



COLLEGE OF AGRICULTURE & LIFE SCIENCES
COOPERATIVE EXTENSION

**WATER RESOURCES
RESEARCH CENTER**

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

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2018 WRRC Photo Contest

We had such a great response to last year's open-ended approach to our photo contest that we're doing it again this year. Just show us Arizona water, in any way you can think of. Use your creativity and technical ability to express how water transforms our state and the many ways our state transforms water. Capture anything from people and nature to business and agriculture. It's completely up to you. Just make sure your picture relates to water and it's in Arizona!

That said, if you are inspired by our Feb. 1, 2019 conference tagline, "Arizona Runs on Water"™ then, well, run with it!

Show Us What You've Got!



WRRC EVENTS

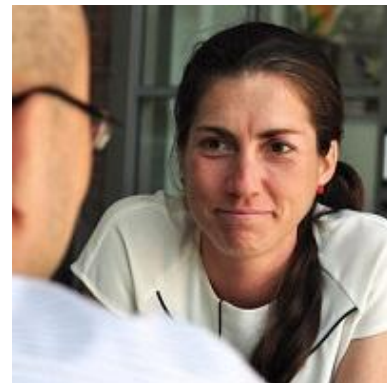
WRRC Brown Bag - Innovating the Urban Water System: The Architecture of a Decentralized Future

September 18, 2018

Speaker: Courtney Crosson, *Assistant Professor*, Global Change Graduate Interdisciplinary Program

Time/Location:

12:00 p.m. - 1:15 p.m./Sol Resnick Conference Rm., 350 N. Campbell Ave., Tucson



Globally, cities are facing increased water stress under growing populations, degrading infrastructure, and changing climate patterns. This imbalance between available water resources and projected urban water demands presents tremendous challenges for water resource management, necessitating novel planning and design strategies and tools. The talk will discuss recent research that evaluates the capacity of Tucson, Arizona to become water independent using rainwater and discuss the regulatory hurdles to make such infrastructure a reality at a commercial scale.



If you cannot get to the WRRC on September 18, you can join us [here](#).

WRRC Brown Bag - Watering Irrigated



Agriculture in Arizona

September 27, 2018

Speaker: Susanna Eden, *Assistant Director*, Water Resources Research Center

Time/Location:

12:00 p.m. - 1:15 p.m./Sol Resnick Conference Rm., 350 N. Campbell Ave., Tucson

In this overview of Arizona's irrigated agriculture and its water supply, the focus will be on what is grown, where, with what water; how the water is managed by the state and by irrigators; water efficiency strategies, and economic impacts.

The presentation will touch on current irrigation water supply issues concerning growers, their communities, and other water users.



 **If you cannot get to the WRRC on September 27, you can join us [here](#).**

Other Upcoming Fall Brown Bags

- **October 17** Hans Huth, *Hydrologist*, ADEQ Source Characterization of Metals in Ambos Nogales Wastewater
- **November 8** Chase Saraiva, *Head Brewer*, *Wilderness Brewing Co.*, Sustainability and Beer

OTHER EVENTS

Upper Gila Watershed Forum - How Do We Adapt to a Hotter and Drier Future?

September 28, 2018

Speakers:
TBA

Time/Location:

8:00 a.m. - 4:00 p.m. / Eastern Arizona College, 615 N. Stadium Drive, Thatcher, AZ

The annual Upper Gila Watershed Forum on September 28th in Thatcher Arizona will feature day-long discussion, presentations, and activities focused on "Adapting to a Hotter and Drier Future." Explore how increasing heat and drought are affecting agricultural, business, municipal, and conservation practices, and what communities and individuals are doing to adapt.



[Register Here](#)

WRRC NEWS

Reviving the Santa Cruz River and Citizen Science are Showcased at First Two WRRC Brown Bag Seminars

Tim Thomure, Director at Tucson Water, opened the WRRC Brown Bag Seminar series with an excellent presentation on the City of Tucson's efforts to restore perennial flow to a portion of the Santa Cruz River near downtown Tucson, Arizona. The City's project also prioritizes cultivating native vegetation and preserving flood protection. Mr. Thomure stated that construction will begin in early 2019, and that Phase I should be operational in early summer when approximately 3800 acre-feet/year will begin to be discharged from the Silverlake Road Outfall. He described the multiple benefits as well as challenges of the project and concluded with next steps, including addressing recharge credits for in-channel recharge.



To learn more about the Santa Cruz River Heritage Project, visit the City of Tucson website [here](#).

At the WRRC's second Brown Bag on September 4th, Meghan Smart, Scientist III at the Arizona Department of Environmental Quality (ADEQ), introduced ADEQ's Citizen Science program. The Arizona Water Watch Citizen Science Program provides resources and guidance to volunteers in Arizona so that they can collect defensible and credible high-quality data. Toward that end, ADEQ has created intuitively usable field forms, handbooks, and trainings, including innovative micro-video lessons. They also created an Arizona Water Watch APP, through which volunteers all over the state have added ~300 observations since January 2018.

To learn more about Arizona Water Watch, visit the ADEQ Website [here](#).

"Invisible" Water Gains Visibility in Journal Article

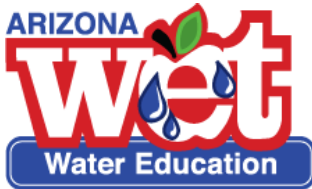
The September edition of Nature Partners Journals', Clean Water, featured a perspective piece by WRRC Director Sharon B. Megdal, entitled "Invisible Water: The importance of good groundwater governance and management". Dr. Megdal's article focused on national and global efforts to bring attention to the governance and management of critically relied upon groundwater, which has been largely ignored in comparison to surface water governance and management. This article also summarizes multi-disciplinary awareness efforts, such as the Global Groundwater Governance Project, predicated on the alarming disappearance and degradation of this hidden resource. Megdal emphasized that groundwater is primarily a local resource, the governance of which requires consideration of relevant laws, regulations, and physical and economic conditions. Dr. Megdal included a discussion of a University of Arizona project documenting the diversity of groundwater management approaches across the United States. Finally, Megdal noted the importance of paying special attention to transboundary aquifers, the need for collaborative aquifer assessments, and highlighted several global case studies further emphasizing the need to look beyond panaceas to accommodate the particular vagaries of local groundwater governance and management.



[Read the Piece](#)

Who Says UA and ASU Can't Get Along?





For 13 years, Arizona Project WET, and ASU's Decision Center for a Desert City in the Global Institute of Sustainability have been working together and getting results (despite our



friendly rivalry). Each year, experts from both universities select an advanced water topic to present to teachers; this year's topic, which reached 24 teachers, was *Food, Energy, and Water: Critical Links to Sustain Society*. Participants examined the role of trade in agricultural land on the U.S. economy, weighed the advantages/disadvantages of urbanizing agricultural land on the fringes of American cities, and explored current energy data on the U.S. Energy Administration Site.

Teachers demonstrated 55% overall knowledge gained and 100% of teachers strongly agreed that: "This workshop was excellent -one of the best I have ever attended; I intend to become a better water steward as a result of this workshop and the resource materials provided will be helpful for teaching about water and the environment."

Welcome Back Wildcats Students, 2018-2019

The WRRC would like to offer a warm welcome to all new and returning Wildcats for the 2018-2019 academic year! The WRRC is thrilled to be housing four new Graduate Outreach Assistants, Matt Bigler, Rachel Murray, Mary Belle Cruz-Ayala and Chris Freimund. The four University of Arizona graduate students will be working on a range of projects including the Water Network, WEES (Water, Environmental, and Energy Solutions) program, the Weekly Wave newsletter, the Arroyo, the 2019 Conference, and an adult education project for Green Valley/Sahuarita. The WRRC looks forward to a rich and engaging year of water policy, analysis, education, and outreach, with these dynamic additions to our team. APW has also hired 16 new undergraduate University of Arizona students working as Water Educators for Project WET, where they will bring innovative water research and field based implementation to this leading edge water education program.



Research and Industry Find New Ways to Generate Water

Scientists at UC Berkeley and MIT demonstrated a prototype water harvester that can collect drinkable water from desert air. A highly porous material called a metal-organic framework, or MOF, absorbs water during the night and releases it during the day when heated by the sun. The water is then condensed and collected.

The system proved itself capable of producing water at low cost from very low humidity and it operates without any additional energy input. Based on real-world test results, the researchers estimated a yield of 2.8 liters of water from air at 20 to 30-percent humidity using only one kilogram of MOF. The trial, which took place in Scottsdale, demonstrated that larger scale operations were possible by adding more MOF. Read more about this work the June 8 issue of the journal [Science Advances](#). This is just one of several water-from-air systems that are being developed and tested by academic and industry scientists. See for example this [Forbes](#) article. The State of Washington is trying out a



different approach. The agricultural waste solutions company, Regenix, received a grant from the Washington State Conservation Commission to install and operate a state-of-the-art water filtration system to produce water from cow manure. The produced water will be clean enough for farm animals to drink and to augment streamflow for salmon. Once the water is extracted, the remaining material can be used as fertilizer. Globally there is about 3 times more water in the air than in all the world's fresh surface water. Making some of that water available for use is a major research and development goal.

See [Water Online](#) for more details.

ANNOUNCEMENTS

- [September 8 Water Flow: A Journey Through the Colorado River by Kathleen Velo - Book Signing](#)
- [September 10 GRA First Annual Western Groundwater Conference - Registration Ends](#)
- [September 10-13 GWPC Annual Forum - New Orleans, LA](#)
- [September 11-12 NIDIS The Burning Desert - A Workshop on Drought Recovery](#)
- [September 12 PCRFD Brown Bag - The Flint Water Crisis: A Personal Account](#)
- [September 12 BARD Research Grant Proposals - Applications Due](#)
- [September 21 UCOWR/NIWR Annual Water Resources Conference - Special Session Proposals Due](#)
- [September 21 New Mexico WRRRI Annual Water Conference - Abstracts Due](#)
- [September 26 Innovations at the Nexus of Food, Energy, and Water Systems \(INFEWS\) - NIFA Grant Applications Due](#)
- [September 30 FOTB Rio Sonora Tour - Registration Deadline](#)
- [October 11-12 Tribal Water Law Conference - Nationwide Perspectives on the Critical Demand for Water](#)
- [November 16 AWRA Spring Speciality Conference Call For Abstracts - Application Deadline](#)
- [December 6 Mine Water Management Symposium Scholarship - Applications Due](#)

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