2025 S1090 Multistate Meeting

Basic Information
- **Project No. and Title:** S1090: AI in Agroecosystems: Big Data and Smart Technology-Driven Sustainable Production
- **Date:** 07/31/2025 to 08/01/2025
- **Location: Farrall Hall 208, 524 S. Shaw Ln, East Lansing, MI 48824**

Participants
The meeting was held in a hybrid format. There were 27 participants, including 10 in-person and 17 participants via Zoom. Here is a list of professors who participated in the meeting: Yuzhen Lu, Daniel Uyeh, Daniel Morris, Younsuk Dong, Won Suk Lee, Akinbode Adedeji, Carlos M. Rodriguez Lopez, Yakun Zhang, Chetan Badguyar, Thanos Gentimis, Edwin Brokesh, Yaping Xu, Changying Li, Henry Medeiros, Hao Gan, Alex Thomasson , Nuwan Wijewardane, Hussein Gharakhani, Daniela Jones, Febina Mathew, Ignacio Ciampitti, Mahendra Bhandari, Robert Strong, Ziteng Xu, Md Shamim Ahamed, Maria Bampasidou, and Ivan Grijalva.

Meeting Minutes
The S1090 meeting was organized by Yuzhen Lu and a two-day event that took place in the Department of Biosystems & Agricultural Engineering, Michigan State University (MSU), East Lansing, MI.

The meeting was called to order at 8:30 am on Thursday, July 31, 2025, by Yuzhen Lu. Dr. Kang Xia, Associate Director of MSU AgBioResearch, delivered a welcome remark and introduced the mission of facilities of MSU AgBioResearch. The S1090 business meeting started at 9:00 am. Yuzhen Lu presented updates on the S1090 project rewrite and reminded the group of the writing tasks and deadlines. The first important deadline to meet is Sept 30 of 2025 when the Issues and Justification session for the project re-writing needs to be submitted. The writing document was created and placed in a shared Google folder. Lu went over the five individual sub-sessions for revisions and tasked them to specific group members identified during the meeting and committed to leading the process for final submission by the deadline.

The meeting proceeded to nominate a new secretary for S1090. Lu nominated Mahendra Bhandari from Texas A&M given his active engagement in the group over the years. Mahendra agreed to serve on the role. Mahendra's nomination and election were ratified by all members in attendance in person and online. Thereafter, there was open discussion on collaborations and funding acquisition among participants. The group discussed the next annual meeting which will be absorbed in the 2026 AI conference at NCSU. Lu shared to the group that there was a possibility for the group to organize and sponsor a special issue on artificial intelligence in the Journal of the ASABE, but there was no further confirmation whether the journal would offer publications free of charge. By the end of the first morning session, Lu reminded the group to submit annual station reports using the prepared template for information collection.

In the afternoon of day 1, the meeting started at 1 pm with a 30-minute invited talk delivered by Dr. Renfu Lu, a USDA-ARS researcher leader on the campus of MSU. The talk was titled "The Status and Prospect of Harvest Automation for Tree Fruit". Dr. Renfu Lu gave an overview of history and challenges with technological development for tree fruit harvesting, particularly apples. Dr. Lu highlighted the need for continued federal funding for technology development and translation. A number of questions followed up his talk by the S1090 group members both online and in-person. Dr. Kang Xia commented that USDA might increase the funding of SCRI to support automation/mechanization research. After the invited talk, the online session was closed, and on-field demos were conducted for in-person participants. The demo consisted of two parts, the precision weeding demo of two AI-powered systems at the MSU horticultural

farm and the in-orchard ground-based platform demo in the MSU plant pathology orchard. The weeding demo was also attended by MSU professors (not S1090 members) and students. Photographs of the demos are shown below.

On Day 2, the meeting started at 8:30 am, focusing on institute reporting, which continued until 12 pm. Representatives of 14 institutions delivered their project reports, covering diverse research topics on AI for plant and animal production, postharvest handling, and natural resource management. Five other institutes listed on the meeting agenda did not show up, although some submitted their report to the S1090 leadership. Dani Jones from NCSU shared updates on the planning of the 2026 AI conference and the finalized conference date (March 31–April 2 of 2026). More information on the conference will be shared in the coming fall. A dedicated session before the formal conference will be reserved for the S1090 annual meeting. The afternoon session was a tour of MSU hosted by Dr. Wei Liao for the in-person participants (see photographs below). The group toured the Anaerobic Digester Research and Education Center (ADREC) & new dairy farm facilities featured with innovative technologies. The tour was done around 3 pm, concluding the S1090 meeting.

Leadership Team
Chair: Yuzhen Lu, Michigan State University
Chair-Elect: Akinbode Adedeji, University of Kentucky
Secretary: Dongyi Wang, Michigan State University