Michael N. Weintraub

University of Toledo, michael.weintraub@utoledo.edu
Department of Environmental Sciences 419-530-2585
Mail Stop 604, Toledo OH 43606 www.eeescience.utoledo.edu/Faculty/weintraub

Education:

Ph.D. Ecology, Evolution, and Marine Biology March 2004
University of California, Santa Barbara
Concentration in Terrestrial Ecosystem Ecology / Soil Microbial Ecology

M.A. Ecology, Evolution, and Marine Biology December 1999
University of California, Santa Barbara
Concentration in Terrestrial Ecosystem Ecology / Soil Microbial Ecology

B.A. Biology May, 1994
Bard College, Annandale-on-Hudson, NY

Professional Experience:

May 2018 – Present
University of Toledo Department of Environmental Sciences
Professor
Studying nutrient cycling, decomposition, plant-soil interactions, and soil microbial ecology

May 2021 – Present
Pacific NW National Lab Biological Sciences Division, Earth & Biological Sciences Directorate
Joint Appointment as Earth Scientist

August 2015 – Present
Bowling Green State University Department of Biological Sciences
Adjunct Assistant Professor

August 2012 – Present
University of Kentucky Department of Plant and Soil Sciences
Adjunct Assistant Professor

May 2012 – April 2018
University of Toledo Department of Environmental Sciences
Associate Professor

August 2006 – April 2012
University of Toledo Department of Environmental Sciences
Assistant Professor

April 2004 – June 2006
University of Colorado, Boulder Department of Ecology and Evolutionary Biology
Postdoctoral Research Associate with Dr. Russ Monson and Dr. Steve Schmidt
Studying the controls on soil carbon dynamics in the Rocky Mountains, Colorado

June 2024

June 1996 - March 2004
University of California, Santa Barbara Dept. of Ecology, Evolution, and Marine Biology
MA/PhD Student in Ecology with Dr. Josh Schimel
Studying soil nutrient dynamics in the arctic tundra of Alaska

June 1993-May 1996
Cary Institute of Ecosystem Studies, Millbrook, NY
Research Assistant for Dr. Peter Groffman
Responsible for sampling, data preparation, and a wide variety of chemical and microbial analyses

Honors:

Excellence in Peer Reviewing Award 2024, American Chemical Society Petroleum Research Fund

University of Toledo Excellence in Sponsored Research Award 2023

U. Toledo College of Natural Sciences & Mathematics Excellence in Research Award 2020-2021

President of the Soil Ecology Society 2018-2019

Soil Biology and Biochemistry **John S. Waid Review Award for 2013**
Awarded for 2013 Burns et al. Soil Biology and Biochemistry paper

Arctic Research Consortium of the U.S. **Student Award for Arctic Research Excellence**
2003 Winner in the Interdisciplinary Category
Awarded for 2003 Weintraub and Schimel Ecosystems paper

Bard College **Distinguished Scientist Scholarship** 1990-1994
4 year full tuition scholarship to Bard College

National Merit Scholarship Finalist 1989

Funding:

Sihi D., et al. (2023). A tale of two extremes: Temperature sensitivity of carbon loss from cool and hot soils. DOE-BER January 2024-December 2025. $369,957 ($29,996 to Weintraub/UT).

Martin J., et al. (2023). Watershed Pilot Program. USDA-NRCS. August 2023-July 2028. $18M ($475,910 to Weintraub/UT).

Co-Principal Investigator for the US Department of Energy-Biological and Environmental Research Coastal Observations, Mechanisms, and Predictions Across Systems and Scales-Field, Measurements, and Experiments (COMPASS-FME) multi-institutional research project. October 2020-September 2026. $17.5M ($8,311,058 to UT).

Weintraub MN, DL Moorhead (2020). Why is Arctic tundra soil respiration carbon limited at low temperatures? Pacific Northwest National Laboratory-Environmental Molecular Sciences Laboratory User Proposal #51407. $229,605 (as in-kind support). October 1, 2020-September 30, 2022.

Herndon EL, Kinsman-Costello L, Weintraub MN (2019). Collaborative Research: Biological and geochemical controls on phosphorus bioavailability in arctic tundra. NSF 1914545. $1,192,067 ($284,604 to UT). November 1, 2019 - October 31, 2022.

Weintraub MN, DL Moorhead (2018). What, exactly, inhibits decomposition at low temperature? Pacific Northwest National Laboratory-Environmental Molecular Sciences Laboratory User Proposal #50209. $152,530 (as in-kind support). October 1, 2018-September 30, 2020.

Weintraub MN (2017). University of Toledo Innovations in Teaching Award: Active Learning Classroom for EEES 4250/5250: Soil Ecology. $2,000. Summer-Fall Semesters 2017.

Sullivan PF, Weintraub MN, Sveinbjornsson B (2015). Collaborative Research: Winter snow depth as a driver of microbial activity, nutrient cycling, tree growth and treeline advance in the Arctic. NSF 1503939. $1,473,094 ($580,850 to UT). 9/1/2015-9/30/2020.

Reed SC, Weintraub MN, Belnap J (2014). Assessing the Risk of Nitrogen Deposition to Natural Resources in the Four Corners Region of Colorado and Utah. National Park Service. $41,977. 7/2014-7/2018.

Reed SC, Weintraub MN, Belnap J (2013). Investigating nitrogen deposition effects on biological soil crust stability and biogeochemical cycling in drylands. USGS G13AC00252. $7,581. 7/1/2013-12/31/2014.

Weintraub MN, PF Sullivan, JP Schimel, EB Rastetter, H Steltzer, and MD Wallenstein (2009). Collaborative Research: The Changing Seasonality of Tundra Nutrient Cycling: Implications for Ecosystem and Arctic System Functioning. NSF 0902096. $1,589,555 ($461,684 to UT). 9/1/2009-8/31/2013. This projected hosted a PolarTREC teacher in 2011

Weintraub MN, DL Moorhead, CB Blackwood, JP Schimel, AS Grandy (2009). Collaborative Research: MSB: Microbial control of litter decay at the cellulose-lignin interface. NSF 0918718. $1,186,960 ($631,515 to UT). 9/15/2009-8/31/2014.

Weintraub MN (2009). University of Toledo Course Transformation Fellowship: EEES 1130: Down to Earth: Introduction to Environmental Sciences. $20,200. 6/1/2009-8/23/2009.

Moorhead D, C Czerniak (MN Weintraub Senior Personnel). Inquiry Masters Program for Advancing Content for Teachers (IMPACT). US Dept of Education: Teachers for a Competitive Tomorrow Program. $937,260. 10/1/2008-9/30/2012.

Schimel JP, KF Reardon, MD Wallenstein, MN Weintraub (2007). IPY: Microbial winter survival physiology: a driver on microbial community composition and carbon cycling. NSF 0733074. $904,623 ($30,978 to UT). 9/15/2007-8/31/2011.

Professional Service:

Soil Ecology Society President-Elect 2016-2017, President 2018-2019, Past-President 2020-2022

of the Soil Ecology Society

Member of the Toolik Field Station Steering Committee 2000; 2011-Present

Associate Editor, Biogeosciences August 2015-June 2021

Associate Editor, Arctic, Antarctic, and Alpine Research June 2015-August 2020

Member of the NEON Terrestrial Biogeochemistry Working Group 2017-2018

Chair of the Sulzman Award Committee, American Geophysical Union, Biogeosciences Section 2015-2016, Committee Member 2014

Chair of the Oak Openings Green Ribbon Initiative Science Sub-Committee 2018-2019

Graduate Admissions Coordinator, Univ. of Toledo Dept. of Env. Sciences 2015- 2020

Member of the Advisory Board to the Univ. of Toledo's Plant Science Research Center 2007-2013

Assessment Committee Chair, Univ. of Toledo Department of Environmental Sciences 2014-2015

Computing Committee Chair and Webmaster, UT Dept. of Environmental Sciences 2008-2020

Peer Reviewer for the United States National Science Foundation, National Aeronautics and Space Administration, Departments of Agriculture and Energy, and Geological Survey; the Czech Academy of Sciences; the Autonomous Province of Bolzano in Italy; the Swiss National Science Foundation; and these journals: Arctic Antarctic and Alpine Research, Biogeochemistry, Canadian Journal of Soil Science, Ecology, Ecology Letters, Ecosystems, European Journal of Soil Biology, Geoderma, Global Biogeochemical Cycles, Global Change Biology, Journal of Ecology, Journal of Integrative Plant Biology, Nature, New Phytologist, Oecologia, Oikos, Soil Biology & Biochemistry, and the Soil Science Society of America Journal.

I have served as a **Panelist** for: The US National Science Foundation: Antarctic Organisms and Ecosystems Panel, Sept. 2007; Ecosystem Studies Pre-Proposal Panel: April 2014, March 2015; Bonanza Creek Long Term Ecological Research (LTER) Site review, June 2013; Hubbard Brook LTER Site review, June 2019; and the Dept. of Energy Office of Biological & Environmental Research Terrestrial Ecosystem Sciences Program, May 2013, May 2014, May 2016.

Publications (* = graduate student advisee/committee, § = undergraduate advisee):

For citation statistics see: https://scholar.google.com/citations?user=Jw_gOKQAAAAJ&hl=en

1. Berens MJ, Michaud AB, VanderJeugdt E, Miah I, Sutor FW, Emerson D, Bowden WB, Kinsman-Costello L, Weintraub MN, Herndon EM 2024. Phosphorus Interactions with Iron in Undisturbed and Disturbed Arctic Tundra Ecosystems. Environmental Science & Technology. https://doi.org/10.1021/acs.est.3c09072
2. Ehosioke S, 2024. Geophysical methods reveal the soil architecture and subsurface stratigraphic heterogeneities across land-lake interfaces along Lake Erie. J. Soils Sediments, 24, 2215-2236
3. Hu Y, Deng Q, Kätterer T, Olesen JE, Ying SC, Ochoa-Hueso R, Mueller CW, Weintraub MN, Chen J 2024. Depth-dependent responses of soil organic carbon under nitrogen deposition. Global Change Biology, 30, e17247. https://doi.org/10.1111/gcb.17247
4. Patel KF, Rod KA, Zheng J, Regier P, Machado-Silva F, Bond-Lamberty B, Chen X, Day DJ, Doro KO, Kaufman MH, Kovach M, McDowell N, McKever SA, Megonigal JP, Norris CG, O'Meara T, Peixoto RB, Rich R, Thornton P, Kemner KM, Ward ND, Weintraub MN, Bailey VL 2024. Time to anoxia: Observations and predictions of oxygen drawdown following coastal flood events. Geoderma 444: 116854. https://www.sciencedirect.com/science/article/pii/S0016706124000831
5. Weintraub MN 2023. Constraints on enzyme production at low O_2 and limitations of stoichiometric vector analyses: A commentary on Chen et al. (2022). Soil Ecology Letters https://doi.org/10.1007/s42832-023-0183-5.

6. Emmanuel ED, Lenhart CF, Weintraub MN, Doro KO 2023. Estimating Soil Properties Distribution at a Restored Wetland Using Electromagnetic Imaging and Limited Soil Core Samples. Wetlands 43(5): 39. https://link.springer.com/article/10.1007/s13157-023-01686-3
7. McDowell NG, Ball M, Bond-Lamberty B, Kirwan ML, Krauss KW, Megonigal P, Mencuccini M, Ward ND, Weintraub MN, Bailey V. 2022. Processes and mechanisms of coastal woody-plant mortality. Global Change Biology https://onlinelibrary.wiley.com/doi/10.1111/gcb.16297.
8. Schimel J, Weintraub MN, Moorhead D. 2022. Estimating microbial carbon use efficiency in soil: Isotope-based and enzyme-based methods measure fundamentally different aspects of microbial resource use. Soil Biology and Biochemistry 169, 108677. https://doi.org/10.1016/j.soilbio.2022.108677.
9. Osborne BBB, Roybal CM, Reibold R, *Collier CD, Geiger E, Phillips ML, Weintraub MN, Reed SC. 2022 Biogeochemical and ecosystem properties in three adjacent semiarid grasslands are resistant to nitrogen deposition but sensitive to edaphic variability. Journal of Ecology https://doi.org/10.1111/1365-2745.13896.
10. Fanin N, Mooshammer M, Sauvadet M, Meng C, Alvarez G, Bernard L, Bertrand I, Blagodatskaya E, Bon L, Fontaine S, Niu S, Lashermes G, Maxwell TL, Weintraub MN, Wingate L, Moorhead D, Nottingham AT. 2022. Soil enzymes in response to climate warming: Mechanisms and feedbacks. Functional Ecology http://doi.org/10.1111/1365-2435.14027.
11. Sullivan PFM, Stokes C, *McMillan CK, Weintraub MN. 2020. Labile carbon limits late winter microbial activity near Arctic treeline. Nature Communications 11: 4024. https://doi.org/10.1038/s41467-020-17790-5.
12. Sullivan PFM, Stokes C, *McMillan CK, Weintraub MN. 2020. Labile carbon limits late winter microbial activity near Arctic treeline. bioRxiv: 2020.2004.2024.058198 (Preprint of above Nature Communications paper).
13. *Susser JR, Pelini SL, Weintraub MN. 2020. Can We Reduce Phosphorus Runoff from Agricultural Fields by Stimulating Soil Biota? Journal of Environmental Quality https://doi.org/10.1002/jeq2.20104.
14. *Maran AM, Weintraub MN, Pelini SL. 2020. Does stimulating ground arthropods enhance nutrient cycling in conventionally managed corn fields? Agriculture, Ecosystems & Environment 297:106934. https://doi.org/10.1016/j.agee.2020.106934
15. Livensperger C, Steltzer H, Darrouzet-Nardi A, Sullivan PF, Wallenstein M, Weintraub MN. 2019. Experimentally warmer and drier conditions in an Arctic plant community reveal microclimatic controls on senescence. Ecosphere 10(4): eo2677 https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.2677
16. Darrouzet-Nardi A, Steltzer H, Sullivan PF, Segal A, Koltz AM, Livensperger C, Schimel JP, Weintraub MN. 2019. Limited effects of early snowmelt on plants, decomposers, and soil nutrients in Arctic tundra soils. Ecology and Evolution 9:1820-1844 http://dx.doi.org/10.1002/ece3.4870

17. Moorhead DL, Weintraub MN. 2018. The evolution and application of the reverse Michaelis-Menten equation. Soil Biology and Biochemistry 125: 261-262. https://doi.org/10.1016/j.soilbio.2018.07.021
18. Dick RP, Li X, Saxena J, Kandeler E, Jones TG, Poll C, Freeman C, Weintraub MN, *Esseili K, Deng S, Dick LK. 2018. Cross-laboratory Comparison of Fluorimetric Microplate and Colorimetric Bench-scale Soil Enzyme Assays. Soil Biology and Biochemistry 121: 240-248. https://doi.org/10.1016/j.soilbio.2017.12.020
19. McLaren JRA, Darrouzet-Nardi A, Weintraub MN, Gough L, 2017. Seasonal patterns of soil nitrogen availability in moist acidic tundra. Arctic Science doi:10.1139/AS-2017-0014
20. Deng S, Dick RP, Freeman C, Kandeler E, Weintraub MN 2017. Comparison and Standardization of Soil Enzyme Assay for Meaningful Data Interpretation. Journal of Microbiological Methods 133: 32-34. doi:10.1016/j.mimet.2016.12.013
21. MacDonald GK, Jarvie HP, Withers PAJ, Doody DG, Keeler BL, Haygarth PM, Johnson LT, McDowell RW, Miyittah MK, Powers SM, Sharpley AN, Shen J, Smith DR, Weintraub MN, Zhang T 2016. Guiding phosphorus stewardship for multiple ecosystem services. Ecosystem Health and Sustainability. doi:10.1002/ehs2.1251
22. McDaniel MD, Grandy AS, Tiemann LK, Weintraub MN 2016. Eleven years of crop diversification alters decomposition dynamics of litter mixtures incubated with soil. Ecosphere doi:0.1002/ecs2.1426
23. Livensperger C, Steltzer H, Darrouzet-Nardi A, Sullivan PF, Wallenstein M, Weintraub MN 2016. Earlier snowmelt and warming lead to earlier but not necessarily more plant growth. Aob Plants doi: 10.1093/aobpla/plw021
An AoB Plants Editor's Choice
24. *Rinkes ZL, Bertrand I, Amin BAZ, Grandy AS, Wickings K, Weintraub MN 2016. Nitrogen alters microbial enzyme dynamics but not lignin chemistry during maize decomposition. Biogeochemistry doi:10.1007/s10533-016-0201-0
25. Moorhead, DL, Sinsabaugh RL, Hill BH, Weintraub MN. 2015. Vector analysis of ecoenzyme activities reveal constraints on coupled C, N and P dynamics. Soil Biology and Biochemistry 93: 1-7. doi:10.1016/j.soilbio.2015.10.019
26. Rowe H, Withers PAJ, Baas P, Chan NL, Doody DG, Holiman J, Jacobs B, Li H, MacDonald GK, McDowell RW, Sharpley AN, Shen J, Taheri W, Wallenstein M, Weintraub MN 2015. Integrating legacy soil phosphorus into sustainable nutrient management strategies for future food, bioenergy and water security. Nutrient Cycling in Agroecosystems doi:10.1007/s10705-015-9726-1
27. Melle CJ, Wallenstein MD, Darrouzet-Nardi A, Weintraub MN 2015. Microbial activity is not always limited by nitrogen in Arctic tundra soils. Soil Biology & Biochemistry 90: 52-61; doi:10.1016/j.soilbio.2015.07.023
28. *Slaughter LC, Weintraub MN, McCulley RL 2015. Seasonal Effects Stronger than Three-Year Climate Manipulation on Grassland Soil Microbial Community. Soil Science Society of America Journal. doi:10.2136/sssaj2014.10.0431
Selected for promotion by the publisher

29. McDaniel MD, Grandy AS, Tiemann LK, Weintraub MN 2014. Crop rotation complexity regulates the decomposition of high and low quality residues. Soil Biology & Biochemistry doi: 10.1016/j.soilbio.2014.07.027.
30. Weintraub MN, 2014. Citation: Steltzer Receives 2013 Sulzman Award for Excellence in Education and Mentoring. Eos, Transactions American Geophysical Union 95, 250-250.
31. Mainali KP, Heckathorn SA, Wang D, Weintraub MN, Frantz JM, Hamilton III EW 2014. Impact of a short-term heat event on C and N relations in shoots vs. roots of the stress-tolerant C4 grass, *Andropogon gerardii*. Journal of Plant Physiology; DOI: 10.1016/j.jplph.2014.04.006
32. Darrouzet-Nardi A, Weintraub MN 2014. Evidence for spatially inaccessible labile N from a comparison of soil core extractions and soil pore water lysimetry. Soil Biology and Biochemistry 73: 22-32; DOI: 10.1016/j.soilbio.2014.02.010
33. Bach CE, Warnock DD, Van Horn DJ, Weintraub MN, Sinsabaugh RL, Allison SD, German DP 2013. Phenol oxidase and peroxidase assays in soil: different substrates give different answers. Soil Biology and Biochemistry DOI: 10.1016/j.soilbio.2013.08.022
34. Arnosti C, Bell C, Moorhead M, Sinsabaugh RL, AD Steen, Stromberger M, Wallenstein MD, Weintraub MN 2013. Extracellular enzymes in terrestrial, freshwater, and marine environments: System variability and common needs. Biogeochemistry DOI: 10.1007/s10533-013-9906-5
35. *Rinkes ZL, Sinsabaugh RL, Moorhead DL, Grandy AS, Weintraub MN 2013. Field and lab conditions alter microbial enzyme and biomass dynamics driving decomposition of the same leaf litter. Frontiers in Microbiology 4:260. DOI: 10.3389/fmicb.2013.00260
36. Moorhead, DL, *Rinkes ZL, Sinsabaugh RL, Weintraub MN 2013. Dynamic relationships between microbial biomass, respiration, inorganic nutrients and enzyme activities: informing enzyme based decomposition models. Frontiers in Microbiology 4:223. DOI: 10.3389/fmicb.2013.00223
37. Moorhead DL, Lashermes G, Sinsabaugh RL, Weintraub MN 2013. Calculating co-metabolic costs of lignin decay and their impacts on carbon use efficiency. Soil Biology and Biochemistry DOI: 10.1016/j.soilbio.2013.06.016
38. *Rinkes ZL, DeForest JL, Grandy AS, Moorhead DL, Weintraub MN 2013. Interactions between leaf litter quality, particle size, and microbial community during the earliest stage of decay. Biogeochemistry DOI: 10.1007/s10533-013-9872-y
39. Burns RG, DeForest JL, Marxsen JR, Sinsabaugh RL, Stromberger ME, Wallenstein MD, Weintraub MN, Zoppini A 2013. Soil enzymes in a changing environment: Current knowledge and future directions. Soil Biology and Biochemistry 58, 216-234
**Awarded the 2013 John Waid Review of the Year prize by Soil Biology & Biochemistry*
40. Darrouzet-Nardi A, [§]Ladd MP, Weintraub MN 2012. Fluorescent microplate analysis of amino acids and other primary amines in soils. Soil Biology and Biochemistry DOI: 10.1016/j.soilbio.2012.07.017
41. German DP, Weintraub MN, Grandy AS, Lauber CL, *Rinkes ZL, Allison SD 2012. Response to Steen and Ziervogel's comment on "Optimization of hydrolytic and oxidative enzyme methods for ecosystem studies." Soil Biology and Biochemistry 48: 198-199

42. German DP, Weintraub MN, Grandy AS, Lauber CL, *Rinkes ZL, Allison SD 2012. Corrigendum to "Optimization of hydrolytic and oxidative enzyme methods for ecosystem studies." Soil Biology and Biochemistry 44: 151
43. §Hawkins J, Weintraub MN 2011. The effect of trails on soil in the oak openings of northwest Ohio. Natural Areas Journal 31: 391-399
44. *Xu J, Chen J, Brosofske K, Li Q, Weintraub MN, Henderson R, Wilske B, John R, Jensen R, Li H, Shao C 2011. Multiple year summer soil respiration variability in harvested forests of the Missouri Ozarks: relationships with precipitation and NDVI. Ecosystems DOI: 10.1007/s10021-011-9482-2
45. German DP, Weintraub MN, Grandy AS, Lauber CL, *Rinkes ZL, Allison SD 2011. Optimization of hydrolytic and oxidative enzyme methods for ecosystem studies. Soil Biology and Biochemistry 43: 1387-1397
46. *Rinkes ZL, Weintraub MN, DeForest JL, Moorhead DL 2011. Microbial substrate preference and community dynamics during decomposition of *Acer saccharum*. Fungal Ecology 4: 396-407, doi:10.1016/j.funeco.2011.01.004
47. Burke DJ, Weintraub MN, Hewins CR, Kalisz S 2011. Relationship between soil enzyme activities, nutrient cycling and soil fungal communities in a northern hardwood forest. Soil Biology and Biochemistry DOI: 10.1016/j.soilbio.2010.12.014
48. Weintraub MN 2011. Biological P cycling in arctic and alpine soils. Pages 295-316 *in* E.K. Bünemann et al. (eds.), Phosphorus in Action, Soil Biology 26. Springer-Verlag, Berlin, Heidelberg. DOI 10.1007/978-3-642-15271-9_12
49. Allison SD, Weintraub MN, Gartner TB, Waldrop MP 2010. Evolutionary-economic principles as regulators of soil enzyme production and ecosystem function. Pages 229-243 *in* Shukla GC & Varma A (Eds) Soil Enzymes. Springer-Verlag, New York. DOI 10.1007/978-3-642-14225-3_12
50. Lipson DA, Monson RK, Schmidt SK, Weintraub MN 2009. The trade-off between growth rate and yield in microbial communities and its consequences for soil respiration. Biogeochemistry 95:23–35
51. Sinsabaugh RL, Lauber CL, Weintraub MN, Ahmed B, Allison SD, Crenshaw C, Contosta AR, Cusack D, Frey S, Gallo ME, Gartner TB, Hobbie SE, Holland K, Keeler BL, Powers JS, Stursova M, Vesbach C, Waldrop MP, Wallenstein MD, Zak DR, Zeglin L 2008. Stoichiometry of soil enzyme activity at global scale. Ecology Letters 11: 1252–1264
52. Nemergut DR, Townsend AR, Sattin SR, Freeman K, Fierer N, Neff JC, Bowman WD, Schadt CW, Weintraub MN, Schmidt SK 2008. The effects of chronic nitrogen fertilization on alpine tundra soil microbial communities: implications for carbon and nitrogen cycling. Environmental Microbiology 10(11): 3093–3105
53. Schmidt SK, Reed SC, Nemergut DR, Grandy S, Costello EK, Cleveland CC, Weintraub MN, Meyer AF, Martin AM, Neff J 2008. The earliest stages of ecosystem succession in high-elevation (5000 metres above sea level), recently deglaciated soils. Proceedings of the Royal Society B: Biological Sciences 275(1653): 2793-2802
54. Wallenstein MD, Weintraub MN 2008. Emerging tools for measuring and modeling the in-situ activity of soil extracellular enzymes. Soil Biology and Biochemistry 40: 2098–2106

55. Weintraub MN, Scott-Denton LE, Schmidt SK, Monson RK 2007. The effects of tree rhizodeposition on soil exoenzyme activity, dissolved organic carbon, and nutrient availability in a subalpine forest ecosystem. Oecologia DOI: 10.1007/s00442-007-0804-1.
56. Grandy AS, Neff JC, Weintraub MN 2007. Carbon Structure and Enzyme Activities in Alpine and Forest Ecosystems. Soil Biology and Biochemistry DOI: 10.1016/j.soilbio.2007.05.009
57. Schmidt SK, Costello EK, Nemergut DR, Cleveland CC, Reed SC, Weintraub MN, Meyer AF, Martin AM 2007. Biogeochemical consequences of microbial turnover and seasonal succession in soil. Ecology 88(6): 1379-1385.
58. Allison SD, Gartner TB, Holland K, Weintraub MN, Sinsabaugh RL 2007. Soil enzymes: linking proteomics and ecological process. In: Hurst CJ, Crawford RL, Garland JL, Lipson DA, Mills AL, Stetzenbach LD (eds) Manual of Environmental Microbiology. 3rd Edition. American Society of Microbiology Press, Washington D.C. Pages 704–711.
59. Monson RK, Burns SP, Williams MW, Delany AC, Weintraub MN, Lipson DA 2006. The contribution of beneath-snow soil respiration to total ecosystem respiration in a high-elevation, subalpine forest. Global Biogeochemical Cycles 20: GB3030, doi:10.1029/2005GB002684.
60. Nemergut DR, Costello EK, Meyer AF, Pescador MY, Weintraub MN, Schmidt SK 2005. Structure and function of alpine and arctic soil microbial communities. Research in Microbiology 156: 775–784.
61. Weintraub MN, Schimel JP 2005. Nitrogen Cycling and the Spread of Shrubs Control Changes in the Carbon Balance of Arctic Tundra Ecosystems. Bioscience 55(5): 408-415.
62. Weintraub MN, Schimel JP 2005. Seasonal protein dynamics in Alaskan Arctic tundra soils. Soil Biology and Biochemistry 37: 1469-1475.
63. Weintraub MN, Schimel JP 2005. Seasonal dynamics of amino acids and other nutrients in Arctic tundra soils. Biogeochemistry 73: 359-380.
64. Doyle A, Weintraub MN, Schimel JP 2004. Persulfate digestion and colorimetric analysis of carbon and nitrogen in soil extracts. Soil Science Society of America Journal 68: 669-676.
65. Weintraub MN, Schimel JP 2003. Interactions between carbon and nitrogen mineralization and soil organic matter chemistry in Arctic tundra soils. Ecosystems 6: 129-143.
66. Schimel JP, Weintraub MN 2003. The implications of exoenzyme activity on microbial carbon and nitrogen limitation in soil: a theoretical model. Soil Biology and Biochemistry 35: 1-15.

Teaching Experience:

Soil Ecology: an upper-division/graduate course in soil ecology
Spring 2007 – Present
Department of Environmental Sciences
University of Toledo

Soil Ecology Lab: an upper-division/graduate course in soil ecology
Fall 2013 – Present
Department of Environmental Sciences
University of Toledo

Writing Science: **an upper-division/graduate seminar on the principles of effective scientific writing**
Spring 2015 – Spring 2020
Department of Environmental Sciences
University of Toledo

Escape from the Ivory Tower: **an upper-division/graduate course on science outreach & communication**
Spring 2014 – Spring 2020
Department of Environmental Sciences
University of Toledo

Climate Change: **a lower division Distance Learning (entirely online) course on climate change science**
Spring 2008 – Spring 2020
Department of Environmental Sciences
University of Toledo

Analytical Methods: **an upper division and graduate course on research methods**
Fall 2016 – Spring 2019
Department of Environmental Sciences
University of Toledo

Down to Earth: **Introduction to Environmental Sciences for non majors**
Fall 2008 – Spring 2014
Department of Environmental Sciences
University of Toledo
**I led a pedagogical transformation of this course in 2009 funded by a grant from U. Toledo*

Biodiversity Laboratory: **an Introduction to Biology Laboratory**
Lab Coordinator Fall 2007 – Spring 2012
Department of Environmental Sciences
University of Toledo

Environmental Problems Laboratory: **an Introduction to Environmental Sciences Laboratory**
Lab Coordinator Fall 2011 – Spring 2012
Department of Environmental Sciences
University of Toledo

Principles of Ecology Laboratory: **an introduction to ecology for Biology majors**
Lab Coordinator Spring Semester 2004 – responsible for developing and implementing lab syllabus and overseeing the teaching assistants
Department of Ecology and Evolutionary Biology
University of Colorado, Boulder

Ecosystem Processes: **an upper division class for Ecology majors**
Teaching Assistant for Dr. Josh Schimel, Spring Quarter 1998
Department of Ecology, Evolution, and Marine Biology

University of California, Santa Barbara

The Biological Environment: an introduction to ecology for Environmental Studies majors
Teaching Assistant for Dr. Josh Schimel, Winter Quarter 1996-1997
Department of Environmental Studies
University of California, Santa Barbara

K-12 Outreach: Developed the Interactive Model of Leaf Decomposition, IMOLD, http://imold.utoledo.edu/
The goal of this project is to explain leaf decomposition and how it relates to the Earth's C cycle and climate to high school and college students. This website contains a series of animated lessons about decomposition, an interactive model that lets you predict how different types of leaves will decompose in different climates, and classroom activities about decomposition for teachers.

Susan Steiner, a science teacher from Murphy High School in Murphy, North Carolina collaborated on IMOLD's design while working with me in 2012 through the National Science Foundation's PolarTREC program.

Professional Development:

- Participated in a week-long Course Design Institute at the University of Toledo in July, 2015 to learn how to better design pedagogically sound classes
- In May 2011 I received NASA GLOBE Program training on teaching the C Carbon to K-12 audiences. I am now a certified GLOBE C Cycle trainer, and I am using the pedagogical methods learned through GLOBE in teaching and outreach.

Graduate Students and Postdocs Supervised

All past students successfully completed their degrees

1. Erin Hammer (MS; Co-advised with Daryl Moorhead) 2006-2008
2. Zachary Rinkes (PhD) 2007- 2014
3. Elizabeth Pisarczyk (MS; Co-advised with Daryl Moorhead) 2007-2009
4. Michael Elk (MS) 2008-2010
5. Danielle Kurek (MS) 2008-2010
6. Anthony Darrouzet-Nardi (Postdoc) 2009-2013
7. Heather Thoman (MS) 2012-2014
8. Chris Collier (MS) 2013-2015
9. Kawthar Esseili (MS) 2013-2016
10. Jessica Susser (MS) August 2015-2018
11. Ruth Whittington (MS) 2017-2019
12. Cameron McMillan (MS, PhD) 2014-2023 (PhD Fall 2023)
13. Donnie Day (PhD) 2020-Present
14. Imtiaz Miah (PhD) 2021-Present
15. Leticia Sandoval (MS) 2022-Present
16. Roberta Bittencourt-Peixoto (Postdoc) 2022-Present
17. Fausto Machado da Silva (Postdoc) 2022-Present
18. Chloe Cash (PhD) 2022-Present

Invited Conference Presentations (speaker in bold):

1. **Weintraub MN** et al. (2023). Integrating ecological and hydrological observations, experiments, molecular analyses, and multi-scale modeling to improve our predictive understanding of the terrestrial-aquatic interface. Abstract B31D-04 presented at Fall Meeting of the American Geophysical Union, San Francisco CA 11-15 December 2023.
2. **Bailey VL**, Patel K, Rod K, Weintraub MN, et al. (2023). Biogeochemical Properties and Processes Across Contrasting Terrestrial-Aquatic Interfaces. Abstract B12B-03 presented at Fall Meeting of the American Geophysical Union, San Francisco CA 11-15 December 2023.
3. MacDonald GK, Jarvie HP, Withers PJA, Doody DG, Keeler BL, **Weintraub MN** (2017). The phosphorus-ecosystem services cascade. Abstract OOS 42-10 Presented at the The Ecological Society of America 102nd Annual Meeting, 6-11 August 2017.
4. **Weintraub MN** (2016). Chair, Symposium IX: Methods: Microplate vs. Bench Enzyme Assays. Enzymes in the Environment, Bangor UK 24-28 July 2016.
5. **Weintraub MN** (2015). Future Directions in Soil Ecology. Invited Panelist at the Biennial Meeting of the Soil Ecology Society, Colorado Springs, CO, 9-12 June 2015.
6. **Weintraub MN**, Rinkes ZL, Grandy AS, Wickings K, Bertrand I (2014). Does elevated N make lignin more recalcitrant? Abstract B22C-07 presented at the 2014 Fall Meeting, AGU, San Francisco CA, 15-19 Dec. 2014.
7. **Weintraub MN** (2013). Extracellular Enzymes in the rhizosphere: who is producing them and why. Abstract SYMP 11-2 Presented at Ecological Society of America 98th Annual Meeting, Minneapolis, MN, 4-9 August 2013.
8. **Weintraub MN**, Steltzer H, Sullivan PF, Darrouzet-Nardi A, Schimel JP, Wallenstein MD, Livensperger C, Segal AD (2012). Interactions between spring temperatures and snow cover alter plant-soil nutrient feedbacks in moist acidic arctic tundra. Abstract B23J-07 Presented at the 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
9. **Weintraub MN**, Steltzer H, Sullivan PF, Schimel JP, Wallenstein MD, Darrouzet-Nardi A, Segal AD (2012). The influence of spring temperatures and snow depth on arctic tundra plant growth and soil nutrient dynamics. Abstract OOS 4-9 presented at The Ecological Society of America 97th Annual Meeting, Program and Abstracts.
10. **Weintraub MN** (2012). Future directions in Arctic research: Science support needs. Toolik Field Station Science Vision Workshop, August 2-4 2012, Portland OR.
11. **Steltzer H**, Weintraub MN, Sullivan PF, Wallenstein MD, Schimel JP, Darrouzet-Nardi A, Shory R, Livensperger C, Melle C, Segal AD, Daly K, Tsosie T. (2011) Seasonal greening of an Arctic ecosystem in response to early snowmelt and climate warming: do plant community responses differ from species responses? (Invited). Abstract B52B-01 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
12. **Weintraub MN** (2011). Invited Discussion Panelist on Enzyme Methods, "-Omics," and Activities. Enzymes in the Environment: Activity, Ecology, and Applications Conference, Bad Neuheim, Germany, July 17, 2011.

13. **Weintraub MN** (2011). The Impacts of Climate Change on Arctic Ecosystems. Keynote Address at the 2011 OhioView Students and Teachers Exploring Local Landscapes to Interpret the Earth from Space Conference, Perrysburg OH. April 12, 2011.
14. **Weintraub MN** (2010). Arctic Climate Change Experiments: Challenges & Recommendations. Workshop on Climate Change Experiments in High Latitude Ecosystems. International Arctic Research Center, University of Alaska, Fairbanks. October 13-14, 2010.
15. **Weintraub MN** (2010). Scaling from microbes to ecosystems. Symposium on Constraints on organic matter decomposition - from molecules to models. Swedish University of Agricultural Sciences, Uppsala Sweden. April 19-23, 2010.
16. **Weintraub MN** (2010). Using microbial exoenzymes to determine patterns of soil microbial carbon and nutrient acquisition in soils. RaiseBio Symposium on Microbial contaminant degradation at biogeochemical interfaces, Helmholtz Center for Environmental Research UFZ, Leipzig, Germany. March 2nd - 4th, 2010.
17. **Weintraub MN** (2009)**.** Creation of decomposition models that include different microbial groups and enzymes and application of modeling approaches to link microbial community composition to ecological processes. Ecological Society of America 94th Annual Meeting, Program and Abstracts.
18. **Weintraub MN**, Schmidt SK, Monson RK (2006). The Effects of Climate and Tree Rhizodeposition on Exoenzyme Activity, Organic Matter Decomposition, and Soil Respiration in a Subalpine Forest Ecosystem. *Eos Trans*. American Geophysical Union, 87(36), Jt. Assem. Suppl., Abstract B53A-05.
19. **Weintraub MN**, Schimel JP (2003). Interactions between carbon and nitrogen mineralization and soil organic matter chemistry in Arctic tundra soils. Seventh Annual Arctic Forum of the Arctic Research Consortium of the United States Program and Abstracts.
20. **Weintraub MN**, Schimel JP (2002). Interactions between carbon and nitrogen mineralization and soil organic matter chemistry in Arctic tundra soils. American Geophysical Union 83(47), Fall Meet. Suppl., Abstract B51C-03, 2002.

Invited Departmental Seminars:

1. Fall 2023 Bowling Green State University Department of Biological Sciences
2. Summer 2023 Old Woman Creek National Estuarine Research Reserve Open House Talk
3. Spring 2023 Old Woman Creek National Estuarine Research Reserve Science Friday Talk
4. Spring 2020 Ohio University Department of Environmental and Plant Biology
5. Spring 2019 Environmental Molecular Sciences Laboratory, Pacific Northwest National Lab
6. Spring 2018 Kent State University Department of Biological Sciences
7. Fall 2016 Department of Land, Air, and Water Resources, University of California Davis
8. Spring 2014 Stockbridge School of Agriculture, University of Massachusetts
9. Spring 2014 Department of Biology, Purdue University
10. Fall 2013 USGS Canyonlands Research Station, Moab UT
11. Summer 2012 Toolik Field Station, Alaska

12. Spring 2012 University of Northern Arizona, School of Forestry
13. Spring 2012 University of Alaska Fairbanks, Institute of Arctic Biology
14. Fall 2011 University of Kentucky, Lexington, Department of Plant and Soil Sciences
15. Fall 2011 Cary Institute of Ecosystem Studies
16. Fall 2010 Oak Ridge National Laboratory, Environmental Sciences Division
17. Spring 2010 University of Maryland Center for Environmental Science Appalachian Laboratory
18. Spring 2010 Eastern Michigan University Department of Biology
19. Spring 2010 Helmholtz Center for Environmental Research UFZ Department of Soil Ecology, Halle, Germany.
20. Fall 2009 University of Louisville Department of Biology
21. Fall 2009 Michigan State University Department of Crop and Soil Science
22. Spring 2009 French National Agricultural Research Institute (INRA FARE), Reims, France
23. Fall 2008 Case Western Reserve Department of Biology
24. Fall 2008 Cleveland State University Department of Biological, Geological and Environmental Sciences
25. Spring 2008 Ohio University Department of Environmental and Plant Biology
26. Spring 2008 West Virginia University Department of Biology
27. Spring 2008 Ohio State University Department of Evolution, Ecology, and Organismal Biology
28. Spring 2007 Kent State University Department of Biological Sciences
29. Fall 2006 Bowling Green State University Department of Biological Sciences
30. Spring 2006 The University of Vermont Department of Biology

Submitted Presentations (Presenter in bold; * = University of Toledo graduate student, § = University of Toledo undergraduate)**:**

1. **Ward, ND**, Rich, R, Pennington, SC, Regier, P, Kovach, M, Machado-Silva, F, Peixoto, RB, Wilson, S, Adebayo, M and Bond-Lamberty, BP (2024) An Integrative Approach for High Resolution Monitoring of the Interactions Among Water, Soil, and Plants that Establish Gradients in Coastal Ecosystem Function, AGU 2024 Spring Meeting
2. **Bidas, K,** Rooney, E, VanderJeugdt, E, Miah, I, Kinsman-Costello, LE, Weintraub, M, Zhao, Q and Herndon, E (2024) Organo-mineral Interactions of Manganese and Iron Oxides in Arctic Tundra. 2024 Goldschmidt Conference
3. **Stetten, L**, Boyanov, MI, O'Loughlin, EJ, Peixoto, RB, Day, D, Hopple, AM, Kovach, M, Machado-Silva, F, Myers-Pigg, AN and Otenburg, O (2024) From Molecular-to Field-Scale Investigation of Iron Biogeochemistry in Marine and Freshwater Coastal Environments, 2024 Goldschmidt Conference
4. **VanderJeugdt, E**, Kinsman-Costello, LE, Rooney, E, Bidas, K**,** Miah, I, Herndon, E Weintraub, M (2024). Does this redox boundary make me look red? How soil moisture

impacts iron minerology and P availability through arctic soil profiles. 2024 Goldschmidt Conference

5. **Zheng, J**, Patel, K, Megonigal, P, Ward, ND, Weintraub, M and Bailey, V (2024) AquaMEND: Reconciling multiple impacts of salinization on soil carbon biogeochemistry, 2024 Goldschmidt Conference
6. **Bailey, VL**, Patel, KF, Rod, KA, Weintraub, MN, Megonigal, J, Bond-Lamberty, BP, Chen, X, Day, D, Doro, KO and Kemner, KM (2023). Biogeochemical Properties and Processes Across Contrasting Terrestrial-Aquatic Interfaces. Fall Meeting December 2023, AGU.
7. **Cory, A**, Zheng, J, Cyle, KT, Davidson, EA, Weintraub, MN, Megonigal, J, Cardon, ZG, Thomas, SM, Ramsey, L and Dale, H (2023) A Novel Experimental Approach to Capturing Heterogeneity of Soil Redox Reactions. Fall Meeting December 2023, AGU
8. **Ding, J**, McDowell, NG, Koven, C, Fang, Y, Kirwan, ML, Bailey, VL, Morris, K, Pennington, SC, Ward, ND and Myers-Pigg, A (2023) Understanding and modeling the mechanisms of coastal vegetation dynamics and ecosystem impacts under changing water levels. Fall Meeting December 2023, AGU
9. **Kemner, KM**, Stetten, L, Boyanov, M, O'Loughlin, EJ, Sholto-Douglas, D, Sterbinsky, G, Kastengren, A, Finfrock, Z, Michalska, KM and Lavens, A (2023) X-ray Imaging Across Scales to Understand Environmental System Function. Fall Meeting December 2023, AGU
10. **Li, B**, Ding, J, Zheng, J, Regier, P, Ward, ND, O'Meara, T, Pennington, SC, Megonigal, P, Weintraub, MN and McDowell, NG (2023) Unraveling Coastal Biogeochemistry: Understanding the Impact of Saltwater Inundation through Integrated Modeling Approaches. Fall Meeting December 2023, AGU
11. **Machado-Silva, F**, Weintraub, MN, Ward, ND, Doro, KO, Regier, P, Ehosioke, S, Thomas, SBP, Peixoto, RB, Sandoval, L and Forbrich, I (2023) Groundwater redox dynamics in the terrestrial aquatic interface of Lake Erie coastal zones. Fall Meeting December 2023, AGU
12. **McMillan, CK**, Weintraub, MN and Patel, KF (2023) Warming at below-freezing temperatures alters Arctic soil respiration and carbon chemistry after thaw. Fall Meeting December 2023, AGU
13. **Patel, KF**, Rod, KA, Zheng, J, Kemner, KM, Megonigal, P, Ward, ND, Weintraub, MN and Bailey, VL (2023) Biogeochemical constraints on redox dynamics in coastal soils. Fall Meeting December 2023, AGU
14. **VanderJeugdt, E**, Kinsman-Costello, LE, Herndon, E, Rooney, E, Bidas, K, Weintraub, MN and Miah, I (2023) Does this redox boundary make me look red? How soil moisture impacts iron minerology and P availability through arctic soil profiles. Fall Meeting December 2023, AGU
15. **Bidas, K**, Rooney, E, Kinsman-Costello, L, Weintraub, MN, Zhao, Q and Herndon, EM (2023) Interactions between Organic Carbon and Synthetic Manganese and Iron Oxides in Arctic Tundra. ASA-CSSA-SSSA November 2023.
16. **Herndon, EM**, Rooney, E, Berens, MJ, Barczok, M, Smith, C, Miah, I, VanderJeugdt, E, Kinsman-Costello, L and Weintraub, MN (2023) Influence of Soil Structure on Redox Dynamics in Variably Inundated Environments, ASA-CSSA-SSSA November 2023.
17. **Rooney, E**, VanderJeugdt, E, Avasarala, S, Miah, I, Berens, MJ, Kinsman-Costello, L, Weintraub, MN and Herndon, EM (2023) Decoupling of Redox Processes with Soil Saturation in Arctic Tundra, ASA-CSSA-SSSA

18. **Wilson, SJ**, Megonigal, P, Rich, R, Regier, P, Myers-Pigg, A, Pennington, SC, Hopple, A, Bond-Lamberty, BP, Weintraub, MN, Ward, ND, Kemner, KM, Bailey, VL (2023). Biogeochemistry and function in soils as they transition from coastal forest to wetland. Coastal & Estuarine Research Federation Biennial Conference 12-16 Nov. 2023, Portland OR.
19. **Stetten, L**, Boyanov, MI, O'Loughlin, EJ, Bailey, V, Day, D, Homolka, KK, Hopple, AM, Kovach, M, Peixoto, RB and Machado-Silva, F (2023) Iron Redox Dynamics Across Coastal Terrestrial-Aquatic Interfaces: Field Study in The Great Lakes and Chesapeake Bay regions, Goldschmidt Conference 2023
20. **Bailey, VL,** Megonigal, P, Chen, X, Weintraub, MN, Thornton, PE, Bond-Lamberty, BP, Kemner, KM, O'meara, T, Ward, ND, Bridgeman, TB (2022). Coastal Observations, Mechanisms, and Predictions Across Systems and Scales–Field, Measurements, and Experiments (COMPASS-FME). Fall Meeting 2022, AGU.
21. **Bargar, J**, Bowman, MM, Chadwick, D, Chen, X, Corilo, YE, Cotrufo, MF, Doro, KO, Falco, N, Griffiths, N, King, A, Lavallee, JM, Sihi, D, Smith, ML, Weintraub, MN, Weintraub-Leff, SR, Wu, Y (2022). Molecular Observation Networks for Enhancing Ecosystem Modeling. Fall Meeting 2022, AGU.
22. **Ehosioke, S**, Ward, ND, Bailey, VL, Weintraub, MN, Doro, KO (2022). Spatial Variation of Soil Hydraulic Properties Across Coastal Terrestrial-Aquatic Interfaces Along Lake Erie. Fall Meeting 2022, AGU.
23. **Emmanuel, ED**, Lenhart, CF, Weintraub, MN, Doro, KO (2022). "Estimating soil properties distribution at a restored wetland using electromagnetic imaging and limited soil core samples."
24. ***Mcmillan, CK**, Weintraub, MN, Chu, RK, Patel, KF (2022). Identification of decomposition thresholds between-10 and 10° C, and potential mechanisms. Fall Meeting 2022, AGU.
25. ***Miah, I**, Rooney, E, Vanderjeugdt, E, Weintraub, MN, Kinsman-Costello, LE, Herndon, E (2022). How soil microbial properties change in the transitional layer between organic and mineral soil in the Arctic tundra. Fall Meeting 2022, AGU.
26. **Patel, KF**, Rod, KA, Norris, C, Kaufman, M, Megonigal, P, Weintraub, MN, Bailey, VL (2022). Time to Anoxia: Oxygen Consumption in Soils Varies Across a Coastal Gradient. Fall Meeting 2022, AGU.
27. **Peixoto, RB**, Hopkins, K, Cash, C, Pennington, S, Silva, FM, Sandoval, L, *Day, D, Patel, KF, Morris, K, Ward, ND, Bond-Lamberty, BP, Megonigal, JP, McDowell, N, Kemner, KM, Doro, KO, Weintraub, MN, Bailey, VL, *Thomas, SP (2022). Opposite gradients of soil greenhouse gas fluxes across the terrestrial-aquatic interface. Fall Meeting 2022, AGU.
28. **Rich, R**, Kovach, M, Mueller, P, Nolte, S, O'meara, T, Pennington, SC, Regier, P, Thomsen, S, Bailey, VL, Bond-Lamberty, BP, Chen, X, Jensen, K, Noyce, GL, Ward, ND, Weintraub, MN, Megonigal JP (2022). Applying Sensor Networks and Design Interconnectivity to Further Understanding and Modeling of Coastal Ecosystem Response to Global Change: A Journey into Developing Design Interconnectivity Among Six Coastal Experiments. Fall Meeting 2022, AGU.
29. **Rooney, E**, Avasarala, S, Vanderjeugdt, E, *Miah, I, Kinsman-Costello, LE, Weintraub, MN, Herndon, E (2022). Redox Conditions Vary with Depth in Arctic Tundra Surface Soils. Fall Meeting 2022, AGU.

30. ***Sandoval, L**, Mcdowell, N, Peixoto, RB, Bond-Lamberty, BP, Conroy, NA, Cash, C, Day, D, Kemner, KM, Kovach, M, Silva, FM, Megonigal, JP, O'Meara, T, O'Loughlin, EJ, Pennington, SC, Regier, P, Rich, R, Rod, KA, §Rodriguez, S, Stearns, A, Ward, ND, §Yeckley, C, Bailey, VL, Weintraub, MN (2022). Inundation Caused by Rising Water Levels in the Great Lakes Drives Hydraulic Dysfunction in Coastal Trees. Fall Meeting 2022, AGU.
31. **Sihi, D**, Zheng, J, Wang, Z, Davidson, EA, Megonigal, P, Weintraub, MN (2022). Estimating Greenhouse Gas dynamics in Terrestrial-Aquatic Interfaces using a redox-informed modeling framework integrated with microsite probability density functions. Fall Meeting 2022, AGU.
32. **Silva, FM**, Regier, P, Myers-Pigg, A, Ehosioke, S, Hopple, A, Peixoto, RB, Wilson, SJ, *Day, D, Kovach, M, Pennington, SC, Phillips E, *Sandoval, L, Stearns, A, *Thomas, SBP, Bond-Lamberty, BP, Bridgeman, TB, Conroy, NA, Doro, KO, Kemner, KM, McDowell, N, Megonigal, JP, O'Loughlin, EJ, O'Meara, T, Rich, R, Spanbauer, T, Ward, ND, Weintraub, MN, Bailey, VL (2022). Flooding events and groundwater redox dynamics of coastal ecosystems. Fall Meeting 2022, AGU.
33. **Stetten, L**, Boyanov, M, O'loughlin, EJ, Bailey, VL, *Day, D, Homolka, KK, Hopple, A, Kovach, M, Mcdowell, N, Megonigal, P, Myers-Pigg, A, Ward, ND, Weintraub, MN, Wilson, S, Kemner, KM (2022). X-ray Absorption Spectroscopy to Unravel Fe Speciation in Soil and Sediment Cores from Redox-Dynamic Marine and Freshwater Coastal Environments. Fall Meeting 2022, AGU.
34. **Vanderjeugdt, E**, Kinsman-Costello, LE, Herndon, E, Weintraub, MN, *Miah, I, Avasarala, S (2022). Iron concentrations and speciation across a soil moisture and soil pH gradient in the arctic tundra and its impact on phosphate availability. Fall Meeting 2022, AGU.
35. **Wilson, SJ**, Megonigal, P, Rich, R, Stearns, A, Phillips, E, Fien, E, Dufresne, L, Regier, P, Myers-Pigg, A, Pennington, SC, Hopple, A, Morris, K, McDowell, N, Bond-Lamberty, BP, Weintraub, MN, Ward, ND, Kemner, KM, Bailey, VL (2022). Beneath the Ghost Forest: Biogeochemistry and Function in Soils as they Transition from Coastal Forest to Wetland. Fall Meeting 2022, AGU.
36. **Weintraub, MN,** *McMillan CK, Herndon EM, Chu RK, Bowman MM, Sullivan, PF (2022). Determining the rate limiting steps of tundra soil carbon and nutrient cycling at low temperatures using advanced approaches. Presented at the 2022 DOE ESS PI Meeting, 26-May-2022 (Virtual).
37. ***McMillan CK**, Weintraub MN, Moorhead DL, Chu RK, and Bowman MM (2022). Exploring a Critical temperature threshold for arctic soil decomposition. Presented at the 2022 Biennial Meeting of the Soil Ecology Society, Richland WA, 17-19 May 2022.
38. ***Miah I**, Weintraub MN, Kinsman-Costello L, Herndon EM (2022). Phosphate Dynamics in Arctic Soil: How Bioavailability Changes with Seasonality. Presented at the 2022 Biennial Meeting of the Soil Ecology Society, Richland WA, 17-19 May 2022.
39. ***Day D**, Boyanov M, Kemner KM, Weintraub MN (2021). Vegetation Influences on Soil and Microbial Function at Transition Zones Within the Terrestrial-Aquatic Interface. Abstract B35F-1486 presented at the 2021 Fall Meeting of the American Geophysical Union, New Orleans LA, 13-17 Dec. 2021.
40. §**Doherty F**, Day D, Weintraub MN (2021). Despite Carbon and Nitrogen limitations, Soil Respiration is Greatest Within Seasonally Flooded Soils Along a Hydrological Gradient in a Temperate Freshwater Wetland. Abstract B34A-03 presented at the 2021 Fall Meeting of the American Geophysical Union, New Orleans LA, 13-17 Dec. 2021.

41. ***McMillan CK**, Weintraub MN, Moorhead DL, Chu RK, Bowman MM (2021). Decomposition signals of warming in Arctic soils, exploring temperature thresholds of cellulose breakdown. Presented at the 2021 Fall Meeting of the American Geophysical Union, New Orleans LA, 13-17 Dec. 2021.
42. **Jacqueton C**., Akkal-Corfini N., Alavoine G., Bertrand I., Chabbert B., Clivot H., Duval J., Fanin N., Ferchaud F., Fontaine S., Giacomini S., Justes E., Morvan T., Nicolardot B., Perveen N., Recous S., Redin M., Refahi Y., Sauvadet M., Schmatz R., Thuries L., Vertes F., Weintraub M., Lashermes G (2021). An overview of litter decomposition in soils for a diversity of agronomic and pedoclimatic contexts, Eurosoil, 23-27 August 2021, Virtual congress, poster.
43. **Jacqueton C**., Akkal-Corfini N., Alavoine G., Bertrand I., Chabbert B., Clivot H., Duval J., Fanin N., Ferchaud F., Fontaine S., Giacomini S., Justes E., Morvan T., Nicolardot B., Perveen N., Recous S., Redin M., Refahi Y., Sauvadet M., Schmatz R., Thuries L., Vertes F., Weintraub M., Lashermes G (2021) Des données ouvertes sur la décomposition des litières végétales dans les sols selon divers contextes agronomiques et pédoclimatiques, 15ème Journées Etudes des Sols, Association française pour l'étude des sols, 21-25 June, 2021, virtual congress, oral communication.
44. ***McMillan CK**, Weintraub MN, Chu RK, Toyoda J (2020). Decomposition signals of warming in Arctic soils identified by FTICR and NMR. Abstract B078-0002 presented at the 2020 Fall Meeting of the American Geophysical Union, 1-17 December 2020, Virtual.
45. **Sullivan PF**, Stokes M, *McMillan CK, Weintraub MN (2020). Labile carbon limits late winter microbial activity near Arctic treeline. Abstract B075-0011 presented at the 2020 Fall Meeting of the American Geophysical Union, 1-17 December 2020, Virtual.
46. **Weintraub MN**, §Clark EN, *McMillan CK (2019). Carbon Access Limits Tundra Soil Respiration at Low Temperatures. Abstract B21D-07 presented at the 2019 Fall Meeting of the American Geophysical Union, San Francisco CA, 9-13 Dec. 2019.
47. **Darrouzet-Nardi A**, Steltzer H, Sullivan P, Segal AD, Livensperger C, Schimel JP, Weintraub MN (2019). Early snowmelt effects on Arctic tundra plants and soils: a summary of findings from a three-year field experiment at Imnavait Creek, Alaska. Abstract B13D-04 presented at the 2019 Fall Meeting of the American Geophysical Union, San Francisco CA, 9-13 Dec. 2019.
48. ***Whittington R**, Weintraub MN (2019). What's the holdup? Temperature limitations to enzyme-catalyzed Arctic soil decomposition. Talk presented at the Biennial Meeting of the Soil Ecology Society, Toledo, OH, 28-31 May 2019.
49. §**Swedik J**, Pelini SL, Moorhead DL, Weintraub MN (2019). Leaf Litter Lability is in The Eyes of the Decomposer. Poster presented at the Biennial Meeting of the Soil Ecology Society, Toledo, OH, 28-31 May 2019.
50. ***Margida M**, Lashermes G, Weintraub MN, Sinsabaugh RL, Moorhead DL (2019). Modeling effects of carbon quality and carbon-nitrogen stoichiometry on eco-enzymatic stoichiometry during plant litter decomposition. Talk presented at the Biennial Meeting of the Soil Ecology Society, Toledo, OH, 28-31 May 2019.
51. **Moorhead DL**, *Margida M, Weintraub MN, Sinsabaugh RL (2019). Modeling tradeoffs in carbon cost and nitrogen gain from enzymatic degradation of chemically recalcitrant forms of organic nitrogen. Talk presented at the Biennial Meeting of the Soil Ecology Society, Toledo, OH, 28-31 May 2019.

52. ***McMillan CK**, Weintraub MN (2019). Stimulating soil respiration below freezing. Poster presented at the Biennial Meeting of the Soil Ecology Society, Toledo, OH, 28-31 May 2019.
53. ***McMillan CK**, Weintraub MN (2018). Measurable disturbance effects from non-invasive soil sampling. Abstract B53G-2152 presented at the 2018 Fall Meeting of the American Geophysical Union, Washington D.C., 10-14 Dec. 2018.
54. ***Whittington R**, Weintraub MN (2018). Enzymatic temperature limitations to Arctic soil decomposition. Abstract B53H-2165 presented at the 2018 Fall Meeting of the American Geophysical Union, Washington D.C., 10-14 Dec. 2018.
55. ***Margida M**, Moorhead DL, Sinsabaugh RL, Weintraub MN (2018). Modeling Effects of Carbon Quality and Carbon-Nitrogen Stoichiometry on Carbon Use Efficiency and Eco-Enzymatic Stoichiometry during Plant Litter Decomposition. Abstract B51B-05 presented at the 2018 Fall Meeting of the American Geophysical Union, Washington D.C., 10-14 Dec. 2018.
56. Moorhead DL, Sinsabaugh RL, **Weintraub MN** (2018). Estimating the Optimal Rate of Enzyme-Catalyzed Decomposition by Combining Standard and Reverse Michaelis-Menten Equations. Abstract B53G-2142 presented at the 2018 Fall Meeting of the American Geophysical Union, Washington D.C., 10-14 Dec. 2018.
57. [§]**Swedik J**, Pelini SL, Weintraub MN (2018). Enzyme Activities in Detritivore Frass Do Not Follow Temperature Responses of Detritus. Abstract B53H-2166 presented at the 2018 Fall Meeting of the American Geophysical Union, Washington D.C., 10-14 Dec. 2018.
58. **Filley TR**, Hall SJ, Hou T, Plante AF, Weintraub MN (2018). Influence of past soil erosion and burial on the reactivity of deep soil carbon. Abstract B41D-02 presented at the 2018 Fall Meeting of the American Geophysical Union, Washington D.C., 10-14 Dec. 2018.
59. ***Whittington R**, Weintraub MN (2018). Inducible enzyme production and its limitations: End-product inhibition of carbon-degrading enzymes. Midwest Ecology and Evolution Conference. Kellogg Biological Station, Michigan State University, 6-8 April 2018.
60. ***Susser J**, Pelini SL, Weintraub MN (2017). Can we reduce phosphorus runoff potential by stimulating decomposers with carbon and sodium? Poster SII.28 Presented at the Biennial Meeting of the Soil Ecology Society, Fort Collins, CO, 5-9 June 2017.
61. *McMillan C, **Weintraub MN** (2017). How do plant seasonal dynamics drive root carbon inputs to the soil and their distribution? Talk Presented at the Biennial Meeting of the Soil Ecology Society, Fort Collins, CO, 5-9 June 2017.
62. **Darrouzet-Nardi-A**, Weintraub MN, Martinez J, Aguirre D (2017). Is soil pore water an exchange depot for nutrients in Arctic tussock tundra soils? Talk Presented at the Biennial Meeting of the Soil Ecology Society, Fort Collins, CO, 5-9 June 2017.
63. ***McMillan C**, Weintraub MN (2016). Do soil sugars correspond to plant phenology? Abstract B41E-0487 presented at the 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec. 2016.
64. Moorhead DL, **Weintraub MN** (2016). Vector analysis: a simple method for quantifying coupled C, N, and P enzyme activities. Abstract 9 P-6 presented at Enzymes in the Environment, Bangor UK 24-28 July 2016.
65. **Dick RP**, Dick LK, Saxena J, Deng S, Li X, Kandeler E, Poll C, Freeman C, Jones TG, Weintraub MN, Esseili K. (2016) Cross-Laboratory comparison of fluorometric microplate

and colorimetric bench-scale soil enzyme assays. Abstract 9 O-1 presented at Enzymes in the Environment, Bangor UK 24-28 July 2016.

66. **Livensperger C**, Steltzer H, Wallenstein MD, Weintraub MN. (2015) Multiple climate drivers accelerate Arctic plant community senescence. Abstract B21G-0558 Presented at the 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec. 2015.
67. DeForest JL, Smemo KA, Dorkoski R, **Weintraub MN**, Moorhead DL. Using soil enzymatic stoichiometry to understand ecosystem nutrient economies. (2015) Abstract OOS 65-4 Ecological Society of America 100th Annual Meeting, Baltimore, MD 9-14 August 2015.
68. **Weintraub MN**. (2015) Why do temperatures below 10 deg. C suppress plant litter decomposition? Presented at the 2015 Soil Ecology Society, Colorado Springs, CO, 9-12 June 2015.
69. [§]**Marinis D**, Weintraub MN, Crail T **(**2014). Characterization of high and low quality dry sand prairie soil for restoration assessment. Presented at the Oak Openings Research Forum, 25 January 2014.
70. **Darrouzet-Nardi A**, Weintraub MN, Euskirchen ES, Steltzer H, Sullivan PF (2013). Labile carbon concentrations are strongly linked to plant production in Arctic tussock tundra soils. Abstract B12D-03 Presented at the 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
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