

The Irrigation Association's Agriculture Faculty Academy: Addressing Complex Problems

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Introduction

The American Association for Agricultural Education (AAAE) National Research Agenda identifies seven research priority areas (Roberts, Harder, & Brashears, 2016). Research Priority Area Seven is addressing complex problems; this area lists natural resource management as one of the five most pressing complex challenges stemming from global population growth. Water was identified as the most precious resource as well as the most pressing challenge that needs to be addressed within the natural resource category. Three research priority questions emerged from this research area, which include identifying methods, models, and programs that can prepare people to solve complex problems such as water conservation. Furthermore, how can teaching, research, and extension programs address water quality? Finally, how can formal and nonformal curriculum untangle complex issues like excessive ground water usage?

The Irrigation Association recognizes the issues related to water and has developed agriculture Faculty Academy as an innovative program to help secondary and post-secondary instructors learn more about irrigation using hands-on curriculum that can be incorporated into their classrooms. Agriculture Faculty Academy focuses on new and emerging technologies used in the irrigation industry to improve the efficiency of water use, while reducing ground water consumption with efficient irrigation. The purpose of agriculture Faculty Academy is aligned with the AAAE National Research Agenda Priority Area Seven.

How it Works

Agriculture Faculty Academy is an annual two-day conference that is open to instructors at high schools and post-secondary institutions. The conference provides instructors with the opportunity to gain new ideas for the classroom, network with fellow academics and get hands-on experience with irrigation-related curriculum. The two days are filled with lectures and labs, tours and a group dinner to encourage networking. The location changes annually so that educators can learn about the different irrigation methods that are used throughout the United States. Registration for the conference and application for the travel grant are completed online at www.irrigation.org/facultyacademy. Registrants are notified of their grant status a week following the registration deadline.

The 2019 Agriculture Faculty Academy included an interactive presentation on the nuts and bolts behind irrigation. The presentation focused on the basic concepts of agricultural irrigation techniques utilized in California. The second session was a hands-on irrigation hydraulic laboratory activity that emphasized Bernoulli's principle to calculate energy loss through friction. The third session was a laboratory exercise comparing microirrigation versus drip irrigation systems. The laboratory exercise placed heavy emphasis on plant water availability and water efficiency. The fifth session was a panel discussion composed of leaders with industry, extension, and association backgrounds that addressed a wide range of issues related to fruit and vegetable crop irrigation management. The sixth session was a tour of the Irrigation Training & Research Center (ITRC) on the Cal Poly, San Luis Obispo campus. The tour included several demonstrations that instructors could integrate into their curricula. The

final session focused on curriculum available for teachers to adopt. The session also included a laboratory activity where participants built demonstration models that can be utilized to teach drainage and salinity.

Results to Date

Agriculture Faculty Academy has hosted over 100 attendees since its inception in 2015. The attendance from year to year includes repeat attendees as well as first-time attendees. In 2019, the Irrigation Association hosted 19 attendees. Of the 19 attendees, there were three high school, 10 community college and six four-year university instructors. The Irrigation Association collects program evaluations from all of the participants at the end of the event. When asked to comment on their overall experience, one of the 2019 attendee said, "This has been a great experience to broaden my knowledge on irrigation". Another attendee said, "The amount of mathematics associated with irrigation is eye-opening". One of the repeat attendees said they: "Look forward to engaging in all of the hands-on learning that I can take back to my classroom".

Future Plans/Advice to Others

Agriculture Faculty Academy is held each June. The location and date for the 2020 event will be announced late fall of this year. Registration and the travel grant request are expected to open in February. Registration for Faculty Academy will close during the first week of May. Recipients of the travel grant will be notified the second week of May and will receive the funding during the first week of June. A planning committee will meet four-six times throughout the year to identify topics and presenters for the next academy.

Water is a critical resource. Educators of students at all levels need to have up-to-date information to enthusiastically train their students on the use of efficient irrigation. As instructors are sharing irrigation knowledge and promoting careers in the field, they themselves need a network. Faculty Academy is a perfect group of like-minded instructors to create a networking group to share ideas and collaborate with one another. All instructors who attend find it a valuable use of their time. We recommend that educators assist the Irrigation Association by sharing Faculty Academy information with other educators who teach irrigation.

Costs/ Resources Needed

Agriculture Faculty Academy is free to attend, and the Irrigation Association offers travel grant assistance to qualifying attendees on a first come, first served basis. Preference is given to those whose institutions can contribute partially to expenses. The authors have participated in two of the agriculture faculty academies over the past three years and have received travel grants each year. The travel grant covers transportation, hotel, meals and other miscellaneous costs associated with attending the conference. The Irrigation Association awards the travel grants prior to the event in order to reduce financial burdens associated with travel. It should be noted that the participants typically receive several teaching aids and curriculum binders that may need to be shipped home if the participant is flying and does not have enough luggage space for the materials.

References

Roberts, T. G., Harder, A., & Brashears, M. T. (Eds). (2016). American Association for Agricultural Education national research agenda: 2016-2020. Gainesville, FL: Department of Agricultural Education and Communication.