University of Nebraska Lincoln

Graduate Research Assistant (PhD) Announcement

Position Description: The Irrigation & Digital Agriculture Laboratory at the Panhandle Research, Extension and Education Center (PREEC), Department of Biological Systems Engineering (BSE), University of Nebraska-Lincoln (UNL) is seeking a highly motivated PhD student to join our research group in summer/fall 2025. The successful candidate will collaborate with a multi-institutional and interdisciplinary team focusing on irrigation management and weather intelligence, while contributing to the development of educational programs for two-year colleges, high schools, agricultural producers, and other stakeholders. This position is based at PREEC in Scottsbluff, NE, with periodic time required on the main campus for coursework completion.

Required Qualifications:

- M.S. degree in Agricultural and Biological Systems Engineering, Agronomy, Environmental Engineering, Electrical Engineering, or Computer Science; or a bachelor's degree in aforementioned fields with significant research accomplishments (including research products, journal publications, etc.)
- Strong written and verbal communication skills
- Meeting GPA and English proficiency requirements set by UNL Graduate School
- Ability to obtain a valid driver's license within 6 months of hiring

Preferred Qualifications:

- Demonstrated publication record in peer-reviewed journals
- Evidence of independence, innovation, and strong problem-solving capabilities
- Advanced programming and instrumentation skills, with demonstrated contributions to coding or instrumentation projects
- Research experience in irrigation engineering or management

What We Offer:

- Competitive annual stipend of $32,000 with full tuition remission
- Comprehensive student health insurance coverage
- Support for attending national and international conferences
- Extensive networking opportunities with academia, stakeholder groups (producers, regulatory agencies), industry partners, and educational institutions
- Flexibility in research direction with open-ended topic selection

About Our Program: The Irrigation and Digital Agriculture Laboratory specializes in developing cutting-edge technology, tools, and management strategies for optimal water resource utilization in crop production. Our research encompasses the development of advanced sensors

and methodologies for data collection and analysis from commercial production fields. We focus on reducing crop production risks from various biotic and abiotic stresses through enhanced real-time monitoring capabilities. Our research emphasizes understanding the relationships between farming practices, processes, and their impacts on yield and environmental outcomes. The ultimate goal is to create effective, user-friendly, and scalable tools that enable producers and industries to improve resource efficiency, reduce environmental impact, and enhance economic returns. The laboratory has secured multiple grants from industry partners, state agencies, and federal institutions (USDA-NIFA, NSF). Notable projects include:

- Web-based irrigation management dashboard: https://phrec-irrigation.com/#/
- Self-powering variable rate valve development with KZValve, LLC: https://www.farmprogress.com/farming-equipment/new-valve-for-pivot-irrigation-has-self-powering-capabilities ·
- USDA-NIFA Data Science yield prediction project with Georgia Institute of Technology: https://portal.nifa.usda.gov/web/crisprojectpages/1031579-dsfas-deepyield--integrating-multi-scale-sensing-time-series-imaging-and-management-data-with-artificial-intelligence-for-crop-yield-prediction.html
- NSF-EPSCoR project: https://now.uiowa.edu/news/2024/07/ui-spearheads-6m-multistate-nsf-grant-help-midwest-agricultural-communities-better

How to Apply: Interested candidates should submit their personal statement, curriculum vitae and academic transcripts to Dr. Xin Qiao (xin.qiao@unl.edu). For detailed information about the BSE graduate program application process at UNL, please visit: https://engineering.unl.edu/bse/graduate-programs-faq/. The University of Nebraska-Lincoln is an equal opportunity employer committed to creating a diverse and inclusive environment.