

Curriculum Vitae

Meghann Jarchow
Assistant professor of sustainability
University of South Dakota
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Education

Department of Agronomy, Iowa State University, Ames, IA
Ph.D. Ecology and Evolutionary Biology and Sustainable Agriculture (2012)
Dissertation: Tradeoffs in ecosystem services of prairies managed for bioenergy production
Advisor: Dr. Matt Liebman

Department of Biological Sciences, Minnesota State University, Mankato, MN
M.S. Biology (2005)
Thesis: Allelopathy as a mechanism for the invasion of *Typha angustifolia* and biochemical differences among *Typha angustifolia*, *Typha latifolia* and *Typha x glauca*
Advisor: Dr. Bradley Cook

Biology Department, Ripon College, Ripon, WI
B.A. Biology (2002)
Senior research project title: Using the bacterial inhibition test as an alternative to the lethal dose 50 test

Work Experience

- Assistant Professor, Sustainability, University of South Dakota, Vermillion, SD (2012 – present)
- Graduate Research Assistant, Department of Agronomy, Iowa State University, Ames, IA (2007 – 2012)
- Adjunct Biology Instructor and Lab Coordinator, Department of Biology, Gustavus Adolphus College, St. Peter, MN (2005 – 2007)
- Adjunct Biology Instructor, Department of Biological Sciences, Minnesota State University, Mankato, MN (2006)
- Graduate Teaching Assistant, Department of Biological Sciences, Mankato, MN (2003 – 2005)
- Cytology Laboratory Assistant, Physician's Laboratory, Sioux Falls, SD (2003)

Peer-Reviewed Publications

- Jarchow, M.E., M. Liebman, S. Dhungel, R. Dietzel, D. Sundberg, R.P. Anex, M.L. Thompson, and T. Chua (2014) Trade-offs among agronomic, energetic, and environmental performance

characteristics of corn and prairie bioenergy cropping systems. *Global Change Biology Bioenergy*, DOI: 10.1111/gcbb.12096

- Jarchow, M.E. and M. Liebman (2013) Nitrogen fertilization increases diversity and productivity of prairie communities used for bioenergy. *Global Change Biology Bioenergy* 5(3):281-289
- Jarchow, M.E., M. Liebman, V. Rawat, and R.P. Anex (2012) Functional group and fertilization affect the composition and bioenergy yields of prairie plants. *Global Change Biology Bioenergy* 4(6):671-679
- Kepner, W.G., M.M. Ramsey, E.S. Brown, M.E. Jarchow, K.J.M. Dickinson, and A.F. Mark (2012) Hydrologic futures: using scenario analysis to evaluate impacts of forecasted land-use change on hydrologic services. *Ecosphere* 3(7):69
- Jarchow, M.E. and M. Liebman (2012) Tradeoffs in biomass and nutrient allocation in prairies and corn managed for bioenergy production. *Crop Science* 52:1330-1342
- Jarchow, M.E., I. Kubiszewski, G.L.D. Larsen, G. Zdorkowski, R. Costanza, S. R. Gailans, et al. (2012) The future of agriculture and society in Iowa: four scenarios. *International Journal of Agricultural Sustainability* 10:76-92
- Jarchow, M.E. and M. Liebman (2012) Nutrient enrichment reduces complementarity and increases priority effects in prairies managed for bioenergy. *Biomass and Bioenergy* 36:381-389
- Jarchow, M.E., J.W. Rice, R.M. Ritson, and S.K. Hargreaves (2011) Awareness and convenience important in increasing conference sustainability. *Sustainability Science* 6:253-254
- Jarchow, M.E. and M. Liebman (2010) Incorporating prairies into multifunctional landscapes: establishing and managing prairies for enhanced environmental quality, livestock grazing and hay production, bioenergy production, and carbon sequestration. *Iowa State University University Extension PMR 1007*, 25 pp. – revised 2011
- Jarchow, M.E. and B.J. Cook (2009) Allelopathy as a mechanism for the invasion of *Typha angustifolia*. *Plant Ecology* 204:113-124

Non-peer Reviewed Publications

- Jarchow, M.E. and M. Liebman (2011) Maintaining multifunctionality as landscapes provide ecosystem services. *Frontiers in Ecology and the Environment* 5(9):262
- Jarchow, M.E. and M. Liebman (2011) Incorporating prairies into multifunctional landscapes module. Iowa State University Crop Advisor Institute. Available at: <http://www.cai.iastate.edu/modules/module.aspx?modID=113>
- Jarchow, M.E. (2010) Using extension to communicate agricultural research. Video: Brenton Center and the Department of Agricultural Education and Studies. Available at: [http://brenton2.brenton.iastate.edu/bcrelay/courses/AgEdS%20311/Meghann_Jarchow_Presentation_Aged327_-_Flash_\(Original_Size\)_-20100928_07.55.05AM.html](http://brenton2.brenton.iastate.edu/bcrelay/courses/AgEdS%20311/Meghann_Jarchow_Presentation_Aged327_-_Flash_(Original_Size)_-20100928_07.55.05AM.html)

Teaching Experiences

Assistant Professor, University of South Dakota

- Sustainability and Society (Sust 201)
- Sustainability and Science (Sust 203)
- Sustainability Capstone (Sust 489)
- Sustainability Internship/Field Experience/Undergraduate Research (Sust 494/496/498)

Graduate Teaching Assistant, Iowa State University

- Principles of Agronomy (Agron 114)

Adjunct Biology Instructor, Gustavus Adolphus College

- Cell and Molecular Biology laboratory and laboratory lecture (Biol 201)
- Microbes and Human Health laboratory (Biol 118)
- Organismal Biology laboratory (Biol 102)
- Career Exploration faculty sponsor (Biol 268)
- Mayo Scholars Program faculty mentor

Adjunct Biology Instructor, Minnesota State University

- General Biology II lecture and laboratory (Biol 106)

Graduate Teaching Assistant, Minnesota State University

- Microbiology laboratory (Biol 270)
- General Biology laboratory and discussion (Biol 100)

Undergraduate Teaching Assistant, Ripon College

- Microbiology laboratory (Biol 314)

Grants, Fellowships, and Scholarships Received

- Jarchow, M.E. (October 2013 – September 2014) Prairies in multifunctional landscapes: understanding the role of plant phenology and disturbance, University of South Dakota Office of Research and Sponsored Programs, \$10,000
- Jarchow, M.E. and C.K.H. Hover (co-PIs) (October 2012 – June 2014) Games for improved learning in STE(A)M: sustainability and science, University of South Dakota Office of Research and Sponsored Programs, \$19,871
- Jarchow, M.E. (August 2010 – August 2012) Environmental Protection Agency Science to Achieve Results Fellowship, Environmental Protection Agency, \$111,000
- Jarchow, M.E. (April 2010) Print and Grace Powers Hudson Scholarship in Agriculture, Iowa State University College of Agriculture and Life Sciences, \$1,000
- Jarchow, M.E. and M. Liebman (September 2009) Incorporating native prairies into working farm landscapes. North Central Region Sustainable Agriculture Research and Education graduate student grant, \$9,965
- Jarchow, M.E. (January 2009) Travel scholarships for participation in Organization for Tropical Studies course Adaptive Management in Conservation Projects, Las Cruces, Costa Rica from Ecology and Evolutionary Biology program, College of Agriculture and Life Sciences, Graduate Program in Sustainable Agriculture professional development grant, Agronomy Department, and Wallace Chair for Sustainable Agriculture, \$3,200
- Jarchow, M.E. (August 2008) Travel scholarship for participation in Ecological Society of America annual meeting from the Department of Defense Strategic Environmental Research grant and Development Program and Graduate Program in Sustainable Agriculture professional development grant, \$640
- Jarchow, M.E. (August 2007 – May 2011) Research Training Fellowship, Department of Agronomy, \$25,000/year for 2 years
- Jarchow, M.E. (August 2007 – May 2011) Plant Sciences Institute Fellowship, Plant Sciences Institute, \$25,000/year for 2 years
- Jarchow, M.E. (June 2006) Research, Creativity, and Scholarship grant, Gustavus Adolphus College, \$1,750

- Jarchow, M.E. (January 2006) Travel scholarship for participation in Ecological Society of America International Conference from Gustavus Adolphus College faculty development grant and the National Science Foundation travel grant, \$1,500
- Morrissey, M.E. (April 2004) Allelopathy as a mechanism for the invasiveness of *Typha angustifolia*. Department of Biological Sciences graduate student research grant, \$600
- Morrissey, M.E. (August 2009) Pickard Scholarship, Ripon College, \$12,500/year for 4 years

Oral and Poster Presentations

- *M.E. Jarchow* (November 2013) Developing a sustainability program at the University of South Dakota. Upper Midwest Association for Campus Sustainability annual conference, Decorah, IA
- *M.E. Jarchow* (October 2013) Prairies versus corn for bioenergy: agronomic and environmental tradeoffs. University of South Dakota Sigma Xi seminar, Vermillion, SD
- *M.E. Jarchow* (September 2013) Tradeoffs in agronomic, energetic, and environmental performance of prairie and corn bioenergy cropping systems. University of South Dakota Department of Biology seminar, Vermillion, SD
- *M.E. Jarchow, M. Liebman, S. Dhungel, R. Dietzel, D. Sundberg, R.P. Anex, M.L. Thompson, and T. Chua* (August 2013) Tradeoffs in agronomic, energetic, and environmental performance of prairie and corn bioenergy cropping systems. Ecological Society of America annual meeting, Minneapolis, MN
- *A. Millikin, M.E. Jarchow, K. Olmstead, M. Dixon* (August 2013) Long-term restoration assessment of historic tallgrass prairie at Spirit Mound: changes in vegetation composition 12 years post-restoration. Ecological Society of America annual meeting, Minneapolis, MN
- *V. Nichols, F. Miguez, M. Jarchow, and M. Liebman* (July 2013) Biofuel production stability: effect of drought on ethanol yields from prairie- and corn-based systems. American Society of Agricultural and Biological Engineers annual meeting, Kansas City, MO
- *M.E. Jarchow, M. Liebman, S. Dhungel, R. Dietzel, D. Sundberg, R.P. Anex, M.L. Thompson, and T. Chua* (April 2013) Tradeoffs in agronomic, energetic, and environmental performance of prairie and corn bioenergy cropping systems. South Dakota Academy of Science, Sioux Falls, SD (conference cancelled due to inclement weather but proceedings published)
- *J. Mitchell** and *M. Jarchow* (April 2013) Examining sustainable cooking options and their applications in the developing world. University of South Dakota IdeaFest, Vermillion, SD
- *J. Mitchell*, E. Roberson*, E. Soluk*, and M. Jarchow* (April 2013) Taking action to enhance sustainability: projects from Sustainability and Society. University of South Dakota IdeaFest, Vermillion, SD
- *M.E. Jarchow* (November 2012) What is sustainability? What can I do? Art of Sustainability workshop, Vermillion, SD
- *M.E. Jarchow* and *M. Liebman* (October 2012) Tradeoffs in ecosystem goods and services for prairie bioenergy production. South Dakota Biotech Association annual meeting, Sioux Falls, SD
- *M. Thompson, R. Anex, E. Bach, T. Chua, R. Cruse, A. Daigh, R. Dietzel, M. Helmers, K. Hofmockel, R. Horton, M. Jarchow, M. Liebman, F. Miguez, V. Nichols, F. Rivas, T. Sauer, and D. Sundberg* (October 2012) Biomass production and ecosystem services in Iowa biofuel cropping systems. Agronomy Society of America Annual Meeting, Cincinnati, OH (oral presentation & poster)
- *M.E. Jarchow* (September 2012) Designing resilient agricultural systems to cope with climate change effects. University of South Dakota International Forum, Vermillion, SD
- *M.E. Jarchow* (September 2012) Sustainability on our campus + in our lives. University of South Dakota Honors Program Seminar, Vermillion, SD

- *M. Liebman, C.A. Chase, R. Dietzel, S.M. Hirsh, M.J. Helmers, M.E. Jarchow, and L.A. Schulte* (August 2012) Using biodiversity to link agricultural productivity and profitability with environmental quality: results from three field experiments in Iowa. Ecological Society of America Annual Meeting, Portland, OR
- *M.E. Jarchow* (June 2012) Teaching transformative sustainability in higher education. Transcending Sustainability: Principles and Paradigms Exploring Deep Sustainability Conference, Fairfield, IA
- *M.E. Jarchow and M Liebman* (April 2012) Tradeoffs in ecosystem goods and services for prairie bioenergy production. 10th Anniversary Iowa State University Graduate Program in Sustainable Agriculture Research Symposium, Ames, IA. Won first prize in poster competition
- *M.E. Jarchow and M. Liebman* (January 2012) Tradeoffs in ecosystem goods and services for prairie bioenergy production. Iowa State University Ecology and Evolutionary Biology Spring Symposium, Ames, IA
- *Liebman, M. and M.E. Jarchow* (November 2011) Using biodiversity to link agricultural productivity with environmental quality: results from four field experiments in Iowa, Bioproducts and Biosystems Engineering seminar, St. Paul, MN
- *Jarchow, M.E. and M. Liebman* (November 2011) Tradeoffs in ecosystem goods and services for prairie bioenergy production. Iowa State University Agronomy Research Symposium, Ames, IA
- *Jarchow, M.E.* (September 2011) Tradeoffs in ecosystem goods and services for prairie bioenergy production. Environmental Protection Agency Science to Achieve Results Fellowship Conference, Washington, DC
- *Jarchow, M.E.* (August 2011) Growing native: how do we do it? How to Conserve Beneficial Insects with Native Plants workshop, Boone County, IA
- *Jarchow, M.E.* (June 2011) Grasslands: reconstructing prairies on acreages. Homegrown Lifestyle webinar, broadcast from Iowa State University, Ames, IA
- *Jarchow, M.E., M. Liebman, V. Rawat, and R.P. Anex* (April 2011) Functional group and fertilization affect the composition and bioenergy yields of prairie plants. Iowa State University Graduate Program in Sustainable Agriculture Research Symposium, Ames, IA
- *Bugeja, S.M.*, M.E. Jarchow, and M. Liebman* (April 2011) Yield component comparisons between fertilized and non-fertilized diverse prairies. Iowa State University Symposium on Undergraduate Research and Creative Expression, Ames, IA
- *Jarchow, M.E. and M. Liebman* (November 2010) Functional group and fertilization affect the composition and bioenergy yields of prairie plants. Iowa State University Agronomy Research Symposium, Ames, IA
- *Bugeja, S.M.*, M.E. Jarchow, and M. Liebman* (November 2010) Yield component comparisons between fertilized and non-fertilized diverse prairies. Iowa State University Agronomy Research Symposium, Ames, IA
- *Jarchow, M.E. and M. Liebman* (November 2010) Managing prairies for bioenergy production. Iowa State University Graduate Program in Sustainable Agriculture Colloquium, Ames, IA
- *Jarchow, M.E. and M. Liebman* (November 2010) Functional group and fertilization affect the composition and bioenergy yields of prairie plants. Agronomy Society of America Annual Meeting, Long Beach, CA
- *Jarchow, M.E., M. Liebman, and R. Dietzel* (September 2010) Comparing corn and prairie systems. Iowa State University Agronomist In-Service, Boone County, IA
- *Jarchow, M.E. and M. Liebman* (August 2010) Growth analyses of prairie and corn biomass cropping systems. Ecological Society of America Annual Meeting, Pittsburgh, PA

- *Jarchow, M.E.* and M. Liebman (April 2010) Phenology of an agroecological field experiment. Iowa State University Graduate Program in Sustainable Agriculture Research Symposium, Ames, IA
- *Jarchow, M.E.* and M. Liebman (March 2010) Growth analyses of prairie and corn biomass cropping systems. Midwest Ecology and Evolution Conference, Ames, IA
- *Jarchow, M., M. Thompson,* and *M. Helmers* (February 2010) Designing biofuel cropping systems to benefit farmers and the environment, Iowa Crop Improvement Association Annual Meeting, Ames, IA
- *Jarchow, M.E.* and M. Liebman (November 2009) Incorporating native prairie into working farm landscapes. Iowa State University Agronomy Research Symposium, Ames, IA
- *Jarchow, M.E.* and M. Liebman (November 2009) Incorporating native prairie into working farm landscapes. Ecological Society of America Millennium Conference, Athens, GA
- *Dietzel, R., M. Jarchow, D. Sundberg,* and *M. Liebman* (November 2009) A comparison of biomass production in corn- and prairie-based biofuel cropping systems. Agronomy Society of America Annual Meeting, Pittsburgh, PA
- *Dietzel, R., M. Jarchow, D. Sundberg,* and *M. Liebman* (September 2009) A comparison of biomass production in corn- and prairie-based biofuel cropping systems. BioCentury Research Farm Dedication, Boone County, IA
- *Jarchow, M.E.* and M. Liebman (September 2009) Using diversity to increase productivity in fertilized and unfertilized prairie mixtures. BioCentury Research Farm Dedication, Boone County, IA
- *Jarchow, M.E.* and M. Liebman (August 2009) Field demonstration of the Diversity and Nitrogen (DIVN) experiment. Iowa State University Extension and Iowa Agriculture and Home Economics Experiment Station Field Day, Boone County, IA
- *Jarchow, M.E.* (July 2009) Tools for holistic decision making in agriculture. Sustainable Agriculture Education Association Annual Meeting, Ames, IA
- *Jarchow, M.E.* and M. Liebman (April 2009) Using diversity to increase productivity in fertilized and unfertilized prairie mixtures. Women in Science Technology Engineering and Mathematics (STEM) Speaker Series, Ames, IA
- *Jarchow, M.* and M. Liebman (April 2009) Using diversity to increase productivity in fertilized and unfertilized prairie mixtures. Iowa State University Graduate Program in Sustainable Agriculture Research Symposium, Ames, IA
- *Dietzel, R., M. Jarchow, D. Sundberg,* and *M. Liebman* (April 2009) A comparison of biomass production in corn- and prairie-based biofuel cropping systems. Iowa State University Graduate Program in Sustainable Agriculture Research Symposium, Ames, IA
- *Jarchow, M.* and M. Liebman (April 2009) Using diversity to increase productivity in fertilized and unfertilized prairie mixtures. Iowa State University Ecology and Evolutionary Biology Spring Symposium, Ames, IA
- *Jarchow, M.E.* and B.J. Cook (August 2008) Allelopathy as a mechanism for the invasion of *Typha angustifolia*. Ecological Society of America Annual Meeting, Milwaukee, WI
- *Cook, B.J.* and M.E. Jarchow (June 2006) Allelopathy as a novel weapon for the invasion of *Typha angustifolia*. Society of Wetland Scientists Annual Meeting, Carnes, Australia
- *Jarchow, M.E.* and B.J. Cook (February 2006) Invasiveness of *Typha angustifolia* due to possession of a novel weapon. Society of Wetland Scientists North Central Chapter Annual Meeting, Madison, WI
- *Kottschade, C.R., M.E. Jarchow,* and *B.J. Cook* (February 2006) Possible allelopathic interactions of decomposing *Typha angustifolia* on native wetland species *Bolboschoenus fluviatilis*. Society of Wetland Scientists North Central Chapter Annual Meeting, Madison, WI

- *Jarchow, M.E.* and B.J. Cook (January 2006) Allelopathy as a mechanism of invasion in *Typha angustifolia*/El alelopatía como mecanismo para la invasión del *Typha angustifolia*. Ecological Society of America International Conference, Merida, Mexico
- *Morrissey, M.E.* and B.J. Cook (June 2005) Allelopathy as a mechanism for the invasion of *Typha angustifolia*. Society of Wetland Scientists Annual Meeting, Charleston, SC

Italics indicate presenting author

*Indicates undergraduate student author

Professional Affiliations

- Upper Midwest Association for Campus Sustainability, Steering Committee member (2012 – present)
- Association for the Advancement of Higher Education, member (2012 – present)
- Spirit Mound Trust, Board of Directors (2012 – present)
- Agronomy Society of America, member (2007 – present)
- Ecological Society of America, member (2005 – present)
- Iowa State University Graduate Program in Sustainable Agriculture Student Association, member (2007 – 2012) (co-chair from January 2009 – August 2010)
- Iowa State University Graduate Research in Evolutionary Biology and Ecology, member (2007 – 2012) (president from June 2009 – May 2010)
- Iowa State University Department of Agronomy Graduate Student Club, member (2007 – 2012) (vice-president from January 2010 – December 2010)
- Iowa State University Graduate Program in Sustainable Agriculture Colloquium series, coordinator (August 2008 – May 2009)

Professional Volunteer Activities

- Guest lecturer for Agronomy Senior Forum (ISU Agron 410), Advanced Community Ecology (ISU EEOB 585), Agroforestry (ISU SusAg 471/571), Advanced Communications in Agriculture and Life Sciences (ISU AGEDS 327), Issues in Sustainable Agriculture (ISU Agron 450), Agronomy Freshman Learning Community courses (ISU), Environmental Life Cycle Assessment (UM-TC), Environmental Science (USD BIOL 310) (2008 – 2013)
- Iowa Learning Farms Conservation Station volunteer (2010)
- Reviewer for *Ecology and Society*, *Landscape Ecology*, and *PLOS ONE* (2010 – 2013)
- Session presider at Ecological Society of America annual meeting (2010)
- Women in Science and Engineering program leader (2009)
- Iowa Science Fair judge (2009)
- Buell/Braun oral presentation judge at Ecological Society of America annual meeting (2008)
- Minnesota Science Fair judge (2006, 2007)