

2024 DARCY LECTURE

California State University, Long Beach,

Matthew W. Becker, Ph.D.



Host: **Morwick G360 Groundwater Research Institute**

Date: **Tuesday March 5, 2024**

Time: **2:00-3:00pm**

Location: **Richards 3504**

Light refreshments will be served

Matt Becker is the Conrey Chair in Hydrogeology and Professor of Earth Sciences at California State University Long Beach, USA. He holds degrees in Geology and Civil Engineering and has worked with Los Alamos National Labs, the U.S Geological Survey, NASA Goddard Space Flight Center, the University at Buffalo, and has been awarded Fulbright scholarships for Italy and Australia. Matt's primary focus of research is fluid flow in highly heterogeneous subsurface environments.

How Groundwater Impacts the People and Ecosystems of the South Pacific Islands

The Pacific Ocean is host to more than 30,000 islands, the vast majority of which are small, remote, and vulnerable to climate variability. Groundwater plays an important role in the resilience of these isolated environments. We will see how groundwater was a critical resource for the first settlers of Rapa Nui (Easter Island), how it helps coral reefs flourish in a nutrient desert (Darwin's Paradox), and the role it plays in terrestrial flora and fauna. Understanding of these interactions is hindered by the complexity of groundwater flow in coastal and offshore environments. Our recent investigations of the distribution of groundwater flow to fringing coral reefs sheds some light on these processes. Climate change and sea level rise will disrupt and potentially overwhelm these unique and biologically critical ecosystems. An improved understanding of hydrogeologic systems and their interactions with marine life surrounding Pacific islands will be essential for strategic adaptation to environmental stresses.



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