**W3128 Minutes – November 12-13, 2015**

**Long Beach, CA**

Attendees:

Brad Rein brein@nifa.usda.gov

Rhucinito Ferrareri ferrareri@uvi.edu

Elin Roman Paoli elin.roman@upn.edu

Joel Schneekloth Joel.Schneekloth@colostate.edu

Claude Corcos Claude.corcos@toro.com

Suat Irnak sirmak2@unl.edu

Samia Amiri Samia.Amiri@okstate.edu

Saleh Taghvacian salek.taghvacian@okstate.edu

Jiri Simunek JIRI.SIMUNEK@UCR.EDU

Clint Shock clinton.shock@oregonstate.edu

Jim Bordovsky j.bordovsky@tamu.edu

Tsaya Kisckka ikissekka@ksu.edu

Delan Zha dlzhu@izl.edu

Freddie Lamm flamm@ksu.edu

Ken Shackel kashackel@ucdavis.edu

Maluneh Yitayew myitayew@email.arizona.edu

Pete Jacoby jacoby@wsu.edu

**Nov. 12 (13:00 – 17:00):**

Ken Shackel – 2015 Committee Chair, presiding

(Kelly Morgan – 2015 Vice Chair, only present on Nov. 13)

Pete Jacoby – 2015 Secretary, recording

**Registration, Introductions**

**Agenda review and changes to agenda**

* No changes

**Business meeting**

* 2016 meeting location be determined by the 2016 Committee Chair (Kelly Morgan)
1. Possible meeting locations could be Florida, Virgin Islands, or Phoenix (at end of ASA,CSSA,SSSA meeting during first week of November)
* Secretary (Johnny Ferrarezi) – elected with term beginning at 2016 meeting
* Webinar – clogging and remediation of micro-irrigation systems
1. Beta test with a small group
2. Prepare and present archival webinar
3. W3128 group should submit ideas for subject matter
4. Money needs to be spent - $13.4 k – ($10 k for webinar and $3.4 k for tour at next meeting) - Ken will check with Steve Lohring about using the residual funds for the tour at the next meeting after the webinar costs are covered

**Overview of W3128** multi-state project (Brad Rein – USDA NIFA)

* Experiment Station directors approve new projects (over 200 multi-state projects currently)
* Report is usually submitted for each project by each state Experiment Station director
* Focus on objectives – listed on back of meeting agenda

**Updates from NIFA** (Brad Rein)

* Operating on continuing resolution (cannot obligate funds, except 1st quarter)
* 2016 AFRI – has provision to consider priorities established by commodity boards that align with those of NIFA
* Water for Agriculture – RFA

**Shortage of Water (Irrigation) Engineering Faculty positions** (Brad Rein)

* Meeting between Sonny Ramaswamy and Ag. Engineering Dept. Chairs from Land Grant universities to discuss situation
* AFRI funding is phased to assist new faculty applications (considered “new” if faculty member has not received a grant from AFRI)

**State Project Updates and visitor reports (Nov 12 and 13)**

A number of attendees presented a state project update by PowerPoint or oral update on research and education activities being performed to advance use of subsurface micro-irrigation for better water conservation and crop production. On Thursday afternoon, *Freddie Lamb* (KS) summarized findings from a recent review of 150 published works on SDI. *Seleh Taghvaeian* (OK) discussed work on more effective irrigation scheduling using the OK MesoNet and HYDRUS 2D/3D modeling. *Jim Bordovsky* (TX) reviewed his work on SDI on cotton production in the southern high plains near Lubbock. *Zhu Delan* presented her work on use of porous ceramic emitters in China. *Jiri Simunek* discussed irrigation applications of HYDRUS. On Friday, state presentations continued, led off by a presentation by *Freddie Lamm* on corn production with SDI. *Kelly Morgan* (FL) briefed the attendees about impacts of HLB (greening disease) on the Florida citrus industry. *Suat Irmak* (NE) discussed the development and studies associated with a comprehensive field scale site to perform research on use of SDI on a variety of crops. *Pete Jacoby* (WA) discussed use of SDI delivered through hard PVC delivery tubes in vineyards. *Claude Corcos* (TORO) brought an industry perspective to the group, indicating that 5 million acres are under SDI and a number of crops respond very favorably to SDI. Problems with gopher damage and emitter clogging continue to plague some users, so both education and training are important factors in maintaining and designing systems. System design issues address on-farm efficiency and basic hydrology. *Elin Roman Paoli* discussed the use of low-pressure bubblers in Egypt. *Clint Shock* (OR) updated the group on SDI for production of steevia and issues of nutrient balance and scheduling in wheat. *Johnny Ferrarezi* (VI) reported on his research using the Arduino micro-controller with sensors. *Paul Colaizzi* discussed issues of overwatering based on certain crop coefficients and reduction of evaporation with SDI. *Ken Shackel* (CA) discussed use of stem water potential as a baseline by which to schedule irrigation.

**Webinar Discussion**

Ken Shackel led a group discussion about the educational webinar to be conducted prior to the 2016 meeting. It is envisioned to be preceded by a “dry run” to help refine the programmatic content. Comments from the group included the following considerations:

* Real life examples
* Non proprietary
* Geographical representation – different areas have different problems
* Focused central topics
* Types of plugging (internal and external)
* Filtration – both for particulates and biotic material
* Water quality issues
* Preliminary considerations prior to purchase and installation of a system, including maintenance
* Placement of injector in relation to filtration system – issues of back-flushing chemicals
* Utilize Grange network
* Develop the product, then consider the marketing

W3128 Objectives

1. Develop robust and appropriately-scaled methods of irrigation scheduling using one or more soil-, plant- or weather-based approaches.
	1. Development and Evaluation of Soil-Based Irrigation Scheduling
	2. Development and Evaluation of Weather-Based Irrigation Scheduling
	3. Development and Evaluation of Plant-Based Irrigation Scheduling
	4. Software Development and Comparison of Multiple or Combined Irrigation Scheduling Methods
2. Develop microirrigation designs and management practices that can be appropriately scaled to site-specific characteristics and end-user capabilities.
	1. Improved Management for Soil Salinity and Source Water Quality Concerns
	2. Improved Efficiency of Water and Nutrients
	3. Improved Designs and Performance of Microirrigation Systems
3. Develop technology transfer products for a diversity of stakeholders to promote adoption of microirrigation.
	1. Development and expansion of internet-based resources, decision tools and applications
	2. Development of print and multimedia content
	3. Coordination of Educational Events
	4. Advancement and Promotion of Microirrigation through Public-Private Partnerships

Milestones (2015):

Laboratory and field studies to select, develop, calibrate, adapt, and evaluate soil water sensors begin.

Software development/adaptation/modification and field studies involving weather-based irrigation scheduling begin.

Plant-based sensor development/modification and their evaluation in field studies begin.

Field studies to evaluate single, multiple, or combined irrigation scheduling techniques begins.

Modeling, field, and educational efforts to address soil salinity and poor source water quality begin.

Field studies will be initiated to determine optimal DI and SDI water and nutrient management for various crops.

Initial discussions and outlines will be developed for both publications and software being jointly developed or adapted to a new locale.

Tours, field days and educational events will be held at the local and regional level to promote microirrigation.

Outline of needs for small holder systems will be developed in cooperation with USDA-NRCS.

Conduct roundtable discussions with industry partners to identify needs and possible areas of cooperation.

Initiate a pilot joint activity with industry to gage opportunities and challenges of such activities.