

RACHEL C. WOOLIVER

University of Tennessee
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PROFESSIONAL APPOINTMENTS

- Postdoctoral Research Associate** *2020-present*
Department of Biosystems Engineering & Soil Science
University of Tennessee, Knoxville
Main advisor: Dr. Sindhu Jagadamma; co-advised by Dr. Stephanie Kivlin, Dr. Angela McClure, Dr. Tyson Raper, and Dr. Lori Duncan
- Postdoctoral Research Associate** *2018-2020*
Department of Plant & Microbial Biology
North Carolina State University
Advisor: Dr. Seema Sheth

EDUCATION

- Ph.D., Ecology & Evolutionary Biology** *2013-2018*
University of Tennessee, Knoxville
Advisor: Dr. Jennifer Schweitzer; co-advised by Dr. Brian O'Meara, Dr. Joseph Bailey, and Dr. Henri Grissino-Mayer
- B.S., Ecology & Evolutionary Biology** *2009-2013*
University of Tennessee, Knoxville
Geography minor, Study abroad James Cook University (Queensland, Australia)

PUBLICATIONS

15. **Wooliver R**, Kivlin SN, Jagadamma S (2022). Links among crop diversification, microbial diversity, and soil organic carbon: Mini review and case studies. *Frontiers in Microbiology*, 13, 854247.
14. Coughlin AO, **Wooliver R**, Sheth SN (2022). Populations of western North American monkeyflowers accrue niche breadth primarily via genotypic divergence in environmental optima. *Ecology and Evolution*, 12, e9434.
13. **Wooliver R**, Vtipilthorpe E, Weigmann A, Sheth SN (2022). A viewpoint on ecological and evolutionary study of plant thermal performance curves in a warming world. *AoB Plants*, plac016, <https://doi.org/10.1093/aobpla/plac016>.
12. Querns A, **Wooliver R**, Vallejo-Marn M, Sheth SN (2022). The evolution of thermal performance in native and invasive populations of *Mimulus guttatus*. *Evolution Letters*, 6, 136-148.
11. Preston J, **Wooliver R**, Driscoll H, Coughlin A, Sheth SN (2022). Spatial variation in high temperature-regulated gene expression predicts evolution of plasticity with climate change in the scarlet monkeyflower. *Molecular Ecology*, 31, 1254-1268.

10. **Wooliver R**, Tittes SB, Sheth SN (2020). A resurrection study reveals limited evolution of thermal performance in response to recent climate change across the geographic range of the scarlet monkeyflower. *Evolution*, 74, 1699-1710.
9. Ware I, Fitzpatrick C, Senthilnathan A, Bayliss S, Beals K, Mueller L, Summers J, **Wooliver R**, Van Nuland M, Kinnison MT, Palkovacs E, Schweitzer J, Bailey JK (2019). Feedbacks link ecosystem ecology and evolution across spatial and temporal scales: Empirical evidence and future directions. *Functional Ecology*, 33, 31-42.
8. **Wooliver R**, Pellegrini AFA, Waring BG, Houlton BZ, Averill C, Schimel J, Hedin LO, Bailey JK, Schweitzer JA (2019). Changing perspectives on terrestrial nitrogen cycling: the importance of weathering and evolved resource-use traits for understanding ecosystem responses to global change. *Functional Ecology*, 33, 1818-1829.
7. **Wooliver R**, Senior JK, Potts B, Van Nuland ME, Bailey JK, Schweitzer JA (2018). Soil fungi underlie a phylogenetic pattern in plant growth responses to nitrogen enrichment. *Journal of Ecology*, 106, 2161-2175. [Editor's choice]
6. Senior JK, O'Reilly-Wapstra JM, Potts BM, **Wooliver R**, Bissett A, Bailey JK, Glen M, Schweitzer JA (2018). Phylogenetic trait conservatism predicts patterns of plant-soil feedback. *Ecosphere*, 9, e02409.
5. **Wooliver R**, Marion Z, Peterson CR, Potts B, Senior JK, Bailey JK, Schweitzer JA (2017). Phylogeny is a powerful tool for predicting plant biomass responses to nitrogen enrichment. *Ecology*, 98, 2120-2132.
4. Van Nuland ME, **Wooliver R**, Pfennigwerth A, Read Q, Ware IM, Mueller L, Fordyce J, Schweitzer JA, Bailey JK (2016). Plant-soil feedbacks: connecting ecosystem ecology and evolution. *Functional Ecology*, 30, 1032-1042.
3. **Wooliver R**, Pfennigwerth A, Schweitzer JA, Bailey JK (2016). Plant functional constraints guide macroevolutionary trade-offs in competitive and conservative growth responses to nitrogen. *Functional Ecology*, 30, 1099-1108.
2. Senior JK, Potts BM, Davies N, **Wooliver R**, Schweitzer JA, Bailey JK, O'Reilly-Wapstra JM (2016). Phylogeny explains variation in the root chemistry of *Eucalyptus* species. *Journal of Chemical Ecology*, 42, 1086-1097.
1. **Wooliver R**, Senior JK, Schweitzer JA, O'Reilly-Wapstra JM, Langley JA, Chapman SK, Bailey JK (2014). Evolutionary history and novel biotic interactions determine plant responses to CO₂ and nitrogen fertilization. *PLOS ONE* 9(12): e114596.

SCIENTIFIC PRESENTATIONS

Wooliver R, Kivlin SN, McClure A, Lee J, Jagadamma S (2022). "Soil microbial communities, soil carbon, and crop yields after two years of crop diversification in Tennessee." ASA-CSA-SSSA International Annual Meeting [Poster].

Wooliver R, Kivlin S, McClure A, Jagadamma S (2021). "Outcomes of crop diversification for soil microbial communities, soil health, and crop yields in west Tennessee." ASA-CSSA-SSSA International Annual Meeting.

Wooliver R, Vtipil E, Sheth SN (2020). "A call for unified study of plant thermal performance in a warming world." Virtual Botany.

Wooliver R, Tittes S, Sheth SN (2019). “Can plant thermal tolerance evolve under climate change? A comparison of central and edge populations.” Southeastern Population Ecology & Evolutionary Genetics Conference.

Wooliver R, Tittes S, Sheth SN (2019). “Can plant thermal tolerance evolve under climate change? A comparison of central and edge populations.” International Biogeography Society, Humboldt 250 Meeting in Quito, Ecuador. (*Symposium: “Architects of variation: How climate and physiology shape patterns of biodiversity”*)

Wooliver R (2019). “New insights in the ecology and evolution of plant nitrogen limitation.” North Carolina State University, Plant & Microbial Biology Seminar Series.

Wooliver R (2019). “New insights in the ecology and evolution of plant nitrogen limitation.” Duke University, Population Biology Seminar Series.

Wooliver R (2018). “New insights in the ecology and evolution of plant nitrogen limitation.” UTK, Ecology & Evolutionary Biology Seminar Series.

Wooliver R, Pfennigwerth A, Peterson CR, Marion Z, Potts B, Senior JK, Bailey JK, Schweitzer JA (2017). “Phylogeny and soil fungi explain tradeoffs in plant growth responses to nitrogen enrichment.” Ecological Society of America. (*Symposium: “Nitrogen in terrestrial ecosystems: New paradigms”, organized by Wooliver R & Schweitzer JA*)

Wooliver R, Pfennigwerth A, Bailey JK, Schweitzer JA (2016). “Plant functional constraints guide macroevolutionary trade-offs in competitive and conservative growth responses to nitrogen.” Ecological Society of America.

Wooliver R, Bailey JK, Schweitzer JA (2015). “Effects of phylogeny and functional traits on plant responses to nitrogen enrichment.” University of Tasmania, School of Biological Sciences Seminar Series.

Wooliver R, Bailey JK, Schweitzer JA (2014). “Plant responses to global change through the lens of evolutionary history.” University of Kentucky, Spring Symposium in Ecology, Evolution & Behavior.

SERVICE & TRAINING

Research Tour Contributor at Milan No-Till Field Day. ”Impacts of cover crop mixtures on weeds and soil health” [Recorded talk] 2022
Manuscript reviewer for *Agriculture, Ecosystems, and Environment*, *American Naturalist*, *Biogeochemistry*, *Current Biology*, *Ecology*, *Ecology and Evolution*, *Ecoscience*, *Frontiers in Ecology and Evolution*, *Functional Ecology*, *Journal of Ecology*, *New Phytologist*, & *Soil Biology and Biogeochemistry* 2016-present
Mentorship: Providing guidance for undergraduate and graduate students 2016-present
Exhibitor in the North Carolina Museum of Natural Science Darwin Day event 2019
Attendee of Ridge 2 Reef: Microbiomes & Global Change Summer Institute 2019
UTK Ecology & Evolutionary Biology Seminar Committee 2016-2017
UTK Darwin Day Advertising Committee 2016
Guest co-author for British Ecological Society Plants-Soils-Ecosystems Journal Club: “*Looking back to move forward: evolutionary history and plant-soil feedbacks*” 2014
Science Olympiad State Tournament & Boo at the Zoo volunteer 2014-2015

GRANTS & AWARDS

NCSU Postdoctoral Professional Development Award: \$1,000	<i>2020</i>
Nominated for the Jimmy & Ileen Cheek Medal of Excellence	<i>2018</i>
Cokkinias Graduate Fellowship, UTK Division of Biology: \$1,000	<i>2017</i>
Excellence in Research Award, UTK Graduate Student Senate	<i>2017</i>
Alexander Hollaender Graduate Fellowship: \$6,000	<i>2016</i>
Francis & Evelyn Clark Soil Biology Scholarship: \$2,000	<i>2016</i>
Ecological Society of America Soil Ecology Travel Award: \$500	<i>2016</i>
UTK Graduate Student Senate Travel Award: \$1,565	<i>2016 & 2017</i>
East Asia & Pacific Summer Institute Fellowship, National Science Foundation: \$5,000	<i>2015</i>
EEB Outstanding Publication by a Graduate Student Award	<i>2015 & 2017</i>
UTK Chancellors Funds: \$5,333	<i>2014-2018</i>
Departmental Research Grant: \$3,402	<i>2014-2015</i>

TEACHING

Graduate Teaching Assistant at UTK (Courses taught: Ecology field-based lab, Ecology lecture, Biology lab, Biology literature)	<i>2013-2018</i>
Guest lecturer for undergraduate Ecology course at UTK	<i>2015-2018</i>
Member of Curriculum Reform Committee for Biology courses at UTK	<i>2014</i>