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Professor, Soils and Ecosystem Ecology

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EDUCATION

Institute of Terrestrial Ecology (Merlewood), Uni. of Exeter (Exeter), UK

Ph.D. in Biological Sciences awarded 4/1999

University of Exeter, Exeter, UK

BSc (hons first class) in Biological Sciences awarded 7/1995

APPOINTMENTS

Yale University, New Haven, CT USA

1/2017 to present, *Professor of Soils and Ecosystem Ecology*

1/2014 to 12/2016, *Associate Professor of Terrestrial Ecosystem Ecology*

1/2009-12/2013, *Assistant Professor of Terrestrial Ecosystem Ecology*

University of Georgia, Athens, GA USA

1/2009-12/2012, *Adjunct Professor of Terrestrial Ecosystem Ecology*

1/2005-12/2008, *Assistant Professor of Terrestrial Ecosystem Ecology*

Duke University, Durham, NC USA

11/2002-12/2004, *Postdoctoral Research Associate*

Imperial College, London (Silwood Park Campus), UK

4/2000-10/2002, *Research Project Leader of the Ecotron facility*

4/1999-3/2000, *Postdoctoral Research Associate*

RECOGNITION

Highly Cited Researcher (ISI) in Environment and Ecology (2018, 2019, 2020).

Associate Chief Editor for *Soil Biology & Biochemistry* (top-ranked *Soil Science* journal, ISI Citation Reports. IF 5.290). Jan 2017 to Mar 2020.

M.A. Privatim (honorary) 2017 Yale University.

Invited Guest Editor for special issue (Food web interactions) of *Soil Biology & Biochemistry* (top-ranked *Soil Science* journal). Issue published Nov 2016.

Invited Visiting Scholar of the Institute of Advanced Studies, Hebrew University, Jerusalem, Israel, June-August 2016.

Visiting Professorship, Royal Netherlands Academy of Arts and Sciences, 2015 (held at the Academy's Netherlands Institute of Ecology in Wageningen).

National Science Foundation, Division of Environmental Biology, Grant Proposal Panel Member (multiple occasions).

Invited External Professor Oral Opponent for a Ph.D. Defense, Wageningen Univ., Netherlands, June 2015.

Lead of a National Science Foundation funded national survey and workshop on *Identifying and prioritizing research questions for long-term ecological experiments* (2015-6).

Invited 'News & Views' contribution to *Nature* (Ecology: Good dirt with good friends (2014)).

Outstanding Teaching Faculty Award, 2008. University of Georgia, Athens, GA.

Junior Faculty Fellowship, Andrew W. Mellon Foundation (Conservation and the Environment Program), 2006-2010.

PUBLICATIONS

Peer-Reviewed Journal Articles and Book Chapters

**Denotes publications led by my research group (postdocs, students or me).

Note: In my field it is typical to assume last authorship (and occasionally second authorship) for papers arising from your lab group and/or collaborative publications to which you were a major contributor.

2021 (or in press)

1. **Ward, E.B., Doroski, D.A., Felson, A.J., Hallett, R.A., Oldfield, E.E., Kuebbing, S.E., **Bradford, M.A.** (2021) Positive long-term impacts of restoration on soils in an experimental urban forest. *Ecological Applications*, in press.
2. **Warren, R.J, **Bradford, M.A.** (2020) Non-native *Microstegium vimineum* populations collapse with fungal leaf spot disease outbreak. *Plant Ecology*, **222**, 107-117. (<https://doi.org/10.1007/s11258-020-01091-4>)

2020

3. **Lustenhouwer, N., Maynard, D.S., **Bradford, M.A.**, Lindner, D.L., Oberle, B., Zanne, A.E., Crowther, T.W. (2020) A trait-based understanding of wood decomposition by fungi. *Proceedings of the National Academy of Sciences, USA*, **117**, 11551-11558. (doi.org/10.1073/pnas.1909166117)
4. **Oldfield, E.E, Wood, S.A., **Bradford, M.A.** (2020) Direct evidence using a controlled greenhouse study for threshold effects of soil organic matter on crop growth. *Ecological Applications*, **30**, e02073. (https://doi.org/10.1002/eap.2073)
5. **Pregitzer, C.C., Charlop-Powers, S., **Bradford, M.A.** (2020) Natural area forests in US cities: opportunities and challenges. *Journal of Forestry*, **fvaa055**, 1-11. (doi:10.1093/jofore/fvaa055)
6. **Ward, E., Pregitzer, C.C., Kuebbing, S.K., **Bradford, M.A.** (2020) Invasive lianas are drivers of and passengers to altered soil nutrient availability in urban forests. *Biological Invasions*, **22**, 935-955. (doi.org/10.1007/s10530-019-02134-2)
7. **Warren, R.J., King, J.R., **Bradford, M.A.** (2020) Disentangling resource acquisition from interspecific behavioral aggression to understand the ecological dominance of a common, widespread temperate forest ant. *Insectes Sociaux*, **67**, 179-187. (doi.org/10.1007/s00040-020-00750-z)
8. **Yona, L., Cashore, B., Jackson, R.J., Ometto, J., **Bradford, M.A.** (2020) Refining national greenhouse gas inventories. *Ambio*, **49**, 1581-1586. (https://doi.org/10.1007/s13280-019-01312-9)
9. Fisher, J.R.B., Wood, S.A., **Bradford, M.A.**, Kelsey, T.R. (2020) Improving scientific impact: how to practice science that influences environmental policy and management. *Conservation Science and Practice*, **2**, e210. (https://doi.org/10.1111/csp2.210)
10. Ye, J.-S., **Bradford, M.A.**, Maestre, F.T., Li, F.-M., García-Palacios, P. (2020) Compensatory thermal adaptation of soil microbial respiration rates in global croplands. *Global Biogeochemical Cycles*, **34**, e019GB006507. (https://doi.org/10.1029/2019GB006507)

2019

11. ****Bradford, M.A.**, Carey, C.J., Atwood, L., Bossio, D., Fenichel, E.P., Gennet, S., Fargione, J., Fisher, J.R.B., Fuller, E., Kane, D.A., Lehmann, J., Oldfield, E.E., Ordway, E.M., Rudek, J., Sanderman, J., Wood, S.A. (2019) Soil carbon science for policy and practice. *Nature Sustainability*, **2**, 1070-1072. (doi.org/10.1038/s41893-019-0431-y)
12. ****Bradford, M.A.**, McCulley, R.L., Crowther, T.W., Oldfield, E.E., Wood, S.A., Fierer, N. (2019) Cross-biome patterns in soil microbial respiration predictable from evolutionary theory on thermal adaptation. *Nature Ecology & Evolution*, **3**, 223-231. (https://doi.org/10.1038/s41559-018-0771-4)
13. **Kuebbing, S.E., **Bradford, M.A.** (2019) The potential for mass ratio and trait divergence effects to explain idiosyncratic impacts of non-native invasive plants on carbon mineralization of decomposing leaf litter. *Functional Ecology*, **33**, 1156-1171. (https://doi.org/10.1111/1365-2435.13316).

14. **Maynard, D.S., **Bradford, M.A.**, Covey, K.R., Lindner, D., Glazer, J., Talbert, D.A., Walker, D.M., Crowther, T.W. (2019) Consistent trade-offs in fungal trait expression across broad spatial scales. *Nature Microbiology*, **4**, 846-853. (<https://doi.org/10.1038/s41564-019-0361-5>).
15. **Oldfield, E.E, **Bradford, M.A.**, Wood, S.A. (2019) Global meta-analysis of the relationship between soil organic matter and crop yields. *SOIL*, **5**, 15-32. (<https://doi.org/10.5194/soil-5-15-2019>)
16. **Pregitzer, C.C., Charlop-Powers, S., Bibbo, S., Forgiione, H., Gunther, B., Hallett, R.A., **Bradford, M.A.** (2019) A city-scale assessment reveals that native forest types and overstory species dominate New York City forests. *Ecological Applications*, **29**, e01819. (<https://doi.org/10.1002/eap.1819>)
17. **Pregitzer, C.C., Ashton, M.A., Charlop-Powers, S., D'Amato, A., Frey, B.R., Gunther, B., Hallett, R.A., Pregitzer, K.S., Woodall, C.W., **Bradford, M.A.** (2019) Defining and assessing urban forests to inform management and policy. *Environmental Research Letters*, **14**, 8, doi.org/10.1088/1748-9326/ab2552.
18. **Sokol, N.W., **Bradford, M.A.** (2019) Microbial formation of stable soil carbon more efficient from belowground than aboveground input. *Nature Geoscience*, **12**, 46-53. (<https://doi.org/10.1038/s41561-018-0258-6>)
19. **Sokol, N.W., Sanderman, J., **Bradford, M.A.** (2019) Pathways of mineral-associated soil organic matter formation: integrating the role of plant carbon source, chemistry, and point-of-entry. *Global Change Biology*, **25**, 12-24. (<https://doi.org/10.1111/gcb.14482>)
20. **Warren II, R.J., Elliott, K., Giladi, I. King, J.R., **Bradford, M.A.** (2019) Field experiments show contradictory short- and long-term myrmecochorus plant impacts on seed-dispersing ants. *Ecological Entomology*, **44**, 30-39. (<https://doi.org/10.1111/een.12666>)
21. Barba, J., **Bradford, M.**, Brewer, P., Bruhn, D., Covey, K., van Haren, J., Megonigal, P., Mikkelsen, T., Pangala, S., Pihlatie, M., Poulter, B., Rivas-Ubach, A., Schadt, C., Terazawa, K., Warner, D., Zhang, Z., Vargas, R. (2019) Methane emissions from tree stems: a new frontier in the global carbon cycle. *New Phytologist*, **222**, 18-28. (<https://doi.org/10.1111/nph.15582>)
22. Buchkowski, R., Schmitz, O.J., **Bradford, M.A.** (2019) Nitrogen recycling in coupled green and brown food webs: weak effects of herbivory and detritivory when nitrogen passes through soil. *Journal of Ecology*, **107**, 963-976. (<https://doi.org/10.1111/1365-2745.13079>)
23. Dacal, M., **Bradford, M.A.**, Plaza, C., Maestre, F.T., García-Palacios, P. (2019) Soil microbial respiration adapts to ambient temperature in global drylands. *Nature Ecology & Evolution*, **3**, 223-231. (<https://doi.org/10.1038/s41559-018-0771-4>)
24. Tang, J., **Bradford, M.**, Carey, J., Crowther, T., Machmuller, M., Mohan, J., Todd-Brown, K. (2019) The temperature sensitivity of soil carbon. In Mohan, J. (ed.) *Ecosystem consequences of soil warming: Microbes, vegetation, fauna and soil biogeochemistry*, pp. 175-208. (Invited)

25. Veen, G.F., Wubs, E.R.J., Bardgett, R.D., Barrios, E., **Bradford, M.A.**, Carvalho, S. De Deyn, G.B., de Vries, F., Giller, K.E., Kleijn, D., Landis, D.A., Rossing, W.A.H., Schrama, M., Six, J., Struik, P.C., van Gils, S., Wiskerke, J.S.C., van der Putten, W.H., Vet, L.E.M. (2019) Applying the aboveground-belowground interaction concept in agriculture: spatio-temporal scales matter. *Frontiers in Ecology and Evolution*, doi.org/10.3389/fevo.2019.00300
26. Wieder, W.R., Sulman, B.N., Hartman, M.D., Koven, C.D., **Bradford, M.A.** (2019) Arctic soil governs whether climate change drives global losses or gains in soil carbon. *Geophysical Research Letters*, **46**. (doi.org/10.1029/2019GL085543)
27. Ye, J.-S., **Bradford, M.A.**, Dacal, M., Maestre, F.T., García-Palacios, P. (2019) Increasing microbial carbon use efficiency with warming predicts soil heterotrophic respiration globally. *Global Change Biology*, **25**, 3354-3364. (doi.org/10.1111/gcb.14738)

2018

28. **Crowther, T.W., Machmuller, M.B., Carey, J.C., Allison, S.D., Blair, J.M., Bridgham, S.D., Burton, A.J., Dijkstra, F.A., Elberling, B., Estiarte, M., Larsen, K.S., Laudon, H., Guo, J., Harte, J., Jiang, L., Johnson, B.R., Kröel-Dulay, G., Lavallee, J.M., Luo, Y., Lupascu, M., Marhan, S., Mohan, J., Niu, S., Peñuelas, J., Templer, P.H., Kroel-Dulay, G., Frey, S.D., **Bradford, M.A.** (2018) Brief Communications Arising: Crowther *et al.* reply. *Nature*, **554**, E7-E8. (<https://doi.org/10.1038/nature20150>)
29. **Kuebbing, S.E., Reimer, A.P., Rosenthal, S.A., Feinberg, G., Leiserowitz, A., Lau, J.A., **Bradford, M.A.** (2018) Long-term research in ecology and evolution: A survey of challenges and opportunities. *Ecological Monographs*, **88**, 245-258. (<https://doi.org/10.1002/ecm.1289>)
30. **Kuebbing, S.E., Maynard, D.S., **Bradford, M.A.** (2018) Linking functional diversity and ecosystem processes: a framework for using functional diversity metrics to predict the ecosystem impacts of functionally unique species. *Journal of Ecology*, **106**, 687-698. (<https://doi.org/10.1111/1365-2745.12835>)
31. **Maynard, D.S., Covey, K.R., Crowther, T.W., Sokol, N.W., Morrison, E.W., Frey, S.D., van Diepen, L.T.A., **Bradford, M.A.** (2018) Species associations overwhelm abiotic conditions to dictate the structure and function of wood-decay fungal communities. *Ecology*, **99**, 801-811. (<https://doi.org/10.1002/ecy.2165>)
32. **Oldfield, E.E., Wood, S.A. & **Bradford, M.A.** (2018) Direct effects of soil organic matter on productivity mirror those observed with organic amendments. *Plant and Soil*, **423**, 363-373. (<https://doi.org/10.1007/s11104-017-3513-5>)
33. **Oldfield, E.E., Crowther, T.W. & **Bradford, M.A.** (2018) Substrate identity and amount overwhelm temperature effects on soil carbon formation. *Soil Biology & Biochemistry*, **124**, 218-226. (<https://doi.org/10.1016/j.soilbio.2018.06.014>)
34. **Sokol, N.W., Kuebbing, S.E., Karlsen-Ayala, E., **Bradford, M.A.** (2018) Evidence for the primacy of living roots, not root or shoot litter, in forming soil organic carbon. *New Phytologist*, **221**, 233-246. (<https://doi.org/10.1111/nph.15361>)

35. **Wood, S.A., **Bradford, M.A.** (2018) Leveraging a new understanding of how belowground food webs stabilize soil organic matter to promote ecological intensification of agriculture. In Singh, B. (ed.) *Soil Carbon Storage: Modulators, mechanisms, and modeling*. pp. 117-136. Elsevier. (<https://doi.org/10.1016/B978-0-12-812766-7.00004-4>) (Invited)
36. Burghardt, K.T., **Bradford, M.A.**, Schmitz, O.J. (2018) Acceleration or deceleration of litter decomposition by herbivory depends on nutrient availability through intraspecific differences in induced plant resistance traits. *Journal of Ecology*, **106**, 2380-2394. (<https://doi.org/10.1111/1365-2745.13002>)
37. Doroski, D.A., Felson, A.J., **Bradford, M.A.**, Ashton, M.P., Oldfield, E.E., Hallett, R.A., Kuebbing, S.E. (2018) Factors driving natural regeneration beneath a planted urban forest. *Urban Forestry & Urban Greening*, **29**, 238-247. (<https://doi.org/10.1016/j.ufug.2017.11.019>)
38. Hall, E.K., Bernhardt, E.S., Bier, R., **Bradford, M.A.**, Boot, C.M., Cotner, J.B., del Giorgio, P.A., Evans, S.E., Graham E. B., Jones, S.E., Lennon, J.T., Locey, K.J., Nemergut, D., Osborne, B.B., Rocca, J.D., Schimel J.S., Waldrop, M.S., Wallenstein, M.W. (2018) Understanding how microbiomes influence the systems they inhabit: moving from a correlative to a causal research framework. *Nature Microbiology*, **3**, 977-982. (<https://doi.org/10.1038/s41564-018-0201-z>)
39. King, J.R., Warren, R.J., Maynard, D.S., **Bradford, M.A.** (2018) Ants: Ecology and impacts in dead wood. In Ulyshen, M. (ed.) *Saproxyllic insects. Zoological Monographs, vol. 1*. pp. 237-262. Springer, Cham. (https://doi.org/10.1007/978-3-319-75937-1_8) (Invited)
40. Sulman, B.N., Moore, J.A.M., Abramoff, R., Averill, C., Kivlin, S., Georgiou, K., Sridhar, B., Hartmann, M.D., Wang, G., Wieder, W.R., **Bradford, M.A.**, Luo, Y., Mayes, M.A., Morrison, E., Riley, W.J., Salazar, A., Schimel, J.P., Tang, J., Classen, A.T. (2018) Multiple models and experiments underscore large uncertainty in soil carbon dynamics. *Biogeochemistry*, **141**, 109-123. (<https://doi.org/10.1007/s10533-018-0509-z>)

2017

41. ****Bradford, M.A.**, Veen, G.F.C., Bonis, A., Bradford, E.M., Classen, A.T., Cornelissen, J.H.C., Crowther, T.W., De Long, J.R., Freschet, G.T., Kardol, P., Manrubia-Freixa, M., Maynard, D.S., Newman, G.S., van Logtestijn, R.S.P., Viketoft, M., Wardle, D.A., Wieder, W.R., Wood, S.A., van der Putten, W.H. (2017) A test of the hierarchical model of litter decomposition. *Nature Ecology and Evolution*, **1**, 1836-1845 (doi: [10.1038/s41559-017-0367-4](https://doi.org/10.1038/s41559-017-0367-4))
42. ****Bradford, M.A.**, Leiserowitz, A., Feinberg, G., Rosenthal, S.A., Lau, J.A. (2017) Long-term research in ecology and evolution (LTREE): 2015 survey data. *Ecology*, **98**, 2980.
43. **Keiser, A.D., **Bradford, M.A.** (2017) Climate masks decomposer influence in a cross-site litter decomposition study. *Soil Biology & Biochemistry*, **107**, 180-187.

44. **Maynard, D.S., **Bradford, M.A.**, Lindner, D.L., van Diepen, L.T.A., Frey, S.D., Glaeser, J.A., Crowther, T.W. (2017) Diversity begets diversity in competition for space. *Nature Ecology and Evolution*, **1**, art. 0156.
45. **Maynard, D.S., Crowther, T.W., **Bradford, M.A.** (2017) Competitive network determines the direction of the diversity–function relationship. *Proceedings of the National Academy of Sciences, USA*, **114**, 11464-11469.
46. **Maynard, D.S., Crowther, T.W., **Bradford, M.A.** (2017) Fungal interactions reduce carbon use efficiency. *Ecology Letters*, **20**, 1034-1042.
47. **Rubenstein, M.A., Crowther, T.W., Maynard, D.S., Schilling, J., **Bradford, M.A.** (2017) Decoupling direct and indirect effects of temperature on decomposition. *Soil Biology & Biochemistry*, **112**, 110-116.
48. **Strickland, M.S., Callaham, M.A. Jr., Gardiner, E.S., Stanturf, J.A., Leff, J.W., Fierer, N., **Bradford, M.A.** (2017) Response of soil microbial community composition and function to a bottomland forest restoration intensity gradient. *Applied Soil Ecology*, **119**, 317-326.
49. **Sokol, N., Kuebbing, S.L., **Bradford, M.A.** (2017) Impacts of an invasive plant are fundamentally altered by a co-occurring forest disturbance. *Ecology*, **98**, 2133-2144.
50. **Warren II, R.J., Love, J.P. **Bradford, M.A.** (2017) Nest-mediated seed dispersal. *Plant Ecology*, **218**, 1213-1220.
51. Buchkowski, R.W., **Bradford, M.A.**, Grandy, A.S., Schmitz, O.J., Wieder, W.R. (2017) Applying population and community ecology theory to advance understanding of belowground biogeochemistry. *Ecology Letters*, **20**, 231-245.
52. Oliverio, A., **Bradford, M.A.**, Fierer, N. (2017) Identifying the microbial taxa which consistently respond to soil warming across time and space. *Global Change Biology*, **23**, 2117-2129.
53. Warren II, R.J., King, J.R., Chick, L., **Bradford, M.A.** (2017) Global change impacts on ant-mediated seed dispersal in eastern North America. In Oliveira, P.S. and Koptur, S. (eds.) *Ant-plant interactions. Impacts of Humans on Terrestrial Ecosystems*. Cambridge University Press, UK (Invited).

2016

54. ****Bradford, M.A.**, Wieder, W.R., Bonan, G.B., Fierer, N., Raymond, P.A., Crowther, T.W. (2016) Managing uncertainty in soil carbon feedbacks to climate change. *Nature Climate Change*, **6**, 751-758 (Review article).
55. ****Bradford, M.A.**, Berg, B., Maynard, D.S., Wieder, W.R., Wood, S.A. (2016) Understanding the dominant controls on litter decomposition. *Journal of Ecology*, **104**, 229-238 (*Future Directions* concept paper).
56. **Covey, K.R., Bueno de Mesquita C.P., Oberle, B., Maynard, D.S., Bettigole, C., Crowther T.W., Duguid, M.C., Steven, B., Zanne, A.E., Lapin M., Ashton, M.S., Oliver, C.D., Lee, X., **Bradford, M.A.** (2016) Greenhouse trace gases in dead wood. *Biogeochemistry*, **130**, 215-226.

57. **Crowther, T.W., Todd-Brown, K.E.O., Rowe, C.W., Wieder, W.R., Carey, J.C., Machmuller, M.B., Snoek, B.L., Fang, S., Zhou, G., Allison, S.D., Blair, J.M., Bridgman, S.D., Burton, A.J., Carrillo, Y., Reich, P.B., Clark, J.S., Classen, A.T., Dijkstra, F.A., Elberling, B., Emmett, B., Estiarte, M., Frey, S.D., Guo, J., Harte, J., Jiang, L., Johnson, B.R., Kröel-Dulay, G., Larsen, K.S., Laudon, H., Lavelle, J.M., Luo, Y., Lupascu, M., Ma, L.N., Marhan, S., Michelsen, A., Mohan, J., Niu, S., Pendell, E., Peñuelas, J., Pfeifer-Meister, L., Poll, C., Reinsch, S., Reynolds, L.L., Schmidt, I.K., Sistla, S., Sokol, N., Templer, P.H., Treseder, K.K., Welker, J.M., **Bradford, M.A.** (2016) Quantifying global soil carbon losses in response to warming. *Nature*, **540**, 104-108.
58. **Keiser, A.D., Knoepp, J.D., **Bradford, M.A.** (2016) Disturbance decouples biogeochemical cycles across forests of the southeastern US. *Ecosystems*, **19**, 50-61.
59. Smets, W., Leff, J.W., **Bradford, M.A.**, McCulley, R.L., Lebeer, S., Fierer, N. (2016) A method for simultaneous measurement of soil bacterial abundances and community composition via 16S rRNA gene sequencing. *Soil Biology & Biochemistry*, **96**, 145-151.
60. van der Putten, W., **Bradford, M.A.**, Brinkman, P., van de Voorde, T., Veen, C. (2016) Where, when and how plant-soil feedback matters in a changing world. *Functional Ecology*, **30**, 1109-1121.
61. Wood, S.A., Sokol, N., Bell, C.W., **Bradford, M.A.**, Naeem, S., Wallenstein, M.W., Palm, C.A. (2016) Opposing effects of different soil organic matter fractions on crop yields. *Ecological Applications*, **26**, 2072-2085.

2015

62. **Crowther, T.W., Glick, H.B., Covey, K.R., Bettigole, C., Maynard, D.S., Thomas, S.M., Smith, J.R., Hintler, G., Duguid, M.C., Amatulli, G., Tuanmu, M.-N., Jetz, W., Salas, C., Stam, C., Piotta, D., Tavani, R., Green, S., Bruce, G., Williams, S.J., Wiser, S.K., Huber, M.O., Hengeveld, G.M., Nabuurs, G.-J., Tikhonova, E., Borchardt, P., Li, C.-F., Powrie, L.W., Fischer, M., Hemp, A., Homeier, J., Cho, P., Vibrans, A.C., Umunay, P.M., Piao, S., Rowe, C.W., Ashton, M.S, Crane, P.R, **Bradford, M.A.** (2015) Mapping tree density at a global scale. *Nature*, **525**, 201-205.
63. **Crowther, T.W., Sokol, N., Maynard, D.S., Oldfield, E.E., Thomas, S.M., **Bradford, M.A.** (2015) Environmental stress response limits microbial necromass contributions to soil organic carbon. *Soil Biology & Biochemistry*, **85**, 153-161.
64. **Crowther, T.W., Thomas, S.M., Maynard, D.S., Baldrian, P., Covey, K., Frey, S.D., van Diepen, L.T.A., **Bradford, M.A.** (2015) Biotic interactions mediate soil microbial feedbacks to climate change. *Proceedings of the National Academy of Sciences, USA*, **112**, 7033-7038.
65. **Crowther, T.W., Maynard, D.S., Thomas, S.M., Baldrian, P., Covey, K., Frey, S.D., van Diepen, L.T.A., **Bradford, M.A.** (2015) Reply to Veresoglou: Overdependence on “significance” testing in biology. *Proceedings of the National Academy of Sciences, USA*, doi: 10.1073/pnas.1513283112.
66. **Maynard, M.S., Crowther, T.W., King, J.R., Warren, R.J., **Bradford, M.A.** (2015)

- Temperate forest termites: ecology, biogeography, and ecosystem impacts. *Ecological Entomology*, **40**, 199-210 (invited review).
67. **Maynard, D.S., Leonard, K.E., Drake, J.M., Hall, D.W., Crowther, T.W., **Bradford, M.A.** (2015) Modelling the multidimensional niche by linking functional traits to competitive performance. *Proceedings of the Royal Society B: Biological Sciences*, **282**, 20150516 (doi: <http://dx.doi.org/10.1098/rspb.2015.0516>).
 68. **Neupane, A., Maynard, D.S., **Bradford, M.A.** (2015) Consistent effects of eastern subterranean termites (*Reticulitermes flavipes*) on properties of a temperate forest soil. *Soil Biology & Biochemistry*, **94**, 84-91.
 69. **Oldfield, E.E., Felson, A.J., Ashton, M.A., Auyeung, N., Crowther, T.W., Falxa-Raymond, N., Harada, Y., Maynard, D.S., Sokol, N.W., Warren II, R.J., Hallett, R.A., **Bradford, M.A.** (2015) Growing the urban forest: tree performance in response to biotic and abiotic land management. *Restoration Ecology*, **23**, 707-718.
 70. **Strickland, M.S., Keiser, A.D., **Bradford, M.A.** (2015) Climate history shapes contemporary leaf litter decomposition. *Biogeochemistry*, **122**, 165-174.
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168. Goddard M.R., **Bradford, M.A.** (2003) The adaptive response of a natural microbial population to carbon- and nitrogen-limitation. *Ecology Letters* **6**, 594-598.

2002

169. ****Bradford, M.A.**, Jones, T.H., Bardgett, R.D., Black, H., Boag, B., Bonkowski, M., Cook, R., Eggers, T., Gange, A.C., Grayston, S.J., Kandeler, E., McCaig, A.E., Newington, J.E., Setälä, H., Staddon, P.L., Tordoff, G.M., Tscherko, D., Lawton, J.H. (2002) Impacts of soil faunal community composition on model grassland ecosystems. *Science* **298**, 615-618.
170. ****Bradford, M.A.**, Newington, J.E. (2002) With the worms: soil biodiversity and ecosystem functioning. *Biologist* **3**, 127-130 (Invited).
171. ****Bradford, M.A.**, Tordoff, G.M., Eggers, T., Jones, T.H., Newington, J.E. (2002) Microbiota, fauna, and mesh size interactions in litter decomposition. *Oikos* **99**, 317-323.
172. Catovsky, S., **Bradford, M.A.**, Hector, A. (2002) Biodiversity and ecosystem productivity: implications for carbon storage. *Oikos* **97**, 443-448.

2001

173. ****Bradford, M.A.**, Ineson, P., Wookey, P.A., Lappin-Scott, H.M. (2001) The effects of acid nitrogen and acid sulphur deposition on CH₄ oxidation in a forest soil: a laboratory study. *Soil Biology & Biochemistry* **33**, 1695-1702.
174. ****Bradford, M.A.**, Ineson, P., Wookey, P.A., Lappin-Scott, H.M. (2001) The role of CH₄ oxidation, production and transport in forest soil CH₄ flux. *Soil Biology & Biochemistry* **33**, 1625-1631.
175. ****Bradford, M.A.**, Wookey, P.A., Ineson, P., Lappin-Scott, H.M. (2001) Controlling factors and effects of chronic nitrogen and sulphur deposition on methane oxidation in a temperate forest soil. *Soil Biology & Biochemistry* **33**, 93-102.
176. Jones, T.H., **Bradford, M.A.** (2001) Assessing the functional implications of soil biodiversity in ecosystems. *Ecological Research* **16**, 845-858 (Invited).

2000 and before

177. ****Bradford, M.A.**, Ineson, P., Wookey, P.A., Lappin-Scott, H.M. (2000) Soil CH₄ oxidation: response to forest clearcutting and thinning. *Soil Biology & Biochemistry* **32**, 1035-1038.
178. Greenup, A.L., **Bradford, M.A.**, McNamara, N., Ineson, P., Lee, J. (2000) The role of *Eriophorum vaginatum* in CH₄ flux from an ombrotrophic peatland. *Plant and Soil* **227**, 265-272.
179. ****Bradford, M.A.**, Humphrey, T.J., Lappin-Scott, H.M. (1997) The cross-contamination and survival of *Salmonella enteritidis* PT4 on sterile and non-sterile foodstuffs. *Letters in Applied Microbiology* **24**, 261-264 (undergraduate thesis research).

Non Peer-Reviewed Publications (including commentaries, white papers, reports, editorials and letters)

2021

180. ****Bradford, M.A.** Carey, C.J., Kane, D.A., Oldfield, E.E., Watnick, D., Wood, S.A. (2021) Understanding soil carbon science to identify strategies for climate mitigation and adaptation. *Aspen Global Change Institute, Quarterly Review* (forthcoming).

2017

181. ****Bradford, M.A.** (2017) Soil carbon: A leaky sink. *Nature Climate Change*, **7**, 475-476 (News & Views).

2016

182. ****Bradford, M.A.** (2016) Re-visioning soil food webs. *Soil Biology & Biochemistry*, **102**, 1-3 (Guest Editorial to the Special Issue on Food Web Interactions in the Root Zone: Community and Ecosystem Dynamics).
183. Wieder, W., **Bradford, M.A.**, Grandy, S., Talbot, J. (2016) Turning uncertainty into opportunity by advancing theory and models. *White Paper for the Offices of Advanced Scientific Computing Research and DOE Biological and Environmental Research*

(BER) review to assess computing and data requirements for BER programs in the next decade.

2015

184. **Oldfield, E.E., Wood, S.A., Palm, C.A., **Bradford, M.A.** (2015) How much SOM is needed for sustainable agriculture? *Frontiers in Ecology & Environment*, **13**, 527 (Guest Editorial).
185. Wieder, W., Allison, S.D., Bonan, G., **Bradford, M.A.**, Grandy, S., Hinckley E.-L., Randerson, J., Reed, S.C., Stephens, B. (2015) Scaling soil processes with data from above and below: Using space-based and local observations to advance our capacity to project carbon cycle-climate feedbacks. *White Paper for the 2017-2027 National Research Council (NRC) Decadal Survey, Earth Science and Applications from Space*.

2014

186. ****Bradford, M.A.** (2014) Ecology: Good dirt with good friends. *Nature*, **505**, 486-487 (News & Views).
187. ****Bradford M.A.**, Warren, R.J. (2014) Terrestrial Biodiversity and Climate Change. In Freedman, B. (ed.) *Handbook of Global Environmental Change*, chapter 13, pp. 1-7, Springer, Dordrecht. doi: 10.1007/978-94-007-5784-4_13 (Invited).
188. Felson, A., Oldfield, E, **Bradford M.**, Warren, R (2014) Constructing native urban forests as experiments to evaluate resilience. *Scenario Journal*, **4** (online).

2013

189. ****Bradford, M.A.**, Crowther, T.W. (2013) Carbon use efficiency and storage in terrestrial ecosystems. *New Phytologist*, **199**, 7-9 (Commentary).
190. **Warren, R.J, **Bradford, M.A.** (2013) Public opinion: Science petitions are a facade of numbers. *Nature*, **493**, 480 (Correspondence).

Manuscripts Submitted, In Review or Revising

191. ****Bradford, M.A.**, Wood, S.A., Addicott, E.T., Fenichel, E.P., Fields, N., González-Rivero, J., Jevon, F.V., Maynard, D.S., Oldfield, E.E., Polussa, A., Ward, E.B., Wieder, W.R. Quantifying microbial control of soil organic matter dynamics at macrosystem scales.
192. ****Bradford, M.A.**, Maynard, D.S., Crowther, T.W., Frankson, P.T., Mohan, J.E., Steinrueck, C., Veen, G.F., King, J.R., Warren, R.J. Belowground community turnover accelerates the decomposition of standing dead wood.
193. **Covey, K.R., Bettigole, C.A., Warren, R.J., Williams, C.A., Aubrey, D.P., Asbjorsen, H., Bohn, K.K., Classen, A.T., Crowther, T.W., Farrell, M., Frey, B.R., Holzmueller, E.J., Keeton, W.S., Knapp, B.O., King, J.R., Kuers, K.K., Lhotka, J.M., Love, J.P., Maynard, D.S., Megonigal, J.P., Pitz, S., Rittenbeck, N.E., Sanders, N.J., Saunders, M.R., Stovall, J.P., Szlavcecz, K., Wright, J.P., Wurzbarger, N., Oliver, C.D., Lee, X., **Bradford, M.A.** Methane in upland temperate forest trees.

194. **Kane, D.A., **Bradford, M.A.**, Fuller, E., Oldfield, E.E., Wood, S.A. Soil organic matter effects on US maize production and crop insurance payouts under drought.
195. **Keiser, A.D., Warren, R.J., Filley, T., **Bradford, M.A.** Signatures of an abiotic decomposition pathway in temperate forest leaf litter.
196. **Oldfield, E.E., **Bradford, M.A.**, Augarten, A.J., Cooley, E.T., Radatz, A.M., Radatz, T., Ruark, M.D. Positive associations of soil organic matter and crop yields across a regional network of working farms.
197. **Pregitzer, C.C., Hanna, C., Charlop-Powers, S., **Bradford, M.A.** Estimating carbon storage in urban forests.
198. **Pregitzer, C.C., **Bradford, M.A.** Historical land use shapes urban forest composition and structure.
199. **Taylor, M., **Bradford, M.A.**, Arnold, W., Peccia, J., Raymond, P.A. Managing unintended climate warming from wetland restoration and creation.
200. **Ward, E.B., Duguid, M.C., Kuebbing, S.E., Lendemer, J.C., Warren, R.J., **Bradford, M.A.** Biogeochemical effects of ericoid mycorrhizae and the need to reconceive the mycorrhizal dominance framework. Invited review.
201. **Yona, L., Cashore, B., **Bradford, M.A.** Factors influencing the development and implementation of greenhouse gas inventories.
202. Addicott, E., Fenichel, E.P., **Bradford, M.A.**, Pinsky, M.L., Wood, S.A. Toward an improved understanding of causation in ecological science.
203. Carpenter, R., Ward, E.B., Wikle, J., Duguid, M.C., **Bradford, M.A.**, Ashton, M.S. Soil nutrient recharge after shelterwood timber harvesting in a temperate oak-hardwood forest: Insights using a twenty-five-year chronosequence.
204. García-Palacios, P., Crowther, T.W., Dacal, M., Hartley, I.P., Reinsch, S., Rinnan, R., Rousk, J., van den Hoogen, J., Jian-Sheng Ye, J.-S., **Bradford, M.A.** Global warming accelerates soil carbon losses via the microbial decomposition of soil organic matter.

LEAD/ INVITED PRESENTATIONS (since 2007)

2021 and upcoming

Mark A. Bradford. t.b.d. Lawrence Berkeley National Laboratory (LNBL), CA. *postponed due to COVID*. Invited: Distinguished Scientist Seminar Series.

2020

Mark A. Bradford. Global to local (and nothing between): Not seeing the forest for the trees. The Intricate Life of Trees event. MGH Arboretum and Burchfield Penney Art Center, Buffalo, NY. February 2020. Invited.

2019

Mark A. Bradford. Building confidence in projections of global carbon cycle-climate feedbacks by understanding local processes. Univ. of Vermont, Gund Institute, VT. October 2019. Invited seminar and discussion.

2018

Mark A. Bradford. From evolutionary trade-offs to community shifts: how can we tease out the net effect of multiple mechanisms underlying thermal responses of soil microbial respiration? British Ecological Society, Annual Meeting, Birmingham, UK. 16-19 December 2018. Oral presentation and co-chair, in the lead Thematic Session: Microbial influence on climate change feedbacks.

Mark A. Bradford. Building confidence in projections of global carbon cycle-climate feedbacks by understanding local processes. Univ. of Georgia, Odum School of Ecology, GA. February 2018. Invited departmental seminar.

Mark A. Bradford. Building confidence in projections of global carbon cycle-climate feedbacks by understanding local processes. SUNY Buffalo State, Biology Department, NY. April 2018. Invited departmental seminar.

2017

Mark A. Bradford. Biotic interactions reduce microbial carbon use efficiency. American Geophysical Union, Fall Meeting. New Orleans, MS. December 10th-15th, 2017. Invited speaker for a special session on microbial-mineral regulation of organic matter.

Mark A. Bradford. Competition reduces microbial carbon use efficiency. Soil Ecology Society Biennial Meeting. Fort Collins, CO. June 5-9th, 2017. Contributed oral.

Mark A. Bradford. Building confidence in projections of global carbon cycle-climate feedbacks. Univ. of Minnesota, Department of Ecology, Evolution and Behavior, MN. 1st March 2017. Invited departmental seminar.

Mark A. Bradford. Climate change impacts on decomposition – novel insights from microbe-to biome-level. Swedish Ecological Society. Carbon cycling in cold biomes workshop. Lund, Sweden, February 9-10th, 2017. Invited plenary.

2016

Mark A. Bradford. Building confidence in projections of global carbon cycle-climate feedbacks. Yale School of Forestry and Environmental Studies, CT. 7th September 2016. Invited departmental seminar.

Mark A. Bradford. Biotic interactions, biogeochemistry and scale: does ignoring local variation invalidate our knowledge of broad-scale controls on carbon cycling? Gordon Research Conference *Unifying Ecology Across Scales*, Univ. of New England, Biddeford, ME, July 24th-29th, 2016. Invited plenary.

Mark A. Bradford. Climate and litter decomposition: the ecological fallacy of a dominant paradigm in ecosystem ecology. UC Santa Barbara Department of Ecology, Evolution and Marine Biology, CA. 4th April 2016. Invited departmental seminar.

2015

Mark A. Bradford. Convenor, Chair, and Presenter of the session “Food-web Interactions” at Rhizosphere4 Conference. Maastricht, Netherlands, June 21st-25th, 2015. Invited.

Mark A. Bradford. Center for Macroecology, Evolution and Climate, Univ. of Copenhagen, Denmark, May 12th, 2015. Invited departmental seminar.

Mark A. Bradford. Climate and litter decomposition: the ecological fallacy of a dominant paradigm in ecosystem ecology. The Netherlands Institute of Ecology (NIOO-KNAW), Wageningen, Netherlands, Feb 16th, 2015. Invited departmental seminar.

2014

Mark A. Bradford. Forest degradation, belowground diversity and carbon cycling. Workshop on: Forests of the Western Himalaya: Conservation and Restoration of Ecosystem Services in a time of Climate Change. Dehradun, Uttarakhand, India, June 28th-30th, 2014. Invited oral presentation.

Mark A. Bradford. Climate and litter decomposition: the ecological fallacy of a dominant paradigm in ecosystem ecology. The Ecosystem Center, Marine Biological Laboratory, MA, May 20th, 2014. Invited departmental seminar.

Mark A. Bradford. Carbon cycle projections depend on how we think about life after death. Dartmouth College, NH, March 28th, 2014. Invited departmental seminar.

Mark A. Bradford. The living side of dead wood: animals, fungi and their environmental responses. Yale Institute for Biospheric Studies, CT, March 7th, 2014. Invited seminar.

Mark A. Bradford, Emily E. Oldfield, Novem Aeyung, Nancy Falxa-Raymond, Richard A. Hallett, Alexander J. Felson. Species identity and land management effects on tree performance. New York City Urban Research Station, NY, February 25th, 2014. Invited seminar.

Mark A. Bradford. Carbon cycle projections depend on how we think about life after death. School of Forestry & Environmental Studies, Yale University, New Haven, CT. January 29th, 2014. Invited departmental seminar.

2013

Mark A. Bradford. Ecosystem multifunctionality does not respond positively to increasing soil faunal diversity. INTECOL 2013, London, UK, August 18-23, 2013. Invited oral symposium presentation.

Mark A. Bradford. How do microbial communities influence the formation rate, stability and chemistry of soil organic matter? Ecological Society of America Annual Meeting, Minneapolis, Minnesota, August 4-9, 2013. Invited oral symposium presentation.

2012

Mark A. Bradford. How do organism responses to temperature modify forest carbon and nitrogen dynamics? University of New Hampshire, NH, December 7th, 2012. Invited departmental seminar.

Mark A. Bradford. Do we have to consider microbes to understand and predict carbon cycling in terrestrial systems? University of Massachusetts Amherst, MA, October 18th, 2012. Invited departmental seminar.

Mark A. Bradford. Do we have to consider microbial species identity to understand and predict carbon cycling in terrestrial systems? Yale Climate & Energy Institute's Third Annual Conference, Yale University, New Haven, CT, April 12-14, 2012. Invited oral presentation.

2011

Mark A. Bradford. Responses of soil microbial communities to temperature: implications for ecosystem carbon dynamics. Harvard Forest, MA, October 14th, 2011. Invited seminar.

Mark A. Bradford. Responses of soil microbial communities to temperature: implications for ecosystem carbon dynamics. Indiana University, Bloomington, September 30th, 2011. Invited departmental seminar.

Mark A. Bradford. Acclimation and adaptation in soil microbial communities: implications for ecosystem carbon dynamics. Boston University, Boston, April 25, 2011. Invited departmental seminar.

Mark A. Bradford. Soil microbial community effects on ecosystem carbon dynamics. McGill University, Montreal, Canada, February 10, 2011. Invited departmental seminar.

2010

Mark A. Bradford. Look beneath your feet: soil microbes and carbon cycling. Roger Williams University, Bristol, Rhode Island, November 10, 2010. Invited departmental seminar.

Mark A. Bradford. Acclimation and adaptation in soil microbial communities: implications for ecosystem carbon dynamics. Cornell University, Biogeochemistry and Environmental Biocomplexity Program, Ithaca, New York, October 1, 2010. Invited seminar.

Mark A. Bradford. Digging-up the dead-box: testing assumptions of soil carbon models used to predict future climate. School of Forestry & Environmental Studies, Yale University, New Haven, Connecticut. September 22, 2010. Invited seminar.

Mark A. Bradford. Soil microbial community effects on ecosystem carbon dynamics. Cary Institute for Ecosystem Studies, Millbrook, New York, September 16, 2010. Invited seminar.

Mark A. Bradford. Plant resource history effects on contemporary microbial processes. Session: 'Biotic interactions and biogeochemical processes'. European Geophysical Union, General Assembly, Vienna, Austria, May 2-7, 2010. Invited oral presentation.

Mark A. Bradford. Soil microbial community effects on ecosystem carbon dynamics. University of Pennsylvania, Earth and Environmental Science, Philadelphia, Pennsylvania, March 19, 2010. Invited departmental seminar.

2009

- Mark A. Bradford. Acclimation and adaptation in soil microbial communities: implications for ecosystem carbon dynamics. Yale University, Ecology and Evolutionary Biology, New Haven, Connecticut, November 18, 2009. Invited departmental seminar.
- Mark A. Bradford. How does consideration of soil microbial processes influence predictions of ecosystem carbon dynamics? University of Tennessee, Knoxville, Tennessee, November 6, 2009. Invited departmental seminar.
- Mark A. Bradford, T. Hefin Jones. Does higher belowground diversity improve pasture performance? 10th International Congress of Ecology, Brisbane, Australia, August 16-21, 2009. Invited oral presentation.
- Mark A. Bradford. Exploring the role of soil microbial communities in ecosystem carbon dynamics. Apr. 2009. School of Biological & Environmental Sciences, Univ. of Stirling, Scotland. Invited departmental seminar.

2008

- Mark A. Bradford. Thermal adaptation of microbial respiration. May 2008. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA. Invited seminar.

2007

- Mark A. Bradford. Are different soil communities functionally equivalent? Oct. 2007. Department of Biology, Colorado State Univ., CO. Invited departmental seminar.
- Mark A. Bradford. Soil carbon response to global change: underlying biotic mechanisms. EcoSummit, Beijing, China, 22-25 May 2007. (British Ecological Society organized symposium). Invited oral presentation.
- Mark A. Bradford. Soil carbon response to global change: underlying biotic mechanisms. Mar. 2007. Ecology & Evolutionary Biology, Univ. of Colorado, CO. Invited departmental seminar.

INVITED WORKSHOPS (since 2007)

- Forests in Cities, A National Workshop. New York City, NY, October 2019
- SNAPP Working Group: Managing Soil Carbon. NCEAS, Santa Barbara, CA. Multiple meetings. March 2017 to August 2019
- Yale and Environmental Defense Fund: Reducing methane emissions from managed peatlands/wetlands. Yale University, 13 February 2019
- U.S. Department of Energy BERAC Grand Challenges 2 Workshop. Washington D.C., March 2017
- Working Research Group: Health and the Environment: A Unifying Framework from Individual Stress to Ecosystem Functioning. Hebrew University, Jerusalem, Israel, June 2016

- INTERFACE Workshop: Frontiers in terrestrial climate feedbacks: Integrating models and experiments to explore climate feedbacks in an increasingly managed and warming world. St. Pete's Beach, FL, January 2016
- Towards an ecology intensive agriculture: learning from nature. KNAW Amsterdam and Netherlands Institute of Ecology (Wageningen), April 2015
- U.S. Geological Survey, John Wesley Powell Center for Analysis and Synthesis: The next generation of ecological indicators: defining which microbial properties matter most to ecosystem function and how to measure them. Fort Collins, CO, 2014
- Soil carbon decomposition and temperature – the way forward. Colorado Springs, CO, July 2009
- National Center for Ecological Analysis and Synthesis: Detritus and dynamics of populations, food webs and communities. Santa Barbara, CA, May 2008
- European Union-concerted action CONSIDER Workshop: Linking above- and belowground species and processes, empiricists and modelers. Netherlands, July 2007
- National Science Foundation-funded Workshop: Microscale approaches to macroscale issues in ecology. Washington D.C., April 2007

FUNDED GRANTS

- 2020-2021 Advancing re-sampling designs to confidently detect temporal change in SOC stocks. PI, with Emily E. Oldfield. Ecosystem Services Market Place. \$52,624 (to Yale).
- 2019-2024 Collaborative Proposal: MRA: Understanding how local-scale controls on litter decomposition shape emergent macrosystem biogeochemical patterns. PI, with Co-PIs Stephen Wood and Will Wieder. National Science Foundation. MacroSystems Biology Program. \$889,554 (to Yale).
- 2018-2020 Managing methane in peatlands. Joint-PI with Peter A. Raymond. Private Foundation. \$500,000.
- 2017-2019 Dissertation Research: Untangling aboveground versus belowground plant contributions to the soil organic carbon pool. Acting PI for Noah Sokol (doctoral student, Co-PI). National Science Foundation. Division of Environmental Biology. \$21,775.
- 2016-2018 Dissertation Research: The functional consequences of antagonism in fungal communities. Acting PI for Dan Maynard (doctoral student, Co-PI). National Science Foundation. Division of Environmental Biology. \$21,543.
- 2015-2018 SG: Understanding local controls on wood decomposition in a regional context. PI. National Science Foundation. Division of Environmental Biology. \$149,901.
- 2015 Visiting Professors Program Fellowship, Royal Netherlands Academy of Arts and Sciences. For outstanding foreign researchers to spend time working in the Netherlands. Euro19,500.

- 2014-2015 Collaborative Workshop: Identifying and prioritizing research questions for long-term ecological experiments. Joint-PI with Jen Lau. National Science Foundation. Division of Environmental Biology. \$57,787 (to Yale).
- 2014-2016 Dissertation Research: Quantification and characterization of the production of methane in living trees. Acting PI for Kris Covey (doctoral student, Co-PI). National Science Foundation. Division of Environmental Biology. \$21,645.
- 2013-2017 Urban forest ecosystem assessment and monitoring: establishing and expanding a permanent plot network in New York City's urban forest. Joint-PI with Rich Hallett. U.S. Forest Service. \$93,282.
- 2010-2014 Collaborative Research: Do expected evolutionary trade-offs in enzyme activities manifest at the level of microbial community function? PI, with Co-PIs Noah Fierer and Rebecca McCulley. National Science Foundation, Ecosystem Studies Program. \$312,384 (to Yale).
- 2010-2011 Climate warming, species interactions and transformation of ecosystem carbon cycling. Joint-PI with Os Schmitz. Yale Climate and Energy Institute, competitive internal grant. \$94,675.
- 2010-2011 Understanding the belowground impacts of managing for biofuels in loblolly pine plantations. PI. Weyerhaeuser NR Company. \$30,000.
- 2010-2012 Soil microbial community composition in bottomland hardwood restoration on the Mississippi delta. Joint-PI with Mac Callahan. U.S. Forest Service. \$40,000.
- 2008-2015 Southern Appalachia on the edge - Exurbanization & climate interaction in the Southeast. National Science Foundation, LTER Program. PI (of 27).
- 2008-2010 Dissertation Research: Functional dissimilarity in soil microbial communities. Acting PI for Michael Strickland (doctoral student, Co-PI). National Science Foundation. Division of Environmental Biology. \$11,032.
- 2007-2011 Are carbon and nitrogen dynamics in soils of the southern Appalachians coupled? Joint-PI with Jennifer Knoepp. U.S. Forest Service. \$50,000.
- 2008 "Resource-Ratio Theory": is the competition parameter of proportionate consumption evolutionarily labile? PI. UGA Research Foundation New Faculty Research Grant. \$8,660.
- 2006-2010 Fungal vs. bacterial dominance of belowground communities: consequences for ecosystem carbon and nutrient dynamics. Joint-PI with Noah Fierer. Andrew W. Mellon Foundation. \$440,000.
- 2004-2008 Heterotrophic soil respiration in warming experiments: using microbial indicators to partition contributions from labile and recalcitrant soil organic carbon. PI, with Co-PIs Jerry M. Melillo, James F. Reynolds, Kathleen K. Treseder, Matthew D. Wallenstein. Department of Energy. \$1,157,821.
- 2006 Anaerobic ammonium oxidation: does it exist as a pathway in the terrestrial nitrogen cycle? PI. UGA Research Foundation New Faculty Research Grant. \$7,000.

- 2003 Development of a mathematical model to predict the consequences of altered soil community complexity on grassland ecosystem functioning. Joint-PI with H.W. Hunt. U.K. Natural Environment Research Council, Soil Biodiversity Programme. \$3,437.
- 2001 Plant invasions and global environmental change. PI. U.K. Royal Society. £9,200.
- 2000 The Impact of soil faunal diversity on soil carbon dynamics. Joint PI with T. Hefin Jones. U.K. Natural Environment Research Council, Radiocarbon Research Award. £15,400.
- 2000 Carbon fluxes in model Sourhope ecosystems: an Ecotron experiment. Joint PI with T. Hefin Jones. U.K. Natural Environment Research Council, ¹⁵N Stable Isotope Facility Grant. £12,718.

ADVISING

Postdoctoral Scholars

Current (3 total)

- Annise Dobson (2018-; co-advised with Os Schmitz)
Meghan Taylor (2019-; co-advised with Pete Raymond)
Fiona Jevon (2020-)

Completed (7 total)

- Emily Oldfield (2019-2020 Yale)
Sara Kuebbing (YIBS Fellowship, Smith Conservation Fellowship, 2014-2018 Yale)
Stephen Wood (The Nature Conservancy Fellowship, 2015-2017 Yale)
Tom Crowther (YCEI Fellowship, 2012-2015 Yale)
Mike Strickland (2009-2012 Yale)
Robert Warren (2009-2012 Yale)
Christian Davies (2005-2008 UGA)

Doctoral Students

Current (4 total)

- Dan Kane (5th year)
Elisabeth (Eli) Ward (3rd year)
Kristy Barnes (3rd year, joint with Os Schmitz and recipient of an NSF GRFP)
Alex Polussa (2nd year)

Completed (8 total)

Clara Pregitzer (2020 Yale)

Emily Oldfield (2019 Yale)

Noah Sokol (2018 Yale)

Dan Maynard (2017 Yale)

Ashley Keiser (recipient of an EPA STAR doctoral fellowship; 2014 Yale)

Kenneth Leonard (2010 UGA)

Mike Strickland (2009 UGA)

Rebecca Ball (2007 UGA)

Service as an Advisory Committee Member (27 total)

I am on the doctoral advisory committees of 7 current Ph.D. students at Yale

I have served on doctoral advisory committees for 21 graduated students (7 Yale, 1 Columbia Univ., 1 Hebrew Univ., 12 UGA)

Research Masters Students

Current (1 total)

Sally Donovan (2nd year Yale, recipient of an NSF GRFP)

Completed (9 total)

Elisabeth Ward (2018 Yale)

Madeleine Rubenstein (2015 Yale)

Avishesh Neupane (2014 Yale)

Tara Ursell (2013 Yale)

Bhavya Sridhar (2012 Yale)

Emily Stevenson (2012 Yale)

Tim Kramer (2010 Yale)

Caitlin O'Brady (2010 Yale)

Yaya Tang (2010 Yale)

Undergraduate Independent Research Students

Current (0 total)

none current

Completed (7 total)

Connor Reed (2019 Yale)

Anna Wade (2013 Yale)

Taylor Gregoire-Wright (2012 Yale)

Calley Mersmann (2011 UGA)

Brian Watts (2011 UGA)
Ernest Osburn (2010 UGA)
Tara Gancos (2007 UGA)

TEACHING EXPERIENCE (LEAD INSTRUCTOR)

Undergraduate

University of Georgia (2005-2008)

General Ecology with laboratory (Junior, 4 h)
Senior Seminar in Ecology (1 h)
Honors Freshman Gateway Seminar in the Natural Sciences (1 h)

Duke University (2002-2004)

Freshman Seminar in Biology (2 h)

Graduate

Yale University (2009-onwards)

Current: Ecosystem Science (Incoming Masters class, required residential field course (MOD))

Current: Soil Science (Masters, 3 h)

Current: Ecosystems & Landscapes, Core Class for the Ecosystem Management and Conservation specialization (Masters, 3 h)

Ecosystems & Landscapes, Foundations Class (Masters, 4 h with lab)

Ecosystem Pattern & Process (Masters, 3 h)

Foundations of Agriculture and Environment (Masters, 3 h)

Synthesizing Environmental Science for Policy (Masters seminar, 3 h, cross-listed with the Environmental Studies undergraduate major)

Various independent study projects: academic advisor (e.g. 3 in fall 2017, 2 in summer/fall 2018; 2 in summer 2019)

University of Georgia (2005-2008)

Concepts & Approaches in Ecosystem Ecology (Doctoral, 4 h)

Synthesizing Concepts in Soil Ecology (Masters-Doctoral, 2 h)

EDITORIAL ROLES

Direct Submission Editor for journal *Proceedings of the National Academy of Sciences, USA* (2020-)

Associate Chief Editor for journal *Soil Biology & Biochemistry* (2017-2020)

Guest Editor for Special Issue of journal *Soil Biology & Biochemistry* (2016)

Editorial Advisory Board member for journal *Global Change Biology* (2005-2012)

Editorial Board member, British Ecological Society, Ecological Reviews Series (2012-)

JOURNAL REVIEWING (only a selection of common journals listed)

General ecology (including microbial and plant science) – Biological Invasions, Ecology, Ecology Letters, Ecosystems, Functional Ecology, Global Change Biology, ISME, Journal of Ecology, Journal of Applied Ecology, Nature Ecology & Evolution, New Phytologist

General/other science –Nature, Nature Climate Change, Nature Sustainability, PNAS, Science

Geosciences –Biogeochemistry, Nature Geoscience

Soil science –Plant and Soil, Soil Biology & Biochemistry

GRANT PROPOSAL REVIEWING

National Science Foundation (USA)

U.S. Department of Agriculture, AFRI (USA)

U.S. Department of Energy (USA)

National Geographic

Netherlands Organisation for Scientific Research (NWO)

OTHER EXTERNAL SERVICE

Ph.D. Dissertation Evaluator (Reader), Hebrew Univ., Jerusalem, March 2015

Tenure and Promotion, external evaluator (12 total)

UNIVERSITY SERVICE

University Science Strategy Committee – Environmental Science and Evolution panel member (2017-2018, Yale)

Fellow of Silliman College (2015-onwards, Yale)

“Occasional Member” on the University Tribunal (2013-2015, Yale)

Stable Isotope User Group (2010-onwards, Yale)

Member of Microbial Sciences Institute Advisory Committee (2009-2011, Yale)
Microbial Diversity Institute faculty search committee (2010-2011, Yale)
Dissertation Reader (7 total, Yale)
Reviewer for Yale Institute for Biospheric Studies graduate and center proposals (Yale)
Office of the Vice Provost for Research Review team of the Center for Applied Isotope Studies
(2007-2008, UGA)

DEPARTMENTAL SERVICE

Governance committee, Chair (YSE, 2020-)
MODS steering committee, member (2020-)
Childs Family Fund for applied research, Co-Chair (TFS, 2020-)
Tenure and Promotion committee, Chair for Liza Comita (YSE, 2020)
Search committee, Chair, People & Forests, tenure track position (YSE, 2020)
Search committee, Chair, for Target of Opportunity at FES (2017/8, Yale, multiple positions)
Lead for the Specialization in Ecosystem Management and Conservation (2018-, YSE)
Search committee, Chair, for Assistant Dean to establish an Office of Diversity, Community &
Inclusion at FES (2017, Yale)
Promotion committee member (2017, Yale)
Diversity committee, leader, for Organizational Strategic Plan (2016-2017, Yale)
MESC/MFS Admissions & Merit Committee, member (2016-, Yale)
Co-ordinator of the Specialization in Ecosystem Conservation and Management (2011-2017,
Yale)
Doctoral Program committee, member (2010-2015, Yale)
Masters Admissions committee, member (2009, Yale)
Chair of Analytical Chemistry Laboratory Oversight Committee (2007-2008, UGA)
Search committee member: 2 positions in population & evolutionary ecology (2007, UGA)
Ad hoc committee member on School administrative organization (2006-2007, UGA)
Search committee member for position in ecosystem ecology (2006, UGA)
Search committee member for position in population ecology (2006, UGA)
Search committee member for an Assistant Director (2006, UGA)
Analytical Chemistry Laboratory Oversight Committee (2004-2006, UGA)
Executive Committee, member (2005-2006, UGA)
Graduate Committee, member (2005, UGA)