

# WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES  
COOPERATIVE EXTENSION

**WATER RESOURCES  
RESEARCH CENTER**

**March 31, 2017 / Volume 5, Issue 13**

The [Water Resources Research Center](#) - a research and [Extension](#) unit of the [College of Agriculture and Life Sciences](#)



Photo: Lynn Ketchum-College of Agriculture and Life Sciences

## Participants Pack the Student Union for the March 28th WRRRC Conference

On March 28, 2017, approximately 325 people traveled to the University of Arizona Student Union for the WRRRC Annual Conference, *Irrigated Agriculture in Arizona: A Fresh Perspective*. The event began with a packed audience viewing the movie *Groundwater: To Enact a Law for the Common Good*, followed by a discussion led by the movie's co-producer, Kathleen Ferris, during which panelists discussed how sustainable water management can be achieved through cooperation and leadership. Morning and afternoon panels and keynote presentations covered a range of current agricultural water issues, and included commentary from water managers, farmers, and policy makers. The luncheon presentations fittingly celebrated the rich agricultural history of Tucson. The lunch table included fresh breads made with locally grown wheat and donated by renowned baker Don Guerra of Barrio Breads.

In the closing commentary, WRRRC Associate Director Jean McLain stressed that "the conversation is

just beginning," that the day was meant to stimulate dialogue between diverse sectors of the agricultural water community. Look for follow-up stories and information related to the conference in the Weekly Wave, the WRRC quarterly AWR newsletter, and the 2018 Arroyo. For information on how to subscribe to these online publications, click [here](#).

To view the conference speaker presentations, click [here](#).

To read more about the conference from Cooperative Extension, click [here](#).

## WRRC EVENTS

### WRRC Brown Bag - Getting to Water Security

**April 7, 2017**

**Time/Location:** 12 :15 p.m. - 1:30 p.m. / WRRC Sol Resnick Conference Room (350 N. Campbell Ave.)

**Please note later starting time.**

**Speaker:** Alexandra Campbell-Ferrari, Co-Founder and Executive Director at The Center For Water Security and Cooperation

Water Security remains an ambiguous concept with an uncharted path to achievement. Water is an essential resource to our survival and to the pursuit of our livelihoods. However, countries lack a clear strategy for how to protect and manage water. To get to that strategy, we need a clearer understanding of what water security means, how our needs depend on water, and how existing law reflects and directs those relationships.



For more information on the Center for Water Security and Cooperation, click [here](#).



If you can't make it to the seminar on April 7th, join us online [here](#).

[April 7 Brown Bag web page](#)

### WRRC Brown Bag - Transforming Wastewater to Drinking Water: How Two Agencies Collaborated to Build the World's Largest Indirect Potable Reuse Project

**April 13, 2017**

**Time/Location:** 12:00 p.m. - 1:30 p.m. / WRRC Sol Resnick Conference Rm. (350 N. Campbell Ave.)

**Speaker:** Adam Hutchinson, Recharge Planning Manager, Orange County Water District

In the early 2000's, two Orange County agencies faced some challenges. The Orange County



Sanitation District (OCSD) needed to replace an ocean outfall for treated sewer water at a cost of millions of dollars. The Orange County Water District's Water Factory 21, a groundbreaking water recycling facility constructed in the mid-1970s, was nearing the end of its useful life.

Rather than focus on their individual needs, the two agencies developed a mutually beneficial project that saved money and generated tremendous benefits for the citizens of Orange County. This project is the Groundwater Replenishment System (GWRS), which currently generates 100 million gallons per day of advanced purified water that is recharged into the Orange County groundwater basin to supplement potable water supplies. Further expansion of the GWRS to 130 million gallons per day will result in the recycling of all the available wastewater within OCSD's service area, further bolstering the reliability of Orange County's water supplies. In addition to being a reliable supply, GWRS water is very pure, which greatly assists in reversing a salt imbalance in the basin and improving overall groundwater quality.



If you can't make it to the live seminar on April 13th, join us online [here](#).

[April 13 Brown Bag web page](#)

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## WRRC Brown Bag - The Financial Benefits of Water Conservation: The Tucson Story

**April 19, 2017**

**Time/Location:** 12:00 p.m. - 1:30 p.m. / WRRC Sol Resnick Conference Rm. (350 N. Campbell Ave.)



**Speakers:** Candice Rupprecht , Water Conservation Specialist, Tucson Water  
Mary Allen, P.E., Pima County Wastewater Reclamation

"Why do you ask me to conserve water and then raise my rates?" This question is frequently asked by water customers, often without a clear answer from utilities except to say that water rates would be higher today without conservation. This presentation will share the findings of the Tucson Avoided Cost Analysis done by WaterDM in partnership with the Alliance for Water Efficiency, Tucson Water, and Pima County Regional Wastewater. The cost analysis explored the impacts of water conservation and efficiency on today's water rates.

The Tucson Avoided Cost Analysis provides a rigorous examination of the overall impact of water efficiency on water and wastewater rates and clearly and convincingly debunks the myth that conservation drives up water rates. Water and wastewater rates in Tucson are at least 17% lower today than they would need to be had Tucsonans not implemented various water conservation and efficiency actions. Tucson, like many other communities, would be facing a much different situation today if per capita water demand had not been curtailed, dropping over 30% while population increased by nearly 70%.



If you can't make it to the live seminar on April 19th, join us online [here](#).

[April 19 Brown Bag web page](#)

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## Sally & Ralph Duchin Campus Lecture Series - Israel's Shared Borders and Shared Waters: Water as a Bridge and a Barrier



**April 19, 2017**

**Time/Location:** 4:00 p.m. / The University of Arizona Hillel Foundation (1245 E 2nd St.) **Please note special time and location.**

**Speaker:** Sharon B. Megdal, Director, UA Water Resources Research Center



Israel has overcome the scarcity of naturally occurring freshwater through the deployment of technology and a holistic approach to water management. Large desalination plants, use of reclaimed water by the agricultural sector, irrigation efficiency, and water conservation have changed the water balance in Israel from one of deficit to adequacy or even surplus. Yet, water challenges remain. The Dead Sea continues to decline. The Lower Jordan River and other rivers continue to be the focus of rehabilitation efforts. Wastewater flows remain a problem in some areas.

In this presentation, Prof. Sharon B. Megdal will explain how Israel has addressed the scarcity of freshwater and how the lessons learned by Israel can assist us here in the Southwest as we deal with low flows on the Colorado River and growing population. She will discuss collaborative efforts involving Israelis, Jordanians, and Palestinians. She will also address what she sees as some challenges and barriers to water cooperation. Her presentation will include reflections on her most recent visit to the Middle East with the Mexican and U.S. Commissioners of the International Boundary and Water Commission and more recent efforts to foster dialogue and professional exchanges.

**For more information on this lecture, click [here](#).**

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## WRRC Brown Bag - Plugging into WEST: researchers, industry, and Arizonans benefit by connecting with the UA Water and Energy Sustainable Technology Center



**April 26, 2017**

**Time/Location:** 12:00 p.m. - 1:30 p.m. / WRRC Sol Resnick Conference Rm. (350 N. Campbell Ave.)

**Speaker:** Ian Pepper, Co-Director, WEST Center  
Bob Stea, Associate Director, Research Business Development, WEST Center

The University of Arizona's Water and Energy Sustainable Technology (WEST) center, constructed at Pima County's water reclamation campus, epitomizes the concept of public/private partnerships. Cutting-edge research is being funded by utilities, private sector companies, and industry, with more of these links being established every day. UA faculty at WEST specialize in advanced treatment and detection of emerging microbial and chemical contaminants in municipal wastes and reclaimed water. A unique, real-time sensor lab allows scientists to test for chemical and microbial contaminants during water treatment and within a functioning water distribution system. Presenters will share vignettes demonstrating unique research-industry relationships and sparking ideas for new collaboration. WEST is also a member of the team that won the 2016 Arizona Water Innovation Challenge.



If you can't make it to the live seminar on April 26th, join us online [here](#).

[April 26 Brown Bag web page.](#)

## OTHER EVENTS

### Lunch Talk - China's Innovative Solutions: Resettling People in the Path of Large Scale Water Infrastructure Projects

**April 3, 2017**

**Time/Location:** 12:00 p.m. - 1:00 p.m. / ENR2 Building, Room 225 (1064 E. Lowell St., Tucson)

**Speaker:** Professor Shi Guoqing, Director of China's National Research Center for Resettlement



Hydropower and other large infrastructure projects often require the expropriation of land and the involuntary displacement of peoples. China's rapid development has made successful resettlement an integral part of the infrastructure planning, development and financing. Professor Shi Guoqing, Director of China's National Centre on Resettlement at Hohai University, a University of Arizona partner, will give an overview of the common risks facing resettlement. These include resettlement willingness, construction land procedures, land compensation standard, resettlement mode, environmental capacity of resettlement, production and livelihood recovery, social management, media and public opinion, engineering construction, and geological hazard.

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## Colloquium - Managing the Colorado River in Interesting Times: Overallocation, Drought and Climate Change



**April 27, 2017**

**Time/Location:**

4:00 p.m./ ENR2 Building, Room 225 (1064 E. Lowell St., Tucson)

**Speakers:** Ted Cooke General Manager, Central Arizona Project  
Marie Pearthree, P.E. Former Deputy General Manager, Central Arizona Project

This is a critical time for the State of Arizona and key sectors of its economy, given the impacts of the 17 year drought on the Colorado River and historic overallocation of its supplies created by the "structural deficit" on the watershed. This colloquium will present the history of Colorado River management from 1922 to the present, focusing on the evolution of decision making on the river over time, the impacts of changing climatic and hydrologic conditions on water supplies, and current negotiations between the seven Basin States and Mexico.

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## Southern Arizona Technical Luncheon Program



**April 6, 2017**

**Time/Location:**

11:00 p.m. - 1:00 p.m. / Hotel Tucson City Center  
(425 N Granada Ave., Tucson)

**Speaker:** Ian Pepper, University of Arizona

Dr. Pepper will present on current research at the University of Arizona's Water and Energy Sustainable Technology Center (WEST)

Note that sponsorships will allow up to four students to attend this luncheon at no charge, but pre-registration is mandatory. Students interested in this opportunity are encouraged to contact [Shawn-Noel Simmons](#).

For more information, and to register online [here](#).

## NEWS

### 2017 Student Poster Winners

Each year, the Water Resource Research Center's Annual Conference features a poster session and student poster contest. At the March 28th conference, *Irrigated Agriculture in Arizona: A Fresh Perspective*, the poster exhibit included 15 posters on projects related to water management, quality, and irrigated agriculture. While all the posters generated animated discussion during the event, the

following three posters won top honors.

1st Place:

Ravindra Dwivedi, Department of Hydrology and Atmospheric Sciences

*Catchment-scale Groundwater Recharge and Vegetation Water Use Efficiency*

2nd Place:

Juli Simons, Department of Soil, Water and Environmental Science

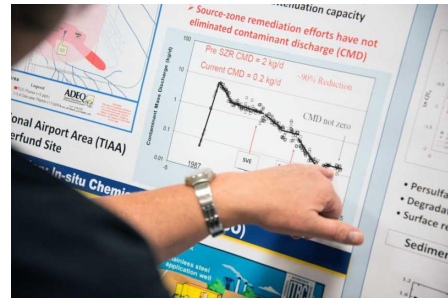
*Self-Sterilizing Irrigation Pipelines*

3rd Place:

Suhina Deol, Department of Agricultural and Resource Economics

*Innovative Water & Risk Trading Between Agriculture, Cities, Tribes & Conservation Interests*

Congratulations on a job well done!

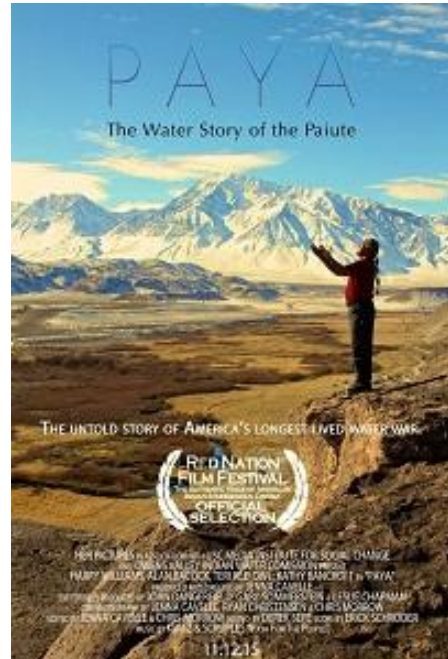


## Paya: The Water Story of the Paiute

A co-sponsored screening and panel discussion of *Paya: The Water Story of the Paiute* will take place on Friday, April 21 beginning at 6:00 p.m. in ENR2 building, Room S107 (1064 E. Lowell St., Tucson). This event is free and open to the public.

Writer and Director Jenna Cavelle documents the untold story of Paiute Indian water practices and history in the context of an ongoing 150-year California Water War.

The Paiute Native Americans constructed and managed 60-miles of intricate irrigation systems in Owens Valley for millennia long before Los Angeles secured its largest source of water through modern engineering a century ago. Today, 150 years after the Paiute returned to the region, they continue to fight to save their waterworks. *Paya*, which means water in Paiute, intends to restore both Paiute history, practices, and strengthen their legal case through the powerful medium of this film.



This event is co-sponsored by the Native American Law Students Association; UA James E. Rogers College of Law, Indigenous Peoples Law & Policy; UA Water Resources Research Center; UA School of Anthropology; Environmental Law Society, UA School of Geography and Development; and UA Conflucenter for Creative Inquiry.

## Start Spring with Science



The best way to launch into Spring is to venture to a local nature preserve. Taking advantage of great weather and new foliage, the Aqua STEM program engaged 370 middle school

students and 55 adults in an exploration of the Hassayampa River Preserve. The students became



scientists, collecting data to answer their scientific questions about water chemistry, aquatic biology, botany, terrestrial biology, and soils. They made observations like: "I learned that living organisms can be anywhere if you look closely and that many macroinvertebrates are translucent so that you can't see them without a magnifying lens." Students also toured the site, mapping the parts of habitat for a chosen animal or plant. Many of these middle school students have never been to a place like the Hassayampa River Preserve, and, through Project WET, they begin to see the value of these special places

Learn more about APW programs on our [website](#) .

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## New Director of the Udall Center for Studies in Public Policy

Dr. Christopher Scott has been appointed to head the Udall Center by the UA Senior Vice President for Research, Kimberly Andrews Espy, based on an extended nationwide search. Dr. Scott has been a faculty member at the Udall Center since 2006, with an active externally-funded grant program and policy engagement that address water security, the food-energy-water nexus, and broader goals of societal and ecological resilience.



As Director, Dr. Scott aims to expand work into new research and policy domains, while also consolidating and enhancing collaboration between the Udall Center's two main programs - the Native Nations Institute and the Environmental Policy Programs. He will continue as a jointly-appointed, tenured Professor in the UA School of Geography and Development, and as Director of the Consortium for Arizona-Mexico Arid Environments and Professor of Hydrology and Atmospheric Sciences - both in the UA College of Science.

Over the past two decades, the Udall Center has been directed by Robert G. Varady (January 2016 - present) and by Stephen E. Cornell (July 1998 - December 2015), both of whom continue on at the Center. The Center employs about 30 persons, including 12 PhDs (6 of them jointly appointed with other UA departments) and one JD. In addition, 10 graduate and 7 undergraduate research assistants work on projects. The Udall Center's annual budget is on the order of \$4 million, of which about 85% is from sponsored research and contracts.

To read the full story on the Udall Center website, click [here](#).

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## Ph.D. Student Valerisa Joe Participates in Global Health Case Competition!

On March 23-26, a diverse team of gifted graduate students represented the University of Arizona at the 2017 Emory Global Health Case Competition at Emory University in Atlanta. The team, made up of Emmanuel Anderson (Business Administration), Heather Dreifuss (Health Promotion Sciences), Randall Blankers and Stephen Crabbe (Medicine), Valerisa Joe (Soil, Water and Environmental Science), and Jeffrey Watson (Biomedical Engineering), were given 7 days to complete the task of designing a program to address children's mental health needs in Monrovia, Liberia. To tackle this problem and develop an imaginative, "TED-type talk" effectively describing a program that addressed the unique social and economic conditions in Liberia, the team spent long days and nights in the UA Medical School Library.





Though the team did not win this competition the experience was invaluable, Bradley Dreifuss (Emergency Medicine), one of the faculty leaders of the this program, hopes in the near future to create a Global Health Case Competition at the University of Arizona, with the winning UA team traveling to Emory University to compete.

Valerisa Joe is conducting her Ph.D. research in the laboratory of WRRRC Associate Director Jean McLain.

To learn more about Emory Global Health Case Competitions, click [here](#).

## ANNOUNCEMENTS

### 2017 AWRA Israel Conference Call for Abstracts

American Water Resources Association has announced a call for abstracts for the 2017 International Specialty Conference to be held September 10-11, 2017 in Tel Aviv, Israel. Abstracts must be received on, or before, **April 17, 2017**.

For more information on abstract submittal, click [here](#).

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### Guide to Arizona Agriculture Available Online

Whether you're looking to learn more about our state's agriculture industry, find out the many ways you can benefit from Arizona agriculture, or even relocate your business here, the Guide to Arizona Agriculture is for you.

To view the online guide, click [here](#).

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### WateReuseArizona 2017 Scholarship

WateReuseArizona will award two \$2,500 scholarships to Arizona university and college students to encourage full-time students with a focus on wastewater reclamation, water reuse, and desalination. Applications must be post-marked by **June 15, 2017**.

For additional information on how to apply visit the WateReuseArizona website, click [here](#).

## WATER RESOURCES RESEARCH CENTER

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