Ranae Dietzel

3403 Agronomy Hall
Iowa State University

Education

Iowa State University, Ames, IA 2009-2014
Doctorate of Philosophy
Crop Production & Physiology and Sustainable Agriculture

Cornell University, Ithaca, NY 2006-2009
Master of Science
Soil Science, Minors: Agronomy and Biogeochemistry

University of Minnesota – Morris, Morris, MN 2002-2006
Bachelor of Arts
Biology

Research and Teaching Experience

Iowa State University Department of Agronomy, Ames, IA Aug 2014-Present
Postdoctoral Research Associate

- Work in a lab group focused on addressing agronomic and environmental problems through field measurements and computer simulations
- Focus on corn, soybean, and prairie systems

Iowa State University Department of Agronomy, Ames, IA Jan 2009-2014
Graduate Research Assistant

- Examined differences in biogeochemical processes in corn- and prairie-based biofuel cropping systems

Cornell University, Ithaca, NY Aug 2006-Jan 2009
Graduate Research and Teaching Assistant

- Conducted research on the effect of freeze-thaw cycles on spring nitrous oxide emissions in cornfields with and without a winter rye cover crop, focusing on microbial mechanisms
- Assisted with teaching introductory soil science and soil ecology classes

USDA-Agricultural Research Service, Morris, MN May-Dec 2005
Biological Science Aid

- Assisted with research on trace gas fluxes
- Collected and processed soil, water, and gas samples
- Ran field and laboratory equipment

West Central Research and Outreach Center, University of Minnesota, Morris, MN
Undergraduate Research Assistant 2003-2004

- Assisted with research on low input dairies
- Measured various properties of cattle feed

Agro-Soyuz, Mayskoye, Ukraine Summer 2004
Veterinary Assistant

- Worked with dairy, swine, and ostrich
- Assisted with breeding, births, and treatments
- Assisted with veterinary research

Iowa State University, Ames, IA Summer 2003
Undergraduate Research Assistant

- Assisted with studies on the impact of land use on streams
- Field work included rain simulations, stream and stream bank measurements, and riparian zone measurements
- Lab work included water testing, soil measurements, and dishwashing

Grants and Awards

NIFA ELI Postdoctoral Fellowship ($150,000, PI)	2016-2018
Leopold Center for Sustainable Agriculture Competitive Grant ($48,000, PI)	2016-2019
Iowa Soybean Association Competitive Grant ($150,000, co-PI)	2015-2017
Outstanding Graduate Student, Iowa State University Department of Agronomy	2013
NIFA Pre-doctoral Fellowship ($75,000, co-PI)	2011-2014
Andrew W. Mellon Student Research Grant	2008
Agricultural Ecology Program Mini-grant	2008
Clinton DeWitt Smith Summer Fellowship	2008
Crop and Soil Sciences Outstanding Teaching Assistant	2008
Biogeochemistry and Environmental Biocomplexity Small Grant	2007
University of Minnesota – Morris Dean's Scholarship	2002-2006
Academic All-Conference Track and Field	2005, 2006
Academic All –Conference Cross Country	2005
All-American Wrestling	2003, 2004

Publications

Martinez-Feria, R.A., Dietzel, R., Liebman, M., Helmers, M.J., Archontoulis, S.V. *In review*. Rye cover crop effects on maize: A system-level analysis. Field Crops Research (In review).

Nichols, V., Miguez. F., Sauer, T., and R. Dietzel. *In review*. Field-measured root-growth derived CO_2 respiration in continuous maize and reconstructed prairies.

Dietzel, R., Liebman, M., Ewing, R., Helmers, M., Horton, R., Jarchow, M., and S. Archontoulis. 2016. How efficiently do corn- and soybean-based cropping systems use water? A systems modeling analysis. Global Change Biology 22: 666-681, DOI: 10.1111/gcb.13101

Dietzel, R. Jarchow, M. and M. Liebman. 2015. Above- and belowground growth, biomass, and nitrogen use in maize and reconstructed prairie cropping systems. Crop Science 55:1-14

Jarchow, M., Liebman, M., Dhungel, S., Dietzel, R., Sundberg, D., Anex, R., Thompson, M., and T. Chua. 2015. Tradeoffs among agronomic, energetic, and environmental performance characteristics of corn and prairie bioenergy cropping systems. Global Change Biology Bioenergy 7:57-71

Dietzel, R and M. Liebman. 2014. Root inputs drive carbon storage potential differences in corn- and prairie-based cropping systems. Dissertation chapter. Order No. 3641012, Iowa State University, 2014, http://search.proquest.com.proxy.lib.iastate.edu/docview/1622571419

Dietzel, R. and M. Liebman. 2014. Predicted changes in soil organic carbon over fifty years in corn- and prairie-based cropping systems. Dissertation Chapter. Order No. 3641012, Iowa State University, 2014, http://search.proquest.com.proxy.lib.iastate.edu/docview/1622571419

Jarchow, M., Neal, J., Costanza, R., D'Adamo, S., Damery,P., and R. Dietzel, et al. 2012. The future of food and life: Four visions focused on Iowa. International Journal of Agricultural Sustainability. International Journal of Agricultural Sustainability 10:76-92

Dietzel, R., Wolfe, D., and J. Thies. 2011. The influence of winter cover crops on spring nitrous oxide emissions from an agricultural soil. Soil Biology & Biochemistry 43:1989-1991

Presentations

Dietzel, R., Liebman, M., Ewing, R., Horton, R., and Archontoulis, S. 2014. How efficiently do corn- and soybean-based systems use water? A modeling analysis. *ASA-CSA-SSA Annual Meeting, Minneapolis, MN*

Dietzel, R., Archontoulis, S., and M. Liebman. 2014. Predicted changes in soil organic carbon over fifty years in corn- and prairie-based cropping systems. *ASA-CSA-SSA Annual Meeting, Long Beach, CA*

Dietzel, R. and M. Liebman. 2014. Root inputs drive C storage differences in corn- and prairie-based cropping systems. *ASA-CSA-SSA Annual Meeting, Long Beach, CA*

Dietzel, R. and M. Liebman. 2012. Root inputs drive C sequestration differences in corn and prairie cropping systems. *ASA-CSA-SSA Annual Meeting, Cincinnati, OH*

Dietzel, R. and M. Liebman. 2011. Root growth in corn- and prairie-based biofuel cropping systems. *ISU Agronomy Research Symposium, Ames, IA.*

Dietzel, R. and M. Liebman. 2010. Root growth in corn- and prairie-based biofuel cropping systems. *ISU Graduate Program in Sustainable Agriculture Symposium, Ames, IA*

Dietzel, R. and M. Liebman. 2010. C sequestration in cornfields and prairies? *Graduate Program in Sustainable Agriculture Colloquium, Ames, IA.*

Dietzel, R., Jarchow, M., Sundberg, D., and M. Liebman. 2009. A comparison of corn- and prairie-based cropping systems. *ASA-CSA-SSSA Annual Meeting, Pittsburgh, PA*

Dietzel, R., Jarchow, M., Sundberg, D., and M. Liebman. 2009. A comparison of biomass production in corn- and prairie – based cropping systems. *Live Green! Sustainability Series Poster Presentation, Ames, IA*

Dietzel, R., Jarchow, M., Sundberg, D., and M. Liebman. 2009. A comparison of biomass production in corn- and prairie – based cropping systems. *BioCentury Research Farm Dedication, Ames, IA*

Dietzel, R., Jarchow, M., Sundberg, D., and M. Liebman. 2009. A comparison of biomass production in corn- and prairie – based cropping systems. *Biofuels Research at ConocoPhillips – Women in STEM Speaker Series, Ames, IA*

Dietzel, R., Jarchow, M., Sundberg, D., and M. Liebman. 2009. A comparison of biomass production in corn- and prairie – based cropping systems. *Iowa State Graduate Student in Sustainable Agriculture Annual Research Symposium, Ames, IA*

Dietzel, R. 2008. The influence of winter field cover on spring nitrous oxide emissions. *Cornell Crop and Soil Sciences Seminar Series, Ithaca, NY*

Dietzel. R. and J. Thies. 2008. Surface insulation leads to higher N_2O fluxes during soil thawing. *ASA-CSA-SSSA Annual Meeting, Houston, TX*