

WEEKLY WAVE

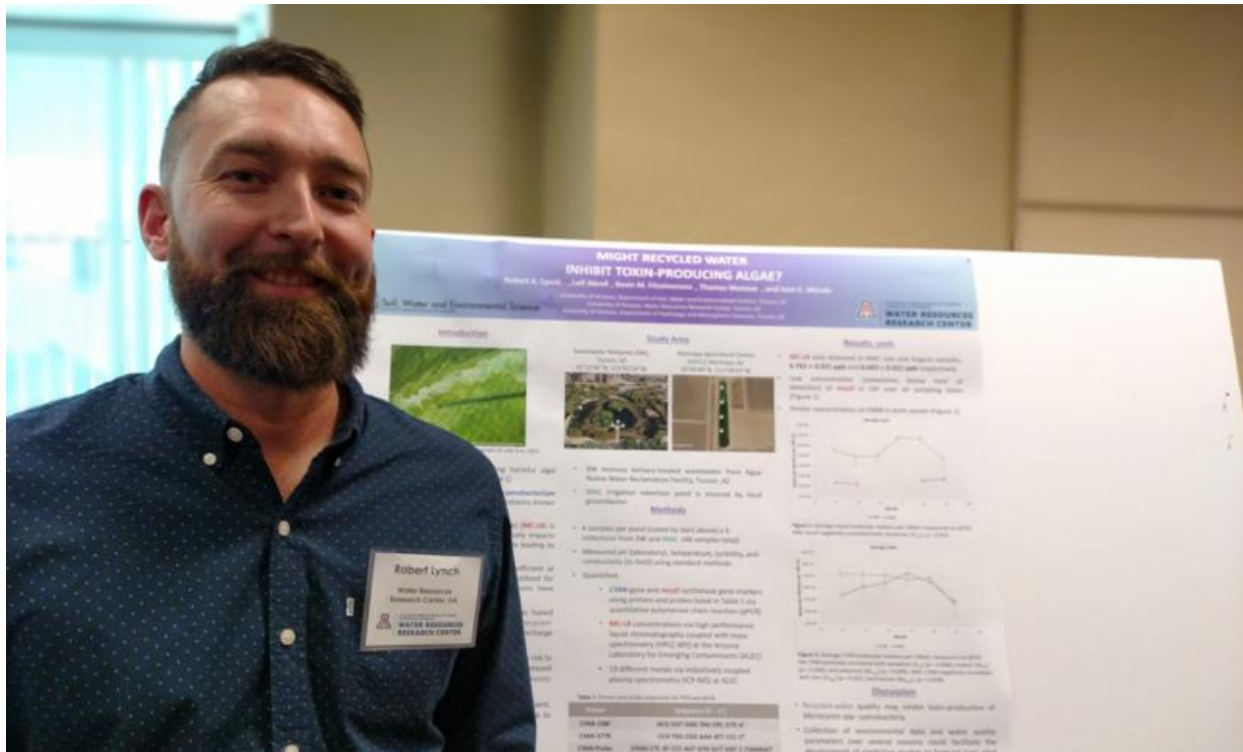


COLLEGE OF AGRICULTURE & LIFE SCIENCES
COOPERATIVE EXTENSION
**WATER RESOURCES
RESEARCH CENTER**

April 20, 2018 / Volume 6, Issue 16

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

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WRRC Students Shine Brightly in Annual SWESx Symposium

Each year during the University's Earth Week festivities, undergraduate and graduate students within the UA Department of Soil, Water and Environmental Science present research results in the "SWESx Symposium." Research talks and posters are evaluated by a panel of judges, and this year, WRRC students were prominent among the winners. Master's student Robert Lynch (pictured above) won first place for his SWESx oral presentation, "Might Recycled Water Inhibit Toxin-Producing Algae?" while Ph.D. candidate Valerisa Joe won third place with "Development of Native American Produce Safety and Agricultural Water Quality Trainings in Arizona." WRRC research scientist Dr. Jean McLain serves as advisor to Robert, and co-advises Valerisa with SWES scientist Dr. Channah Rock. Additional presenters included Ph.D. candidate Rebecca

Bernat, who is advised by Dr. Sharon B. Megdal. Rebecca presented "Meeting Arizona Water Management Objectives with Long-Term Storage Credits", while Ph.D. candidate Hany Almotairy, who performs research in Dr. McLain's laboratory, presented a keynote talk on "Accumulation of Heavy Metals in Aquaponic systems and Effects on Bacterial Antibiotic Resistance."

Please join all of us at the WRRRC in congratulating our brilliant students on a job well done!

[SWESx](#)

WRRRC EVENTS

WRRRC Brown Bag - Navigating Water Policy in Uncertain Times: New vs. Old Paradigms

April 25, 2018

Time/Location: 12:00 p.m. - 1:15 p.m. / WRRRC Sol Resnick Conference Room (350 N. Campbell Ave.)

Speaker: *Melanie Stansbury, Sr. Advisor and Consultant, Utton Transboundary Resources Center, University of New Mexico*

What does water security mean in the 21st Century and how do we reconfigure water policy for a more sustainable future? Although drought and water scarcity have driven conflict throughout history, there are increasing efforts across the U.S. to bring a more collaborative and systems-based approach to water governance. This talk examines the current water policy landscape and the ways in which a clash of paradigms is playing out between the legacy systems of the past and the new paradigm solutions of the future. Case studies of several major water policy efforts at the national level--including legislation and regulatory efforts in the current and past Congress--provide a lens for examining how these tensions are reflected in federal policy making. This talk will also explore the frontier of water policy-making in the U.S. and what that may look like going forward in a time of great political, social, and hydrologic change.

This presentation will not be recorded.



WRRRC Brown Bag - New Techniques for Mapping planted versus fallowed croplands using MODIS data

April 26, 2018

Time/Location: 12:00 p.m. - 1:15 p.m. / WRRRC Sol Resnick Conference Room (350 N. Campbell Ave.)

Speaker: *Cindy Wallace, Research Geographer, USGS Western Geographic Science Center*



An important metric to monitor for optimizing water use in agricultural areas is the amount of cropland left fallowed, or unplanted. Fallowed croplands are difficult to model because they have many expressions. Western Geographic Science Center researchers used 250 m, 8-day composite Moderate Resolution Imaging Spectroradiometer (MODIS) normalized difference vegetation index (NDVI) data to develop an algorithm that can routinely map cropland status (planted or fallowed) with over 75% user's and producer's accuracies. The technique compares the current greenness of a cultivated pixel to its historical greenness and to the greenness of all cultivated pixels within a defined spatial neighborhood, and is therefore transportable across space and through time. The research is part of DOI's WaterSMART (Sustain and Manage America's Resources for Tomorrow) Program that is working to achieve a sustainable water strategy to meet the Nation's water needs.



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

OTHER EVENTS

Seminar - Waters of the United States (WOTUS) - Evolution of a Quagmire and the Supreme Court

April 24, 2018

Time/Location: 11:00 a.m. - Noon / ENR2, S107 (1064 E. Lowell St., Tucson)



Speaker: Jim Burling, Esq., *Vice President of Litigation and Principal Attorney for Property Rights, Pacific Legal Foundation*

Jim Burling has been with Pacific Legal Foundation since 1983 and his cases involve regulatory takings, environmental and land use regulations, eminent domain, and Indian law. In 2001, he successfully argued a leading property rights case, *Palazzolo v. Rhode Island*, before the United States Supreme Court. He is a frequent lecturer at continuing legal education courses on topics such as the regulation of wetlands, eminent domain, and the "taking" of private property. In 2013, Mr. Burling was awarded the Crystal Eagle Award by the Owners Counsel of America in recognition of his work on behalf of property rights.

Water Roots - Springs in our Wildest Places: Results from 100+ Springs Surveys in Sky Island Wilderness

April 24, 2018



Time/Location: 5:30-7 p.m. / Borderlands Brewing Company (119 E. Toole Ave., Tucson)

Speaker: Samantha Hammer, *Conservation Biologist & GIS Specialist, Sky Island Alliance*

Join us for a pint and presentation on the interesting things we've been learning about springs in our Sky Island Wilderness areas. Ever wondered what springs in the wilderness look like--or how many are out there? This presentation will take you on a tour of springs surveyed with help from dozens of intrepid citizen science volunteers who did some serious scrambling and orienteering to bring us this new information. You'll also get a brief introduction to the

techniques used to gather information through springs surveys and how this is helping protect our wildest waters and guide restoration and conservation of these amazing oases in the sky islands.

WRRC NEWS

WRRC Director Invited Guest Lecturer at University of Waterloo

On April 10, WRRC Director Sharon B. Megdal traveled to Waterloo, Ontario, Canada at the invitation of the University of Waterloo's Water Institute. The Institute, established in 2009, serves to support an extensive group of university faculty and students working in water science, water engineering, water governance, and water economics, and to bring them together with a single institutional setting. More than 150 faculty from all six University of Waterloo campuses are members of the Water Institute. Dr. Megdal presented, "Groundwater Governance and Management Research: Connecting Researchers and Practitioners" at the Institute's WaterTalks lecture series.



California Water - Where are we, where are we going, and how the heck do we get there?

Felicia Marcus, Chair of the State Water Resources Control Board for California, gave a captivating presentation at the WRRC's April 12th Brownbag Seminar. Setting the stage with a historical overview that included discussion of California's water supplies and major water projects, Ms. Marcus described how California's three-year drought impacted the state's water systems. One troubling impact was an increased reliance on groundwater in the absence of reliable surface water, which caused declining groundwater levels in much of the state. In response to this and other concerning situations, the state developed the California Water Action Plan in 2014. Strategies in the Plan included making conservation a California way of life, increasing regional self-reliance, achieving co-equal goals for the Delta, protecting and restoring important ecosystems, managing and preparing for dry periods, improving groundwater management, and ensuring safe water for all communities. Ms. Marcus described how the Plan was created by bringing many different parties and perspectives to the table for discussions and negotiations. The resulting plan takes a comprehensive "all of the above" approach, and implementing the plan continues to motivate people to bridge organizational and geographic barriers to find solutions.



Bringing Underwater ROV Scrimmages to Arizona



The ability to think fast, adjust on the fly, and persevere when things don't work out are skills that will serve students well when life throws challenges their way.



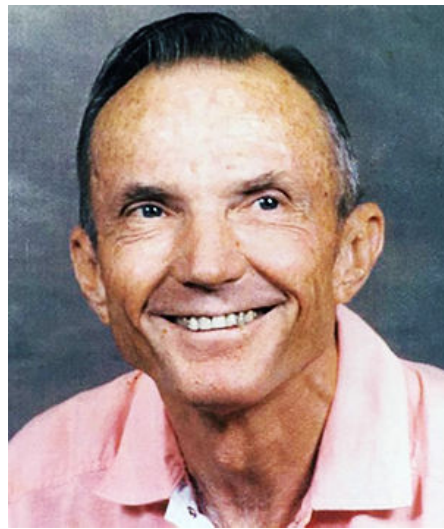
Students participating in Arizona Project WET's first annual Underwater ROV scrimmage on April 14th demonstrated these skills. Thirteen teams of 5th-12th grade students from schools across Arizona designed and built Remotely Operated Vehicles (ROVs) to accomplish a set of underwater tasks set forth in the 2018 [MATE](#) (Marine Advanced Technology Education) Scout Challenge. Teams had to form a company and respond to a request for proposal to provide an ROV capable of 1) locating and recovering a vintage airplane, 2) deploying an underwater seismometer, and 3) installing a tidal turbine. Additionally, they provided marketing displays, technical reports, engineering presentations, and passed a safety inspection. Students learned about buoyancy, hydrodynamics, forces, energy, electrical circuitry, wiring, soldering, control systems, marketing and how to quickly solve problems that arise. Teachers who participated in [APW's Underwater Robotics & Engineering Design Academy](#) last summer gave their students this opportunity!



[Learn More About APW](#)

WRRC Remembers Esteemed Alumnus Dr. Jim DeCook

The WRRC learn recently that Dr. Kenneth James DeCook (June 7, 1925 - April 14, 2017), passed away a year ago. Born in Indiana, Dr. DeCook lived and worked for most of his life in Tucson. He was recognized in his lifetime for his contributions to water research in Arizona. DeCook earned his B.S. and Ph.D. from the University of Arizona, where he received one of the first Ph.D.'s awarded in Hydrology. Subsequently, he served as a research faculty member at the WRRC and taught hydrology courses at UA. Throughout the 1970s and 1980s, his research and publications centered on water management issues ranging from the wastewater reuse and water conservation to artificial recharge and rainfall utilization, issues that are present still today. He also contributed to hydrological and geological studies in Texas during his time at the University of Texas between UA degrees. While at the WRRC, in addition to his many research projects, he was an editor of the Arizona Water Resources News Bulletin.



Emerging Voices of Tribal Perspectives in Water Resources Webinar Series

The Universities Council on Water Resources is presenting a two-part webinar series, "Emerging Voices of Tribal Perspectives in Water Resources." The webinars highlight papers from the April special issue on tribal waters in the Journal of Contemporary Water Research & Education (JCWRE), edited by the University of Arizona's Dr. Karletta Chief, Assistant Professor of Soil, Water & Environmental Science. The first webinar on April 26 at 9 AM MST, "Tribal Waters and Climate Change", will feature authors of two papers. The second webinar will be held on May 23 at 9 AM MST. The authors of two papers will present papers on tribes and water quality and quantity. The webinar is free to both UCOWR members and non-members.



ANNOUNCEMENTS

- [Good Neighbor Environmental Board Seeking Nominations](#)
- [April 23 AWRA Conference Topical Session and Workshops - Deadline](#)
- [April 24-26 IFC Flow 2018 - Registration Open](#)
- [April 29-May 1 Next Generation Water Summit - Registration Open](#)
- [May 2-4 AZ Water 91st Annual Conference & Exhibition](#)
- [May 7 AWRA 2018 Annual Water Resources Conference - Call For Abstracts Deadline](#)
- [May 10 PNW WaterReuse Conference - Online Registration Ends](#)
- [May 14 DOE Critical Water Issues Prize Competition RFI - Response Due](#)
- [May 21-24 U.S. EPA Region 9 Tribal Drinking Water Symposium - Registration Open](#)
- [May 22 Water Conservation Field Services Grant - Applications Due](#)
- [June 15 WaterReuse AZ 2018 Scholarship - Application Due](#)
- [June 26-28 UCOWR/NIWR Annual Water Resources Conference - Registration Open](#)
- [June 29 MSSC Student Scholarship Program - Applications Due](#)
- [July 9-11 AWRA Summer Conference: The Science, Management, and Governance of Transboundary Groundwater - Registration Open](#)
- [September 26 Innovations at the Nexus of Food, Energy, and Water Systems \(INFEWS\) - NIFA Grant Application Due](#)

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