



## BREN SEMINAR

EFFECTS-DIRECTED MONITORING  
OF EMERGING CONTAMINANTS

KEITH MARUYA

Principal Scientist, Chemistry Department  
Southern California Coastal Water Research Project

Monday, April 23, 2018 11:00 – 12:00  
Bren Hall 1414

Watch live at <https://ucsb.zoom.us/j/922324552>

**“Dr. Maruya’s latest research includes the assessment of the water quality near treatment plant effluents in the Southern California Bight and the potential impacts contaminants of emerging concern can have on the environment. He will discuss using innovative tools to prioritize monitoring of these contaminants. If you are interested in toxicology, water quality, CECs and tools for their assessment, do not miss this exciting talk!”**

— Violaine Desgens-Martin, Bren School PhD Student

**ABSTRACT** With thousands of new chemicals entering the marketplace each year, the need to modernize monitoring and assessment frameworks to protect water quality from the impacts of contaminants of emerging concern (CECs) has never been greater. Conceptualized with input from a panel of experts and a broad coalition of stakeholders, a framework to screen for a broad suite of CECs, and that identifies the most problematic chemicals among those detected, is being developed and test driven for water quality in California. This framework combines a traditional risk-based element for chemicals for which adequate information is available (i.e. “knowns”), with a multi-tiered element that screens for chemicals not targeted by current methods (i.e. Pri“unknowns”) according to their common modes of biological activity, and follows up with instrumental analysis to identify bioactive agents. The screening by mode of action element is based on the application of high throughput in vitro transactivation assays that provide clues as to which classes of chemicals to prioritize for subsequent analysis using environmental mass spectrometry. This “effects directed monitoring” framework has been endorsed by Cal EPA and is being test driven for ambient and recycled water monitoring applications across the state.

**BIO** Dr. Keith Maruya is the Principal Scientist for the Chemistry Department at SCCWRP, a public agency that focuses on water quality research. Dr. Maruya has degrees in Chemical and Environmental Engineering from USC and UC Berkeley. His expertise is in the measurement, fate and effects of organic chemicals in aquatic systems. He is an Associate Editor for *Chemosphere*, and is currently serving as President of the SoCal Chapter of SETAC. Keith was raised in southern California, and before coming to SCCWRP, spent 10 years on the faculty at the Skidaway Institute of Oceanography in Savannah, GA.

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