



University of California | Agriculture and Natural Resources

California Institute for Water Resources

Developing solutions to California's water-related challenges

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60 years of Water Resources Research & Extension at the University of California



The institute has been directed by academics across the University of California system, beginning with Martin Huberty in the 1950's, John Letey in the 1990's, and Doug Parker today.

This interview is with **Doug Parker**, director of the California Institute for Water Resources & Strategic Initiative Leader for UC Agriculture and Natural Resources' Water Quality, Quantity & Security Strategic Initiative.

Can you explain the California Institute for Water Resources?

It's a bit of complicated, but fun, **history**. In 1956, the state legislature passed a bill to allocate \$100,000 to the University of California to create an institute that would help solve water issues facing California. A year later, those funds were matched by the university, which established a multi-campus research unit that became the UC Water Resources Center. It was originally housed at UCLA and over the years, it moved between UC Berkeley, UC Davis, and UC Riverside. It has been a part of **UC Agriculture and Natural Resources** (UC ANR) most of this time. We are now located at UC ANR's headquarters in Oakland.

To complicate the picture a bit, in 1964, Congress passed the **Water Resources Research Act**, creating a nationwide system of institutes. California designated the UC Water Resources Center as its representative institute. This national network, collectively known as the National Institutes for Water Resources, is overseen by the U.S. Geological Survey.

That history brings us to today. The center was renamed the California Institute for Water Resources in 2011, when I became the director. The initial mission of the institute still stands: to integrate California's research, extension, and education programs to develop research-based solutions to water resource challenges.

At this point, **we are a small institute**. I wear multiple hats, including as the leader of the UC ANR **water strategic initiative**. **Faith Kearns** has multiple roles, including leading our online science engagement efforts. We are really lucky to have support with things like meeting arrangements from UC ANR, as well as to work with researchers across the UC system and beyond.

The water landscape, so to speak, in California is crowded. How does CIWR fit in?

Our role as the California institute in this nationwide system of water institutes is to increase cooperation and collaboration among all academic institutions working on water across the state. Nearly every UC campus, as well as several CSU campuses and private universities, has an institute or center working on

California water issues. In addition, individual academics often work on water issues outside any formal affiliation with a water institute. Our role is to help connect those efforts where appropriate.

As an example, we use our federal budget allocation from USGS to administer a competitive grants program. The program is open to new academic appointees at any university or college in California. We support between five and eight projects on two-year cycles at up to \$15,000 per year, on topics ranging from agricultural **groundwater recharge** to intermittent **stream biology to water policy**. We use our limited funds to to increase the diversity of projects and voices in California water.

In addition, we hope to directly impact California water issues through our own research and extension programs. For example, we created a **series of drought tips**, supported by the California Department of Water Resources, to help farmers and homeowners adapt to drought. We have also worked with a group of UC, gency, and industry scientists to develop and deliver curricula on **fertilizer and water management** to lessen nitrates, supported by the California Department of Food and Agriculture.

We created a series of **online seminars** on water management issues ranging from groundwater to wildlife management. We stay in touch with our partners through our website, newsletter, **blog**, and **Twitter feed**. We use social media to contribute, shape, and diversify the conversation on California water issues.

What are some of the key water issues that you see ahead for state and how will CIWR contribute to solutions?

California will always face a variety of water issues. In the short-term, I think the state is on a path to better manage both groundwater quality and supplies. Over the next five years, these two aspects of groundwater management need to be jointly addressed. We currently have two parallel management programs that I hope the scientific community can assist the state in man-



Helen Dalhke, CIWR Affiliate and UC Davis professor, talks with journalists about her groundwater recharge research.

aging so that they do not have competing goals.

Another key issue will be management of surface water supplies in a changing environment. Snowpack currently provides nearly one-third of California's freshwater supply. Climate change models predict snowpack will decline by approximately one-third. We need to look closely at how we manage surface water – and groundwater – to account for these changes.

We are nearing the end of a strategic planning process to determine our efforts for our next 5-10 years. One aspect of that plan is an assessment of how the institute and its partners, can help California respond to these water management challenges. Stay tuned.

Our mission is to integrate California's research, extension, and higher education programs to develop solutions to water resource challenges.

Web: ciwr.ucanr.edu | Blog: ucanr.edu/blogs/confluence | Twitter: [@ucanrwater](https://twitter.com/ucanrwater)

Drought & Water Management Resources

Because water management will always be a part of life in California, we produced a [series of videos](#) to maintain water use and drought awareness and planning.

The videos are inspired by a collection of science-based [drought tip sheets](#) developed in collaboration with UC Agriculture and Natural Resources researchers, with support from the California Department of Water Resources.

The tips cover a broad spectrum of California crops, from alfalfa to walnuts. Several of the tipsheets are now available in Spanish as well, with more coming this spring.

Groundwater recharge recommendations

Experts expect more intense cycles of drought and flooding to be a common occurrence in the future. To adapt to this new reality, it is critical that we capture and bank groundwater during wet years so that it is available during periods of drought. Thus, it is important that those entities that currently supply water and those that manage flood waters work together.

To develop a strategy for moving forward, UC Vice President Glenda Humiston and the California Economic Summit brought together innovative land use decision makers and cutting edge leaders from water supply and flood management districts to [develop recommendations](#) for the [California Economic Summit](#).

Institute activity highlights

Doug Parker, CIWR Director, recently participated as a delegate to the California Department of Food and Agriculture's, California Climate-Smart Agriculture Policy Mission to Chile. There he learned about water and temperature adaptation in Chilean agricultural production. He continues to serve the [Universities Council on Water Resources](#) (UCOWR) as Past-President. He has been working with UCOWR to create a 5-year strategic plan. Doug continues as subject matter expert to the CDFA's Environmental Farming Act Science Advisory Panel. That Panel has helped create two environmentally sound grower assistance programs: the [Statewide Water Efficiency and Enhancement Program](#) and the [Healthy Soils Program](#). CIWR provides technical assistance to these two programs as well as the [Dairy Digester Program](#).

Faith Kearns, CIWR Academic Coordinator, recently published several articles. A piece on [disasters](#) in *Bay Nature* was [quoted in Rolling Stone](#). Her article on [wildfire](#) at *The Conversation* was picked up by CBS News and others. A [climate change](#) article in *Cal Ag* co-authored with UC colleagues T. Grantham, S. Kocher, T. Pathak, and L. Roche formed the basis of a related workshop the group developed and where Faith led a section on [climate communication](#). She also recently led two [science communications training sessions](#) at the California Naturalist Regional meeting.

"A reliable supply of water for drinking, growing food and sustaining our natural resources remains one of California's greatest challenges. UC's California Institute for Water Resources is vital to integrating California's research, extension, and education programs to help mitigate current water-related issues and develop practical long-term solutions."

Secretary Karen Ross, California Dept. of Food & Agriculture

The Confluence: New on our blog

Here are just some of our most recent articles. You can follow and subscribe at: ucanr.edu/blogs/confluence.

Fire & water issues are intimately linked in California *F. Kearns*

From ecosystems to housing, fire and water issues are deeply connected. That lesson keeps coming home again and again in California. After years of drought, a wet winter that led to lots of summer-dried vegetation, and some very high winds (among other factors), many thousands of California residents are being deeply affected...



Faith Kearns

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Water is life, relationality, and tribal sovereignty: An interview with Melanie K. Yazzie *F. Kearns*

Water is life allows us to focus on life instead of death. It makes a lot of sense that it came from these ground-up social movements that indigenous people are spearheading, whether it's within the Navajo context or the multi-tribal effort at Standing Rock, because it's about trying to shift this extraction-based paradigm that dictates all of our terms of life as indigenous people in North America...



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Water challenges for California's small farm community *F. Kearns*

F. Kearns

Small farmers were hit hard by California's drought. Perhaps none as hard as the Hmong and other Southeast Asian farmers that lease small plots of land, often with declining groundwater levels, shallow wells, and outdated irrigation systems. Yet, many of these small farmers persist, growing an incredible variety of tropical and subtropical crops in California's temperate climate...



Jacob Roberson

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California's idea of "natural" beauty may have shifted during the drought *F. Kearns*

From beaches to canyons, southern California is well-known for its iconic landscapes. Palm-lined streets are so ingrained in the popular imagination that it's easy to forget the trees haven't been there all that long. In fact, much of what is commonly thought of as the area's natural beauty has been created to match a specific human idea of what nature should look like. However, a new study indicates that what many residents and visitors see as the ideal coastal landscape may have evolved...[READ MORE](#)



Alex Beattie