

Curriculum Vitae  
Nina Wurzburger  
Odum School of Ecology  
University of Georgia  
Athens, GA 30602  
(706) 296-2973, [ninawurz@uga.edu](mailto:ninawurz@uga.edu)  
[wurzburger-lab.org](http://wurzburger-lab.org)

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**Education and Training:**

University of California Davis	Environmental and Resource Science	B.S. 1997
University of California Davis	Soil Science	M.S. 2000
University of Georgia	Forest Resources	Ph.D. 2007

**Research and Professional Experience:**

Associate Professor, Odum School of Ecology, University of Georgia	2017–present
Courtesy Faculty, Department of Plant Biology, University of Georgia	2018–present
Visiting Scholar, University of California Santa Cruz	2021
Assistant Professor, Odum School of Ecology, University of Georgia	2011–2017
Smithsonian Postdoctoral Fellow	2009–2010
Princeton University, Project Specialist	2007–2010
Princeton University, Lecturer	2007–2009
University of Georgia, Graduate Research Assistant	2004–2007
University of Georgia, Teaching Assistant	2001–2004
University of California Davis, Teaching Assistant	1998–2000
University of California Davis, Postgraduate Researcher	1997–1998
Harvard Forest, NSF undergraduate Intern (REU)	1997

**Publications** (in print or accepted, \*peer reviewed & refereed, \*\*invited submission, ^editorial, †graduate student, ‡undergraduate student)

50. \*Rains, KC, Kraus TEC, Bledsoe CS and **Wurzburger N** (Accepted) Experimental evidence that ericoid mycorrhizal shrubs can outcompete ectomycorrhizal trees for nitrogen in tannin-rich litter, *Ecosphere*.
49. \*\*\*Batterman, SA and **Wurzburger, N** (In Press) Biological nitrogen fixation, In *The First 100 Years of Research on Barro Colorado Island: Plant and Ecosystem Science*, ed. H. C. Muller-Landau and S. J. Wright: Smithsonian Institution Scholarly Press.
48. \*Liu, L, Zhang, Z, Wang, X, Zhang, R, Wang, M, **Wurzburger, N**, Li, J and Zhang, J 2023 Urbanization reduces soil microbial network complexity and stability in the megacity of Shanghai, *Science of the Total Environment*, 893, 164915.
47. \*Shao, S, **Wurzburger, N**, Sulman, B and Hicks Pries, C 2023 Ectomycorrhizal effects on decomposition are highly dependent on fungal traits, climate and litter properties: A model-based assessment, *Soil Biology and Biochemistry*, 184 109073.

46. \***Wurzburger, N**, Elliott, K and Miniati CF 2023 Forest mycorrhizal dominance depends on historical land use and nitrogen-fixing trees, *Journal of Applied Ecology*, 60 1551-1561.
45. \*<sup>†</sup>Ottinger, SL, Miniati, CF, and **Wurzburger, N** 2023 Nitrogen and light regulate symbiotic nitrogen fixation by a temperate forest tree, *Oecologia*, 201 565-574.
44. \*Hicks Pries, C, Lankau, R, <sup>\*</sup>Ingham, GA, Legge, E, Krol, O, Forrester, J, <sup>†</sup>Fitch, A and **Wurzburger, N** 2023 Differences in soil organic matter between EcM- and AM-dominated forests depend on tree and fungal identity, *Ecology*, 104:3.
43. \*Cleveland, CC, Reis, CRG, Perakis, SS, Dynarski, KA, Batterman, SA, Crews, TE, Gei, M, Gundale, MJ, Menge, DNL, Peoples, MB, Reed, SC, Salmon, VG, Soper, FM, Taylor, BN, Turner MG and **Wurzburger, N** 2022 Exploring the role of cryptic nitrogen fixers in terrestrial ecosystems: A frontier in nitrogen cycling research. *Ecosystems* 25 1653-1669.
42. \***Wurzburger, N**, <sup>†</sup>Motes, JI and Miniati, CF 2022 A framework for scaling symbiotic nitrogen fixation using the most widespread nitrogen-fixer in eastern deciduous forests of the United States, *Journal of Ecology*, 110, 569-581.
41. \*Liu, L, Barberán, A, Gao, C, Zhang, Z, Wang, M, **Wurzburger, N**, Wang, X, Zhang, R, Li, J and Zhang, J 2022 Impact of urbanization on soil microbial diversity and composition in the megacity of Shanghai, *Land Degradation and Development*, 33 282-293.
40. Scott, JL, Miniati, CF, <sup>†</sup>Motes, J, <sup>†</sup>Ottinger, SL, **Wurzburger, N** and Elliott, KJ 2021 Improved allometric equations for black locust (*Robinia pseudoacacia*) in the Coweeta Basin, USDA Forest Service Research Paper SRS-64.
39. \*Miniati, CF, Oishi, AC, Bolstad, PV, Jackson, RJ, Liu, N, Love, JP, Pringle, CM, Solomon, KJ, **Wurzburger, N** 2021 The Coweeta Hydrologic Laboratory and the Coweeta Long-Term Ecological Research Project, *Hydrologic Processes*, 35:7.
38. \*Freschet, GT, Pagès, L, Iversen, CM, Comas, LH, Rewald, B, Roumet, C, Klimešová, J, Zadworny, M, Poorter, H, Postma, JA, Adams, TS, Bagniewska-Zadworna, A, Blancaflor, EB, Brunner, I, Cornelissen, JHC, Garnier, E, Gessler, A, Hobbie, SE, Lambers, H, Meier, IC, Mommer, L, Picon-Cochard, C, Rose, L, Ryser, P, Scherer-Lorenzen, M, Soudzilovskaia, NA, Stokes, A, Sun, T, Valverde-Barrantes, OJ, Weemstra, M, Weigelt, A, **Wurzburger, N**, York, LM, Batterman, SA, Bengough, AG, Gomes de Moraes, M, Janeček, Š, Salmon, V, Tharayil, N & McCormack, ML 2021. A starting guide to root ecology: strengthening ecological concepts and standardizing root classification, sampling, processing and trait measurements. *New Phytologist*, 232:3, 973-1122.
37. \*Freschet, GT, Roumet, C, Comas, LH, Weemstra, M, Bengough, AG, Rewald, B, Bardgett, RD, de Deyn, GB, Johnson, D, Klimešová, J, Lukac, M, McCormack, ML, Meier, IC, Pagès, L, Poorter, H, Prieto, I, **Wurzburger, N**, Zadworny, M, Bagniewska-Zadworna, A, Blancaflor, EB, Brunner, I, Gessler, A, Hobbie, SE, Iversen, CM, Mommer, L, Picon-Cochard, C, Postma, JA, Rose, L, Ryser, P, Scherer-Lorenzen, M, Soudzilovskaia, NA, Sun, T, Valverde-Barrantes, OJ, Weigelt, A, York, L & Stokes, A 2021. Root traits as drivers of plant and ecosystem functioning: current understanding, pitfalls and future research needs. *New Phytologist*, 232:3, 1123-1158.

36. \*<sup>†</sup>Coughlin, AM, Shefferson, R, Clark, S and **Wurzburger, N** 2021 Plant-soil feedbacks and the introduction of *Castanea* (chestnut) hybrids to eastern North American forests, *Restoration Ecology*, 29 (3).
35. \*<sup>†</sup>Carpenter, DO, <sup>†</sup>Taylor, MK, Callaham Jr, MA, Hiers, JK, Loudermilk, EL, O'Brien, JJ, and **Wurzburger, N** 2021 Benefit or liability? The ectomycorrhizal association may undermine tree adaptations to fire after long-term fire exclusion, *Ecosystems*, 24, 1059-1074.
34. \*<sup>†</sup>Perreault, L, Forrester, JA, **Wurzburger, N**, and Mladenoff, DJ 2020 Emergent properties of downed woody debris in canopy gaps: A response of the soil ecosystem to manipulation of forest structure, *Soil Biology and Biochemistry*, 151, 108053.
33. \*Ulyshen, M, Horn, S, Brownie, C, Strickland, MS, **Wurzburger, N** and Zanne, A 2020 Comparison of decay rates between native and non-native wood species in invaded forests of the southeastern U.S.: A rapid assessment, *Biological Invasions*, **22** 2619–2632.
32. \*Liu, L, Zhu, K, **Wurzburger, N** and Zhang J 2020 Relationships between plant and soil microbial diversity vary across taxonomic groups and spatial scales, *Ecosphere*, 11(1) e02999.
31. \*<sup>†</sup>Minucci, JM, Miniati, CF, and **Wurzburger, N** 2019 Drought sensitivity of an N<sub>2</sub>-fixing tree may slow temperate deciduous forest recovery from disturbance, *Ecology*, 100(12) e02862.
30. \*Brookshire, ENJ, **Wurzburger, N**, <sup>†</sup>Currey, B, Menge, DNL, Oatham, M and Roberts, C 2019 Symbiotic N fixation is sufficient to support net aboveground biomass accumulation in a humid tropical forest. *Scientific Reports*, 9: 7571.
29. \*<sup>†</sup>Tierney, J, Hedin, LO, and **Wurzburger, N** 2019 Nitrogen fixation does not balance fire-induced nitrogen losses in longleaf pine savannas, *Ecology* 100(7) e02735.
28. \*<sup>†</sup>Phillips, CA and **Wurzburger, N** 2019 Elevated rates of heterotrophic respiration in shrub-conditioned arctic tundra soils, *Pedobiologia- Journal of Soil Ecology* 72: 8-15.
27. \*<sup>†</sup>Machmuller, MB, Ballantyne, F, Markewitz, D, Thompson, A, **Wurzburger, N**, Frankson, PT, Mohan, J. 2018 Temperature sensitivity of soil respiration in a low-latitude ecosystem varies by season and habitat but is unaffected by experimental warming. *Biogeochemistry* 141:63-73.
26. \*<sup>†</sup>Ament, MR, <sup>†</sup>Tierney, JA, Hedin, LO, Hobbie, EA, and **Wurzburger, N** 2018 Phosphorus and species regulate N<sub>2</sub> fixation by herbaceous legumes in longleaf pine savannas *Oecologia* 187: 281-290.
25. <sup>^</sup>**Wurzburger, N** and Clemmensen, KE 2018 From mycorrhizal fungal traits to ecosystems—and back again, *Journal of Ecology* 106: 463-467.
24. \*Zhu, K, McCormack, ML, Lankau, RA, Egan, FF and **Wurzburger, N** 2018 Association of ectomycorrhizal trees with higher carbon-to-nitrogen ratio soils is driven by smaller nitrogen not larger carbon stocks, *Journal of Ecology* 106: 454-535.
23. \***Wurzburger, N** and Brookshire, ENJ 2017 Experimental evidence that mycorrhizal nitrogen strategies affect soil carbon, *Ecology* 98(6) 1491-1497.

22. \*<sup>†</sup>Minucci, JM, Miniati, CF, Teskey, R, and **Wurzburger, N** 2017 Tolerance or avoidance: drought frequency determines the response of an N<sub>2</sub>-fixing tree. *New Phytologist* 215 (1), 434-442.
21. \*\***Wurzburger, N**, Brookshire, ENJ, McCormack, ML, and Lankau, RA 2017 Mycorrhizal fungi as drivers and modulators of terrestrial ecosystem processes. *New Phytologist* 213: 996-999.
20. \*<sup>†</sup>Machmuller, MB, Mohan, JE, <sup>†</sup>Minucci, JM, <sup>†</sup>Phillips, CA and **Wurzburger, N** 2016 Season, but not experimental warming, affects the activity and temperature sensitivity of extracellular enzymes. *Biogeochemistry* 131(3): 255-265.
19. \*<sup>†</sup>Taylor, MK, Lankau, RA, and **Wurzburger, N** 2016 Mycorrhizal associations of trees have different indirect effects on organic matter decomposition. *Journal of Ecology* 104: 1576-1584.
18. \*\***Wurzburger, N** 2016 Old growth temperate forests harbor hidden N-fixing bacteria. *New Phytologist* 210: 374-376.
17. \***Wurzburger, N** and Hedin, LO 2016 Taxonomic identity determines symbiotic N<sub>2</sub> fixation by canopy trees across lowland tropical forests. *Ecology Letters* 19: 62-70.
16. \*<sup>†</sup>Collins, CG, Wright, SJ, and **Wurzburger, N** 2016 Root and leaf traits reflect distinct resource acquisition strategies in tropical lianas and trees. *Oecologia* 180:1037-1047.
15. \***Wurzburger, N** and Wright, SJ 2015 Fine root responses to fertilization reveal multiple nutrient limitation in a lowland tropical forest. *Ecology* 96: 2137-2146.
14. \***Wurzburger, N** and Miniati, CF 2014 Drought enhances symbiotic di-nitrogen fixation and competitive ability of a temperate forest tree. *Oecologia* 174:1117-1126.
13. \*<sup>†</sup>Bunch, WC, Cowden, CC, **Wurzburger, N**, Shefferson, RP 2013 Geography and soil chemistry drive the distribution of fungal associations in a lady's slipper orchid, *Cypripedium acaule*. *Botany* 91(12):850-856.
12. \*<sup>†</sup>Batterman, SA, **Wurzburger, N**, and Hedin, LO 2013 Nitrogen and phosphorus interact to control tropical N<sub>2</sub> fixation: A test in *Inga punctata*. *Journal of Ecology*, 101: 1400-1408.
11. \***Wurzburger, N**, Bellenger, JP, Kraepiel, AML, and Hedin, LO 2012 Molybdenum and phosphorus interact to constrain asymbiotic nitrogen fixation in tropical forests. *PLoS ONE* 7(3):e33710.
10. \***Wurzburger, N**, Higgins, BP and Hendrick, RL 2011 Ericoid mycorrhizal root fungi and their multi-copper oxidases from a temperate forest shrub. *Ecology and Evolution* doi: 10.1002/ece3.67.
9. \*Wright, SJ, Yavitt, JB, **Wurzburger, N**, Turner, BL, Tanner, VJ, Sayer, EJ, Santiago, LS, Kaspari, M, Hedin, LO, Harms, KE, Garcia, MN, and Corre, MD 2011 Potassium, phosphorus, or nitrogen limit root allocation, tree growth, or litter production in a lowland tropical forest. *Ecology* 92: 1616-1625.

8. \***Wurzburger, N** and Hendrick RL 2009 Plant litter chemistry and mycorrhizal roots promote a nitrogen feedback in a temperate forest. *Journal of Ecology* 93: 528-536.
7. \*Barron, AR, **Wurzburger, N**, Bellenger, JP, Kraepiel, AML, Wright, SJ, and Hedin, LO 2009 Molybdenum limitation of symbiotic nitrogen fixation in tropical forest soils. *Nature Geoscience* 2: 42-45.
6. \*<sup>†</sup>Nuckolls, AE, **Wurzburger, N**, Ford, CR, Hendrick, RL, Vose, JM, and Kloeppel BD 2009 Hemlock declines rapidly with hemlock woolly adelgid infestation: impacts on the carbon cycle of southern Appalachian forests. *Ecosystems* 12: 179-190.
5. \***Wurzburger, N** and Hendrick RL 2007 Rhododendron thickets alter N cycling and soil extracellular enzyme activities in southern Appalachian hardwood forests. *Pedobiologia* 50: 563-576.
4. \*Ford, CR, **Wurzburger, N**, Hendrick, RL, and Teskey, RO 2007 Soil DIC uptake and fixation in *Pinus taeda* L. seedlings and its C contribution to plant tissues and mycorrhizal fungi. *Tree Physiology* 27: 375-383.
3. \***Wurzburger, N**, Hartshorn, AS, and Hendrick, RL 2004 Ectomycorrhizal fungal community structure across a bog-forest ecotone in southeastern Alaska. *Mycorrhiza* 14: 383-389.
2. \***Wurzburger, N**, Bidartondo, MI, and Bledsoe, CS 2001 Characterization of *Pinus* ectomycorrhizas from mixed conifer and pygmy forests using morphotyping and molecular methods. *Canadian Journal of Botany* 79: 1211-1216.
1. \***Wurzburger, N** and Bledsoe, CS 2001 Comparison of ericoid and ectomycorrhizal colonization and ectomycorrhizal morphotypes in mixed conifer and pygmy forests on the northern California coast. *Canadian Journal of Botany* 79: 1202-1210.

### Manuscripts in Review

\*<sup>†</sup>Tierney, J and **Wurzburger, N** Phosphorus controls symbiotic nitrogen fixation in fire-dependent longleaf pine savannas (in revision with *Journal of Ecology*)

\*Wong, MY, **Wurzburger, N**, Hall, JS, Wright, SJ, Tang, W, Hedin, LO, Saltonstall, K, van Breugel, M, and Batterman, SA, Trees adjust nutrient acquisition strategies across tropical forest secondary succession (in review with *New Phytologist*).

## Grants and Fellowships:

### Active:

USDA NIFA AFRI Foundational 2023–2027  
How does long-term prescribed fire alter the abundance and stability of soil carbon in eastern forests?  
\$750,000 PI (\$605,695 to Wurzburger), co-PI: Caitlin Hicks Pries (Dartmouth College), co-PI: Richard Lankau (University of Wisconsin).

DOE Terrestrial Ecosystem Science 2019–2024  
Testing mechanisms of how mycorrhizal associations affect forest soil carbon and nitrogen cycling,  
\$999,995, co-PI (\$330,000 to Wurzburger), PI: Caitlin Hicks Pries (Dartmouth College), co-PI: Richard Lankau (University of Wisconsin), co-PI: Benjamin Sulman (Oak Ridge National Lab).

### Completed:

NSF DEB ES/PCE 2018–2023  
Ecosystem response to the repeated interaction of disease and fire, \$450,000, co-PI (\$0 to Wurzburger),  
PI: David Rizzo (University of California Davis), co-PI: Ross Meentemeyer (North Carolina State University), co-PI: Richard Cobb (California Polytechnic and State University).

NSF DEB 2017–2020  
Coweeta LTER VII, Examining long-term southern Appalachian ecosystem dynamics through interactions and indirect effects, \$5,120,000, co-PI (\$250,000 to Wurzburger), lead PIs: Rhett Jackson (University of Georgia) and Chelcy Miniat (USDA FS).

Tall Timbers Research Station Subcontract 2017–2019  
Landscape wildfire, duff consumption and ecosystem trajectories in the southern Appalachians, \$47,971 PI.

UGA Global Research Collaboration Grant  
Do soil nutrients constrain the carbon sink of tropical forests? \$5000, PI 2017–2018

UGA OVPR Junior Faculty Research Grant 2017–2018  
How do fire and disease interactions affect ecosystem resiliency? \$9,829, PI.

NSF Dissertation Research 2016–2017  
Do accelerated microbial-organic matter interactions feed back to promote shrub growth in arctic tundra, \$17,264 co-PI with Carly Phillips.

Department of Defense, Strategic Environmental Resource and Development Program 2013–2018  
Controls Regulating Biological Nitrogen Fixation in Longleaf Pine Ecosystems: The Role of Fire and Stand Development, \$1,396,272, PI (\$1,144,272 to Wurzburger), co-PIs: Robert Mitchell (Jones Center), Erik Hobbie (University of New Hampshire) and Lars Hedin (Princeton University).

USDA Forest Service Cooperative Agreement 2013–2016  
Exploring how drought affects water and nutrient cycles of early successional forests in the southern Appalachians \$25,000, PI.

UGA OVPR, Junior Faculty Research Grant 2012–2013  
Mycorrhizal fungi as modulators of soil carbon in terrestrial ecosystems, \$12,557, PI.

USDA Forest Service Cooperative Agreement 2011–2013  
Exploring how drought affects water and nutrient cycles of early successional forests in the southern Appalachians \$50,000, PI.

Previous Awards:

Smithsonian Postdoctoral Fellowship 2009–2011  
Various Graduate School Travel & Research Grants, University of Georgia (\$4,500) 2003–2006  
Graduate Student Grant, Society of Wetland Scientists, (\$1,500) 2003  
Grant-in-Aid of Research, Sigma Xi (\$500) 2003  
Martha Love May Memorial Scholarship (\$2,000) 2003  
University of Georgia Graduate School Assistantship (\$60k) 2001–2003  
Jastro Shields Research Fellowship, UC Davis (\$1,500) 1999

**Awards and Honors:**

University of Georgia Presidential (Fred C. Davison) Early Career Award 2016  
Faculty Instructor of the Year, Odum School of Ecology 2014  
Best Oral Paper Award, Division S-7, Soil Science Society of America 2013  
Outstanding Teaching Award, Odum School of Ecology 2013  
Harper Prize for best paper by young author, *Journal of Ecology* 2009  
Best Paper of Session, Division S-7, Soil Science Society of America Annual Meeting 2005  
Outstanding Teaching Assistant, University of Georgia 2005  
Amazing Student Award, University of Georgia 2005  
Blue Key Honor Society 2005

**Oral Presentations:**

†Taylor, MK, Callaham, MA, and Wurzburger, N The view from below: A mesophication framework incorporating biogeochemistry, mycorrhizal fungi and soil food invertebrates, Ecological Society of America (ESA) Annual Meeting, Portland, OR, Aug 10, 2023 (Invited).

Wurzburger, N, Simler-Williamson, A, Frangioso, K, Metz, M, Cobb, R, Meentemeyer, R, and Rizzo, D Wildfire and tree disease promote the expansion of a nitrogen-fixing shrub in coastal California forests, Ecological Society of America (ESA) Annual Meeting, Portland, OR, Aug 7, 2023 (Contributed).

Wurzburger, N Forest dominance depends on historical land use and nitrogen-fixing trees. USDA Forest Service Southern Research Station, Center for Forest Watershed Research Colloquium, April 27, 2023 (Invited).

Wurzburger, N If you care about forests, it's time to think about microbes, University of Georgia Warnell School of Forestry and Natural Resources Seminar, Nov 3, 2022 (Invited).

Wurzburger, N A fix or a problem? Disturbance-induced nitrogen fixation and forest recovery, Cary Institute for Ecosystem Studies Seminar, Oct 10, 2019 (Invited).

Wurzburger, N, †Motes, JI, Elliot, KJ and Miniati, CF The rise and fall of N fixation following disturbance. Ecological Society of America (ESA) Annual Meeting, Louisville, KY, August 15, 2019 (Invited).

Wurzburger, N, Elliot, KJ and Miniati, CF Plant strategies for nutrient acquisition – an unconsidered dimension of forest “mesophication”. North American Forest Ecology Workshop, June 24, 2019 in Flagstaff, AZ (Invited).

Miniati, CF, Elliot, KJ, Bolstad, PV, Oishi, AC, and Wurzburger, N Multiple dimensions of mesophication: A case study from Coweeta Hydrologic Lab. North American Forest Ecology Workshop, Flagstaff, AZ, June 24, 2019 (Invited).

O'Brien, JJ, Wurzburger, N, Loudermilk, EL, †Carpenter, D, Hiers, JK, Callahan, MA Jr. Does burning the O-horizon following long-term fire exclusion accelerate mesophication? North American Forest Ecology Workshop, Flagstaff, AZ, June 24, 2019 (Invited).

Wurzburger, N, †Motes, JI, Elliot, KJ and Miniati, CF Nitrogen legacies in southern Appalachian Forests. The Coweeta LTER Retrospective Symposium, Dillard, GA, May 28, 2019. (Invited)

Wurzburger, N A fix or a problem? Nitrogen fixation and forest resilience, Population Biology, Ecology and Evolution Seminar, Emory University, Feb 22, 2019 (Invited).

Wurzburger, N A fix or a problem? Disturbance-induced nitrogen fixation facilitates recovery, but contributes to declining forest resilience, Department of Plant Biology Seminar, UGA, Oct 22, 2018 (Invited).

Wurzburger, N A fix or a problem? Disturbance-induced nitrogen fixation facilitates recovery, but contributes to declining forest resilience, Department of Environmental Studies Seminar, UC Santa Cruz, Oct 8, 2018 (Invited).

Wurzburger, N, Elliott, KJ and CF Miniati Nitrogen fixation facilitates dominance of arbuscular mycorrhizal trees. Ecological Society of America (ESA) Annual Meeting, New Orleans, LA, August 9, 2018 (Contributed).

‡Motes, JI and N Wurzburger Evidence of high nitrogen fixation in early successional southern Appalachian forests. Coweeta Hydrologic Lab Summer Student Symposium, August 3, 2018 (Contributed).

O'Brien, JJ, Wurzburger, N, Hiers, JK, †Carpenter, D Can wildfire accelerate mesophication following long periods of fire exclusion in Appalachian forests? 79th Annual Meeting of Association of Southeastern Biologists, Myrtle Beach, SC March 28, 2018 (Contributed).

†Carpenter, D, Wurzburger, N, Heirs, K, O'Brien, J, Loudermilk, L Has long-term fire exclusion reduced the resiliency of southern Appalachian forests to wildfire? Odum School of Ecology Graduate Student Symposium, January 10, 2018 (Contributed).



<sup>†</sup>Carpenter, D, Wurzburger, N, Heirs, K, O'Brien, J, Loudermilk, L Does adaptation to fire predispose trees to post-fire mortality after a century of fire exclusion? The 7<sup>th</sup> Association of Fire Ecology International Fire Congress, Orlando, FL, December 10, 2017 (Invited).

Loudermilk, EL, O'Brien, JJ, Hornsby, B, Wallace, D, Norman, S, Williams, M, Goodrick, S, Wurzburger, N, <sup>†</sup>Carpenter, D, Hiers, JK, <sup>†</sup>Fowler, E, Reilly, M 2017. Early measurements of fire effects and long-term forest recovery after the 2016 southern Appalachian wildfires. The 7<sup>th</sup> Association of Fire Ecology International Fire Congress, Orlando, FL, December 10, 2017 (Invited).

Wurzburger, N, Elliott, KJ and Miniati, CF Nitrogen fixation facilitates forest recovery after repeated disturbance. Ecological Society of America (ESA) Annual Meeting, Portland, OR, August 10, 2017 (Contributed).

<sup>†</sup>Tierney, J and Wurzburger, N Longleaf pine savannas house diverse niches of nitrogen fixation. Ecological Society of America (ESA) Annual Meeting, Portland, OR, August 10, 2017 (Invited).

Wurzburger, N Why plant-microbial symbioses matter in our changing world. Biogeochemistry Seminar Series, Cornell University, Ithaca, NY, Oct 1, 2016 (Invited).

<sup>†</sup>Taylor, MK, Lankau, RA and Wurzburger, N Mycorrhizal symbioses of trees have different indirect effects on organic matter decomposition. Ecological Society of America (ESA) Annual Meeting, Fort Lauderdale, FL, August 9, 2016 (Invited).

McCormack, ML, Lankau, RA, Egan, JF and Wurzburger, N Patterns in soil carbon and nitrogen relate to mycorrhizal and phylogenetic identity of forest trees across eastern North America. Ecological Society of America (ESA) Annual Meeting, Fort Lauderdale, FL, August 9, 2016 (Invited).

<sup>†</sup>Tierney, J and Wurzburger, N N<sub>2</sub>-fixation dynamics during ecosystem recovery in a fire-maintained savanna. Ecological Society of America (ESA) Annual Meeting, Fort Lauderdale, FL, August 11, 2016 (Invited).

Wurzburger, N Why plant-microbial symbioses matter in our changing world. Odum School Seminar Series, University of Georgia, Athens, GA, April 25, 2016.

Knoepp, JD, Oishi, AC, Strahm, BD, Miniati, CF, Fraterrigo, JM and Wurzburger, N Southern Appalachian forest soils show a pattern of long-term C loss. Annual Meeting of Soil Science Society of America (SSSA), Minneapolis, MN, November 2015 (Contributed).

Wurzburger, N and Brookshire, ENJ Mycorrhizal strategies have differential effects on soil carbon and nitrogen. ESA Annual Meeting, Baltimore, MD, August 10, 2015 (Contributed).

<sup>†</sup>Minucci, JM, Miniati, CF, and Wurzburger, N Symbiotic N<sub>2</sub> fixation facilitates resilience to hydroclimate variability. ESA Annual Meeting, August 12, 2015 Baltimore, MD, (Contributed).

<sup>†</sup>Phillips, CA and Wurzburger, N Biogeochemical consequences of arctic shrub expansion. ESA Annual Meeting, August 13, 2015 Baltimore, MD, (Contributed).

Wurzburger, N and Reed, S Nutrient limitation of tropical N<sub>2</sub> fixation. Association for Tropical Biology and Conservation Annual Meeting, Honolulu, HI, July 13, 2015 (Invited).

†Phillips, CA and Wurzburger, N Biogeochemical consequences of arctic shrub expansion. Odum School of Ecology Graduate Student Symposium, January 2015 (Contributed) (Awarded first place in the Ph.D. division).

†Coughlin, AM, Wurzburger, N, Shefferson, RP, Lankau, RA and Clark, S Plant-soil interactions in American chestnut restoration. Odum School of Ecology Graduate Student Symposium, January 2015 (Contributed) (Awarded first place in the M.S. division).

†Taylor, M, Lankau, RA, and Wurzburger, N Will tree migration amplify or suppress carbon loss from temperate forest soils? Odum School of Ecology Graduate Student Symposium, January 2014 (Contributed). (Awarded second place in proposed research division).

Wurzburger, N and Miniat, CF Drought enhances symbiotic di-nitrogen fixation and competitive ability of a temperate forest tree, SSSA Annual Meeting, November 5, 2013, Tampa, FL (Contributed) (Awarded for best oral paper in Forest, Range and Wildland Division).

†Machmuller, MB, Wurzburger, N, Phillips, CA, Minucci, JM, Thompson, A, Mohan, JE, The effect of soil warming on organic matter decomposition in highly-weathered soils, SSSA Annual Meeting, November 5, 2013 Tampa, FL (Contributed).

Wurzburger, N Controls and constraints on N<sub>2</sub> fixation in terrestrial ecosystems E3B Departmental Seminar, Columbia University Oct 8, 2013 (Invited).

†Machmuller, MB, Thompson, A, Wurzburger, N, Markewitz, D, Mohan, JE, Lack of warming-induced increases of soil respiration in highly-weathered soils, INTECOL meeting, Aug, 10 2013, London, England (Contributed).

†Machmuller, MB, Thompson, A, Wurzburger, N, Markewitz, D, Mohan, JE, Lack of warming-induced increases of soil respiration in highly-weathered soils, North American Forest Soils Meeting, June 6, 2013, Whitefish, Montana (Contributed).

Wurzburger, N Plant-Soil-Microbial Feedbacks, Guest speaker for ECOL 8310, Soil Ecology, April 4, 2013 (Invited).

†Minucci, JM, Wurzburger, N, Miniat, CF Determining the threshold response of symbiotic N<sub>2</sub>-fixation to drought. Odum School Graduate Student Symposium Jan 22, 2013 (Contributed).

†Phillips, CA and Wurzburger, N Do Plant-Soil-Microbial feedbacks influence arctic carbon storage? Odum School Graduate Student Symposium Jan 22, 2013 (Contributed).

Wurzburger, N and Wright, SJ Root functional traits reveal complexity of nutrient limitation in a tropical forest ESA Annual Meeting, August 8, 2012 Portland, OR. (Contributed).

Wurzburger, N Molybdenum limitation on nitrogen fixers in a tropical forest Guest speaker for UGA HONS 3070, Gateway to the Natural Sciences, April 12, 2012 (Invited).

Wurzburger, N Stoichiometry of soil nutrients controls leguminous N<sub>2</sub> fixation in tropical forests ESA Annual Meeting, August 6, 2011 Austin TX. (Contributed).

Wurzburger, N Does Biogeochemistry matter in our changing world? Clemson University, Biological Sciences Departmental Seminar, Feb 14, 2011 (Invited).

Wurzburger, N Guest speaker for UGA HONS 3070, Gateway to the Natural Sciences, Feb 28, 2011 Molybdenum limitation on nitrogen fixers in a tropical forest (Invited).

Wurzburger, N Nutrient constraints in temperate and tropical forests UGA, Plant Biology Departmental Seminar, March 7, 2011 (Invited).

Wurzburger, N What controls N fixation in tropical forests? Smithsonian Tropical Research Institute, Bambi Seminar, July 21, 2011 (Invited).

Wurzburger, N Do soil nutrients constrain symbiotic N<sub>2</sub> fixation in tropical forests? British Ecological Society Annual Meeting, Sheffield, England. Thematic Topic on belowground processes and global change, Sept 13, 2011 (Invited).

Wurzburger, N Stoichiometry of soil nutrients controls nitrogen fixation in a lowland tropical forest UGA Soil Seminar Series, September 30, 2011 (Invited).

Wurzburger, N Mechanism of molybdenum and phosphorus limitation on asymbiotic nitrogen fixation in tropical forest soils, ESA Annual Meeting, August 5, 2010 Pittsburgh, PA (Contributed).

Wurzburger, N Exploring a plant-soil-mycorrhiza feedback in a temperate forest. Environmental Sciences Seminar, University of New Hampshire, 2007 (Invited).

Wurzburger, N Tannins in Ecology and Biogeochemistry. NSF LTER Polyphenol Workshop, Oregon State University 2007 (Invited).

Wurzburger, N and Hendrick, RL Exploring a plant-soil-mycorrhizal feedback with *Rhododendron maximum*. Coweeta Hydrologic Lab Annual Meeting, 2007 (Invited).

Wurzburger, N and Hendrick, RL ESA Annual Meeting, San Jose, CA Exploring a plant-soil-mycorrhiza feedback with *Rhododendron maximum* in a temperate hardwood forest, 2007 (Contributed).

Wurzburger, N and Hendrick, RL Roots and mycorrhizal fungi in Southeastern forests, controls on productivity and implications for C sequestration. USFS Southern Forest Research Partnership, Carbon Cycling Workshop, 2006 (Invited).

Wurzburger, N, Higgins, BP, and Hendrick, RL Fungi and fungal laccase genes from ericoid mycorrhizal roots of *Rhododendron*. International Conference on Mycorrhizas 5, Granada, Spain 2006 (Contributed).

Wurzburger, N, and Hendrick, RL *Rhododendron maximum* litter and ericoid mycorrhizal fungi- a positive feedback? Coweeta Hydrologic Lab annual meeting, 2006 (Invited).

Wurzburger, N and Hendrick, RL Do litter and ericoid mycorrhizas function as a N positive feedback for *Rhododendron maximum*? Soil Science Society of America, annual meeting, Salt Lake City, UT, 2005 (Contributed).

Wurzburger, N, and Hendrick, RL *Rhododendron maximum* litter and ericoid mycorrhizal fungi- a positive feedback? Warnell School of Forestry and Natural Resources Graduate Student Symposium, 2004 (Contributed).

Wurzburger, N, and Hendrick, RL Ectomycorrhizal fungal community structure across a bog-forest ecotone in southeastern Alaska. Warnell School of Forestry and Natural Resources Graduate Student Symposium, 2003 (Contributed).

Wurzburger, N and Bledsoe, CS The mycorrhizal ecology of mixed conifer and pygmy forests, Mendocino county, northern California. UC Davis, Dept of Land Air and Water Resources, M.S. Exit Seminar, 2000.

#### **Poster Presentations:**

†Bonilla, K, †Motes, JI, Hicks Pries, CE and Wurzburger, N Underrated understories: Effects of ericoid mycorrhizal shrubs on soil organic matter along a gradient of AM-ECM dominance in temperate forests, Ecological Society of America (ESA) Annual Meeting, Portland, OR August 9, 2023.

Scott, J, †Motes, J, †Ottinger, S, Wurzburger, N, Miniati, CF, Elliott, KJ Improved site-specific allometric equations for *Robinia pseudoacacia*. (Published abstract) Poster presentation at the Seventh Interagency Conference on Research in the Watersheds, University of Georgia Tifton Campus Conference Center, Tifton, GA, Nov 16–19, 2020.

‡Ingham, GA, Wurzburger, N, Lankau, RA, and Hicks Pries, CE Sensitivity of heterotrophic soil respiration to temperate as mediated by mycorrhizal fungi. Ecological Society of America (ESA) Annual Meeting, New Orleans, LA, August 9, 2018.

Wurzburger, N and †Tierney, JA, N<sub>2</sub>-fixation as a recovery mechanism in longleaf pine savannas. SERDP Symposium, Washington D.C, Nov 29, 2017.

Wurzburger, N and Brookshire, ENJ Mycorrhizal strategies have differential effects on soil carbon and nitrogen. AGU Annual Meeting, San Francisco, CA, Dec 15, 2016.

†Phillips, CA and Wurzburger, N Shrubs stimulate heterotrophic respiration in arctic soils. AGU Annual Meeting, San Francisco, CA, Dec 15, 2016.

†Tierney, JA and Wurzburger, N N<sub>2</sub>-fixation dynamics during ecosystem recovery in a fire-maintained savanna. AGU Annual Meeting, San Francisco, CA, Dec 12, 2016.

†Ament, MR, and Wurzburger, N How is N fixation regulated in fire-adapted ecosystems? ESA Annual Meeting, Baltimore, MD, August 10, 2015.

†Coughlin, AM, Wurzburger, N, Shefferson, RP, Lankau, R and Clark, S Plant-soil interactions in American chestnut restoration. ESA Annual Meeting, Baltimore, MD August 10, 2015.

<sup>†</sup>Collins, CG, Wright, SJ, and Wurzburger, N Functional traits of lianas differ from those of trees in a lowland tropical forest. Ecological Society of America Annual Meeting, Sacramento, CA, August 15, 2014.

<sup>‡</sup>Patillo, MS, <sup>†</sup>Phillips, CA, Wurzburger, N Investigating microbial responses to warming in the mineral layer of arctic soils. Odum School of Ecology Undergraduate Symposium, Jan 2014.

<sup>†</sup>Minucci, JM, Wurzburger, N Will severe droughts exceed the tolerance threshold of symbiotic dinitrogen fixation and impair ecosystem resilience? Southeastern Biogeochemistry Symposium, Atlanta, GA April 5-6.

<sup>†</sup>Phillips, CA, Wurzburger, N Biogeochemical consequences of arctic shrub expansion: a plant soil feedback perspective, Southeastern Biogeochemistry Symposium, Atlanta, GA April 5-6.

<sup>†</sup>Phillips, CA, <sup>†</sup>Machmuller, MB, <sup>†</sup>Minucci, JM, Mohan, JE, Wurzburger, N Temperature and moisture interact to constrain soil respiration from ultisol soils, SSSA Annual Meeting, Tampa, FL November 5, 2013.

<sup>†</sup>Minucci, JM, <sup>†</sup>Machmuller, MB, <sup>†</sup>Phillips, C.A., Mohan, JE, Wurzburger, N. The effect of soil warming on extracellular enzyme kinetics in a piedmont Ultisol, SSSA Annual Meeting, Tampa, FL, November 5, 2013.

### Teaching experience:

#### University of Georgia Courses

Co-Instructor, ICON 8002 <i>Principles of Integrated Conservation II</i>	2022
Co-Instructor, ICON 8110 <i>Field Planning and Preparation</i>	2021
Instructor, ECOL 4010/6010 <i>Ecosystem Ecology</i>	2012–2020, 2022–2023
Instructor, ECOL 4010/6010L <i>Ecosystem Ecology Lab</i>	2023
Instructor, ECOL 8322 <i>Principles of Ecosystem Ecology</i>	2019
Co-Instructor, ECOL 8322 <i>Principles of Ecosystem Ecology</i>	2011, 2012, 2013, 2015, 2017
Co-Instructor, ECOL 4950 <i>Ecology Senior Seminar</i>	2017
Instructor, ECOL 8990 <i>Problems in Ecology</i>	2014, 2018, 2022
Module Instructor, ECOL 8000 <i>Fundamentals of Ecology</i>	2017, 2019, 2020, 2023

#### University of Georgia, Guest lectures

CURO Honors Program, Lunchbox lecture	2017
ECOL 8660 <i>Soil Ecology</i>	2013
HONS 3070 <i>Gateway to the natural sciences</i>	2012, 2013
FORS 8100 <i>Advanced Forest Ecology</i>	2002, 2004, 2006
FORS 6010 <i>Silviculture</i>	2003

#### Princeton University

Lecturer, Dept. of Ecology & Evolutionary Biology/ Princeton Environmental Institute	2007–2009
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Assistant Instructor for ENV 201- Fundamentals of Environmental Studies, responsible for directing preceptorials, designing assignments and exams, grading.

Graduate Student Teaching Assistantships

University of Georgia 2001–2004  
FORS 3060 *Soils and Hydrology*, upper division undergraduate course. Responsible for laboratory lectures, experiments and field trips (4 semesters). Supervisors: Dr. Todd Rasmussen and Dr. Rhett Jackson

University of California, Davis 1998–2000  
SSC 10 *Soils and Our Environment*, non-majors undergraduate course. Coursework grading and lectures (2 semesters). Supervisor: Dr. Randy Dahlgren.

**Teaching and Mentoring Development:**

CIMER Mentoring Workshop for Odum School of Ecology faculty 2022

Faculty Learning Series: Leadership through effective mentoring 2019

Faculty Learning Series: Courageous Conversations – Strategies for making connections and setting boundaries 2019

Safe Space Training 2018

Teaching Academy Symposium, Unicoi State Park, The Teaching-Research Nexus: Building Effective Bridges 2012

Teaching Science, short course, McGraw Center Princeton University 2008

**Service**

International/National

*Associate Editor: Journal of Ecology* 2011–present

*Member: Scientific Advisory Board Coweeta LTER* 2014–2020

*Session or Workshop Organizer:*

- Invited Workshop Organizer: Department of Energy, Office of Biological and Environmental Research's (BER) Environmental System Sciences (ESS) Program to coordinate research efforts complementing ongoing activities with the third ARM Mobile Facility (AMF3) deployment to the Southeastern United States (2023).
- Session Organizer: 2023 ESA Annual Meeting "Fire exclusion and mesophication across scales in historically fire-dependent forests."
- Session Organizer: 2019 North American Forest Ecology Workshop "Understanding of the causes

and consequences of forest mesophication through multiple ecological dimensions”.

- Session Organizer: 2016 ESA Annual Meeting “Mycorrhizal Fungi as Drivers and modulators of ecosystem processes”.
- Session Organizer: 2016 ESA Annual Meeting “Soil microbial communities as facilitators of ecosystem restoration and recovery”.

*Panelist:*

- U.S. Department of Energy Terrestrial Ecosystem Science (TES) University Review, 2013
- National Science Foundation DEB Ecosystem Sciences, 2016

*Ad hoc Proposal reviews*

- NSF DEB 2013, 2014, 2015, 2017, 2019, 2020, 2021
- National Environment Research Council, UK 2013
- Israel Science Foundation 2018, 2019

*Ad hoc manuscript reviews - Applied Soil Ecology, Biogeochemistry, Biotropica, Ecology, Ecosystems, Functional Ecology, Global Biogeochemical Cycles, Global Change Biology, Journal of Ecology, Madroño, Mycorrhiza, Nature, Nature Ecology & Evolution, New Phytologist, Plant and Soil, Proceedings of the National Academy of Sciences, Symbiosis, Oecologia, Oikos, PLoS ONE, Restoration Ecology, Soil Biology and Biochemistry, Science of the Total Environment, ISME Journal, Trends in Ecology and Evolution, Fungal Ecology*

*External examiner and doctoral dissertation committee member*

- PhD Qualifying Exam for Ashley Lang, Dartmouth College (2017)

*Invited evaluations of promotion and tenure dossiers and merit reviews of federal and international scientists*

- 2018, 2022, 2023, 2023

*Invited Workshop or Working Group Participant:*

- Invited Participant: Land-Based Carbon Management Workshop, to develop a cohesive team and set of research questions that could motivate an NSF Science and Technology Center proposal, The Ohio State University (2023).
- Invited Participant: The Next 100 Years: Creating a Shared Vision for Watershed Research at the Coweeta Hydrologic Laboratory, USDA Forest Service (2023)
- USGS Powell Center – Nitrogen Fixation Working Group (2020–present)
- New Phytologist Workshop on Root Functional traits, Sommières, France (2019)
- NSF LTER Polyphenol Workshop, Oregon State University (2007).
- NSF X-Roots Workshop, University of California Davis (1998).

Local

Member and two-time president of Athens-Clarke County Community Tree Council, (2013–2020): The council’s goal is to promote a sustainable community forest through information and tree policy recommendations, education and outreach, and promotional campaigns that highlight the vital role of trees in the community.

Career Panel: Georgia Water Resources Conference (2011)

### University

Facilitator for Panel on Field Work Safety, for Symposium on Gender, the Body and Fieldwork Across Disciplines, April 29, 2022

Mentor for Symposium on Gender, the Body and Fieldwork Across Disciplines, April 19, 2019

Task Force – Lab-specific Chemical Hygiene Plan, College of Public Health (2016–2017)

ARCS Proposal Review Committee (Achievement Rewards for College Scientists Foundation), UGA  
Biomedical and Health Sciences Institute (2016)

Department of Plant Biology, Faculty Search Committee (2016–2017)

Department of Microbiology, Faculty Search Committee (2012)

Warnell–Odum School Faculty Search Committee (2011)

### Odum School

Human Resources Operations position search committee (2022)

Research & Teaching Postdoctoral position search committee (Chair) (2022)

Lecturer Search Committee (2020)

Undergraduate Program Committee (2019 –current)

Graduate Program Committee (2014– 2019)

Space and Facilities Committee (2018– 2019)

Seminar Committee (2018–2019)

Steering Committee (2017–2018)

CURO undergraduate fellowship committee (2015–2016)

Ecologist Faculty Search Committee (2016)

Ecosystem Ecology Faculty Search Committee (2012)

Chair of the Analytical Chemistry Lab Committee (2011– 2015)

Warnell School – Odum School Faculty Search Committee (2011)

### **Graduate and Postdoctoral Advisors:**

M.S. advisor: Dr. Caroline S. Bledsoe, University of California, Davis (Retired)

Ph.D. advisor: Dr. Ronald L. Hendrick, University of Georgia (now Provost of Texas Tech University),

Postdoctoral advisor: Dr. Lars O. Hedin, Princeton University.

### **Supervision of Student Research**

#### Postdoctoral mentorship

Dr. Kelly Andersen 2011–2012

#### Doctoral dissertations directed

Jeffrey Minucci, PhD in Ecology (2012–2017)

Carly Phillips, PhD in Ecology (2012–2018)

Melanie Taylor, PhD in Ecology (2019–current)

Jordan Argrett, PhD in Ecology (2021–current)

Erik Jones, PhD in Ecology (2021–current)

Angelia Romano, PhD in Plant Biology (2022–current)

#### Masters theses directed

Courtney Collins, MS in Ecology (2011–2013)

Melanie Taylor, MS in Ecology (2013–2015)



Aeran Coughlin, MS in Ecology (2013–2015)  
Michael Ament, MS in Ecology (2014–2016)  
Julie Tierney, MS in Ecology (2015–2017)  
Dana Carpenter, MS in Ecology (2017–2019)  
Sarah Ottinger, MS in Ecology (2019–2021)  
Jessie Motes, MS in Ecology (2019–2022)  
Kayla Bonilla, MS in Ecology (2021–current)

Undergraduate student projects directed

Meryom Patillo (2013)  
Jenna Peissig (2014)  
Kelsey Morton (2016–2017)  
Evan Barnard (2016–2017)  
Sumaya El-Khalidi (2016–2018)  
Grace Anne Ingham (2016–2018)  
Jessie Motes (2018–2019)  
Hannah Goldberg (2019)  
Carter Coleman (2019)  
Erik Ramos (2019)  
Ian Morton (2022)  
Isabella Pellicano (2023)  
Soumya Vajrala (2023)

High School student projects directed

Evan Barnard, John's Creek High School (2015)

Masters advisory committee member

William Bunch, Ecology (2011–2012)  
Elizabeth Guinessey, Ecology (2016–2017)  
Stephen Ruswick, Forestry and Natural Resources (2016–2018)  
Isabel Wargowsky, Ecology (2021–2022)  
Phoebe Judge, Ecology (2020–2022)  
Monica Harmon, Forestry and Natural Resources (2019–2022)  
Alison Moss, Forestry and Natural Resources (2020–2023)  
Liam Stiefel, Forestry and Natural Resources (2023–current)

Doctoral advisory committee member

Richard Reitz, Forestry and Natural Resources (2011–2012)  
Peter Baas, Ecology (2011–2014)  
Megan Machmuller, Ecology (2011–2014)  
David Manning, Ecology (2011–2015)  
Chelsea Cunard, Plant Biology (2012– 2016)  
Jinyan Yang, Forestry and Natural Resources (2013– 2016)  
Uma Nagendra, Plant Biology (2012– 2017)  
Elise Kruger, Ecology (2013– 2017)  
Aaron Joslin, Forestry and Natural Resources (2012– 2018)  
Dexter Strother, Ecology (2013–2020)

Conor Fair, Entomology (2016– 2021)  
Rachel Mactavish, Genetics (2017–2022)  
Michael Belovitch, Ecology (2020–current)  
KB McCrum, Plant Biology (2020–current)  
Michelle Henson, Plant Biology (2021–current)  
Ourania Nikolaidis, Forestry and Natural Resources (2022–current)  
Emma Kelsick, Ecology (2022–current)  
Logan Novack, Plant Biology (2023–current)