

Krista A. Ehlert

Graduate Research Assistant, Montana State University - Bozeman
krista.ehlert@msu.montana.edu

Education

Graduate Research Assistant – Montana State University
Dept. of Land Resources and Environmental Sciences
Advisors: Drs. Rick Engel and Jane Mangold

Current GPA: 3.68/4.00
Expected degree: M.S.
Expected graduation: January 2013

B.A. in Biology
Saint Olaf College; Northfield, MN

GPA: 3.33/4.00
Graduated: December 2010
Degree conferred: May 2011

Research and Independent Study

Enhancing efficacy of herbicides to improve Cheatgrass and Japanese Brome management

Advisors: Drs. Rick Engel and Jane Mangold

Current M.S. project research

I have successfully designed, implemented, and reported on research improving cheatgrass management. Greenhouse and field studies investigate imazapic efficacy at different rates, timing of application, and litter presence. Further work integrates chemical and biological control with the fungal pathogen, *Pyrenophora semeniperda*. I have successfully demonstrated my excellent organization skills through time management and the development of work schedules for my own research, as well as for the assistance I receive from undergraduate students and research associates.

The Impact of Soil Amendments on Soil Nutrients, Reinvasion, and Native Plant Community

Advisors: Dr. Liam Heneghan and Lauren Umek, M.S. (both DePaul University)

NSF REU with the Chicago Botanic Garden and Northwestern University

Summer 2010

I led an investigation into the effect of soil carbon addition in the form of mulch as a novel restoration practice to control *Rhamnus cathartica*, common buckthorn. Aspects I investigated included: soil nutrient dynamics, *R. cathartica* reinvasion, and the surrounding native plant community. I was in charge of analyzing soil samples for inorganic nitrogen and phosphorus, as well as conducting thorough vegetative surveys. At the completion of the project, I presented a poster and talk, entitled: “The Impact of Soil Amendments on Soil Nutrients, Reinvasion, and Native Plant Community: A Restoration Project,” at the program’s symposium.

Biology 298: Invasion Ecology

Advisor: Dr. Stephanie Schmidt (Saint Olaf College)

Fall 2010

I conducted an independent study to investigate the field of invasion ecology. More specifically, I developed a syllabus for myself, and held weekly ecological discussions about current primary literature in the field with Dr. Schmidt. The culmination of my independent study was a literature review paper assessing the biology, factors of invasibility, genetics, interactions, and control of *Bromus tectorum* (cheatgrass), which is the target species of my Master’s of Science program at Montana State University.

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Posters* and Presentations

*Ehlert, K.A., R. Engel and J. Mangold. 12 April 2012. Improving cheatgrass management by using soil bioassays to assess imazapic degradation. Montana State University – Land Resources and Environmental Sciences Student Research Colloquium. *Bozeman, MT*.

Ehlert, K.A., R. Engel and J. Mangold. 13 March 2012. Using Soil Bioassays to Assess Imazapic Degradation to Improve Cheatgrass Management. Western Society of Weed Science Annual Meeting. *Reno, NV*.

Ehlert, K.A., R. Engel and J. Mangold. 31 October 2011. Improving Cheatgrass and Japanese Brome management on MT Range, Pasture, and CRP Lands. Montana State University – Land Resources and Environmental Sciences Departmental Seminar. *Bozeman, MT*.

*Pankratz, T., K.A. Ehlert and J. Mangold. 30 July 2011. The Effects of Imazapic on Bluebunch Wheatgrass. The Leadership Alliance National Symposium Student Poster Session. *Old Greenwich, CT*.

Ehlert, K.A., L. Heneghan and L. Umek. 30 June 2010. The impact of soil amendments on soil nutrients, reinvasion, and native plant community: a restoration study. The Chicago Botanic Garden REU poster session and symposium. *Glencoe, IL*.

Awards and Scholarships

Montana Weed Control Association Scholarship	2011 – 2012, 2012 – 2013
Western Society of Weed Science, First Place – Student Paper Contest	March 2012
NSF REU Highly Commended Oral Presentation	Summer 2010
Jody Albrecht Memorial Scholarship	Fall 2010
Alliss Scholarship	2008 – 2010
Saint Olaf Scholarship	2007 – 2010

Research Skills and Professional Experience

Research Skills

Plant identification using dichotomous keys; Tree identification and DBH; Earthworm sampling and identification; Field ecology flora sampling; Plant Root Simulator probes (PRS probes); Braun-Blanquet cover class estimates; Soil texture and moisture; Soil biogeochemistry (KCl extracts, fluorometer measurements, Epoch microplate reader for NO₃, NH₄, and PO₄); Biodiversity indices, including Swink and Wilhelm's coefficients of conservatism and Floristic Quality Indices; YSI probes; compound and dissecting microscopes; gravity, pipette, and suction filtration; micropipetting; aseptic technique; cat dissection; Microsoft Excel, Word, and PowerPoint; Populus; FitData_VB; EndNote; Statistical analysis using Excel and R; GPS; ArcMap

Professional Experience

Teaching Assistant, Montana State University *Fall 2011*
Environmental Science 110: Land Resources & Environmental Science
I helped the professor with grading homework assignments, and aiding students during field trips.

Extracurricular and Outreach Activities

Weed Ecology Discussion Group, Montana State University *Spring 2011 – present*
I participate in this discussion group, which consists of graduate students, faculty, and staff in the LRES department who all share an interest in weed ecology and management. Discussions have focused on invasion ecology, trophic interactions, ecologically based invasive plant management (EBIPM), and scientific communication.

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Co-Chair, Graduate Student Organization, Montana State University 2011 – 2012
Department of Land Resources & Environmental Sciences (LRES)

Advisor: Dr. Lucy Marshall

With another graduate student, I was responsible for organizing and implementing monthly Graduate Student Organization (GSO) meetings as well as procuring funding and organizing our departmental Research Colloquium, held during Student Research Month in April. These activities are held in an effort to facilitate interaction and communication among LRES graduate students, and between LRES graduate students, faculty, and staff, as well as providing a voice for LRES graduate students.

Discussions in Ecology

Spring 2010 – Fall 2010

A primary literature focused discussion group, led by Dr. John Schade and Dr. Stephanie Schmidt. Students are selected for participation based on research interests and ecology related course performance.

Mountain Physical Therapy; Kalispell, MT

Summer 2009

Center for Sports Medicine & Rehab; Northfield, MN

March – May 2009

Wieber Physical Therapy; Faribault, MN

March – May 2009

We Can Ride Inc. (therapeutic horseback riding); Minneapolis, MN

March – May 2009

Active Equestrian and Horse Owner

1999 - present

Large time commitment, approximately 10 to 12 hours per week

Professional Affiliations

Western Society of Weed Science

2011 – present

Montana Weed Control Association

2011 – present

Ecological Society of America

2011 – 2012

Employment

Saint Olaf College, Resident Hall Receptionist

Fall 2009 – Fall 2010

Saint Olaf College Bookstore, Student worker

Winter 2007 – Fall 2010

Family babysitter, for a Saint Olaf Professor

Summer 2008 – Summer 2009