**NCERA 180 Multistate Hatch Project Annual Meeting**

**May 23, 2024 9:00 am EDT**

**Tifton, GA and Online (MS Teams)**

1. Introductions: Wes Porter called the meeting to order. He welcomed and thanked all the participants for joining today’s meeting. He introduced the new ABAC Ag Tech Building to the participants. In-person participants also had the chance to participate at the UGA Institute for Integrative Precision Agriculture (IIPA) meeting to learn about UGA’s effort in precision agriculture on the day before of the NCERA-180 Annual Meeting.
2. Participants

* Wes Porter, University of Georgia Tipton Campus, NCERA 180 Chair
* K. Muthu Muthukumarappan, South Dakota State University, NCERA 180 Admin Advisor (online)
* Chris Hamilton, NC regional multistate projects coordinator, NIMSS system admin, and NCRA Assistant Director (online).
* Pedro Andrade, University of Arizona (online)
* Joby Czarnecki, Mississippi State University (online)
* John Evans, Purdue University (online)
* John Fulton, Ohio State University
* Peter Kovacs, South Dakota State University
* Wes Lowe, Mississippi State University
* Brian Luck, University of Wisconsin
* Yuxin Miao, University of Minnesota
* Rob Proulx, North Dakota State University Extension
* Natasha Rayne, University of Wisconsin
* Simerjeet Virk, University of Georgia Tifton Campus

1. General Discussion

Christina Hamilton introduced herself as the system administrator for the national multi-state project database where all the annual reports, proposals, members, and other items related to multi-state projects are kept. Also introduced was Dr. Muthu, who serves as the administrative advisor, making him the liaison between the group and Christina’s office. Dr. Muthu reminded participants that the multi-state projects are to make a difference. The Federal government is allocating funding for these activities.

Following introductions, Wes Porter explained the project outline, including the focus on three objectives. These objectives were (1) to promote multidisciplinary collaboration among researchers and industry and leverage these technologies to improve the environmental and economic sustainability systems; (2) provide insight and direction to industry and funding agencies; and (3) improving stakeholder literacy by sharing educational materials between universities.

John Fulton gave an update on the International Conference on Precision Agriculture, that will be held in July in Manhattan, KS. More than 500 abstracts have been submitted and approved for the conference. He was still seeking moderators and poster judgers.

1. Highlights from Station Reports

Below are highlights from each station representative regarding the work being done at their respective institutions.

**Ohio State University (John Fulton)**

* autonomous agricultural operations between solar panels
* incorporating intelligence, through sensors, on machinery and equipment
* building a database of on-farm research network data and developing analytics for gaining insights from the data
* developing precision agriculture curriculum to support extension educators, including in collaboration with neighboring states

**University of Wisconsin (Brian Luck)**

* using AI algorithms to automate cleaning of yield monitor data
* updating nutrient management recommendations
* applied research using UAVs
* developed a planter closing wheel library; 14 sets of wheels were left over from a research study, which are now loaned out for on-farm testing
* expressed a need for in-service precision agriculture trainings for regional extension educators
* UW hired new soil fertility (Natasha Rayne) and water specialists

**University of Minnesota (Yuxin Miao)**

* nutrient management, including dynamic in-season nitrogen management in corn
* irrigation management
* remote sensing for insect/disease detection
* AI Climate Institute; developing curriculum forteaching
* organizing a Minnesota precision agriculture conference

**North Dakota State University (Rob Proulx)**

* site-specific weed management, including weed detection, weed identification, prescription mapping, and thermal weed control
* robotic platforms for weed mapping, livestock behavior monitoring, soil health monitoring, and high-throughput phenotyping
* spatiotemporal crop health and disease monitoring
* adaptive management zones and yield prediction

**South Dakota State University (Peter Kovacs)**

* site-specific management practices
* AI/ML for adaptive management zones and yield prediction
* Precision research in livestock production, not just with field crops
* creating different emphases within the precision agriculture undergraduate program

**Mississippi State University (Wes Lowe)**

* AI/ML for data analysis and insights
* site-specific decision-making
* rebuilding their Extension program
* creating an agricultural autonomy institute
* Conducting farmer scale trials where plot size is 100+ acres
* testing equipment to optimize its settings, such as planter speed and downforce
  + the committee expressed interest in seeing expansion of this into a broader effort

**University of Arizona (Pedro Andrade)**

* examining precision planting settings, such as two-stage closing, downforce, and variable depth
* soil amendments for salinity
* reintroducing in-season tillage
* variable rate fertility management in vegetable crops

**Purdue University (John Evans)**

* evaluating sense and act spray technologies from various manufacturers
* data management, including field collection
* spray drones for fungicides
* integrating farming practices onto land occupied by solar arrays
* high-speed planting education and economic evaluation

**University of Georgia (Wes Porter)**

* UGA is three to four years into having the Institute of Integrative Precision Agriculture
  + Lots of new specialist/researchers have been hired in the system
* extensive research in precision irrigation
* lots of work similar to what others discussed

1. Business Meeting and Elections

* General discussion was about sprayer drones and their usage in the eastern corn belt, the need for education materials, both basic and advanced and their updates.
* Peter Kovacs offered to host the 2025 meeting at South Dakota State University in Brookings, SD.
  + During the discussion Joby Czarnecki and Simer Virk suggested to reach out to the S-1069 work group for a joint meeting. There are several participants who are part of both group and mots of the time have to choose which annual meeting they can attend due to time and financial constraints. John Fulton and Joby Czarnecki offered to reach out to the S-1069 group and bring up the idea of joint meeting to the other group.

All members unanimously approved the following slate of executive team members.

Chair – Peter Kovacs, South Dakota State University

Vice-Chair – Rob Proulx, North Dakota State University

Secretary – Joby Czarnecki, Mississippi State University

Meeting Adjourned at 11:00 AM EDT.