Quentin D. Read

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

USDA Agricultural Research Service
N.C. State University Plant Sciences Building
840 Oval Drive
Raleigh, North Carolina 27606

Email: quentin.read@usda.gov
Website: quentinread.com
GitHub: qdread

Professional appointments

Agricultural Research Service, U.S. Department of Agriculture, Raleigh, NC   2021–
Applied consulting statistician, Southeast Area (located at North Carolina State University)
- Support USDA researchers by designing experiments, processing and visualizing data, and doing statistical analyses using R, Stan, SAS, and Python
- Design and teach statistics and data science lessons to USDA researchers, topics including Bayesian regression, R programming, and data visualization
- Pursue a research program modeling the impacts of the food system on human and natural communities, using techniques from ecology, environmental science, and economics

National Socio-Environmental Synthesis Center (SESYNC), Annapolis, MD   2018-2021
Data scientist (2019-2021); *Postdoctoral fellow* (2018-2020)
- Provided data science consulting for socio-environmental research teams
- Maintained and developed new features for the R package *rslurm*
- Maintained and wrote content for SESYNC's cyberhelp website
- Developed and taught lessons for data science curriculum
- Modeled impacts of food waste and benefits of food waste reduction interventions
- Participated in SESYNC's postdoctoral immersion training program
- Published three first-authored manuscripts and multiple co-authored manuscripts
- Research featured in multiple media outlets (list)

Michigan State University (MSU), East Lansing, MI   2016-2018
Postdoctoral researcher, Department of Forestry
- Compiled, analyzed, and processed environmental and biodiversity datasets in R
- Fit spatial Bayesian models; did GIS analysis in R and GDAL
- Published three first-authored manuscripts and multiple co-authored manuscripts

Education

University of Tennessee (UT), Knoxville, TN   2011-2016
Ph.D., Ecology & Evolutionary Biology
University of North Carolina, Chapel Hill, NC   2005-2009
B.S., Environmental Science

Skills and languages

- Data processing and visualization in R, including tidyverse and data.table
- Bayesian modeling with Stan
- Geospatial analysis and modeling with GDAL and R
- Applying machine learning models for bioinformatics in R
- High-performance parallel computing using Linux
- Website development using Markdown and Jekyll
- Using git for version control and remote collaborations

Publications (for full list see Google Scholar)

- 10 first-authored publications in journals including *PNAS*, *Resources Conservation & Recycling, Science of the Total Environment, Ecography,* and *Biology Letters*
- Two publications with undergraduate first authors that I mentored, in *Ecology* and *Oecologia*
- 42 other co-authored publications in journals including *Science, Science of the Total Environment,* and *Global Ecology and Biogeography*
- Published an article based on my research in 360info special feature on food and climate change

Selected invited talks

- USDA ARS, 2023 IACUC workshop, Athens, GA (virtual)   2023
- N.C. State University, Plant & Microbial Biology department seminar, Raleigh, NC   2022
- Duke University, University Program in Ecology Seminar Series, Durham, NC (virtual)   2020
- Commission for Environmental Cooperation, Arlington, VA   2018
- National Ecological Observatory Network, Boulder, CO   2017
- MSU Department of Forestry, Hanover Forest Science Seminar Series, East Lansing, MI   2016
- Rocky Mountain Biological Laboratory seminar series, Gothic, CO   2014

Software

- Co-developer, *epi2me2r*: R package that helps users import Nanopore data into R   2022
- Lead developer, *Ostats*: R package for trait analysis of ecological communities   2021
- Co-developer, *ggalluvial*: R package adding functionality to ggplot2   2020
- Co-developer, *rslurm*: R package for running R code in parallel   2019

Selected teaching and course design

- Delivered guest lecture on ethics in biostatistics at N.C. State University   2023
- Designed and taught workshops on Bayesian statistics, R for SAS users, and data   2023
  visualization
- Designed and taught two-day workshop on mixed models in R   2022
- Delivered guest lectures on food waste at UMD and George Washington University   2021, 2022
- Co-designed and taught lessons for day-long geospatial data workshop at SESYNC   2021
- Designed and led workshop on best practices for collaboration with GitHub   2020
- Co-instructor of graduate seminar course in ecology at MSU   2017
- Graduate teaching assistant for eight semesters at UT   2011-2016
- Served on panel developing and reforming UT undergraduate biology curriculum   2013-2014

Mentoring experience

- Mentored student team in University of Maryland Data Challenge; team won grand   2021
  prize in a 75-team competition
- Remotely mentored 2 undergraduates at Bryn Mawr College developing an R package   2020
- Mentored 4 undergraduates through Summer Research Opportunities Program and   2017-2018
  High Performance Computing Center, MSU
- Mentored 11 summer research undergraduates and laboratory assistants through   2012-2015
  Rocky Mountain Biological Laboratory (RMBL) and UT

Selected fellowships and awards

- SESYNC NSF-funded postdoctoral immersion fellowship   2018-2020
- Science Alliance award for exemplary accomplishments as a graduate student, UT   2015
- Outstanding Outreach and Community Service award, UT   2014
- Dr. Jean H. Langenheim Endowed Graduate Fellowship, RMBL   2013-2014

Selected professional and public outreach

- Peer reviewer for >60 manuscripts in >30 different journals   2013–
- Peer reviewer for R packages on ROpenSci   2020–
- Review panelist, SESYNC immersion postdoctoral fellowship program   2019
- Public research talks on climate change and citizen science   2017, 2018
- Organized Darwin Day, a campus-wide science education event   2014