Oklahoma Water Resources Center

Currents

April 2019

Take-homes from My Capital Visits

(by Dr. Kevin Wagner)

At the end of February, I traveled to Washington, DC and met with fellow water center directors from throughout the U.S., federal water agency leaders, and Oklahoma's Congressional delegation.

We discussed the USGS 104b grant program we administer (*Don't miss the RFP below!*), and OSU's HAB research and produced water research program. The importance of working with industry partners to address these issues was stressed time and again. I will be looking for every possible opportunity to do this, and I welcome your input.

On another note, if you are interested in collaborating on a USDA-NIFA proposal addressing sustainable agriculture, please get in touch soon. I was told that the call for proposals is expected in April.

This is just a snippet of what I learned. If you are interested in more information, give me a ring or stop by my office. I would love to catch up and talk about how we can work together to address our state's pressing water issues.

Seed Grants Grow One Agronomist's Program

(by Brittany Davis)

Each year the Water Center awards $25,000 to two to three projects as seed money to kick-start smaller projects or support a portion of larger projects. "It is amazing to watch how such small investments in research yield such significant benefits," says Dr. Kevin Wagner, Water Center director.

Dr. Jason Warren, an associate professor in Plant and Soil Sciences at Oklahoma State University, had just reached a new stage in his career when he received his first Water Research Grant through the Water Center in 2013. Up to that point, his career had revolved around soil research, oftentimes working towards preserving water resources. The grant from the Water Center allowed him to broaden his scope and reach—*searching for ways to prolong the life of the Ogallala aquifer and the agricultural production that depends on it...* Read the full article here.

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To find out more about these seed grants, view the RFP, and apply for a Water Research Grant, visit http://water.okstate.edu/opportunities/funding/ok-grants. Student projects are welcomed!

Dr. Jason Warren collects instrument readings

Opportunities

Funding

- **Oklahoma Water Research Grants Program** (grants of up to $25,000; due May 31, 2019 @ 5:00)

Employment

- **Environmental Scientist/Researcher** (OU)
- **Groundwater Modeler Post-Doctoral Fellow** (OU)

Events

- **OCLWA Annual Conference** (Stillwater, 4/3-4)
- **Workshop on Response and Recovery After Tornados Related to Water Resources and Planning** (OSU's Stillwater campus; 4/11-12)
- **National Adaptation Forum** (Madison, WI; 4/23-25)
- **"Managing Your Pond for Recreation" workshop** (Ardmore, OK; 5/23)
- **UCOWR/NIWR Annual Water Resources Conference** (Snowbird, Utah; 6/11-13)
- **Great Plains LID Research and Innovation Symposium and Design Competition** (Fort Collins, CO; 6/24-26)
- **Southern Region Water Conference** (College Station, TX; 7/23-25)
- **North American Lake Management Society Symposium** (Burlington, VT; 11/10-15; abstracts due by 5/17)

Removing Redcedar Beneficial in Restoring Natural Water Cycle

Eastern redcedar encroaches native prairie

(by Ali Meek)

Spring brings promises of returning warmth, new life, and the annual green-up. With this, the contrast between the brown winter landscape and the evergreen eastern redcedar diminishes. But the threat of redcedars does not.

Many Oklahomans are all too aware of the highly allergenic pollen of the eastern redcedar. Added to that is their high flammability. This can lead to devastating wildfires and increase their ability to quickly invade and convert vital prairies into unproductive stands of redcedar.

Another well-known threat of redcedar expansion is its negative impact on the natural water cycle. Dense redcedar stands can reduce soil moisture and potentially cause a decrease in runoff and groundwater recharge at a local scale due to some unique characteristics. Redcedars consume and evapotranspire more water than most other plants. Their leaves act as a canopy over the soil, catching the rainfall and preventing it from reaching the ground.

As redcedars keep expanding into grassland and oak forests, and monopolize water resources, Oklahomans are at risk of losing a considerable amount of water in the streams, ponds, and reservoirs.

For these reasons, researchers want to find ways to control the expansion of redcedar in Oklahoma. In 2010, researchers at Oklahoma State University began doing just that... *Keep reading to learn what their research shows and how you might transform your land from problematic to profitable.* [View the full article.]

Faculty Spotlight: Dr. Ali Mirchi

(by Dr. Ali Mirchi)

I am a water resources scholar and educator specializing in systems analysis and modeling, including system dynamics simulation, hydro-economic optimization, and watershed modeling. Sustainable management of water resources systems requires understanding of interlinked social, environmental, and economic subsystems, which collectively support thriving economies and healthy ecosystems.

My research helps better understand the tradeoffs associated with meeting the water demands of the agricultural sector and growing urban areas while maintaining the ecological integrity of natural environments.

Dr. Ali Mirchi

In terms of teaching, I strive to provide students with solid foundational knowledge, and mentor them to become critical thinkers, problem solvers, team players, and life-long learners.

I am currently working on a stakeholder-driven modeling application to increase awareness about water resources management outlooks in the New Mexico-Texas-Mexico border region based on a robust analysis of water sustainability challenges and realistic solutions.

I enjoy working with diverse populations, nationally and internationally, and view such opportunities as the highlight of my career. In an international project, I am working with collaborators in Tunisia to test novel technological solutions based on farm-level water-energy nexus to improve agricultural water management in coastal areas of Tunisia.

I am an active member of the American Society of Civil Engineers' Environmental and Water Resources Institute and a number of other professional organizations. In my free time, I like to swim, travel, and engage in cultural exchanges.

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