

Postdoctoral Research Associates: Ecophysiology, Modeling, and Agronomy of Agrivoltaic Crops

Agrivoltaics (AVs), the co-located production of solar energy and crops, is an emerging technology that can reduce competition for land, and provide climate-smart solutions to improve land use efficiency (combined crop and electricity yield), crop water-use efficiency, profitability and the economic resilience of farmers. Two postdoctoral positions are available in the Institute for Sustainability, Energy, and Environment at the University of Illinois, Urbana-Champaign (UIUC) as part the Sustainably Colocating Agricultural and Photovoltaic Electricity Systems (SCAPES) project funded by the U.S. Department of Agriculture. The goal of SCAPES is to provide the interdisciplinary research, outreach, and educational opportunities that will optimize the design of sustainable AV technologies for diverse crop species (row crops, forage, and specialty crops) across three biophysically diverse regions in the US: Illinois, Colorado and Arizona.

The ecophysiology postdoc will focus on measuring photosynthesis, photoinhibition, conductance, plant water relations of select C3 and C4 crops growing in different configurations under commercial and experimental photovoltaic solar arrays. In addition, the researcher will also characterize the dynamic atmospheric and soil microenvironment between and under solar arrays and scale the responses from the individual/canopy to the ecosystem. The agronomy postdoc will quantify crop development and patterns of biomass allocation, including root growth, of crops growing under the treatments described above. It is expected that both postdoctoral associates have experience conducting field research, under sometimes adverse weather conditions, and will contribute to a highly collaborative work environment where they will coordinate research activities with a large team of collaborators, supervise technicians and undergraduates, and write manuscripts. Field work will be conducted on solar farms in Champaign County Illinois.

The ecophysiology postdoc will work primarily under the guidance of Dr. Carl Bernacchi, Evan DeLucia and Nuria Gomez-Casanovas, and the agronomy postdoc will work primarily under the guidance of Dr. DoKyong Lee and Dr. Bruce Branham. The postdocs will be expected to collaborate with economists, ecosystem modelers, and others in the SCAPES project.

Required Qualifications:

- A Ph.D. or the equivalent in plant physiology, ecophysiology, agronomy or related field
- Experience with laboratory and field work
- Strong English writing and oral communication skills
- Strong organizational skills
- Ability to work in a collaborative environment
- Ability to travel frequently to research sites in Illinois
- A valid driver's license

Strong candidates will also possess the following attributes:

- A strong publication record from their Ph.D. (papers published, in press, or submitted)
- Experience with gas exchange and micrometeorology measurements, and above- and belowground plant sampling, and soil coring
- Knowledge of soil temperature and moisture monitoring equipment
- Creativity, independence, and the desire to learn new things

All candidates must have received a Ph.D. in a relevant field within the past five years. The position is available for two years, with possible extension further; however, annual renewal is dependent on funding and progress made by the individual. This position includes a competitive salary and full benefits.

Application review will begin 31 May 2022 and will continue until the position is filled. The start date is flexible. Applications should include a brief cover letter, curriculum vitae, and the names and contact information for three references. Please put the specific postdoctoral position for which you would like to be considered in the subject line of your email to Basia Latawiec the SCAPES Research Coordinator, latawic2@illinois.edu.

For further information about the position, please contact Dr. Carl Bernacchi at bernacch@illinois.edu, Dr. Evan DeLucia at delucia@illinois.edu, Dr. Nuria Gomez-Casanovas at ngomezca@illinois.edu, Dr. DoKyong Lee at leedk@illinois.edu, or Dr. Bruce Branham at bbranham@illinois.edu.

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The University of Illinois conducts [criminal background checks](#) on all job candidates upon acceptance of a contingent offer.