

Karen McLaughlin

Principal Scientist at the Southern California Coastal Water Research Project



What is your current occupation?

I am a Principal Scientist at the Southern California Coastal Water Research Project (SCCWRP), a public research institute that provides impartial science to inform management decisions regarding improvement of aquatic systems in Southern California and beyond. SCCWRP has been developing strategies, tools and technologies that the region's water-quality management community relies on to more effectively protect and enhance the ecological health of Southern California's coastal ocean and watersheds. I serve as the regional monitoring coordinator, facilitating implementation of the Southern California Bight Regional Marine Monitoring Program. My current research includes integrating and optimizing monitoring programs to characterize the vulnerability of coastal marine ecosystems to multiple anthropogenic stressors and developing appropriate indicators and metrics for assessing water and sediment quality in Southern California. Her research also includes understanding factors and processes controlling nearshore ocean acidification and hypoxia (OAH) and understanding ecosystem response to anthropogenic nutrient loading.

In 2020, I was elected to the Board of Directors of the Irvine Ranch Water District (IRWD). This is a publicly elected position. The board sets the policy of the district, ensuring that district policy serves the interest of the residences. IRWD provides drinking water and sanitation services to ~20% of Orange County.

What is your educational background?

I earned my Bachelor of Science degree in geosciences from Penn State University, with specialization in hydrology; my Ph.D. in geological and environmental sciences from Stanford University; and worked as a post-doctoral researcher at the UC Irvine.

A key message for students is that the geoscience workforce is dynamic, and boundaries between sectors and occupations are fluid. How has this been true in your career?

Following my PhD, I was interested in working on applied science. I wasn't interested in doing science in a vacuum, I wanted to make sure that it was directly relevant to management decisions. This led me to a post doc at UCI working on a project for the Santa Ana Regional Waterboard. They were tracking sources of fecal contamination to a coastal embayment. I loved working at the intersection of science and policy. My postdoc advisor knew of my interest and introduced me to the Executive Director at SCCWRP where I've been ever since. I love working for SCCWRP, knowing that my science is working to improve water quality in California! Effective environmental policy is built on strong science. My agency works to provide that foundation.

Last fall, I took another step into the policy realm, running as a candidate and winning my election to the board of directors to the Irvine Ranch Water District. Water supply and reliability will continue to be a great concern for the US Southwest and I felt that, as a scientist, I had knowledge and expertise that could make a difference for my community.

Where do you see your sector moving in future years? How would you advise students to prepare to be competitive job applicants and successful employees?

The future of my sector is understanding how multiple stressors are interacting. We can no longer manage ecosystems one stressor at a time. We need to untangle the impacts related to local discharges compared to global changes so that we can make the best management decisions. I would advise students to gain a breadth of knowledge so they can interpret science from another field because eventually they'll need to connect it to their own work. Outside of academia in particular, geosciences and environmental sciences are very interdisciplinary.

What is the role of networking in your sector? Do you have advice for a student who is just beginning to build their network? What is the best way for students to get their foot in the door?

Networking is big in any field. I would advise students to not lose touch with other students in their cohort. Graduate school is probably the last time you'll meet people heading into careers that are wildly different from the career path you are on. Those connections can become very helpful later in your career when you need some cross-disciplinary advice or collaboration. Also, if you ever want to change career paths, that diversity of connections may come in handy.

If you are looking to get your foot in the door, ask your advisor or mentor to introduce you to connections in their networks. A personal reference/introduction from a trusted colleague is way more valuable than a pretty resume and interesting cover letter. If you are highly recommended, some employers may hire you even if they don't have a current job opening or at the very least you will be the top of their list when they do have a job opening. Be proactive for the job you really want, it will get you farther than being reactive to job ads.

What does a “typical” day of work look like for you?

I answer emails and have meetings, sometimes I actually do science or write about science or talk about science.

What is the best part of your job?

Seeing resource managers use my science to make better decisions. Seeing the monitoring data that shows environmental condition improved because of science-based management actions.

Do you have any other comments or advice for students looking to enter your sector of the geoscience workforce?

There are a lot of jobs out there that you don't even know about that may be a better fit for your personality. I knew I wasn't interested in academia, but I didn't have a good understanding of job opportunities in science besides environmental consulting. I didn't know that research institutes like SCCWRP existed until my postdoc advisor said he'd worked with them before, and it seemed like a good fit for my professional interests. I never would have run for the Board of Directors of my local water district if someone hadn't told me I should run because she thought I could do a lot of good there. Keep an eye open for opportunities, listen to your colleagues, friends, and mentors when they bring you career ideas. If you are reading this, you are probably well on your way.

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