UCI Samueli School of Engineering | Department of Civil and Environmental Engineering

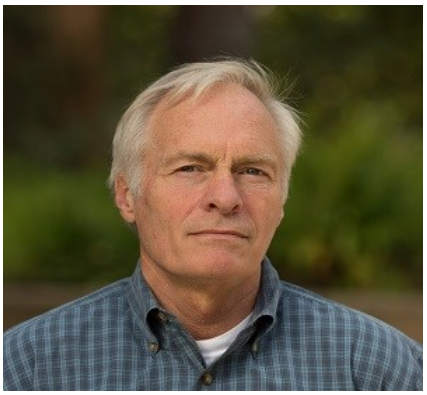
# Distinguished Seminar

## Dennis Lettenmaier, Ph.D.

Distinguished Professor
University of California Los Angeles

Friday, November 17, 2017
Seminar: 1:30PM to 2:30PM
Reception: 4:00PM to 6:00PM

McDonnell Douglas Engineering Auditorium
Colloquia Rm (EH 2430)



Dennis P. Lettenmaier (Ph.D.), University of Washington, 1975, Distinguished Professor with interests in hydrologic modeling & prediction, hydrology-climate interactions and hydrologic change. He is an author or co-author of over 300 journal articles. He was the first Chief Editor of the American Meteorological Society Journal of Hydrometeorology, and is a past President of the Hydrology Section of the American Geophysical Union.

## RSVP Required: Click Here

### The Hydrology of The Conterminous U.S.: What's Changing and What Isn't?

A central premise of most hydrologic risk analysis is stationarity, the assumption that the probability distribution of hydrologic quantities (especially extremes) do not change with time. This assumption is now widely questioned as we have better documentation of the effects of land cover change, climate change, and water management on hydrologic fluxes including precipitation, runoff, and evapotranspiration. Long-term changes n hydrological fluxes are well documented in California (which has just emerged from a four-year drought), the Colorado River basin (which remains mired in a drought of duration more than a decade), and other Western U.S. river basins. On the other hand, the case is less clear for historical changes in hydrologic extremes, such as floods and droughts. I review evidence (mostly from the Western U.S., but more broadly where available) from multiple hydrological records which in some cases now exceed 100 years in duration, including long-term streamflow records, as well as precipitation extremes for over 200 of the world's largest urban areas, snow water equivalent (SWE) and other hydrologic variables. I discuss in particular temperature-related changes in snow processes in the Western U.S., including recent studies of the exceptionally low snow winter of 2015-2016 across much of the West (for which California essentially was "ground zero") and the possible shift of droughts in the Colorado River basin from precipitation to temperature control.

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