

**CSU** The California State University

**WRPI** 

WATER RESOURCES & POLICY INITIATIVES

[www.calstate.edu/water](http://www.calstate.edu/water)

**11<sup>th</sup> Annual Conference**  
**April 25-26, 2019**  
**Chico, CA**

“Balancing the California Water Budget for Sustainability”







Water Resources and Policy Initiatives (WRPI) 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. The WRPI 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.



The Water Resources and Policy Initiatives 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. WRPI 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 WRPI mission. The goals reflect the CSU comparative advantage in addressing current and emerging statewide water issues. WRPI will be a leading resource to:

- Develop partnerships with water resource stakeholders to advance technology, support economic development, and create public awareness and support concerning water-related resources and issues for sustainable, reliable water with fair and equitable access.
- Support WRPI and expansion of CSU research and external funding through systemwide and multiple campus coalitions.
- Promote career awareness through high-impact practices in education, training, and professional capacity building.

# WRPI Annual Conference Agenda

April 25, 2019  
California State University, Chico


## ***"Balancing California Water Management for Sustainability"***

8:00 am	<b>Conference Registration and Continental Breakfast</b>	
8:45 am	<b>Welcome</b>	Gayle E. Hutchinson, Chico President, California State University
9:00 am	<b>Conference Overview</b>	Sarge Green, Associate Director, WRPI
9:20 am	<b>Sustainable Water Infrastructure; The Oroville Spillway Construction Overview</b>	John Yarbrough, Department of Water Resources
10:20 am	<b>Network</b>	
10:30am	<b>Groundwater Sustainability</b>	<b>Moderator:</b> Anita Chaudhry, CSU Chico
	Tackling Technical and Policy Aspects of Groundwater Sustainability in Butte County Subbasins	Christina Buck, Butte County Water and Resource Conservation
	Agricultural Water Transfers in Northern California and Implications for Sustainable Management of Ground Water Storage	Steffen Mehl, CSU Chico
	Evaluating and Enhancing Groundwater Recharge in the Sacramento Area	Amelia Vankeuren, CSU Sacramento
11:30am	<b>A Sustainable Water Future for California: Communicating to the Public and the Media</b>	<b>Keynote speaker:</b> Jennifer Bowles, Water Education Foundation
12:10pm	<b>Lunch</b>	
12:40 pm	<b>Student Poster Session</b>	
1:15pm	<b>Water Quality and Water Management Policy for Sustainability</b>	<b>Moderator:</b> Emmanuel Iyiebuniwe
	Policy Priorities for California's Water Management	Alvar Escrive-Bou, Public Policy Institute of California
	Addressing Aging Infrastructure by Improving Drinking Water Distribution and Sewer Collection Systems in Portola, CA	Pablo K. Cornejo, CSU Chico
	CAPTURE Guidance for Schools, California Practices to use Runoff Effectively	Brian Currier, CSU Sacramento
2:15pm	<b>Network</b>	

2:30 pm	<b>Fire Effects on Watersheds</b>	<b>Moderator:</b> Todd Greene, CSU Chico
	Camp Fire – Lessons Learned and Success Stories	Calli-Jane DeAnda, Butte County Fire Safe Council
	The Effects of Fire Retardants in Mediterranean Aquatic Ecosystems	Jamie Kneitel, CSU Sacramento
	Burning for Salmon	Don Hankins CSU Chico
	Characterizing Watershed Contamination Following the Camp Fire	Jackson Webster, CSU Chico
3:30 pm	<b>Getting funded by the CSU Agriculture Research Institute</b>	David Still, Director, CSU Agricultural Research Institute
3:50 pm	<b>Update of WRPI Activities Wrap up and Comments</b>	Boykin Witherspoon Director, WRPI
4:30 pm	<b>Conference Adjourn*</b>	

**Post-Conference Dinner Networking at Pour House (no host)**

\*Two buses available from CSU Chico to Ramada Chico. Departure times will be announced.



**Tour**  
April 26, 2019

**Chico Conference Field Trip**

- 8:00 am** Load bus at Ramada Hotel Chico
- 8:30 am** Bus departs Ramada Hotel Chico
- 9:30 am** **Salmon Hatchery Tour**
- 10:30 am** Load bus
- 11:15 am** **Oroville Visitor Center**  
917 Kelly Ridge Rd, Oroville, 95966
- 11:45 am** Lunch at Visitor Center
- 12:15 pm** Load bus
- 12:30 pm** **Tour of Oroville Dam, Viewing Point East**
- 1:45 pm** **Tour Around Paradise City**
- Approx. 3:00** **Bus drops off at Ramada Hotel Chico**

Lake Oroville and Dam- Photo by Kelly M. Grow

## WELCOME MESSAGE



**Boykin Witherspoon III**  
Executive Director, WRPI

Dear Conference Attendees:

This year's conference will explore some of the things that affect the balance of California water for long term sustainability. We will hear an overview of the Oroville Dam spillway construction followed by groundwater sustainability. Educating the public about a sustainable water future is critical, we will hear how we can be communicating with the public and the media. During the afternoon, we will hear all about water quality and water management policy for sustainability as well as learn how fires have affected watersheds. Please make sure you get a chance to stop by all the posters during the breaks!

I am very pleased with the varied scales and examples the conference committee has assembled for our consideration today. Again, thank you for attending the 2019 WRPI Annual Conference.

Sincerely,

Boykin Witherspoon III

### Special thanks to the WRPI Conference Planning Committee:

Jackie Aboud  
Jennifer Alford  
Hakob Avetisyan  
Anita Chaudhry  
Kathleen Firstenberg  
Alan Fuchs  
Mario Giraldo

Sarge Green  
Todd Greene  
Arlene Haffa  
Eric Houk  
Emmanuel Iyieguniwe  
Jingjing Li

Miranda Moore  
Pamela Murawski  
Laura Ramos  
Jennifer Rotnem  
Ellen Suryadi  
Kaomine Vang  
Boykin Witherspoon

# WRPI Presidential Oversight Committee

WRPI appreciates the continued support of the Presidential Oversight Committee.  
Without your support, our work would not be possible. Thank you!



**Tomás D. Morales**  
San Bernardino  
WRPI Presidential Oversight Committee Chair



**Jeffrey D. Armstrong**  
San Luis Obispo



**Joseph I. Castro**  
Fresno



**Soraya M. Coley**  
Pomona



**Dianne F. Harrison**  
Northridge



**Robert S. Nelsen**  
Sacramento



**Lisa Rossbacher**  
Humboldt

## Welcome from CSUSB Chico



**President Gayle E. Hutchinson**  
**California State University, Chico**

President  
530-898-5201  
president@csuchico.edu

An accomplished former professor and dean, California State University, Chico President Gayle E. Hutchinson returned to campus in June 2016, after working for three years as provost and vice president for Academic Affairs at CSU, Channel Islands. She is Chico State's 12th president and the first female president in the University's 129-year history.

Hutchinson built her career in higher education at Chico State, where she was hired in 1990 as a member of the Chico State faculty and taught kinesiology with a specialty in teacher preparation. She served as project director for the Pacific Wellness Center, and the principal investigator and co-director of the Northern CA Physical Education-Health Subject Matter Project. She was elected Academic Senate chair in 2006 after serving as statewide senator from 2003-2005, and she chaired the Diversity Scorecard Committee responsible for drafting the University's Diversity Action Plan. Hutchinson's scholarship and grant writing focused on teacher socialization, social psychology of sport, comprehensive school-based wellness programs, and equity in sport and physical education.

She holds a BS in physical education teacher education from the University of Massachusetts, Amherst; an MA in teaching analysis and curriculum development from Teachers College, Columbia University; and an EdD in teacher education and staff development from University of Massachusetts, Amherst.



**Sarge Green, Water Resources and Policy Initiatives**

Associate Director  
559-278-8653  
sgreen@csufresno.edu

Sarge Green is a water management specialist with the Center for Irrigation Technology at California State University, Fresno, and serves as the Associate Director of WRPI. He has been with the Fresno State for ten years. He is currently Interim Director of the water management programs at Fresno State which includes the Center for Irrigation Technology and the Water and Energy Technology Center which is comprised of a business incubator and a hydraulics testing laboratory.

Prior to joining Fresno State, Sarge was General Manager of Tranquillity Irrigation District in western Fresno County for 18 years, and before that worked 13 years at the California Regional Water Quality Control Board, Central Valley Region.



This image shows a sheet of white paper with a dark blue border. The paper is ruled with horizontal lines, creating a series of writing lines. There are 25 horizontal lines in total, spaced evenly down the page. The lines are thin and black. The paper is otherwise blank, with no text or other markings.



This image shows a blank sheet of lined paper. The paper is white and features 25 horizontal black lines spaced evenly down its length. The lines are contained within a dark blue border that has rounded corners. The overall appearance is that of a standard notebook page or a sheet of stationery.

## GUEST SPEAKERS

## Groundwater Sustainability

### Moderator:



#### **Anita M. Chaudhry , CSU Chico**

Associate Professor of Economics  
a chaudhry@csuchico.edu  
530- 898-5494

Anita M. Chaudhry is Associate Professor of Economics at CSU, Chico. Her research focuses on water and land economics and policy. Recent projects include studying the effects of salinity on crop choice in California's Sacramento-San Joaquin Delta, effects of flood risk on agricultural land restoration in the Sacramento river corridor, and the role of local and state regulations in incentivizing water sales by farmers in California. She completed her PhD in Economics at the University of Wyoming and was awarded the 2014-15 Outstanding Research Mentor Award at CSU, Chico.



#### **Christina Buck, Butte County Water and Resource Conservation**

Assistant Director  
cbuck@buttecounty.net  
530-552-3593

Christina Buck, Assistant Director for Butte County Water and Resource Conservation, leads projects to support local implementation of the Sustainable Groundwater Management Act and development of data and tools to better understand and manage water resources within Butte County. She has a Masters and PhD from UC Davis in Hydrologic Sciences and her interests include groundwater-surface water interaction, water resources management, and groundwater modeling.



#### **Steffen Mehl, CSU Chico**

Professor of Civil Engineering  
smehl@csuchico.edu  
530-898-5456

Steffen is a Professor of Civil Engineering at CSU Chico. His research interests include flow and transport modeling, simulation of surface water-groundwater interactions, parameter estimation and uncertainty analysis, and using modeling tools to better support sustainable management of groundwater resources.



#### **Amelia Vankeuren, CSU Sacramento**

Assistant Professor of Geology  
vankeuren@csus.edu  
916-278-7385

Dr. Amelia Vankeuren is an Assistant Professor of Geology at Sacramento State. She uses fieldwork, lab, and computer modeling techniques to study water-rock reactions controlling groundwater quality. This includes investigating arsenic release in the San Joaquin Valley, quantifying recharge from Sierra Nevada rivers, monitoring groundwater during managed aquifer recharge, and researching geologic carbon dioxide storage in Oman. Dr. Vankeuren earned her degrees from the University of Southern California (B.S. Geological Sciences, B.A. International Relations) and Columbia University (Ph.D. Earth and Environmental Sciences), and is a faculty research

participant with the U.S. Department of Energy at its National Energy Technology Lab.

This image shows a blank sheet of lined paper. The paper has a dark blue border and a white central area. The central area is ruled with horizontal lines, creating a series of rows for writing. There are 20 horizontal lines in total, spaced evenly down the page. The lines are thin and black. The paper is otherwise empty, with no text or markings.



## STUDENT POSTERS

### PRESENTERS:

Bakersfield  
Doney Peters

Chico  
Andres Ramirez, Aurora Diaz, and  
Uriel Dominguez  
Cab Esposito  
James Norris  
Sandrine Matiasek

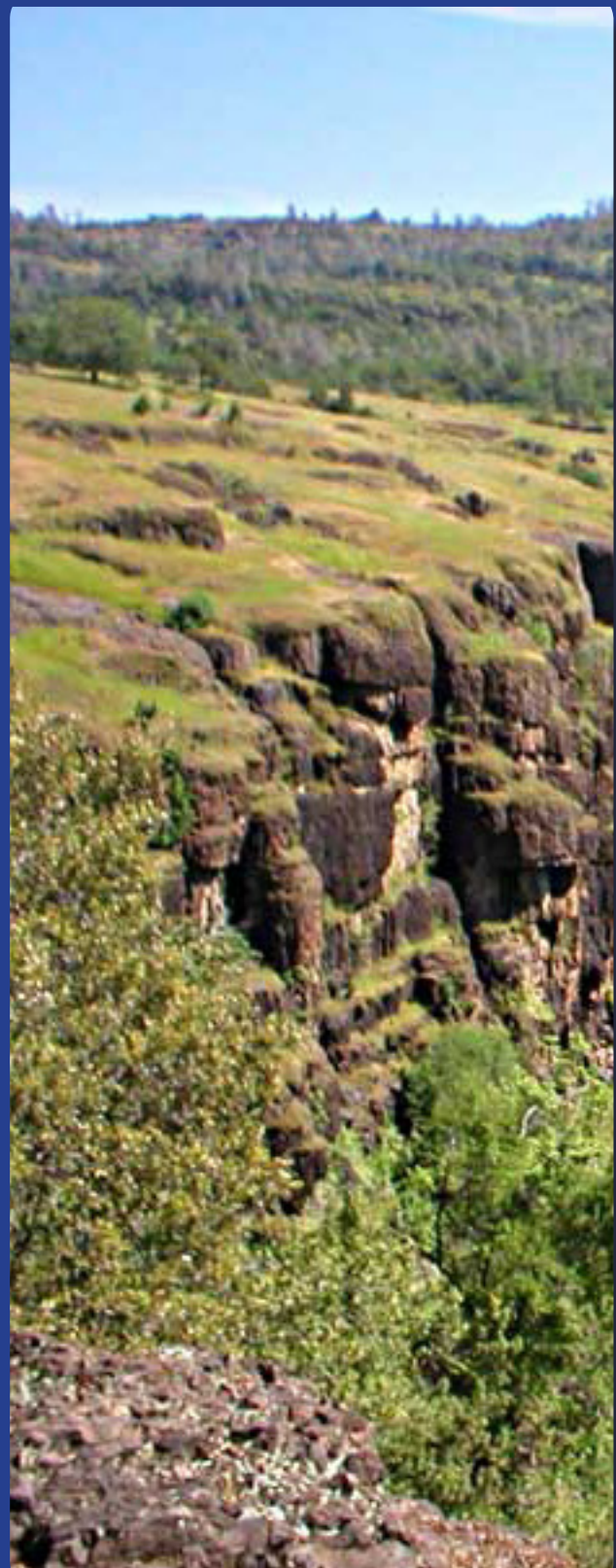
Long Beach  
Marvie Baconawa

Sacramento  
Erik Porse  
John Heltzel  
Khalil Lezzaik

San Bernardino  
Jose Mora

San Diego  
Hannah Carney

San Jose  
Laura Bates



Cliffs and Big Chico Creek in  
Upper Park Photo by Derek  
Curry

## GUEST SPEAKERS

## Water Quality and Policy

### Moderator:



#### **Emmanuel Iyiegbuniwe, CSU San Marcos**

Director of Public Health and Associate Professor in the College of Education  
eiyiegbuniwe@csusm.edu  
760-750-8499

Emmanuel Iyiegbuniwe, PhD, MSPH, MBA is the Director of Public Health and Associate Professor in the College of Education, Health & Human Services at California State University San Marcos (CSUSM). Professor Iyiegbuniwe has over 25 years of academic, administrative, and consulting experiences and currently provides vision, leadership for a new MPH degree program with concentrations in Health Promotion & Education and Global Health. He received both MSPH and PhD degrees in Environmental & Occupational Health Sciences from the University of Illinois at Chicago and MBA from Western Kentucky University. He teaches courses and conducts research in environmental & occupational health science and global health. He currently teaches a number of MPH courses including Environmental Determinants of Health and Community-Based Participatory Research. He has led students on study abroad and international service learning programs to Belize and Vietnam.



#### **Alvar Escriva-Bou, Public Policy Institute of California**

Research Fellow  
escriva@ppic.org  
916-440-1125

Alvar Escriva-Bou is a research fellow at the PPIC Water Policy Center. His research explores integrated water, energy, and environmental resources management, including systems approaches, simulation and optimization of economic-engineering models, and climate change analysis. Previously, he worked as a civil engineer, managing and developing large infrastructure projects for local and regional governments and consulting firms in Spain. He holds a PhD and MS in water and environmental engineering and a BS in civil engineering from the Polytechnic University of Valencia in Spain, as well as an MS in agricultural and resource economics from the University of California, Davis.



#### **Pablo K. Cornejo, CSU Chico**

Assistant Professor of Civil Engineering  
pcornejo-warner@csuchico.edu  
530-898-4628

Dr. Pablo K. Cornejo is an Assistant Professor at California State University, Chico in the Civil Engineering Department. He obtained his Ph.D. in Environmental Engineering at the University of South Florida (USF) and conducted post-doctoral research at the University of Colorado at Boulder. His research focuses on the life cycle environmental impacts of centralized and decentralized wastewater and resource recovery management strategies and sustainability frameworks for water treatment systems. Other research interests include carbon footprint models for water reuse and desalination facilities; the water-energy-food nexus; and water and sanitation issues in the developing world. Dr. Cornejo is passionate about teaching

and interested in increasing the participation of underrepresented students in STEM fields through interactive, project-based sustainability education and interested in increasing the participation of underrepresented students in STEM fields through interactive, project-based sustainability education.



#### **Brian Currier, CSU Sacramento**

Research Engineer  
brian.currier@owp.csus.edu

Brian is a 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. Brian has been involved in stormwater research since 1997 and has performed numerous full-scale BMP evaluations. He serves on the Board of Directors for the California Stormwater Quality Association and co-chairs the Training Subcommittee.



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## GUEST SPEAKERS

## Fire Effects on Watersheds



### **Calli-Jane DeAnda, Butte County Fire and Safety Council**

Executive Director  
530-877-0984

Calli-Jane is a mother, holds a masters degree in Geography from CSU Chico and has been Executive Director of the Butte County Fire Safe Council for the past 13 years. She has a passion for forest health and community wildfire safety. She has worked closely with partners to develop a Community Wildfire Protection Plan Landscape Level Planning Process over the past three years. She enjoys writing and has authored a Children's book titled "Once Upon a Wildfire". She has spent the majority of life in the mountains and foothills of the Sierra Nevada. Her home was within a mile of the Camp Fire in three directions. Wildfire recovery is now a front line task along with forest health, fuels reduction and community education she and her team assist in coordinating.



### **Jamie Kneitel, CSU Sacramento**

Professor in the Department of Biological Sciences  
kneitel@csus.edu  
916-278-3633

Jamie Kneitel is a Professor in the Department of Biological Sciences at Sacramento State University. His research focuses on understanding the consequences of environmental variation on species diversity and ecosystem function in seasonal wetlands, including vernal pools and rock pools. This research also encompasses food webs, metacommunities, spatiotemporal linkages, eutrophication, species invasions, and disturbance ecology. This research has been supported by

many funding agencies, including the National Science Foundation and has resulted in dozens of articles. He received a Fulbright Scholar Award and spent 2017-18 conducting research and teaching in Israel and Morocco.



### **Don Hankins, CSU Chico**

Professor in the Department of Geography and Planning  
dhankins@csuchico.edu  
530-898-4104

Don Hankins is a Professor in the Department of Geography and Planning at California State University, Chico and Field Director for the California State University Chico Ecological Reserves. His areas of expertise are pyrogeography, water resources, and conservation. Combining his academic and cultural interests as a Miwko? traditional cultural practitioner, he is particularly interested in the application of Indigenous land stewardship practices as a keystone process to aid in conservation and management of resources. He is currently engaged in wildland fire research with an emphasis on

landscape scale, prescribed and cultural burns; water research focused on ecocultural approaches to place with an emphasis on the Bay-Delta and tribal water rights; and, related service projects. Don has been involved in various aspects of land management and conservation for a variety of organizations and agencies including federal and Indigenous entities in North America and Australia. More about his work can be found at <https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=26710>.



### **Jackson Webster, CSU Chico**

Assistant Professor of Civil Engineering  
jwebster13@csuchico.edu  
530-258-7549

Dr. Webster's research is in the areas of water quality and contaminant fate and transport. Most of his work focuses on natural systems and characterizing fundamental processes that govern contaminant behavior.

His areas of expertise are:

Geochemical processes governing water quality and contaminant transport

Effects of wildfire on water quality and drinking water treatment

Environmental sample collection and laboratory analysis of inorganic and organic contaminants

Engineering design: water and wastewater treatment processes, pumping, pipelines, open channels, surface drainage, well installation

This image shows a blank sheet of lined paper. The paper has a white background with horizontal ruling lines spaced evenly down the page. The entire sheet is framed by a thick, dark blue border. There are small tick marks at the corners of the page, likely for alignment or printing purposes. The lines are consistent in length and spacing throughout the page.





# ATTENDEES

## Joe Adams

Student

Sonoma State University  
adamsj@sonoma.edu

I am from the small town of Placerville, California, which is tucked in the foothills at the base of the Sierra Nevada Mountains. I have spent the last four years at Sonoma State University studying Earth Science, and will be graduating this May with a Bachelors in Earth Science and a minor in paleontology. Growing up so close to the Sierras, I have always been interested in watersheds and what it takes to properly manage them. This is my second semester taking part in Sonoma State's water research training course. I plan on going into this field after I graduate and the experience gained from this course will help me to succeed in this career.

## Aurora Alexander

Student

Sonoma State University  
alexanau@sonoma.edu

Aurora Alexander is currently a senior at Sonoma State. She is originally from Hollister CA and is pursuing a Bachelor of Arts degree in Geography and Environmental Planning with a concentration in Environmental Systems. She is interested in hydrology, and water quality. Aurora has an AA in Water Resources Management, and an AA in Communication Studies, as well as my California Treatment Operator Certification.

## Jennifer Alford

Faculty

California State University, San Bernardino  
910-547-4245  
jennifer.alford@csusb.edu

Dr. Jennifer B. Alford is an Assistant Professor in the Department of Geography and Environmental Studies at CSUSB. She grew up along the North Carolina coast where she developed a passion for conserving the unique natural resources and ecosystems of the Southeastern United States. Prior to joining the faculty at CSUSB, her endeavors included teaching at small liberal arts colleges and large regional universities, developing public-private partnerships, and working with stakeholders to implement comprehensive environmental programs and policies. In her free time, Dr. Alford enjoys spending time outdoors with her family and traveling domestically and abroad.

## Janet Arroyo

Student

California State Polytechnic University, Pomona  
jarroyo@cpp.edu

Janet Arroyo is studying Source(s) of Arsenic and Bromide in waters at Dos Palmas Preserve, Salton Sea, California. Department of Geological Sciences, California State University, Pomona. She is a current masters student with an emphasis in hydrogeology.

## Marvie Baconawa

Student

California State University, Long Beach  
bmarvbee@gmail.com

Marvie Baconawa completed a BS in Civil Engineering in Fall 2018 and is currently working as Civil Engineering Assistant at Long Beach Water Department, City of Long Beach. Marvie's research interest is different areas of water resource management.

## Leslie Barajas

Student

San Diego State University  
lbarajas2@sdsu.edu

Leslie Barajas is a senior public administration student at San Diego State University - Imperial Valley Campus. As a PA student I am interested in

various topics, some of which include public health, economic development, and the energy sector. I am currently about to become an intern for the Sustainable Energy Center (SEC) which is located in Brawley, California. The SEC is focused on promoting research for renewable energy methods, education, and training.

## Laura Bates

Student

San José State University  
laurampeter@gmail.com

Laura Bates is a Master of Science candidate at San Jose State University in the Department of Environmental Studies. Her thesis research assesses the effectiveness of select Green Stormwater Infrastructure (GSI) in Santa Clara County, CA, using infiltration tests and site observations. Her work will help to make recommendations for local municipal and facilities staff on design and maintenance practices to support long-term GSI performance at treating stormwater runoff. She is also finishing up an internship with the Santa Clara Valley Water District. Upon graduation, Laura plans to continue her education for a Ph.D. and ultimately a career in academia.

## Madeline Blua

Student

California State University, San Bernardino  
006150361@coyote.csub.edu

Madeline Blua is currently completing a Master's degree in Environmental Science at California State University San Bernardino. Her thesis work is comparing edaphic factors with invasive plant distribution in California's shrubland ecosystem, which has given her experience with vegetation surveys, soil chemistry analysis, and mineralogy analysis. She is also involved in several hydrology and water quality research projects. During these projects, she has become familiar with regulations and water quality analysis. Additionally, an internship in which she is involved has allowed her to collaborate with water agencies and organizations to find solutions to documented water needs in disadvantaged communities of the Santa Ana Watershed. Madeline also work for the Forest Service, which allowed her the experience of collecting and analyzing depositional pollution samples—a position that requires both laboratory and field work. Overall, Madeline's education and experiences has given her an all-embracing understanding of natural processes and regulatory agencies.

## Amanda Brewer

Student

Sonoma State University  
brewera@sonoma.edu

Amanda Brewer is working on her major, Geography Environmental and Planning with a concentration in environmental systems. At Sonoma State University, she has participated in research regarding the Laguna of Santa Rosa with the overgrowth of Ludwigia. She has an AA in Water Resources Management. She has certificates through the California Water Resource Control Board in Water Treatment Grade and her Laboratory Analysis Grade 1 through the American Water Works Association.

## Alison Bridger

Faculty

San José State University  
408-924-5206  
alison.bridger@sjsu.edu

Alison Bridger is a Professor & Chair of Meteorology & Climate Science at SJSU. She is working on accurate simulations of rain shadows in the Bay Area.

## Justin Brown

Student

Sonoma State University  
browjust@sonoma.edu

Justin Brown lives in Sebastopol located on the west side of Sonoma County. He is in his senior semester at Sonoma State University majoring in Conservation Restoration and Geography. He was just accepted to San Francisco State University for a Masters in Geography and Environmental

Planning. Justin is currently working on tribal water policy and has been apart of water research at Sonoma State University for the last two semesters.

#### **Hannah Carney**

Student  
San Diego State University  
hcarney09@gmail.com

Hannah Carney is an undergraduate student studying hydrogeology at San Diego State University. Her research interests are using stable isotopes of hydrogen and oxygen in surface and groundwater flows in the San Diego Region. In 2018, she was a recipient of the SDSU Undergraduate Summer Fellowship.

#### **Gabriela Castro**

Student  
California State University, Bakersfield  
gcastro26@csu.edu

Gabriela Castro is currently a freshman at CSUB working towards a biology degree. The research she is working on is based on trying to purify oil produced water using micro-algae. Water is a necessity for all life forms, thus water conservation is a very important concern to her.

#### **Jaskaran Chahal**

Student  
California State University, Bakersfield  
jchahal1@csu.edu

Jaskaran Chahal is currently a senior, majoring in computer science at California State University Bakersfield. His area of research is in autonomous vehicles. He is working with Dr Chengwei Lei on a project to prevent wildfires using greedy algorithm approach, and implementing it using a smart RC car featuring temperature, humidity and vision modules. Jaskaran plans to attend graduate school after finishing his undergraduate degree. He is also working as an ISA (Instructor Student Assistant) assisting Dr Vincent on the Artificial Intelligence class.

#### **Anita Chaudhry**

Faculty  
California State University, Chico  
530-898-5494  
achaudhry@csuchico.edu

Anita M. Chaudhry is Associate Professor of Economics at CSU, Chico. Her research focuses on water and land economics and policy. Recent projects include studying the effects of salinity on crop choice in California's Sacramento-San Joaquin Delta, effects of flood risk on agricultural land restoration in the Sacramento river corridor, and the role of local and state regulations in incentivizing water sales by farmers in California. She completed her PhD in Economics at the University of Wyoming and was awarded the 2014-15 Outstanding Research Mentor Award at CSU, Chico.

#### **Javier Contreras**

Student  
California State University, Bakersfield  
jcontreras47@csu.edu

Javier Contreras is a sophomore majoring in Biology at the California State University of Bakersfield. His area of expertise is the study of diatoms, a species-diverse group of eukaryotic unicellular algae, and their ability to assist in the purification of produced water through the usage of heavy metals for growth.

#### **Pablo Cornejo**

Faculty  
California State University, Chico  
530-898-4628  
pcornejo-warner@csuchico.edu

Dr. Pablo K. Cornejo is an Assistant Professor at the California State University, Chico in the Civil Engineering Department. He obtained his Ph.D. in Environmental Engineering at the University of South Florida (USF) and conducted post-doctoral research at the University of Colorado at Boulder. His research focuses on the life cycle environmental impacts of centralized and decentralized wastewater and resource recovery management strategies and sustainability frameworks for water treatment systems.

#### **Brian Currier**

Staff  
California State University, Sacramento  
brian.currier@owp.csus.edu

Brian is a 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. Brian has been involved in stormwater research since 1997 and has performed numerous full-scale BMP evaluations. He serves on the Board of Directors for the California Stormwater Quality Association and co-chairs the Training Subcommittee.

#### **Eric Dearden**

Student  
California State University, Chico  
ericdearden@gmail.com

Eric Dearden is a senior at Chico State conducting research on the efficacy of stormwater biofiltration. He is funded by a WRPI internship to establish a stream gauging station that will serve as a natural flow point to compare to runoff from urban environments.

#### **Aurora Diaz**

Student  
California State University, Chico  
auroradiaz01@gmail.com  
Student Researcher part of CSU Chico Research Foundation, Civil Engineering

#### **Alvar Escriva-Bou**

Research Fellow  
Public Policy Institute of California  
escriva@ppic.org

Alvar Escriva-Bou is a research fellow at the PPIC Water Policy Center. His research explores integrated water, energy, and environmental resources management, including systems approaches, simulation and optimization of economic-engineering models, and climate change analysis. Previously, he worked as a civil engineer, managing and developing large infrastructure projects for local and regional governments and consulting firms in Spain. He holds a PhD and MS in water and environmental engineering and a BS in civil engineering from the Polytechnic University of Valencia in Spain, as well as an MS in agricultural and resource economics from the UC Davis.

#### **Cab Esposito**

Student  
California State University, Chico  
cmesposito@mail.csuchico.edu

Cab Esposito is a graduate student at Chico State University. Before coming back to graduate school, he worked as a consulting geologist in the field of mine remediation. His research is focused on coupling groundwater models with future stressors, specifically those related to land use change, within the California Central Valley.

**Kathleen Firstenberg**

Staff

California State University, San Bernardino  
kfirstenberg@csusb.edu

Kathleen Firstenberg is a Program Manager for WRPI. She graduated from California State University, San Bernardino with a BA in psychology and is currently pursuing her Master of Public Administration degree at CSUSB. She has worked in social services and higher education and also operates a freelance editing and writing business.

**Tamara Fukumoto**

Staff

California State University, San Bernardino

Tamra Fukumoto is a Program Manager with Water Resources and Policy Initiatives (WRPI) in San Bernardino. She received her bachelor's degree in Civil Engineering from California Polytechnic University, Pomona. She started as an intern with WRPI gaining exposure to projects involving disadvantaged communities (DACs). Today she continues to be involved with the State Water Board Proposition 1 Technical Assistance Program working with CSU engineering teams on drinking water and wastewater infrastructure improvement projects, serving the DACs.

**Philip Garone**

Faculty

California State University, Stanislaus  
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Philip Garone is Professor and Chair of History at California State University, Stanislaus. He teaches environmental history and his research focuses on California water issues. His book, *The Fall and Rise of the Wetlands of California's Great Central Valley* (University of California Press, 2011), analyzes the ecological transformation of the Central Valley from wetlands, riparian forests, and native grasslands to agriculture, as well as efforts to restore part of the valley's natural habitat. He is working on a book project on the ecological and human history of the terminal lakes of the Great Basin of the American West.

**Jeroen Gillard**

Faculty

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jgillard@csub.edu Dr.

Jeroen Gillard is an Assistant Professor at the Biology Department of CSU Bakersfield. He specializes in the cellular physiology of micro-algae, mainly focusing on the molecular regulation of diatom life history dynamics, and the application of micro-algae for water remediation and bio-fuel production purposes.

**Sarge Green**

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Sarge Green is a water management specialist with the Center for Irrigation Technology at California State University, Fresno. He has been with the campus for ten years. He is currently Interim Director of the water management programs at Fresno State which includes the Center for Irrigation Technology and the Water and Energy Technology Center which is comprised of a business incubator and a hydraulics testing laboratory. Prior to joining Fresno State, Sarge was General Manager of Tranquillity Irrigation District in western Fresno County for 18 years, and before that worked 13 years at the California Regional Water Quality Control Board, Central Valley Region.

**Todd Greene**

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Dr. Todd Greene is a professor at California State University, Chico, in the Department of Geological and Environmental Sciences. He specializes in working with core, outcrop, shallow 3-D seismic data, and modern analogs to piece together depositional facies models for volcanic-derived deposits, shallow marine clastic sequences, as well as deep-water sediment gravity flows.

**Nicole Grimm**

Student

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Nicole Grimm is a first year MS Environmental Geoscience student at CSU East Bay. She is studying stable isotopes of groundwater to calibrate ages with an Integrated Water Flow Model for Butte County and the Sustainable Groundwater Management Act.

**Jackie Guilford**

Faculty

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Jackie Guilford and her Water Research Methods students at Sonoma State University have been collaborating with the Sonoma County Water Agency for three years studying the levels of nitrogen and phosphorus in the water and sediment in the Laguna de Santa Rosa and its tributaries.

**Uriel Guzman**

Student

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Uriel Guzman's interest is in Civil Engineering which stemmed from a passion in math and science. During his time at CSU, Chico, he grew a passion for water related issues. He believes it is important because water scarcity will be a big issue. As a Civil Engineer, Uriel wants to contribute to the solution.

**Don Hankins**

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Don Hankins is Professor of Geography and Planning at CSU Chico and Field Director for the CSU Chico Ecological Reserves. His areas of expertise are pyrogeography, water resources, conservation, and Indigenous land stewardship practices to aid in conservation and management of resources. His research includes wildland fire with an emphasis on landscape scale, prescribed and cultural burns; water research including ecocultural knowledge of the Bay-Delta, tribal water rights, and meadows. Don's work various aspects of land management and conservation with a variety of organizations and agencies including Indigenous entities in North America and Australia. For more information see <https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=26710>.

**Lawson Hardrick**

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Lawson Hardrick would like to be at the forefront of both public and private organizations. He would like to combing both of those passions through work with water related organizations.



**Juan Herrera**

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Juan Herrera currently serves as the Manager for University Relations & ADvocacy for the CSU Chancellor's Office of Advocacy and State Relations. In this role, he serves as the legislative liaison with the 23 CSU campuses and develops advocacy and communication strategies to support the CSU's efforts in Sacramento. Prior to joining the CSU Chancellor's Office, Juan was at CSU San Bernardino as the Assistant Director of Government and Community Relations.

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Dr. Eric Houk is a Professor of Agricultural and Resource Economics and serves as the Program Lead in Agricultural Business at CSU, Chico. His research focuses on issues relating to water and agriculture which includes: economic impacts of water transfers and groundwater decline, the effects of irrigation induced waterlogging and soil salinization, and the contribution of agriculture to the economy. He has supported his research by securing numerous grants and has presented his research at more than 50 professional presentations both nationally and internationally.

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Professor Emmanuel Iyiegboniwe is the Public Health Director and Associate Professor at California State University San Marcos. He has 27 years of academic, administrative, and consulting experience and currently provides vision, leadership for the MPH program (Health Promotion & Education and Global Health concentrations). He received MSPH and PhD in Environmental & Occupational Health Sciences from University of Illinois at Chicago and MBA from Western Kentucky University. He teaches /conducts research in environmental/global health and community-based participatory research, is a Thomas Jefferson scholar and fellow of American Industrial Hygiene Association, CDC's Environmental Public Health Leadership Institute, and Japan Studies Institute.

**Sara Johnson**

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Sara Johnson is an MA Candidate of Geography, GIS Certificate

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Ida Jones is a Professor of Business Law in the Craig School of Business. Her research and teaching includes California water laws, the Sustainable Groundwater Management Act (SGMA) and environmental justice as it relates to access to water. Ida requires students to do research on water issues in California and to discuss water laws and policy in the context of science of water. Along with her colleagues, she recently published a law review article on California water laws and SGMA.

**John Keyantash**

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John Keyantash is an Associate Professor in the Department of Earth Science and Geography, with specialization in hydroclimatology. He conducts research with his USDA Water Resources intern to evaluate streamgauging networks using GIS, and he studies the hydrographic settings of large waterfalls around the world. He is also interested in sustainable water use in California.

**Jamie Kneitel**

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Jamie Kneitel is a Professor in the Department of Biological Sciences at Sacramento State University. His research focuses on understanding the consequences of environmental variation on species diversity and ecosystem function in seasonal wetlands, including vernal pools and rock pools. This research also encompasses food webs, metacommunities, spatiotemporal linkages, eutrophication, species invasions, and disturbance ecology. This research has been supported by many funding agencies, including the National Science Foundation and has resulted in dozens of articles. He received a Fulbright Scholar Award and spent 2017-18 conducting research and teaching in Israel and Morocco.

**Sudarshan Kurwadkar**

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Dr. Sudarshan Kurwadkar is an Associate Professor in the Department of Civil and Environmental Engineering at California State University, Fullerton (CSUF). Before joining CSUF, he worked as an Assistant Professor at the Tarleton State University (Member of Texas A&M University System). His non-academic employment includes working as an Environmental Engineer with the Missouri Department of Natural Resources (2006-2009). He is a Board Certified Environmental Engineer and a licensed Professional Engineer in the states of Texas, Ohio, and Missouri. His major research focus is studying the fate and transport of emerging contaminant of concern particularly the pharmaceuticals and personal care products. He is currently studying the fate and persistence of the widely used neonicotinoid insecticides. He is an active researcher and maintains a cross-collaborative research network. Besides teaching and research, he enjoys outdoor activities such as kayaking and fishing.

**Khalil Lezzaik**

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Khalil Lezzaik is a Water Research Engineer at OWP at Sacramento State. He is a specialist on using remote sensing and integrated approaches for understanding and modeling groundwater scarcity and risk conditions in the Middle East and North Africa (MENA) region. Currently, his work focuses on providing technical assistance on groundwater and drinking water projects in disadvantaged communities in California. He also runs decision-support systems for water infrastructure security, namely dam breach flood modeling and mapping. Khalil has published on water insecurity issues in the MENA region in Hydrogeology Journal and the Journal of Science of the Total Environment.

**Joshua Maher**

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Josh is the Assistant Director for Government and Community Relations at Cal Poly Pomona. He holds a Masters in business administration from California Baptist University in Riverside.

He has extensive experience in working with municipal governments on a myriad of policy issues, including sustainability, active transportation and homelessness.

**Sandrine Matiasek**

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Dr. Sandrine Matiasek is an Assistant Professor in the Department of Geological and Environmental Sciences at California State University, Chico. She is an aqueous biogeochemist studying how land use impacts the chemical composition of terrestrial waters. She mentors undergraduate and graduate students on projects ranging from the effects of wildfires and urban land uses on water quality to contamination from historic mining and industrial practices. Her current EPA People, Prosperity, and the Planet (P3) grant focuses on identifying key design criteria for building high-performing and resilient stormwater biofiltration systems.

**Steffen Mehl**

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Steffen is a Professor of Civil Engineering at CSU Chico. His research interests include flow and transport modeling, simulation of surface water-groundwater interactions, parameter estimation and uncertainty analysis, and using modeling tools to better support sustainable management of groundwater resources.

**Miranda Moore**

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Miranda Moore is the WRPI Administrative Coordinator. She has been with the organization since November 2018 and is enjoying learning more about water related issues and solutions in California. Miranda holds a Bachelor of Arts in communication and her background is in administration and hospitality as well as event planning. She plans to pursue her MBA in the near future.

**Jose Mora**

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Jose Mora is a graduate student at CSU San Bernardino pursuing a masters degree in Earth and Environmental Science. Mr. Mora is currently working with Dr. Jennifer Alford to assess surface water resource quality in both the Mojave and Santa Ana River Basins. His thesis research is focused on the spatiotemporal characteristics of surface water quality in Waterman Creek, a headwater stream of the Santa Ana Watershed. In addition to his academic pursuits he is an engineering intern for Cucamonga Valley Water District and an intern for the CSU Water Resources and Policy Initiative.

**Ali Moradi**

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Ali Moradi is currently an assistant professor at department of Environmental Resources Engineering in Humboldt State University. Ali received a PhD degree from Colorado School of Mines. His research is aimed at increasing understanding of novel methods for improving surface/groundwater quality, renewable energy-powered plant irrigation technique for enhancing green-water consumption, atmospheric water vapor harvesting and sustainable renewable energy storage in unsaturated soil/groundwater. He has ten peer-review journal papers and have received several awards including National Association of Energy Engineering award (2015), Edna Bailey Sussman Foundation Environmental Fellowship and April 2016 National Institutes of Health Superfund Research Program hot publication award.

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Dr. Jean Moran is a professor in the Department of Earth and Environmental Science at CSU East Bay. Her research focuses on using naturally-occurring and introduced isotopes to examine geochemical and transport processes in groundwater. Over the last 20 years, she has led numerous projects on groundwater vulnerability, fate and transport of nitrate, and groundwater transport near artificial recharge areas under the Groundwater Ambient Monitoring and Assessment project sponsored by the California State Water Resources Control Board. She has been an author on more than 50 peer-reviewed publications and was the Outstanding Researcher (tenured) at CSU East Bay in 2016.

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Melissa Moreno is a Program Manager for WRPI at CSUSB. She graduated from Cal Poly Pomona in 2018 with a bachelors in Civil Engineering.

**Kayla Nelson**

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Kayla Nelson is from Santa Rosa which is the largest city north of San Francisco in the heart of Sonoma County. She is currently finishing her senior year and will be graduating in Spring 2019. She is studying environmental studies with a concentration in urban planning. Topics such as water resource management and planning are her main interests. Throughout her experience at Sonoma State University she has participated in research regarding the Laguna de Santa Rosa and the overgrowth of Ludwigia. She is also participating in the NASA funded Soundscapes to landscapes research project that explores how climate change impacts species diversity in connection to vegetative land cover.

**Joel Osuna**

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Joel Osuna is a project manager at the Center for Geospatial Science and Technology (CGST) at California State University, Northridge (CSUN). He is currently a project manager helping to lead the work done on National Hydrography Dataset (NHD) update projects and NHD sub-stewardship in California, Arizona, and New Mexico. His previous work has primarily

focused on using geographic information systems (GIS) for water resource management, including topics such as historical ecology modeling, wetland and surface water mapping, and water quality mapping.

#### **Kyle Page**

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Kyle Page is from Dublin, California and raised in Thousand Oaks, California. He has been in the outdoors his whole life from Boy Scouts to camping with his family. Those experience peaked his interest in an Environmental Science major at Sonoma State University. He loves being around water and enjoys fishing and kayaking. He has worked on projects such as monitoring Coho Salmon survival in the Russian River and monitoring invasive species' habitats in streams. Doing water related research has always been a passion of his.

#### **Doney Peters**

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Doney Peters is a student researcher his area of study is autonomous air quality sensing via Quadcopter. His Research Advisor is Dr. Chengwei Lei.

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Erik Porse is a research engineer in the Office of Water Programs at Sacramento State and a visiting research at UCLA's Institute of the Environment and Sustainability. His research focuses on systems analysis for urban and environmental management.

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Laura Ramos is a Program Manager for the Water, Energy, and Technology (WET) Center at Fresno State. She is responsible for the completion of deliverables of several grants, monitoring budgets, and event planning. She is also the lead event planning and communications manager for the Water Centers at Fresno State.

#### **Mariah Rivera**

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Mariah Rivera is a third year geography student at Sonoma State University, California with a concentration in the biophysical environment. She is on the regional conference team for a national non-profit organization and go to leadership conferences around the United States. She is passionate about water management and climate change and sustainable measures in California.

#### **Jennifer Rotnem**

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Jennifer Rotnem is the Managing Director for the Center for Water and the Environment (CWE) at CSU, Chico. CWE's mission is to cultivate collaborative research on water, energy, and the environment for a multidisciplinary perspective on complex issues. Jennifer's role is to oversee the programs, administration and management of CWE; support faculty and student research; and partner the campus with the community on water, energy and environmental issues.

#### **Martha Sanchez**

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Martha Sanchez is a senior at San Diego State University, Imperial Valley Campus. She is a public administration major and is currently an intern for the United States Department of Agriculture.

#### **Rebecca Sanchez**

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Rebecca Sanchez is a student attending San Diego State University- Imperial Valley campus and is a senior. Her major is Public Administration. She is a student intern at USDA-NRCS. USDA-NRCS informs people on how to help the land by providing loans to farmers. She has learned a lot during her internship about water and how to assist farmers. She is very enthusiastic to learn about water resources and policy initiatives.

#### **Balaji Seth**

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Balaji Seth is a faculty specializing in Agricultural Engineering research in Precision Agriculture and Site Specific Crop/Irrigation Management. He is the program director of Agricultural Systems Management program at Jordan College of Agricultural Sciences and Technology at Fresno State. He is the past chairs of the American Society of Agricultural and Biological Engineers of California/Nevada section.

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Maryam Shafahi received her PhD in Mechanical Engineering. She is currently an Associate Professor in Cal Poly, Pomona. Her field of interests includes water conservation, aquaponics, sustainability and heat transfer.

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Russell Shapiro is a Professor of Geology and Department Chair.

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Dr. Liaosha Song is an assistant professor at Department of Geological Sciences, CSU Bakersfield. He received his Ph.D. degree in geology from West Virginia University in 2018. Prior to joining CSU Bakersfield, he worked at EQT Corporation and US-China Clean Energy Research Center. His research focuses on petrophysics, reservoir characterization, carbon sequestration, and unconventional reservoirs.

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Jailene Sotelo is a senior at Sonoma state, She is originally from Hollister, CA and currently pursuing a Bachelor of sciences degree in Environmental Studies and Planning with a concentration in Energy Management and Design. She is interested in ways of providing energy with water and water quality. In addition to improving the other forms of renewable energy in order to supply the growing demand. She has previously worked on testing nutrient levels and taking water depths for the Laguna de Santa Rosa, as well as taking core saplings and analyzing data.

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**Greg Thomas**

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Greg Thomas is the General Manager for Rincon del Diablo Municipal Water District in the greater Escondido area. Greg's background includes engineering, construction, operations and maintenance, and serving at all levels in the federal, private and municipal sectors. Greg has a B.S. degree in Mechanical Engineering Technology from Purdue University and M.A. degrees in Business and Management from Webster University. He serves on the Advisory board for the Certificate of Water Resources Management and Leadership program at CSUSM and is an adjunct professor teaching Leadership in Water Management for the same program.

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Ms. Rachael Urbano of Cal State Dominguez Hills is soon to graduate with a Bachelor's degree in Earth Science. Fiercely committed to the well being of forests, coastlines and public lands. Areas of expertise are focused on public service and conservation, having worked with the USFS as a ranger, City of Carson doing GIS in public works, and water conservation with service providers in Los Angeles.

**Kaomine Vang**

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Dr. Kaomine Vang is the Hydraulics Laboratory Manager and Research Project Manager for the Center for Irrigation Technology (CIT) at California State University, Fresno. His research includes the application of Soil Moisture Sensor technology, nitrate management, and monitoring in vegetables. Additionally, Dr. Vang coordinates education seminars and workshops, which focus on new irrigation and water technology. Dr. Vang's interest include but are not limited to new innovative technology methodologies in irrigation.

**Amelia Vankeuren**

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Dr. Amelia Vankeuren is an Assistant Professor of Geology at CSU Sacramento with a specialty in groundwater geochemistry. Dr. Vankeuren and her team of students are working to quantify and improve recharge of California groundwater. This includes measuring natural recharge from Sierra Nevada rivers using myriad natural tracers, as well as monitoring water quality during managed aquifer recharge through off-season irrigation of vineyards. Dr. Vankeuren is also investigating carbon dioxide mineralization converting carbon dioxide gas into rocks for permanent storage to combat climate change – in the Oman ophiolite.

**Brice Vanness**

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Brice Vanness is an undergraduate biochemistry student working on developing a method for measuring hydrocarbons in urban storm runoff using gas chromatography.

**Lydia Vass**

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Lydia Vass is from Sonora which is located in the foothills of Tuolumne county. She is finishing up her senior year semester and will be graduating this spring. She is studying is Environmental Studies and Planning with a concentration in energy management and design. Topics such as sources of renewable energy and waste water management projects are her main interests. Throughout her experience at Sonoma State she has contributed to research that examined the watershed at the Fairfield Osborn Preserve and Copeland creek. Lydia has also participated in research regarding the Laguna of Santa Rosa and the overgrowth of Ludwigia.

**Jackson Webster**

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Dr. Jackson Webster is an Assistant Professor in the Civil Engineering department at Chico State. His research is in the areas of water quality and contaminant fate and transport. Most of his work focuses on natural systems and characterizing fundamental processes that govern contaminant behavior. Specific areas of interest include the effects of wildfire on water quality, mercury cycling in forest soils and reservoir sediments, and natural organic matter characterization.

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Mr. Witherspoon's experience includes the administration of all aspects of the management for the Water Resources and Policy Initiatives including: strategic planning and budgeting; promotion with community, universities, and industry; liaison with advisory boards; program management; development and oversight of contracts and grants; hiring and supervision of staff; and training and publications efforts. Additionally, Mr. Witherspoon is a focused problem solver with international project management experience developing Geographic Information System (GIS) applications and software for sustainable landscape architectural planning and design. Mr. Witherspoon's professional experience includes managing interdisciplinary teams of designers, scientists, and software developers creating innovative and sustainable land use and land planning solutions with an emphasis on programmatic suitability and capability analysis. Mr. Witherspoon is dedicated to ingraining GIS and geographic information science into the teaching, legal, and regulatory frameworks that direct development and use of the Earth's resources.

**Gabrielle Wyatt**

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Gabrielle Wyatt is a California State University, Chico biology student working on her undergraduate degree. As a student researcher, she is investigating the role of plants in heavy metal removal from stormwater runoff through biofiltration systems.

**Irina Zhuravskaya**

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Irina Zhuravskaya is a student at Sonoma State University, majoring in environmental studies. Having taken courses on environmental policy, history and water and land resource law has instilled a bigger sense of curiosity within her to pursue the field of water conservation. With her passion for education and research she hopes she will become a great asset to work with a group that wants to protect aquatic ecosystems and implement sustainable water use practices within the community, more specifically disadvantaged communities.



Camp Fire- Photo by Justin Sullivan



Oroville Dam- Getty Images



Calif. Groundwater Supply  
photo by Chris Austin



Paradise, California/ Camp Fire  
photo by LiPo Ching News Group

# CSU Chico



## California State University, Chico

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