Notes from NE2335 – 23 September 2024

**Present:**

*In person:*

Shuyang Zhen (Chair, Texas A&M)

Stephanie Burnett (Secretary, University of Maine)

Jennifer Boldt (USDA ARS)

Neil Mattson (Cornell University)

Samson Humphrey (University of Tennessee)

Shamim Ahamed (University California, Davis)

Qianwen Zhang (Mississippi State University – new faculty member)

Ying Zhang (University of Florida)

Zhihao Chen (Arizona State)

Yujin Park (Arizona State)

Qingwu (William) Meng (U Delaware)

Genhua Niu(Texas AgriLife Research Center in Dallas)

Joe Masabni (Texas AgriLife Research Center)

Meriam Karlsson (U Alaska, Fairbanks)

Timothy (Vegetable crop; high tunnel and open field)

Xinhua Jia (Aquaculture, smart irrigation, NDSU)

Xiaoyu (Iris) Feng (NDSU)

Donald Koon (University of Florida, PhD student)

Daniel Leskovar (TAMU at the Agrilife Research Center)

Dr. Biswas (Fort Valley State University)

Alex Speck (NDSU, grad student)

Youping Sun (Utah State)

*Zoom:*

Puneet Srivastava (Administrative Advisor)

Kim Williams (Kansas State University)

Most Tahera Naznin (University of Nevada)

Murat Kacira (Arizona State)

Business Meeting:

* Welcome and Introduction
  + Brief introductions for members in person in Hawaii and on zoom; attendees are listed above
* Approval of Meeting Minutes from 2023:
  + Motion to approve (Neil); no objections or suggested changes
* Administrative Advisor Report (Puneet Srivastava)

Puneet works in biosystems engineering related to climate change. His role as the Administrative Advisor is to make sure the project is going well. He reviews and approves the reports each year. He is a spokesperson for us during the renewal process. Puneet discussed the goal of multistate projects. For Cooperative Extension and Experiment stations, some formula/capacity funding through the Hatch Act is specifically for multistate projects. Our project is ‘NE-2335’ because it originated in the Northeast. There are fifteen Experiment Stations in the Northeast Region (NERA – Northeast Experiment Station Regional Area). There are four regions in the US. Multi-State Activities Committee reviews and approves projects on a five-year cycle. Our project was last reviewed and approved in 2023. Multistate projects allow for connecting with colleagues in related areas to facilitate collaboration on grants and publications. Puneet can nominate us for a regional and national multistate award after this cycle if it appears that we are doing well.

Xinhua Jia had a question about the difference between NCERA-101 and NE-2335. NCERA-101 is an information exchange group, while NE-2335 is a research group. As a research group, Universities can provide/budget funds for research, travel, etc... Some funds are specifically for multi-state projects.

Samson had a question about how to be a member of NE2335, and who can join. Only PIs who are faculty and representatives Industry can become members. Graduate students can’t be members, but they are always welcome to participate.

* Updates on Collaborative Activities (past, current, and proposed)
  + Hydroponic book – last year, Genhua Niu offered to lead the hydroponic book, and Shamim also offered to help from engineering area. The group is still interested in working on getting this book published. Shuyang suggested that if anyone is interested in submitting a chapter, they should let us know. There is a good outline for the chapter that Neil will share as a google doc, and people can edit. Several people mentioned they are interested in contributing a chapter, and there is good support for this effort from the group.
  + Neil is collaborating with Stephanie as part of the Northeast Greenhouse group; he is also serving on Jacob Schwab’s doctoral committee for UMaine. AJ Both (Rutgers) is collaborating with Neil on Project LAMP. Neil is interested in more collaboration on K-12 education and curriculum development for hydroponics. He has collaborated with TAMU on aquaponics research, and he has collaborated with Shamim from UC Davis on grant collaboration.
  + Stephanie, Kim, and Shuyang are collaborating on a Higher Education Challenge Grant proposal.
  + Qingwu Meng is working with Josh Craver (Colorado State) and Yujin Park grant proposal for Indoor Ag. Improving and advancing hydroponic factors for indoor agriculture. Qingwu is looking at reducing tip burn in hydroponics and looking at manipulating light for reducing disease (pythium and phytopthora). Yujin is looking at maximizing oxygen for strawberry production. Josh Craver is looking at reducing intumescence for fruiting crops (i.e. peppers). Also developing educational materials for handbook of hydroponic materials.
  + Murat mentioned University of Arizona is collaborating with Michigan State and Purdue University; also working on Advanced CEA project (AI embedded climate control) with Ohio State University.
  + Genhua Niu is collaborating on a biostimulant project with Youping Sun from Utah State. TAMU is also collaborating on proposals with Shamin. TAMU is working on building collaborations; NSF proposal with University of Wyoming.
  + Xinhua shared that NDSU had a CEA conference with 40 attendees; this was their first CEA conference. NDSU has a project collaborating with USDA-ARS Toledo lab that will start this fall. This will look at automation, smart irrigation, and energy efficiency. NDSU will have a large data center to generate 135 MB of power and hot air. This heat source will be an opportunity for greenhouse heating/building greenhouses. There is a new yydroponic lettuce facility in North Dakota.
  + Yujin is collaborating with Kim about teaching activities. They have a review article published on organic hydroponics. Association of public and land grant universities supported development of a module on organic hydroponics. They are doing SoTL work in this area.
  + Shamim is collaborating on USDA-NIFA grant in collaboration with Most Tehrar – looking at reducing carbon footprint of greenhouses in sunny/hot areas (Arizona, Nevada, CA). Submitting two big grants that are collaborative across multi-states. UF, TAMU, and UC-Davis published a review article.
* Membership report and introductions – We have 30 members from 24 stations, and we have several new members.
* Nomination and election of secretary – Yujin Park was nominated and accepted.
* Announcements, upcoming events, relevant conferences
  + Neil mentioned that NCERA-101 will be meeting in Monterey, Mexico in April 5-9, 2025. Details are on the [NCERA-101 website](https://www.controlledenvironments.org/meetings/). The group is getting approval for a North American meeting; the group has also met in Montreal, Canada.
  + Shamim - The American society for Ag and Biosciences meeting will be in Toronto at the end of July
* 2025 Meeting location and logistics
  + Logistics – This meeting cost $1400, and TAMU covered the costs in 2024. Should we change the model for our meetings so that costs be spread to all members? Shuyang suggested that there should be a way to make it more fair to cover meeting costs. Neil says that historically the meeting host has been separate from the chair of the group. We would travel around to different universities in the past, and the host of the meeting could charge a fee. With this model, there would be a day of tours and a day of meetings. Post-covid, we have tried to have the meeting along with ASHS or another meeting to make travel easier. Cheiri suggested that we could move the meeting online completely as well. Another option is to combine with NCERA-101. Qingwu suggested having shorter station reports and a longer business meeting to have more time for discussion. US-CEA meeting is another possible meeting to tag along with; it will be at the Kennedy Space Station. Samson suggested having a presence at ASHS that is shorter if we decide to have the meeting someplace else in the future. Dr. Lescovar suggested that one benefit of having the meeting with ASHS is that we can connect with other groups that would not attend a NE2335 meeting. Ying suggested that we could present station reports online and have the business meeting in person. Jennifer mentioned that there are members who could not participate and are not present. Maybe we should send an email poll.
  + Stephanie will send out an email poll after the meeting asking people to vote on options: NCERA-101 (April 5-9, 2025 in Mexico); Meeting at Kennedy Space Center (Summer, 2024; date TBD); ASHS (New Orleans; July 28- August 1, 2025) or a member hosted site
* Station reports start at 11 am with the following schedule and presenters:
  + 11:00 - 11:15 am University of Florida (Ying Zhang)
  + 11:15 - 11:30 am University of Nevada, Reno, (Most Tahera Naznin, zoom)
  + 11:30 - 11:45 am Cornell (Neil Mattson)
  + 11:45 - 12:00 am University of Delaware (Qingwu Meng)
  + 12:00 - 1:30 pm Lunch
  + 1:30 - 1:45 pm The Ohio State University (Garrett Owen)
  + 1:45 - 2:00 pm Arizona State University (Yujin Park)
  + 2:00 - 2:15 pm USDA-ARS (Jennifer Boldt)
  + 2:15 - 2:30 pm Kansas State University (Kimberly Williams, zoom)
  + 2:30 - 2:45 pm North Dakota State University (Iris (Xiaoyu) Feng)
  + 2:45 - 3:00 pm Break
  + 3:00 - 3:15 pm University of California, Davis (Shamim Ahamed)
  + 3:15 - 3:30 pm University of Arizona (Murat Kacira, zoom)
  + 3:30 - 3:45 pm Texas A&M (Genhua Niu and Shuyang Zhen)
  + 3:45 - 4:00 pm University of Maine (Stephanie Burnett)