**Minutes: NE-1835 Resource Optimization in Controlled Environment Agriculture**

**Annual Meeting – Virtual Meeting via Zoom, August 3rd, 2020**

**Attendees**

* Celina Gomez (University of Florida)
* AJ Both (Rutgers University)
* Brian Poel (Fluence Bioengineering)
* Peter Ling (Ohio State)
* Chieri Kubota (Ohio State University)
* Adel Shirmohammadi
* Ellen Paparozzi (University of Nebraska)
* Gene Giacomelli (University of Arizona)
* Genhua Niu (Texas A&M Extension, Dallas)
* Jennifer Boldt (USDA ARS Toledo)
* John Erwin (University of Maryland)
* Joshua Craver (Colorado State University)
* Kale Harbick (USDA ARS Toledo)
* Kellie Walters (University of Tennessee)
* Kimberly Williams (Kansas State University)
* Marlon Retana Cordero (University of Florida)
* Neil Mattson (Cornell University)
* Meriam Karlsson (University of Alaska, Fairbanks)
* Robin Brumfield (Rutgers University)
* Rosa Raudales (University of Connecticut)
* Stephanie Burnett (University of Maine)
* Garett Owen (University of Kentucky)
* Ying Zhang (University of Florida)
* Youping Sun (Utah State University)
* Murat Kacira (University of Arizona)

**Meeting schedule:**

**10:00 A.M. EST:** NE1835 Business Meeting

* Welcome and introductions (Celina Gomez)
* Introductions from members and approved 2019 minutes
* Technical Advisor report (Adel Shirmohammadi)
* Collaborative Research and Grant activities
	+ Investigation of an HEC (Higher Education Challenge) grant – suggestion to coordinate our activities to a NIFA Agriculture workforce development grant
	+ Expansion of the virtual field trips Celina Gomez has been coordinating
	+ Create a centralized repository for information and current activities (grant applications, collaborative publications, educational material)
* Introductions from new members
* Ying Zhang (University of Florida, Agriculture and Biological Engineering since Jan 2020)
	+ Indoor airflow distribution and simulation
* Genhua Niu (TAMU, Dallas Extension, Urban Agriculture Professor)
	+ Conventional and organic hydroponics
* Kale Harbick (USDA ARS – Toledo, Ag Engineering Research)
	+ Energy modelling and robotics applications
* Youping Sun (Utah State University, Assistant Professor Landscape Horticulture)
	+ Water conservation and water stress
* Garrett Owen (University of Kentucky, Horticulture Assistant Professor and Extension Specialist)
	+ Ornamentals and greenhouse vine crop production
* Kellie Walters (University of Tennessee, Food Production Systems)
	+ Controlled environment food production, phytochemical content, shelf life
* Kimberly Williams (Kansas State, Greenhouse Management)
	+ Greenhouse management, hydroponic production, learning and development
* Joshua Craver (Colorado State University, Controlled Environment Horticulture)
	+ Production in controlled environments, input optimization
* Outreach to potential new members
* Our biggest differentiator from NCERA-101 is they don’t have specific research objectives – this group is tied to research funding and tasks
* This group also has a broader focus including other inputs (broaden our horizons)
* No members from California, this should change
* Steps for outreach:
	+ Personally contact members who would be a good inclusion for collaboration
	+ Industry contacts
		- Reach out to greenhouse constructors, irrigation designers
		- Greenhouse control companies
		- Contact potential growers with research-minded objectives
* Action Items:
	+ John Erwin and Peter Ling to reach out to potential academia members
	+ Brian Poel to contact potential industry representatives
	+ All members are encouraged to share info about expanding membership
* Collaborative Research and Grant activities (continued)
* Completion of a hydroponics book
	+ Build off of the article MDPI – advances in hydroponics and aquaponics
	+ Using a similar format to “Lighting Up Profits” which has a revenue model
	+ Ongoing discussion on what is the objective of this text in the context of existing material
	+ A textbook both as a teaching tool but also used as an industry standard
	+ Celina Gomez will take the lead on assigning and organizing chapters with help from AJ Both and John Erwin
	+ Publishing outlets: Meister Media, Ball Publishing
	+ What aspect can participants share expertise on – this will guide the outline
		- Can help with gaps in membership expertise
	+ What is a realistic timeline?
		- Project ends in 2023, a realistic target would be completion of a book in 2022
	+ Action Items:
		- John Erwin, AJ Both, Celina Gomez and Kellie Walters will begin gathering potential chapters from members based on areas of interest
* Nominating and Incoming Secretary
* Roberto Lopez (Michigan State University) nominated as incoming secretary (one-year appointment followed by one year as chair)
* John Erwin moves to nominate, Seconded by Neil Mattson
* 2021 Meeting Location and Tours
* This group always benefits from tagging on to existing meetings
* Possibility of a joint meeting (NCERA, ASHS)
	+ NCERA-101 (Tucson) is postponed to 2021
	+ ASHS (Colorado State in August)
* Will take time to see how traveling situation develops into 2021
	+ At this point Colorado makes more sense to give more time for clarity regarding Covid-19
* Action Items:
	+ Make determination on travel by end of 2020 to begin coordinating tour locations

**12:00 P.M. EST:** Station Reports

* Ohio State University
	+ Chieri Kubota
	+ Peter Ling
* University of Arizona
	+ Murat Kacira
	+ Gene Giacomelli
* University of Connecticut
	+ Rosa Raudales
* University of Maine
	+ Stephanie Burnett
* University of Maryland
	+ John Erwin
* USDA-ARS, Toledo
	+ Jennifer Boldt
	+ Kale Harbick
* Rutgers University
	+ AJ Both
* Cornell University
	+ Neil Mattson
* University of Florida
	+ Celina Gomez
* Outgoing Action Items
* Request information on what educational materials you’re using (what do we need to get together)
* Brian Poel to determine meeting location
* Peter Ling and John Erwin - reaching out to academia new members
* AJ, John Erwin, Kellie Walters and Celina Gomez to gather chapters for updated hydroponic text/handbook

**4:00 P.M. EST:** Meeting Adjournment