

# University of Idaho

## Palouse Team

### PhD Assistantship Announcements

#### **Interdisciplinary PhD Research Assistantships in Conservation Biology, Sustainable Production and Resilience of the Palouse Prairie Ecosystem.**

Up to five Ph.D. research assistantships will be available to join a collaborative team working on aspects of conservation of the endangered Palouse Prairie ecosystem in the context of bioregional planning in southeastern Washington State and Northern Idaho. The linked dissertation projects will work in the context of expected exurban development and sustainable agricultural production in the region. With funding from the National Science Foundation's Integrative Graduate Education and Research Traineeship program (IGERT), the individual fellows will pursue disciplinary research important for the overall theme, and work together to identify and address interdisciplinary issues critical for development of effective planning and policy. The team will interact with members of five other IGERT-sponsored student/faculty teams pursuing similar objectives in other ecosystems in which sustainability and conservation in the face of changing conditions and pressures is desired.

**PhD Assistantship in Soil Biogeochemistry.** Seeking a highly motivated and qualified student to pursue the study of soil-plant relations and feedbacks in the endangered Palouse Prairie. The student will contribute to our understanding of resiliency in this unique ecosystem that is increasingly threatened by invasive weed species and urban sprawl. Research will focus on: 1) the importance of soil and site properties in determining the likelihood of invasion, and 2) the impact of invasive species on processes that control carbon storage and nutrient availability. In addition, the student will conduct collaborative research to examine interdisciplinary aspects of conservation of Palouse Prairie within a dynamic, human dominated landscape with team members in fields such as entomology, conservation/restoration plant ecology, virus ecology, and rural and community economics. Contact Jodi Johnson-Maynard ([jmaynard@uidaho.edu](mailto:jmaynard@uidaho.edu)).

**PhD Assistantship in Entomology and Landscape Genetics.** Seeking a highly motivated and qualified student to pursue the study of populations of native insects linked to the ecological communities specific to the Palouse Prairie, now existing exclusively as widely distributed small remnants. Target populations will be key pollinators, specialist herbivores affecting predominant plant species and other indicator species. Research will focus on: 1) determining the genetic diversity and structure of arthropod populations, 2) examining how behavioral and ecological correlates of genetic structure influence level of landscape connectivity, and 3) assessing elements required to sustain connectivity as part of conservation plans. In addition, the student will conduct collaborative research to examine interdisciplinary

aspects of conservation of Palouse Prairie within a dynamic, human dominated landscape with team members in fields such as soil science, conservation/restoration plant ecology, virus ecology, and rural and community economics. Contact Sanford D. Eigenbrode ([sanforde@uidaho.edu](mailto:sanforde@uidaho.edu)) and Lisette Waits ([lwaits@uidaho.edu](mailto:lwaits@uidaho.edu)).

**PhD Assistantship in Conservation/Restoration Plant Ecology.** Seeking a highly motivated and qualified student to pursue restoration ecology research within the Palouse Prairie and related canyon grassland systems of Northern Idaho. The field research will develop restoration methods appropriate for a range of plant communities at various stages of secondary succession to enhance resilience of those plant communities. The outcome of the research will include development of a decision tool to assist those actively involved in restoration. Research may include: 1) sequence of introduction of native species, 2) seeding techniques, 3) invasive plant management, 3) species selection for seed mixes that may incorporate native annuals, and 4) feasibility of establishment of biological soil crust. In addition, the student will conduct collaborative research to examine interdisciplinary aspects of conservation of Palouse Prairie within a dynamic, human dominated landscape with team members in fields such as soil science, entomology, virus ecology, and rural and community economics. The student must have a strong desire for collaboration with other students within or attached to the IGERT program. Contact Tim Prather ([tprather@uidaho.edu](mailto:tprather@uidaho.edu)).

**PhD Assistantship in Rural and Community Economics.** Seeking a highly motivated and qualified student to pursue the study of rural community economics and social dynamics found in the Palouse Prairie region, including both patterns of decline and revitalization. The student will contribute to our understanding of patterns and perceptions affecting rural community opportunities and constraints related to the surrounding environment. Research will focus on: 1) determining the economic and social factors that contribute to forming vibrant communities, 2) examining the economic relationships embedded in community-based uses and values attached to natural resources and natural amenities, and 3) assessing social networks and forms of capitals needed to ensure community vitality and well-being. Methods that may be employed include regional general equilibrium economic modeling, social accounts modeling, capitals framework analysis, nonmarket valuation, and behavioral modeling. In addition, the student will conduct collaborative research to examine interdisciplinary aspects of conservation of Palouse Prairie within a dynamic, human dominated landscape with team members in fields such as soil science, entomology, virus ecology, and conservation/restoration plant ecology. Contact Philip Watson ([pwatson@uidaho.edu](mailto:pwatson@uidaho.edu)) and J.D. Wulffhorst ([jd@uidaho.edu](mailto:jd@uidaho.edu)).

**PhD Assistantship in Virus Ecology and Virology.** Seeking a highly motivated and qualified student to pursue the study of plant viruses and virus ecology in the endangered Palouse Prairie and surrounding agricultural landscape. Research will focus on studies to: 1) reveal the breadth of viruses in native plants and invasive species in the Palouse Prairie, 2) assess vector transmission and virus spread and their role on dynamics of virus populations in the landscape, and 3) examine the role

of viruses on plant and vector fitness. The student will use a variety of sequencing and bioinformatics methods applied to field-collected material, and conduct controlled field and greenhouse experiments. In addition, the student will conduct collaborative research to examine interdisciplinary aspects of conservation of Palouse Prairie within a dynamic, human dominated landscape with team members in fields such as soil science, entomology, conservation/restoration plant ecology, and rural and community economics. Contact Nilsa Bosque-Pérez ([nbosque@uidaho.edu](mailto:nbosque@uidaho.edu)) and Alexander Karasev ([akarasev@uidaho.edu](mailto:akarasev@uidaho.edu)).

**This unique graduate education program will provide students:**

- Team-based interdisciplinary education
- International perspective
- Broad geographic and ecological exposure
- Participation in integrated interdisciplinary teams
- Cross-cultural experience

**Requirements: Applicants must be American citizens or permanent residents of the USA.** Successful applicants must have obtained a research-based M.S. degree in a discipline of relevance to the project, and demonstrate interest and/or experience in team-based projects. Students will join the program to begin course work at the end of July 2010.

**Review of applications will begin Dec 1<sup>st</sup> 2009 and end Jan 4<sup>th</sup> 2010. Earlier applications are highly encouraged.** Interviews of top applicants will be conducted at the University of Idaho campus in March 2010.

For application information visit the web page:  
<http://www.students.uidaho.edu/gradadmissions/IGERT>

For information on our previous IGERT project go to: <http://www.cals.uidaho.edu/igert/>

For information on the University of Idaho College of Graduate Studies see:  
<http://www.uidaho.edu/coqs/>