

August  
2016

# Kearney Research News

University of California  
Agriculture and Natural Resources



Research and Extension Center System

[UC Kearney Agricultural Research and Extension Center website](#)



## Message from the director: Jeff Dahlberg

Wow, talk about the “dog days” of summer! To say it has been hot and dry would be a terrible understatement. That plus the poor air quality days and this has been a long summer already. Needless to say, we keep doing lots of research at Kearney Agricultural Research and Extension Center. If you have been by lately, you’ll notice lots of activity on the center and this is really encouraging. Lots of research programs are underway and we’ve just gotten two new academics here on the center as well. Both will bring additional projects to the San Joaquin Valley. [Ali Pourreza](#) came to [Kearney](#) from the University of Florida and is our new UC Cooperative Extension assistant advisor, agricultural engineering. He is working to set up his lab and get started. He comes with a strong background in precision agriculture and remote sensing. Pourreza was working on HLB detection in Florida. [Khaled Bali](#) comes to us from the Imperial Valley and is our new UC Cooperative Extension specialist, irrigation water management. He brings a plethora of experience in irrigation technologies, management, and innovation. He will be a great asset for the valley as we learn to work with drought and limited water availability.

Speaking of drought, I’m involved in several projects that are trying to address drought tolerance in plants. We have two rather large projects. One looks at the impact of drought on soil biological communities, plant genetics and gene expression and how they might help plants deal with drought using sorghum, a major cereal crop, as our model. Sorghum is one of the more drought tolerant cereal crops grown in the world. KARE and the valley offer an ideal working environment to work with and control field level drought. The other project is using drone technology to do high-throughput phenotyping that we hope to use to correlate back to gene expression. We are doing pre-flowering and post-flowering drought stress and our drone takes plant height, leaf area index, and other readings on 3,960 plots in a little over one hour. So why is that a big deal? In order for us to take those kind of readings on this amount of plots would take us several days, perhaps even weeks if we had to do a leaf area index on each plot. This is now being done weekly in less than an hour a week. This is letting us generate phenotypic data (like plant height, biomass estimates, etc.) that we will be able to use to help correlate gene expression with these phenotypic expressions. These fields will also allow us to see how drought impacts these readings as well. This is a great place to be able to do this type of research and I believe we can build an international reputation for screening plants for field level drought stress.

There is a new call for positions in the works within ANR and we had 9 positions proposed for location here at KARE. Can’t wait to see how we fare in the allocation of those positions. We’ve turned a corner and are starting to rebuild our academic staff here. I’m pleased with our new additions and I think you’ll like them as they start outreaching to the community of farmers here in the valley.

As always, you can help us financially and allow us to expand our research efforts so that we can continue to research sustainable solutions to the variety of problems that face our farmers and our food systems through our [“Make a Gift”](#) on-line donation button. If you feel the need to talk, feel free to contact me at [jadahlberg@ucanr.edu](mailto:jadahlberg@ucanr.edu), through our Facebook page, [blog](#), or at our [website](#).

Jeff Dahlberg



**Kearney hosted a workshop on leaffooted bug monitoring, damage to tree nut crops, and management strategies.**

On May 10, 2016, Kearney researchers Kris Tollerup, UC Cooperative Extension advisor at Kearney Agricultural Research and Extension Center, integrated pest management (IPM) for almond, pistachio, tree fruit and grape crops; and Themis Michailides, UC Cooperative Extension specialist in the Department of Plant Pathology at UC Davis and Kearney Agricultural Research & Extension Center, ecology, epidemiology and control of fungal diseases of fruit and nut crops and vines, postharvest diseases, aflatoxin and mycotoxins of nut crops and figs, conducted a workshop to help attendees learn more about leaffooted bug monitoring, damage, management, and its involvement in spreading *Botryosphaeriaceae* fungi “BOT” [blight](#) of pistachio and other diseases on pistachio and almond. [Read more.](#)



**Kearney was the site for an apiary inspector’s training on May 9, 2016.**

[Shannon Mueller](#), UC Cooperative Extension advisor and county director in Fresno and Madera counties, agronomy, alfalfa seed, hay production, seed certification, forage crops, pollination and honeybee management, oil seed crop production, and dry beans teamed up with [Karen Francone](#), Environmental Program Manager, California Department of Pesticide Regulation (CDPR), to provide an apiary inspectors' training at Kearney Agricultural Research and Extension Center. According to the [2012-2014 CDPR progress report](#), “Bee health and protection is a state, national, and worldwide issue.”

The overarching theme was to train the apiary inspectors so that CDPR, the County Ag Commissioners, UCCE, and beekeepers can continue to work together in finding strategies and technologies to help reduce bee colony deaths. The same training was delivered in Modesto the following week. [Read more.](#)



**UCD plant pathology graduate students visited Kearney on May 13, 2016 to have classes in the field.**

[Bob Gilbertson](#), professor in the Department of Plant Pathology at UC Davis, specializing in seed pathology, virology, and insect-transmitted viruses, brought 18 graduate students to the University of California Agriculture and Natural Resources Kearney Agricultural Research and Extension Center (UC ANR KARE) in May. The visit was related to the course: [PLP 205A](#) Diseases of Field, Vegetable, Fruit and Nut Crops.

Students learned more about the UC Cooperative Extension principles and philosophy before going to research plots to see different diseases in prunes, pistachios, and grapes. [Read more.](#)



**Kearney offered a free surface irrigation efficiency workshop on June 3, 2016.**

This half-day event included improving surface irrigation efficiencies, irrigation system energy efficiency, the relationship between irrigation efficiency and field conditions, and understanding how irrigation efficiency with different systems is defined and why it is important. [Read more.](#)



**UC Agriculture and Natural Resources assisted with the Bravo Lake Botanical Garden Berry Festival on May 28, 2016.**

The [Bravo Lake Botanical Garden](#) Berry Festival was Saturday, May 28, from 8 am to 12 noon. UC Master Gardeners, UC ANR Kearney Agricultural, Lindcove, and Westside Research and Extension Centers were participants.

There were blueberries, blackberries, strawberries, oranges, peaches, nectarines, Pakistani mulberries, and Setton Farms pistachio chews to taste. Over 1000 visitors came to walk through the tropical, vegetable, and rose gardens. [Read more.](#)



**Sano Farms hosted a California farm demonstration network visit on June 24, 2016.**

Alan Sano and Jesse Sanchez of Sano Farms hosted visitors at 44935-B W. Shields Avenue. They discussed and showed what they've done to achieve their soil management goals in their processing tomato fields using reduced disturbance tillage, precision drip irrigation and cover crops. Visitors also had an opportunity to learn more about the growing [farm demonstration network](#) and its work. [Read more.](#)



**Integrated pest management extension helps Guatemalan farmers.**

As part of the Farmer-to-Farmer Program sponsored by the Partners of the Americas and funded by the [United States Agency for International Development \(USAID\)](#), Walter Bentley, UCANR integrated pest management entomologist, emeritus, at Kearney Agricultural Research & Extension Center, and Washington State University entomologist Jay Brunner traveled to Guatemala in April to help growers improve the peach and apple industry. Their primary goal was to identify pest problems and possible solutions to help peach and apple growers improve fruit production, taking into account the region's unique climate. [Read more.](#)



### **Kearney has a new UC Cooperative Extension assistant advisor, agricultural and biological engineering.**

[Alireza “Ali” Pourreza](#) is a new UC Cooperative Extension assistant advisor at UC ANR Kearney Agricultural Research and Extension Center, agricultural engineering. His research and extension area includes spray technology, precision agriculture, automation and robotic control, sensor design, geographic information systems (GIS) and remote sensing, computer vision, spectroscopy, machine learning, and big data. He completed his graduate studies at the University of Florida and obtained his Ph.D. degree in Agricultural and Biological Engineering under the advisement of Wonsuk “Daniel” Lee, professor in the Department of Agricultural and Biological Engineering at the University of Florida. Pourreza also received an interdisciplinary certificate in GIS and Remote Sensing. Ali holds a master's degree in Mechanics of Agricultural Machinery and a bachelor's degree in Farm Machinery Engineering. [Read more.](#)



### **Kearney has a new irrigation water management specialist.**

Khaled Bali, UC Cooperative Extension specialist in irrigation water management is now at the Kearney Agricultural Research and Extension Center. Bali has been with UC Agriculture and Natural Resources since 1992 and served in different capacities as UC Cooperative Extension advisor in Imperial County, irrigation and water management (1992-2016), UCCE county director in Imperial County (2009-2016) and two years as interim director of the UC Desert Research and Extension Center in Holtville (2012-2013 and 2014-2015). He is responsible for designing, implementing, and conducting educational and applied research programs in irrigation, drainage, water management, water quality, soil salinity, waste management, reuse of wastewater for irrigation and nonpoint source pollution control practices. [Read more.](#)



### **Lessons from six California soil care farmers.**

Despite the growing interest in soil health in many parts of the country, the notion hasn't captured the imagination of most farmers in California. The Golden State's lackluster attention to soil care is likely due to “phenomenal yield increases over the past several decades, the sheer diversity of cropping systems, and widespread perception that California's environment and crop production mix doesn't lend itself to soil health improvements,” said [Jeff Mitchell](#), UC Cooperative Extension agronomy specialist.

A series of farm visits this summer in the Central Valley prove this rationale wrong, Mitchell said. The farm visits showcased the soil health goals and experiences of six farmers who are familiar with soil care principles across a wide range of local cropping contexts. [Read more.](#)



### **Teachers observe next generation science in action on Kearney tour.**

Third grade teachers from around California toured UC ANR [Kearney Agricultural Research and Extension Center](#) (KARE) Center July 21 during a week of Next Generation Science Standards training in nearby Reedley. The tour stops highlighted the [California Irrigation Management Information System](#) (CIMIS) weather station, sorghum deficit irrigation trials, and how a soil weighing lysimeter measures tree and vine crops water use.

[Khaled Bali](#), UC Cooperative Extension specialist in statewide irrigation water management at KARE, explained at the weather station how the data is used for irrigation management decisions. [Read more.](#)



**About 100 high school students attended workshops at Kearney to explore how math and science help agriculture and natural resources.**

Academic and support staff joined forces to provide experiential workshops to about 100 students in Reedley College's [upward bound math and science programs](#). Workshops included integrated pest management strategies, entomology, nematology, plant pathology, conservation tillage, soil texture, fruit maturity standards, consumer acceptance, experimental design. Students had activities in labs as well as in the research plots. [Read more](#).

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