

# Michael N. Weintraub

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## 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 2012 – Present  
**University of Toledo** Department of Environmental Sciences  
Associate Professor  
Studying nutrient cycling, decomposition, plant-soil interactions, and soil microbial ecology

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

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:

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). 9/1/2015-9/30/2019.

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 project 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:

President-Elect of the Soil Ecology Society 2016-2017

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

Associate Editor, Biogeosciences August 2015-Present

Associate Editor, Arctic, Antarctic, and Alpine Research June 2015-Present

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

Graduate Admissions Coordinator, Univ. of Toledo Dept. of Env. Sciences 2014-Present

Member of the Advisory Board to the Univ. of Toledo's Interprofessional Immersive Simulation Center 2016-present

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-Present

I have served as a **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 Northern Italy; the Swiss National Science Foundation; and the following 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, New Phytologist, Oecologia, Oikos, Soil Biology and Biochemistry, and the Soil Science Society of America Journal.

I have served as a **Panelist** for: The National Science Foundation: Antarctic Organisms and Ecosystems Panel, September 2007; Ecosystem Studies Pre-Proposal Panel: April 2014, March 2015; Bonanza Creek Long Term Ecological Research Site review, June 2013; and the Department 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](https://scholar.google.com/citations?user=Jw_gOKQAAAAJ&hl=en)

1. 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
2. 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
3. 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:10.1002/ecs2.1426
4. 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*
5. \*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

6. 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
7. 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
8. 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
9. \*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**
10. 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.
11. **Weintraub, MN**, 2014. Citation: Steltzer Receives 2013 Sulzman Award for Excellence in Education and Mentoring. *Eos, Transactions American Geophysical Union* 95, 250-250.
12. 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
13. 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
14. 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
15. 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
16. \*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
17. 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

18. 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
19. \*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
20. 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*
21. Darrouzet-Nardi A, <sup>§</sup>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
22. 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
23. 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
24. <sup>§</sup>Hawkins J, **Weintraub MN** 2011. The effect of trails on soil in the oak openings of northwest Ohio. *Natural Areas Journal* 31: 391-399
25. \*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
26. 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
27. \*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
28. 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
29. **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
30. 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

31. 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
32. 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
33. 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
34. 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
35. 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
36. **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.
37. 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
38. 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.
39. 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*. 3<sup>rd</sup> Edition. American Society of Microbiology Press, Washington D.C. Pages 704–711.
40. 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.
41. 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.
42. **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.
43. **Weintraub MN**, Schimel JP 2005. Seasonal protein dynamics in Alaskan Arctic tundra soils. *Soil Biology and Biochemistry* 37: 1469-1475.

44. **Weintraub MN**, Schimel JP 2005. Seasonal dynamics of amino acids and other nutrients in Arctic tundra soils. *Biogeochemistry* 73: 359-380.
45. 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.
46. **Weintraub MN**, Schimel JP 2003. Interactions between carbon and nitrogen mineralization and soil organic matter chemistry in Arctic tundra soils. *Ecosystems* 6: 129-143.
47. 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:**

**Writing Science: an upper-division/graduate seminar on the principles of effective scientific writing**

Spring 2015 – Present

Department of Environmental Sciences

University of Toledo

**Escape from the Ivory Tower: an upper-division/graduate course on science outreach & communication**

Spring 2014 – Present

Department of Environmental Sciences

University of Toledo

**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

**Climate Change: a lower division Distance Learning (entirely online) course on climate change science**

Spring 2008 – Present

Department of Environmental Sciences

University of Toledo

**Analytical Methods: an upper division and graduate course on research methods**

Fall 2016 – Present

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-present (graduation Spring, 2015)
9. Kawthar Esseili (MS) 2013-present (graduation Spring, 2016)
10. Cameron McMillan (MS, PhD) 2014-present (MS earned and PhD begun Spring, 2017)
11. Jessica Susser (MS) August 2015-present (expected graduation Fall, 2017)
12. Ruth Whittington (MS) Starting January 2017 (expected graduation Fall, 2018)

**Invited Conference Presentations** (speaker in bold):

1. 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 102<sup>nd</sup> Annual Meeting, 6-11 August 2017.
2. **Weintraub MN** (2016). Chair, Symposium IX: Methods: Microplate vs. Bench Enzyme Assays. Enzymes in the Environment, Bangor UK 24-28 July 2016.
3. **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.
4. **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.
5. **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.
6. **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.
7. **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.
8. **Weintraub MN** (2012). Future directions in Arctic research: Science support needs. Toolik Field Station Science Vision Workshop, August 2-4 2012, Portland OR.
9. **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.
10. **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.

11. **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.
12. **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.
13. **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.
14. **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.
15. **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.
16. **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.
17. **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.
18. **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 2016 Department of Land, Air, and Water Resources, University of California Davis
2. Spring 2014 Stockbridge School of Agriculture, University of Massachusetts
3. Spring 2014 Department of Biology, Purdue University
4. Fall 2013 USGS Canyonlands Research Station, Moab UT
5. Summer 2012 Toolik Field Station, Alaska
6. Spring 2012 University of Northern Arizona, School of Forestry
7. Spring 2012 University of Alaska Fairbanks, Institute of Arctic Biology
8. Fall 2011 University of Kentucky, Lexington, Department of Plant and Soil Sciences
9. Fall 2011 Cary Institute of Ecosystem Studies
10. Fall 2010 Oak Ridge National Laboratory, Environmental Sciences Division
11. Spring 2010 University of Maryland Center for Environmental Science Appalachian Laboratory

12. Spring 2010 Eastern Michigan University Department of Biology
13. Spring 2010 Helmholtz Center for Environmental Research UFZ Department of Soil Ecology, Halle, Germany.
14. Fall 2009 University of Louisville Department of Biology
15. Fall 2009 Michigan State University Department of Crop and Soil Science
16. Spring 2009 French National Agricultural Research Institute (INRA FARE), Reims, France
17. Fall 2008 Case Western Reserve Department of Biology
18. Fall 2008 Cleveland State University Department of Biological, Geological and Environmental Sciences
19. Spring 2008 Ohio University Department of Environmental and Plant Biology
20. Spring 2008 West Virginia University Department of Biology
21. Spring 2008 Ohio State University Department of Evolution, Ecology, and Organismal Biology
22. Spring 2007 Kent State University Department of Biological Sciences
23. Fall 2006 Bowling Green State University Department of Biological Sciences
24. Spring 2006 The University of Vermont Department of Biology

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

1. \***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.
2. \***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.
3. **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.
4. \***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.
5. 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.
6. **Dick RP**, Dick LK, Saxena J, Deng S, Li X, Kandeler E, Poll C, Freeman C, Jones TG, Weintraub MN, Esseili K. 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.
7. **Livensperger C**, Steltzer H, Wallenstein MD, Weintraub MN. 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.

8. DeForest JL, Smemo KA, Dorkoski R, **Weintraub MN**, Moorhead DL. Using soil enzymatic stoichiometry to understand ecosystem nutrient economies. Abstract OOS 65-4 Ecological Society of America 100th Annual Meeting, Baltimore, MD 9-14 August 2015.
9. **Weintraub MN**. 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.
10. <sup>§</sup>**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.
11. **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.
12. **Steltzer H**, Chong G, Weintraub MN (2013). From Spring to Fall: Life Cycle Responses of Plant Species and Communities to Climate Change. Abstract B53F-03 Presented at the 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
13. **Moorhead DL**, Lashermes G, Sinsabaugh RL, Weintraub MN (2013). A cost:benefit analysis of lignocellulose decomposition based on energetic tradeoffs. Abstract COS 30-8, Ecological Society of America 98th Annual Meeting, Minneapolis, MN, 4-9 August 2013.
14. **\*Thoman HM**, Weintraub MN (2013). A critical temperature threshold for early *Acer rubrum* leaf litter decomposition. Abstract COS 73-3 Presented at Ecological Society of America 98th Annual Meeting, Minneapolis, MN, 4-9 August 2013.
15. **DeForest JL**, Smemo KA, Weintraub MN, Burke DJ, Carrino-Kyker SR, Hewins CR, Kluber LA (2013). Shifts in forest soil enzyme stoichiometry due to season, pH, and phosphorus availability. Abstract COS 82-3 Presented at Ecological Society of America 98th Annual Meeting, Minneapolis, MN, 4-9 August 2013.
16. **\*Thoman HM**, Weintraub MN 2013. Respiration dynamics during the early stage of *Acer rubrum* leaf litter decay. Presented at the Oak Openings Research Forum, 26 January 2013.
17. **McLaren JR**, Gough L, Weintraub MN (2012). Seasonal variation in soil nitrogen availability across a fertilization chronosequence in moist acidic tundra. Presented at the ArcticNET Scientific Meeting, Vancouver, British Columbia, 10-14 Dec.
18. **Darrouzet-Nardi A**, Weintraub MN, Steltzer H, Sullivan PF, Wallenstein MD (2012). Soil nitrogen dynamics during snow melt in moist acidic tussock tundra soils. Abstract B22D-03 Presented at the 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
19. **Livensperger C**, Steltzer H, Darrouzet-Nardi A, Sullivan PF, Wallenstein MD, Weintraub MN (2012). The response of aboveground plant productivity to earlier snowmelt and summer warming in an Arctic ecosystem. Abstract B23H-0550 Presented at the 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
20. **McLaren JR**, Gough L, Weintraub MN (2012). Seasonal variation in soil nitrogen availability across a fertilization chronosequence in moist acidic tundra. Abstract GC12A-03 Presented at the 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.
21. **Slaughter L**, McCulley R, Weintraub M (2012). Soil Microbial Community Response to Climate Change: Results From a Temperate Kentucky Pasture. Poster 127-8 Presented at the 2012 Fall Soil Science Society of America Meeting, Cincinnati, Ohio 21-24 Oct.

22. **Darrouzet-Nardi A**, Sistla S, Steltzer H, Sullivan PF, Wallenstein MD, Weintraub MN (2012). Soil nitrogen dynamics during snow melt in moist acidic tussock tundra soils. Long-Term Ecological Research (LTER) All Scientists Meeting. September 10-13, 2012.
23. **Darrouzet-Nardi A**, Sistla S, Steltzer H, Sullivan PF, Wallenstein MD, Weintraub MN (2012). Soil nitrogen dynamics during snow melt in moist acidic tussock tundra soils. Abstract COS 51-7 presented at The Ecological Society of America 97th Annual Meeting, Portland OR, 5-10 August 2012.
24. **\*Rinkes ZL**, Grandy AS, Moorhead DL, Weintraub MN (2012). Interactions between litter quality, surface area, and the microbial community in two contrasting soils during the earliest stage of decay. Abstract COS 23-7 presented at The Ecological Society of America 97th Annual Meeting, Portland OR, 5-10 August 2012.
25. **Ladd M**, \*Rinkes ZL, Weintraub MN (2012). Effects of elevated nitrogen on the interaction between microbial activity and plant litter chemistry during decomposition of *Acer saccharum* litter. Abstract PS 60-196 presented at The Ecological Society of America 97th Annual Meeting, Portland OR, 5-10 August 2012.
26. §Numbers E, **Philpott SM**, Weintraub MN (2012). Correlations between soil quality and arthropod communities in organically managed farms in NW Ohio. Abstract PS 79-157 presented at The Ecological Society of America 97th Annual Meeting, Portland OR, 5-10 August 2012.
27. **\*Thoman H**, \*Rinkes ZL, Weintraub MN (2012). Respiration and biomass dynamics during the early stage of *Acer rubrum* leaf litter decay. Abstract PS 60-197 presented at The Ecological Society of America 97th Annual Meeting, Portland OR, 5-10 August 2012.
28. **\*Thoman H**, \*Rinkes ZL, Weintraub MN (2012) Respiration and biomass dynamics during the early stage of *Acer rubrum* leaf litter decay. Presented at 2012 Oak Openings Research Forum, Toledo Ohio, 27 – 28 Jan.
29. **Darrouzet-Nardi A**, Wallenstein MD, Steltzer H, Sullivan P, Melle C, Segal A, Weintraub MN. 2011. Early season nitrogen limitation of microbial respiration in the organic horizon of tussock tundra soils. Abstract GC51F-1070 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec. 2011
30. **Darrouzet-Nardi, A.**, Weintraub, M., Euskirchen, E., Steltzer, H., Sullivan, P., 2011. Hydrologic variability controls summer nitrate export: A multi-scale measurement and modeling approach. Abstract B12D-03 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec. 2011
31. **Segal A**, Sullivan P, Weintraub MN, Darrouzet-Nardi A, Steltzer H. 2011. Relative contributions of rhizosphere and microbial respiration to belowground and total ecosystem respiration in arctic tussock tundra: results of a <sup>13</sup>C pulse-chase experiment. Abstract GC51F-1077 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
32. **Weintraub MN**, Steltzer H, Sullivan P, Schimel JP, Wallenstein MD, Darrouzet-Nardi A, Segal AD. 2011. The Changing Seasonality of Tundra Nutrient Cycling: Implications for Arctic Ecosystem Function. Abstract GC32A-03 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.
33. **Daly KM**, Steltzer H, Boelman N, Weintraub MN, Darrouzet-Nardi A, Wallenstein MD, Sullivan P, Gough L, Rich M, Hendrix C, Kielland K, Philip K, Doak P, Ferris C, Sikes D.

2011. Lepidoptera Larvae as an Indicator of Multi-trophic Level Responses to Changing Seasonality in an Arctic Tundra Ecosystem. Abstract B43C-0308 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

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35. **Darrouzet-Nardi A**, Wallenstein MD, Steltzer H, Sullivan P, Melle C, Segal A, Weintraub MN. 2010. Seasonal patterns in soil N availability in the arctic tundra in response to accelerated snowmelt and warming. Eos Trans AGU, 91(52), Fall Meet. Suppl., Abstract GC52A-07.
36. **Steltzer H**, Weintraub MN, Darrouzet-Nardi A, Melle C, Segal A, Sullivan PF, Landry C, Wallenstein MD. 2010. Changing the seasonality of an arctic tundra ecosystem: earlier snowmelt and warmer temperatures. Eos Trans AGU, 91(52), Fall Meet. Suppl., Abstract GC43A-0955.
37. <sup>§</sup>**Czegledy DC**, \*Rinkes ZL, Weintraub MN. 2010. The effect of increased Nitrogen availability on plant litter decomposition. Ecological Society of America 95<sup>th</sup> Annual Meeting, Program and Abstracts.
38. \*Elk MR, **Weintraub MN**. 2010. Extracellular enzyme activity on plant roots: a widespread phenomenon? Ecological Society of America 95<sup>th</sup> Annual Meeting, Program and Abstracts.
39. \***Herman JE**, Moorhead DL, Weintraub MN. 2010. Changes in leaf litter chemistry and extracellular enzyme activity during decomposition of natural leaf mixtures at two northwest Ohio forests. Ecological Society of America 95<sup>th</sup> Annual Meeting, Program and Abstracts.
40. \***Rinkes ZL**, Weintraub MN 2010. A mechanistic look at plant litter decomposition and its effect on soil carbon storage. Ecological Society of America 95<sup>th</sup> Annual Meeting, Program and Abstracts. \*\**Won the ESA Soil Ecology Section Best Student Oral Presentation Award*
41. **Lipson DL**, Monson RK, Schmidt SK, Weintraub MN 2009. Changes in microbial physiology and community structure along seasonal and altitudinal gradients: Implications for soil respiration. Ecological Society of America 94<sup>th</sup> Annual Meeting.
42. **Grandy AS**, Weintraub MN, Filley TR, Wickings K. 2009. Do enzymes link microbial communities to soil organic matter chemistry? A cross site synthesis using py-gc/ms. Ecological Society of America 94<sup>th</sup> Annual Meeting, Program and Abstracts.
43. \***Elk MR**, Weintraub MN. 2009. A comparison of plant root extracellular enzyme activities between native and exotic plants. Midwest Oak Savanna and Woodland Conference, Toledo OH. July 29-August 1, 2009.
44. \***Pisarczyk EW**, \*Hammer EL, Weintraub MN, Moorhead DL. 2009. The effect of garlic mustard (*Alliaria petiolata*) density on soil enzyme activity in northwest Ohio. Midwest Oak Savanna and Woodland Conference, Toledo OH. July 29-August 1, 2009.
45. \***Rinkes ZL**, Weintraub MN. 2009. The relationship between enzyme activity and microbial biomass during litter decomposition. Midwest Oak Savanna and Woodland Conference, Toledo OH. July 29-August 1, 2009.

46. \***Elk, MR**, Weintraub MN. 2009. A comparison of plant root extracellular enzyme activities between native and exotic plants. Soil Ecology Society Biennial Meeting, Burlington, VT. July 12-15, 2009.
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50. **Weintraub MN**, Peters KA, \*Hammer EL. 2008. The Belowground Effects of Invasive Plants. Oak Openings Research Forum January 2008 Toledo OH.
51. **Weintraub MN**, Peters KA. 2007. The Belowground Effects of Invasive Plants. 30<sup>th</sup> Annual Meeting of the Natural Areas Association.
52. \***Hammer EL**, \*Herman JE, Moorhead DL, Weintraub MN. 2007. Impacts of garlic mustard (*Alliaria petiolata*) on microbial community function in Ohio forest soils. Soil Ecology Society Annual Meeting, Moab, Utah.
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54. **Weintraub MN**, Monson RK, Schmidt SK 2005. Root carbon inputs and soil enzyme activity in the sub-alpine forest of the front range of the Rockies, Colorado. Ecological Society of America 90<sup>th</sup> annual meeting, Program and Abstracts.
55. **Weintraub MN**, Monson RK, Schmidt SK 2005. Seasonal dynamics of soil enzyme activity in the sub-alpine forest of the front range of the Rockies, Colorado. Tenth International Conference of the Soil Ecology Society, Program and Abstracts.
56. **Weintraub MN**, Schimel JP 2004. Protein dynamics in Arctic tundra soils. Ecological Society of America 89<sup>th</sup> annual meeting, Program and Abstracts.
57. **Weintraub MN**, Schimel JP 2003. Plant uptake of amino acids in the Arctic tundra of Alaska. Ecological Society of America 88<sup>th</sup> annual meeting, Program and Abstracts.
58. **Weintraub MN**, Schimel JP 2003. Soil amino acid dynamics in the Arctic tundra of Alaska. Ninth International Conference of the Soil Ecology Society, Program and Abstracts.
59. **Weintraub MN**, Schimel JP 2001. Amino Acids in the Nitrogen Economy of Arctic Tundra Communities. Ninth International Symposium on Microbial Ecology, Program and Abstracts.
60. **Weintraub MN**, Schimel JP 1998. Dynamics of biologically available C and N in tundra communities. Eighth International Symposium on Microbial Ecology, Program and Abstracts.
61. **Weintraub MN**, Bohlen PJ, **Groffman PM** 1995. Spatial and temporal variation in soil C and N pools in a northern hardwood forest. *Bulletin of the Ecological Society of America* 76(2):280.