

#WEFForum | www.wef.org/forum

2023

WEF FORUM
**INTENSIFICATION
OF RESOURCE
RECOVERY**

CONFERENCE

MARCH 20 – 22

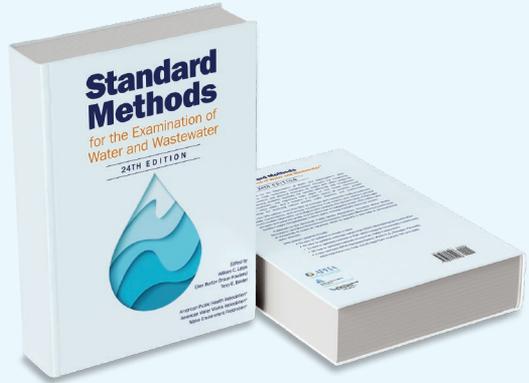
CARY, NORTH CAROLINA

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Events

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- 82 new or updated methods

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WEF Forum: Intensification of Resource Recovery

March 20-22, 2023
Embassy Suites by Hilton Raleigh Durham
Research Triangle
Cary, North Carolina

www.wef.org/forum
#WEFForum

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Section headers are color coded by **General Conference Information** (aqua), **Program** (yellow), and **Sponsors** (red).

CONFERENCE COMMITTEE

WEF FORUM STEERING COMMITTEE CHAIRS



Erika Bailey
Raleigh Water



Rahil Fofana
DC Water



George Sprouse
Metropolitan Council Environmental Services

CONFERENCE COMMITTEE

WEF FORUM STEERING COMMITTEE

Isaac Avila
Black & Veatch

Chris deBarbadillo
Black & Veatch

Rob Nerenberg
Notre Dame

Kati Bell
Brown & Caldwell

Bryce Figdore
HDR

Jeff Peeters
Veolia

Katya Bilyk
Hazen

Xavi Fonoll
*Great Lakes Water
Authority*

Ana Pena-Tijerina
Plummer

Charles Bott
HRSD

Rashi Gupta
Carollo Engineers

Tanja Rauch Williams
Carollo Engineers

Onder Caliskaner
*Caliskaner Water
Technologies, Inc.*

Jose Jimenez
Brown & Caldwell

Jeff Sparks
HRSD, VT

Martha Dagneu
Western University

Stephanie Klaus
HRSD

Dru Whitlock
Stantec

Dan Dair
World Water Works

Jim McQuarrie
TetraTech

Blair Wisdom
*Denver Metro Water
Recovery*

Haydee De Clippeleir
DCWater

Sudhir Murthy
NEWHub Corp

Fenghua Yang

Francis de los Reyes
*North Carolina State
University*

Tom Nangle
Brown & Caldwell

REGISTRATION & CONFERENCE INFORMATION

All events and technical programming will be held in the Embassy Suites by Hilton Raleigh Durham Research Triangle.

Technical sessions will take place in the Blowing Rock room.

The Registration Desk is located in Registry and will be open during the following times:

Monday, March 20	12:30 p.m. – 5:00 p.m.
Tuesday, March 21	7:30 a.m. – 5:00 p.m.
Wednesday, March 22	7:30 a.m. – 12:30 p.m.

RECEPTIONS AND MEAL FUNCTIONS

Staff have arranged to have a variety of food options to accommodate vegan and vegetarian preferences. Please advise staff if you have additional special dietary requirements.

Breakfasts, Luncheons, and Coffee Breaks

For Embassy Suites by Hilton Raleigh Durham Research Triangle guests only, a complimentary cooked-to-order breakfast will be informally held Tuesday and Wednesday mornings from 7:15 a.m.– 8:15 a.m. in the Embassy Suites lobby.

Luncheons will be served on Tuesday and Wednesday in Chimney Rock.

Coffee will be provided inside the session room at 10:00 a.m. and 3:00 p.m.

Monday and Tuesday Evening Receptions

Please join the Steering Committee, technical program presenters, and other participants for receptions on Monday and Tuesday evenings in Chimney Rock. Join us for this casual event and network with other Forum participants over light hors d'oeuvres and drinks. Following the reception, participants are encouraged to arrange dinner plans within small groups on-own.

Monday, March 20 and Tuesday, March 21

Room: Chimney Rock

5:00 p.m. – 6:00 p.m.

Reception continues in the Hotel Lobby until 7:00 p.m. for Embassy Suites guests.

WI-FI

Complimentary standard Wi-Fi is provided in all event guestrooms and meeting spaces in the Embassy Suites. Please use the following information to access Wi-Fi.

Network name: EMBASSY MEETING

Code: ECCONNECT

CONFERENCE SAFETY AND SECURITY

Embassy Suites by Hilton Raleigh Durham Research Triangle

201 Harrison Oaks Blvd, Cary, NC 27513

(919) 677-1840

In case of an emergency, the Embassy Suites by Hilton Raleigh Durham Research Triangle has prepared emergency procedures for their staff to follow for everyone's safety.

- Please contact the front desk in case of an emergency (or dial "0" from guestroom for hotel operator). The front desk will call for the appropriate responder.
- Paramedics, Fire Department, and the Cary Police Department are all located approximately 7-10 minutes from the hotel.
- The Embassy Suites by Hilton Raleigh Durham Research Triangle has at least two employees per shift that are CPR and first aid certified, contact the front desk and they will send the appropriate assistance.
- Emergency evacuation routes and procedures are located on the backside of all guest room doors.

WEF SOCIAL MEDIA POLICY

WEF strongly encourages the use of social media to share your experiences at our event. This includes sharing interesting quotes or information, taking pictures with colleagues, and using the event hashtag: **#WEFForum**. However, to protect intellectual property, videotaping, filming, or live-streaming of any technical session is prohibited. Any participant violating this policy must relinquish the media and may be removed from the conference. Also, promotional or commercial use of photographs taken at WEFTEC and other WEF conferences is strictly prohibited. If you are interested in content, materials, or products, please consider talking to the speaker who may provide the information or grant permission.

CODE OF CONDUCT

WEF is committed to providing a professional, safe, and welcoming environment during its in-person and virtual events for all water professionals and their guests. WEF expects all attendees, exhibitors, speakers, sponsors, media, and other participants to uphold our commitment to diversity and inclusion by helping us provide a positive conference environment for everyone.

As a conference participant you agree to the following:

- To treat all individuals with respect and create a collegial, inclusive, and professional environment.
- To value a diversity of views and opinions by communicating openly with respect for others.
- Not to verbally abuse any individual or to discriminate, harass, or intimidate on the basis of gender, race, gender identity and expression, sexual orientation, physical or mental disability, physical appearance, age, religion, national origin, veteran status, citizenship, or professional rank.

Anyone requested to stop unacceptable behavior is expected to comply immediately. WEF management may take any action deemed necessary and appropriate, including removal from the event (and any remaining portions thereof) without warning and without refund of registration fee.

Additionally, if you are a WEF Member, you agree to uphold the WEF Member Code of Conduct while attending WEF Events.

Reporting Concerns

In the event a matter must be addressed immediately, you may email the WEF executive director at executivedirector@wef.org.

For the complete event Code of Conduct, please visit <https://www.weftec.org/about/about-weftec/code-of-conduct/>.

WEF'S VISION & CORE VALUES



WEF's Vision

Life free of water challenges

WEF's Core Values

- Lead boldly with purpose and agility
- Focus on our customers through empathy and service
- Collaborate for collective impact
- Integrate diversity, equity, and inclusion in all we do

For more information about WEF's new strategic plan, mission, and vision, visit <https://www.wefwaterfuture.org/>.

SPONSOR

We would like to thank the following sponsoring company for their contributions to the conference and program.



**www.hdrinc.com/markets/water
Bronze Elite**

CONTINUING EDUCATION

Continuing Education credit files will be made available online after the event.

Participating attendees will receive an email within 4 weeks after each event informing them when CE Credit documentation becomes available. Attendees will be able to view and download a certificate and transcript detailing their event participation using the following link - <https://ww2.highmarksce.com/wefce/> . These details are posted under the Events & Education tab of WEF.org.

How Do I Receive Credit For this Conference?

In order to receive credit for participation in any of the event sessions attendees will be required to properly fill out and track session times using the CE Credit Request Form. This requires obtaining a room monitor or WEF staff member initial for each session which you'd like to claim CE credit hours. These forms will be made available at the registration counter. Credits obtained during this event will be available after the conference using the link provided above. Please ask a WEF staff member if you have any questions or if you need to locate a CE Credit Request Form.

Technical Sessions:

WEF offers Professional Development Hours (PDHs) for participation in technical sessions. **A PDH is defined as one hour** spent engaged in an activity that contributes to the advancement or enhancement of professional skills or scientific knowledge of a professional engineer or operator.

When Will I Receive Credits For this Conference?

Certificates and transcripts are available for download after each event. ***WEF will send an email within 4 weeks after each qualified event to remind attendees where they can obtain CE Credit documentation.*** Please keep in mind that most state licensing boards require individual licensees to report continuing education credits.

Note: Educational Credits will not be recorded, and documentation will not be distributed unless the attendee is a confirmed registrant of this event and the proper steps are completed as indicated in the directions provided here and on the CE Request Forms.

Are WEF Continuing Education Credits Approved in My State?

Most state licensing boards will accept WEF event credits as issued by WEF. WEF applies for approval in many states and will be happy to work with individuals and Member Associations on additional state licensing board approvals upon request. In addition, WEF has been approved as a Training Provider with several state licensing boards, including:

The Florida Board of Professional Engineers, the New York State Department of Education, and the Ohio EPA.

CONTINUING EDUCATION

What Else Do I Need to Know?

WEF follows the International Association of Continuing Education and Training (IACET) guidelines along with strict state-specific CE Credit regulations. We strive to maintain these policies and procedures regarding our Continuing Education Program to meet with and receive state recognition of our events. WEF calculates education credits following a standardized method that is the most widely accepted by certification and licensing agencies. However, many states differ in the type and/or number of credits they will approve for educational events. Because of this, participants are responsible for exploring their state requirements and for ensuring that WEF conference credits are accepted.

Service and Support...

WEF maintains a database of all continuing education files for a minimum of 7 years. You may contact WEF's Customer Service Team between the hours of 8:30 a.m. and 5:00 p.m. EST, Monday through Friday for questions related to WEF Programs - 1-800-666-0206 or csc@wef.org.

State Credit Calculations:

Each state has its own set of CE credit requirements. Some licensing boards use different acronyms for approved training credits. In most instances the credits issued by WEF can be converted to meet state specific requirements that vary from the system used by WEF. This is usually managed at the state level using the following conversion:

1.0 CEU = 10 Hours of session time

1.0 PDH = 1 Hour of session time

1.0 General Contact Hour = 1 Hour of session time

For example: **1.7 CEU Credits = 17.0 PDH** depending on individual state regulations.

**CEU & PDH credits are available for Workshops to Professional Engineers licensed in the state of New York (NYSED).*

Please note: courses that are not related to professional practice, such as accounting/financial planning, basic Auto CAD, general office management, insurance, marketing, real estate, risk management, DE&I, etc. are not approved for continuing education credits by some state licensing boards, including the NYSED.

For more information regarding WEF's Continuing Education Program, please visit the Events & Education tab at www.WEF.org.

The WEF CE Credit program is sponsored in part by:



The Associated Boards
of Certification

TECHNICAL PROGRAM

Opening Session

Monday, March 20

1:30 p.m. – 3:00 p.m.

- 1:30 p.m. Welcome to the WEF IR² Forum 2023: What to Expect**
Erika Bailey, Raleigh Water
Rahil Fofana, DC Water
George Sprouse, Metropolitan Council Environmental Services
2023 IR² Forum Co-Chairs
- 1:35 p.m. The IR² Forum – Its Goals, History, and Impact**
Jeff Moeller, WRF
Jim McQuarrie, TetraTech
- 1:50 p.m. The Why and How of Intensification and Where the IR² Forum Fits in – A Case Study**
Erika Bailey, Raleigh Water
- 2:00 p.m. Intensification Successes, Pivots, and Discussion of How These Experiences May Inform Development of Emerging Intensification Technologies**
Personal stories and facilitated discussions among Innovators and Implementers
Facilitated by Sudhir Murthy, NEWhub
- Topics:
- ❖ THP
 - ❖ MABR
 - ❖ Phosphorus Recovery and Dewaterability Improvements
 - ❖ Brainstorming discussion on newer/emerging technologies to understand challenges and brainstorm pivots
- 2:40 p.m. Introduction of the 2023 IR²Forum's Sessions**
Steering Committee Session Leads
- 2:55 p.m. Partners in Innovation and Intensification**
- 3:00 p.m. Session Adjourns for Networking Coffee Break**

TECHNICAL PROGRAM

Session 1: Operationalizing Densification and Granular Sludge Monday, March 20 3:30 p.m. – 5:00 p.m.

Session development leads: Isaac Avila and Sudhir Murthy

Description: This session will highlight three of the processes which have gained industry traction for activated sludge intensification through microbial selection. Presentations will be given by vendors, consulting, and utilities with extended operating experience, allowing for knowledge transfer as to the operational strategies, instrumentation, and controls that can provide a toolbox for process engineers and operators. A facilitated discussion will follow the technical presentations.

- 3:30 p.m. Introduction: Utility and Operational Drivers and Perspective of AGS**
Blair Wisdom, Metro Water Recovery
- 3:40 p.m. Technology Presentations**
- 3:40 p.m. Aqua Aerobics – Nereda**
Bryce Figdore, HDR
- 3:55 p.m. World Water Works – InDense**
Eric Staunton, CDM Smith
- 4:10 p.m. Nuvoda – MOB**
Jason Calhoun, Nuvoda
Tony Dolan, Moorefield, WV
- 4:25 p.m. Outro: Case Study - Strengths and Differentiators of Densification**
Isaac Avila, Black & Veatch
Bryce Figdore, HDR
- 4:35 p.m. Facilitated Discussion**
- 5:00 p.m. Session Adjourns for Evening Networking Reception**

TECHNICAL PROGRAM

Session 2: Novel Application of Membranes/MABRs

Tuesday, March 21

8:30 a.m. – 10:00 a.m.

Session development leads: Rob Nerenberg and Jeff Peeters

- 8:30 a.m. Introduction**
Glen Daigger, University of Michigan
- 8:40 a.m. MABR Technology State of the Art**
8:40 a.m. Overview
Glen Daigger, University of Michigan
- 8:45 a.m. Utility perspective #1 - CAS upgrade for process intensification**
Tim Constantine, Jacobs
- 8:50 a.m. Utility perspective #2 – sustainable decentralized WWT**
Neri Nathan, Fluence
- 8:55 a.m. Facilitated Discussion**
- 9:05 a.m. Emerging MABR Applications**
9:05 a.m. Veolia
Jeff Peeters, Veolia Water Technologies & Solutions
- 9:12 a.m. Fluence**
Neri Nathan
- 9:20 a.m. Facilitated Discussion**
- 9:30 a.m. Novel Membrane Application**
9:30 a.m. Technology #1 - Direct Nanofiltration by NX Filtration
Tony Fuhrman, NX Filtration
- 9:40 a.m. Technology #2 - MemGas Biogas Upgrading**
Kristina Gerber, Veolia Water Technologies & Solutions
- 9:50 a.m. Technology #3 - Taron by Xylem: A More Cost Effective MBR System Using Dynamic Membrane**
Wenjun Liu, Xylem
- 10:00 a.m. Session Adjourns for Networking Coffee Break**

TECHNICAL PROGRAM

Session 3: Advanced Primary Treatment

Tuesday, March 21

10:30 a.m. – 12:00 p.m.

Session development leads: Onder Caliskaner and Jose Jimenez

To improve primary treatment performance and efficiency, several Advanced Primary Treatment (APT) technologies such as filtration and micro-screening have been developed to augment or replace conventional primary treatment. APT technologies have shown major benefits for Water Resource Recovery Facilities (WRRF) including energy savings, intensification, and performance enhancement. This session is designed to engage discussion between the attendees and the forum speakers to highlight essential innovation, design, and operational criteria for successful implementation of APT technologies at WRRFs.

10:30 a.m. Overview of Advanced Primary Treatment
Onder Caliskaner, Caliskaner Water Technologies

10:45 a.m. Technology Presentations

10:45 a.m. Cloth Disk Primary Filtration
Terry Reid, Aqua Aerobics Systems

11:00 a.m. AAA
Sudhir Murthy, NEWhub
Thomas Worley-Morse, Metro Water Recovery

11:15 a.m. Proteus Filter
Amit Kaldate, Tomorrow Water
Leon Downing, Black & Veatch

11:30 a.m. Facilitated Panel Discussion

12:00 p.m. Session Adjourns for Lunch

TECHNICAL PROGRAM

Session 4: Intensification of Anaerobic Digestion

Tuesday, March 21

1:30 p.m. – 3:00 p.m.

Session development leads: Chris deBarbadillo and Kati Bell

- 1:30 p.m. Intro and Technology Overview**
Chris Wilson, HRSD
- 1:40 p.m. Limiting Factors for Anaerobic Digestion
Intensification**
Matt Higgins, Bucknell
- 1:50 p.m. Panel Members Round Robin**
Bill Barber, Cambi
Gerhard Forstner, CNP
Kristina Gerber, Veolia Water Technologies & Systems
Ian Piro, Anaergia
Peter Schauer, Clean Water Services
- Facilitated by: Rashi Gupta, Carollo
Chris deBarbadillo, Black & Veatch
- With support from: Tom Nangle, Brown and Caldwell
- 3:00 p.m. Session Adjourns for Networking Coffee Break**

TECHNICAL PROGRAM

Session 5: Beating Best Practice – Development in Carbon Efficient Nitrogen Removal

Tuesday, March 21

3:30 p.m. – 5:00 p.m.

Session development leads: Jim McQuarrie and Jose Jimenez

- | | |
|------------------|--|
| 3:30 p.m. | Overview
Haydee De Clippeleir, DC Water |
| 3:40 p.m. | Advanced Aeration Control
Steve Kestel, APG Neuros |
| 3:50 p.m. | Sensors for Advanced Aeration Control
Susan Guswa, Woodard and Curran |
| 4:00 p.m. | Utility Experience
Gregory Pace on behalf of WSSC Water |
| 4:10 p.m. | Detour-PdNA
Chandler Johnson, World Water Works |
| 4:20 p.m. | BAF PdNA
Larry Li, Veolia Water |
| 4:30 p.m. | Utility Experience with PdNA
Mike Parsons, HRSD |
| 4:40 p.m. | Utility Experience with PdNA
Wendell Khunjar, on behalf of Fairfax County |
| 4:50 p.m. | Facilitated Discussion
Katya Bilyk, Hazen and Sawyer
Pusker Regmi, Brown and Caldwell |
| 5:00 p.m. | Session Adjourns for Evening Reception |

TECHNICAL PROGRAM

Session 6: Machine Learning – Use of Data in Automation for Treatment Processes

Wednesday, March 22

8:30 a.m. – 10:30 a.m.

Session development leads: Ana Pena-Tijerina and Fenghua Yang

- 8:30 a.m. Introduction**
Katya Bilyk, Hazen and Sawyer
- 8:45 a.m. Utility Perspective**
Elkin Hernandez, DC Water
- 9:00 a.m. Case Studies**
- 9:00 a.m. WRF study - WRF 5121 ODIN (Hybrid Nutrient Controller)**
Bruce Johnson, Jacobs
Adrienne Menniti, Clean Water Services
Keaton Larson Lesnik, Maia Analytica
- 9:15 a.m. The Intersection of Machine Learning, Digital Twins, and Industrial Control at HRSD**
Jeff Sparks, HRSD
- 9:30 a.m. Data Wrangling at Metro and Experience Using Alteryx**
Dan Freedman, Metro Water Recovery
- 9:45 a.m. Neuse River RRF Flow Prediction Tool**
Erika Bailey, Raleigh Water
Katya Bilyk, Hazen and Sawyer
- 10:00 a.m. AI/ML Solutions**
Brian Vu, Xylem
- 10:15 a.m. Facilitated Panel Discussion**
Ana Pena-Tijerina, Plummer
- 10:30 a.m. Session Adjourns for Networking Coffee Break**

TECHNICAL PROGRAM

Session 7: Non Reverse Osmosis Advanced Water Treatment for Reuse Applications

Wednesday, March 22

11:00 a.m. – 12:00 p.m.

Session development leads: Kati Bell and Charles Bott

This session will host short presentations at the front followed by an interactive facilitated discussion focusing on the state of technology in this topic area, with the intent to seek input on development at future, targeted events and projects.

- 11:00 a.m. Introduction and Purpose**
Charles Bott, HRSD
- 11:10 a.m. Flow Sheets for Non-RO Based Treatment for Potable Reuse – Costs, Benefits, and Key Technical Challenges**
Kati Bell, Brown and Caldwell
- 11:30 a.m. Regulatory Perspectives on Non-RO Based Treatment – Opening the Door for Potable Reuse at Inland Utilities**
John Rehring, Carollo
- 11:50 a.m. Facilitated Discussion on Industry Needs and Future Events**
Charles Bott, HRSD
- 12:00 p.m. Session Adjourns for Working Lunch and Closing Session**

TECHNICAL PROGRAM

Closing Session

Wednesday, March 22

12:30 p.m. – 2:00 p.m.

12:30 p.m.

Introduction, Key Themes, and Takeaways

Erika Bailey, Raleigh Water

Rahil Fofana, DC Water

George Sprouse, Metropolitan Council Environmental Services

2023 IR² Forum Co-Chairs

12:35 p.m.

Advancing Innovation in the Wastewater World

John Norton, Great Lakes Water Authority

Facilitated Discussion to follow: What utilities really need from consultants, academics, equipment developers, and WEF

2:00 p.m.

Forum Adjourns

FORUM SCHEDULE AT-A-GLANCE

WEF Forum 2023: Intensification of Resource Recovery (IR²)

Overall Event Layout

Monday, March 20 Arrival and Day 1	Tuesday, March 21 Day 2	Wednesday, March 22 Day 3 and Departure
<p>730</p> <p>800</p> <p>830</p> <p>900</p> <p>930</p> <p>1000</p> <p>1030</p> <p>1100</p> <p>1130</p> <p>1200</p> <p>1230</p> <p>1300</p> <p>200</p> <p>230</p> <p>300</p> <p>330</p> <p>400</p> <p>430</p> <p>500</p> <p>530</p> <p>600</p> <p>630</p> <p>700</p> <p>730</p> <p>800</p> <p>830</p> <p>900</p> <p>930</p>	<p>7:15am-8:15am BREAKFAST (for Embassy Suites guests)</p> <p>8:30am-10:00am Session 2: Novel Application of Membranes/MABRs Coffee Break 10-10:30am</p> <p>10:30-noon Session 3: Advanced Primary Treatment</p> <p>12:00pm-1:30pm LUNCH BREAK</p> <p>1:30pm-3:00pm Session 4: Intensification of Digestion</p> <p>Coffee Break 3-3:30pm</p> <p>3:30pm - 5:00pm Session 5: Low Carbon Nutrient Removal (including PDNA)</p> <p>5:00pm-6:00pm Evening Reception <i>(Reception continues until 7:00pm for Embassy Suites guests)</i></p>	<p>7:15am-8:15am BREAKFAST (for Embassy Suites guests)</p> <p>8:30am-10:30am Session 6: Machine Learning - Use of Data In Automation for Treatment Processes</p> <p>Coffee Break 10:30-11am</p> <p>11:00am - noon Session 7 Non RO Adv Water Treatment for Reuse Applications</p> <p>12:00pm-12:30pm WORKING LUNCH (no formal break)</p> <p>12:30pm-2:00pm Closing session</p>
<p>12:00pm-1:30pm Registration Open & Check-in</p> <p>approx 1:30pm-3:00pm Opening Session</p> <p>Coffee Break - 3-3:30pm</p> <p>3:30pm - 5:00pm Session 1: Aerobic Granular sludge</p> <p>5:00pm-6:00pm Evening Welcome Reception <i>(Reception continues until 7:00pm for Embassy Suites guests)</i></p>	<p>7:15am-8:15am BREAKFAST (for Embassy Suites guests)</p> <p>8:30am-10:00am Session 2: Novel Application of Membranes/MABRs Coffee Break 10-10:30am</p> <p>10:30-noon Session 3: Advanced Primary Treatment</p> <p>12:00pm-1:30pm LUNCH BREAK</p> <p>1:30pm-3:00pm Session 4: Intensification of Digestion</p> <p>Coffee Break 3-3:30pm</p> <p>3:30pm - 5:00pm Session 5: Low Carbon Nutrient Removal (including PDNA)</p> <p>5:00pm-6:00pm Evening Reception <i>(Reception continues until 7:00pm for Embassy Suites guests)</i></p>	<p>7:15am-8:15am BREAKFAST (for Embassy Suites guests)</p> <p>8:30am-10:30am Session 6: Machine Learning - Use of Data In Automation for Treatment Processes</p> <p>Coffee Break 10:30-11am</p> <p>11:00am - noon Session 7 Non RO Adv Water Treatment for Reuse Applications</p> <p>12:00pm-12:30pm WORKING LUNCH (no formal break)</p> <p>12:30pm-2:00pm Closing session</p>

UPCOMING WEF EDUCATION & TRAINING EVENTS

WEF/AWWA Utility Management Conference

March 28-31, 2023
Sacramento, California
www.wef.org/utilitymanagement

WEF/IWA Residuals and Biosolids Conference & WEF Odors and Air Pollutants Conference

May 16-19, 2023
Charlotte, North Carolina
www.wef.org/residualsbiosolids
www.wef.org/odorsair

WEF/IWA Innovations in Process Engineering Conference

June 6-9, 2023
Portland, Oregon
www.wef.org/processengineering

WEF Collection Systems Conference & WEF Stormwater Summit

June 27-30, 2023
Kansas City, Missouri
www.wef.org/collectionsystems
www.wef.org/stormwatersummit

WEF Circular Water Economy Summit

July 18-20, 2023
Nashville, Tennessee
www.wef.org/cwesummit

WEFTEC

September 30-October 4, 2023
Chicago, Illinois
www.weftec.org

NOTES

NOTES



2023

WEF/IWA INNOVATIONS IN PROCESS ENGINEERING CONFERENCE

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MARK YOUR
CALENDAR AND
SAVE THE DATE

WORKSHOPS
JUNE 6

CONFERENCE
JUNE 7 – 9



**REGISTER TODAY !
EARLY - BIRD SAVINGS END
APRIL 28, 2023**

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www.wef.org/processengineering

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water association





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Cary, North Carolina

