

Curriculum Vitae for Jacob Prater

274 Trainer Natural Resources
University of Wisconsin Stevens Point
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Position

Assistant Professor University of Wisconsin Stevens Point
• Discipline Coordinator

2012 - present
2015 - present

Education

Ph.D. Soil Science (Soil Physics and Environmental Science) **2012**
Iowa State University, Ames

M.S. Soil Science (Soil Chemistry) **2007**
Iowa State University, Ames

B.S. Environmental and Soil Sciences **2004**
University of Tennessee, Knoxville

Teaching Experience

2012 - present

Current Courses

Soil Physics (SOIL 465)	Fall (switched to spring now)
Agronomy (NRES 373)	Fall
Integrated Pest Management (NRES 336)	Fall
Soil Chemistry and Mineralogy (SOIL 350)	Fall
Soil Certification Exam Review (SOIL 350)	Fall and Spring
Soil Internship (SOIL 381) (2012-2015)	Summer
Soil Conservation and Watershed Inventory Methods (SOIL 359)	Summer
Soil Inventory Methods (SOIL 360)	Summer
Soil Management (SOIL 461)	Spring (switched to fall now)
Advanced Soil Management (SOIL 761)	Spring
Intro to Soil and Water Resources (NRES 251)	Spring

Previous Teaching Experience (Iowa State University)

Teaching Assistant and Guest Lecturer **2006 – 2011**
• Various courses (Agronomy, Soil Physics, Soil Chemistry)

Advising

Currently 20 undergraduate advisees
1 Master of Science student (successfully defended)
Served as mentor for 4 undergraduate research projects
Committee member for 4 graduate students (3 have successfully completed degree)
Faculty advisor for Soil and Water Conservation Club

University and College Service

Strategic Planning Committee (UWSP)	2013 – 2017
<ul style="list-style-type: none">• Developed guidelines for the provost to use in making restructuring decisions	
Personnel Committee (CNR)	2013 – Present
<ul style="list-style-type: none">• Developed and drafted new language for the CNR policy manual	
Internship Committee (CNR)	2012 – 2015
Property Management Committee (CNR)	2012 – Present
Summer Field Experience Committee (CNR)	2014 – Present
<ul style="list-style-type: none">• Chair• Summer Field Experience Sub-Committee – Curriculum Redesign<ul style="list-style-type: none">○ Coordinated an external review and evaluated the review to adapt and develop new curriculum	2016 – Present 2015 – 2016
Dean’s Council (CNR)	2015 – Present
<ul style="list-style-type: none">• Discipline Coordinator	
Ad Hoc Committee (Faculty Load and Core) (CNR)	2015 – Present

Search and Screen Committees

Search and Screen Committee	2013
<ul style="list-style-type: none">• Hiring a new Associate Dean for Outreach and Extension	
Search and Screen Committee	2013
<ul style="list-style-type: none">• Hiring a Faculty Associate	
Search and Screen Committee	2013
<ul style="list-style-type: none">• Hiring a Soil Microbiologist	
Search and Screen Committee (Chair)	2014
<ul style="list-style-type: none">• Hiring a Pedologist	
Search and Screen Committee	2015
<ul style="list-style-type: none">• Hiring a Director for Treehaven	

Professional Service

Early Career Committee Member Soil Science Society of America	2017 - Present
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Reviewer:

<ul style="list-style-type: none">• Journal of Environmental Quality (1 paper)	2016
<ul style="list-style-type: none">• Geoderma (1 paper)	2015
<ul style="list-style-type: none">• Soil Science Society of America Journal (2 papers)	2015 and 2016
<ul style="list-style-type: none">• Journal of Hazardous Materials (1 paper)	2014

Outreach/Service:

Service Learning:

2015 – Present

- Developed class projects that benefit local growers to build usable tools for small grower operations (poor man's precision agriculture)

Presented “Soil Physics 101” at a WOWRA conference

2017

- Septage haulers, POWTS designers, Soil Scientists
- Continuing education credit for attendees

Envirothon Station Leader (2 times)

2015 – Present

- Scheduled to lead again in Spring 2017

North Central Conservancy Trust

2016 – Present

- Board Member
- Vice President 2017 – Present

Research Experience

Current Research

- Emerging Contaminants Transport Research **2014 – Present**
 - Investigating the role of Dissolved Organic Matter (DOM) on the fate and transport of two synthetic endocrine disrupting compounds in soil/water systems
- Forest Ecology **2013 - Present**
 - Investigating the effects of fire and thinning on Red Pine ecosystem soil properties
- Ginseng **2014 - 2017**
 - Can vermicompost reduce disease pressure in commercial ginseng?
- Gypsum and Phosphorus Availability **2016 – 2017**
 - Does gypsum application reduce P availability on Optimum testing soils?
- Pre-Lab Videos and Student Preparedness for Laboratories **2016 – Present**
 - Can student preparedness be enhanced while increasing instructor efficiency?
- Provisional Ecological Site Descriptions **2017 – Present**
 - Developing PESDs for the state of WI in collaboration with NRCS

Graduate Research Assistant, Department of Agronomy, ISU 2005 - 20012

- Assisted in rainfall simulation studies to determine phosphorus losses in runoff.
- Design and construction/improvement of lab equipment (diffusion chamber, air permeameter)
- Soil Sampling –Giddings hydraulic soil probe, Uhland core sampler, and hand probe Data Management and Analysis
- Project management – planning and overseeing sampling and analysis for agro-environmental experiments
- Working knowledge of Scilab
- Soil, plant, and grain analysis
 - Soil – particle size fractionation, IR spectroscopy, X-ray Diffraction, Thermal Analysis, Atomic Adsorption, Spectrophotometry, and Sequential Phosphorus Fractionations
 - Plant and Grain – Digestions for nutrient content analysis
- Solute and Colloid Transport Experiments
- HPLC
- Chemical Transport Modeling - CXT Fit, Hydrus 1-D
- Other Modeling – MODFLOW (some experience)

Iowa State University Soil Testing Lab

2005

- Performed soil testing procedures and nutrient analyses.
- Spectrophotometry, atomic absorption/emission, and ICP

Center for Biomarker Analysis, Knoxville, TN

2004

- Developed an assay for determining the viability of micro-organisms in environmental samples.
- Con-focal microscopy, fluorescence microscopy, well plate reader, and image analysis
- Publication from work

Achievements and Awards

- **CNR Excellence in Teach Award 2017**
- **Collegium Graduate Fellow 2010**
- **2nd Place Educational Poster Iowa Water Conference 2010**

Publications

Published

Prater, J.R., Thompson, M.L., and Horton, R. *Impacts of environmental colloids on the transport of 17 β -estradiol in intact soil cores*. Soil and Sediment Contamination Journal 25 (p. 164-180) 2016 Taylor & Francis

Prater, J.R., Thompson, M.L., and Horton, R. *Reduction of estrone to 17 β -estradiol in the presence of swine manure colloids*. Chemosphere 119:642-645, 2015.

J.P. Biggerstaff, M. LePuil, B.L. Weidow, J. Prater, K. Glass, M. Radosevich, D.C. White *New methodology for viability testing in environmental samples*. Molecular and Cellular Probes 20 (p.141-146) 2006 Elsevier Ltd.

Manuscripts Submitted for Publication – under review

J.R. Prater, M.L. Thompson, and R. Horton. *Sorption equilibrium and kinetics of 17 β -estradiol and estrone with soil and soil and manure colloids*.

Manuscript in Preparation for Publication

L.C. Joers, J.R. Prater, and R.E. Masters. *The Effect of Prescribed Fire Frequency and Seasonality on Soil Properties in a Wisconsin Mixed Red Pine Ecosystem*. – Target journal: Forest Ecology and Management

J.R. Prater. *Can student preparedness be enhanced while increasing instructor efficiency: Using pre-lab video tutorials to enhance laboratory time efficiency and student learning*.

Education Related Presentation

Soil Science Society of America meetings 2016 *Pre-Laboratory Video Tutorials in Soil Physics: Effects on Student Learning and Laboratory Preparedness*, Jacob R. Prater

Biennial Conference for Undergraduate Education in Natural Resources 2016, *Evaluating a Natural Resources Summer Field Skill Curriculum*, Jacob R. Prater, Eric Anderson, Ronald Crunkilton, Michael Demchik, and Becca Franzen

Scientific Presentations

Soil Science Society of America meetings 2016 *Gypsum Use and Phosphorus Availability in Two Wisconsin Soils*, Alec J. Dix, Aaron Pershern, and Jacob R. Prater

Soil Science Society of America meetings 2016 *Effects of Vermicompost Application on Ginseng Production at 3 Wisconsin Sites*, Erik Halverson, Jacob R. Prater, Daniel Keymer, and Robert Michitsch

Soil Science Society of America meetings 2016 *The Effect of Fire on Soil Chemical and Biological Properties*, Lucas Joers and Jacob R. Prater

Soil Science Society of America meetings 2016 *The Effect of Fire on Soil Physical Properties*,
Wednesday Jordan, Lucas Joers, and Jacob R. Prater

Emerging Contaminants Conference 2014, *Impacts of Environmental Colloids on the Transport of 17 β -estradiol in Intact Soil Cores*, Jacob R. Prater, Michael L. Thompson, and Robert Horton

Soil Science Society of America meetings 2013, *Ammonium Removal From Landfill Leachate By Struvite (magnesium ammonium phosphate) Precipitation*, Anthony Roche, Robert C. Michitsch, and Jacob Reed Prater

Soil Science Society of America meetings 2013, *Effects of Biochar and Cover Crops On Nitrogen Leaching and Soil Physical Properties in a Central Wisconsin Soil*, Michelle Scarpace, Dana Mae Christel and Jacob Reed Prater

Soil Science Society of America meetings 2012, *Impacts of Environmental Colloids on the Transport of 17 β -estradiol in Intact Soil Cores*, Jacob R. Prater, Michael L. Thompson, and Robert Horton

Soil Science Society of America meetings 2011, *Sorption of Estrogens to Colloidal Material: Of Swine Manure and Soil Origin*, Jacob R. Prater, Teresita Chua, Michael L. Thompson, and Robert Horton

Soil Science Society of America meetings 2010, *The Role of Colloids in Estrogen Transport through Soil*. Jacob R. Prater, Teresita Chua, Colton Meyer, Michael L. Thompson, and Robert Horton

Iowa Water Conference 2010, *The Role of Colloids in Estrogen Transport to Tiles and Shallow Groundwater*. Jacob R. Prater, Michael L. Thompson, and Robert Horton

Soil Science Society of America meetings 2009, *Impacts of Colloidal Material on the Fate of Estrogens in Soils*. Jacob R. Prater, Ritushree Chatterjee, Teresita Chua, Michael L. Thompson, and Robert Horton

American Society of Agronomy meetings 2007, *Efficiency of Fall and Spring Broadcast Fertilizer Phosphorus Application for Corn and Soybean in No-till*. Sebastian R. Barcos, Antonio P. Mallarino, and Jacob R. Prater

American Society of Agronomy meetings 2006, *Soil Phosphorus, Grain Yield, and Phosphorus Removal During Twelve Years of Phosphorus Management for Corn-Soybean Rotations*. Jacob R. Prater and Antonio P. Mallarino

Non-Peer Reviewed Reports

Integrated Crop Management Conference proceedings 2011 *Nutrient uptake by corn and soybean, removal, and recycling with crop residue* Mallarino, A.P., Oltmans. R.R., Prater, J.R., Villavicencio, C.X., and Thompson, L.B. Nutrient uptake by corn and soybean, removal, and recycling with crop residue

Integrated Crop Management Conference proceedings 2007 *Corn and soybean grain yield, phosphorus removal and soil-test responses to long-term phosphorus fertilization strategies* Mallarino, A.P. and Prater, J.R.

Grants

NRCS Developing PESDs for WI (PI)	(Awarded \$621,800)
UPDC Course Innovation Grant (PI)	(Awarded \$1500)
USDA-SCBG (PI)	(Awarded \$40,000)
BARD (Co-PI)	(Awarded \$300,000. [\$80,000 to UWSP] project date 2013-2016)
McIntire-Stennis (Co-PI)	(Awarded \$66,000 project date 2013-2015)
Solid Waste Research (PI)	(Awarded \$29,800 project date 2013-2014)
College of Natural Resources Technology Mini-Grant	(Awarded \$840)
URSCA	(Awarded \$900 Alec Dix and Aaron Pershern)
Student Research Fund	(Awarded \$2,165 Lisa Moehlman, Sarah Shawver, and Elise Worthel)
Student Research Fund	(Awarded \$1000 Dana Christel)
Student Research Fund	(Awarded \$1000 Aaron Pershern)
Student Research Fund	(Awarded \$1000 Michelle Scarpace)

Leadership and Community Involvement:

North Central Conservancy Trust **2016 – Present**

- Board member
- Vice President 2017 – Present

Speaker at UWSP Newman Center “Faith and Science” **2015**

Student Club Advisor **2013 – Present**

- Soil and Water Conservation Club

St. James Pastoral Council **2013 – Present**

- Member
- Chair

Diocese of LaCrosse Pastoral Council **2015 – Present**

- Member

St. Thomas Aquinas Church Pastoral Council Chair **2011 - 2012**

- Member 2010-2012
- Committee member to develop new Mission, Vision, and Strategic Plan 2011 - 2012

Iowa State Weight Club **2010 - 2012**

- President 2012
- Vice President 2011

Iowa State Graduate and Professional Student Senator 2009 - 2010

Iowa State Men's Ultimate Frisbee Club Coach 2007 - 2008

- Sectionals Champions 2007

Soil and Water Conservation Society (ISU Chapter) 2006

- Treasurer Jan. 2006 – Dec. 2006

Sports Club Executive Council Member 2003 - 2004

- Reviewed sports club budgets and allotted University funds to each club

University of Tennessee Ultimate Frisbee Club 1999 - 2004

- President: 2003-2004
- Team Captain: 2004