

# Watershed Health Indicators and Data Science Symposium

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2<sup>nd</sup> Annual - June 29 and 30, 2017

CalEPA-Byron Sher Auditorium

**Thursday, June 29, 2017**

**Special Session 2:15-3:30**

## **Emerging Tools for Water Quality Monitoring**

Modern monitoring and analysis technologies can enhance the Water Board's ability to prevent, reduce, and avoid pollution. This short session will feature 5 minute Flash Talks by Companies and Research Facilities developing tools and technology that can be used to efficiently assess and visualize status and trends of conditions in California's waters. There will be time to visit displays and posters.

Be sure to sign up for a **Virtual Reality Tour of Southern California** as the sea level rises around you!

**San Francisco Estuary Institute**-Tony Hale

### **Freshwater Harmful Algal Bloom Visualization Tool**

Using data and algorithms provided by NOAA's National Centers for Coastal Ocean Science, SFEI developed a new tool under the guidance of California's Freshwater Harmful Algal Bloom Group. The map interface uses satellite data to display estimated concentrations of cyanobacteria in large water bodies to better understand potential risks to public health. Data is displayed in map form to show the spatial extent of blooms and is also viewable in long and short timelines to show how concentrations vary over time. Additionally, field data can be displayed from the California Environmental Data Exchange Network (CEDEN) to provide users a combination of information sources to better understand the status and trends of blooms and the potential risks to public health.

The tool will be available on California's Harmful Algal Bloom portal

(<http://www.mywaterquality.ca.gov/habs/>)

**Aqualytical** -Jamie Aderhold

### **CLAM - Trace Organics Monitoring**

The CLAM, a high volume field extraction sampler for trace organics, will be discussed to include background of the tool and field studies with data performed by the USGS and Washington State Department of Ecology. A summary of a recent presentation by the California Departments of Fish & Wildlife and Pesticide Regulation, on the CLAM for pesticide method development will also be presented.

**FLUIDION US Inc.**- Joyce Wong

### **FLUIDION ALERT System: the world's first fully autonomous, connected, in-situ pathogen detection system**

We will present the fluidion ALERT System product, typical deployment scenarios, comparison of in-situ and lab data, and will discuss applications to watershed monitoring. Fluidion is a high-technology company specialized in creating sampling and environmental analysis products for in-situ monitoring of surface waters (lakes, rivers, coastal waters) and treatment facilities (drinking water and wastewater plants). Fluidion's flagship product is the ALERT System: a fully autonomous in-situ microbiology lab, capable of automatically sampling and analyzing water for the monitoring of pathogens (disease-causing bacteria such as E. Coli, enterococci and total coliforms) in surface waters. In particular, it is designed to

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detect bacterial indicators of fecal pollution, notably in bathing waters (beaches, lakes), but also for industrial water markets (drinking water or reclaimed water for agriculture). The in-situ version is deployed on-site, in target field locations, where it is anchored to shore or attached to a floating buoy. It is capable of automating all the laboratory procedures required to monitor bacterial content of the water (representative fluid sampling, bio-reagent mixing, incubation, multi-spectral optical monitoring, data transmission and interpretation), thus creating a complete in-situ microbiology lab that is ideally suited to detecting and quantifying pathogens that are present in the sample – and generating an alert in case of an outbreak.

## **Tableau-** Mike Ramos

Tableau helps people see and understand data in a secure and scalable environment. Get answers fast by connecting to data stored anywhere, in any format. Perform limitless ad-hoc analyses with powerful, intuitive analytics that reveal hidden opportunities. Drag and drop to create interactive dashboards and advanced visualizations in just a few clicks. Then share across the enterprise and empower people to ask their own questions, discover answers, and drive your organization to success.

## **Break to Visit Displays**

### **Ayyeka-** Sivan Cohen

Ayyeka, an Industrial Internet of Things (IIoT) technology company, was founded in 2011 to simplify the process of delivering data from remote infrastructure and dispersed assets to decision makers. Ayyeka leads, and is leading the field in tactical edge analytics, low-power connectivity, and advanced sensing.

### **Ceres Imaging-** Mike Guerin

Ceres Imaging captures, processes, and delivers high-resolution spectral imagery as a service for agriculture, thereby helping growers make important resource allocation decisions by showing them real-time plant health throughout the growing season.

### **FREDsense-** David Lloyd

FREDsense uses a biosensor with an electrochemical output to create a system that is fast, sensitive, and unlike anything else on the market, allowing anyone to know exactly what is in their water.

### **Wellintl-** Charles Dunning

Wellintl is the first ever groundwater information system consisting of sensors, a gateway, and a cloud that lets stakeholders keep track of groundwater in a well and sends alerts when something needs attention.

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**Virtual Reality Tour – in Training Room 2** (available all day)

**Using Virtual Reality and Scenario-Driven Visualizations to Inform Decision Making**-Shelly Moore (SCCWRP)

Southern California coastal wetlands provide critical ecosystem functions and services. Long-term sustainability of these systems is threatened by urban encroachment and climate change. The Tijuana Estuary is one such area likely to be directly impacted by climate change into the future, which makes it critically important to effectively communicate and educate decision makers and the public on how these impacts effect the estuary. Traditional visualization methods including statistics, maps and charts are often ineffective at communicating complex, model-based outcomes and future conditions. Virtual Reality (VR) refers to a technology used to place users into an environment without physically going there. This emerging technology has significant potential to communicate complex information based in real scientific, planning and decision-making applications to a variety of audiences. These visualizations can be used to initiate dialogue between groups that are at odds over divisive issues in the different landscapes or to engage in discussion about different issues and perspectives.

There will be displays and posters by these and others available in the 2<sup>nd</sup> Floor Lobby and Training Room 2

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