

**Day 1 - Thursday, February 6, 2025 - Sensing, Connectivity, & Digital Twins****10:00 am - Welcome and Introductions - Intro to the Open Ag Technology & Systems Center - Ault****10:15 am - Intensive and Autonomous Sensing at Scale (part 1 vision)**20 min: Jim Krogmeier (Purdue) - *PIVOT+ project overview*30 min: Jian Jin (Purdue) - *Precision Crop Nutrient/Disease Sensing Tools, and Their Roles with Central Pivot Systems*10 min: Dennis Buckmaster (Purdue) - *OATS/IoT4Ag BHAG Regarding Data***11:15 am - Digital Twins (part 1)**20 min: Bedrich Benes (Purdue) - *3D Geometry Reconstruction and Digital Twins in AI Phenotyping*20 min: Jinha Jung (Purdue) - *Data to Science: Module Open-Source Ecosystem for GeoAI***11:55 - Lunch****12:45 pm - Connectivity in Rural Spaces (part 1 theoretical considerations and performance)**15 min: David Love (Purdue) - *Precision Ag Use Cases for 6G Communications*15 min: Yaguang Zhang (Purdue) - *Machine Learning for Channel Modeling: Enhancing Accuracy and Generalization*15 min: Tomo Arakawa (Lynk, virtual) - *Lynk: Global, Ubiquitous Connectivity for the Cell Phone in Your Pocket*15 min: Shuai Nie (UNL) - *5G on a Farm: Channel Modeling for Wireless Agricultural Networks at Broadband Millimeter-Wave Frequency*15 min: Ted Rappaport (NYU) - *Millimeter Wave Coverage for Rural Mobile and Fixed Wireless Access: It Will (and does) Work!***2:00 pm - Break****2:20 pm - Connectivity in Rural Spaces (part 2 practical matters - a panel) - Krogmeier**10 min: Tom Williams (VEEA) - *Connecting Rural Communities*10 min: Mike Wilson (Mainstream Fiber) - *Connecting Rural Communities*

0 min: Ted Rappaport (NYU)

0 min: David Love (Purdue)

30 min panel discussion

**3:10 pm - AI Demonstrations (part 1)**20 min: Chad Fiechter (Purdue) - *Off the Shelf AI to Supplement Farm Financial Management***3:25 pm - Break****3:40 pm - Digital Twins (part 2)**15 min Michael Mardikes (Purdue) - *Digital Twin Roadside Vegetation Management and Real-world Verification*15 min: Prati Poudel (Purdue) - *Integrating Crop Simulation Models with Digital Twin Technology*10 min: Harsh Pathak (Purdue) - *Biophysics Enabled Informed Nitrogen Fertilizer Management in Corn Production*10 min: Sneha Jha (Purdue) - *Leveraging High Resolution Geospatial Data to Reduce Random Errors in Ag Field Experiments*20 min: Amy Reibman / Jackie Boerman (Purdue) - *FEED-VID: Updates on a Dairy Cow video USDA/IDEAS project***4:50 pm - Introducing IDAAS - the Purdue Institute for Digital and Advanced Agricultural Systems - Buckmaster****5:00 pm - Adjourn**

**Day 2 - Friday, February 7, 2025 - Intensive sensing, AI, and Open-Source Projects****8:30 am - Light Breakfast****9:00 am - Welcome and Overview of IoT4Ag - Krogmeier & Kagan****9:20 am - Intensive and Autonomous Sensing at Scale (part 2 - sensing and applications panel)**15 min: Andrew Balmos (Purdue) - *Design of an Autonomous Ag Platform Capable of Field Scale Data Collection in Support of Artificial Intelligence*15 min: Yang Yang (Purdue) - *From Shoot to Root: The Imaging Capabilities at Plant Sciences Institute*15 min: Sunoj Shahjahan (UIUC) - *Integrating Agricultural Data: Robotics, Machine, and Remote Sensing for Precision Agriculture*15 min: Cherie Kagan - (U Penn) - *IoT4Ag Agricultural Leaf and Soil Sensors*

20 min at-table discussions (include identification of good collaborators not yet in the loop)

**10:40 - Break****11:00 am - AI Demonstrations part 2**20 min: Josh Bailey / Sami Basir (Purdue) - *Bridging Generative AI and AI-Enhanced Recordkeeping for Data Driven Agriculture*20 mins: Dharmendra Saraswat (Purdue) - *A Friendly Chatbot for Weed Management Guidance*20 mins: Upinder Kaur (Purdue) - *Physical AI for Precision Agriculture***12:00 pm - Lunch****12:40 pm - Open-Source Efforts & Funding**20 min: Hannah Wittman (UBC) - *LiteFarm: An Open-source Tool for Sustainable Agroecosystem Management, Monitoring, and Transformation*20 min: Ankita Raturi (Purdue) - *Participation in Open Ag Tech*20 min: Rob Trice (Better Food Ventures, virtual) - *New Innovation Approaches for Agrfoodtech*20 min: Jim Krogmeier (Purdue) - *Program for Open-Source Ecosystems proposal***2:00 pm - Adjourn to Networking and Departures**