



COLLEGE OF AGRICULTURE & LIFE SCIENCES  
COOPERATIVE EXTENSION

**WATER RESOURCES  
RESEARCH CENTER**

**April 5, 2019 / Volume 7, Issue 12**

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

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## Announcing an Exciting New APW/WRRC Collaboration

Summer 2019 will be an exciting time for Arizona Project WET and WRRC Researchers. Kerry Schwartz and Jean McLain have been awarded a grant from the USDA Agricultural and Food Research Initiative for their new collaborative project, Bringing Microbiology and Water Quality to Arizona Classrooms: Workforce Development through Teacher Training. Starting in July, APW facilitators will engage in learning microbiological laboratory techniques from Dr. McLain and her lab manager. They will then collaborate on developing a curriculum and lab manual for secondary school teachers on the microbiological techniques used to assess water quality, including traditional culturing and cutting-edge molecular analyses. This project will bridge the gap between research and secondary schools and will increase the number of teachers trained in food and agricultural sciences. Teachers will develop new skills to integrate agricultural science concepts into their classroom, will broaden students understanding of agricultural science careers, and will forge partnerships with research faculty.

## WRRC EVENTS

### WRRC Brown Bag - Urban Desert Landscapes - Creating Climate Resilience One Tree at a Time

**April 24, 2019**

**Speaker:** Tanya M. Quist, Ph. D. Associate Professor, School of Plant Sciences. Director, University of Arizona Campus Arboretum

**Time/Location:** 12:00 p.m. - 1:15 p.m. WRRC Sol Resnick Conference Rm. (350 N. Campbell Ave., Tucson)



Tree and urban landscapes provide an opportunity for every citizen to contribute to climate resilience through informed plant selection and sustainable management practices. Join us for this talk aimed at empowering urban communities through understanding principles and practices of horticultural science and through exploration of resources and tools available.

View the presentation [online](#)

### WRRC On-The-Road - Second Cobre Valley Forum on Water

**April 9, 2019**

**Time/Location:** 8:00 a.m. - 2:00 p.m. / Gila County Fairgrounds (900 E. Fairgrounds Rd., Globe)



In September 2018, leaders from government, industry, and not-for-profit organizations shared their water experiences and lessons at the First Cobre Valley Forum on Water. Participants learned about local and regional opportunities to create a more resilient water future for healthy communities, businesses, and the environment. Since then, the WRRC and community partners have been working to make progress on some of the top priorities related to water and community well-being that emerged from the first Forum. Join us to learn about recent progress and project results, engage with local decision makers, ask questions, and share ideas about water in the Globe-Miami area.

[Event Flyer](#)

## OTHER EVENTS

### Hot Topic Webinar - World Water Corps

**April 11, 2019**

**Speaker:** Mark Taylor, Water For People, World Water Corps Volunteer



**Time/Location:** 9:00 a.m. MST, **view via webinar only**

Mark Taylor volunteers his time with Water For People's World Water Corps and has participated in and led multiple assignments, including seven in South and Central America, and Rwanda. These included a riverbank filtration study in Honduras; study of partnership programs in Bolivia; safe drinking water plans and analysis in both Bolivia and Guatemala; sanitation as a business plan in Cochabamba, Bolivia; and training curriculum creation and adoption in Kigali, Rwanda. Most recently, Mark has returned from a project in Villa Rivero and Arani, Bolivia regarding the evaluation of local wastewater treatment plants and effluent reuse.

Mark will discuss his work as a volunteer with the World Water Corps and offer his perspectives on issues and opportunities in remote locations. This seminar will be presented via webinar only. It is necessary to download Skype to join the webinar.

[Join Webinar](#)

## WRRC NEWS

### Take the Pledge to Save Water

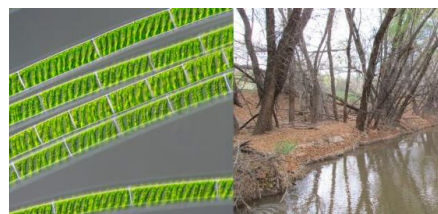
Saving water has become one of the most talked about issues in the nation. The Wyland National Mayor's Challenge for Water Conservation was created to reward residents for positive conservation behavior and to provide immediate feedback with real-time city-by-city results. The goal is to promote positive changes in consumer behavior and to put a spotlight on public role models to encourage behavioral change. Mayors encourage their residents to make a conservation pledge through a simple online form, and cities with the highest percentage of residents who take the challenge in their population category win. Participants in the winning cities are eligible to win hundreds of prizes, but this year there is added incentive: you can nominate your favorite charity to win a community prize of a 2019 Toyota Highlander Hybrid! Every person makes a difference. Last year, the challenge awarded more than \$50,000 in prizes to nearly 300 residents in U.S. cities.



### [Take the Pledge](#)

### Brown Bag Features Student Research

Outstanding student research was featured in the March 28 WRRC Brown Bag seminar. Sophomore Amanda Minke, Department of Hydrology and Atmospheric Science, and PhD student Drew Eppehimer, Arid Lands Resource Sciences, presented summaries of the research projects for which they received federal Water Resources Research Act, Section 104(b) program grants through the WRRC. Minke's research explores the use of algae to remove lead from drinking water. She has been testing the efficacy of an algae filter made by pressing  $\frac{1}{4}$  gram of Spirulina between a fiberglass filter and a nylon filter inside a metal or plastic housing. In her presentation, she reported that the device can reduce lead concentrations in water by an amazing 95%. A water treatment system that employs algae for lead removal may be particularly applicable at small scales, such as a filtration device for faucets or household connections. Eppehimer's presentation detailed the multiple ways he has been assessing how an aquatic environment dominated by treated wastewater impacts native fish. The Santa Cruz River downstream of the outfall from Pima County's two major reclamation facilities is his study area. Somewhat surprisingly, his research did not find significant adverse impacts in terms of fish mortality, abundance, or sexual development from living in high quality treated wastewater. Although microplastics from the wastewater made up a small percentage of their diet, that consumption did not appear to affect the growth of the fish. These findings can support the use of effluent for native fish habitat.



## [View Recorded Presentations](#)

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### 4th Graders Take Water Waste Into Their Own Hands



Last year, teacher Julia Hubbs of Madison School District's Simis Elementary participated in the 4th grade Water Festival Unit's 7-hour workshop, taught her students the pre- and post-festival lessons and

brought her students to the 1st annual Madison Water Festival! This program was the spark needed to peak her student's interest in water conservation. Traditionally the 4th grade celebrated the end of the school year with a water party that included a fire truck spraying a fire hose, buckets of water to fill up water guns and soak sponges, and a running hose to keep the slip-n-slide wet. But according to Ms. Hubbs, "After we learned about water conservation at the Water Festival, my students asked me why we have a water party that wastes so much water?" Ms. Hubbs brought their concerns to the parents and administration planning the event and this year they are starting a new end of year tradition, a field trip to an indoor pool. "My students took action!" concluded Ms. Hubbs.



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### Guest View - Internships and Undergraduate Research Have Real-World Impacts

*By Martha P.L. Whitaker, Professor of Practice, Department of Hydrology & Atmospheric Sciences*

Mandla Kunnie has created a digital database of the locations of all rainwater harvesting infrastructure in the Tucson area. Such a database can help water managers plan for population growth and the associated increased demand on water resources. Tiffani Cañez has mapped the location and depth of underground fresh and salty water in the Willcox, Arizona area, where homeowners' wells are running dry. Cañez's map is one step toward helping local people better understand the extent of their freshwater resources and assess the potential to use salty water as an alternative resource.



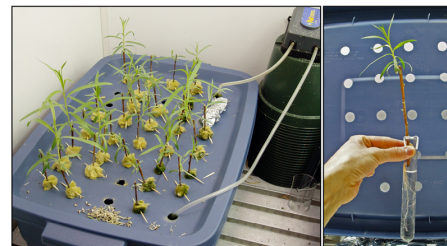
## [Read News Item](#)

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### Recent Study Shows Native Plant Removes Pharmaceuticals from Water

Concerns about pharmaceuticals in our water supplies have grown with increased population and drug prescriptions. A new study by Carmen G. Franks, David W. Pearce, and Stewart B. Rood of the University of

Lethbridge published in Environmental Management shows that a plant native to Arizona is able to



help combat drug contamination in water. The coyote willow (*Salix exigua*, a.k.a. narrowleaf willow) removes several common pharmaceuticals from water at a significant rate. This means that restoring riparian vegetation can help allay concerns about emerging contaminants in treated wastewater that is released to the environment.

[Read Article](#)

## ANNOUNCEMENTS

- [April 6 - 2019 Arizona Hydrological Society Symposium - Call for Abstracts](#)
- [April 9 AHS Monthly Chapter Meeting - David Quanrud talk on CECs in the Santa Cruz River](#)
- [April 10 RFCD Brown Bag- Pond Sealing and Seepage Control](#)
- [April 10-11 IBWC Binational Summit on Groundwater](#)
- [April 12 - 2019 UCOWR/NIWR Annual Water Conference - Early Bird Registration Ends](#)
- [April 15 New Mexico WRRRI 63rd Annual Water Conference - Abstracts Due](#)
- [April 15 US Water Alliance Water Prize 2019 - Nominations Due](#)
- [April 23-25 US-Mexico Border Water Summit - Agenda Posted](#)
- [April 29 AWRA Richard A. Herbert Memorial Fund Scholarships - Application Deadline](#)
- [May 6 AWRA 2019 Annual Water Resources Conference - Abstracts Due](#)
- [May 10 Desert Horticulture Conference - Early Registration Closes](#)
- [May 15 CAP Award for Water Research - Submission Deadline](#)
- [May 16 Agribusiness and Water Council Annual Meeting - Register Now](#)
- [May 28 AWRA Summer Conference - Early Registration Closes](#)
- [May 31 Renewable Natural Resources Foundation 2019 Awards Program - Nominations Due](#)
- [July 31 XVII World Water Congress - Call for Abstracts, Special Session & Side Events](#)

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