Natural Resource Ecology Laboratory • Colorado State University • Fort Collins, CO 80523-1499

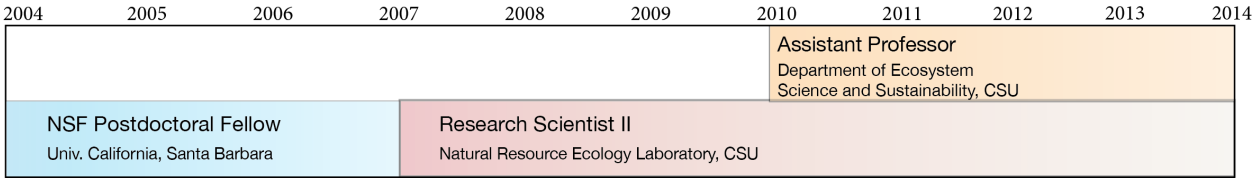
(970) 556-2591 • matthew.wallenstein@colostate.edu

EDUCATION

2004 Ph.D., Ecology. Duke University, William Schlesinger, advisor.

1996 B.A., Geosciences. Franklin & Marshall College, Lancaster, Pennsylvania; Honors in Biology. Andrew Barton, thesis advisor.

APPOINTMENTS



AWARDS

2014 John S. Waid Award for best review paper in Soil Biology & Biochemistry

2013 National Science Foundation BREAD Ideas Challenge winner

2013 National Science Foundation CAREER award

2013 Jack Cermak Advising Award (CSU award for outstanding graduate advising)

2012, 2013 Nominated for Monfort Professor by Warner College of Natural Resources

2007, 2011 "Outstanding Graduate Advisor", Natural Resource Ecology Laboratory.

2007, 2010 "Most Proposals Submitted", Natural Resource Ecology Laboratory.

2004 NSF Office of Polar Programs Postdoctoral Fellowship

2002 NSF Doctoral Dissertation Improvement Grant

2001 NASA Earth System Science Fellowship

TEACHING EXPERIENCE

- General Ecology (LIFE 320): 2008, 2010, 2011, 2012
- Biogeochemistry (NR 660): 2010, 2012
- Summer Soil Institute: 2010, 2011, 2012, 2013
- Biogeography and Biogeochemistry of Arctic and Alpine Ecosystems (EY 592): 2008
- Advanced Topics in Soil Ecology (EY 592); 2007

- Earned 'Certificate in Teaching Biology' through completion of a formal training program at Duke University. 2004.

LEADERSHIP ACTIVITIES

President. Soil Ecology Society. 2015-2017.

Co-Chair. USGS Powell Center Working Group: Identifying the Next Generation of Ecological Indicators. 2012-present.

Director. Enzymes in the Environment Research Coordination Network. 2009-present.

Faculty Director. EcoCore Analytical Facility at the Natural Resource Ecology Laboratory. 2009-present.

Chair. International Workshop on Environmental Proteomics. Keystone, Colorado. January 2010.

Secretary. ESA Biogeosciences Section. 2008-2010.

Guidance Committee Member. American Geophysical Union Biogeosciences Section. 2009-present.

Committee Member. Technical Committee on Soils and Critical Zone Processes. American Geophysical Union. 2011-present.

Program Committee Member/Organizer: AGU Chapman conference: "Soil-mediated drivers of coupled biogeochemical and hydrological processes across scales", October 2013.

Workshop Organizer. 2nd International Enzymes in the Environment RCN Workshop: Incorporating Enzymes and Microbial Physiology into Biogeochemical Models. Colorado State University, 2012.

Symposium Organizer. Assessing the relative contributions of fungi and bacteria to terrestrial biogeochemical processes: state of the art. Ecological Society of America Annual Meeting, 2011.

Symposium Organizer. Enzymes in the Environment: New insights into controls on enzyme production, in situ activity, and turnover. Ecological Society of America Annual Meeting, 2013.

EDITORSHIPS AND REVIEWS

Associate Editor: Biogeochemistry. 2009-present; **Founding Chief Editor** for special section "Biogeochemistry Letters".

Subject Editor: Soil Biology & Biochemistry. 2009-present.

Editorial Advisory Board: Global Change Biology. 2008-present.

Review Editor: Frontiers in Terrestrial Microbiology. *2010-present.*

Panelist. NSF Ecosystems (5x), NSF Polar Programs, USDA NRI, DOE National Institute for Climate Change Research (NICCR), DOE Next Generation Ecosystem Experiment

Ad-Hoc proposal reviewer for NSF; DOE National Institute for Climate Change Research; Energy Biosciences Institute; National Academy of Sciences

Manuscript reviewer *for* Applied and Environmental Microbiology, Biogeochemistry, Biogeosciences, Chemical Geology, Ecography, Ecological Applications, Ecology, Ecology

Letters, Ecological Modeling, Environment International, FEMS Microbiology Ecology, Forest Ecology and Management, Functional Ecology, Global Biogeochemical Cycles, Global Change Biology, Global Ecology and Biogeography, Journal of Ecology, JGR-Biogeosciences, Journal of Proteome Research, Microbial Ecology, Nature Climate Change, Plant and Soil, PNAS, Polar Biology, Soil Biology and Biochemistry, Soil Science Society of America Journal, Pedobiologia, Plant and Soil, Water Research.

Reader Advisory Panel: NATURE. 2008-2010.

GRANTS (CURRENT)

1. 2013-2018: PI. CAREER: Microbial Allocation of Assimilated Carbon: Interactions between Temperature, Substrate Quality, and Microbial Physiology Determine the Efficiency of Arctic Soil Carbon Cycling. NSF $916,609
2. 2013-2016. PI. Understanding litter input controls on soil organic matter turnover and formation are essential for improving carbon-climate feedback predictions for Arctic, tundra ecosystems. DOE, $1,045,99
3. 2012-2014. PI. Dissertation Research: Is organic matter chemistry or temperature a stronger driver of microbial community structure in permafrost soil? (NSF-DDIG award to Jessica Ernakovich). $15,000
4. 2010-2014. PI. Plant-microbe feedback mechanisms affecting decomposition and nutrient availability and interactions with climate change. NSF Ecosystems. $666,209
5. 2009-2014. PI, Mary Stromberger and Richard Dick Co-PI's. RCN: Enzymes in the Environment. NSF Research Coordination Networks. $499,833

GRANTS (PAST)

1. 2009-2013. Co-PI. Laura Gough, PI; John Moore Co-PI. A biotic awakening: How do invertebrates, microbes, and plants determine soil organic matter responses to release from nutrient limitation in arctic tundra? NSF Office of Polar Programs. $771,369
2. 2010-2013. Co-PI. John Moore, PI. Global climate change education (GCCE): Research experiences, modeling and data. NASA. $399,365
3. 2009-2013. Co-PI. Mike Weintraub, PI; Heidi Steltzer, Co-PI. The Changing Seasonality of Tundra Nutrient Cycling: Implications for Ecosystem and Arctic System Functioning. NSF Office of Polar Programs. $409,117 (CSU portion).
4. 2011-2012. PI. Dissertation research: Does long-term drought alter the response of microbial communities to moisture? (NSF-DDIG award to Sarah Evans). $15,000
5. 2009-2012. Co-PI. Richard Conant, PI. Reconciling predictions of kinetic theory with observations of decomposition responses to temperature: Biochemical, biological, and edaphic constraints. NSF Ecosystems. $698,980.
6. 2009-2011. Co-PI. John Moore, PI. Summer Soil Institute: Addressing environmental challenges with current and emerging techniques. USDA NRI. $149,950.
7. 2008-2011. Co-PI with John Moore (PI). USDA-National Needs Fellowship. Research opportunities in ecosystem science and environmental sustainability. $234,000.
8. 2008-2011. PI with Ed Ayres (PI) and Heidi Steltzer. NSF Ecological Biology. Does home-field

advantage cause faster decomposition rates in temperate forest ecosystems? $135,000

9. 2007-2011. Co-PI with Josh Schimel (PI), Ken Reardon, and Michael Weintraub. NSF Office of Polar Programs. IPY: Microbial winter survival physiology: a driver on microbial community composition and carbon cycling $908,000; $358,718 subcontract to Wallenstein.
10. 2007-2010. Co-PI with Elise Pendall (PI) and Feike Djikstra. USDA-NRI-Soil Processes Microbial and biogeochemical mechanisms of altered decomposition and N mineralization in a rangeland ecosystem exposed to global change. $360,000; $180,000 subcontract to Wallenstein.
11. 2007-2010. PI, Co-PI's Richard Conant, Eldor Paul. DOE-NICCR. Responses of soil decomposition processes and decomposer communities to climate warming and altered precipitation: a test of the microbial acclimation hypothesis. $375,000.
12. 2008-2010. PI. USGS contract to examine recovery of microbial community structure and function in soils degraded by Coal Bed Methane extraction in Wyoming. $35,000.
13. 2007-2010. Co-PI with Alan Knapp, PI: John Blair. DOE-NICCR. Collaborative Research: Interactive effects of altered rainfall timing and elevated temperature on soil communities and ecosystem processes. $480,000; $25,000 subcontract to Wallenstein.
14. 2009. PI, Shawna McMahon Co-PI. Microbes at the Cold Margin of Life: Can They Grow in Permanently Frozen Environments? Colorado State Space Grant. $8486
15. 2008. PI. Warner College of Natural Resources, Mini-Grant Program. An evaluation of soil warming effects on soil C quality using microbial indicator species. $10,000
16. 2004-2007. PI. NSF Postdoctoral Fellowship, Office of Polar Programs. Linking Microbial Communities in Arctic Tundra Soils to Decomposition Processes: Effects of Vegetation Type and Season. $214,800.
17. 2004-2007. Co-PI. Department of Energy. Heterotrophic Soil Respiration in Warming Experiments: Using Microbial Indicators to Partition Contributions from Labile and Recalcitrant Soil Organic Carbon. PI: Mark Bradford. Co-PI's: Jerry Melillo, Kathleen Treseder, Jim Reynolds $1,157,821; no direct support for Wallenstein.
18. 2004-2006. Co-PI. USDA, Northeastern States Resource Cooperative. Does elevated nitrogen deposition induce phosphorus deficiency in north temperate forest ecosystems? PI: Ivan Fernandez Co-PI: Lindsey Rustad. $101,419; $25,000 subcontract to Wallenstein.
19. 2002-2003. NSF, Doctoral Dissertation Improvement Grant. Effects of increasing nitrogen inputs on microbial immobilization, soil nitrogen retention, and denitrification in an aggrading forest ecosystem. $10,000.
20. 2001-2004. NASA, Earth System Science Fellowship. Mechanisms controlling the response of denitrification to anthropogenic nitrogen deposition.

INVITED PARTICIPANT

2013 Root/Soil/Microbiome Systems Biology Workshop. Bill and Melinda Gates Foundation. Seattle, WA.

2013 Frontiers in Ecosystem Science: Energizing the Research Agenda. NSF. Annapolis, MD.

2013 Metaproteomics of the Soil, DOE JGI, Walnut Creek, CA

2013 EMSL Scientific Technical Advisory Panel: Belowground Carbon Cycling Processes at the Molecular Scale: New Tools for User Research. DOE EMSL. Richland, WA.

2011 Emerging Frontiers in Rhizosphere Science Workshop. Airlee, Virginia.

2011 DOE Office of Science. Characterizing Soil Carbon in Permafrost Regions and Its Vulnerability to Climate Change. Argonne National Lab, IL.

2010 Workshop to design the next generation of experiments on soil C and temperature. Loveland, Colorado.

2010 Living Environments in Natural, Social, and Economic Systems (LENSES) workshop, The Institute for the Built Environment, Fort Collins, CO.

2009 DOE Office of Biological and Environmental Research workshop on "New Frontiers in Characterizing Biological Systems". Bethesda, Maryland.

2008 NCEAS working group: "Detritus Dynamics"

2008 DOE Office of Science. Carbon Cycling and Biosequestration Workshop. Rockville, MD.

2008 NASA Astrobiology Workshop on "New Paradigms for Remote Sensing and Monitoring of Microbial Ecosystems"

2005 Synthesis of soil biodiversity and ecosystem functioning in Victoria Land, Antarctica. Jekyll Island, GA.

2004-2006 NCEAS working group; "Can we now determine if, when, and how microbial community composition impacts ecosystem processes? Will that understanding yield critical new information about ecosystem function and response to change?".

2004 Workshop on advanced approaches to quantify denitrification. Woods Hole, MA.

2004 International workshop on molecular methods in soil biological and biochemical diversity in terrestrial ecosystems. Taipei, Taiwan.

UNIVERSITY SERVICE

- Vice President for Research Advisory Committee, 2014-
- WCNR Curriculum committee, WCNR. (2013-)
- Executive committee, NREL. (2011-)
- Executive committee, CSU Graduate Degree Program in Ecology (2008-2010)
- Director of Graduate Studies, NREL (2009-2011)
- Search Chair (3x); Search Committee member for faculty search 2012-2013.
- Organized and developed new 'Area of Emphasis" in Microbial Ecology for Graduate Degree Program in Ecology (2008)
- NREL Web committee (2008-)
- NREL Curriculum committee (2007-present)
- Affiliate Faculty, School of Global Environmental Sustainability at CSU (2008-present).

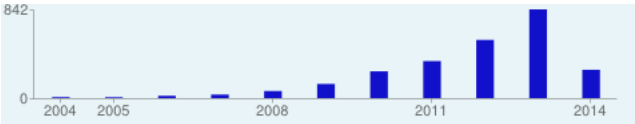
PROFESSIONAL MEMBERSHIPS

Ecological Society of America, Soil Science Society of America, American Geophysical Union, Soil Ecology Society, International Society of Microbial Ecology

CITATION METRICS (GOOGLE SCHOLAR, UPDATED FEBRUARY 13, 2014)

Sum of the Times Cited: 2570

h-index: 25



PUBLICATIONS (PUBLISHED OR IN PRESS)

1. Ernakovich, J. G., K. A. Hopping, A. B. Berdanier, R. T. Simpson, E. J. Kachergis, H. Steltzer, and M. D. Wallenstein. 2014. Predicted responses of arctic and alpine ecosystems to altered seasonality under climate change. Global Change Biology, in press.
2. Nie, M., E. Pendall, C. Bell, and M. D. Wallenstein. 2014. Soil aggregate size distribution mediates microbial climate change feedbacks. Soil Biology and Biochemistry **68**:357-365.
3. Evans, S. E., M. D. Wallenstein, and I. C. Burke. 2014. Is bacterial moisture niche a good predictor of shifts in community composition under long-term drought? Ecology **95**:110-122.
4. Evans, S. E. and M. D. Wallenstein. 2014. Climate change alters ecological strategies of soil bacteria. Ecology Letters **17**:155-164.
5. Bell, C., M. Stromberger, and M. Wallenstein. 2014. New insights into enzymes in the environment. Biogeochemistry **117**:1-4.
6. Bell, C., Y. Carrillo, C. M. Boot, J. D. Rocca, E. Pendall, and M. D. Wallenstein. 2014. Rhizosphere stoichiometry: are C: N: P ratios of plants, soils, and enzymes conserved at the plant species-level? New Phytologist **201**:505-517.
7. Arnosti, C., C. Bell, D. Moorhead, R. Sinsabaugh, A. Steen, M. Stromberger, M. Wallenstein, and M. Weintraub. 2014. Extracellular enzymes in terrestrial, freshwater, and marine environments: perspectives on system variability and common research needs. Biogeochemistry **117**:5-21.
8. Steinweg, J. M., J. S. Dukes, E. A. Paul, and M. D. Wallenstein. 2013. Microbial responses to multi-factor climate change: effects on soil enzymes. Frontiers in Microbiology **4**.
9. Koyama, A., M. D. Wallenstein, R. T. Simpson, and J. C. Moore. 2013. Carbon-Degrading Enzyme Activities Stimulated by Increased Nutrient Availability in Arctic Tundra Soils. PLoS ONE **8**:e77212.
10. Delgado-Baquerizo, M., A. Gallardo, M. D. Wallenstein, and F. T. Maestre. 2013. Vascular plants mediate the effects of aridity and soil properties on ammonia-oxidizing bacteria and archaea. FEMS Microbiology Ecology **85**:273-282.
11. Delgado-Baquerizo, M., F. T. Maestre, A. Gallardo, J. L. Quero, V. Ochoa, M. García-Gómez, C. Escolar, P. García-Palacios, M. Berdugo, and E. Valencia. 2013. Aridity modulates N availability in arid and semiarid Mediterranean grasslands. PLoS ONE **8**:e59807.
12. Delgado-Baquerizo, M., F. T. Maestre, A. Gallardo, M. A. Bowker, M. D. Wallenstein, J. L. Quero, V. Ochoa, B. Gozalo, M. García-Gómez, and S. Soliveres. 2013. Decoupling of soil nutrient cycles as a function of aridity in global drylands. Nature **502**:672-676.
13. Cotrufo, M. F., M. D. Wallenstein, C. M. Boot, K. Denef, and E. Paul. 2013. The Microbial Efficiency-Matrix Stabilization (MEMS) framework integrates plant litter decomposition with soil organic matter

stabilization: do labile plant inputs form stable soil organic matter? Global Change Biology 19:988-995.

14. Burns, R. G., J. L. DeForest, J. Marxsen, R. L. Sinsabaugh, M. E. Stromberger, M. D. Wallenstein, M. N. Weintraub, and A. Zoppini. 2013. Soil enzymes in a changing environment: current knowledge and future directions. Soil Biology and Biochemistry 58:216-234.
15. Bell, C. W., D. T. Tissue, M. E. Loik, M. D. Wallenstein, V. Acosta-Martinez, R. A. Erickson, and J. C. Zak. 2013. Soil microbial and nutrient responses to seven years of seasonally altered precipitation in a Chihuahuan Desert grassland. Global Change Biology.
16. Bell, C. W., B. E. Fricks, J. D. Rocca, J. M. Steinweg, S. K. McMahon, and M. D. Wallenstein. 2013. High-throughput fluorometric measurement of potential soil extracellular enzyme activities. Journal of Visualized Experiments. doi 10:50961.
17. Wallenstein, M. D. and E. K. Hall. 2012. A trait-based framework for predicting when and where microbial adaptation to climate change will affect ecosystem functioning. Biogeochemistry 109:35-47.
18. Wallenstein, M. D., M. L. Haddix, E. Ayres, H. Steltzer, K. A. Magrini-Bair, and E. A. Paul. 2012. Litter chemistry changes more rapidly when decomposed at home but converges during decomposition–transformation. Soil Biology and Biochemistry.
19. Wallenstein, M., M. Stromberger, and C. Bell. 2012. Bridging the gap between modelers and experimentalists. Eos, Transactions American Geophysical Union 93:312.
20. Steinweg, J. M., J. S. Dukes, and M. D. Wallenstein. 2012. Modeling the effects of temperature and moisture on soil enzyme activity: Linking laboratory assays to continuous field data. Soil Biology and Biochemistry.
21. Sarah, E. and D. Evans Matthew. 2012. Wallenstein. Soil microbial community response to drying and rewetting stress: does historical precipitation regime matter. Biogeochemistry 109:101-116.
22. Nie, M., E. Pendall, C. Bell, C. K. Gasch, S. Raut, S. Tamang, and M. D. Wallenstein. 2012. Positive climate feedbacks of soil microbial communities in a semi-arid grassland. Ecology Letters.
23. Graham, D. E., M. D. Wallenstein, T. A. Vishnivetskaya, M. P. Waldrop, T. J. Phelps, S. M. Pfiffner, T. C. Onstott, L. G. Whyte, E. M. Rivkina, and D. A. Gilichinsky. 2012. Microbes in thawing permafrost: the unknown variable in the climate change equation. The ISME Journal 6:709-712.
24. Wang, S.-Y., E. B. Sudduth, M. D. Wallenstein, J. P. Wright, and E. S. Bernhardt. 2011. Watershed urbanization alters the composition and function of stream bacterial communities. PLoS ONE 6:e22972.
25. Wallenstein, M. D., M. L. Haddix, D. D. Lee, R. T. Conant, and E. A. Paul. 2011. A litter-slurry technique elucidates the key role of enzyme production and microbial dynamics in temperature sensitivity of organic matter decomposition. Soil Biology and Biochemistry.
26. Wallenstein, M. D. and R. G. Burns. 2011. Ecology of extracellular enzyme activities and organic matter degradation in soil: A complex community-driven process. Methods of soil enzymology. SSSA Book Ser 9:35-56.
27. Wallenstein, M., S. D. Allison, J. Ernakovich, J. M. Steinweg, and R. Sinsabaugh. 2011. Controls on the temperature sensitivity of soil enzymes: a key driver of in situ enzyme activity rates. Soil Enzymology:245-258.

28. McMahon, S. K., M. D. Wallenstein, and J. P. Schimel. 2011. A cross-seasonal comparison of active and total bacterial community composition in Arctic tundra soil using bromodeoxyuridine labeling. Soil Biology and Biochemistry **43**:287-295.

29. Hoyt, C. M. and M. D. Wallenstein. 2011. Soil Respiration and Student Inquiry: A Perfect Match. Science Activities: Classroom Projects and Curriculum Ideas **48**:119-128.

30. Goldfarb, K. C., U. Karaoz, C. A. Hanson, C. A. Santee, M. A. Bradford, K. K. Treseder, M. D. Wallenstein, and E. L. Brodie. 2011. Differential growth responses of soil bacterial taxa to carbon substrates of varying chemical recalcitrance. Frontiers in Microbiology **2**.

31. Finzi, A. C., A. T. Austin, E. E. Cleland, S. D. Frey, B. Z. Houlton, and M. D. Wallenstein. 2011. Responses and feedbacks of coupled biogeochemical cycles to climate change: examples from terrestrial ecosystems. Frontiers in Ecology and the Environment **9**:61-67.

32. Evans, S. E. and M. D. Wallenstein. 2011. Soil microbial community response to drying and rewetting stress: does historical precipitation regime matter? Biogeochemistry:1-16.

33. Conant, R. T., M. G. Ryan, G. I. Ågren, H. E. Birge, E. A. Davidson, P. E. Eliasson, S. E. Evans, S. D. Frey, C. P. Giardina, and F. M. Hopkins. 2011. Temperature and soil organic matter decomposition rates–synthesis of current knowledge and a way forward. Global Change Biology.

34. Wallenstein, M. D., A. M. Hess, M. R. Lewis, H. Steltzer, and E. Ayres. 2010. Decomposition of aspen leaf litter results in unique metabolomes when decomposed under different tree species. Soil Biology and Biochemistry **42**:484-490.

35. Smith, W. K., W. Gao, H. Steltzer, M. D. Wallenstein, and R. Tree. 2010. Moisture availability influences the effect of ultraviolet-B radiation on leaf litter decomposition. Global Change Biology **16**:484-495.

36. Allison, S. D., M. D. Wallenstein, and M. A. Bradford. 2010. Soil-carbon response to warming dependent on microbial physiology. Nature Geoscience **3**:336-340.

37. Wallenstein, M. D., S. K. Mcmahon, and J. P. Schimel. 2009. Seasonal variation in enzyme activities and temperature sensitivities in Arctic tundra soils. Global Change Biology **15**:1631-1639.

38. McMahon, S. K., M. D. Wallenstein, and J. P. Schimel. 2009. Microbial growth in Arctic tundra soil at− 2° C. Environmental Microbiology Reports **1**:162-166.

39. Bradford, M. A., M. D. Wallenstein, S. D. Allison, K. K. Treseder, S. D. Frey, B. W. Watts, C. A. Davies, T. R. Maddox, J. M. Melillo, and J. E. Mohan. 2009. Decreased mass specific respiration under experimental warming is robust to the microbial biomass method employed. Ecology Letters **12**:E15-E18.

40. Ayres, E., H. Steltzer, B. L. Simmons, R. T. Simpson, J. M. Steinweg, M. D. Wallenstein, N. Mellor, W. J. Parton, J. C. Moore, and D. H. Wall. 2009. Home-field advantage accelerates leaf litter decomposition in forests. Soil Biology and Biochemistry **41**:606-610.

41. Ayres, E., H. Steltzer, S. Berg, M. D. Wallenstein, B. L. Simmons, and D. H. Wall. 2009. Tree species traits influence soil physical, chemical, and biological properties in high elevation forests. PLoS ONE **4**:e5964.

42. Wallenstein, M. D. and M. N. Weintraub. 2008. Emerging tools for measuring and modeling the in situ activity of soil extracellular enzymes. Soil Biology and Biochemistry **40**:2098-2106.

43. Sinsabaugh, R. L., C. L. Lauber, M. N. Weintraub, B. Ahmed, S. D. Allison, C. Crenshaw, A. R. Contosta, D. Cusack, S. Frey, and M. E. Gallo. 2008. Stoichiometry of soil enzyme activity at global scale. Ecology Letters **11**:1252-1264.

44. Hanson, C. A., S. D. Allison, M. A. Bradford, M. D. Wallenstein, and K. K. Treseder. 2008. Fungal taxa target different carbon sources in forest soil. Ecosystems **11**:1157-1167.

45. Bradford, M. A., C. A. Davies, S. D. Frey, T. R. Maddox, J. M. Melillo, J. E. Mohan, J. F. Reynolds, K. K. Treseder, and M. D. Wallenstein. 2008. Thermal adaptation of soil microbial respiration to elevated temperature. Ecology Letters **11**:1316-1327.

46. Wallenstein, M. D., S. McMahon, and J. Schimel. 2007. Bacterial and fungal community structure in Arctic tundra tussock and shrub soils. FEMS Microbiology Ecology **59**:428-435.

47. Schimel, J., T. C. Balser, and M. Wallenstein. 2007. Microbial stress-response physiology and its implications for ecosystem function. Ecology **88**:1386-1394.

48. Wallenstein, M. D., W. T. Peterjohn, and W. H. Schlesinger. 2006. N fertilization effects on denitrification and N cycling in an aggrading forest. Ecological Applications **16**:2168-2176.

49. Wallenstein, M. D., D. D. Myrold, M. Firestone, and M. Voytek. 2006. Environmental controls on denitrifying communities and denitrification rates: insights from molecular methods. Ecological Applications **16**:2143-2152.

50. Wallenstein, M. D., S. McNulty, I. J. Fernandez, J. Boggs, and W. H. Schlesinger. 2006. Nitrogen fertilization decreases forest soil fungal and bacterial biomass in three long-term experiments. Forest Ecology and Management **222**:459-468.

51. Barrett, J., R. Virginia, D. Hopkins, J. Aislabie, R. Bargagli, J. Bockheim, I. Campbell, W. Lyons, D. Moorhead, and J. Nkem. 2006. Terrestrial ecosystem processes of Victoria Land, Antarctica. Soil Biology and Biochemistry **38**:3019-3034.

52. Wallenstein, M. D. and R. J. Vilgalys. 2005. Quantitative analyses of nitrogen cycling genes in soils. Pedobiologia **49**:665-672.

53. Wallenstein, M. D. 2004. Effects of increased nitrogen deposition on forest soil nitrogen cycling and microbial community structure. Duke University.

54. Schlesinger, W. H., J. S. Pippen, M. D. Wallenstein, D. M. Klepeis, and B. E. Mahall. 2003. Photosynthetic rate of algae under quartz pebbles in the Southern Mojave Desert, California. Ecology **84**:3222-3231.

55. Schlesinger, W. H., J. S. Pippen, M. D. Wallenstein, K. S. Hofmockel, D. M. Klepeis, and B. E. Mahall. 2003. Community composition and photosynthesis by photoautotrophs under quartz pebbles, southern Mojave Desert. Ecology **84**:3222-3231.

56. Barton, A. M. and M. D. Wallenstein. 1997. Effects of invasion of Pinus virginiana on soil properties in serpentine barrens in southeastern Pennsylvania. Journal of the Torrey Botanical Society:297-305.

57. Suseela, V., R. T. Conant, M. D. Wallenstein, and J. S. Dukes. 2011, Effects of soil moisture on the temperature sensitivity of heterotrophic respiration vary seasonally in an old-field climate change experiment. Global Change Biology 55:336-348.

BOOK REVIEWS

1. Wallenstein, M. D., 2007. Modern Soil Microbiology (second Edition): Edited by Jan Dirk van Elsas,

Janet K. Jansson, and Jack T. Trevors. Soil Sci Soc Am J 71, 1947.

ADVISEES

Postdocs

Shawna McMahon (2009-2011)

Claudia Boot (**NSF OPP Postdoctoral Fellowship** 2009-2011; co-advised by Josh Schimel at UCSB)

Colin Bell (2010-)

Akihiro Koyama (2011-)

Graduate Students

Alumni

J. Megan Steinweg (PhD awarded 2011; postdoc at Oak Ridge National Lab 2011-2013; currently Assistant Professor at University of Wisconsin)

Sarah Evans (PhD awarded 2012), **NSF Graduate Research Fellowship** (2009-2012); currently NSF Postdoctoral Fellow; accepted position as Assistant Professor at Kellogg Biological Station, Michigan State University starting 2014).

Caroline Melle (MS 2013)

Current

Jessica Ernakovich (PhD candidate), **DOE Graduate Fellowship** (2009-2012) and **NSF Graduate Research Fellowship** (2009-2014)

Barbara Fricks (PhD candidate), **NSF Biofuels IGERT Fellowship, C2B2-Chevron Graduate Fellowship**.

Jennifer Rocca (PhD candidate)

Laurel Lynch (PhD in progress), **NSF I-WATER IGERT Fellowship**

Carolyn Livensperger (MS candidate), **NSF Graduate Research Fellowship (2012-2015)**

Graduate Committees

Elizabeth Kidner (M.S. Engineering awarded 2007)

William Smith (M.S. awarded 2008)

Brooke Osborne (MS awarded 2012, Graduate Degree Program in Ecology)

Hannah Birge (MS awarded 2013, Graduate Degree Program in Ecology)

Christy Wyckoff (PhD in progress, Microbiology Immunology and Pathology)

Paul Brewer (PhD in progress, Graduate Degree Program in Ecology)

Jennifer Soong (PhD in progress, Graduate Degree Program in Ecology)

Peter Baas (PhD in progress, Odum School of Ecology, University of Georgia)

Courtney Gomola (MS in progress Graduate Degree Program in Ecology)

Samuel Dunn (PhD in progress, Graduate Degree Program in Ecology)

Peter Leipzig-Scott (MS in progress, Graduate Degree Program in Ecology)

Carly Phillips (PhD in progress, Odum School of Ecology, University of Georgia)

Charlotte Aster (PhD in progress, Graduate Degree Program in Ecology)

Scott Fulbright (PhD in progress, Cell and Molecular Biology Program)

SELECTED FIRST-AUTHOR PRESENTATIONS SINCE 2006 (* INDICATES INVITED)

*Wallenstein, M.D. 2013. How will climate change affect the transformation of plant litter into soil organic matter? The surprising role of microbial physiology. Department of Soil and Crop Sciences, Colorado State University.

*Wallenstein, M.D. 2013. We are living in a microbial world. SOGES Biodiversity IGNITE symposium.

*Wallenstein, M.D. 2012. Microbial responses to changing precipitation patterns in grassland ecosystems: Does community composition reveal niche partitioning? University of Texas-Austin, Integrative Biology Departmental Seminar.

*Wallenstein, M.D. 2012. Temperature effects on litter and soil decomposition and soil formation: The surprising role of microbial physiology. University of Wisconsin-Madison, Department of Soil Science Seminar.

*Wallenstein, M.D., J.M. Steinweg, S. Evans. 2011. The surprising role of extracellular enzymes in soil microbial responses to altered precipitation patterns. Ecological Society of America Annual Meeting, Austin, TX.

* Wallenstein, M.D. 2011. Integrating Genomics, Transcriptomics, Proteomics, and Metabolomics into Environmental Enzymology: The Next Frontier or Fool's Gold? Enzymes in the Environment Conference. Bad Neuheim, Germany.

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