

Postdoc & grad student (MS or PhD) positions available in agroecology, local food systems, and sustainable crop production

Purdue University is leading a newly funded USDA SCRI (Specialty Crop Research Initiative) project on insect management in high tunnels (see below for full project description). As part of this work, we are recruiting 3 new postdocs and/or graduate students (either MS or PhD). Two of these individuals will focus on the entomology portion of the project, whereas one will emphasize horticultural aspects of crop production.

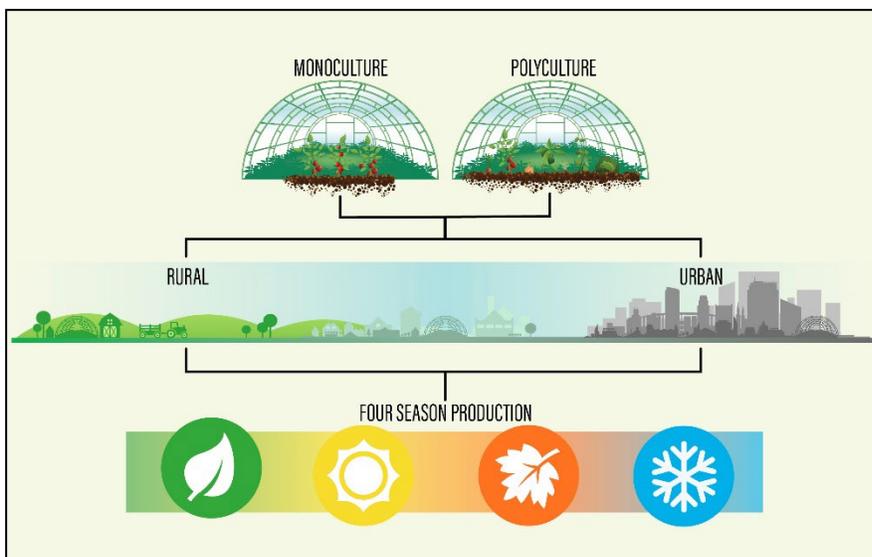
Start date: January to May 2023

Compensation: Postdoc salary is \$49,000/yr. Graduate student stipends are \$26,000/yr with tuition waver included. Both are benefits-eligible positions (e.g., insurance); for additional information see: <https://www.purdue.edu/hr/benewell/>

Qualifications: All positions entail substantial field research so candidates should be interested in working outdoors in agricultural settings with background/interests in insects, ecology, plant sciences and/or horticulture. Candidates should be enthusiastic about application and communicating results with grower cooperators, as well as sharing data with research audiences.

Project description

Local food systems are an important driver of specialty crop production. Despite the emerging interest and economic opportunity of local food systems, resources (e.g., research, funding) have disproportionately favored conventional large farms over the more diffuse network of small-medium sized farms that take part in direct-to-consumer (DTC) sales. One of the central tools



employed by DTC farmers are high tunnels (HT), a form of protected agriculture used almost exclusively to produce specialty crops. Little is available in the way of research-backed recommendations related to pest management in HT crops, even though we know from discussions with and surveys of growers that this is a major factor limiting production. In this

project, we aim to understand the impacts of crop diversity (mono- vs. polyculture) on pest and

beneficial insects across a rural to urban gradient and all four growing seasons (i.e., winter production). We will investigate the contribution of natural enemies to pest suppression through molecular gut content analyses and experimental manipulations of natural enemy releases on grower and research farms (e.g., parasitic wasps, entomopathogenic nematodes, predaceous mites). We will also evaluate seasonal dynamics and focus on optimizing production from fall through spring. In collaboration with two economists, we will investigate the economic impacts of pest and crop management decisions, the value provided through ecosystem services of such practices, and develop economically-backed decision support tools for HT growers. We anticipate the development of pest management recommendations tailored to farm cropping strategies, location and season. Decision making support tools will be created online and in print and disseminated through demonstrations.

Project press release: <https://www.purdue.edu/newsroom/releases/2022/Q1/extending-the-season,-improving-food-security.html>

For additional context, see relevant publications from our research group:

<https://doi.org/10.1002/ps.4634>

<https://doi.org/10.1016/j.biocontrol.2018.04.012>

<https://doi.org/10.1093/jee/toz060>

<https://doi.org/10.21273/HORTTECH04370-19>

How to apply: Please send a cover letter providing a statement of interests and CV with contact information for 3 references to one of the following three individuals listed below, each of whom will advise one of the three hires. You are encouraged to peruse backgrounds (e.g., social media activity, lab webpages, Google Scholar profiles) to determine appropriate fit, but, in general, Drs. Ingwell and Kaplan will lead the insect portion, while Dr. Guan is focused on crop performance. There is no formal deadline – applications will be accepted until a suitable candidate is identified.

Ian Kaplan, Professor, Department of Entomology

Social media: @Kaplan_Lab

Lab webpage: <https://www.entm.purdue.edu/ecolab>

Email: ikaplan@purdue.edu

Laura Ingwell, Assistant Professor, Department of Entomology

Social media: @Ingwell_vegIPM

Email: lingwell@purdue.edu

Wenjing Guan, Associate Professor, Department of Horticulture

Social media: @VeggieGuan

Email: guan40@purdue.edu