

# Quentin D. Read

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

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## ***Professional appointments***

- 2021– **USDA Agricultural Research Service**, Raleigh, NC  
Applied consulting statistician, Southeast Area (GS-13 as of 2023)
- 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 training page](#) for lesson text and slides
- Promote modern statistical approaches and best practices for open and reproducible science at USDA
- Co-write manuscripts, presentations, and research grants; 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 and brms
- Geospatial data processing and modeling with GDAL and R
- Statistical analysis with SAS 9
- 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

2025 McKenzie-Reynolds, P., I. A. Owolabi, A. Biswas, **Q. D. Read**, G. R. Burke, A. Levi, and A. M. Simmons. 2025. Wild sources for host plant resistance to *Bemisia tabaci* in watermelon: insights from behavioral and chemical analyses. *Crop Protection* 199, 107411. DOI: 10.1016/j.cropro.2025.107411.

Harris-Shultz, K., J. Wallace, S. Sapkota, B. Schwartz, **Q. D. Read**, J. Peterson, A. L. Santana, D. Smolensky, and A. Coffin. 2025. Identification of candidate genes for stigma color using a genome-wide association study in centipedegrass. *Crop Science* 65(6), e70185. DOI: 10.1002/csc2.70185. (OA)

Cottrell, T. E., **Q. D. Read**, and C. Starns. 2025. Electron beam irradiation for management of in-shell pecan weevil larvae (Coleoptera: Curculionidae). *Journal of Economic Entomology*, toaf300. DOI: 10.1093/jee/toaf300.

Toomer, O. T., T. C. Vu, R. Wysocky, V. Moraes, R. Malheiros, **Q. D. Read**, and K. E. Anderson. 2025. Effects of an unblanched peanut and/or peanut skin diet on egg quality, egg lipid chemistry, and performance of hens housed in a cage-free environment. *Animals* 15(18), 2673. DOI: 10.3390/ani15182673. (OA)

Oakley, B. A., T. R. Mitchell, **Q. D. Read**, G. T. Hibbs, T. T. Baldwin, L. J. Pierce, S. E. Gold, and A. E. Glenn. 2025. A nitric oxide reductase is a key enzyme target for eliminating fungal emissions of nitrous oxide. *Fungal Genetics and Biology*, 104038. DOI: 10.1016/j.fgb.2025.104038.

McMillan, E., **Q. D. Read**, T. Mitchell, C. Harris, A. E. Glenn, A. Pokoo-Aikins, R. Meinersmann, and J. Frye. 2025. *In vitro* synergistic effects of peracetic acid and biocides approved for use in poultry meat processing against four serotypes of non-typhoidal *Salmonella enterica*. *Microbiology Spectrum*: e00652-25. DOI: 10.1128/spectrum.00652-25.

Chen, C. and **Q. D. Read**. 2025. Variability of ripening peaches from different orchards, seasons, and harvests in the southeastern USA. *Technology in Horticulture* 5, e032. DOI: 10.48130/tihort-0025-0027. (OA)

Portilla, M., N. S. Little, B. H. Elkins, Y. Du, Y. C. Zhu, J. P. Glover, and **Q. D. Read**. 2025. Evaluation of *Beauveria bassiana* strain NI8 and conventional insecticides to control *Lygus lineolaris* in cotton. *Southwestern Entomologist* 50(2): 611-631. DOI: 10.3958/059.050.0225.

Eichenwald, A., J. M. Grady, J. Knott, **Q. D. Read**, J. M. Rodriguez, and S. Record. 2025. The impact of disturbance on tree size distributions in the United States. *Global Ecology & Biogeography* 34(8): e70102. DOI: 10.1111/geb.70102.

Valles, S. M., M. S. Ascunce, **Q. D. Read**, R. L. White, and R. K. Vander Meer. 2025. Virome of *Solenopsis invicta* (Hymenoptera: Formicidae): Intercontinental differences in the native and introduced ranges. *Journal of Invertebrate Pathology* 213: 108401. DOI: 10.1016/j.jip.2025.108401. (OA)

- Oppenheimer, P., F. Tini, R. Whetten, I. Laraba, **Q. D. Read**, B. Whitaker, M. Vaughan, G. Beccari, L. Covarelli, and C. Cowger. 2025. Synthetic spike-in metabarcoding for plant pathogen diagnostics results in precise quantification of copy number within the genus *Fusarium*. *International Society of Microbial Ecology Communications*, ycaf124. DOI: 10.1093/ismeco/ycaf124. (OA)
- Pawlowski, E. D., L. Witthaus, J. M. Taylor, M. T. Moore, E. Stevens, S. McNamara, and **Q. D. Read**. 2025. The role of vegetation, drying, and rewetting on water and sediment phosphorus concentrations in an experimental ditch channel experiment. *Agrosystems, Geosciences & Environment* 8(3): e70168. DOI: 10.1002/agg2.70168. (OA)
- Penn, H. J., **Q. D. Read**, R. T. Richard, and D. J. Dufrene. 2025. Prior stem borer damage does not impact conspecific damage or perennial crop yield in subsequent years of growth. *Entomologia Experimentalis et Applicata*, e13609. DOI: 10.1111/eea.13609.
- Paye, W. S., R. Moral, M. B. Vanotti, A. A. Szögi, and **Q. D. Read**. 2025. Agronomic effectiveness of nitrogen and phosphorus recovered from swine manure. *Agrosystems, Geosciences & Environment* 8(2): e70153. DOI: 10.1002/agg2.70153. (OA)
- Copes, W. E., **Q. D. Read**, and B. J. Smith. 2025. Application variables that affect efficacy of disinfestants sprayed on different substrate materials to control *Colletotrichum siamense*. *PhytoFrontiers* 5(3). DOI: 10.1094/PHYTOFR-12-24-0131-R. (OA)
- Ruebel, M., S. P. Gilley, P. Jambal, J. Dado-Fox, D. N. Yazza, N. Nakra, C. Uhlon, L. Sian, S. Kode, **Q. D. Read**, L. Yeruva, J. L. E. Westcott, P. S. MacLean, N. F. Krebs, and K. Shankar. 2025. Maternal undernutrition exacerbates effects of ambient heat during pregnancy in mice. *The Journal of Nutrition* 155(9): 2996-3007. DOI: 10.1016/j.tjnut.2025.05.021.
- Chatterjee, A., J. M. Taylor, **Q. D. Read**, M. T. Moore, M. A. Locke, and J. D. Hoeksema. 2025. Water quality and soil nutrient availability trade-offs associated with timing and duration of managed flooding for migratory waterbird habitat. *Soil Science Society of America Journal* 89(3): e70077. DOI: 10.1002/saj2.70077.
- Newman, C., R. Austin, R. Andres, **Q. D. Read**, N. Garrity, K. Fritz, A. Oakley, A. Hulse-Kemp, and J. Dunne. 2025. Evaluating UAV captured RGB and multispectral imagery as a proxy for visual rating of leaf spot in cultivated peanut. *The Plant Phenome Journal* 8(1): e70019. DOI: 10.1002/ppj2.70019. (OA)
- Jia, J., K. Leep, K. Phillips, E. Willis, L. Robinson, W. Phillips, **Q. D. Read**, W. E. Copes, and S.-E. Lu. 2025. Development of a quantitative PCR method to detect the bacterial gall pathogen *Pseudomonas amygdali* pv. *loropetalii* from loropetalum plant materials. *Plant Disease*, in press. DOI: 10.1094/PDIS-11-23-2533-SR.
- Rodrigues, N. B., T. R. Barbosa, H. S. Koenow Pinheiro, M. Mancini, **Q. D. Read**, J. Blackstock, H. E. Winzeler, D. Miller, P. R. Owens, and Z. Libohova. 2025. Influences of sampling design and model selection on predictions of chemical compounds in Petroferric formations in the Brazilian Amazon. *Remote Sensing* 17(9): 1644. DOI: 10.3390/rs17091644. (OA)
- Kannan, N., B. Fritz, **Q. D. Read**, and R. Srinivasan. 2025. Testing the drift reduction potential of some adjuvants from renewable sources for aerial pesticide applications. Book chapter in *Pesticide Formulation and Delivery Systems: 43rd Volume, Creating Certainty in an Uncertain World*, ed. Danny Brown (West Conshohocken, PA: ASTM International, 2025), 134–147. DOI: 10.1520/STP165220240015.
- Woolfolk, S., G. A. Matthews, and **Q. D. Read**. 2025. Comparison of infestation

- rates of fall armyworm (Lepidoptera: Noctuidae) neonates for maize resistance screening. *Journal of Insect Science* 25(2): 9. DOI: 10.1093/jisesa/ieaf025. (OA)
- Mengistu, A., **Q. D. Read**, C. R. Little, H. M. Kelly, and N. Bellaloui. 2025. Severity of charcoal rot disease in soybean genotypes inoculated with *Macrophomina phaseolina* isolates differs among growth environments. *Plant Disease* 109(10). DOI: 10.1094/PDIS-10-24-2230-RE.
- Smith, B. J., E. T. Stafne, and **Q. D. Read**. 2025. Establishment of southern highbush blueberry cultivars and suppression of *Phytophthora* root rot using cover crop and soil amendment treatments. *PhytoFrontiers* 5(3). DOI: 10.1094/PHYTOFR-09-24-0096-R. (OA)
- Caren, J., Y.-C. Zhu, **Q. D. Read**, and Y. Du. 2025. Risk assessment of essential oils on honey bees (*Apis mellifera* L.). *Insects* 16(3):303. DOI: 10.3390/insects16030303. (OA)
- Adeli, A., J. P. Brooks, D. M. Miles, **Q. D. Read**, Y. Huang, G. Feng, and J. N. Jenkins. 2025. Integrated effects of tillage, fertilizer sources and a rye cover crop on dryland cotton production. *Agronomy Journal* 117(2):e70019. DOI: 10.1002/agj2.70019.
- Lofton, L. W., **Q. D. Read**, H. L. Hamilton, A. E. Glenn, J. A. Hawkins, T. R. Mitchell, and S. E. Gold. 2025. Pyrrocidines A and B demonstrate synergistic inhibition of *Fusarium verticillioides* growth. *Frontiers in Microbiology* 15. DOI: 10.3389/fmicb.2024.1480920. (OA)
- Yeh, H.-Y. and **Q. D. Read**. 2025. Immune responses of chickens against recombinant *Salmonella enterica* serotype Heidelberg FimA and FimW fimbriae and FliD and FlgK flagellar proteins. *Veterinary Immunology and Immunopathology* 280:110870. DOI: 10.1016/j.vetimm.2024.110870.
- 2024 Oi, D. H., R. A. Atchison, and **Q. D. Read**. 2024. Effect of fast and slow-acting bait toxicants on tawny crazy ant (Hymenoptera: Formicidae) foraging and nesting in the field. *Journal of Economic Entomology* toae284. DOI: 10.1093/jee/toae284.
- Mears, M. C., **Q. D. Read**, and A. Bakre. 2024. Comparison of direct RNA sequencing of *Orthoavulavirus javaense* using two different chemistries on the MinION platform. *Journal of Virological Methods* 333:115103. DOI: 10.1016/j.jviromet.2024.115103. (OA)
- Frazier, S., S. M. Brown, **Q. D. Read**, A. L. Jacobson, K. Conner, C. Escalante, and K. S. Balkcom. 2024. Cotton stalk management and a cover crop produce minimal effects on cotton leafroll dwarf virus. *Agronomy Journal*. DOI: 10.1002/agj2.70002. (OA)
- Johnson, R. M., K. A. Richard, and **Q. D. Read**. 2024. Effects of potassium fertilizer on sugarcane yields and plant and soil potassium levels in Louisiana. *Agronomy* 14(12): 2761. DOI: 10.3390/agronomy14122761. (OA)
- Kim, S.-B., K.-T. Kim, S. In, N. Jaiswal, G.-W. Lee, S. Jung, A. Rogers, L. F. Gómez-Trejo, S. Gautam, M. Helm, H.-K. Ahn, H.-Y. Lee, **Q. D. Read**, J. Woo, K. L. Holan, S. A. Whitham, J. D. G. Jones, D. Choi, R. Dean, E. Park, and P. Balint-Kurti. 2024. Use of the *Puccinia sorghi* haustorial transcriptome to identify and characterize AvrRp1-D recognized by the maize Rp1-D resistance protein. *PLoS Pathogens* 20(11): e1012662. DOI: 10.1371/journal.ppat.1012662. (OA)
- Assumpcao, A. L. F. V., K. Arsi, K. S. Alharbi, A. Asnayanti, A. D. Trieu, **Q. D. Read**, R. Perera, A. Shwani, A. Hasan, S. Pillai, A. M. Donoghue, D. Rhoads, P. R. R. Jesudhasan, and A. A. K. Alrubaye. 2024. Electron-beam-killed *Staphylococcus* vaccine reduced lameness in broiler chickens. *Vaccines* 12(11): 1203. DOI: 10.3390/vaccines12111203. (OA)

- McMillan, E., E. S. Adams, T. Mitchell, J. Hawkins, **Q. D. Read**, A. Pokoo-Aikins, M. Berrang, C. E. Harris, M. D. Hughes, A. E. Glenn, and R. J. Meinersmann. 2024. Susceptibility of pESI positive *Salmonella* to treatment with biocide chemicals approved for use in poultry processing as compared to *Salmonella* without the pESI plasmid. *Letters in Applied Microbiology* 77(7): ova067. DOI: 10.1093/lambio/ova067.
- H. Abou-Shaara, S. Mehrparvar, **Q. D. Read**, J. Chen, and E. Amiri. 2024. Impact of commercial plastic queen cell cups on rearing success and development of honey bee queens. *Journal of Apicultural Research* 64(4): 1074–1084. DOI: 10.1080/00218839.2024.2418682.
- Pokoo-Aikins, A., C. M. McDonough, T. R. Mitchell, J. A. Hawkins, L. F. Adams, **Q. D. Read**, X. Li, R. Shanmugasundaram, E. Rodewald, P. Acharya, A. E. Glenn, and S. E. Gold. 2024. Mycotoxin contamination and the nutritional content of corn targeted for animal feed. *Poultry Science* 103(12): 104303. DOI: 10.1016/j.psj.2024.104303.
- Libohova, Z., M. Mancini, H. E. Winzeler, **Q. D. Read**, N. Sun, D. Beaudette, C. Williams, J. Blackstock, S. H. G. Silva, N. Curi, K. Adhikari, A. Ashworth, J. Minia, and P. R. Owens. 2024. Interpreting the spatial distribution of soil properties with a physically-based distributed hydrological model. *Geoderma Regional*: e00863. DOI: 10.1016/j.geodrs.2024.e00863. (OA)
- Kannan, N., **Q. D. Read**, and W. Zhang. A natural polymer material as a pesticide adjuvant for mitigating off-target drift. 2024. *Heliyon* 10(16): e35510. DOI: 10.1016/j.heliyon.2024.e35510. (OA)
- Toomer, O. T., P. Maharjan, K. L. Harding, T. C. Vu, R. Malheiros, R. Mian, M. Joseph, **Q. D. Read**, E. O. Oviedo-Rondon, and K. E. Anderson. 2024. Effects of full-fat high-oleic soybean meal in layer diets on performance, egg quality and chemical composition. *Poultry Science* 103(10): 104074. DOI: 10.1016/j.psj.2024.104074. (OA)
- Copes, W. E., **Q. D. Read**, and B. J. Smith. Environmental influences on drying rate of spray applied disinfestants from horticultural production services. 2024. *PhytoFrontiers*: PHYTOFR-03-24-0019-R. DOI: 10.1094/PHYTOFR-03-24-0019-R.
- Mulakala, B. K., M. Salinas, J. Rearick, B. Onyekweli, M. Gurung, M. Ruebel, J. Dada-Fox, J. Zeledon, R. Talatala, L. Davidson, R. Chapkin, **Q. D. Read**, S. Donovan, and L. Yeruva. 2024. Human milk oligosaccharides and *Bifidobacteria Infantis* interactively shape mouse splenic immune responses. *Current Developments in Nutrition* 8: 103429. DOI: 10.1016/j.cdnut.2024.103429. (OA)
- Owens, P. R., M. Mancini, H. E. Winzeler, **Q. D. Read**, N. Sun, J. Blackstock, and Z. Libohova. 2024. Simulating water dynamics related to pedogenesis across space and time: implications for four-dimensional digital soil mapping. *Geoderma* 447: 116911. DOI: 10.1016/j.geoderma.2024.116911.
- Elkins, B. H., M. Portilla, K. C. Allen, N. S. Little, R. M. Mullen, R. T. Paulk, and **Q. D. Read**. 2024. Sublethal effects of a commercial Bt product and Bt cotton flowers on the bollworm (*Helicoverpa zea*) with impacts to predation from a lady beetle (*Hippodamia convergens*). *PLoS One* 19(5): e0302941. DOI: 10.1371/journal.pone.0302941. (OA)
- Rering, C. C., A. B. Rudolph, Q.-B. Li, **Q. D. Read**, P. R. Muñoz, J. Ternest, and C. T. Hunter. 2024. A quantitative survey of the blueberry (*Vaccinium* spp.) nectar microbiome: variation between cultivars, locations, and farm management approaches. *FEMS Microbiology Ecology* 100(3): fia020. DOI: 10.1093/femsec/fia020. (OA)
- Gurung, M., B. T. Schlegel, D. Rajasundaram, R. Fox, L. Bode, T. Yao, S. R.

- Lindemann, T. LeRoith, **Q. D. Read**, C. Simecka, L. Carroll, A. Andres, and L. Yeruva. 2024. Microbiota of infants consuming secretors' or non-secretors' mother's milk impacts the gut and immune system in mice. *mSystems* e00294-24. DOI: 10.1128/msystems.00294-24. (OA)
- Mengistu, A., **Q. D. Read**, V. Sykes, H. Kelly, T. Kharel, and N. Bellaloui. 2024. Cover crop and crop rotation effects on tissue and soil population dynamics of *Macrophomina phaseolina* and yield under no-till system. *Plant Disease* 108: 302-310. DOI: 10.1094/PDIS-03-23-0443-RE.
- Koebnick, J., A. Gillen, R. Fett, S. Patel, B. Fallen, V. Pantalone, G. Shannon, Z. Li, A. Scaboo, W. Schapaugh, R. Mian, and **Q. D. Read**. 2024. Soybean test weight in relation to genotype, environment, and genotype  $\times$  environment interaction in the southern USA. *Agronomy Journal*. DOI: 10.1002/agj2.21551.
- Heintzman, L. J., N. E. McIntyre, E. J. Langendoen, and **Q. D. Read**. 2024. Cultivation and dynamic cropping processes impart land-cover heterogeneity within agroecosystems: a metrics-based case study in the Yazoo-Mississippi Delta (USA). *Landscape Ecology* 39:29. DOI: 10.1007/s10980-024-01797-0. (OA)
- Shanahan, M., M. Simone-Finstrom, P. Tokarz, F. Rinkevich, **Q. D. Read**, and M. Spivak. 2024. Thinking inside the box: Bringing tree cavity textures to beehive design to stimulate propolis collection and support honey bee health. *PLoS One* 19:e0291744. DOI: 10.1371/journal.pone.0291744. (OA)
- Safaei, S., Z. Libohova, E. J. Klavivko, A. Brown, H. E. Winzeler, **Q. D. Read**, S. Rahmani, and K. Adhikari. Influence of sample density, model selection, and land use on prediction accuracy of soil properties. *Geoderma Regional* 36:e00766. DOI: 10.1016/j.geodrs.2024.e00766. (OA)
- Shults, D. D., M. L. Reba, J. Nowlin, J. Massey, and **Q. D. Read**. 2024. Extending irrigation reservoir histories for improved groundwater modeling and conjunctive water management in two Arkansas critical groundwater areas. *Agricultural Water Management* 293:108678. DOI: 10.1016/j.agwat.2024.108678. (OA)
- Grady, J. M., **Q. D. Read**, S. Record, N. Rüger, P. L. Zarnetske, A. I. Dell, S. P. Hubbell, S. T. Michaletz, and B. J. Enquist. 2024. Life history scaling in a tropical forest. *Journal of Ecology*. DOI: 10.1111/1365-2745.14245.
- Little, N. S., B. H. Elkins, M. Portilla, K. C. Allen, **Q. D. Read**, and R. T. Paulk. 2024. Field evaluation of biological and conventional insecticides for managing multiple insect pests in cotton. *Journal of Entomological Science*. DOI: 10.18474/JES23-37.
- 2023 Martin Ewert, A., M. Simone-Finstrom, **Q. D. Read**, C. Husseneder, and V. Ricigliano. 2023. Effects of ingested essential oils and propolis extracts on honey bee (Hymenoptera: Apidae) health and gut microbiota. *Journal of Insect Science* 23(6):15. DOI: 10.1093/jisesa/ieado87.
- Halbritter, D. A., E. Kariuki, G. S. Wheeler, M. B. Rayamajhi, C. Minter, and **Q. D. Read**. Changes in plant architecture in Brazilian peppertree damaged by the biological control agent, *Pseudophyllothrips ichini* Hood (Thysanoptera: Phlaeothripidae). *Biological Control* 188, 105414. DOI: 10.1016/j.biocontrol.2023.105434.
- Penn, H. J. and **Q. D. Read**. 2023. Stem borer herbivory dependent on interactions of sugarcane variety, associated traits, and presence of prior borer damage. *Pest Management Science*. DOI: 10.1002/ps.7843.
- Cho, S., L. M. Hiott, **Q. D. Read**, J. Damashek, J. Westrich, M. Edwards, R. F. Seim, D. A. Glinski, J. M. Bateman McDonald, E. A. Ottesen, E. K. Lipp, W. M. Henderson, C. R. Jackson, and J. G. Frye. 2023. Distribution of antibiotic resistance in a mixed-use watershed and the impact of wastewater treatment plants on antibiotic resistance in surface water. *Antibiotics* 12(11):1586. DOI:

10.3390/antibiotics12111586.

Osei-Owusu, K. A., **Q. D. Read**, and M. Thomsen. 2023. Potential energy and environmental footprint savings from reducing food loss and waste in Europe: a scenario-based multiregional input–output analysis. *Environmental Science & Technology*. DOI: 10.1021/acs.est.3c00158. (OA)

Balkcom, K. S., **Q. D. Read**, and A. V. Gamble. 2023. Rye planting date impacts biomass production more than seeding rate and nitrogen fertilizer. *Agronomy Journal*. DOI: 10.1002/agj2.21418. (OA)

de Gracia Coquerel, M., A. McAuley, J. Wegerif, **Q. D. Read**, N. Chowdhury, K. C. Jeong, J. G. Morris, S. J. Martins, E. M. Goss, and M. S. Ascunce. 2023. Preliminary assessment of bacterial antibiotic resistance and *Candidatus Liberibacter asiaticus* titer in three Florida commercial citrus groves. *Crop Protection* 172:106350. DOI: 10.1016/j.cropro.2023.106350.

Taliercio, E., D. Eickholt, **Q. D. Read**, T. Carter, N. Waldeck, and B. Fallen. 2023. Parental choice and seed size impact the uprightness of progeny from interspecific *Glycine* hybridizations. *Crop Science*. DOI: 10.1002/csc2.21015.

Yeh, H.-Y., J. G. Frye, C. R. Jackson, **Q. D. Read**, J. E. Line, and A. Hinton. 2023. Use of automated capillary immunoassay for quantification of antibodies in chicken sera against recombinant *Salmonella enterica* serotype Heidelberg proteins. *Journal of Microbiological Methods*. DOI: 10.1016/j.mimet.2023.106757.

Jia, Y. and **Q. D. Read**. 2023. Bacteria disinfection of rice seeds by ultraviolet light irradiation in a biosafe flow cabinet. *Plant Health Progress*. DOI: 10.1094/PHP-02-23-0017-RS.

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. *Editor's Pick*.

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.

Adeli, A., J. P. Brooks, D. Miles, T. Misna, **Q. D. Read**, and J. N. Jenkins. 2023. Effectiveness of combined biochar and lignite with poultry litter on soil carbon sequestration and soil health. *Open Journal of Soil Science* 13:124-149. DOI: 10.4236/ojss.2023.132006. (OA)

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- Richards, A. K., E. A. McMillan, **Q. D. Read**, N. W. Shariat, R. J. Buhr, and C. E. Harris. Evaluation of MicroTally mitts for detecting foodborne pathogens during broiler processing. *Journal of Food Protection*, submitted.
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- Reardon, C., Long, D., and **Q. D. Read**. Agronomic and economic performance of nitrogen recommendations derived from site-specific wheat yield and protein data. *Agrosystems, Geosciences, & Environment*, submitted.
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## **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**

- |      |  |
|------|--|
| 2025 | Designed and taught one-day workshop for USDA researchers: "Machine learning demystified"                          |
| 2024 | Designed and taught two-day workshop for USDA researchers: "Bayesian generalized linear mixed models"              |
|      | Designed and taught two-day workshop for USDA researchers: "R for SAS Users"                                       |
|      | Designed and taught one-day workshop for USDA researchers: "A smorgasbord of options for multiomics data analysis" |

	Designed and presented lectures for USDA researchers on interpreting statistical interactions, means comparison tests, dealing with common errors in statistical model fitting, and analyzing categorical phenotype data
2023	Designed and taught <a href="#">lessons for USDA researchers</a> : “Bayesian mixed models with brms,” “Data visualization basics with R and ggplot2”
2022	Designed and taught two-day workshop for USDA researchers: “A practical toolkit for mixed models in R”
2021	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
2020-2021	Co-taught SESYNC 2020 and 2021 <a href="#">Computational Summer Institute</a> , 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
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
2012-2014	Graduate teaching assistant, General Ecology, UT-Knoxville
2011-2012	Graduate teaching assistant, Introduction to Biodiversity, UT-Knoxville

## ***Mentoring***

2024–	Member of Nirwan Tandukar’s graduate committee, N.C. State University Department of Molecular and Structural Biochemistry
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***

2024	USDA-ARS Southeast Area Annual Employee Recognition Program: award for Customer Service and Technical Expertise	
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***

V = virtual

2025	“Multinomial logistic GLMMs: a patchy landscape of software implementations.” AgStats (Conference on Applied Statistics in Agriculture & Natural Resources), as part of session I co-organized on GLMM best practices, Gainesville, FL (V)	
2024	“Doing more with less: using prior knowledge and creative experimental design to get more results from fewer animals.” USDA ARS 2024 IACUC workshop, Stuttgart, AR (V)	
	“Analyzing ordered categorical phenotypes: challenges and pitfalls.” USDA ARS SIBS Phenomics working group meeting, Raleigh, NC	
	“Troubleshooting common errors and warnings in (G)L(M)Ms.” USDA ARS Honey Bee Lab, Baton Rouge, LA	
	“Statistical interactions: what are they and what do they mean, anyway?” USDA ARS Southern Regional Research Center, New Orleans, LA	
	“Everything you ever wanted to know about means comparisons but were afraid to ask.” USDA ARS Dale Bumpers National Rice Research Center, Stuttgart, AR	
	“A smorgasbord of options for multiomics data analysis.” USDA ARS and Arkansas Children’s Nutrition Center, Little Rock, AR	
2023	“Structural equation modeling in food science.” USDA ARS Food Science & Market Quality & Handling Research Unit lab meeting, Raleigh, NC	
	“Power analysis: bureaucratic busywork or critical step in the scientific method?” USDA ARS 2023 IACUC workshop, Athens, GA (V)	
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 (V)	
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***

- 2024 **Read, Q. D.** and F. Breidt. “Exploring the options for quantifying uncertainty in derivatives of splines.” NCCC-170 meeting, Mayagüez, PR
- 2023 **Read, Q. D.** and H. J. Penn. “‘Boring’ for insights in a 28-year sugarcane insect herbivory dataset.” AgStats, West Lafayette, IN
- 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

### ***Guest lectures***

- 2023 Food waste, Global Environmental Issues (undergraduate course), William Peace University, Raleigh, NC
- Ethical and responsible statistical practices, Bioethics (graduate/undergraduate course), N.C. State University
- 2022 Food waste, Agroecology (undergraduate course), University of Maryland
- 2021 Food waste, People, Land and Food (undergraduate course), George Washington University, Washington, DC
- 2020 Data synthesis in food-energy-water nexus research, Global Stewards (graduate seminar), University of Maryland
- 2015 Mock trial activity, Conservation Biology, UT-Knoxville
- 2013 Climate change and communities, General Ecology, UT-Knoxville
- 2012 Biogeochemistry, General Ecology, UT-Knoxville



## 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

- 2025– Member, USDA ARS Data Management Working Group; providing policy and best-practices recommendations to the agency about data management

- 2024– Member, [NCCC-170](#) “Research Advances in Agricultural Statistics” research coordinating committee
- 2024– Member, USDA SciNet (high-performance computing network) Advisory Committee; chair of Education subcommittee
- 2020– Peer reviewer of R packages for [RopenSci.org](#)
- 2019–2023 Maintainer of the R package *rslurm* ([earthdatascience.org/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 >40 scholarly journals

### ***Community outreach***

- 2016– Maintain a personal science blog ([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](#))
- 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***

- 2024 Bayesian Procedures in SAS training course
- 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

