

ISSUE 5
2023/24

CLEAN WATER

THE OFFICIAL PUBLICATION OF THE CALIFORNIA WATER ENVIRONMENT ASSOCIATION

MISSION: POSSIBLE

A SUSTAINABLE WATER FUTURE AGAINST ALL ODDS

AC24 CONFERENCE AND EXPO | APRIL 9 - 12 | SACRAMENTO

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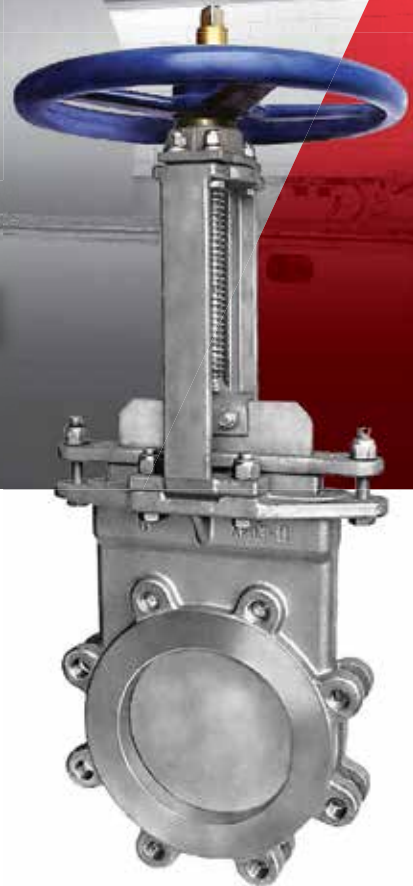
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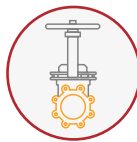
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Photo by Andrea Solis

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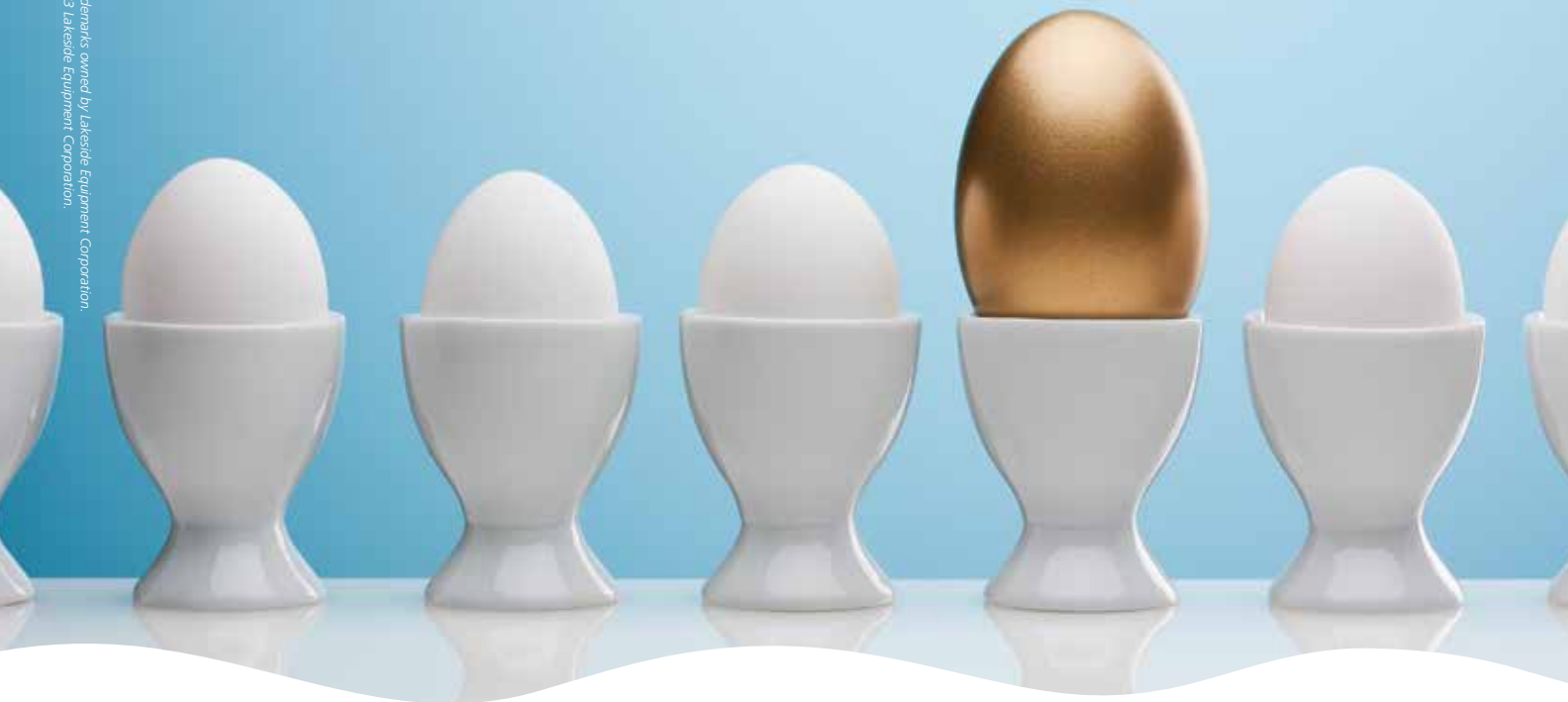
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A SUSTAINABLE WATER FUTURE AGAINST ALL ODDS



Share your CWEA story to help recruit the next generation

BY CHUCK GREELY, DUEK ● CWEA PRESIDENT



What's your CWEA story?

It is a question that many of our members and volunteer leaders, including myself, are

frequently asked. Sometimes, the answer is a passion that developed as a youth or young adult.

Sometimes, people are enticed by the prospect of free food and drinks, while at other times, they are driven by a desire to expand their network, acquire technical or leadership skills, or simply make connections if they are new to the industry or region.

Whatever your story is, we are delighted to have you as a member and excited for the future. As for my own CWEA story, I'd be delighted to share it with you. Come find me during the Annual Conference, and I'll fill you in on the details (it's a fun story).

FUTURE WORKFORCE

You might be asking why your CWEA story is important. It seems like we've heard about the upcoming retirement wave, also known as the silver tsunami, for many years, but without any clear evidence it was

affecting the profession. While it may have taken some time to materialize, the retirement wave has undeniably accelerated since the end of the pandemic. As the pandemic subsided and the economy stabilized, many water pros found the opportune moment to retire, resulting in a wave of departures. Additionally, the retirement age of water and wastewater professionals is generally higher than the national average, making our sector particularly susceptible to a rapid increase in retirements as older workers exit the field.



AC22 attendees, including CWEA Board member Garry Parker in the center. Photo by Taras Garcia.

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By 2030, almost one-third of the water sector workforce will be eligible for retirement. Recognizing access to safe drinking water and essential wastewater treatment could be at risk without a stable workforce, the Environmental Protection Agency, through the American Water Infrastructure Act of 2018, developed a grant program to assist with the development and utilization of innovating activities related to workforce development and career opportunities in the water sector. The 'Innovative Water Infrastructure Workforce Development Grant Program' is an important investment for the health of our communities.

What can CWEA, and you as an individual, do to create new water stories for the next generation? Collectively, we can play a pivotal role in attracting and recruiting the next generation, fostering enthusiasm and engagement among younger and emerging professionals

by encouraging participation in CWEA's Annual Conference.

INFORMAL MENTORS

While CWEA has established a formal mentoring program with excellent feedback, nothing prevents you from being an informal mentor. Why not invite a student, a new co-worker, or maybe even someone you know who is considering a career change to AC24? You can serve as their informal mentor, guiding them through the nuances of the industry and sharing your knowledge and experiences. There's an added benefit; we always have a great time at CWEA conferences! At AC24, we have everything you need for skill development, including 88 top-notch educational sessions and a trade show exhibiting the latest equipment and technological advancements. We will also be showcasing and celebrating the success stories of individuals and institutions who have advanced the industry.

PROMOTING WATER CAREERS

Can't attend the AC24, or maybe not comfortable being a mentor? Take advantage of social media to connect with, engage, and inspire the next generation. Share your water stories and the insights you gather on a daily basis from your fellow passionate water workers and spread the news on social media. Use the hashtag **#WorkForWater** and you'll join others proudly promoting the water profession. Follow CWEA's Facebook, Instagram, TikTok, or LinkedIn accounts. Like and share the posts with others.

Your involvement in inspiring the next generation is crucial for our future. Against all odds, help us ensure a sustainable and well-prepared workforce capable of addressing the evolving challenges and growing demands in the field of water.

Together, this is a Mission: Possible! ●

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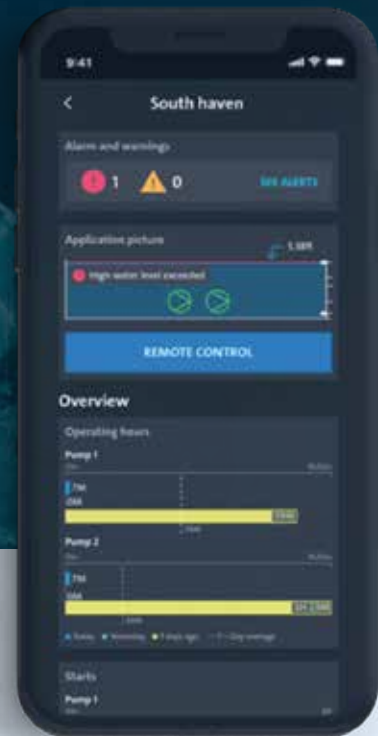
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Your AC24 Mission: Learn, Connect, and Have Fun!



MINDY BOELE, CITY OF VACAVILLE
AC24 CO-CHAIR



AMY LAI, CWEA
AC24 CO-CHAIR



WEA is already seeing more interest and excitement about our Annual Conference.

We saw a record influx of speaker proposals, and the Conference Committee painstakingly narrowed down the field to bring you the most interesting topics from the state's leading experts.

We're all keeping busy, and facing more challenges than ever due to aging infrastructure, workforce shortages, and wild weather whiplash. Please be sure to take time for your professional development and register for AC24.

Remember; the early bird deadline is March 8.

The Annual Conference is the place where you can learn new strategies, make connections with professionals facing similar challenges, and find new technologies inside the massive expo hall. Whatever challenges you're facing at work, there's someone at AC24 who can help you through it.

What can you expect at Mission Possible? Here's a sneak peek:

1. **Cutting-Edge Topics:** Our conference delves into California's most pressing issues, including collection systems, water reuse, laboratory practices, operations, safety measures, engineering case studies, and groundbreaking research. We'll also discuss new State regulations, including WDR, TNI, and DPR.
2. **Networking Opportunities:** As proud professionals, we understand the value of connections, so we've set aside time for networking and catching up with friends. Join us at the

icebreaker event, awards luncheon, committee meetings, and more.

3. **A Sprawling Expo Hall:** You won't want to miss our expansive exposition hall, featuring over 200 exhibitors. The chance to engage with industry leaders and experts under one roof is invaluable. Relax and unwind after a day of sessions with a bite to eat and a frosty beverage while chatting with vendors and fellow attendees.
4. **Opening Session:** We're taking a break from the technology hype to consider what the digital world means for us. Humans are not robots, so will more technology make work and our lives better? On Wednesday morning we're proud to feature keynote speaker Kate O'Neill. Kate is a tech entrepreneur, former Netflix executive, and the author of *A Future So Bright*.
5. **Discover the Future:** Our conference is not just about addressing today's challenges; it's about looking ahead

and helping you shape sustainable water systems for all Californians.

Whatever challenges are coming our way, CWEA members will be ready.

6. **Time for fun:** Don't miss out on the fun events, like the Students and Young Professionals Networking Mixer, Women Impacting Water Breakfast, expo hall receptions with exciting door prize drawings, interesting tours on Tuesday and Friday, and so much more.

Your participation at AC24 contributes to the greater goal of ensuring clean water for all Californians. Reuniting with friends and making new connections are two of the most rewarding outcomes from a CWEA Annual Conference. The knowledge, ideas, and new tech you'll discover will assist you in your day-to-day job, as well as help you look ahead and plan your own water career journey.

We look forward to seeing you in Sacramento for an informative, inspiring, and fun AC24! ●

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SCHEDULE AT A GLANCE

TUESDAY, APRIL 9

6:30 a.m. – 4:00 p.m.	Registration Open (Pre-Conference Workshop Registration Only)
7:00 a.m. – 3:00 p.m.	School of Solids at Fairfield- Suisun Sewer District*
8:30 a.m. – 3:00 p.m.	Regional San Tour*
9:00 a.m. – 3:30 p.m.	Pre-Conference Workshops*
12:00 p.m. – 1:00 p.m.	Lunch (Included in workshop fee)
4:00 p.m. – 5:00 p.m.	NRC/SRC Committee Meeting
5:00 p.m. – 5:30 p.m.	CWEA New Member Orientation
5:30 p.m. – 6:00 p.m.	5S Ceremony
6:00 p.m. – 8:00 p.m.	Icebreaker Reception

WEDNESDAY, APRIL 10

7:30 a.m. – 5:00 p.m.	Registration Open
8:30 a.m. – 10:30 a.m.	Opening General Session
10:45 a.m. – 11:35 a.m.	Education Sessions
11:35 a.m. – 1:15 p.m.	Grab n' Go Lunch
11:45 a.m. – 1:15 p.m.	Collection System Awards Lunch*
11:45 a.m. – 1:15 p.m.	Students and Young Professionals Committee Meeting
1:25 p.m. – 4:15 p.m.	Education Sessions
4:00 p.m. – 7:00 p.m.	Reception and Expo
7:00 p.m. – 8:30 p.m.	Students and Young Professionals Networking Mixer*

Schedule is subject to change. Please visit ac.cwea.org for the most up-to-date information.

* Fee associated with this event

THURSDAY, APRIL 11

7:00 a.m. – 5:00 p.m.	Registration Open
7:30 a.m. – 9:00 a.m.	Women Impacting Water Breakfast*
9:10 a.m. – 12:05 p.m.	Education Sessions
12:15 p.m. – 12:45 p.m.	Annual Business Meeting
12:45 p.m. – 1:45 p.m.	Awards Ceremony Lunch*
12:05 p.m. – 1:45 p.m.	Grab n' Go Lunch
1:55 p.m. – 4:45 p.m.	Education Sessions
3:45 p.m. – 6:45 p.m.	Reception and Expo

FRIDAY, APRIL 12

7:15 a.m. – 12:00 p.m.	Registration Open
8:00 a.m. – 9:00 a.m.	Committee Meeting Breakfasts*
8:00 a.m. – 2:00 p.m.	City of Roseville's Energy Recovery Project Tour*
9:10 a.m. – 12:00 p.m.	Education Sessions
12:00 p.m.	Conference Adjourns



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OPENING GENERAL SESSION:

WEDNESDAY, APRIL 10 8:30 A.M. – 10:30 A.M.

KATE O'NEILL, ENTREPRENEUR & CEO, AUTHOR OF *A FUTURE SO BRIGHT*,
DIGITAL TRANSFORMATION PIONEER AND TECHNOLOGY FUTURIST



Digital transformation expert and pioneer Kate O'Neill shares her 'Tech Humanist' enthusiasm for the power of data, automation, AI and human-centric design to help businesses thrive and improve lives at scale.

As one of the first 100 employees at Netflix, Kate helped launch the company that soon became everyone's favorite case study for disruptive innovation. Today, as an entrepreneur and the CEO of her own tech advisory firm, she advises organizations such

as Google, Coca-Cola and the United Nations on the strategies that will prepare their business, their teams, customers, and the planet for whatever comes next.

The author of four books, including *Pixels and Place* (2016), *Tech Humanist* (2018), and her most recent, *A Future So Bright* (2021), Kate's focus is on the impact of data and emerging technologies on current and future human experiences, and the importance of making technology better for humans.

The world seems more complex and uncertain every day, and the problems of the future are becoming more urgent. From the ongoing effects of the pandemic to changes in climate, geopolitics, labor economies and more, how can organizations face these unknowns with optimism? How can they make strategic decisions in a time of constant change? Kate O'Neill presents an approach to global transformation of technology that keeps humans at the center, helping leaders see the future in an empowering new way. ●



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PRE-CONFERENCE WORKSHOPS

TUESDAY, APRIL 9

Dive into the latest advancements and industry insights at AC24's pre-conference workshops. Explore specialized topics, engage with industry experts, and forge connections with your peers. Your workshop fee not only covers a day of enriching content but also includes a complimentary lunch. Each workshop is eligible for CWEA contact hours. Check ac.cwea.org for updates and details.

► PREW1 COLLECTION SYSTEM MAINTENANCE TOPIC TBD

Presenter: TBD



Topic TBD

► PREW2 TAKE CONTROL USING A PROCESS SIMULATOR TO GET THE NITROGEN OUT

Presenters:

Paul Dombrowski, Susan Guswa,
and Alexandra Greenfield,
Woodard & Curran



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The workshop will provide an overview of the fundamental concepts associated with biological nitrogen removal, as well as advanced topics associated with instrumentation and controls commonly used at operating facilities. After a brief session on using the simulator, the presentation of each main concept will be followed up by process model simulations led by the instructors but performed by attendees to solidify the understanding of each topic. The workshop will cover nitrification and denitrification in multiple process configurations. Following each major portion of the workshop, attendees will be given problems to solve on their own to test what they have learned on each subject.

► PREW3 LABORATORY DATA REVIEW 101 AND REPORTING

Presenters: TBA



This one-day workshop will provide attendees with a basic overview and examples of laboratory data review prior to preparation of final analytical reports for submittal to internal or external clients and ultimately prior to reporting to the regulatory agencies. Data Review 101 will cover three levels of review conducted by prep/laboratory analysts, laboratory supervisors/data reviewers, and project managers from both publicly operated and commercial laboratories. Basic project management and reporting from commercial laboratories will also be covered in the workshop. All of the above will encompass laboratory standard requirements for regulatory compliance purposes as applicable (2016 TNI-2, MUR, Permits, etc.)

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PRE-CONFERENCE WORKSHOPS

► PREW4 MISSION POSSIBLE: PARTNERING TO UNLOCK THE FULL POTENTIAL OF PROJECT TEAMS

Presenters:

**Nicole Schramm and
Cherylle Barrido**, Brown and Caldwell
May Kye and Cindy Murra, OC San



Learn how to professionally engage in difficult conversations with your team and instill trust and transparency throughout. Lack of

communication is the root cause of inefficiencies, and the current virtual-hybrid environment adds layers of complexity to our ability to develop high-performing teams. This presentation offers an approach to returning to mindful communication by aligning people towards a common goal, creating clear expectations with trust at the core, and leaning into the tension that is bound to arise between people. This workshop will engage attendees in a mock session providing attendees with firsthand experience and provide lessons learned that confirm the importance of leadership. This workshop will be valuable to those leading or participating in project teams seeking to successfully deliver a project.

► PREW5 SCHOOL OF SOLIDS



CWEA's popular, hands-on training event for operators and engineers is back. Get a broad base of biosolids training at this year's event.

See page 47 for details.

*Photos by Adobe, iStock
and Olivia Rakowski.*

**“EXCEPTIONAL INSIGHTS AND NETWORKING
OPPORTUNITIES FOR INDIVIDUALS WITH SHARED INTERESTS.”**

- AC23 ATTENDEE



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ACTIVITIES, NETWORKING, AND MEALS

The mission is easy: choose your favorite social events and meals during Annual Conference, and be sure to mark those on the registration form.

TUESDAY, APRIL 9

► NORTHERN/SOUTHERN REGIONAL COMMITTEE MEETING (FREE/RSVP)



4:00 – 5:00 p.m.

The Northern and Southern Regional Committees convene annually to collaborate on Local Section initiatives and upcoming events. This annual gathering provides an excellent opportunity to gain insight into the activities of different sections and to discover our exciting plans for the future. All members are welcome.

Session Leaders:

Chathu Abeyrathna, NRC Chair,
Silicon Valley Clean Water

Chris Newton, SRC Chair,
South Coast Water District

► NEW MEMBER ORIENTATION (FREE/RSVP)

5:00 – 5:30 p.m.

Connect with CWEA's President Chuck Greely, and President-Elect Gilbert Barela. Join us for a casual and brief introduction to the organization. Come with your inquiries, gather insights about the conference, discover ways to engage with CWEA, and make new acquaintances. We're excited to welcome you!

Session Leaders:

Chuck Greely, CWEA President,
Dudek

Gilbert Barela, CWEA President-Elect,
Jurupa Community Services District

► 5S CEREMONY (FREE/RSVP)



5:30 – 6:00 p.m.

The 5S Committee is thrilled to invite the latest inductees of Sanitary Sludge Shovelers to this lively and exciting event. All 5S members in attendance, come welcome your new shovelers, and remember to proudly display your pin.

Recognize your dedicated colleagues with a commendable five years or more of service to CWEA. Visit awards.cwea.org to submit your nominations.

The deadline for applications is March 1, 2024.

Session Leader:

Garry Parker, 5S Committee Chair

► ICEBREAKER RECEPTION (FREE/RSVP)



6:00 – 8:00 p.m.

Prepare to unwind at the AC24 Icebreaker Reception. As we gear up for the conference, take a moment to relax and recharge, setting the tone for the week ahead. This is your opportunity to mingle with fellow members and get to know CWEA leaders. Join us before we dive headfirst into an exciting week of innovation.

WEDNESDAY, APRIL 10

► OPENING GENERAL SESSION (FREE) *A FUTURE SO BRIGHT* **KATE O'NEILL**

8:30 – 10:30 a.m.

See page 17 for details.



LUNCH OPTIONS

There are four lunch options available Wednesday:

1. Grab lunch inside the convention center and find a sunny spot to enjoy lunch.
2. Grab lunch and then join the SYP Committee meeting (details below).
3. Register for the Collection Systems Awards luncheon which includes a plated lunch.
4. Find a nearby restaurant in Sacramento's popular restaurant row.

► GRAB N' GO LUNCH (FEE) **11:35 a.m. – 1:15 p.m.** Convention Center

► STUDENTS & YOUNG PROFESSIONALS COMMITTEE MEETING (FREE)

Get lunch at one of the Grab N' Go locations inside the convention center and then bring it over to the meeting room. Leaders with CWEA's Students and Young Professionals Committee will share what they're working on and help you get engaged with this active committee. We'll also hear an insightful lunchtime chat with Dr. Mentor (Susan Weinberger), consultant for CWEA's Mentoring Program, where you can discover if mentoring is right for you. All members are welcome.

MISSION: POSSIBLE

A SUSTAINABLE WATER FUTURE AGAINST ALL ODDS

► COLLECTION SYSTEMS AWARDS LUNCHEON (FEE)



11:45 a.m. – 1:15 p.m.

Join the Collection System Committee in celebrating outstanding collection system winners including PICK, Gimmicks and Gadgets, Golden Manhole, Person of the Year, and Collection Systems of the Year. All members are welcome.

► STUDENTS AND YOUNG PROFESSIONALS NETWORKING MIXER (FEE)



7:00 – 8:30 p.m.

**The COA Room @ Mayahuel
1200 K St., Sacramento, CA**

We invite all participants to join the SYP Committee for a relaxed evening of networking and mingling. What better way to network amongst your peers from different parts of the state than over great food and drinks! The Networking Mixer includes appetizers, one drink ticket, and one door prize ticket per person. All members are welcome.

► GOLF SIMULATOR

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THURSDAY, APRIL 11

► WOMEN IMPACTING WATER BREAKFAST (FEE)



7:30 – 9:00 a.m.

Join us for an inspiring morning featuring an engaging presentation and interactive Q&A sessions led by accomplished women in the water industry. We invite female engineers, operators, scientists, and all who champion their contributions to join us. Our objective is to exchange strategies for fostering meaningful, authentic, and long-lasting connections within the field and beyond.

LUNCH OPTIONS

There are four options available Thursday:

1. Grab lunch inside the convention center and find a sunny spot to enjoy lunch.
2. Grab lunch and then join the CWEA Annual Business meeting (details below).
3. Register for the CWEA Awards luncheon which includes a plated lunch.
4. Find a nearby restaurant in Sacramento's popular restaurant row.

► CWEA ANNUAL BUSINESS MEETING (FREE)

12:15 – 12:45 p.m.

All members are invited to attend the Annual Business Meeting. Meet the newly sworn-in Board of Directors, learn about the achievements of our local sections and committees, and find out what's coming up for CWEA members.

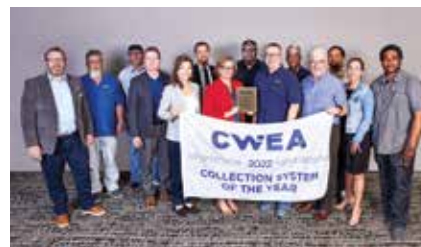
► GRAB N' GO LUNCH (FEE)

12:45 – 1:45 p.m.

Lunch is on your own. Options are to eat on the convention center grounds or head into the theater seating

section of the awards luncheon to watch the award winners take the stage. The plated lunch is reserved for ticketed attendees.

► AWARDS CEREMONY LUNCHEON (FEE)



12:45 – 1:45 p.m.

Join us in celebrating our industry's unsung heroes in an afternoon of recognition and gratitude. Come celebrate and honor your peers for their significant contributions to our industry. Your ticket includes a plated lunch.

FRIDAY, APRIL 12

► COMMITTEE BREAKFASTS (FEE)

8:00 – 9:00 a.m.

Join us for one of our committee breakfasts to stay informed about upcoming committee activities.

- Engineering & Research Committee
- Laboratory Training Committee
- Leadership Development Committee
- Operator & Maintenance Committee

Go ahead and put your hand up if you want to get more involved with the committee. They love volunteers! Come find out what's on the horizon for CWEA members. Visit ac.cwea.org for details.

The Leadership Committee Breakfast will feature Bob Donaldson and his presentation, the Journey of Heroes Coaching System. He'll share strategies for inviting, attracting, and cultivating collaborative power.



Photos by Sal Ochoa and Olivia Rakowski



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ANNUAL CONFERENCE TOURS

TOUR THE ECHOWATER RESOURCE RECOVERY FACILITY (FEE)

TUESDAY, APRIL 9, 8:30 A.M. – 3:00 P.M.

Tour Leads: Helen Hu, SacSewer and Ligaya Kohaguru, Black and Veatch

Join us on a tour of the EchoWater Resource Recovery Facility, one of the largest of its kind in the United States. Tour participants will receive a behind-the-scenes tour of: a state-of-the-art environmental laboratory; Biological Nutrient Removal facility, which removes more than 99% of ammonia from the sewage; and a demonstration of the dual-media filtration and backwash process at the tertiary treatment facilities.



Photo by Regional San.

TOUR THE CITY OF ROSEVILLE'S ENERGY RECOVERY PROJECT (FEE)

FRIDAY, APRIL 12, 8:00 A.M. – 2:00 P.M.

Tour Leads: Chathu Abeyrathna, Silicon Valley Clean Water and Lauren Riley, Brown & Caldwell

Join our new fun and relaxing Friday tour. The City of Roseville's Energy Recovery Project is a ground-breaking initiative to decrease greenhouse gas emissions and minimize landfill waste.

The project involves powering its trash and recycling fleet with renewable natural gas (RNG) derived from the digestion of organic waste. Lunch and networking at Track Seven Brewery to follow. **Seats are limited.**



Photo by City of Roseville.

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TECHNICAL PROGRAM

WEDNESDAY, APRIL 10, 2024

	1	2	3
TRACKS	Collection System Front Line	Emerging Challenges & Opportunities	Biosolids
10:45 a.m. – 11:35 a.m.	Principles of Root Foaming – Implementing a Chemical Sewer Root Control Program <i>Tom Edwards</i> <i>Duke's</i>	Achieving Stable Densification in Continuous Flow Systems through Granule Management <i>Pusker Regmi</i> <i>Brown and Caldwell</i>	Concrete Proof: Transforming Digester Decisions Through Results-Based Condition Assessment <i>Teigan Gulliver</i> <i>HDR</i>
TRACKS	Collection System Front Line	Collection System Leadership	Digestion to Dewatering Biosolids
1:25 p.m. – 2:15 p.m.	Trenchless Pipe Repairs – USD Tri-City Wastewater's Journey <i>Shawn Nesgis</i> <i>USD Tri-City Wastewater</i>	Sewer Spill Simulations and Emergency Response Training Support Mutual Aid <i>Shawn Spromberg</i> <i>Cucamonga Valley Water District</i>	How to Have the World's Best Operating Anaerobic Digestion System <i>David Parry</i> <i>Jacobs</i>
2:25 p.m. – 3:15 p.m.	Confined Space Rescue: A Guide to Complying with the Rescue Mandate <i>Kent Freeman</i> <i>California Health & Rescue Training</i>	Sanitary Sewer Systems General Order Compliance and Enforcement <i>Bryan Elder</i> <i>State Water Resources Control Board</i>	Net Zero versus Nutrients: Understanding the Impacts of Co-digestion Waste on Your Facility's Performance <i>Maxwell Armenta</i> <i>Brown and Caldwell</i>
3:25 p.m. – 4:15 p.m.	Safety Issues Facing Collection System Workers <i>Malvin "Rusty" Nezat, II</i> <i>Nezat Training and Consulting, Inc.</i>	Sanitary Sewer Systems General Order Implementation <i>Afroz Farsimadan</i> <i>State Water Resources Control Board</i>	Pilot Testing Innovative Biosolids Dewatering Tech for Cost-Effective Class A Treatment <i>Kathryn Gies</i> <i>West Yost Associates</i>

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TECHNICAL PROGRAM

Speakers are subject to change. Find session descriptions, speaker bios and the latest program at ac.cwea.org.

4	5	6	7
Operations & Maintenance	Water Reuse & Advanced Water Treatment	Asset Management	Water Resource Recovery Facilities
Safety Incident Reporting – A Simple, Streamlined Approach <i>Sarah Bogner</i> <i>Contra Costa Water District</i>	Every Last Drop – How Treatment Plant Improvements Maximize Reuse Efficiency <i>Christopher Ott</i> <i>CDM Smith</i>	A Risk-Based Approach to Capital Improvements and Regulatory Requirements <i>Allan Scott</i> <i>HDR</i>	How WIFIA Financing Makes Sustainable Water Infrastructure Investments Possible <i>Dan-Tam Nguyen</i> <i>U.S. EPA</i>
Operations & Maintenance	Water Reuse & Advanced Water Treatment	Asset Management	Pretreatment, Pollution Prevention & Stormwater
How to Expect the Unexpected with Digester Cleaning? We've Got Some Grit Ideas <i>Tom Chapman</i> <i>Brown and Caldwell</i>	Innovating Chlorination Approaches to Tackle Stringent THM Limits <i>June Leng</i> <i>HDR</i>	Asset Management – Beginning with Accurate Registries and Identifying Asset Criticality <i>Glenn Edwards, Jr.</i> <i>Inland Empire Utilities Agency</i>	Creating a Municipal Fats, Oils, and Grease Program <i>Samuel Mcleod</i> <i>FOG BMP</i>
The Operator's 10 Core Competency Objectives <i>Manny Moreno</i> <i>Inland Empire Utilities Agency</i>	Moving Direct Potable Reuse Forward in Los Angeles: a Pilot Study Comparing Alternatives <i>Emily Wood</i> <i>CDM Smith</i>	Large In-Plant Pump Station Condition Assessment – It's All in the Planning <i>Kyle O'Dea</i> <i>City of San Jose</i>	DPR vs. IPR: How Will This Impact Your Source Control Program? <i>Mary Kate Foran</i> <i>Carollo Engineers</i>
Navigating the Successful Startup of a 260 MGD Headworks While Maintaining Plant Operations <i>John Ryan</i> <i>Jacobs</i>	UV Disinfection in a Shoebox: City of Pacifica Reuse Disinfection Improvements <i>Bryan Burnitt</i> <i>Carollo Engineers</i>	Size Doesn't Matter: Approaches to Asset Management Regardless of Agency Size <i>Rachel Schonwit</i> <i>Nextgen Asset Management</i>	The Intersection of a Pretreatment Program and One Water <i>Amanda Lujan</i> <i>LA Sanitation and Environment</i>

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A SUSTAINABLE WATER FUTURE AGAINST ALL ODDS

TECHNICAL PROGRAM

THURSDAY, APRIL 11, 2024

	1	2	3
TRACKS	Nutrient Management	Collection System Front Line	Collection System Leadership
9:10 a.m. – 10:00 a.m.	Bay Area Regional Nutrient Planning Update <i>Eric Dunlavey</i> <i>City of San Jose</i>	From Training to Triumph: Enhancing Success in Industry Certification Exams <i>Michele Rodriguez-Flores</i> <i>Ridgecresta</i>	Best Practices for Expediting Compliance with the Reissued Collection System WDR <i>James Fischer</i> <i>Fischer Compliance</i>
10:15 a.m. – 11:05 a.m.	Ten Years from Design to Start-up at Regional San: What's Changed and What's the Same? <i>Patrick Dunlap</i> <i>Black & Veatch</i>	Inland Empire Utilities Agency Delivers Real-Time Protection for its Collection System <i>Lucia Diaz</i> <i>Inland Empire Utilities Agency</i>	Updating your Sewer System Management Plan <i>Mary Cousins</i> <i>Bay Area Clean Water Agencies</i>
11:15 a.m. – 12:05 p.m.	Water Recycling: A Cost-Effective Approach for Smaller Agencies to Meet SF Bay Nutrient Load Reductions <i>Logan Smesud</i> <i>West Yost Associates</i>	Vacuum Systems <i>Malvin "Rusty" Nezat, II</i> <i>Nezat Training and Consulting, Inc.</i>	Areas of Focus for Your Next SSMP Audit and Update <i>Michael Flores</i> <i>HDR</i>
TRACKS	Nutrient Management	Collection System Front Line	Collection System Leadership
1:55 p.m. – 2:45 p.m.	Full-Scale Performance Comparison of Sidestream Nitrogen Removal Processes in the U.S. <i>Andre Gharagozian</i> <i>Carollo Engineers</i>	Preparing your SSMP and Workforce for Audits by Regulators <i>James Fischer</i> <i>Fischer Compliance LLC</i>	Remote System Monitoring at Ross Valley Sanitary District and Contributions to Improved Performance <i>John Vogel</i> <i>Ross Valley Sanitary District</i>
2:55 p.m. – 3:45 p.m.	The Sidestream Treatment Journey, From Planning Through Design and How it Might Benefit Your WWTP <i>Bryce Danker</i> <i>Hazen and Sawyer</i>	San Luis Obispo Protects Public Health and Environment with Smart Sewer Technology <i>Ryan Beech</i> <i>City of San Luis Obispo</i>	Data Science for Gravity Main Cleaning Optimization Case Study <i>Lars Stenstedt</i> <i>V&A Consulting Engineers</i>
3:55 p.m. – 4:45 p.m.	Mainstream Anammox: New Frontiers in Superefficient Biological Nitrogen Removal from PN/A to PdN/A <i>Jon Liberzon</i> <i>Tomorrow Water (BKT)</i>	Fundamentals of Atmospheric Monitoring <i>Kent Freeman</i> <i>California Health & Rescue Training</i>	A Sewer Runs Through It: Navigating Aging Creek Crossings -- Can They Stay or Should They Go? <i>Robert Natoli</i> <i>Water Systems Consulting, Inc.</i>

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TECHNICAL PROGRAM

Speakers are subject to change. Find session descriptions, speaker bios and the latest program at ac.cwea.org.

4	5	6	7
Laboratory/ELAP	Emerging Challenges and Opportunities	Operations and Maintenance	Water Resource Recovery Facilities
California ELAP Update <i>Christopher Hand</i> <i>State Water Resources Control Board</i>	An “Out of the Pipe” Innovative Solution to Save Tax Dollars and Protect the Environment <i>Uday Sant</i> <i>Brown and Caldwell</i>	Peristaltic and Diaphragm Metering Pumps, Accessories, and Systems <i>Richard Hopkins</i> <i>Blue-White Industries</i>	Overcoming Hurdles to Make Energy Recovery a Reality <i>Lauren Riley</i> <i>Brown and Caldwell</i>
ELAP Accreditation Requirements: Make Management Review Worth the Effort <i>Michael Shepherd</i> <i>Shepherd Technical Services, LLC</i>	A Storm Series Provides Central San a Flood of Ideas to Optimize Storage <i>Craig Mizutani</i> <i>Central Contra Costa Sanitary District</i>	Machinery Lubrication Programs Aren’t Created Equal: How a Machinery Lubrication Strategy Affects Asset Reliability <i>Francis Concemino</i> <i>Inland Empire Utilities Agency</i>	One Agency’s Approach to Greenhouse Gas Reduction and Fleet Electrification <i>Christine Polo</i> <i>Carollo Engineers</i>
TNI-2 Implementation Lessons Learned <i>Mark Koekemoer</i> <i>Central Marin Sanitation Agency</i>	Going Green, Saves a Lot of Green <i>Allan Briggs</i> <i>Hazen and Sawyer</i>	Keep it Flowing: Maintaining Conveyance During Sailor Bar Pump Station Replacement <i>Ryan Hook</i> <i>Carollo Engineers</i>	Addressing Electrical Energy Resiliency – The Development of Union Sanitary District’s Roadmap to Energy Resiliency <i>Tyler Estrada</i> <i>Black & Veatch</i>
Laboratory/ELAP	Water Resource Recovery Facilities	Operations and Maintenance	Big Data and AI
Working Smarter: Leveraging IoT Technology to Automate Environmental Monitoring in the Laboratory <i>Ken Ochi</i> <i>Accelerated Technology Laboratories</i>	Impacts of Advanced Primary Treatment on the Modified Ludzack-Ettinger Advanced Secondary Process <i>Onder Caliskaner</i> <i>Caliskaner Water Technologies, Inc.</i>	LACSD’s Instrumentation Lessons Learned for Control of Biological Nutrient Removal <i>Patricia Hsia</i> <i>Los Angeles County Sanitation Districts</i>	Leveraging Big Data Platforms to Accelerate Machine Learning at a Regional Scale <i>Joshua Registe</i> <i>Jacobs</i>
Volatile Fatty Acids Method Study Reveals a Need to Update Analytical Methods <i>Mark Koekemoer</i> <i>Central Marin Sanitation Agency</i>	SBR to MBR Raceway Conversion: Advancing Mountain House’s Water Supply Resiliency <i>Guyton Durnin</i> <i>HD</i>	Session TBD	Full-Scale Testing of a Digital Twin Controller: Water Research Foundation’s Advanced Nutrient Controller <i>Bruce Johnson</i> <i>Jacobs</i>
Using Automation Data Tools to Improve Lab Efficiency <i>Yiping Cao</i> <i>Orange County Sanitation District</i>	Greenfield WRRF Delivers Complete Resource Recovery and Community Resilience <i>Margaret Laub</i> <i>Anaergia</i>	Rust Kills: Investigation into Plant Water Corrosion and Mitigation Strategies <i>Alice Wang</i> <i>HDR</i>	Flying Blind No More: Using Edge Analytics to Improve Pump Performance <i>Ryan Hougham</i> <i>Specific Energy</i>

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TECHNICAL PROGRAM

FRIDAY, APRIL 12, 2024

Speakers are subject to change. Find session descriptions, speaker bios and the latest program at ac.cwea.org.

	1	2	3	5	5
TRACKS	Public Outreach and Education	Emerging Challenges and Opportunities	Laboratory/ELAP	Leadership/ Communications	Asset Management
9:10 a.m. – 10:00 a.m.	Engagement is Our Mission: OC San Meets its Mission One Program at a Time <i>Rebecca Long</i> OC San	Impact of PFAS on Biosolids Management in New England <i>Eric Spargimino</i> CDM Smith	State Water Board Toxicity Provisions: From Permit to Execution in the Lab <i>Stephen Clark</i> Pacific EcoRisk	Standardized Training Program Case Studies and Panel Discussion <i>Kevin Stewart</i> San Bernardino Municipal Water Department	City of Oakland's Risk and Rehabilitation of Sewer Assets with Info360 Asset <i>Chen Wen</i> City of Oakland Public Works
10:10 a.m. – 11:00 a.m.	Flushed with Knowledge: Unveiling the Wonders of Wastewater for Every Generation <i>Brayden Mitchell</i> City of Roseville Utilities	Diversifying Biosolids Management with Thermal Drying <i>Anthony Tartaglione</i> Hazen and Sawyer	Pathogen Monitoring in Wastewater for DPR Regulation Development <i>Rick Danielson</i> Danielson Applied Consulting, LLC	Session TBD	Reaching for the Scars: Protecting Corroded Piping in Hard-to-Reach Places <i>Aniruddha Bhagwat</i> Silicon Valley Clean Water
11:10 a.m. – 12:00 p.m.	Quantifying Social Equity Benefit for Capital Project Investment Prioritization <i>Katherine Sheehan</i> Black & Veatch	Implementing Supercritical Water Oxidation to Overcome Biosolids Challenges <i>Derya Dursun</i> Hazen and Sawyer	Assessment of EPA Method 1633 and Predecessor Techniques for PFAS Analysis <i>Nona Jesmani</i> CDM Smith	Leading with Resilience and Well-Being Through Mindful Self-Compassion <i>Susan Hiestand</i> Silicon Valley Clean Water	Public Outreach Lessons Learned: Relocating Backyard Water Main to the Street <i>Amber Wallace</i> City of West Sacramento
12:00 p.m.	Conference Concludes				

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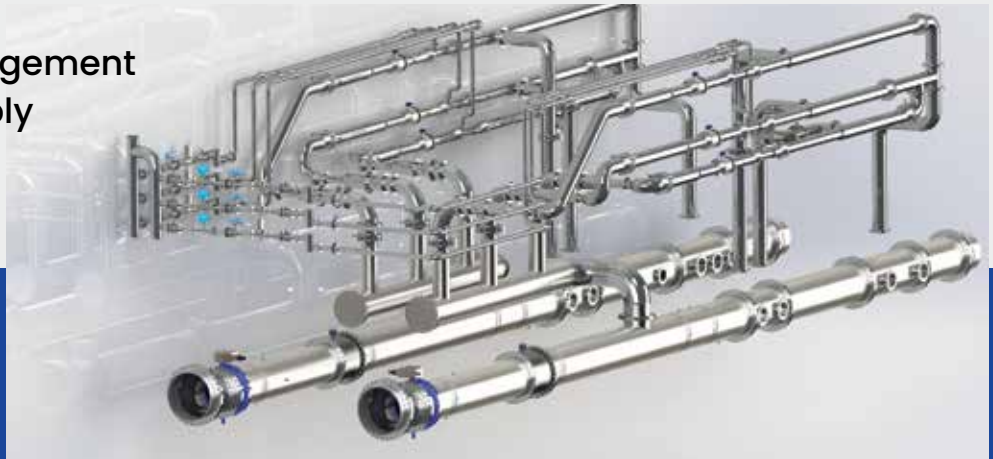
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WEDNESDAY, APRIL 10

4:00 p.m. – 7:00 p.m.

Reception & Expo

THURSDAY, APRIL 11

3:45 p.m. – 6:45 p.m.

Reception & Expo

Please note the schedule is subject to change. Visit ac.cwea.org for the latest info.

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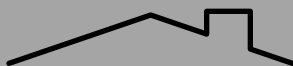
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PHOTO CONTEST



WEA invites all amateur photographers to enter the CWEA Annual Conference

Photo Contest. Photos may depict anything related to the clean water profession, with special attention to the conference theme:

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A sustainable water future against all odds.

Over \$200 in prizes will be awarded to first, second, and third place winners. The contest is open to all CWEA members.

Entries will be displayed in the conference gathering areas throughout the conference event.

- Judging will be based on originality, educational value and relevance to the AC24 conference theme.
- Photos may be either black and white or color.
- Entry forms are online at ac.cwea.org

First place 2023:



Exploring Our Watershed, 2023 Winner Andrea Solis of Fairfield-Suisun Sewer District

“OVER \$200 IN PRIZES WILL BE AWARDED TO FIRST, SECOND, AND THIRD PLACE WINNERS. THE CONTEST IS OPEN TO ALL CWEA MEMBERS.”

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REGISTRATION INSTRUCTIONS

Before you register one or more persons online, please read all instructions and ensure you know the participant's chosen activities. Have your online CWEA password ready for all those you are registering.

Discrepancies may result in delays at registration onsite. All conference attendees, including speakers and exhibitors, are required to register for the Annual Conference. For information on our Group Discounts for seven or more registrants, please contact Member Services at memberservices@cwea.org.

► EARLY BIRD REGISTRATION

Registering by March 8 entitles you to a discounted rate, and your registration materials will be ready for you upon arrival at the CWEA Registration Desk.

Register early to save time onsite and to take advantage of the lower conference rates.

► MEMBER-DISCOUNTED RATES

Only CWEA, WEF, or CA-NV AWWA membership qualifies for member-discounted rates and memberships will be verified. The additional cost of a non-member registration rate will be applied toward one year of CWEA membership.

► RETIRED MEMBERS

Retired members are eligible for a special registration rate. CWEA Bylaws state that a retired member is any person retired from and not currently affiliated professionally or technically with the water quality field.

► STUDENT REGISTRATION

Full-time students are eligible for free registration. This does not include extra fee-based meals, technical tours, and other activities which can be purchased separately. This registration type is not available online since

students must provide verification of current enrollment (nine or more units per semester). Students can submit a registration form by mail, fax, or email.

► SPOUSE/GUEST REGISTRATION

Spouses/guests can participate in the Icebreaker Reception, access the Expo, and receive a drink ticket for each Expo reception. Since you must be registered for the conference as an attendee to earn contact hours, spouses/guests are not eligible for contact hours.

► EXHIBITOR BADGES

Please reference your exhibitor profile where you reserved your booth space for badge allocation and instructions. If you have questions, please contact Nicole Agnone at exhibit@cwea.org.

► ACADEMICS REGISTRATION

Full-time employees of academic institutions are eligible for our discounted Academics registration fee.

► CONFERENCE MEAL EVENTS

Please indicate which conference meal events you will be attending by checking the appropriate box online or on the AC24 Registration Form. Note the number attending plus the cost in the space provided.

CANCELLATION POLICY

Cancellations and substitutions must be received at least 3 business days prior to the date of the event. Credit Eligibility: To be eligible for credit, a written notice must be received one week prior to the program date.



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Cancellation Fee: A 25% cancellation fee will be deducted from the refund amount.

Day of Program Cancellation/No-Show: Cancellations or no-shows on the day of the program will not be eligible to receive a refund or credit.

Refund Process: Refunds, minus the applicable cancellation fee, will be processed within 3 days after receiving the cancellation request once approved.

► HOTEL REGISTRATION

To reserve hotel rooms, please visit ac.cwea.org.

Rooms will sell out at the conference hotels before the cutoff date of March 15, so book early.

► REGISTRATION PAYMENT

Payment can be made by check or money order payable to: CWEA 2024 Annual Conference. Credit card payments are also accepted using the enclosed registration form or through

CWEA's secure website (ac.cwea.org). Early Bird Registration MUST be post-marked by March 8.

Those who submit payments with an Early Bird Registration fee after March 8 will be billed for the difference. All fees for conference registration shall be paid in full at the time of registration. Full payment may be made by credit card, money order or check in order to complete your registration. Purchase orders are also acceptable. You must be registered for the conference as an attendee to receive CWEA contact hours.

► REGISTRATION QUESTIONS

Registration questions may be directed to Member Services at memberservices@cwea.org or 510.382.7800 x4.

► SPEAKER QUESTIONS

Speaker questions may be directed to Amy Lai, Director of Education, at alai@cwea.org.

► HOSPITALITY SUITES

While CWEA welcomes hospitality suites for our members, the hours must not conflict with any conference event. Hospitality suites may be available at the conference hotels. All hospitality events (both on-site and off-site) must be arranged/approved through the Conference Co-Chairs, Mindy Boele and Amy Lai. Please send an email request to alai@cwea.org with your organization, details of proposed event, preferred evening, and contact information.

► DISCLAIMER

CWEA and its Board members and volunteers are not responsible for the actions of speakers or the content of their sessions. No endorsement is implied or given of any persons or their philosophies, ideas, or statements, nor of any products or processes, nor of any organizations or companies who volunteer to serve as speakers at the conference or exhibitors who purchase display space in the Expo. ●



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REGISTRATION FORM

EARLY BIRD DEADLINE IS MARCH 8

(PLEASE PRINT OR TYPE)

First Name: _____ Last Name: _____

Name For Badge: _____ Job Title: _____

Agency/Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone Number: _____ Email: _____

Emergency Contact: _____ Emergency Phone: _____

☐ CWEA MEMBER ☐ WEF MEMBER ☐ CA-NV AWWA MEMBER # _____

Non-member rates includes one year membership in CWEA. Please check here if you do not wish to take advantage of CWEA membership: ☐

Required: ☐ I will comply with any CWEA health and safety requirements in place at AC24.

Special Accommodations: ☐ Provide a description of your special needs to participate: _____

Dietary Restrictions: ☐ Please check here to include any dietary restrictions: _____

FULL CONFERENCE ATTENDANCE TUESDAY, APRIL 9 – FRIDAY, APRIL 12		(By March 8) Early Bird	(After March 8) Saver	(After March 22) Regular
<input type="checkbox"/> Member – Discounted		\$745	\$875	\$960
<input type="checkbox"/> Non-Member		\$966	\$1,096	\$1,181
<input type="checkbox"/> Retired Member		\$475	\$475	\$475
<input type="checkbox"/> Academics		\$165	\$165	\$165
<input type="checkbox"/> Student	(must provide proof of attendance at a college or university with a minimum of nine units)	\$0	\$0	\$0
Fee Subtotal		\$		

ONE-DAY CONFERENCE ATTENDANCE (WEDNESDAY or THURSDAY)			
	(By March 8) Early Bird	(After March 8) Saver	(After March 22) Regular
Please check the day you would like to attend: <input type="checkbox"/> WEDNESDAY, APRIL 10 <input type="checkbox"/> THURSDAY, APRIL 11			
<input type="checkbox"/> Member – Discounted	\$480	\$510	\$545
<input type="checkbox"/> Non-Member	\$701	\$731	\$766
<input type="checkbox"/> Full-Time Student	(must provide proof of attendance at a college or university with a minimum of nine units)	\$0	\$0
Fee Subtotal		\$	

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ONE-DAY CONFERENCE ATTENDANCE (FRIDAY, APRIL 12)

	(By March 8) Early Bird	(After March 8) Saver	(After March 22) Regular
<input type="checkbox"/> Member - Discounted	\$185	\$220	\$250
<input type="checkbox"/> Non-Member	\$406	\$441	\$471
<input type="checkbox"/> Full-Time Student (must provide proof of attendance at a college or university with a minimum of nine units)	\$0	\$0	\$0
Fee Subtotal	\$		

SPOUSE/GUEST REGISTRATION

See page 37 for details on what is included.

<input type="checkbox"/> Name:	\$130
Fee Subtotal	\$

CONFERENCE WORKSHOPS AND TOURS

See descriptions on pages 18, 19 and 23 for what is included.

	(By March 22) Early Bird/Saver	(After March 22) Regular
TUESDAY, APRIL 9		
<input type="checkbox"/> PREW1: Collection System Maintenance Topic TBD	\$215	\$265
<input type="checkbox"/> PREW2: Take Control Using a Process Simulator to Get the Nitrogen Out	\$215	\$265
<input type="checkbox"/> PREW3: Laboratory Data Review 101 and Reporting	\$215	\$265
<input type="checkbox"/> PREW4: Mission Possible: Partnering to Unlock the Full Potential of Project Teams	\$215	\$265
<input type="checkbox"/> PREW5: School of Solids	\$215	\$265
<input type="checkbox"/> T1: EchoWater Resource Recovery Facility (Tuesday)	\$90	\$100
<input type="checkbox"/> T2: City of Roseville's Energy Recovery Project (Friday)	\$90	\$100
Fee Subtotal	\$	

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CONFERENCE MEAL EVENTS

(By March 22)
Early Bird/Saver

(After March 22)
Regular

<input type="checkbox"/> Collection System Awards Lunch (Wednesday, April 10, 11:45 - 1:15 p.m.)	\$85	\$95
<input type="checkbox"/> Students and Young Professionals Networking Mixer (Wednesday, April 10, 7:00 - 8:30 p.m.)	\$30	\$40
<input type="checkbox"/> Women Impacting Water Breakfast (Thursday, April 11, 7:30 - 9:00 a.m.)	\$75	\$85
<input type="checkbox"/> Awards Ceremony Lunch (Thursday, April 11 12:45 - 1:45 p.m.)	\$85	\$95
Breakfast Meetings <input type="checkbox"/> Engineering & Research Committee <input type="checkbox"/> Laboratory Training Committee <input type="checkbox"/> Leadership Development Committee <input type="checkbox"/> Operator & Maintenance Committee (Friday, April 12 8:00 - 9:00 a.m.)	\$50	\$60

Fee Subtotal \$

ACTIVITIES AND NETWORKING

See event pages 20 to 21 for descriptions.

(By March 22)
Early Bird/Saver

(After March 22)
Regular

<input type="checkbox"/> Northern/Southern Regional Committee Meeting (Tuesday, April 9, 4:00 - 5:00 p.m.)	FREE	FREE
<input type="checkbox"/> CWEA New Member Orientation (Tuesday, April 9, 5:00 - 5:30 p.m.)	FREE	FREE
<input type="checkbox"/> 5S Ceremony (Tuesday, April 9, 5:30 - 6:00 p.m.)	FREE	FREE
<input type="checkbox"/> Icebreaker Reception (Tuesday, April 9, 6:00 - 8:00 p.m.)	FREE	FREE
<input type="checkbox"/> Opening General Session Presentation - "A Future So Bright" (Wednesday, April 10, 8:30 - 10:30 a.m.)	FREE	FREE

Fee Subtotal \$

PAYMENT INFORMATION

Please make your check or money order payable to : **CWEA AC24**. For payments by credit card, please print clearly.

Credit card: ☐ VISA ☐ MASTERCARD ☐ DISCOVER ☐ AMEX Signature: _____

Credit card number: _____ Expiration date: _____

Name of account holder: _____ Billing zip code: _____

Disclaimer: CWEA is not responsible for theft of or damage to personal or agency/company property whether intended to be used for CWEA purposes or not.

Mail registration payment and form to:

CWEA
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Oakland, CA 94621-1935

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memberservices@cwea.org



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ACCOMMODATION

► HOW TO BOOK YOUR ROOM

Book your room online: ac.cwea.org

Hotel reservations are on a first-come, first-serve basis and will likely sell out. Make reservations as soon as possible.

Deadline to book rooms within the CWEA room block:

Friday, March 15, 2024

► HYATT REGENCY SACRAMENTO

1209 L Street
Sacramento, CA 95814
916.443.1234

► SHERATON GRAND

1230 J Street, 13th and J Street
Sacramento, CA 95814
916.447.1700

Rates:

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Rates Available 3 Days Pre- and
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Check In: 3:00 p.m.
Check Out: 12:00 p.m.

Cancellation policy: Reservations must be cancelled 72 hours prior to arrival to avoid any cancellation fee. If cancelled within 72 hours, a cancellation fee of one night room & tax will be charged.

The reservation link only allows you to book three rooms at a time under one name.

Inquiries regarding reservations: Contact Central Reservations at 800.325.3535 and use the code 'CWE' for expedited assistance. ●

PLEASE DON'T FALL FOR HOUSING SCAMS!

Beware of companies contacting you to book rooms. These companies may not be legitimate.

There are benefits to being in the conference block.

- Discounted rates at the official meeting hotel
- Stay at the headquarters hotel with all the conference attendees
- Be steps away from session rooms and the expo

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READY, STEADY, AND LET'S CONNECT: TIPS FOR NETWORKING

By Anabel Martinez, CWEA Membership Director



One of the benefits of CWEA membership is getting to meet a diverse spectrum of professionals, and to build strong connections and even friendships with your fellow members. For some people networking is a breeze. For others it's a bit nerve wracking. We're all friendly wastewater professionals here, and you have nothing to lose by saying hello to a fellow attendee. Here are some tips on connecting:

1. **Don't be shy!** Attend the AC24 social events or networking receptions.
2. **Be approachable:** have an open attitude and don't always wait for people to come to you; take initiative and introduce yourself.

“WE'RE ALL FRIENDLY WASTEWATER PROFESSIONALS HERE AND YOU HAVE NOTHING TO LOSE BY SAYING HELLO TO A FELLOW ATTENDEE.”

3. **Ask away!** Ask questions like:

- What brings you to the event?
- Tell me about your background?
- What do you find most exciting or challenging in your field right now?
- These are great to get you started!

4. **Exchange contact information.** This doesn't always mean exchanging business cards either: social media hubs are a great way to keep the connection or conversation going.

5. **You made the connection, now what?** Keep it alive! Share insights or resources. You can also ASK for insights or resources. You are likely to see each other at future events, so don't forget to say hi!

Effective networking is about building genuine relationships, not just collecting business cards or social media profiles. Remember you are not the only one trying to network, don't be shy and CONNECT! ●



AC23 attendees at the Icebreaker. Photo by Sal Ochoa.

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TAKE TIME FOR YOU: A STRESS-FREE AC24



One of our most important missions in life is taking care of our family, our friends, and ourselves!

Join Pollution Prevention Specialist and wellness expert Susan Hiestand for Friday's special mindfulness session at AC24. This is the return of Susan's popular session from last year.

Leadership is challenging and rewarding work. But as leaders, we don't always escape the work unscathed. With deep change comes uncertainty, and not knowing can evoke feelings of discomfort, fear, self-doubt and shame.

In this experiential session, participants will learn the art of mindful self-compassion and how it can support their whole-person development, including capacities integral to leadership. Participants will leave with tools and resources to support an ongoing practice of mindful self-compassion in their lives and leadership work.



“PARTICIPANTS WILL LEAVE WITH TOOLS AND RESOURCES TO SUPPORT AN ONGOING PRACTICE OF MINDFUL SELF-COMPASSION IN THEIR LIVES AND LEADERSHIP WORK.”

Here are five fast ideas from CWEA Board member **Stephanie Prescott** from JDC on easy ways you can care for yourself in our busy and often stressful profession. Take a break at AC24 and every day.

- 1. Mindful morning:** start with a quiet break to get centered, breathe, and clear your mind.
- 2. Reminder app:** download the InsightTimer® or Calm® app to receive reminders throughout the day to take a break, move away from the computer, and take time to breathe and clear your mind.
- 3. Remove negativity:** move away from negative people, turn off the news, and unplug from social media now and then to remove negative influences from life.
- 4. Positive outlook:** stress doesn't exist in the universe; it's how we react to situations that can lead to stress. “Stress is internal not external, and is caused by our own thoughts,” noted Stephanie.
- 5. Maintain balance:** Eat more fruits and veggies. A diet rich in vitamins and minerals can help your body cope with our busy lives. ●



FIVE AC24 EVENTS TO LOWER YOUR STRESS:

- 1.** Tuesday evening's Icebreaker social
- 2.** SYP Lunch (Wednesday) and Committee Breakfasts (Friday)
- 3.** Golf simulator in the expo hall
- 4.** Stay hydrated with a CWEA water bottle
- 5.** Unwind at the Expo Hall receptions

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AC24'S SCHOOL OF SOLIDS OFFERS A UNIQUE LOOK AT A BIOSOLIDS OPERATION

By Roni Gehlke, Clean Water Magazine editor

During AC24's School of Solids, CWEA members will be given a unique opportunity to spend the day at an operating wastewater treatment and resource recovery facility. The day will focus on understanding how biosolids are managed, the technologies used to treat the biosolids, and how to operate and maintain those technologies and supporting equipment. The pre-conference workshop will be held at the Fairfield-Suisun Sewer District (FSSD), the first in the country to partner with the private sector to produce a biosolids-derived liquid fertilizer.

A series of education stations will be set up along the solids treatment train, where small hands-on classes will be held. Each education station

will be led by an experienced certified wastewater treatment plant operator, with other operations and maintenance folks bringing their experience into the mix.

"We'll be able to show the equipment working to treat and move the biosolids," said Mary Martis, the current chair of CWEA's Biosolids Committee and one of the co-founders of the School of Solids. "Additionally, there will be another unit offline and/or partially broken down in the vicinity of each of the operating equipment stations to give everyone a look under the solids."

Martis said this will give those touring the facility the opportunity to look inside and see how the equipment works.

"Usually, when you take a tour like this, it relies on someone conducting





Photos by Mary Martis

the tour and telling you how the unit works,” said Mark Harris, another co-founder of the program and the O&M manager at West County Wastewater. “With the unit broken down next to the working unit, it gives you a big added value to see what’s going on inside.”

In 2021, a group of seasoned professionals were discussing organizing a tour of the Roseville Dry Creek Wastewater Treatment Plant as part of the upcoming CWEA annual conference. During the discussion, they came up with the idea of creating a School of Solids during the tour. The School of Solids tour was designed to include a host of stations/outdoor classrooms that covered different aspects of Dry Creek’s biosolids operation, with opportunities for hands-on experiences. Each station had an educational session led by volunteer operations and maintenance professionals who came from treatment plants around California to provide a comprehensive learning experience.

A similar program will occur at Fairfield-Suisun, except this facility has a slightly different process. This

wastewater treatment plant is also unique because, since May 2015, FSSD has had a Public-Private Partnership agreement with Lystek International Limited. The Lystek operation converts biosolids into fertilizer, which is an innovative way of beneficially using the material.

The partnership provides physical space at the District’s wastewater treatment plant for Lystek to operate a biosolids processing facility, also called the Organic Material Recovery Center, or OMRC.

“Lystek’s OMRC accepts dewatered biosolids from the District, as well as biosolids from other wastewater treatment plants around the San Francisco Bay Area and other areas in California. These biosolids are further conditioned in the OMRC process using thermal, chemical, and physical treatments until they meet EPA’s Class A standards,” explained Ben Carver, operations manager at FSSD. “Afterward, it is sold to local farmers as a liquid fertilizer for sub-surface injection,”

Lystek’s services provide FSSD with a solution to CA Senate Bill 1383, which requires diverting biosolids away from landfills.

FSSD is responsible for maintaining and operating a 70-mile-long sewer system that includes 13 pump stations. They are also in charge of wastewater collection, treatment, water recycling, and stormwater management services. The wastewater treatment plant has a design capacity of 23.7 MGD average dry weather flow and can handle a wet weather operational capacity of 45 MGD. The District caters to over 135,000 customers comprising of residential, commercial, and industrial sectors in a 48-square-mile area.

Carver said that the biosolids treatment train consists of two Alfa Laval Aquabelt two-meter gravity belt thickeners for secondary sludge thickening, as well as two single-stage mesophilic anaerobic digesters with mechanical mixing. Added to the system are one FKC



Johnson Ho, Mary Martis, and Mark Harris.

screw press and 40 asphalt-lined drying beds for solids dewatering. Biogas is captured and utilized to produce heat and electricity.

The AC24 School of Solids will include an expanded version of the SOS Notebook with focused content on FSSD’s biosolids program. The tour will include 50-minute sessions at six stations showcasing FSSD’s operation and offering Q&A opportunities. The six stations include:

- thickening stations with an emphasis on gravity belt thickener technology, polymer basics, and when it’s time to change
- high-strength liquid waste receiving plus anaerobic co-digestion, waste management agreements, enhanced biogas production, sidestreams, and nutrient management
- dewatering with an emphasis on belt filter press technology and co-digestion impacts to dewatering
- biogas conditioning, plus biogas utilization, cogeneration, and renewable natural gas
- Lystek ORM, Public-Private-Partnerships, and farming as a beneficial use
- A look at the future of biosolids management, PFAS, microplastics, and other unregulated organic compounds, as well as emerging technology solutions

“Lystek’s process is not used at any other wastewater plant in the U.S.,” Johnson Ho, a co-founder of the School of Solids and the O&M manager at Vallejo Flood and Wastewater District, said. “This plant is showing the present with the future at this School of Solids.” ●



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A CLASS ACT: CITY OF DAVIS PILOTS CLASS A EQ BIOSOLIDS TECHNOLOGY

By Roni Gehlke, Clean Water Magazine editor

The CWEA Annual Conference in 2024 will bring together wastewater industry experts to discuss the latest innovations and emerging technologies in wastewater maintenance. One of the key topics of discussion will be the various methods for treating and disposing of biosolids, also known as sewage sludge. The focus will be on exploring newer and more cost-effective approaches. Kathryn Gies from West Yost Associates will be hosting a session to discuss her current pilot program with the City of Davis.

“The City of Davis is conducting pilot testing of the Dry Vac system, which is an innovative wastewater biosolids dewatering technology,” Gies explained. “By demonstrating the efficacy and feasibility of this technology, the City hopes to identify a viable strategy to decrease in energy consumption of the solids processing train and reduce hauling and disposal costs while regaining anaerobic digestion capacity and producing a beneficial product that qualifies as Class A EQ biosolids.”



Biosolids are classified as ‘Class A’ and ‘Class B’ based on their treatment methods. The two classes have different requirements for treating pollutants, pathogens, and vector attraction, as well as general management practices. Part 503 treatment processes are used for Class A biosolids, which effectively eliminate pathogens, including viruses.

The DryVac system used in Davis’ pilot program is a thermal vacuum steam desiccation process that uses a combination of physical, chemical, and thermal processes to stabilize biosolids. It is a mechanical dewatering system that employs a plate-and-frame design, along with steam drying.

The first step of the process involves dewatering the solids under pressure, yielding filtrate that’s as pure as the source water. In the second phase of the cycle, the solids





are dried up to 98% solid under a partial vacuum with the help of steam. This stage also kills pathogens via heat, causing biological cell material to lyse and release biologically held water. This water is then purified through filtration and distillation.

“The two major advantages are that it is one piece of equipment and the reduced hauling cost of the end product,” Gies said.

The DryVac process does not involve biological oxidation or conversion. This means that most of the nutrients in the raw material are preserved in the dried sludge, except for any soluble ammonia and phosphorus in the transfer water. Additionally, the DryVac system can be used before digestion, eliminating the need for thickening, digestion, heating, and dewatering equipment that would otherwise be required.

During the conference session, Gies will discuss the pilot program’s results and its effectiveness in achieving Class A standards for various solid streams produced by the City’s wastewater treatment plant. The implementation of this technology will be defined by the study, including operational requirements, capital costs, and potential savings in operational expenses.

“The City intends for the study to support not only the adoption of this new technology for the City’s WWTP, but also provide information needed for other agencies to consider this option at their facilities as well,” Gies said.

Gies has worked for West Yost Associates for more than 23 years providing planning and regulatory compliance support for wastewater treatment and recycled water projects. Her expertise lies in process design, planning, natural wastewater treatment, sustainable infrastructure, biological nutrient removal (BNR) systems, recycled water master planning, NPDES and biosolids regulatory permitting, and groundwater quality studies.

Gies is currently vice president of CWEA’s state Board of Directors. She has been actively involved with CWEA since 2002, serving on both local and state committees. ●



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MACHINE LEARNING MODELS CAN HELP PROVIDE ACTIONABLE INSIGHTS FOR OPERATORS

By Roni Gehlke, Clean Water Magazine editor

Artificial intelligence technology is becoming increasingly prevalent across various industries, including water and wastewater management. The annual CWEA conference will feature sessions that demonstrate how AI, algorithms, and machine learning can benefit plant operators and enhance the wastewater treatment process by boosting efficiency. Attendees will have the opportunity to witness the potential of these technologies first-hand.

Joshua Registe, an environmental engineer from Jacobs, will present two case studies during one of the conference sessions. These case studies demonstrate how wide-scale machine learning algorithms can be used to effectively ingest all available data, providing actionable insights and recommendations to operators. This approach enables operators to fully leverage big data, cloud technology, data science, and wastewater subject matter expertise.

“For those unfamiliar with machine learning, this is a form of artificial

intelligence that enables computers to learn and make decisions without being explicitly programmed to do so,” Registe said. “Instead, there are many machine learning algorithms that use different statistical techniques across streams of data to enable a computer system to learn patterns and make predictions.”

To put it simply, machine learning is a process that involves inputting data into a computer, which then identifies patterns and relationships within the data. This process is also known as training a model. Once the





model has been trained, the computer can use the examples provided to make predictions or decisions on new data without requiring explicit programming for the task. Machine learning is widely used in applications such as image recognition, natural language processing, forecasting, recommendation systems, and predictive analytics.

“Machine learning also has the ability to uncover valuable insights and patterns that allow us to deploy predictive models that help operators migrate from the reactive style of operations to enabling more proactive decision-making,” Registe said. “Predicting future conditions based on real-time data, and more importantly, allowing operators to design to the specific future that they want on any given day as it relates to water quality or consumption, or maintenance, has proven to be very valuable with still much more potential to unlock.”

Water and wastewater facilities have a plethora of sensors and data that can be utilized for machine learning

purposes. By employing data science and machine learning techniques, it becomes possible to capture all the crucial procedural knowledge of how operators would react to different operational events.

Registe will cite two case study examples in his presentation. The first is the Agua Nueva Water Reclamation Facility in Tucson, Arizona, a 32 MGD wastewater facility with screens, dissolved air flotation, five-stage Bardenpho process, tertiary filters, and a chlorine disinfection facility. The second case study involves the Wilmington WWTF in Wilmington, Delaware, a 340 MGD wastewater facility with screens, primary settling, secondary treatment (BOD), polishing ponds, and chlorine disinfection facility.

Both are examples of wastewater plants that have implemented AI and Bayesian modeling frameworks to improve their operations. Agua Nueva focuses on reducing aeration energy expenses and improving nutrient management, while

Wilmington optimizes disinfection chemicals. AI algorithms are used for both forecasting future conditions and predicting water quality. Post-deployment, both sites have seen significant savings, ranging from 10% to 30% in energy or chemical usage. Registe explains that these case studies demonstrate the successful implementation of AI at treatment facilities and show how it can empower plant operators and improve efficiencies in wastewater treatment.

According to Registe, organizations looking to develop an AI and machine learning program can begin by identifying quick wins for optimization in specific areas of interest. They should then assess the availability and limitations of data and gradually build digital solutions.

“A phased approach can allow organizations to be flexible and adapt to realize the value early on without having to build all components at once. Breaking the transformation journey into smaller achievable goals,” he said.

Registe has worked for Jacobs for two years, where he developed and deployed various types of machine learning, mechanistic, and hybrid models, both as on-premise and cloud solutions. He has seven years of experience in statistics, data visualization, data management, predictive analytics, and machine learning. Registe is also a licensed professional engineer with expertise in wastewater facility environmental planning, analysis, and design.

Registe has specialized knowledge in applied science and research in disinfection, energy, nutrient removal, solids, and biogas treatment. He has an undergraduate and graduate degree in environmental engineering, as well as a graduate degree in data science. ●

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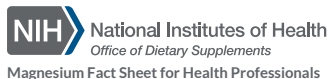
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CWEA MENTORING PROGRAM



ASK DR. MENTOR

MENTORING IS ALL ABOUT BUILDING RELATIONSHIPS

By Dr. Susan Weinberger

The newly minted CWEA Mentoring Program builds meaningful and exciting relationships between mentors and mentees.

Mentors report through check-ins that they feel comfortable interacting with their assigned mentee, are positively impacting them, and the experience is a valuable one. Mentees are reporting similar experiences. The pairs meet regularly and have covered many topics together.

The pairs discuss everything from job hunting, resume reviews, career path opportunities, work-related topics, and even frustrations, setting work goals, life goals, work-life balance, certification, and many more topics. Mentors offer advice, guidance, and support based on their expertise and experience.

During the first seven months of this program, there appears to be a common thread. While meetings of mentors and mentees occur virtually for the most part, on Zoom or a similar platform, mentors and mentees have expressed a desire to meet in person.

Nothing compares to face-to-face meetings and the pairs miss this part of the program.

Since the pandemic, we have become comfortable relying on virtual meetings. Further, even when this is not the case, California is the third-largest state, with a total area of 163,000 square miles. As a result, most mentor-mentee matches have been unable to meet in person. Understandably, geography limits our members from meeting-up.

MEET US IN SACRAMENTO

Now, we have an excellent opportunity to change that. On April 10, 2024, during the CWEA Annual Conference at the Sacramento Convention Center, a special Meet and Greet, sponsored by the CWEA SYP Committee, will enable mentors and mentees to meet each other in person.

Are you planning to attend the conference? This event is your opportunity to learn more about mentoring by attending workshops, connecting with colleagues, visiting the information tables, and enjoying meeting new friends.

It is also the chance for the long-awaited in-person mentor-mentee exchange.

Recently, one of the current CWEA mentors shared that mentoring has been a wonderful experience. "I helped my mentee work toward a promotion. I conducted a mock interview, and my mentee got the job," she stated.

No need to wait any further. See you in Sacramento!

Have a mentoring question? Email it to ebulletin@cwea.org.

To learn more about the CWEA Mentoring Program visit mentor.cwea.org ●

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