

Postdoc & grad student (MS or PhD) positions available in agroecology, organic and regenerative agricultural systems

Purdue University is leading a newly funded USDA OREI (Organic Research and Extension Initiative) project on integrated pest management (IPM) in organic and ecologically intensified grain cropping systems (see below for more detailed project description). As part of this work, we are recruiting a post-doctoral scholar and graduate students (MS or PhD). The post-doctoral scholar will help lead the overall project, including working with university partners at UW-Madison and Western Illinois University, while the graduate student will emphasize quantifying the effects of varying cropping regimes upon arthropod diversity and pest management.

Start date: January to May 2023

Compensation: Postdoc salary is \$51,000/yr. Grad student stipend is \$26,000/yr with tuition waver included. Both are benefits-eligible positions (e.g., insurance); for additional information please see:

<https://www.purdue.edu/policies/human-resources/vif13.html>

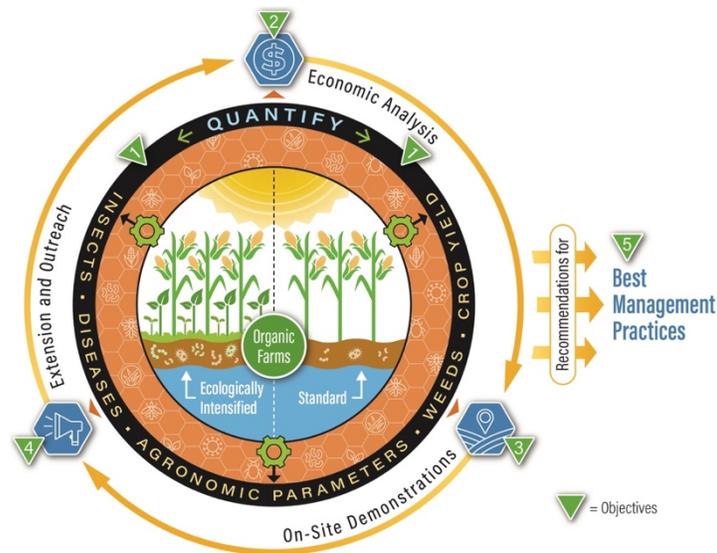
<https://www.purdue.edu/policies/human-resources/s3.html>

Qualifications: All positions entail substantial field research so candidates should be interested in working outdoors in agricultural settings with background/interests in insects, integrated pest management, and the plant sciences and/or agronomy more broadly. Candidates must be enthusiastic about applied research and working with a range of stakeholders. For example, there will be opportunities for communicating results with grower-cooperators through a variety of extension venues, as well as sharing results and collaborating with research audiences. Post-doc applicants must have a PhD in hand before beginning work on the project. A valid US driver's license is required for both positions.

Project description:

Organic grain production has increased dramatically across the upper Midwest. Producers are moving beyond proven, established organic rotations and exploring additions of novel cover and cash crops into rotations, as well as additions of biological seed treatments, including a broad array of microbial products. Producers lack baseline information regarding the strengths and weaknesses, and overall sustainability, of these varying regimes. In a four-year, three-state study, we will assess the weed, disease and beneficial and pest insect populations impacting corn, soybeans and small grains under both a "standard" and "ecologically-intensified" organic grain rotation system. The latter approach has never been empirically investigated in detail, and our multidisciplinary, multi-state project will address this key data gap using on-farm, replicated field trials

over multiple growing seasons. Both large and small-plot research will be conducted on organic-certified ground on six commercial farms and three university-managed research farms. We will also evaluate the potential economic benefits of each approach. Our objectives are straightforward and designed to provide data that are applicable, relevant and can be readily interpreted and implemented by producers for short and long-term sustainability. The overall project design is summarized by the schematic below.



This is a multidisciplinary study that prominently features extension specialists committed to real-time updates on the project through a range of extension and outreach venues. We will compare the two organic crop regimes outlined above in several broad categories, including: pest incidence (weeds, diseases, insects), as well as beneficial and pollinator arthropod populations; agronomic parameters including soil fertility and yield; and farm economics to better inform farmers and build their capacity to maintain sustainable and profitable organic grain farms that meet the National Organic Program (NOP) requirements. Although some of this work is observational in nature, one of the key elements of the work will include manipulative, hypothesis-driven experiments to uncover the drivers underlying interesting field observations.

Project press release: <https://www.purdue.edu/newsroom/releases/2022/Q4/usda-grant-to-support-intensive-research-on-ecological-processes-affecting-organic-farming.html>

How to apply: Please send a cover letter providing a statement of interest and CV with contact information for 3 references to Dr. Christian Krupke, the project director. Applications will be accepted until a suitable candidate is identified, but fieldwork will commence in **Spring 2023**.

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