

September 2024

Dean's Fellow Welcome

I have been fortunate to serve our college as Dean's Fellow for Digital Agriculture for several years. Digital agriculture is more prevalent than ever, and we needed more collective leadership across units to pull research teams together, to coordinate educational and extension programming, and to weave digital aspects into international work. To set Purdue up for even bigger success in this realm, we proposed, and our Executive Vice President for Research, Dr. Karen Plaut, recently approved, the Institute for Digital and Advanced Agricultural Systems (IDAAS). Our mission:

The Institute for Digital and Advanced Agricultural Systems will serve as a hub and catalyst to connect efforts and share resources that build community while effectively communicating Purdue's leadership in integrated data-driven systems. The IDAAS will drive research, technological advancement, workforce development, and adoption throughout the entire agriculture value chain.

The executive committee has representation across mission areas:

- Research: Dharmendra Saraswat, Agricultural and Biological Engineering
- Extension: Adam Shanks, Cooperative Extension
- Teaching: Bruce Erickson, Agronomy
- International Programs: Margaret Gitau, Agricultural and Biological Engineering

And topic communities:

- Plant production: Christian Cruz, Botany and Plant Pathology
- Animal production: Luiz Brito, Animal Sciences
- Social Sciences: Chad Fiecther, Agricultural Economics
- Post-farm/Processing: Betty Feng, Food Science

And includes me as founding director, Bill Bogan as managing director, and Melinda Smith as project manager.

We are working to revise/rebrand what was the Digital Ag Resources website into the IDAAS site so stay up to date with news, publications, projects, and events there. We started with an update to the "people". If you are not listed and see yourself aligned with IDAAS, just send a simple note note and we will add you. The projects and publications (under research) will take some time to get fully populated, so watch for continual updates. Also watch for announcements of IDAAS-sponsored events in coming months.

I know time is limited and you get lots of newsletters, but I hope you can at least skim the headlines of this one; you'll see that Purdue efforts toward advanced agricultural systems are diverse across departments and mission areas.

We would also love it if you shared this newsletter (via forwarding the email or providing this link) with folks outside our university who may find it of value.

Wishing you the best,

Dennis R. Buckmaster

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PURDUE UNIVERSITY | College of Agriculture — Cosponsored by: Institute for Digital Forestry, Institute for Plant Sciences, and Digital Agriculture

Remote Sensing in Agricultural Research Webinar Two: Considerations and Tradeoffs in Remote Sensing in Modern Agriculture

We are excited to invite you to the Fall 2024 Remote Sensing in Agricultural Research Webinar Series, presented by Purdue University Plant Sciences in collaboration with GRYFN. This series will provide researchers, students, and industry professionals with essential insights into the latest advancements in remote sensing technologies and their applications in agricultural research.

Rule #1: There is no perfect sensing solution (Webinar 1: August 27th)

Rule #2: Everything in remote sensing is a tradeoff (Webinar 2: September 24th)

Rule #3: Graduate level rule 1 & 2 review (Webinar 3: October 22nd – last of the series)

This session is designed for participants of all experience levels and will cover how environmental variables such as atmospheric conditions, light, clouds, and temperature impact data quality and sensor performance. The session will compare various platforms -- satellites, airplanes, drones, and subsurface sensors -- focusing on the tradeoffs between time, data, and quality. We will explore the differences between sampling/scouting and "wall to wall" sensing and discuss the unique demands of production versus research applications. Additionally, we'll uncover some of the "dirty little secrets" behind data visualization, interpretation, and presentation.

Please RSPV to confirm your attendance. We look forward to your participation in this informative and engaging webinar series!

AAAI 2024 Fall Symposium Series

The Association for the Advancement of Artificial Intelligence (AAAI) will host the 2024 Fall Symposium Series from November 7-9 at the Westin Arlington Gateway in Virginia. This annual event features multiple parallel meetings, fostering an intimate yet significant gathering for the AI community. The two-and-a-half-day format encourages extensive feedback and discussion, making it perfect for emerging fields and new communities.

Research Spotlight

IoT4Ag Center is advancing data collection capabilities for rural farms

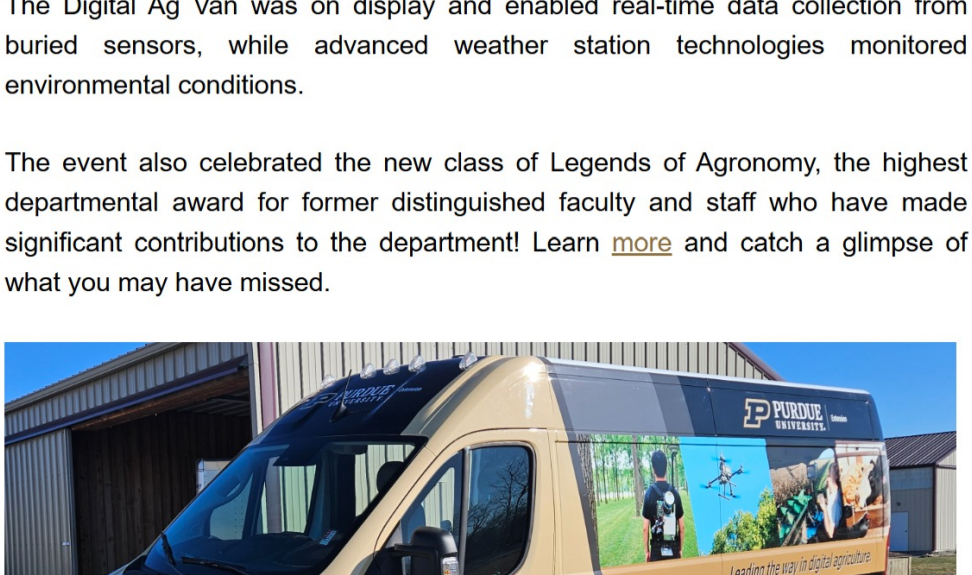
Entering its fifth year, the Internet of Things for Precision Agriculture Center (IoT4Ag) is revolutionizing agriculture with affordable, innovative technologies like the Solar-Powered Remote IoT4Ag Network Gateway (SPRING) project. Funded by the National Science Foundation, IoT4Ag connects scientists from the University of Pennsylvania, Purdue University, the University of California, Merced, and the University of Florida with farmers and industry partners. SPRING builds on previous projects to collect farm data using solar-powered, long-range networks, enabling real-time access via the cloud. This initiative aims to make IoT technology more accessible and affordable for farmers, helping them make informed decisions and adapt to challenges like climate change and rising production costs.



several projects that are leading agriculture into the digital era were on display. There were displays of UAVs for product imagery and chemical application, robots for autonomous operations, systems for improving digital records, reading of planted sensors, improved weather stations, and more.

The Digital Ag Van was on display and enabled real-time data collection from buried sensors, while advanced weather station technologies monitored environmental conditions.

The event also celebrated the new class of Legends of Agronomy, the highest departmental award for former distinguished faculty and staff who have made significant contributions to the department! Learn more and catch a glimpse of what you may have missed.



Leveraging Extension and University Engagement: Developing and Implementing Novel Projects Using Transdisciplinary Approaches

The USDA National Institute of Food and Agriculture recently hosted a webinar on leveraging extension and university engagement to develop and implement novel projects using transdisciplinary approaches. University administrators discussed the challenges and opportunities of such work, focusing on inclusivity and diverse perspectives to address complex challenges in food and agricultural systems. This event is part of the Transdisciplinary Approaches Webinar series, which explores strategies for team building and overcoming challenges in transdisciplinary systems. Recordings from past webinars in the series are available for viewing.

Positions Available

Fall CoA Career Fair

Join us October 1st from 10:00 AM - 3:00 PM for the CoA Career Fair. The College of Agriculture hosts career fairs in the fall and spring semesters. More than 250 organizations attend annually. Several sectors of the agricultural industry are represented, including natural resources, technology, food and animal sciences, plant and crop sciences, and farm management to list a few. There is no doubt that there will be internships and full-time positions open related to data driven agriculture.

- Students: View more details about the fair and how to prepare by visiting the Careers Services Student Page.
- Employers: View more details about the fair and how to register by visiting the Career Services Employer Page.



Digital Presence

What is Digital Agriculture? It's the use of digital devices to gather, process and analyze spatial and/or temporal data. This data can then guide targeted actions to improve agricultural efficiency, productivity and sustainability.