

15th Annual CSU Water Advocacy Towards Education & Research Conference



April 18-19, 2024

15TH ANNUAL CSU-WATER CONFERENCE

Welcome Message



Hello CSU-WATER Conference Attendees,

We are so excited and pleased to bring you a new format for the 2024 CSU-WATER conference. We continue to highlight new directions and areas of emphasis and engagement. We've focused our core goals on outreach across the CSU, with external partners, and integration of these across California to best address our onerous and dynamic water issues. Noteworthy survey feedback from the 2023 conference at CSU-Monterey Bay recommended a longer conference, alternative presentation formats including networking strategies, student and community inclusion in research, and the inclusion of external entities. These are the motivations for adding a networking event to our traditional CSU-focused program. We thank our friends and colleagues at Southern California Coastal Water Research Project (SCCWRP) for generously hosting the networking event.

I am constantly appraised of many significant efforts across the CSU focused on water education, programs, and research. Much of this is through our CSU Campus Representative network. We also connect to students through our recently formed SOURCE group (Student Outreach Unit for Research and Career Education), which I trust you have heard about. We encourage you to share these entities with your CSU and external networks for even greater connections. Since our last conference, CSU-WATER has been moving into research areas that link water with agriculture, climate, communities, and energy, which are in line with many state programs.

The Campus Reps and SOURCE networks are just part of what we've created to encourage you to reach out and let us know about your water-related activities. We will soon launch a CSU Faculty survey which aims to hear about and address your research concerns and bottlenecks, and how CSU-WATER can help to overcome those to best connect students and research fronts with our external network. We will share the survey findings with relevant leaders in the CSU Chancellor's Office.

Hopefully the conference sessions will motivate you to consider additional connections within and among water issues in our state and how you can be active in our CSU-WATER networks.

Best Regards,

A handwritten signature in black ink that reads "Steve Cunningham". The signature is fluid and cursive.

Executive Director
CSU-WATER



Vision, Mission, & Key Goals

Vision

CSU-WATER will be a resource for education, research, and policy development to help state agencies, regulators, and lawmakers achieve a long-term, sustainable water supply for California based on good science. CSU-WATER aims to convene and organize the vast knowledge and expertise related to water within the CSU and will help foster collaborations to demonstrate this capacity as a resource in California for information and solutions regarding the state's water resources.

Mission

CSU-WATER is designed to target the capabilities and resources within the 23 California State University Campuses to provide academic preparation, applied research, and partnerships with stakeholders, addressing all aspects of water use. CSU-WATER serves to focus synergistically with the many centers and programs of excellence within the CSU on water issues. The goals listed below support the key elements in the CSU-WATER mission.

Key Goals

- ◆ Support and increase CSU multi-campus collaborations among faculty and students on water research and education via internal resources and external funding.
- ◆ Develop community networks and partnerships to create awareness and support for the CSU-WATER Mission and Goals.
- ◆ Leverage and combine the resources of the CSU System and External Partners address persistent and frequently changing state-wide water issues with a focus on faculty engagement and student professional development opportunities

Special thanks to the CSU-WATER Conference Planning Committee:

Jennifer Alford, San Bernardino	Laurie Huning, Long Beach	Rae McNeish, Bakersfield
Bailey Benedict, San Bernardino	Devrim Kaya, San Diego	Garrett Struckhoff, Fullerton
Priya Ganguli, Northridge	Leila Khatib, San Jose	Hailu Xu, Long Beach
Christopher Gibson, Fullerton	Zhongzhe Liu, Bakersfield	Tongren Zhu, Sacramento
Aseem Hasnain, Fresno	Sami Maalouf, Northridge	

15TH ANNUAL CSU-WATER CONFERENCE

April 18, 2024

11:00 am Registration

11:30 am Welcome & Overview

CSU-WATER/SCCWRP

11:45 am Lunch, Networking and Poster Viewing

All

12:35 pm **CSU Programs**

- ◆ Office of Water Programs
- ◆ CGST (Center for Geospatial Science & Technology)
- ◆ Institute for Watershed Resiliency
- ◆ Blue Gold
- ◆ WET Center (Water, Energy, Technology)
- ◆ CA Energy Research Center
- ◆ CSU C.O. Sustainability

Brian Currier, Sacramento
Danielle Bram, Northridge
Jennifer Alford, San Bernardino
Matthew W, Hassan D, San Diego
Eric Hadden, Fresno
Liaosha Song, Bakersfield
Tamara Wallace, Chancellor's
Office

1:20 pm **CSU-WATER SOURCE**

Raymond Hess, San Jose
Steve Blumenshine

1:30 pm **CSU Faculty**

- ◆ Mass Comm/Film making
- ◆ Geomorphology, watershed hydrology
- ◆ Microplastics Lab
- ◆ Environment & Water Education

Samuel Contrares, Fresno
Jimmy Guilinger, Monterey Bay
Rae McNeish, Bakersfield
Jackie Guilford, Sonoma

1:50 pm **External Presentations**

- ◆ Coastal Conservancy
- ◆ Community Water Center
- ◆ Council for Watershed Health
- ◆ Dudek
- ◆ CBM Consulting
- ◆ LA County Sanitation Districts
- ◆ LA Dept. of Water and Power
- ◆ LACSD
- ◆ Met Water
- ◆ Milk Producers Council; Water Blueprint of the SJV
- ◆ Riverside Co Flood Control & Water Cons District

Sally Gee
Erick Orellana
Yareli Sanchez
Christopher Oesch, Trevor Jones
Kathryn Boren
Erica Terrell
Rafael Villegas
Margott Hinostrroza
Edgar Dymally
Geoffrey Vanden Heuvel
Nikita Lau

2:30 pm Break

AGENDA

2:40 pm

External Presentations

- San Bernardino Valley Water Cons Dist
- Self Help Enterprises
- Sustainable Land Initiative Group
- SoCal Water Coalition
- South OC Watershed Mgmt Area
- Southern CA Regional Energy Network
- Southern California Regional Energy Network
- Stantec
- State Water Board
- WRD (LA area)
- Youth Leadership Institute

Betsy Miller
Eddie Ocampo
Devin Best, Michael Larcher
Charley Wilson
Grant Sharp, Kurt Zach
Amanda Hassan
Michelle Bunn
Hayat Rasul
Erick Burress
Jenn Swart
Fahad Qurashi

3:30 pm

Break-out Discussions

All

4:20 pm

Report Out

All

15TH ANNUAL CSU-WATER CONFERENCE

April 19, 2024

8:00 am **Registration and Poster Viewing**

8:30 am **Conference Overview**

8:45 am **Conference Welcome**

Steve Blumenshine, CSU-WATER
Binod Tiwari, AVP for Research and
Sponsored Projects
Krista Kamer, CSU-COAST
Frank Gomez, STEM-NET

9:00 am Climate Literacy for All: A statewide CSU-UC partnership
driving education collaboratives for PK-12 climate curriculum

Tamera Wallace, Chancellor's Office
Kelley Le, Dominguez Hills
Heather Clark, Dominguez Hills

9:15 am Establishing a Baseline for Contaminant Trends in California
Reservoirs: Castaic Lake State Recreation Area, Los Angeles
County

Scott Jedrusiak, Northridge

9:30 am "Following Water in the San Joaquin River Delta" - A Journey
into California's Agricultural Heartland (20 min film)

Tina Korani, San Jose

9:55 am **Break**

10:25 am **Breakouts**

- ◆ **Breakout Room 1** | Evaluating Sources of Bioaccumulative
Mercury in Southern California Reservoirs: Castaic Lake,
Los Angeles County
- ◆ **Breakout Room 2** | Predictive Modeling of Soil Moisture
and Plant Water Use in the East River Catchment, Colorado
- ◆ **Breakout Room 3** | Affective soil: Using agroecology to
improve our relationship with soil

Greg Jesmok, Northridge

Raymond Hess, San Jose

Gabriel Valle, San Marcos

10:40 am **Breakouts**

- ◆ **Breakout Room 1** | Sand Mobility in a Gravel Bed Lowland
River Downstream of a Dam: A Case Study of the San
Joaquin River, Fresno California
- ◆ **Breakout Room 2** | Monitoring and Modeling Stream-
Aquifer Drawdown and Stream Depletion due to
Groundwater Pumping
- ◆ **Breakout Room 2** | Machine Learning Based Control
System Design for BSM1 Wastewater Treatment Plant
- ◆ **Breakout Room 3** | Airborne LiDAR System for Urban
Stream Management

Trent Sherman, San Francisco

Bwalya Malama, San Luis Obispo

Chengyan Ye, Long Beach

Connor Rudmann, Pomona

AGENDA

11:10 am	Breakouts <ul style="list-style-type: none">◆ Breakout Room 1 Trejo Investigating polycyclic aromatic hydrocarbon transport in natural systems◆ Breakout Room 2 Stable Isotopic Signatures of NO₃ in Waste Water Effluent and Los Angeles River◆ Breakout Room 3 Grow Cover Crops in California? Investigate Water Use and Groundwater Recharge Under Winter Cover Crops	Cathy Trejo , Los Angeles Isaac Hall , Los Angeles Nathaniel Bogie , San Jose
11:25 am	Poster Viewing	
11:45 am	Lunch	
1:00 pm	Partnerships and Student Research	Jennifer Alford , San Bernardino
1:30 pm	Poster Viewing	
2:15 pm	Breakouts <ul style="list-style-type: none">◆ Breakout Room 1 Sustainable Oasis: CSUN's Comprehensive Water Conservation Initiatives◆ Breakout Room 2 Terrestrial-aquatic connections: Anthropogenic litter distribution, degradation, and impacts on macroinvertebrate communities	Rachel Singleton , Northridge Aspen Coty , Northridge Rae McNeish , Bakersfield
2:30 pm	Breakout <ul style="list-style-type: none">◆ Breakout Room 1 Effects of ruminant bromoform supplementation on manure wastewater treatment◆ Breakout Room 2 Terrestrial-Aquatic Connections: Invasive Ailanthus altissima leaf decomposition in freshwater ecosystems and impacts on macroinvertebrate communities	Tommie Post , San Diego Jonathan Juarez , Bakersfield
2:45 pm	Breakouts <ul style="list-style-type: none">◆ Breakout Room 1 Development of platform for novel molecular method for detection of Coxsackievirus B3 in recycled water◆ Breakout Room 2 Hydrologic Response of Meadow Restoration Following the Removal of Encroached Conifers	Leila Khatib , San Jose Oriana Ramirez , San Luis Obispo
3:00 pm	Breakouts <ul style="list-style-type: none">◆ Breakout Room 1 Sampling 1,227 Disadvantaged Public Water Systems for PFAS◆ Breakout Room 2 Hydrological Analysis of Post-Fire Responses within the Little Creek Watershed of Swanton Pacific Ranch	Caitlyn Leo , Sacramento Alexander Wiens , San Luis Obispo
3:30 pm	Break	
4:00 pm	Determination of Drinking Water Quality for Nitrates and Sulfates Across Southern California- Blended Analytical Assessment	Swatantra Kethireddy , San Bernardino
4:15 pm	Reservoir Operations Impact During Socioeconomic Droughts in Regulated Basins	
4:35 pm	Closing Remarks	

15TH ANNUAL CSU-WATER CONFERENCE

Above average rainfall during spring 2023 led to a rare diatom bloom in San Pablo Bay | By Ella Jones, Morgan Illman, and Dr. Alexander Parker

The northern San Francisco Estuary is characterized by low phytoplankton biomass and rare spring bloom events. The lack of phytoplankton is the result of benthic grazing while infrequent water column stratification, combined with strong tidal mixing and high turbidity, result in poor conditions for phytoplankton growth. It is speculated that low productivity conditions have negatively impacted the pelagic food web. The San Pablo Bay, which connects Central Bay with Suisun Bay, is poorly studied relative to these other embayments. During spring 2023, students at the California State University Maritime Academy characterized physical, chemical, and biological conditions in San Pablo Bay weekly between late February and mid-April using the R/V Questuary. During this time, northern California experienced above average precipitation from a large number of atmospheric rivers. This set up conditions favorable for salinity stratification. The team occupied five stations along the main axis of the ship channel and collected profiles of temperature, salinity, and submarine light, as well as characterizing Secchi depth, suspended sediments, and chlorophyll-a near the surface. At selected stations, phytoplankton tows were also performed. During the early spring the water column appeared well-mixed and light penetration depths and Secchi depth were relatively shallow at an average of 0.37m. However, as rain events continued throughout the spring, a distinct halocline was observed throughout San Pablo Bay that led to water column stratification. Secchi depth and light penetration increased nearly threefold during this period and elevated chlorophyll-a (29 ug L⁻¹) was also observed at the eastern end of the transect, peaking in mid-March. A second, smaller chl-a peak followed in the beginning of April. Microscopy suggested that chain forming diatoms became abundant. These results demonstrate that under certain meteorological conditions, spring phytoplankton blooms may occur in San Pablo Bay that would provide food resources for the estuarine food web.

Monitoring Water Quality Near Homeless Encampments on Santa Rosa Creek | By Jackie Guilford, Alexis Kamages, Erin Mitchell, Stephany Orellana, Bryan Peeso, and Sydney Pontius

The recent increase in homelessness across California has raised concerns about water quality in urban creeks. While the public perception is that unhoused people living adjacent to creeks degrade the creek water quality, there is a lack of data supporting that claim. Beginning in August 2022, research students at Sonoma State University have been measuring water quality along 15 miles of Santa Rosa Creek. This creek is well monitored by the Santa Rosa Creek Cleanup Interns, who provide weekly reports on where they observe evidence of homeless encampments. These reports show that the creek is unimpacted far upstream and far downstream of the city, and there are many individual pockets of homeless activity as the creek moves through the urban areas, particularly in the Prince Memorial Greenway. At some of our water sampling locations, high levels of fecal bacteria have been detected, indicating that the water may be polluted by unsanitary defecation in close proximity to the creek. A limitation of our original method of fecal bacteria testing is that it was not specific for human sources, meaning that a positive result could be coming from wildlife, such as dogs, birds, or cattle. In order to know if the high levels of fecal bacteria we have detected at some creek locations are coming from a human source, we are using real time PCR to measure for the relative abundance of the HF183 gene, which is specifically found in human fecal bacteria. Understanding the human impacts on water quality can help local agencies design services and solutions to support clean water and sustainable creek use by all members of the community.



POSTER ABSTRACTS

Evaluating Drywell Infiltration Methods for Stormwater Deep Infiltration Infrastructure Planning and Design | By Ehsan Khodayaridarviti, Dr. Mehrad Kamalzareh, Scott Kindred, Avery Patrick, and Dr. Ali Sharbat

Our groundwater tables in Southern California are impacted by factors such as urbanization and the rapidly increasing effects of climate change. The necessity of developing sustainable water resource practices is more pronounced as a result of these challenges.

The goal of this study is evaluating and discussing stormwater infiltration testing practices in the United States, particularly focusing on methods for assessing the capacity of stormwater drywells. It highlights a literature review that primarily recognizes the methods outlined in GS200.1 by LA County as the main testing approaches utilized by stormwater permitting agencies.

The research investigated borehole permeameter methods' applicability for stormwater infiltration testing and design. This study encompassed field testing and numerical analysis, exploring methods for both shallow and deep infiltration facilities, including drywells.

Two primary methods were considered: the Falling-Head Borehole Permeameter (FHBP) and the Steady-State Borehole Permeameter (SSBP).

The FHBP method involves instantaneous filling of a test well and tracking the water level's fall, but it proved less accurate for various soil types and well sizes. Consequently, it was not recommended for inclusion in the infiltration guide.

On the other hand, the SSBP method, utilizing steady-state conditions for a set period, proved more promising. It provided relatively accurate estimates of drywell capacity, especially for homogeneous and isotropic soils, showcasing errors ranging from -4% to +3%, significantly outperforming the existing methods in GS200.1.

However, the SSBP methods assume homogeneity and isotropy in soil, which might not reflect real-world conditions where soils are often layered. Therefore, the study used the term "bulk hydraulic conductivity" (K_b) for reporting field test results or numerical simulations involving layered soils.

This study also highlights important observations related to drywell testing and design, such as potential issues with well clogging, the impact of free-falling water in well casing on air entrainment and reduced well capacity, and peculiarities in velocity head affecting readings at the bottom of the well, specifically in different casing diameters.

In summary, the research outlines the limitations of existing stormwater infiltration testing methods, introduces and evaluates new methods (FHBP and SSBP), and discusses insights gained from the ecology study, emphasizing the potential accuracy and practical implications of the SSBP method for estimating drywell capacity in stormwater infiltration testing.

15TH ANNUAL CSU-WATER CONFERENCE

Real-time Monitoring of the Flocculation Process to Enhance Jar Test Teaching and Learning | By Khanh Nguyen, Zhu Tongren, and Phoebe Bloomfield

Coagulation/flocculation is one of the most important processes in drinking water treatment as successful formation of settleable or filterable flocs are imperative for the successful removal of the colloidal contaminants in sedimentation and filtration. Jar test, which simulates the process of coagulation/flocculation/sedimentation in 2-L square jars with rotating impellers, is an important component of the environmental engineering laboratory class curriculum. Traditionally, whether the coagulation/flocculation/sedimentation process is successful or not in a jar test is assessed by measuring turbidity of the water sample collected out of the jars at the beginning and the end of the jar test. Such measurement fails to obtain the size growth of the flocs and is not able to get continuous monitoring of the flocculation process. Conventional particle size analysis techniques require transfer of liquid inside the jar to the analyzer while the flocculation process (and thus growth of floc) is still happening. As a result, the particle size measured by a particle size analyzer is not representative of the sample collected at the given time. JarFlocCAM, a novel, easy-to-use instrument, provides continuous in situ monitoring of the floc size during flocculation. During a jar test, the JarFlocCAM is mounted on the standard jar and captures a video of the flocculation process happening inside the jar. The images of the videos are processed to differentiate the flocs from the background and to calculate the size, number concentration, and sphericity of the flocs. With information obtained by JarFlocCAM, student can not only assess effectiveness of coagulation/flocculation from traditional turbidity measurement, but also gain insight on the mechanism of flocculation from the growth of particle size and evolution of particle shape during flocculation. Real-time videos and the associated size growth chart appear on the computer screen better engage students in observing/recording lab data and enhance students' understanding of the coagulation/flocculation process.

Evaluating the benefits of permeable pavers in Dixieanne Neighborhood, Old North Sacramento | By Joaquin Fraga Hernandez, Zoi Dokou, Christian Carleton, John Johnston and Fedolia "Sparky" Harris

The work presented here is a collaboration with the City of Sacramento on the "Dixieanne Neighborhood Clean & Green Alleys" project aimed to clean and beautify residential alleys in the community of Old North Sacramento. This is one of the most economically depressed neighborhoods in the City of Sacramento, with a Severity of Disadvantage (SOD) of 3.34 on the Healthy Place index. This project, which falls under the City's environmental and sustainability priority will install permeable interlocking pavers, repair fences, plant trees, and include public art. The project aims to create a safe and low-stress corridor for pedestrians, bicyclists, and children to enjoy. Permeable pavers have multiple benefits including recharging groundwater, reducing flood risk and removing pollutants from the water. As part of the project, a stormwater management model was developed using the US EPA modeling software SWMM to quantify the benefits of installing interlocking pavers in different parts of the City of Sacramento. This region specific SWMM model quantifies the amount of water that could potentially be recharged into the local aquifer and the amount of water that is diverted to storm drains or stormwater retention basins under various scenarios. Due to varying soil properties throughout the City, identifying the possible benefits at different locations will help the City determine the priority areas to install the pavers as part of future projects.



POSTER ABSTRACTS

Investigating the Critical Shallow Vadose Zone: Modeling Water Flow Characteristics | By Anita Cervantes and M. Hassan Rezaie Boroon

Agricultural practices impact the Earth's critical zone by significantly contributing to nitrate pollution. Understanding solute transport and water flow characteristics in the critical shallow vadose zone is vital for hydrogeology, hydrology, environmental, and soil sciences as it affects the water quality in the Earth's critical zone. While there have been various studies on solute and water movement using tensiometers and HYDRUS-1D, no project explicitly addresses water flow and solute transport in the critical shallow vadose zone for a short-term water flux event. Utilizing tensiometers and HYDRUS-1D, this project investigated relationships between the field data and modeling results to determine the capabilities of HYDRUS-1D to capture transient properties of water flow characteristics. We assessed water flow characteristics by evaluating relationships between soil moisture conditions (water content), soil matric potential (pressure head), infiltration rate, and porosity. We concluded that the water flow models successfully transcribed the water flow characteristics observed in the field data. However, the solute transport model was restricted to limited data, where environmental factors such as root uptake, transpiration, or heat were not defined. Nonetheless, basic solute flow characteristics were assessed through advection, dispersion, and diffusion mechanics. The project's results contribute valuable information for agricultural management and offer insight into differences between short-term and long-term water flux events.

Drivers of nutrient dynamics in restored wetlands of California's Central Valley | By Sharon Kahara and Buddhika Madurapperuma

It is estimated that two-thirds of restored wetlands in California's Central Valley are privately managed, primarily for wintering waterfowl. Management for bird use typically follows the moist soil management (MSM) regime, a series of practices geared to promote the growth of waterfowl friendly plants for food and habitat cover. The study aimed to understand the impact of MSM on nutrient dynamics. Using program STELLA®, a dynamic process modeling platform, we simulated wetland hydrology, vegetation growth, and nitrogen dynamics. The model was comprised of two main parts; first a hydrology component driven by climate data, precipitation, evapotranspiration, and flow rates to accurately represent wetland conditions. Second, a nutrient dynamics component based on transformation, loss and assimilation rates derived from literature. Initial vegetation composition and biomass were based on field surveys. Carbon availability and the presence of a healthy suitable microbiome were assumed from literature. Simulated hydrology aligned closely with known empirically recorded values for irrigated and unirrigated wetlands but more work is needed to understand the impacts of overland flows in wet years. The study explored the influence of early and late successional wetland vegetation on nitrogen concentrations in wetland outflow. Late successional vegetation may improve nitrogen assimilation and removal especially in irrigated wetlands, thereby reducing nitrogen losses at the outflow. At present the model requires further calibration and sensitivity analysis to assess accuracy. We also suggest more data from above average water years to address climatic effects. Empirical soil carbon as well as above and below ground vegetation carbon assessment is also highly recommended to further parameterize the model to the Central Valley.

Effective Clustering of Water Distribution Networks | By Jorge Pesantez and Luay Al-Aghbari

Water distribution systems (WDSs) are vital for communities globally, ensuring the provision of essential services. With the expanding population and coverage, WDSs also grow to distribute safe drinking water under optimal conditions. The hydraulic networks that embody WDSs are complex networks with hundreds of links and junctions. This study introduces an efficient clustering method for segmenting water distribution systems into sub-networks. Utilizing an adapted K-means clustering algorithm, an analysis is conducted on two benchmark hydraulic networks to showcase the impacts of various clustering parameters—such as pressure and demand, weights as edge distances, and network topologies. A metaheuristic optimization algorithm is deployed to minimize parameter variation among clusters. The outcomes reveal influential areas at the sub-network level, represented by cluster centroids. These areas can be leveraged to infer hydraulic conditions in other regions with varying levels of accuracy. Optimal results in minimizing demand variation are attained through a combination of hydraulic and topological characteristics as edge weights. These clustering models serve as valuable tools for researchers and practitioners, aiding in the selection of effective partitioning strategies to enhance the management of water distribution systems.

15TH ANNUAL CSU-WATER CONFERENCE

Optimizing Pipe Rehabilitation Using Agent-Based Modeling | By Jorge Pesantez

The water distribution system stands out as a crucial element in city planning, demanding continuous adaptation as cities expand and age. As urban areas grow, so must these systems, and with the passage of time, maintenance and replacements become imperative to avert potential disasters. The decision-making process for pipe replacement involves numerous technical considerations, including factors like pressure and the age of the pipes. Non-technical aspects, such as climate and pipe location, also play a role in determining the need for replacements within the system. Crafting a water distribution rehabilitation model involves navigating various uncertainties, and the complexity deepens when analyzing multiple rehabilitation strategies and their impacts on hydraulic systems to find the optimal solution. Agent-based modeling emerges as a valuable tool to address uncertainties and simulate intricate systems. This project aims to develop an agent-based model for analyzing water distribution systems, and establishing a systematic approach for pipe replacement or on-site repairs. The model incorporates a heterogeneous water demand analysis, addressing consumption uncertainties through random factor analysis. It illustrates the interplay of factors likely to contribute to pipe failure. The procedural steps involve assessing the likelihood of pipe failure by considering different demands and the effects of varying weather conditions. Subsequently, the model determines the sequence for pipe repairs, taking into account local traffic conditions and pipe locations. The outcomes suggest that modeling various rehabilitation and replacement plans can aid water utilities in selecting tailored strategies, thereby reducing the likelihood of service disruptions.

Understanding Urban Water Demand and its Main Predictors | By Jorge Pesantez

Efficient water demand management relies on measurements reported at the individual customer level, and the temporal resolution of these measurements plays a crucial role in shaping a utility's strategy for fostering conservation. Despite the increasing prevalence of advanced metering infrastructure projects, monthly water consumption measurements remain the most widely used data sets for utilities. This study employs a data-driven analysis to investigate water demand patterns and identify significant customers using a multiannual demand data set. The analysis distinguishes high-consumption outdoor users by comparing individual customer demands to a variable threshold calculated as the system's average monthly demand. By aggregating individual consumption into district areas using local division data, the project employs correlation analysis to examine the relationship between household characteristics (such as building area, number of stories, year built) and water demand. The findings reveal identifiable peaks in consumption at both monthly and seasonal scales, with a notable positive correlation between districts characterized by large, aging buildings and their water demand. The application of a variable threshold approach across multiannual water demand data successfully identifies multiple outdoor users. During high consumption seasons, the study highlights that outdoor water may constitute up to 60% of the total demand in specific districts. Water demand management programs can leverage these results to design tailored conservation strategies at various spatial resolutions.

Development and Analysis of Clay-based Material for Water Quality Enhancement | By Jorge Pesantez and Jaden Luna

The purpose of this project is to develop a versatile, environmentally sustainable, low cost, clay-based sorbent to extract oil and metallic pollutants in various natural environments. To meet these requirements, the clay based sorbent was made from: Calcium Bentonite, Metakaolin, Calcium Hydroxide, and Quartz-silica sand. Then molded into Concretion-Spheres. The mixture was crafted to remain neutrally buoyant, with a net buoyancy of 1.33 grams. The effectiveness of the sorbent was determined by measuring both the oil absorbency and conductivity. Samples were exposed to oil for 3 hours, and the mass of oil in the simulated environment decreased by 19% in both the organic and synthetic oil treatments. Conductivity measurements indicated a 72.7% decline in TDS after 7 days. A decrease in TDS is indicative of a decrease in metallic pollutants. The novel mixture of Calcium Bentonite and Metakaolin clay demonstrated the ability to be poured and molded similar to concrete, as well as remaining neutrally buoyant. Hereby enabling an external floatation device to hold it above the water's surface with ease; allowing the sample to target oil spills and other forms of pollution on the water's surface. This material can be used in a vast number of applications and can be used in a large variety of environments to extract metallic and oil pollutants in different environments.



POSTER ABSTRACTS

Analysis of Water Demand and its Weather Sensitivity | By Jorge Pesantez

The demand for potable water needs continuous monitoring to use this precious resource effectively. Weather plays a fundamental role in water demand variation, especially in areas where high temperatures are sustained during the year. Efforts to model water demand and the effects of weather at different temporal and spatial resolutions are important to utility managers and city planners to allocate water sources efficiently. This research project presents a multiannual analysis of water demand reported from multiple places in the California Central Valley. The analysis includes consumption trends and the identification of peak values. Furthermore, external predictors, such as weather variables are included in the model to analyze the sensitivity of each of these locations to temperature, humidity, and precipitation. Results show that sustained high temperatures are positively correlated to high water demand values. Also, humidity affects small geographic areas with higher water consumption than more-populated cities. A comprehensive analysis of water demand in the California Central Valley will enhance the practices to manage potable water demand and preserve water resources.

Assistance to California Disadvantaged Communities | By Brian Currier, Maureen Kerner, Randy Marx and Scott Meyer

The Office of Water Programs (OWP) at Sacramento State offers drinking water, wastewater, and stormwater services to the disadvantaged communities of California, as well as small and disadvantaged communities in other areas of the western US. This poster displays a map showing the statewide distribution of these communities and the types of services provided, including technical assistance to drinking water and wastewater programs, groundwater sampling, and lead (Pb) testing of drinking water at child care centers. Specific accomplishments include the testing hundreds of child care centers, technical assistance to 169 public and private water systems, and the planned testing of 3,923 drinking water wells for per- and polyfluoroalkyl substances (PFAS).

Landscape features impact microplastic and nutrient patterns during wet deposition events | By Emily Pantoja and Dr. Rae McNeish

Plastic pollution is ubiquitous across terrestrial and aquatic ecosystems due to the widespread use of plastic and its resistance to degradation. Microplastics (MPs; particles < 5 mm; MPs) are the subject of growing concern due to their potential harmful effects on wildlife and human health. Wet deposition and stormwater runoff have been identified as significant pathways of anthropogenic pollution into lakes, rivers, and oceans. Wet deposition carries atmospheric pollutants to the ground via rainwater, and stormwater runoff collects pollutants as rainwater travels across the surfaces of landscapes, transporting anthropogenic pollutants, such as MPs, across the landscape and into aquatic ecosystems. We are investigating the seasonal patterns of anthropogenic microparticles (AP; includes both natural-based (e.g., cotton fiber) and plastic microparticles) and nutrients across landscape features. We expected that AP abundance and diversity would be greater in areas with increased vegetation and in building stormwater runoff compared to rainwater, with microplastic fibers the most prevalent particle. To accomplish this, water samples consisting of combined stormwater runoff and wet deposition were collected from three building drainpipes during rain events in Bakersfield, CA. Water samples were fractionated to separate particles by size class, stained with Rose Bengal dye to aid in the identification of natural-based AP and MPs, and vacuum filtered onto polycarbonate filters. Nutrient concentrations in water samples were measured using colorimetric methods. Results showed that AP concentration differed between building sites despite being geographically close, with the AP ranging from 23.32 AP/L-1 to 8.58 AP/L-1. In addition, nitrate (NO₂⁻) and ammonia (NH₃) concentrations were greatest in one site with overarching tree canopies (NO₂⁻ = 3.267 ppm/L-1, NH₃ = 2.713 ppm/L-1) compared to a site without overarching foliage (NO₂⁻ = 1.333 ppm/L-1, NH₃ = 0.280 ppm/L-1), with intercepting foliage possibly contributing to observed differences in nutrient concentrations. Plastic microfibers dominated AP composition and morphology, composing 96% of AP identified. Microplastics were found at all sites, supporting stormwater runoff and wet deposition as pathways of pollutant transport. This study serves as a starting point to future studies, which should incorporate different land use types, time points, and landscape features to investigate spatial and temporal patterns of microplastic and nutrient pollution.

15TH ANNUAL CSU-WATER CONFERENCE

Terrestrial-Aquatic Connections: Cattle Grazing Impacts on Tejon Creek at Tejon Ranch Conservancy | By Mason Christian, J. Juarez, and R. E. McNeish

Freshwater ecosystems are under a myriad of stressors linked with anthropogenic activities. Examples of activities that have led to the degradation of freshwaters includes changes in land use, alterations to riparian zones, and water diversions. These activities have often resulted in increased nutrient pollution and physical changes to freshwater habitats, impacting aquatic biota and ecosystem processes. Cattle grazing is a common practice throughout the San Joaquin Valley, CA, with streams often traversing cattle-roaming pastureland. Previous research indicates that cattle grazing activities results in increases in nutrient pollution in pasture streams due to fecal deposition, streambank and riparian vegetation disruption as cattle cross streams, and shifts in aquatic macroinvertebrate communities that inhabit pasture streams. Our research aims to understand if these reported impacts of cattle grazing affect stream ecosystems at the Tejon Ranch Conservancy (TRC), Bakersfield, CA. The TRC consistently leases pastures to ranchers for cattle grazing along Tejon Creek; however, the Conservancy has implemented a seasonal, grazing reduction management strategy in one pasture along the stream in an effort to restore the stream and riparian habitats. We predicted that 1) stream nutrient pollution and 2) the rate of stream bank erosion will be greatest in the stream reach without restricted grazing compared to the stream reach with restricted grazing. In addition, we expected that 3) these patterns will be most pronounced during the spring season when cattle grazing is the most restricted compared to all other seasons. Water samples (n = 5/stream reach) were collected seasonally to measure nutrients via colorimetric methods (N-nitrate, N-nitrite, N-ammonia, orthophosphate). Stream bank erosion has been measured seasonally by recording the length of exposed rebar that was pounded into stream banks. Our initial results suggest that nutrient concentration may not be significantly different between the stream reach treatments. Findings from our research will serve as the first data set for TRC on the effect of their grazing management strategy on the ecology of their freshwaters while contributing to our understanding of stream pollution connected with cattle grazing in an arid climate.

Drought conditions impact leaf and plastic litter degradation in ponds | By Grace Ude, Destiny Carabajal, and Rae McNeish

Plastic pollution remains one of the most pressing environmental issues with about 380 MMT of plastic waste created annually. Plastics are known to leach pollutants into the environment, irritate animal digestive gut tissues, and entangle and wound wildlife. Evidence suggests that plastics can persist in the environment for centuries; therefore, there is a need to understand how environmental conditions may accelerate plastic degradation that can lead to the reduction of plastic pollution in the environment. Our research study aims to investigate how drought conditions in ponds impact the degradation of plastic litter compared to tree leaf litter.

Water Justice: A Course with Undergraduate Research Experience | By Heidy Contreras

Active learning in undergraduate STEM courses increases student engagement, retention, and overall success. Courses with undergraduate research experiences (CUREs) are a type of active learning which allows students to engage in the scientific process in the classroom. CUREs are beneficial as they allow a large group of students (a classroom, or many sections of a course) to work collaboratively in addressing a research question. Depending on the design of the CURE, students may go through the entire scientific method (design their own hypothesis and experiments, collect, and analyze original data, and share results with stakeholders) to complete their research, or they may engage in only certain parts of the scientific method (collect and analyze data, and share results with stakeholders). CUREs are ideal for developing community-based research projects where students work along with community leaders, peers and faculty on a project that is important to their community. Students involved in CBPR show increases in critical thinking skills, positive attitudes towards literacy, and socially responsible leadership (Kilgo et al., 2015). We developed a community-based research CURE on the topic of water justice for first-year Biology students. We will share our experience developing community partnerships for this project, as well as student perspectives and outcomes.



POSTER ABSTRACTS

Developing Interdisciplinary Frameworks to Support Community-Level Watershed Resiliency | By Dr. Jennifer Alford, Danielle Bram, and Ben Chou

The San Bernardino National Forest (SBNF) contains diverse landscapes that support ecotourism, chaparral and alpine ecosystems and the headwaters of the Santa Ana and Mojave River Basins. Although rich in natural resources, foothill and mountain ecosystems have been adversely impacted by a multitude of activities including human development, recreation, wildfire and drought conditions as well as floods and debris flows during atmospheric river events. Of increasing concern is the need to address forest management through community informed adaptive strategies that aim to support both forest and community resiliency. To address these needs, the California Department of Conservation developed the Regional Forest and Fire Capacity (RFFC) program to support local and regional agencies with administering programs and projects that help to understand and address the needs of communities and resource agencies impacted by changing forest conditions and increasing wildfire occurrences.

Evaluating long-term land subsidence sustainability goals set by SGMA in the Central Valley, California, USA (2020-2070) | By Logan Platt

California's Central Valley hosts the majority of critically overdrafted groundwater basins within California. Passed in 2014, the Sustainable Groundwater Management Act (SGMA) aimed to achieve sustainable use of California's groundwater basins. One key sustainability indicator tracked by SGMA is land subsidence caused by groundwater overdraft. Land subsidence can pose a significant threat to the Central Valley's key infrastructure, including major surface water conveyances. Modern subsidence in the Central Valley has shown some regions experienced rates of ground level subsidence in excess of 12 inches per year. Here, we compile a database of SGMA subsidence monitoring stations across the southern portion of California's Central Valley: extensometers, surveying/benchmark sites, and GPS monitoring site. Under SGMA, each site defines a ground level elevation target for 2040, however some sustainability plans elected to use groundwater levels, instead of ground surface elevation, as a proxy for ground level subsidence. Sustainability targets ranged from 'no additional subsidence' from a designated baseline to up to 9.5 inches per year through 2040 in others. Some sustainability plans used a spatially distributed approach to monitoring while others focused solely on critical infrastructure such as roads, bridges, and canals. Two notable regions of historic subsidence contained sparse monitoring -- the Chowchilla and Madera groundwater sustainability agencies. Areas within these regions have experienced 3 to 5 feet of subsidence since June 2015 and the proposed subsidence monitoring is done by proxy via groundwater elevations. Future work will include modeling of future land subsidence in the Central Valley and use this database to compare model results with SGMA ground level elevation targets.

15TH ANNUAL CSU-WATER CONFERENCE

Mark Adams

CSU San Bernardino
008089231@coyote.csusb.edu

Mark, a Marine Veteran, is currently pursuing a degree in Biology. Originally from Northern California, he later moved to the Inland Empire, where he resides with his wife and three dogs. Dedicated and passionate about community service, Mark serves as a Mentor for the University of California Riverside Future Physician Leaders Program and holds the position of Vice President for the Health Professions Advising Center (HPAC) at CSUSB.

Luay Al Aghbari

Student, CSU Fresno
lalaghbari@outlook.com

Luay Al Aghbari is a third-year civil engineering student with a minor in construction management at California State University, Fresno (Fresno State). While he has not yet decided on his emphasis, he is considering specializing in either water resources management or structural engineering. He possesses a strong foundation in civil design, construction documents, and construction management, and is proficient in software such as AutoCAD Civil 3D, MATLAB, Revit, and Microsoft Office. Currently, Luay works as a Research Student Assistant in the Civil and Geomatics Engineering Department at the Fresno State Lyles College of Engineering, where he focuses on research related to water resources. Additionally, he works as a Student Assistant at the Fresno State Lyles College of Engineering Advising Center, offering administrative support and conducting data analysis. Luay has gained valuable educational project experience in areas such as cost estimation, project management, construction plan reading, and design, utilizing tools like Excel, Revit, and Civil 3D. He actively participates in professional organizations like the Fresno State American Society of Civil Engineers (ASCE) and has previously held the position of President a

Emely Alarcon

Student, CSU San Bernardino
007158496@coyote.csusb.edu

She will join the program FLOWS to the water conference event. She is very intrigued to investigate agencies and organizations that have missions related in water conservation and environmental sustainability.

Andrew Alba

Student, CSU Bakersfield
aalba7@csusb.edu

Andrew Alba is a Biology undergraduate at CSU Bakersfield (CSUB) and is an aspiring conservation biologist. He is in his senior year at CSUB and plans to graduate spring 2025. Andrew has served 10 years in the United States Air Force and has wife and two children. After attaining his degree and position in conservation biology he plans to attend a university once more to pursue a Master's degree in Wildlife Management.

Jennifer Alford

Faculty, CSU San Bernardino
jennifer.alford@csusb.edu

Dr. Jennifer Alford is the Director of the CSUSB Institute for Watershed Resiliency (IWR). She leads the IWR with over two decades of environmental resource experiences that engage communities and students in environmental education, research and community service. In addition to serving as the IWR Director, Dr. Alford is also an Associate Professor of Geography and Environmental Studies and the Associate Director of Research for CSU-WATER. Dr. Alford's teaching, research and service interests observe the quality and quantity of watershed resources as well as how water impairment impacts ecological and public health across San Bernardino National Forest and downstream Inland Empire communities.

Felipe Aperador

Student, CSU San Bernardino
laperador1@gmail.com

Felipe Aperador is a dedicated microbiologist currently pursuing a Master's degree in Public Health. With a passion for understanding the intricacies of microbial and environmental life and its impact on public health and aspire to make meaningful contributions to the field of public health, ultimately striving to improve the well-being of communities worldwide.

Maria Fernanda Arechiga

Student, CSU Fullerton
marifer8946@gmail.com

Maria Fernanda Arechiga is in the Environmental Engineer Master's Program student at Cal State Fullerton. She is currently a Scientific Aid at the Regional Water Quality Control Board.

Sarath Babu

Student, CSU San Bernardino
sarathbabu2026@gmail.com

Sarath babu is currently an MPH student at California state university San Bernardino. His academic background is in the field of pharmacy as he completed Doctor of Pharmacy (PHARM -D). At CSUSB, he took courses such as epidemiology, biostatistics, health policy, environmental health, or social and behavioral sciences. His current research focuses on the Assessment of water quality issues in southern California, Implications for disparities in San Bernardino county, riverside, palm springs and Ontario.

Bailey Benedict

Faculty, CSU San Bernardino
bailey.benedict@csusb.edu

Bailey C. Benedict (Ph.D., Purdue University, 2021) is an Assistant Professor of Management at California State University - San Bernardino. Her research centers on how individuals and communities organize social networks of support to manage uncertainty and enact resilience, especially during and after natural disasters. She teaches communication courses in the Jack H. Brown College of Business and Public Administration.

ATTENDEES

Denise Berg

Student, CSU Northridge
denise.berg.976@my.csun.edu

Denise is a graduate student at California State University, Northridge. Her major is in Geophysics and her research focus is on the effects of oil seeps on Southern California watersheds.

Devin Best

devin@us-ltrcd.org

Devin has a degree in Ethnobotany from Humboldt State University. He started his career working in the AmeriCorps Watershed Stewards Project in Northern California. Following his time in Northern California, he moved back to San Luis Obispo County and worked for the California Conservation Corps as a GIS Supervisor and then for the California Department of Fish Wildlife as an Environmental Specialist. He continued to build upon his experience in natural resource management and biological population monitoring and modeling in the Pacific Northwest, as well as developing his skills in watershed restoration, permit coordination, and non-profit leadership. Devin is a strong advocate for community stewardship, collaboration, and ecological restoration.

Steve Blumenshine

Staff, Chancellor's Office
sblumens@mail.fresnostate.edu

Steve Blumenshine is the Executive Director of CSU-WATER. CSU-WATER (Water Advocacy Towards Education and Research) develops and strengthens water research and workforce development in the CA State University System and throughout CA in collaboration with external partners and other water stakeholders. These efforts focus on including faculty and students throughout the 23 campus CSU system to address critical water resource issues pertaining to agriculture, climate, community, energy, and environment. Blumenshine also serves on a number of Boards and Advisory Groups. Prior to CSU-WATER he was the Director of the Research & Education Division of the California Water Institute at Fresno State. He served 20 years in the Fresno State Biology Department where he taught and operated a very active research lab with external collaborators and students. Blumenshine's International water research experience includes two U.S. Fulbright Scholar Awards, and engagement in Thailand, Germany, Israel, Switzerland, China, Australia, and Spain. His degrees include a PhD from the University of Notre Dame, MS from George Mason University, and BS at the University of Wisconsin.

Nathaniel Bogle

Faculty, San Jose
nathaniel.bogle@sjsu.edu

Nate is a subsurface hydrologist, his lab studies movement of water, nutrients, and contaminants through aquifers, plants, and soil, mostly in the unsaturated zone. He teaches classes in hydrogeology, environmental geology, and sustainability.

Kathryn Boren

kathryn@charliebea.com

Kathryn Boren is CEO of CBM Consulting, a full service communications and public affairs agency focused on environment and sustainability. She is a graduate of CSU Fresno and is currently earning her Masters in the Science of Law from McGeorge School of Law in Water and Environmental Law.

Judy Botelho

Staff, Chancellor's Office
Jbotelho@calstate.edu

Judy Botelho serves as the systemwide director of the Center for Community Engagement which creates and leads initiatives that serve the social and civic health of our state through teaching, learning and service.

Danielle Bram

Staff, CSU Northridge
danielle.bram@csun.edu

Danielle Bram is Director of the Center for Geospatial Science and Technology at CSU, Northridge (CSUN) and the CSUN Coordinator for the International Spatial Technology and Research Lab. She is a GIS professional and project manager with over 25 years of experience in the higher education, nonprofit and public agency sectors. Her applied research interests and experience cover a variety of topics such as water resource GIS, wildfire planning GIS, vulnerable population modelling, and municipal GIS, as well as community outreach and engagement. Danielle has been Principal Investigator on over 40 projects and also holds a faculty lecturer position at CSUN.

Erin Bray

Faculty, CSU San Francisco
ebray@sfsu.edu

Dr. Erin Bray is an Assistant Professor in the School of the Environment (formerly Department of Earth and Climate Sciences) and leads the Rivers Lab at San Francisco State University. Her research focuses on hydrology and fluvial geomorphology, with emphasis on river processes, river restoration, and water resources management. Her lab group is interested in river mechanics including sediment transport, river temperature, heat exchange between the water and atmosphere, hyporheic processes. Her research group uses field, lab, and computational methods and is also interested in quantifying how environmental change and human activities alter the ways in which rivers and watersheds function.

Alexandra Brown

Student, CSU Bakersfield
abrown84@csub.edu

Alexandra is a graduate student in the M.S. Biology program at CSU Bakersfield. She is a member of the CSU-WATER SOURCE student group and is the campus lead for CSUB. She is conducting her thesis research under the advisement of Dr. Rae McNeish. Her thesis investigates seasonal microplastic pollution in aquatic habitats and biota linked with land use and species traits. One chapter of her thesis research is in collaboration with SCCWRP as a part of the 2023 Southern California Bight Regional Monitoring. In her free time, she enjoys traveling, reading, and seeing concerts.

15TH ANNUAL CSU-WATER CONFERENCE

Michelle Bunn

mbunn@energycoalition.org

Michelle Bunn is a Program Manager who helps various public agencies identify and implement energy improvements at their facilities, including water and wastewater treatment facilities through Southern California Regional Energy Network's Public Agency programs. SoCalREN was recently authorized to expand its services to support higher education institutions, so she is looking to expand her network within the CSUs and community colleges in Southern California. She is one of their team's School Leads as well as a Water/Wastewater specialist for energy efficiency programs offered by SoCalREN. She currently serves on the American Water Works Association's Energy & Sustainability Committee as well as on the Association of Energy Services Professionals California Board.

Erick Burres

erick.burres@waterboards.ca.gov

Mr. Burres is a conservation biologist and has been serving the SWRCB since 2000 as the Clean Water Team's coordinator. The Clean Water Team provides technical and organizational support to California's citizen monitoring and community science programs. He received a BS in Zoology from SDSU and a MPA from CSULB. In addition to his work for the Water Boards, he has worked as both a Marine Biologist and Wildlife Biologist for the State of California and as a wildlife biologist for other agencies, the private sector, and for nonprofit organizations.

Georgina Campos

Student, CSU Northridge
georgina.campos.951@my.csun.edu

Georgina Judit Campos is graduate student at California State University, Northridge majoring in Geology. As her curiosity grows, she hopes to continue working in water quality, remediation, and hydrogeochemistry. Her thesis is on the long-term water quality impacts associated with the 2018 Woolsey Fire in Malibu Creek, with a focus on trace metals (e.g., Cu, Pb, Zn).

Destiny Carabajal

Student, CSU Bakersfield
Dcarabajal@csu.edu

Destiny is a senior biology undergrad student at cal state Bakersfield. Along side her is her co-researcher Grace Ude. Together, they are studying leaf litter and plastic degradation and decomposition overtime with various hydro-periods.

Christian Carleton

Staff, CSU Sacramento
christian.carleton@owp.csus.edu

Christian Carleton is a professional hydrologist and water resources engineer originally trained in natural system hydrology. He has experience in watershed and stream hydrology, fluvial geomorphology, watershed and hillslope hydrology, and aqueous biogeochemistry which has provided him with unique insight into hydrologic systems. His professional experience provides Christian with an extensive knowledge of both field and analytical techniques. This has allowed him to develop several methodologies for the Caltrans' Stormwater Management Program to both analyze stormwater hydrologic data and to facilitate efficient design of stormwater treatment best management practice (BMP). He has also created multiple numerically based software solutions to assist BMP designers and to help analyze stormwater monitoring data to better inform management decisions. Christian has Geographic Information Systems (GIS) analysis experience which includes the USEPA's BASINS program and various other hydrologic and water quality models, including 2-D hydraulic models used for dam breach inundation modeling. In addition to being active in research, Christian stays current with new advancements and issues in hydrology and water quality as an active member.

Anita Cervantes

Student, Cal State LA
acerva122@calstatela.edu

Anita is a graduate student at Cal State LA who will be earning her degree in M.S. Geological Sciences by May 2024. Her master's thesis project focuses on the movement of the wetting front and solute transportation in the critical shallow vadose zone. As a graduate student, she was awarded several scholarships from the Department of Geography, Geology, and Environment. She also became a Teaching Associate, leading undergraduate geology lab courses for about two years. Aside from her academics, Anita has been tutoring in her community for about three years and is currently working as an Adjunct Geology Instructor. She is also super excited about this upcoming summer where she will be interning with the USGS Earthquake Science Center.

Natalia Chacon de Calleja

Student, CSU Fullerton
natalia.chacon.f@gmail.com

Natalia Chacon is an environmental engineer associate at the DC Tillman Water Reclamation Plant, which is owned and operated by the city of LA. Currently, she is pursuing her Master's degree in environmental engineering at Cal State Fullerton. She is looking to learn more about the latest trends in the water sector, regulations, and treatment.



ATTENDEES

Ramya Chandrasekaran

Student, CSU San Diego
rchandrasekara1597@sdsu.edu

Ramya Chandrasekaran (she/her) is a graduate student at San Diego State University pursuing a M.S. in Civil Engineering. Her research is focused on the changes in surface and subsurface flows in different wildfire affected environments. She is interested in studying urban disturbances on public water resources and strategies to create sustainable water management systems.

Ellery Charleton

CSU Monterey Bay
echarleton@csumb.edu

Ellery Charleton is pursuing a Bachelor of Science at CSUMB. She is interested in freshwater and brackish water systems, currently studying daily temperature changes and cold water refugia in the Pajaro River. She will be graduating in May and working as a field tech this summer. She is excited to talk about anything science or river-related!

Mason Christian

Student, CSU Bakersfield
mchristian3@csusb.edu

Mason Christian is an undergraduate biology student at CSU Bakersfield presenting a poster on the impact of seasonal cattle restriction on stream nutrient concentrations at Tejon Ranch Conservancy.

Heather Clark

Faculty, CSU Dominguez Hills
hclark@csudh.edu

Heather is a learning scientist and teacher educator in the College of Education at CSUDH. She teaches courses for single and multiple subject teacher candidates on ambitious and equitable science instruction methods for urban schools and diverse students. Heather's scholarship is focused on two lines of inquiry: 1) understanding how youth learn climate science in the pursuit of climate justice and 2) studying how teachers learn to support these pursuits by developing justice-centered science pedagogies.

Heidy Contreras

Faculty, CSU San Bernardino
heidy.contreras@csusb.edu

Dra. Heidy L. Contreras, born in Guatemala, received her undergraduate and MSc. in Biology from CSU San Bernardino and her Ph.D. in Ecology and Evolutionary Biology from the University of California Irvine. She worked as a Postdoctoral Research Associate at the University of Arizona and was an Associate Professor at the University of La Verne before her current position as Assistant Professor at CSU San Bernardino. As an immigrant and first-generation college student, Dra. Contreras has a deep commitment in providing underrepresented students access to STEM. Her research interests in STEM Education focus on Culturally Responsive Pedagogy and leveraging Latinx student "conocimientos" (assets) to improve student success in biology. Trained as a comparative physiologist, she is currently developing educational and research opportunities on the physiological ecology of aquatic invertebrates with a focus on water quality, community engaged research, and environmental justice.

Samuel Contreras

Faculty, CSU Fresno
samuelc@mail.fresnostate.edu

Samuel Contreras was born and raised in Guanajuato, Mexico. At the age of eleven his family immigrated to the United States, settling in the City of Fresno, California. In 2011, Samuel completed his bachelor's degrees from the University of California, Berkeley in Film and Media Studies. Making him the first in his family to graduate from college. Most recently, Samuel completed his Master of Fine Arts degree in Social Documentation at the University of California, Santa Cruz, making him part of the first cohort to receive an MFA at UCSC. His thesis film, "The Battle for Matheny Tract," is a documentary that raises public awareness around water rights issues, imposing decision makers to create sound policies that will ensure safe, clean, and affordable water for all communities in the San Joaquin Valley. As an emerging filmmaker, he is committed to social change and to documenting people power, capturing the beauty of diverse cultures and immigration, and creating the space through the art of filmmaking for individuals and communities to tell their stories and contribution to social change. Samuel is currently an Assistant Professor in Film and Media Arts at Fresno State.

15TH ANNUAL CSU-WATER CONFERENCE

Aspen Coty

Staff, CSU Northridge
aspen.coty@csun.edu

ASPEN COTY became CSUN's Sustainability and Zero Waste Coordinator in October of 2022. She holds a B.S. in Environmental Science and Resource Management from CSU Channel Islands and a Master of Arts in Geography from CSUN. She began her sustainability career as a student assistant for Facilities Services Sustainability at CSU Channel Islands where she grew passionate about higher education sustainability efforts. After spending five years doing research on the California Channel Islands with CSU Channel Islands, she came back "home" to pursue Zero Waste at CSUN. As an alumnus of the CSU, it was important for her to continue helping CSUN achieve its Zero Waste goals and promote a culture of sustainability on campus. In her time at CSUN she has worked on finalizing zero waste bin standardization across campus, played a large role in creating the Road Map to Sustainability Plan 2023-2033, and helped campus achieve its Tree Campus recognition for the 9th year in a row. By building relationships across departments, her goal is to bring the campus community together to reduce waste so that everyone can have a part in CSUN Sustainability.

Brian Currier

Staff, CSU Sacramento
brian.currier@owp.csus.edu

Brian is a senior research engineer with the Office of Water Programs at California State University, Sacramento. He holds B.S. and M.S. degrees in Environmental Engineering from the University of California, Davis, and is a licensed Professional Engineer.

Jacob Dabbour

Student, CSU Northridge
jacob.dabbour.500@my.csun.edu

Jacob Dabbour is a senior undergraduate at California State University, Northridge ready to graduate in Spring 2024 with a Bachelor of Arts in Environmental Science. Since joining the major, he actively pursues an interest in undergraduate research through CSUN's Water Science Program. Jacob's experience in trace metal clean techniques in the lab extends into fieldwork water and sediment sample collection concerned with anions, dissolved organic carbon, and metals. His unique academic path contributes to multiple research ventures involving contaminant transport, with a focus on post-wildfire impacts. Jacob's lab work is essential for anion sample analysis where he trains students, and even a faculty member, on an ion chromatography (IC) system. In addition, his assistance with an inductively coupled plasma mass spectrometry (ICP-MS) system shows an interest in high-precision trace metal analysis. At present, Jacob is actively exploring various enticing career opportunities in the environmental sector where he is eager to use his expertise in both the lab and in the field.

Hassan Davani

Faculty, CSU San Diego
hdavani@sdsu.edu

Hassan Davani is an Associate Professor of Civil Engineering at San Diego State University, who is an NSF CAREER awardee for his research on urban water resources and climate change. All his experience in academia and previously in industry has focused on developing advanced computational techniques to explore the impacts of emerging climatic stressors on civil infrastructure. He has earned his BS degree in Civil Engineering from the Power & Water University of Technology in Tehran, Iran (2009); his MS degree in Civil Engineering from the University of Tehran, Iran (2012); and his PhD degree in Civil & Environmental Engineering from the University of Utah, Salt Lake City, UT (2016). He is the Primary Investigator of several federally funded research projects, including the National Science Foundation, National Oceanic and Atmospheric Administration, and US Department of Transportation. He has over 20 peer-reviewed journal publications to date, and has collaborated internationally on global research projects between the US and Europe, including U.K. and Germany. He serves as a member for two committees of the American Society of Civil Engineers: International Participation Committee, and Urban Water Resources Council.

Stephanie Del Rosario

Staff, CSU Fullerton
sdelrosario@fullerton.edu

Stephanie Del Rosario is the Sustainability Analyst with Cal State Fullerton. She provides program leadership through campuswide planning activities and the analysis, development, and evaluation of sustainability and climate action programs.

Zoi Dokou

Faculty, CSUSacramento
zoi.dokou@csus.edu

Dr. Zoi Dokou is Assistant Professor at the Civil Engineering Department, California State University, Sacramento. Dr. Dokou received her B.Eng. degree in Environmental Engineering from the Technical University of Crete, Greece, and her Ph.D. in Civil and Environmental Engineering from the University of Vermont, USA. Dr. Dokou has published 39 peer-reviewed journal articles, 4 book chapters, and 55 conference presentations in the fields of hydrogeology, contaminant hydrology, food, and water resources engineering. She is associate editor for the Journal of Hydrology and reviewer for numerous journals in the area of hydrology. Dr. Dokou's main research focus is on the area of water resources engineering. She believes that sustainable management of water resources necessitates an integrated strategy that requires the combined effort of multiple disciplines and takes into consideration the needs of the end-users, so is very interested in making connections with other faculty and researchers and water agencies in California. Her specific areas of expertise include groundwater flow modeling, managed aquifer recharge (MAR), stormwater management, saltwater intrusion in coastal and island aquifer systems, seasonal forecasting to improve.

ATTENDEES

Jade Dominguez

Student, CSU Bakersfield
jadersdominguez2323@gmail.com

The program is a CSUB lab attending the water conference in regards to hearing and collaborating with Ecologists and professionals in the respective field.

Christy Dykstra

Faculty, CSU San Diego
cdykstra@sdsu.edu

Christy Dykstra is an Assistant Professor of Environmental Engineering and the Director of the Environmental Biotechnology Lab at San Diego State University. Her research focuses on energy and resource recovery from wastes and wastewater. Her area of expertise is in anaerobic digestion, bioelectrochemical systems, and biological processes.

Alireza Farahmand

Faculty, Cal State LA
afarahm2@calstatela.edu

Alireza Farahmand is an Assistant Professor of Environmental Science at California State University Los Angeles. Previously, he was a Postdoctoral scholar and a Science Data Engineer at NASA's Jet Propulsion Laboratory (JPL). While continuing his affiliation with NASA JPL, Dr. Farahmand is currently the Science Lead for the NASA AIRS drought application program, which has been incorporated into the US Drought Monitor (USDM) assessment procedures since 2017. He is also the faculty coordinator of the Environmental Science MS Program at Cal State LA. His main research interests include utilizing remote sensing observations, along with statistical approaches, and GIS techniques for developing more reliable models of hydrologic systems given the climatic changes and anthropogenic activities. These include hydro-climate extremes (e.g. droughts, wildfires, landslides) and their impacts on water resources management, agriculture, and vegetation health. He has graduated with a Ph.D. in water resources engineering from University of California Irvine in 2016. He is also actively collaborating with stakeholders to ensure that his research can be integrated into operational applications.

Amber Flores

Student, CSU San Bernardino
Floamber1254@gmail.com

Amber is a student at Cal State San Bernadino and currently works as a research assistant. She likes enjoys cooking and paining when she's not at school or work. She also loves traveling and studying about different cultures and hopes to travel more after she graduates.

Joaquin Fraga Hernandez

Student, CSU Sacramento
jfragahernandez@csus.edu

Joaquin graduated from the University of California, Merced with a degree in Earth System Sciences. He has previous research experience working for UC Merced looking at the water budget in high elevation basins in the Sierra. He is interested in analyzing and understanding surface and groundwater interactions, addressing California's drought conditions through localized aquifer management strategies, and working to provide safe and reliable sources of water to all communities. He currently is working for The Department of Water Resources, in Asset Management as a student assistant. As part of his research work at Sacramento State University he is working with the City of Sacramento on a pilot program to install and quantify the impacts of permeable pavers in the Dixianne Neighborhood in Northern Sacramento.

Priya Ganguli

Faculty, CSU Northridge
priya.ganguli@csun.edu

Priya Ganguli is an Assistant Professor in the Department of Geological Sciences at California State University, Northridge (CSUN) where she is part of the Water Science Program. She studies contaminant transport and fate with a focus on mercury (Hg) biogeochemistry. Ongoing projects include (1) assessing long-term watershed impacts from wildfires (2) quantifying metals released from legacy mining activities, and (3) evaluating organic and inorganic contaminant cycling in Southern California reservoirs with fish consumption advisories. Prior to returning to graduate school, Priya worked at the San Francisco Bay Regional Water Quality Control Board on environmental remediation projects.

Sally Gee

Sally.Gee@scc.ca.gov

Sally Gee is a project manager with the State Coastal Conservancy. The Coastal Conservancy is a state agency, established in 1976, to protect and improve natural lands and waterways, to help people get to and enjoy the outdoors, and to sustain local economies along California's coast. The Conservancy provides technical assistance and grant funding for multi-benefit projects to protect coastal resources and increase opportunities for the public to enjoy the coast along the entire length of California's coast and within the watersheds of rivers and streams that extend inland from the coast. The Coastal Conservancy also works throughout the nine-county San Francisco Bay Area and the entire Santa Ana River watershed.

Christopher Gibson

Faculty, CSU Fullerton
cwgibson@fullerton.edu

Professor Gibson's research focuses on the intersection of economic markets and social policy, with special attention to environmental governance and water resource management.

15TH ANNUAL CSU-WATER CONFERENCE

Frank Gomez

Chancellor's Office
fgomez@calstate.edu

Dr. Gomez is the Executive Director of STEM-NET, a multicampus consortium, based at the California State University (CSU) Office of the Chancellor where he leads STEM initiatives for the 23-campus system. Prior to this position he was Professor of Chemistry at Cal State LA for over 20 years. He received his BS and PhD in Chemistry from Cal State LA and UCLA, respectively and was a postdoctoral fellow at Harvard University. As Executive Director, he has been a part of collaborative grants securing over \$53MM in funding in STEM and education-related fields. Some of his current work focuses on STEM for social good, the United Nations Sustainable Development Goals, climate change, equity in STEM, and workforce development. His own research involves developing microfluidic point-of-care (POC) diagnostic devices, fuel cells, and batteries. He has mentored over 140 students and postdocs, the majority from underrepresented groups, and has over 130 publications and two books. He previously served on the Montebello Unified School District (MUSD) Board of Education, the Montebello City Council and Mayor.

Nochtli Gomez

Student, CSU Northridge
bryant.gomez.175@my.csun.edu

Nochtli (No-ch-Lee) Gomez is a 4th year undergraduate student at CSUN majoring in Geographic Information Systems. He currently works at the Center for Geospatial Science and Technology at CSUN for the Elevation-Derived Hydrography Project for the State of California. Nochtli is also interning for FLOWS field school with CSU campuses throughout Southern California.

Gerhard Gross

Student, CSUMonterey Bay
ggross@csumb.edu

Gerhard is a second year graduate student studying Environmental Science at CSUMB. He found his affinity for GIS during his undergraduate work and continues to apply it to his graduate projects. He has extensive field work experience through a variety of projects in natural resource management. He is currently conducting research on post-wildfire debris flows and is interested in drone surveying. Additionally, he is a residential advisor and runs an astronomy club at CSUMB. In his free time he enjoys being outdoors mountain biking and stargazing. He also has his pilot's license.

Jackie Guilford

Faculty, CSU Sonoma
guilforj@sonoma.edu

Dr Jackie Guilford teaches in the Departments of Environmental Studies, Biology, and Education at Sonoma State University. Since 2014, she has been working on research projects with students related to local watershed health in collaboration with agencies such as Sonoma Water and the City of Santa Rosa.

Eric Hadden

Staff, CSUFresno
erhadden@mail.fresnostate.edu

Eric Hadden is the Executive Director of the Water, Energy and Technology (WET) Center on the campus of California State University Fresno. Since 2016, the WET Center has worked hand in hand with entrepreneurs to commercialize their ideas or to accelerate existing ventures in the water, energy, and agricultural verticals. To date, the WET Center has worked with over 500 entrepreneurs and accelerated 80 ventures. Cumulatively, they have raised over \$280 million in public, private, and institutional investments. Even more impactful than the capital raised, these ventures have created over 600 jobs, many based in the Central Valley. Eric is a Fresno native, who prior to joining the WET Center, worked in the private sector in the water technology space. Eric holds a B.A. in Philosophy from Saint Mary's College of California and an M.B.A. from the Craig School of Business at CSU Fresno.

Raymond Hess

Student, CSU San Jose
raymond.hess@sjsu.edu

Raymond is a Graduate Researcher and Teaching Associate in the Department of Geology at San José State University. Advised by Dr. Nate Bogie, Raymond studies hydrogeology and stable water isotope dynamics at a site in the Colorado Rocky Mountains.

Margott Hinostroza

mhinostroza@lacsdsd.org

Margott Hinostroza is a senior engineer at the Los Angeles County Sanitation Districts (LACSD). Margott graduated with a Bachelor of Science degree in Civil Engineering in 2000 from CSU Long Beach. She then graduated with a Master of Science (M.S.) degree in Civil/Environmental Engineering in 2001 from UCLA. Margott was a student engineer intern at LACSD from her freshman year until when she graduated with her M.S. degree working and learning about environmental engineering while being a full-time student. In addition, Margott was a member of Tau Beta Pi Engineering Honor Society, Chi Epsilon Civil Engineering Honor Society, Society of Hispanic Professional Engineers, and Society of Women Engineers during the time she was a student at CSU Long Beach. Margott is currently working in the Civil & Mechanical Design Section at LACSD.



ATTENDEES

Ash Ivanov

Student, CSU San Jose
alexander.ivanov@sjsu.edu

Ash was born and raised in San Francisco and moved with their family to Portland, Oregon where they stayed until they were 20 when they graduated from Portland State University with a Bachelor's of Science in Environmental Science and Management with a minor in Water resources. During their time at PSU they did their honors undergraduate thesis on examining the effectiveness of riparian restoration projects on improving water quality in urban streams of the Portland Metropolitan Area. For their graduate research they are continuing to focus on restoration ecology, particularly riparian areas, by researching the techniques used, how effective they are, and what could impact that effectiveness. Outside of academia they are a barista and enjoy photography, snowboarding, hiking, and video games. Their favorite photography style is medium format primarily of landscapes and architecture. When they go hiking in the bay their favorite spots are in Point Reyes for some great views of the Pacific, although for shorter hikes they tend to go to Lands End.

Scott Jedrusiak

Student, CSU Northridge
jedrusiakscott@gmail.com

Castaic Lake in Los Angeles County is an emergency drinking water reservoir and a popular recreational area. Despite a posted fish consumption advisory for mercury (Hg) and polychlorinated biphenyls (PCBs), little is known about how water column mixing in this 90 meter deep reservoir affects metal cycling. This study will characterize seasonal differences in the concentration and distribution of metals in water and sediment to determine if water column stratification (i.e., separating cold dense deep water from the atmosphere leading to oxygen depletion) influences sediment-water interaction. It's suspected that processes that influence Hg bioavailability in Castaic Lake also increase the concentration of other metals (e.g., Cu, Pb, Zn, Fe) in bottom water because oxygen depletion can also release sediment-bound metals into overlying water. Density stratification in reservoirs is common; therefore, this project may provide insights into reservoir contaminant cycling within this region.

Greg Jesmok

Student, CSU Northridge
gregory.jesmok.749@my.csun.edu

Greg Jesmok is a CSUN MS degree candidate in Geology studying biogeochemistry with a concentration in mercury dynamics of reservoirs. A member of Dr. Priya Ganguli's Water Science Group, his research focuses on water quality within Castaic Lake, a reservoir on the EPA's 303(d) list for elevated mercury concentrations. Prior to CSUN, Greg studied geology at UCLA where he worked on research projects in multiple laboratories, exploring subjects as varied as earthquake recurrence intervals, meteorite cosmochemistry, and paleoclimates of the Tibetan plateau. On the continual quest to give back to his community, Greg has mentored over twenty-five students ranging in experience from high school to postdoc, volunteered with Friends of the LA River, acted as a guide for CSUN field trips, and functioned as Vice-President of Environmental Science without Borders, a multinational peer-mentorship program designed to unite and develop scientists and students in the field of environmental science. When Greg is not poring over the latest geological research or environmental policy implementation, he can be found hiking or gardening. After attaining his MS, Greg aims to work within the environmental water quality or engineering geology sectors.

Jonathan-Dale Johnson

Student, CSU Northridge
jonathan-dale.johnson.938@my.csun.edu

Jonathan-Dale Johnson is a senior undergraduate at California State University, Northridge, who is currently assisting in research on the water quality of Castaic Lake and Pyramid Lake Public Recreation areas. Jonathan-Dale is specifically interested in Groundwater contamination, plastic pollution and remediation. Jonathan-Dale will be graduating in December 2024 and hopes to delve deeper in research associated with water quality management and remediation.

Trevor Jones

tjones@dudek.com

Trevor Jones is a senior hydrogeologist with 8 years' experience in the fields of groundwater resource management, planning, and groundwater modeling. While at Dudek, Dr. Jones has supported the development and implementation of Groundwater Sustainability Plans (GSPs) for critically overdrafted, high, and medium priority basins, and has worked closely with water districts, municipalities, and local agencies to help develop a quantitative understanding of historical, current, and projected groundwater conditions. As part of this effort, Dr. Jones has developed, reviewed, and modified numerical groundwater flow models to assess the impacts of basin management strategies on long-term resource availability and reliability. Dr. Jones has experience developing 1D, 2D, and 3D finite difference, finite volume, and finite element models using industry-standard software packages (e.g., MODFLOW, GSFLOW, VS2DT, Hydrus).

15TH ANNUAL CSU-WATER CONFERENCE

Jonathan Juarez

Student, CSU Bakersfield
jjuaraz49@csu.edu

Jonathan is a first-generation graduate who received his B.S. in Biology from California State University Bakersfield in 2022 and is currently pursuing his M.S. in Biology at CSU Bakersfield. His graduate research is focused on leaf decomposition of native and invasive species in aquatic ecosystems and their impacts on macroinvertebrate communities. After graduation, he plans to pursue a career at a government agency in monitoring aquatic and riparian ecosystems.

Sharon Sharon

Faculty, CSU Humboldt
skahara@newhaven.edu

Dr. Sharon Kahara is an ecology specializing in wetland ecosystems. For the past 20 years she has focused primarily on characterizing wetland function and ecosystem services in anthropogenically altered environments to better understand the future of wetlands in our rapidly changing world. Her interests lie in understanding how wetlands and their dependent species function under varying climate conditions as well as direct human impacts such as hydrological alteration, invasive species encroachment, nutrient enrichment and pollutant loading. Previous studies have included wetlands in Africa, Europe and North America's Prairie Pothole Region, but her latest research was on restored wetlands in California's Central Valley. She currently focuses on developing dynamic process models based on her own empirical data and existing literature to serve as management and research tools.

Alexis Kamages

Student, CSU Sonoma
kamagesa@sonoma.edu

Alexis is a senior studying Geography Environment and Planning, with a focus in Environmental Systems at Sonoma State University. She wants to work for the water company after college focusing on water quality.

Devrim Kaya

Faculty, CSU San Diego
dkaya@sdsu.edu

Dr. Kaya is an Assistant Professor in the division of Environmental Health at the School of Public Health and in Imperial Valley at San Diego State University. She specializes in Water-Energy-Food-Climate nexus and its impact on Public Health. Since 2002, she has addressed environmental and public health issues, by leveraging her background and expertise in engineering, microbiology, chemistry, -omic technologies, and AI/ML. Her areas of expertise include wastewater-based epidemiology; water treatment and reuse; bioremediation of contaminated sites; risk assessment; characterization-fate-transport of contaminants of concerns, including pathogens in various environments; anaerobic digestion; environmental microbiology; development of molecular tools and analytical methods. Throughout her academic career, Dr. Kaya has mentored and supported students, fostering safe and inclusive research environments to empower students in accomplishing their professional goals. Awarded for research and mentoring, including NIH's AIM-AHEAD Fellowships in Leadership, OSU's 2022 Excellence Award in Undergraduate Research Mentoring, the ASM Peggy Cotter Early Career Award, and NSF ACADEME fellowship.

Swat Kethireddy

Faculty, CSU San Bernardino
swat.kethireddy@csusb.edu

Dr. Swat Kethireddy is an Environmental Health professional, he currently teaches at CSU San Bernardino and researches water and air quality issues in southern California. He also mentors undergraduate and graduate students for professional, academic, and research matters. He applies his experiences in academia, industry, and research to shape the ideas and guide his students. While he is not busy in the classroom or lab, he loves to go biking, play with his kids, and do outdoor activities.

Leila Khatib

Faculty, CSU San Jose
leila.khatib@sjsu.edu

Leila Khatib is an Assistant Professor of Biological Science at San Jose State University with both industry and research experience focused on water quality and water resource management. Her research investigates novel assays for the detection of infectious disease in water and wastewater and currently developing a new viral detection method with student research assistants. Past research has included: a new approach for viable non-culturable viruses using Coxsackievirus as a model virus and the use of toxin genes from *E. coli* to track sources of fecal pollution. As a consultant, Leila served as a technical lead for a CV-SALTS project which resulted in a GIS based data management tool integrating numeric and narrative water quality data that ultimately supported Basin Plan Amendment Resolution No. R5-2017-0031 for compliance under the Clean Water Act. Currently, Leila is training students in EPA viral detection methods and working on a riboswitch platform with the Computer Science department at SJSU.

ATTENDEES

Jorge Pesantez

Faculty, CSU Fresno
jpesantez@mail.fresnostate.edu

Dr. Pesantez joined the California State University Fresno Department of Civil and Geomatics Engineering in August 2022. He graduated with a B.S. in Civil Engineering at the University of Cuenca, Ecuador (2010), and obtained a Master's in Construction Management at the University of the Armed Forces (ESPE), Ecuador (2014). He holds an M.S. (2017) and a Ph.D. (2021) in Civil Engineering from North Carolina State University. Before joining Fresno State, Dr. Pesantez worked as a Postdoctoral Research Associate at the Civil and Environmental Engineering Department of the University of Illinois Urbana-Champaign. Dr. Pesantez teaches water resources engineering- and management-related courses, including Hydraulics, Hydraulics Lab, and Engineering Construction I. His scientific contributions have been recognized as the Editor's Choice of the Month by the American Society of Civil Engineers Journal of Water Resources Planning and Management.

Erik Porse

Faculty, CSU Sacramento
eporse@ucanr.edu

Erik Porse is the Director of the California Institute for Water Resources and an Associate Cooperative Extension Specialist within the University of California Division of Agriculture and Natural Resources (UC ANR). Erik is an engineer, environmental scientist, and policy analyst who focuses on water and environmental management.

Roxanne Reimer

Staff, Community Water Center
roxanne.reimer@communitywatercenter.org

Roxanne Reimer is the Watsonville-based Community Solutions Manager for Community Water Center. In this position she manages various projects working towards long-term drinking water solutions in low-income communities in the Central Coast.

Much of Roxanne's academic and professional career has been focused on the intersection of community development work and small water systems. Roxanne has a B.A. in Mathematical Sciences from Bethel College KS as well as a M.S. in Environmental Engineering and Certificate in Engineering for Developing Communities from the University of Colorado, Boulder.

Ehsan Khodayaridarviti

Student, CSU Pomona
ehsank@cpp.edu

Ehsan Khodayari is an international graduate student, specializing in Environmental and water resources Engineering. With a bachelor's degree focused on water and wastewater and extensive experience in the field of water and wastewater design and construction, Ehsan brings practical expertise to their academic pursuits. Currently serving as a Research Assistant at Cal Poly Pomona, Ehsan is involved in research projects focused on Best Management Practices (BMPs), infiltration methods, and drywells. Concurrently, they contribute to undergraduate education as a Teaching Assistant, imparting knowledge in environmental engineering fundamentals. Driven by a passion for sustainability and practical problem-solving, Ehsan is committed to making a meaningful impact in the field. Their blend of academic training, hands-on experience, and leadership qualities positions them as a promising contributor to the advancement of Environmental and water resources engineering.

Tierney Kim

Student, CSU San Diego
tkim8398@sdsu.edu

Tierney Kim was born and raised in southern California. After high school, she pursued her interest in the medical field and enrolled in premedical coursework at Point Loma Nazarene University. Her work covered a wide range of topics and led her to enroll in additional math and physics coursework. Upon completing her biology degree and her minor in computational science, she learned about environmental work and its impact on our current and future state of living. She enrolled in a Master's program at San Diego State University for Civil Engineering focusing on Environmental Engineering and is planning to complete her degree by the end of Spring 2024. Today, Tierney continues her interest in environmental work through ecological and hydrologic research and storm water quality assessments.

Mike Larcher

mil@cbrain.com

Mike has almost two decades of experience supporting government agencies with using technology to achieve their strategic objectives. He is currently supporting the Sustainable Land Initiative - a novel approach by Resource Conservation Districts to accelerate adoption of sustainable land and agriculture practices that reduce GHG and make water use sustainable. Leveraging cBrain's software as the backbone of the SLI solution, RCDs are seeing a 10x increase in planning capacity and implementing sustainable practices in weeks rather than years.

Nikita Lau

nlau@rivco.org

The Riverside County Flood Control and Water Conservation District provides for the control and conservation of flood and storm waters and for the protection of watercourses, watersheds, public highways, life, and property from damage within its boundaries. Flood Control is a public agency, funded by public tax dollars. Our fundamental mission is to protect people and property from flooding through responsible and efficient storm water management. We are recruiting for engineers, planners and many more roles.

15TH ANNUAL CSU-WATER CONFERENCE

Kelley Lê

Staff, CSU Dominguez Hills
kellel2@uci.edu

Kelley Lê has been in the educational field for over a decade as a high school science educator, instructional coach, and educational leader. She is currently the executive director of the UC–CSU Environmental and Climate Change Literacy Projects (ECCLPs), former director of the UC Irvine Science Project, Friends of the Planet NCSE Award recipient (2022), and author of Teaching Climate Change for Grades 6-12: Empowering Science Teachers to Take on the Climate Crisis Through NGSS (2021). She also serves as a CLEAN advisory board member, and a Climate Reality Corps mentor.

Caitlyn Leo

Staff, CSU Sacramento
caitlyn.leo@owp.csus.edu

Caitlyn Leo is a research engineer at the Office of Water Programs at Cal State University, Sacramento. She is involved in the current statewide PFAS sampling for water systems in disadvantaged or severely disadvantaged communities.

Yize Li

Faculty, CSU Bakersfield
yli11@csub.edu

Dr. Yize Li is an Associate Professor of Physics at CSU-Bakersfield. Her research interests include low-dimensional electronic and photonic materials and devices, topological materials, and materials and devices for biosensing, chemical-sensing, environmental-sensing, and energy applications. Currently, Dr. Li is interested in characterization and treatment of PFAS in water.

Jaden Luna

Student, CSU Fresno
Jadenluna5@mail.fresnostate.edu

Jaden Luna is a 2nd year engineering student attending Fresno State University, with a history in solo freelance research and a passion for advancing technology he intends to go into the Environmental Engineering field.

Sami Maalouf

Faculty, CSU Northridge
smaalouf@csun.edu

Sami Maalouf's research interests are centered on environmental fluid mechanics (water quality models, turbulence, transport phenomena, coastal environment) and engineering education.

Bwalya Malama

Faculty, CSU San Luis Obispo
bmalama@calpoly.edu

Dr. Bwalya Malama holds a PhD in Hydrology from the University of Arizona. Before joining Cal Poly, he was a senior member of technical staff at Sandia National Laboratories in New Mexico where he investigated groundwater flow and contaminant transport related to geologic disposal of nuclear waste. His research interests are in quantitative (analytical and numerical) modeling of groundwater flow and transport of contaminants in the subsurface, lab- and field-scale investigation of innovative physics based methods for characterizing flow in the near-surface and very low permeability environments, and development of empirical models for soil moisture.

Rae McNeish

Faculty, CSU Bakersfield
rmcneish@csub.edu

Dr. Rae McNeish is a CSUB Assistant Professor of Biology and a freshwater ecologist with 16 years of research and mentoring experience. She earned her B.Sc. in Biology degree from Millersville University, PA, both her Biology M.S. and Ph.D. from the University of Dayton, OH, and she was a Post-doctoral Research Scholar at Loyola University Chicago before joining CSUB in August 2018. Her research focuses on terrestrial-aquatic connections and the effects of anthropogenic activities, pollutants, and land management practices on freshwater ecosystems. Current CSUB research projects are investigating 1) the ecological connections associated with anthropogenic litter and microplastics in the environment, and 2) how terrestrial and aquatic invasive plants impact aquatic macroinvertebrate communities and freshwater ecosystems. Dr. McNeish has mentored 35 undergraduate and 4 graduate students during her time at CSUB, and the McNeish Aquatic Ecology research lab has collectively given 30 conference presentations. Dr. McNeish's goals are to improve our understanding and management of freshwater ecosystems while engaging students in research, and to collaborate with diverse communities while conducting science that serves these communities.

ATTENDEES

Elizabeth McSwain

Student, CSU San Bernardino
mcswaynevents@gmail.com

As a passionate public health advocate and leader, Elizabeth McSwain merges academic study with community action. Currently a Master of Public Health (MPH) student at California State University, San Bernardino (CSUSB), she delves into the relationship between environmental health and community wellness, demonstrating a firm commitment to tackling public health challenges through sustainable solutions. At the helm of the Seeds of Joy Community Garden Project in Ontario, Elizabeth champions environmental stewardship and public health. This initiative underscores the significance of environmental health factors, directly applying her academic insights to enhance community nutrition and food security. Elizabeth's participation in the SCCWRP - CSU-WATER 2024 Conference aims to deepen her knowledge of water quality's impact on public health, furthering her ability to contribute to community and academic endeavors. Her work exemplifies a drive to bridge theory and practice, advancing public health and environmental sustainability. This biography highlights Elizabeth McSwain's leadership, innovation, and commitment to impactful change, marking her as a visionary in public health advocacy.

Ali Mehran

Faculty, CSU San Jose
ali.mehran@sjsu.edu

Ali Mehran is a researcher and academic with 8 years of experience in developing/working with hydrological models and climate models for monitoring droughts. In the last 3 years, I have established a lab/club at San Jose State University (SJSU) focused on autonomous remote sensing and surveying with applications in water quality and quantity. The research has led to publications on drought monitoring, mitigation, and the development of a framework for assessing water stress in changing climate conditions while considering human factors. Currently, I am seeking collaborations with communities and organizations to further the research and address the impacts of drought and water management policies.

Betsy Miller

bmiller@sbvwcd.org

Betsy Miller has worked as a public servant for over twenty years. She currently serves as the General Manager of the San Bernardino Valley Water Conservation District, where she oversees regional aquifer recharge operations, development of key projects to expand local groundwater sustainability, and implementation of a multi-agency Habitat Conservation Plan. Prior to joining the District, she worked for the City of San Diego for 17 years in the Planning and Park & Recreation departments, gaining expertise in land use and development, natural resource planning, and community engagement. Betsy graduated from Whitman College with a degree in Biology and holds a Master of Arts from San Diego State University in Geography with a specialty in Natural Resources Management. Betsy serves as a Board member for the National Habitat Conservation Planning Coalition, and is a past Board member of the Los Penasquitos Lagoon Foundation and the Junior League of San Diego. She has also volunteered with Big Brothers Big Sisters of San Diego County since 2006 and is an associate editor for the Natural Areas Journal. In 2015, she was selected as a finalist for San Diego Magazine's Woman of the Year.

Alejandra Miranda

Student, Cal State LA
amiran137@calstatela.edu

Alejandra Miranda is a last year grad student in Environmental science (biology option) at CSULA. Last year she completed an internship with Heal the Bay in their Marine Protected Areas (MPAs) department. She is currently analyzing data on human use in California MPAs for her final grad project. She is very passionate about water and coastal conservation and water accessibility and equality for all.

Erin Mitchell

Student, CSU Sonoma
Mitchelle@sonoma.edu

Erin is a transfer student who earned 3 Associates through the SRJC in 2022: Natural Sciences, Resource Management and Environmental Studies with an emphasis in Watersheds. She is dedicated to protecting nature, and works as a Landscape Technician for California State Parks.

Ellie Murdoch

Student, CSU San Jose
ellie.murdoch@sjsu.edu

Ellie is a first year Geology Graduate Researcher at San Jose State University advised under Nathaniel Bogie. For Ellie's master thesis she is characterizing stream behavior of Marin County coastal watersheds and their influence on salmonid habitat.

Khanh Nguyen

Student, CSU Sacramento
khanhnguyen5@csus.edu

Khanh Nguyen is a senior undergraduate student from Civil engineering Department of Sacramento State. She will present her work on Real-time Monitoring of the Flocculation Process to Enhance Jar Test Teaching and Learning.

Linny Nguyen

Student, CSU Fullerton
Linda.Nguyen@csusb.edu

Linny Nguyen grew up in the Midwest, surrounded by beautiful open spaces that allowed her to explore and inquire about the world around her. Her curiosity behind the mechanisms of how the world worked drew her to the sciences. Linny graduated with a degree in chemistry at CSU San Bernardino where she now gets to teach. It was ultimately her interest in the intersection between chemistry and ecosystems that brought Linny back to the CSU (this time Fullerton) as a student to pursue a master's degree in environmental engineering where she is currently learning to apply her chemistry background to mitigate environmental issues. In her free time, Linny enjoys immersing herself in nature whether it is visiting national parks, backpacking, or just reading up on solarpunk movements. She strives to be a life-long-learner to study, practice, and advocate for environmental conservation.

15TH ANNUAL CSU-WATER CONFERENCE

Tuan Nguyen

Student, CSU Fullerton
tanguyen@ocwd.com

Tuan Nguyen is the Laboratory Chemist for Orange County Water District's Phillip L. Anthony Water Quality Laboratory. He has been involved with the laboratory at various levels, including but not limited to sample preparation and performing compliance monitoring for complex physical and chemical analyses of drinking and surface water using advanced analytical instruments. Mr. Nguyen's specialty focuses on organic chemistry, where he primarily works on various instruments, including HPLC, GC, GC-MS, and LCMS-MS, to produce quality data for the laboratory. Tuan has more than five years of professional experience in environmental and analytical chemistry. He has worked for the district since 2018, when he began as a laboratory intern. Tuan received his Bachelor of Science in Biological Sciences from the University of California, Irvine, and is currently in the process of obtaining a Master of Science in Environmental Engineering from California State University, Fullerton and will be graduating in May 2024.

Eddie Ocampo

eddieo@selfhelpenterprises.org

Eddie Ocampo is the Director of the Community Sustainability Department at Self-Help Enterprises (SHE). Eddie was hired by SHE's Community Development (CD) Department in 2012. He has also served in the capacity of a CD Specialist, CD Manager, and CD Assistant Director. He has expertise in organizing and collaborating with rural and low-income communities to identify water and wastewater systems' needs and solutions. At SHE, his primary duties include staff and program management, program and projects development and implementation, community income survey development and implementation, septic system and groundwater survey implementation, housing survey implementation, preparation of loan and grant applications for water, wastewater, solar, and land repurposing project development and funding, project grant and loan administration, public district formation facilitation, consultant recruitment, and compensation negotiation, contract preparation, and training of community members, board members, and staff. Experience includes data analysis, collection, and reporting. Eddie attended high school in the San Joaquin Valley (the SJV); left the SJV to attend college and graduate studies; and returned to live and work in the SJV.

Stephany Orellana

Student, CSU Sonoma
orellans@sonoma.edu

Stephany is a fourth-year Geography and Environmental Planning student at Sonoma State University. She has an interest in water pollution, with a focus on mitigating the impacts industrial and radioactive waste.

Marlenne Ortega

Student, CSU Monterey Bay
marlortega@csumb.edu

Hi her name is Marlenne Ortega, she is a junior in CSUMB studying Environmental Science, Technology, and Policy. Her career interests align with creating a safe space in the environmental science community for the underserved and underrepresented families. As a student she has been involved with actively volunteering at the wetland Bolsa Chica Ecological Reserve. She also have research experience within an interdisciplinary marine and climate lab and now positioned at a watershed geology lab. She can apply the skills she has gained to the field projects as well as be able to work alongside with the community and find ways they can grow on their scientific literacy and offer these workshops in Spanish. Her past experiences are of utmost importance to her for the reasons that she practices the values of inclusivity in the scientific community which would lead to a diverse amount of solutions.

Isaac Owens

Student, CSU Bakersfield
iowens@csu.edu

Isaac is a graduate student at California State University who is currently working on his thesis. His current research focuses on applying the River Continuum Concept, originally developed for North American eastern deciduous forests, to river systems in California's arid climate across an elevation gradient. He is also examining the impact of invasive plants on macroinvertebrate communities in ponds. Isaac aspires to have a lasting impact by improving accessibility, persistence, and graduation rates among young men of color in college education. Concurrently, he is deeply committed to advancing his career in the field of ecology and biology, where he can continue to explore and contribute to our understanding of the natural world. Isaac is excited to attend the conference and engage in all the activities it has to offer.

Emily Pantoja

Student, CSU Bakersfield
epantoja5@csu.edu

Emily is an undergraduate student majoring in Biology (B.S.) at CSU Bakersfield. She has enjoyed participating in ecological research as part of Dr. Rae McNeish's Laboratory and has conducted research pertaining to microplastic pollution in stormwater runoff and wet deposition (rainfall) on campus. She is interested in environmental sustainability and the biomedical sciences. In her free time, she enjoys baking and playing the piano.

Paige Pearson

Student, CSU Monterey Bay
ppearson@csu.edu

I am a graduate student in the Applied Environmental Science department at CSU Monterey Bay. I am also a Research Assistant in James Guilinger's Watershed Geology Lab studying post-fire debris flows in the Carmel River and the effects of the San Clemente Dam removal on Steelhead spawning gravel. I work concurrently as a Teaching Associate for an undergraduate GIS class. I am very excited to present our research at this event!

ATTENDEES

Bryan Peeso

Staff, CSU Sonoma
peesob@sonoma.edu

Bryan Peeso is an outstanding student at Sonoma State University. He is a 4th year senior graduating with a bachelors of science in environmental science, geography, and managment. Bryan is attending this conference to share his research testing water quality along the Santa Rosa creek in Santa Rosa CA. Ultimately, him and his peers are trying to correlate the water quality from the creek to the homeless population that resides on the creeks boundaries.

Jorge Pesantez

Faculty, CSU Fresno
jpesantez@mail.fresnostate.edu

Dr. Pesantez joined the California State University Fresno Department of Civil and Geomatics Engineering in 2022. He graduated with a B.S. in Civil Engineering at the University of Cuenca, Ecuador (2010), and obtained a Master's in Construction Management at the University of the Armed Forces (ESPE), Ecuador (2014). He holds an M.S. (2017) and a Ph.D. (2021) in Civil Engineering from North Carolina State University. Before joining Fresno State, Dr. Pesantez worked as a Postdoctoral Research Associate at the Department of Civil and Environmental Engineering of the University of Illinois Urbana-Champaign. Dr. Pesantez teaches water resources engineering- and management-related courses, including Hydraulics, Hydraulics Lab, and Construction Engineering. His scientific contributions have been recognized as the Editor's Choice of the Month by the American Society of Civil Engineers Journal of Water Resources Planning and Management.

Logan Platt

Student, CSU San Diego
lplatt1181@sdsu.edu

Logan Platt is a 2nd year MS student at San Diego State University studying groundwater resources in California's Central Valley using numerical modeling. He is also currently a hydrogeology intern at Dudek. He received his Bachelor of Science ('22) in Geology from BYU-Idaho.

Amanda Plunkett

Student, CSU San Bernardino
008072370@coyote.csusb.edu

Amanda Plunkett is an undergraduate student at California State University - San Bernardino. Planning to graduate in the Spring of 2025 with her bachelor's in environmental studies and a GIS Certificate, she is interested in pursuing research and has worked on projects in conjunction with the USGS. She also has two professional accreditations in organic land care (OLA & NOFA) and has volunteered as a Master Gardener (UC Extension). Her interest in plant chemistry also inspired her to get a certification as a clinical aromatherapist (NAHA). She currently primarily works as a humane live bee removal specialist, beekeeper, public speaker and educator on the interactions between plants and native pollinators.

Sydney Pontius

Student, CSU Sonoma
pontius@sonoma.edu

Sydney Pontius is an undergraduate student in her last semester at Sonoma State University; she is majoring in ecology and evolutionary biology. Sydney has been monitoring water quality near homeless encampments on Santa Rosa Creek with Dr. Jackie Guilford since the start of the fall 2023 semester. She is also a member of Dr. Nick Geist's lab, performing benthic macroinvertebrate surveys along Copeland Creek (an urban waterway) to assess habitat health since spring 2023 as a part of Rebecca Kopel's master's thesis. She has interests in riparian ecology, freshwater ecology, environmental restoration, endangered species conservation, and herpetology.

Tommie Post

Student, CSU San Diego
tpost8715@sdsu.edu

Tommie Post is a Masters student at San Diego State University studying Environmental Engineering. Her thesis studies the effects of ruminant dietary bromoform supplementation on anaerobic manure management systems. Outside of her thesis, she has worked on projects including the design of a stormwater capture-treat-reuse system, TEA and LCA of a rare earth element biomining system, and NSF I-Core for the commercialization of a bioelectrochemical system.

Fahad Qurashi

fQurashi@yli.org

Fahad has over 23 years of youth development, public policy, organization leadership, fund development, strategy and program design experience. He is the son of immigrants from Pakistan and a long time Bay Area resident, and is committed to addressing forms of inequity that communities of color experience everyday and has himself experienced being systems involved as a youth and young adult. Fahad has the expertise of youth in creating policy solutions in partnership with community members, elected officials and philanthropic leaders across the region. He has led incredible collaborative efforts that span intersecting issues that include health equity, financial and economic justice, transportation justice and education reform. He has led the design and implementation of nationally recognized youth leadership programs and is also an expert trainer/facilitator building the capacity of community-led coalitions across the country. Fahad has a longstanding relationship of over 16 years at yli, spanning from his time as a program participant in tobacco prevention efforts to serving as a C-Suite statewide leader.

Ganesh Raman

Staff, Chancellor's Office
graman@calstate.edu

Ganesh Raman is Assistant Vice Chancellor for Research at the California State University, Office of the Chancellor. In this role he is the senior academic official responsible for the vision, advancement and administration of the CSU's research and scholarly mission and enterprise.

15TH ANNUAL CSU-WATER CONFERENCE

Oriana Ramirez

Student, CSU San Luis Obispo
Ojramire@calpoly.edu

A young female scientist working to combine her knowledge of forestry, environmental law, soil science and water science to develop a more resilient California.

Laura Ramos

Staff, CSU Fresno
lramos@mail.fresnostate.edu

Laura is a water professional with over 20 years of experience in delivering water resource management solutions through education, collaboration, and research. Laura particularly enjoys providing current research knowledge to water managers creating a nexus between academia and practical research applications in the field. As a result, Laura has been able to form teams of experts to address water resource management issues by connecting Fresno State researchers to the community. Laura is always looking for water management issues with a need for solutions that Fresno State can help address.

Hayat Rasul

hayat.rasul@stantec.com

As a community water planner, Hayat strives to ensure sustainable management and equitable distribution of water within our communities. Whether it's the biogeochemistry of Water, drinking Water accessibility, stormwater management, or watershed education, Hayat whole-heartedly takes on the approach that Water should be protected to sustain the diverse socioecologies of our planet. Reigning from the arid San Fernando Valley, Hayat has always had an affection for water as it transcends the boundaries that institutions give it. Dedicated to exploring the movement and societal nuances of Water in what we settlers call North America, Hayat hopes to help reshape how we work with Water through a holistic, inclusive, and interdisciplinary approach. Researching behind the scenes, meaningfully engaging communities in Water plans, and sampling in the field are all names to Hayat's long-haul Water game. If Hayat is not talking about Water, they are likely in it.

Kaylie Rogers

Staff, CSU Fresno
kaylier@mail.fresnostate.edu

Kaylie Rogers is the Event and Office Coordinator at the California Water Institute. She plans and coordinates outreach, education, and community events both virtual and in person to create an educational and enjoyable experience for all. Kaylie is a CSU, Fresno alumni, receiving her bachelors in Food Science in 2018 and her masters in Humas Resource Management from National University in 2021.

Connor Rudmann

Student, CSU Pomona
connor.rudmann@gmail.com

Connor is a master's student studying landscape architecture. His research interests include ecohydrology, remote sensing, and river restoration. He loves all of California's rivers, wetlands, and seasonal streams and hopes to dedicate his life to studying, restoring, and protecting them.

Leah Russell

Student, CSU Fullerton
leahdayrussell@yahoo.com

Leah Russell is an Engineer/Scientist and Client Service Manager at the engineering firm Ardurra. Her passion is California water systems, natural and engineered, and their complex interactions. Leah enjoys collaborating with private and public stakeholders in water infrastructure design, resource management, policy, and planning. Current projects include permitting and design of groundwater recharge basins in the Mojave desert, design of recycled water pipelines in a busy Temecula street, and engineering support during construction for two 5-million-gallon water reservoirs in Poway. Leah has an A.A.S. in Veterinary Technology from Purdue University, a B.S. in Earth System Science from UCI, and will graduate in May 2024 with an M.S. in Environmental Engineering from CSU Fullerton. She is active with Orange County Water Association and Women in Water.

Yareli Sanchez

fqurashi@yli.org

yareli@watershedhealth.org

Yareli Sanchez is the Senior Scientist with the Council for Watershed Health (CWH). She is the technical lead for CWH's science work which has focused on stream monitoring, quantifying the benefits of green infrastructure projects, and a community based learning project focused on urban trash. Yareli has managed the Los Angeles River Watershed Monitoring Program, CAL FIRE funded Designing Healthy Schoolyard Project, the Elmer Paseo refresh, and the monitoring, outreach, and educational components of the Drought Response Outreach Program for Schools (DROPS). She has a well-rounded and multidisciplinary understanding of environmental issues and has honed her expertise in science communication and community engagement while at CWH.

Ganesh Raman

Staff, Chancellor's Office
graman@calstate.edu

Ganesh Raman is Assistant Vice Chancellor for Research at the California State University, Office of the Chancellor. In this role he is the senior academic official responsible for the vision, advancement and administration of the CSU's research and scholarly mission and enterprise.

Darren Sandquist

Faculty, CSU Fullerton
dsandquist@fullerton.edu

Darren Sandquist is a biology professor at California State University, Fullerton. He teaches ecology and plant biology courses and studies the ecophysiology of arid-land plants.



ATTENDEES

Edith Santana

Student, CSU Northridge
edith.santana.637@my.csun.edu

Edith Santana is an undergraduate at California State University, Northridge with a major in Environmental Science. She will be graduating in December 2024 and she is interested in groundwater systems specifically, in the Los Angeles County. Edith is excited to learn more about water conservation and water quality issues in hopes of being able to combat the water challenges in California. While water is her main focus, she's also interested in space and working at NASA to find further solutions to the water crisis we are experiencing globally.

Karim Shadid

Student, CSU Northridge
Shadidkarim@gmail.com

Karim Shadid is set to graduate in May 2024 with a Bachelor of Arts in Environmental Science from California State University, Northridge (CSUN). Over the past year, he has been a dedicated undergraduate researcher in CSUN's Water Science Program. His hands-on experience in environmental geochemistry spans lab and field work. He has played a key role in a Southern California reservoir study involving trace metal clean techniques to collect water and sediment samples from deep reservoirs (>200 ft) and their tributaries. Karim has experience sampling from boats and on land, preparing sample bottles for various analytes including anions, trace metals, and dissolved organic carbon (DOC). Additionally, Karim is actively involved in a wildfire study where he assists in trace metal analysis using an inductively coupled mass spectrometer (ICPMS). He independently analyzes suspended particulate matter (SPM) samples from multiple environmental projects focusing on contaminant transport and fate. His involvement in geological research showcases his evaluation of geologic maps to discern specific types of rock outcrops through meticulous map analysis. Karim is currently exploring diverse career prospects within the environmental sector.

Yashvi Shah

Student, CSU San Bernardino
yashvis1125@gmail.com

Yashvi Shah is a Master's student of Environmental Science at California State University, San Bernardino. She is studying water pollution and control techniques, air pollution, environmental GIS, environmental health, and hazards. She completed her undergraduate degree in environmental engineering. Her current research focuses on the change in glacier thickness in the Khumbu region from 2009 to 2012.

Grant Sharp

grant.sharp@ocpw.ocgov.com

The OC Watersheds staff within the Environmental Resources service area of Orange County Public Works are responsible for leading collaborative regional municipal stormwater runoff management compliance programs, as well as integrated regional water management efforts in Orange County.

Trent Sherman

Student, CSU San Francisco
tsherman1@mail.sfsu.edu

Trent Sherman is a graduate student pursuing a Master of Science degree in geoscience at San Francisco State University. Prior to graduate school, Trent received a Bachelor of Science degree in geology at Fresno State University and then held jobs in water resources, involving groundwater management and river restoration. Trent continues studying river processes at SFSU and explores rivers recreationally in his free time.

Sarabdayal Singh

Student, CSU Fullerton
sdsingh@fullerton.edu

Sarabdayal Singh has over 30 years of experience in facilities, planning and design, construction management, operations and maintenance, sustainability, environmental health and safety, civil, and structural engineering. He is a Certified Construction Manager, Project Management Professional, and Certified Educational Facilities Professional and is been with the CSU system for over 25 years. He has developed a reputation of tactfully delivering projects maintaining scope and vision while sustaining budget and schedules. He has been responsible for managing several projects, developments, and operational undertakings (over \$2 billion accumulated) throughout all phases of goal setting, strategic financial planning, and implementation.

Rachel Singleton

Staff, CSU Northridge
rachel.singleton@csun.edu

Rachel Singleton joined the CSUN team in May of 2023 as the new Energy and Sustainability Analyst. She graduated from CSU Sacramento with her B.S. in Mechanical Engineering and continued to receive a M.S. with a concentration in Manufacturing and Material Science (with a focus on plastic waste). While in school, Rachel started working for the Sacramento State Sustainability team where she gained her passion for intertwining her engineering background with sustainability. She then transitioned into her current role at CSUN where she aims to reduce energy consumption and promote sustainability throughout campus. Rachel's work at CSUN includes the upgrade of parking lot lighting to energy-efficient LED fixtures, the replacement of refrigerators in the science building with Energy Star-rated appliances, and the collection of Energy Use Index data for various campus buildings. Her overarching goal is to guide CSUN towards achieving a net-zero carbon footprint by leading energy-focused initiatives, fostering awareness within the campus community, and collaborating with her dedicated team.

Elizabeth Soto

Esotoe25@gmail.com

Dr. Soto has been working in higher education for over 11 years and is excited to be joining the California State University family as the new Chancellor's Office Director of Research.

15TH ANNUAL CSU-WATER CONFERENCE

Garrett Struckhoff

Faculty, CSU Fullerton
gstruckhoff@fullerton.edu

Dr. Struckhoff has been working at CSU Fullerton since 2012. He is currently the program coordinator for the online MS in environmental engineering program. His research focuses on the biological side of environmental engineering, including: phytoremediation, greenroofs, constructed wetlands, and beneficial uses of algae. Dr. Struckhoff is especially passionate about cycling and tries to get at least 20 miles of mountain biking in every week.

Jennifer Swart

jswart@wrd.org

Jenn Swart is a Senior Public Affairs Representative at the Water Replenishment District, a groundwater management agency that serves 4 million residents in southern Los Angeles County. In her role at WRD, Jenn engages with a multitude of audiences and stakeholders on the topics of groundwater, recycled water, and water conservation. She manages the district's community education programs and facilitates stakeholder tours of WRD's water treatment facilities. Jenn was a project lead for the development and installation of the state-of-the-art exhibit hall at the Albert Robles Center for Water Recycling & Environmental Learning (ARC). Jenn has a Bachelor of Science in Geography degree from the University of Calgary, Alberta, Canada.

Erica Terrell

EricaTerrell@lacsds.org

Erica Terrell currently serves as the Diversity, Equity, and Inclusions Programs Manager for the Los Angeles County Sanitation Districts. She is tasked with strategically developing and implementing initiatives aimed at fostering diversity, equity, and inclusion within the agency. Before joining the Districts, she served as System Partner of Anti-racism and DEI, where she guided school districts and organizations through DEI and organizational change. Erica started her career as a middle school mathematics and science teacher while earning her Master of Education in Elementary Education at Delta State University. She is a PMP-certified Project Manager, which she earned through the Project Management Institute. She has obtained a Diversity Professional Certificate through Cornell University and holds dual certifications as an Equal Employment Opportunity (EEO) Counselor as well as an EEO Investigator. Erica is a graduate of the University of California, Santa Cruz, where she earned Bachelor degrees in Politics and American Studies.

Elissa Thomas

Staff, CSU Fullerton
elthomas@fullerton.edu

Elissa has nearly 20 years of experience in program management while leading and supporting Sustainability and Diversity, Equity, and Inclusion efforts. She currently serves as the Director of Sustainability and Transportation Demand Management at California State University, Fullerton, where she oversees all aspects of sustainability and transportation programs in compliance with the California State University Sustainability Policy and South Coast Air Quality Management District (AQMD) Rule 2202. She also presently serves on the Association for Commuter Transportation's DEI Committee as well as on the Board of Healing To You, a nonprofit providing mobile medical & mental health services for survivors of domestic violence. She is committed to addressing the intersection of race, class, and access to educational, vocational and wellness opportunities; the impact of transportation mode choice on air quality; and the importance of clean and affordable mobility choices for all.

Alessandro Toledo Salazar

Student, CSU Fresno
byalessandro@mail.fresnostate.edu

Alessandro Toledo is an international undergraduate student at California State University, Fresno. He is majoring in Civil Engineering with an emphasis on Water Resources and Environmental. During his academic career, he has performed research related to Water Distribution Systems and Water Treatment while collaborating with faculty and industry professionals. Besides, he has taken leadership roles in the American Society of Civil Engineers such as the Vice President of the ASCE Student Presidential Group. Locally, he has engaged with clubs related to Diversity, Equality, and Inclusion in the Lyles College of Engineering at Fresno State and other departments.

Cathy Trejo

Student, Cal State LA
ctrejo15@calstatela.edu

Cathy Trejo is a master's student in the Civil Engineering department at California State University, Los Angeles. Her undergraduate degree is in Environmental Biology from California State Polytechnic University, Pomona. She is currently a student research intern at the Origins and Habitability Lab at the Jet Propulsion Lab exploring the connections between astrobiology and environmental remediation. Her next step in her career is to pursue a phd in either environmental engineering or chemistry for environmental sustainability applications.

Jase Trovao

Staff, CSU Fresno
jtrovao@mail.fresnostate.edu

Jase is the Stakeholder Engagement Coordinator for the California Water Institute. He schedules and coordinates meetings, develops meeting summaries, and distributes required documents to various individuals.

ATTENDEES

Grace Ude

Student, CSU Bakersfield
gude@csub.edu

Grace is a Biology undergraduate with a passion for the sciences. Coming from Nigeria she's a student who likes to experience new things and aid in anyway she can.

Gabriel Valle

Faculty, CSU San Marcos
gvalle@csusm.edu

Gabriel Valle is an associate professor of Environmental Studies at CSU San Marcos. His research interest explore environmental issues at the intersection of race, place, and power. His most recent book, Gardening at the Margins, explores home gardens in a Latinx community in San Jose, CA.

Andreas Chris Vamvakas

Student, CSU San Bernardino
007011102@coyote.csusb.edu

Andreas is a microbiologist that works on anaerobic thermophilic bacteria that ferment complex polymer carbohydrates. He is working with Dr. Contreras in developing the cure for CSUSB is one of his goals his academic career. Helping the community, especially in resources that everyone needs like water, is one of Andreas's passions. Future career paths for Andreas are working in water treatment, or wastewater treatment.

Geoffrey Vanden Heuvel

geoffreyvh60@gmail.com

As a retired dairy farmer of 39 years, Geoff now works as the Director of Regulatory and Economic Affairs for Milk Producers Council a dairy farmer trade association on water supply and dairy economic policy issues. For the last 6 years Geoff has focused significant effort on following the implementation of the Sustainable Groundwater Management Act in the San Joaquin Valley.

Victoria Vera

Student, CSU Fresno
fscwi@mail.fresnostate.edu

Victoria Vera is a second-year college student at the California State University, Fresno. She is a part of the Craig School of Business and is pursuing a Bachelor of Science in Business Administration degree with an option in International Business. She has been at the California Water Institute since August 2022 and is a part of the marketing team.

Rafael Villegas

rafael.villegas@ladwp.com

Rafael Villegas is a Civil Engineer with 24 years of experience in public infrastructure and water utilities. He is the Program Manager for the Operation NEXT Water Supply Program for the Los Angeles Department of Water and Power. This program, LADWP's largest since construction of the original aqueduct, will further diversify the City water supply by maximizing recycling of wastewater from the Hyperion Water Reclamation Plant and provide a significant new reliable, resilient and sustainable water supply. His experience includes development of Operation NEXT; direct engagement in the Measure W Watershed Area Steering Committees, countywide Integrated Regional Water Management Program, Los Angeles River issues and development of the LA's Stormwater Capture Master Plan. Through his experience, Mr. Villegas has developed a strong background in project delivery that includes strategic planning, water rights, program management and most importantly, consensus building. He actively seeks and forges partnerships with outside entities with the shared goals of water conservation, local water supply development and sustainability.

Tamara Wallace

Staff, Chancellor's Office
twallace@calstate.edu

As a sustainability professional of 15 years, Tamara was elected to AASHE's STARS Steering Committee serving as Chair and advocated for the adoption of the STARS benchmarking tool into CSU policy, the largest university in the country. She supervises the CSU Climate Action Grants & Loans Program, sits on the project team for the Climate Resilient Infrastructure Guidelines and Framework for CSU, and represents CSU with the statewide Alliance of Regional Collaboratives for Climate Adaptation (ARCCA). Tamara is Co-Founder and Advising Editor for CSU's Journal of Sustainability and Climate Change. She is a CSU Fullerton double-alumna, accredited LEED Green Associate, and Certified Change Management Practitioner.

Chihhao Wang

Faculty, CSU Fresno
cwang@csufresno.edu

Chih-Hao Wang is an associate professor of the Department of Geography and City & Regional Planning at California State University, Fresno, where he has taught since 2014. He received his Ph.D. (2013) and Master (2010) degrees in City and Regional Planning from The Ohio State University. Dr. Wang's research focuses on environmental planning from the perspective of natural hazard mitigation. Another of his research interest is to apply spatial statistics to analyze spatial or social interactions in the earthquake process, water management, transportation planning, and community development. His research has been published in journals in areas of environmental planning, transportation, and geography.

15TH ANNUAL CSU-WATER CONFERENCE

Matthew Weingarten

Faculty, CSU San Diego
mwiengarten@sdsu.edu

The Weingarten Lab @ SDSU uses computational numerical models to explore the role that fluids, faults and stress play in both natural and induced earthquakes. His lab is also interested in groundwater resources and land subsidence, particularly in the Central Valley of California.

Alex Wiens

Student, CSU San Luis Obispo
alwiens@calpoly.edu

Alex Wiens is a 2nd-year graduate student studying environmental sciences at Cal Poly SLO. He is doing his thesis on post-fire hydrology of the Little Creek watershed in Davenport, CA. Having a B.S. in Civil Engineering from Fresno State, Alex also has work experience with USDA-ARS and the Santa Clara Valley Water District.

Charley Wilson

cwilson@socalwater.org

Charles Wilson serves as Executive Director and CEO of the Southern California WaterCoalition, a nonprofit, nonpartisan, public education partnership between cities, counties, business, industry, agriculture, and water agencies dedicated to securing reliable, affordable, quality water for Southern California.

Chengyan Ye

Student, CSU Long Beach
chengyan.ye01@student.csulb.edu

Machine Learning Based Control System Design for BSM1 Wastewater Treatment Plant will be presented on April 19, 2024. For this presentation, the problems of effluent quality of BSM1 will be mentioned. The approach of Model predictive control was tried to improve the control performance. However, the modeling of MPC was not a good model due to low fitting. Then, a machine learning method is used to find a combination of PID controller parameters in order to get a better control performance of effluent quality.

Julissa Zavala

Staff, CSU Fresno
julissaz@mail.fresnostate.edu

Julissa Zavala is the Grants and Contracts Facilitator at the California Water Institute – Research and Education Division at Fresno State. Julissa helps with researching, drafting, and submitting grant proposals and applications that help the institute receive funding for projects. These projects advance CWI's mission of connecting academia to the water community to solve water management challenges through education, collaboration, and research. In addition to grant writing, Julissa assists with written communication for the institute, guaranteeing clarity and coherence of materials distributed across Fresno State's campus and among various stakeholders. Born and raised in the Central Valley, Julissa received her bachelor's degree in mass communication and journalism from Fresno State and spent several years as a reporter for local newspapers before making the change to grant writing.



ATTENDEES

15TH ANNUAL CSU-WATER CONFERENCE

Campus Representatives

CSU-WATER Campus Representatives have been established to foster bilateral communication of CSU-WATER relevant information, opportunities, and goals to and from their campus community. A first order of business will be updating the 'Campus Expert' list that can be shared throughout the CSU as well as with external partners and stakeholders.



Archana Anand
San Francisco



Hakob Avetisyan
Fullerton



Jessica Bremner
LA



James Guilinger
Monterey



Christopher Halle
Sonoma



Scott Hauswirth
Northridge



Laurie Huning
Long Beach



Andres Jauregui
Fresno



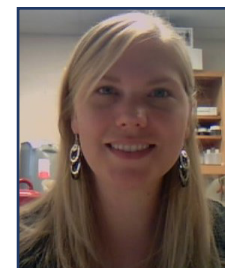
Swat Kethireddy
San Bernardino



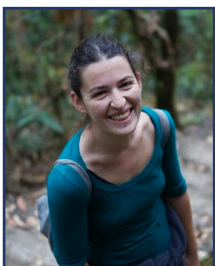
Simeng Li
Pomona



Bwalya Malama
San Luis Obispo



Rae McNeish
Bakersfield



Costanza Rampini
San Jose



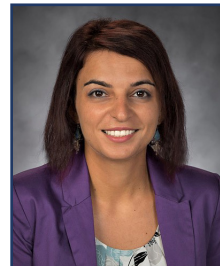
Zhi Wang
Fresno



Jackson P Webster
Chico



Tesfayohanes Yacob
Humboldt



Zoi Dokou
Sacramento



Arezoo Khodayari
LA

Not Pictured: Stephen G Osborn, Pomona

ADVISORY NETWORK

Internal Working Group

Implementing the new goals and directions for CSU-WATER has and will greatly benefit from feedback of faculty leaders in the CSU during this interim period. Working group members continue to provide advice and opinions on how to best engage CSU students, faculty, administrators, and institutes on collaborations that mutually support our CSU-WATER goals.



Jennifer Alford
San Bernardino



Trent Biggs
San Diego



Danielle Bram
Northridge



Erin Bray
San Francisco



Anita Chaudhry
Chico



Katherine Cushing
San Jose



Stefan Talke
San Luis Obispo



Jamie Kneitel
Sacramento



Rea McNeish
Bakersfield



John Olson
Monterey Bay