

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. and M. Liebman (2012) Nitrogen fertilization increases diversity and productivity of prairie communities used for bioenergy. *Global Change Biology Bioenergy*, DOI: 10.1111/j.1757-1707.2012.01186.x

- 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*, DOI: 10.1111/j.1757-1707.2012.01184.x
- 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

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. (August 2010) 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* 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. 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 aleopatía 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*

Professional Affiliations

- 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 (co-chair from January 2009 – August 2010)
- Iowa State University Graduate Research in Evolutionary Biology and Ecology, member (president from June 2009 – May 2010)
- Iowa State University Department of Agronomy Graduate Student Club, member (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 (Agron 410), Advanced Community Ecology (EEOB 585), Agroforestry (SusAg 471/571), Advanced Communications in Agriculture and Life Sciences (AGEDS 327), Issues in Sustainable Agriculture (Agron 450), Agronomy Freshman Learning Community courses at Iowa State University and Environmental Life Cycle Assessment at the University of Minnesota – Twin Cities (2008 – 2011)
- Iowa Learning Farms Conservation Station volunteer (2010)
- Reviewer for *Ecology and Society* and *Landscape Ecology* (2010 – 2011)
- 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)