Arizona has long been a leader on water issues, from the innovative Ground Water Management Act of 1980 to pioneering the practice of water banking. But as drought, growth, and water quality concerns squeeze supplies even tighter, the state will need to develop strong, capable leaders to meet new challenges. WSP is dedicated to supporting leadership training, knowledge transfer, and innovative management programs to sustain the state’s water resources. From sponsoring students in their first water-related research projects to equipping public officials with the latest data and policy information, TRIF funding is cultivating teachers, engineers, scientists, and policy experts that will be prepared to help answer the tough questions ahead. Here are just a few of the leaders and forward-thinking programs that WSP is supporting.

### Workforce Development

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New faculty hires have strengthened teaching and research at the University of Arizona.
Expanding Leadership

Soil, Water & Environmental Science
Channah Rock
Assistant Specialist, Water Quality

Public Health
Kelly Reynolds
Associate Professor

Natural Resources & Environment
Kathleen Lohse
Assistant Professor
Shirley Kurc Papuga
Assistant Professor

Chemical & Environmental Engineering
Glenn Schrader
Associate Dean, College of Engineering
Shane Snyder
Professor

Cooperative Extension
Summer Waters
Assistant Agent, Water Resources
A Model Student: Profile of Amy Lynn

When pressed to describe herself, Amy Lynn, a Tucson native and junior studying civil engineering at UA, uses the word “tenacious”. “I’m not always the smartest person in the class,” she says, “but I don’t give up easily.” And that tenacity has brought her success in her studies, including a 2007 WSP Undergraduate Research Fellowship to work on a model of water usage in the Tucson area.

A NASA Space Grant intern, Lynn first got into water modeling and started working with her advisor for the project, UA engineering professor Dr. Kevin Lansey, as a sophomore. During her internship, she developed a model for water usage in a single-family home, which accounted for indoor parameters, like the number of toilets and showers, as well as outdoor usage, such as swimming pool and lawn area.

With the WSP fellowship, Lynn is expanding those single-house calculations into a model for the Tucson Metro Water District. The final product will have a user-friendly interface that city water managers can use to run “what-if” scenarios and determine how much water can be saved if Tucson residents implement various conservation measures in their homes.

This is the first time Lynn has worked on a model of this scale, and nailing down the parameters required her to be resourceful. She spent hours poring over real estate websites to estimate the ages of homes – and their plumbing – to help accurately calculate indoor water usage. She turned to Google Earth to estimate the average areas of pools and lawns in the neighborhoods she was modeling. Even with these tedious data-gathering tasks, Lynn says she has really enjoyed the whole project and looks forward to handing over the finished product to the Metro Water District when she presents her research at the end of the fellowship.
An old adage in business circles holds that “you can’t manage what you can’t measure.” Susan Pater, an extension agent at the Cochise County Cooperative Extension, would agree. In 2007, with funding from a TRIF grant, support from the WRRC, and matching funds from Cochise County, Pater embarked on a project to help county water managers measure a type of groundwater usage that was slipping under the radar: unmetered rural wells.

Arizona is home to more than 100,000 small, unmetered domestic wells. Alone, each well is a drop in the bucket, but collectively, they represent a major source of groundwater pumping, especially in fast-growing areas like the Verde Valley and the Upper San Pedro Basin. Because these wells are spread out across
rural areas, they are difficult and expensive to monitor. Water managers and planners in Cochise County have been hesitantly relying on a rough estimate of small well usage when making water decisions. With population growth and drought squeezing water supplies, having a precise picture of well water usage is becoming more and more important. So the county asked the UA Cooperative Extension and the WRRC to help verify the amount of water these wells are using.

Using public records and a well-mapping application developed by SAHRA, Pater and her team pulled together a database of information on the 10,000 wells in Cochise County. To get well readings without having to traverse the county, they retrofitted 250 water meters with technology that enables them to transmit water usage data over the internet to a centralized UA database each day. Installation of meters on a representative sampling of the county’s wells will allow more accurate estimation of water usage for the whole county, and provide decision makers with an important piece of the water budget puzzle.
Expanding Leadership

Learning to Mediate the Water Wars

The infamous quip “whiskey is for drinking, water is for fighting,” often attributed to Mark Twain, rings even more true for southwestern water managers today than it did in the 1800’s. Tensions over the allocation and use of scarce water resources continue to escalate, and in 2007 faculty from several disciplines at UA joined forces to offer students a focused way to develop their knowledge of water policy: a new Graduate Certificate in Water Policy.

The Graduate Certificate in Water Policy program is open to UA graduate students as well as professionals who want to sharpen their policy skills. Students are required to take twelve credits – half from a core curriculum and half from a list of thematic courses that run the gamut from American Legal History of the Colorado River to Fishery Management. The schedule is flexible, allowing students to take all four courses in one semester or to spread them over two years so working professionals can fit them into a full-time schedule.

http://gcwp.arizona.edu/