Q. D. Read**, J. E. Line, and A. Hinton. Use of automated capillary immunoassay for quantification of antibodies in chicken sera against recombinant *Salmonella enterica* serotype Heidelberg proteins. *Journal of Microbiological Methods*, submitted.
- Mengistu, A., **Q. D. Read**, V. Sykes, H. Kelly, T. Kharel, and N. Bellaloui. Cover crop and crop rotation effects on tissue and soil population dynamics of *Macrophomina phaseolina* and yield under no-till system. *Plant Disease*, submitted.
- Balkcom, K. S., **Q. D. Read**, and A. V. Gamble. Rye planting date critical compared to seeding and nitrogen rate in a conservation tillage peanut cotton rotation. *Agronomy Journal*, submitted.
- Shanahan, M., M. Simone-Finstrom, P. Tokarz, F. Rinkevich, **Q. D. Read**, and M. Spivak. Thinking inside the box: Bringing tree cavity textures to beehive design to stimulate propolis collection and support honey bee health. *PLoS One*, submitted.
- Ascunce, M. S., M. de Gracia Coquerel, A. McAuley, J. Wegerif, **Q. D. Read**, N. Chowdhury, K. C. Jeong, J. G. Morris, S. J. Martins, and E. M. Goss. Assessment of antibiotic resistance and *Candidatus Liberibacter asiaticus* titer in three Florida commercial citrus groves. *Crop Protection*, submitted.
- Penn, H. J. and **Q. D. Read**. Sugarcane borer damage is dependent on prior conspecific damage and interactions with plant age and variety in a perennial crop. *Functional Ecology*, submitted.
- Spackman, E., A. Buckley, **Q. D. Read**, S. Deblois, J. Easley, and D. Suarez. The robustness of commercial SARS-CoV-2 antigen test kits with sample substrates from agricultural settings. In preparation.
- Cho, S., L. M. Hiott, **Q. D. Read**, J. Damashek, J. Westrich, M. Edwards, R. F. Seim, D. A. Glinski, E. A. Ottesen, E. K. Lipp, W. M. Henderson, J. M. Bateman McDonald, C. R. Jackson, and J. G. Frye. The prevalence and diversity of antibiotic resistant bacteria, antibiotic resistance genes, and antibiotics in freshwater environment. In preparation.
- Shults, D., M. L. Reba, J. Nowlin, J. Massey, and **Q. D. Read**. Use of low-resolution imagery and presence-absence analysis to establish irrigation reservoir histories for improved groundwater modeling and conjunctive water management in two Arkansas critical groundwater areas. In preparation. Target: *Journal of the American Society of Agricultural and Biological Engineers*.
- Rering, C. C., A. B. Rudolph, Q.-B. Li, P. R. Muñoz, J. Ternest, **Q. D. Read**, and C. T. Hunter. A quantitative survey of the blueberry (*Vaccinium* spp.) nectar microbiome: variation between plant species, cultivars, and locations. In preparation. Target: *FEMS Microbiology Ecology*.

## Media articles

- Read, Q. D.**; J. Pitt, editor. 2022. Extinction on our plates. 360info Special Report from Covering Climate Now's joint coverage week on Food & Water. DOI: 10.54377/42f4-f24c.

## ***Teaching and curriculum development***

- 2023 Guest lecture on food waste in Global Environmental Issues (undergraduate course), William Peace University, Raleigh, NC  
Guest lecture on ethical and responsible statistical practices in Bioethics (graduate/undergraduate course), N.C. State University  
Designed and taught lessons for USDA researchers: “Bayesian mixed models with brms,” “Data visualization basics with R and ggplot2,” and “R for SAS users”
- 2022 Designed and taught two-day workshop for USDA researchers: “A practical toolkit for mixed models in R”  
Guest lecture on food waste in Agroecology (undergraduate course), University of Maryland
- 2021 Guest lecture on food waste in People, Land and Food (undergraduate course), George Washington University, Washington, DC  
Co-designed curriculum for day-long geospatial data analysis workshop for postdocs and grad students; taught introductory lesson and lesson on geospatial statistics with vector data
- 2020 Co-designed and co-taught day-long whirlwind data science class for SESYNC postdoctoral researchers  
Co-delivered guest lecture on data synthesis in food-energy-water nexus research, Global Stewards graduate seminar, University of Maryland  
Co-taught SESYNC 2020 [Computational Summer Institute](#), a week-long online data science course  
Designed and led workshop on best practices for collaboration with GitHub
- 2018 Designed graduate teaching module: “Using NEON data to test macroecological hypotheses”
- 2017 Co-instructor of record, Metacommunity Ecology, MSU
- 2016 Graduate teaching assistant, Models in Biology, UT-Knoxville
- 2015-2016 Graduate teaching assistant, Conservation Biology, UT-Knoxville
- 2015 Designed and led workshop on graphing with R and ggplot2  
Delivered guest lecture and led mock trial activity, Conservation Biology, UT-Knoxville
- 2014 Designed and led workshops on introductory statistics with R
- 2013-2014 Member of panel developing and reforming curriculum of undergraduate introductory biology courses, UT-Knoxville
- 2013 Guest lecture on climate change and communities, General Ecology, UT-Knoxville
- 2012-2014 Graduate teaching assistant, General Ecology, UT-Knoxville
- 2012 Guest lecture on biogeochemistry, General Ecology, UT-Knoxville
- 2011-2012 Graduate teaching assistant, Introduction to Biodiversity, UT-Knoxville

## ***Mentoring***

- 2021 Mentored student team in University of Maryland Data Challenge; team won grand prize in a 75-team competition
- 2020 Remotely mentored two Bryn Mawr College undergraduates on an R package



- development project, funded by NSF Macrosystems Biology grant
- 2017-2018 Mentored 4 undergraduates through Summer Research Opportunities Program and High Performance Computing Center, MSU
- 2012-2015 Mentored 8 undergraduate field and lab assistants, Rocky Mountain Biological Laboratory
- 2013-2015 Mentored 3 undergraduate lab assistants, UT-Knoxville

### ***Fellowships and awards***

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|------|---|-----------|
| 2018 | NSF SESYNC postdoctoral immersion fellowship  | \$160,000 |
| 2015 | University of Tennessee Science Alliance graduate award   | \$3000    |
|      | NSF travel grant to deliver biology education seminar at Notre Dame   | \$500     |
| 2014 | Outstanding Outreach and Community Service award, UT-Knoxville Department of Ecology and Evolutionary Biology                     |           |
| 2013 | Dr. Jean H. Langenheimer Endowed Graduate Fellowship in the Ecology and Evolution of Plants, Rocky Mountain Biological Laboratory | \$6000    |
|      | UTK Graduate Student Senate travel award  | \$500     |
|      | Honorable Mention, National Science Foundation Graduate Fellowship  |           |
| 2012 | Dr. Lee R. G. Snyder Memorial Fellowship, Rocky Mountain Biological Laboratory  | \$700     |

### ***Invited talks***

- |      |   |  |
|------|---|--|
| 2022 | “Reducing food waste from farm to fork to benefit biodiversity.” North Carolina State University, Plant & Microbial Biology department seminar, Raleigh, NC   |  |
| 2020 | “Reducing food waste to benefit environment and society: how, why, and in what context?” Duke University Program in Ecology seminar series, Durham, NC  |  |
| 2018 | “Food waste impacts on biodiversity.” Commission on Environmental Cooperation Food Loss and Waste Measurement Experts Group Meeting, Arlington, VA  |  |
| 2017 | “Challenges in the functional trait approach to community ecology (and ways to overcome them).” German Centre for Integrative Biodiversity Research (iDiv), Leipzig, Germany  |  |
|      | “Intraspecific variation and community assembly.” National Ecological Observatory Network, Boulder, CO (talk co-delivered with John Grady)  |  |
| 2016 | “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, East Lansing, MI |  |
| 2015 | “C3UBE undergraduate biology curriculum reform.” University of Notre Dame, Biology Education Seminar, Notre Dame, IN  |  |
| 2014 | “Roots, leaves, and soils facing global change.” Rocky Mountain Biological Laboratory Seminar, Gothic, CO   |  |
|      | “Plant traits & interactions altered by warming at different elevations.” Oak Ridge National Laboratory, Environmental Sciences Division, Oak Ridge, TN   |  |



## ***Conference presentations***

- 2019 **Read, Q. D.**, J. A. Gephart, A. D. Cuéllar, ... and M. K. Muth. “Which supply chain stages should we target to reduce food loss and waste and benefit the environment?” Ecological Society of America-United States Society for Ecological Economics, Louisville, KY
- 2018 **Read, Q. D.**, S. Record, K. M. Dahlin, P. L. Zarnetske, and others. “Measuring geodiversity to explain biodiversity: what is the effect of spatial grain and spatial consciousness?” US-International Association of Landscape Ecology, Chicago, IL
- 2017 **Read, Q. D.**, J. M. Grady, P. L. Zarnetske, S. Record, and others. “Intraspecific variation reflects drivers of rodent community assembly across the National Ecological Observatory Network.” Ecological Society of America, Portland, OR
- 2015 **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, Baltimore, MD

## ***Software***

- 2022 Weinroth, M. and **Q. D. Read**. 2022. epi2me2r: Process Nanopore EPI2ME Output for Use in R. R package version 0.1.0. <https://mweinroth.github.io/epi2me2r/>.
- 2021 **Read, Q. D.**, A. Yue, I. E. Fluck, B. Baiser, J. M. Grady, P. L. Zarnetske, and S. Record. 2021. Ostats: O-stats, or pairwise community-level niche overlap statistics. R package version 0.1.1. <https://neon-biodiversity.github.io/Ostats/>. DOI:10.5281/zenodo.5706470.
- 2020 Brunson, J. C. and **Q. D. Read**. 2020. ggalluvial: Layered Grammar for Alluvial Plots. R package version 0.12.2.0001. <https://corybrunson.github.io/ggalluvial/>.
- 2019 Marchand, P., I. T. Carroll, M. Smorul, R. E. Blake, and **Q. D. Read**. 2019. rslurm: Submit R Calculations to a 'Slurm' Cluster. R package version 0.6.1. <https://sesync-ci.github.io/rslurm>. DOI:10.5281/zenodo.5705430.

## ***Online content***

- 2019-2021 Blog posts on the SESYNC Cyberhelp blog (<https://sesync-ci.github.io/blog>)
- “Making a fifty-state USA map, 2021 edition”
  - “Making free maps with R, ggspatial, and Mapbox”
  - “Goodbye %>%, hello := (Using R data.table to speed up my data science)”
  - “How open reproducible methods benefit the research community: a shiny story”
  - “The carbon footprint of R code, and how to reduce it”
  - “Resources to help you learn GitHub Pages”
  - “Tips for a smooth R(Studio) workflow and reproducible R code”
  - “How do I resolve merge conflicts in git/GitHub/GitLab?”
  - “Using the rslurm package to run code in parallel”
  - “ggplot tricks not to forget about”
- 2021 Marchand, P., I. T. Carroll, and **Q. D. Read**. “Introduction to Geospatial Data.” Jul. 2021, SESYNC Cyberhelp online lesson. <https://sesync-ci.github.io/geospatial-packages-in-R-lesson/>

- 2020 **Read, Q. D.** “Advanced git Techniques.” Sep. 2020, SESYNC Cyberhelp online lesson. <https://sesync-ci.github.io/advanced-git-lesson/>
- Read, Q. D.** and I. T. Carroll. “Online Data with R.” Jul. 2020, SESYNC Cyberhelp online lesson. <https://sesync-ci.github.io/online-data-with-R-lesson/>
- Muth, M. K. and **Q. D. Read.** “Effects of COVID-19 meat and poultry plant closures on the environment and food security.” 7 Jul. 2020, RTI Insights blog. <https://www.rti.org/insights/covid-19-effect-meat-supply-chain>
- Blake, R. E., R. Beilinson, N. Motzer, K. L. Hondula, and **Q. D. Read.** “Resources and tips for elevating your team science in an all-virtual world.” Mar. 2020. <https://www.sesync.org/resources-and-tips-for-elevating-your-team-science-in-an-all-virtual-world>

## ***Professional service***

- 2020– Peer reviewer of R packages for [RopenSci.org](https://ropensci.org): *pixelclasser*, *birdsize*
- 2019–2023 Maintainer of the R package *rslurm* ([sesync-ci.github.io/rslurm](https://sesync-ci.github.io/rslurm))
- 2019 Review panelist, SESYNC immersion postdoctoral fellowship program
- 2017 Co-organizer of oral session at Ecological Society of America meeting: “Challenges and opportunities for investigating ecological communities across space and time: insights from coordinated research networks.”
- 2013– Peer reviewer for the following journals: *Poultry Science*, *Cleaner Waste Systems*, *Healthcare*, *Sustainable Environment*, *Agriculture*, *Food Policy*, *Anthropocene*, *Journal of Animal Ecology*, *Science of the Total Environment*, *Scientific Reports*, *Biogeosciences*, *Remote Sensing of Environment*, *Systematic Biology*, *Resources Conservation & Recycling* (2×), *Annals of Botany*, *Molecular Ecology*, *Energies*, *Nature Climate Change*, *Journal of Biogeography*, *Oikos* (2×), *Ecological Applications*, *Ecology*, *Journal of Ecology* (2×), *Global Ecology and Biogeography* (2×), *Plant Ecology*, *Ecological Monographs*, *Ecology Letters* (2×), *Annals of Botany Plants*, *Methods in Ecology and Evolution*, *Ecography* (2×), *Biotropica*, *Functional Ecology* (3×), *Journal of Plant Ecology*, *PeerJ* (3×), *Ecology and Evolution*, *PLoS One* (3×), *Ecosphere* (3×), *New Phytologist* (2×), *Global Change Biology* (3×)

## ***Community outreach***

- 2016– Maintain a personal science blog ([blog.quentinread.com](https://blog.quentinread.com))
- Answer community programming questions on StackOverflow
- 2023 Panelist, federal careers discussion panel, NC State University biotechnology undergraduate course
- 2021 Interviewed on food waste for SESYNC podcast ([anchor.fm/sesync-communications](https://anchor.fm/sesync-communications))
- 2018 Organized event and gave presentation on citizen science opportunities, MSU Science Festival
- 2017 Gave public research talk, MSU Biology On Tap
- 2014 Organized and coordinated Darwin Day Tennessee
- 2013 Coordinated advertising for Darwin Day Tennessee
- 2012 Discussed my research and assisted 7<sup>th</sup>-grade students with climate change projects
- 2011-2015 Volunteered at kids' science education events at the University of Tennessee and

the Rocky Mountain Biological Laboratory

***Professional training***

- 2021 SAS for R Users training course
- 2020 ReproHack reproducible science workshop, SESYNC
- 2019 Google Earth Engine workshop, SESYNC  
Ecosystem services valuation workshop, USDA, Washington, DC
- 2018 Data to Motivate Synthesis workshop, SESYNC
- 2018-2020 SESYNC postdoctoral immersion series, including multiday workshops on interdisciplinary techniques, team science, socio-environmental hydrology, land system science, methods in social science, ecology, environmental policy, and public health
- 2014 Structural equation modeling workshop with Dr. Jim Grace, Knoxville, TN
- 2013 Short course: Boreal Forest Ecology, Swedish University of Agricultural Sciences, Umeå, Sweden
- 2012 Short course: Fundamentals of Ecosystem Ecology, Cary Institute of Ecosystem Studies, Millbrook, NY