Covering Environments—The CEAC Monthly Seminars

Electronic Eyes in Open Fields: Sensing Technologies in Precision Agriculture

March 31, 2017 @ 4:15-4:45 pm
Controlled Environment Agriculture Center, 1951 E Roger Rd

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Drive north on I-10, just a few miles past the I-8 intersection you will find the University of Arizona Maricopa Agricultural Center, and you will see looming on the dusty horizon a machine moving slowly in the field*. This is a novel piece of agricultural technology designed to monitor thousands of plants as they grow. The machine is known as the *Terra-Ref Field Scanner*, and our speaker Dr. Andrade-Sanchez is one of the principal investigators looking at ways to deriving from its computerized sensor 'eyes' extensive and sophisticated information about plant growth. What Andrade-Sanchez, and his team, does with this information is known as "Precision Agriculture" – a novel approach to optimizing the use of farm inputs to substantially increase crop yield while protecting the environment. Through science-based protocols, these technologies enable genetic gain for crop improvement as well as site-specific crop management strategies. The urgent need to increase crop yield comes from the expected increase in the world's population coupled with climate changes (rising temperatures, reduced rainfall), diminished arable land, and reduced ground water resources all of which will require new approaches to feed the world masses. A major approach to this problem is to do more with less: optimize conditions for much higher yields of grain and vegetable production.

Our speaker Pedro Andrade – Sanchez is familiar with farming systems of the low desert having started his career as a production manager in Baja California, Mexico, then gaining expertise and knowledge through several earned degrees (UC Davis and Autonomous University of Chihuahua) enabling him to work collaboratively in the enormously challenging task at hand: using ultra modern technology in the quest for increased food crop production in open fields based on the high-throughput plant phenotype data (ca 5 TB/d) generated by the Scanner. In today's presentation, Pedro will discuss the intricacies of this consortium project between the Dept of Energy, Donald Danforth Plant Science Center, the UofA and many other research institutions, and how it fits into the missions of CALS and the University of Arizona.

The Terra-Ref Field Scanner*

http://cals-mac.arizona.edu/ http://terraref.org/about/
https://uanews.arizona.edu/story/world-s-largest-robotic-field-scanner-now-place