

#WEFPublicHealth

# PUBLIC HEALTH AND WATER CONFERENCE

# WASTEWATER DISEASE SURVEILLANCE SUMMIT

## CONFERENCE PROGRAM

SUMMIT  
March 21

CONFERENCE  
March 22-24

EXHIBITION  
March 22-23

# 2022



In support of:

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WASTEWATER  
SURVEILLANCE  
SYSTEM





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**Public Health and Water Conference  
&  
Wastewater Disease Surveillance Summit**

March 21-24  
Duke Energy Convention Center  
Cincinnati, Ohio

#WEFPublicHealth

*In support of:*



**NATIONAL™  
WASTEWATER  
SURVEILLANCE  
SYSTEM**



*This conference is organized by the Water Environment Federation in cooperation with the US Centers for Disease Control, and the Ohio Water Environment Association.*

To Our Friends and Colleagues:

Welcome to Cincinnati and the inaugural Public Health and Water Conference & Wastewater Disease Surveillance Summit! Great to have you with us!

The Water Environment Federation in cooperation with the US Centers for Disease Control and Prevention, US Environmental Protection Agency, and the Ohio Water Environment Association, is excited to bring public health professionals, practitioners, and policy makers together for another four days of learning, sharing and celebrating the value of our work. After almost two years of living through the COVID-19 pandemic, we acknowledge that engagements like this have been drastically altered from what we had become accustomed to, and we promised to make it rewarding for all.

We encourage you to make the most of our time together. Step away from your daily routine of meetings, emails, deliverables, approvals and submittals to take a well-deserved pause. Here, you have rich opportunities to interact, in person, with the best and brightest in our sector - in an open, engaging, and unique program. This is a great time for all of us to think beyond the day to day about how you can increase your impact back home!

As Chairs, we are confident of the value and benefits of this Conference. We also hope you'll enjoy your time here. Please seek us out and share your experiences with us so we can reinvest that knowledge into the continued success of this conference.

### **Conference Highlights**

- **Wastewater Disease Surveillance Summit** – We hope to see you at the Summit to learn more about Wastewater Disease Surveillance and the National Wastewater Surveillance System.
- **Opening General Session** — We're excited to be able to hear from national and local leaders from the CDC, EPA, ODOH, and the Ohio River Valley Water Sanitation Commission. Come join us!
- **16 Sessions** — Over the next three days, a variety of sessions will be featured covering a vast array of topics on surveillance, PFAS, Equity, Environmental Justice, and more to meet the specific needs of attendees.
- **Networking Reception** — Join us on the exhibit floor on March 22 after the sessions end to network with all the attendees. It will run from 4:45 p.m. – 6:15 p.m. and we look forward to seeing you there.



We welcome and love your feedback! Please tell us what you think. What works? What can be better? What can we do to improve your experience and the conference for future attendees? Take a minute to complete a survey to provide us with your valuable input or share your thoughts with staff.

On behalf of WEF, the conference steering committee, the dedicated staff, and all moderators and speakers, we invite you to make this conference experience your best yet!

Thank you for joining us!

Sincerely,

Andrew Sanderson - Conference Co-Chair

Kari Brisolara – Conference Co-Chair

Maya Carrasquillo – Conference Co-Chair

Lee Gary – Conference Co-Chair

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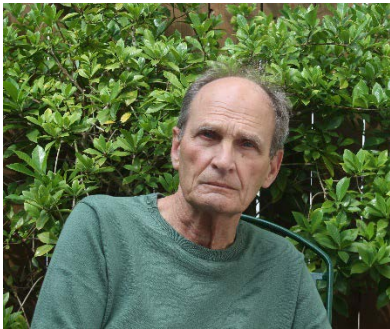
**CONFERENCE AND SUMMIT CO-CHAIRS**



Kari Brisolaro  
Co-Chair  
*Louisiana State University*



Maya Carrasquillo  
Co-Chair  
*University of California, Berkeley*



Lee Gary  
Co-Chair  
*Tulane University*



Andrew Sanderson  
Co-Chair  
*Water Environment Federation*

## CONFERENCE COMMITTEES

### SPECIALTY CONFERENCE STEERING COMMITTEE

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Health Laboratories*

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### SPECIALTY CONFERENCE PROGRAM COMMITTEE

Emily D'Angelo  
*National Association  
of County and City  
Health Officials*

Deise Galan  
*National Association  
of County and City  
Health Officials*

Dan Gerrity  
*Southern Nevada  
Water Authority*

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Robert Reimers  
*Tulane University*

Emily Rimmel  
*NACWA*

Kenneth Williamson  
*Clean Water  
Services*

## HEALTH AND WELL-BEING

WEF's priority at all meeting and events is always the health and safety of our community. Refer to this conference's website for the most current protocols posted under "Health and Well-Being": <https://www.wef.org/PublicHealth>.

## 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: **#WEFPublicHealth**. However, to protect intellectual property, videotaping, filming, or live-streaming of any workshop or technical session presentation, or exhibit booth 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 or exhibitor, who may provide the information or grant permission.

## CODE OF CONDUCT

### **WEF's Vision**

A community of empowered professionals creating a healthy global water environment.

### **Core Values**

Leadership, Passion, Scholarship, and Collaboration, and Service

### **WEF Policies**

WEF respects and takes the broadest view of human diversity and inclusion and is committed to providing a professional, safe, and welcoming environment at its events for all water professionals and their guests. WEF expects all sponsors, speakers, attendees, media, exhibitors and other participants to uphold our commitment to diversity and inclusion by helping us provide a positive conference environment for everyone.

For more information, please see WEF's Diversity and Inclusivity Policy, as well as WEF's Non-Discrimination and Harassment Policy at [www.wef.org/about/about-wef](http://www.wef.org/about/about-wef).

### **Reporting Concerns**

If you have any concerns during this conference, please stop by the conference registration desk in the Grand Ballroom Foyer on Level 3, or you may email the WEF Executive Director Walter Marlowe at [wmarlowe@wef.org](mailto:wmarlowe@wef.org).

## CONFERENCE SAFETY AND SECURITY

### **Duke Energy Convention Center Emergency Info**

Duke Energy Convention Center: 525 Elm Street, Cincinnati, OH 45202

Phone: (513) 419-7300

In case of an emergency, the Duke Energy Convention Center (DECC) has prepared emergency procedures for their staff to follow for everyone's safety.

- The DECC has house phones throughout the facility that dial our Security Console automatically. The Security Console is staffed 24/7.
- The DECC has an emergency response team 24 hour a day. In the event of an actual emergency, picking of any house phone will initiate the appropriate response.
- Paramedics, Fire Department, and the Cincinnati Police Department are all located approximately 1-4 minutes from the Convention Center.
- The DECC Security Department, and majority of DECC employees, are trained in CPR and First Aid. (There is always someone onsite that is CPR and First Aid certified).
- There is a Tri-Health medic onsite during all event hours. Tri-Health is located on the 1st Floor, 5th Street Concourse – across from Hall A.
- In the event of an emergency and evacuation is required, all attendees should exit the facility by using the closest marked exit door and/or stairwell. Do not use elevators. Once you exit the building, please proceed to the open parking lot located on 5th Street.

### **Hyatt Regency Cincinnati Emergency Info:**

The official conference hotel, Hyatt Regency Cincinnati, is located at 151 West Fifth Street, Cincinnati, OH 45202, USA.

- The Hyatt internal emergency number is #55 on any house phone.
- The Hyatt has an emergency response team 24 hour a day. In the event of an actual emergency, calling the emergency number #55 from any house phone or guest room phone will initiate the appropriate response
- Paramedics, Fire Department, and the Cincinnati Police Department are all located approximately 3-5 minutes from the hotel.
- The Hyatt Security Department, and some Hyatt employees, are trained in CPR and First Aid.
- Emergency evacuation routes and procedures are located on the backside of all guest room doors.

## REGISTRATION

**All events are held in the Duke Energy Convention Center.**

The Registration Desk is located in the Grand Ballroom Foyer on Level 3 and will be open at the following times:

Monday, March 21	7:30 a.m. – 5:00 p.m.
Tuesday, March 22	7:30 a.m. – 5:00 p.m.
Wednesday, March 23	8:00 a.m. – 5:00 p.m.
Thursday, March 24	8:00 a.m. – 12:00 p.m.

## PRESENTER AND MODERATOR INFORMATION

**All presenters, alternates, and moderators should sign in at the conference Registration Desk and attend their assigned briefing.**

Presenters and alternates participating Tuesday, Wednesday, and Thursday should attend their assigned briefing. Please attend only once unless speaking on multiple days. The Speaker Briefing and room schedule is as follows:

Tuesday, March 22 — West 252 on Level 2 *Sessions 1 through 6	7:30 AM – 8:15 AM
Wednesday, March 23 — West 252 on Level 2 *Sessions 7 through 16	7:30 AM – 8:15 AM

## COMMITTEE MEETING

### **NWSS Utilities CoP Meetup**

Tuesday, March 22 | 3:00 p.m. – 3:45 p.m.  
West 252 on Level 2

## RECEPTIONS AND MEAL FUNCTIONS

### Networking Luncheon

Lunch will be provided for all registered attendees on both full days of the Public Health and Water Conference. Use this opportunity to meet your fellow participants from across the country and abroad while enjoying a luncheon. The menu has been created with a variety of dietary preferences in mind, but please let staff know if you have specific restrictions.

#### **Tuesday, March 22 and Wednesday, March 23**

Exhibit Hall on Level 3

11:45 a.m. – 1:30 p.m.

### Networking Reception

Join fellow Public Health and Water Conference attendees, speakers, and exhibitors in the Exhibit Hall to network and relax while enjoying a complimentary beverage and light hors d'oeuvres. **We will also be announcing the winner of the Rapid Wastewater SARS-CoV-2 Testing Challenge during the reception.**

#### **Tuesday, March 22**

Exhibit Hall on Level 3

4:45 p.m. – 6:15 p.m.

### Networking Breaks

#### **Monday, March 21**

Foyer Outside West 263 on Level 2

10:00 a.m. – 10:30 a.m. and 3:00 p.m. – 3:30 p.m.

#### **Tuesday, March 22 and Wednesday, March 23**

Exhibit Hall on Level 3

10:00 a.m. – 10:45 a.m. and 3:00 p.m. – 3:45 p.m.

*Tuesday Networking Break Sponsored by: Kando*

#### **Thursday, March 24**

Foyer Outside West 263 on Level 2

10:00 a.m. – 10:15 a.m.

*Please note that lunch will not be provided at the Wastewater Disease Surveillance Summit or on Thursday, March 24<sup>th</sup> after the conference has adjourned. Nearby lunch options are provided in the back of this program and the Registration Desk has additional location options and details.*



## CONTINUING EDUCATION

**Continuing Education files will be available online following the conclusion of the conference.**

You will be able to view your participation details and access your Continuing Education Credits for Technical Sessions online. Attendees will have daily access to their certificates and transcripts through an online portal for 1 year from the event date. After that time, CE documentation will be available through WEF's new CE Credit Archive site: <https://www.wef.org/resources/wef-ce-credit-archive>. These details will be posted on the PH page of WEF.org and emailed to event participants after the conference.

### **How Do I Receive Credit For this Conference?**

In order to receive credit for participation in any of the technical sessions, you will be required to fill out a paper form indicating the time you entered and exited each session room. Forms should be initialed by either a Room Monitor, WEF Staff, or Moderator for all technical sessions you attend. Credits obtained during this event will be available at the end of the conference using a link provided via email.

### **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 during and post conference. ***WEF will send an email after the conference to remind each attendee where they can obtain these credits.*** Please keep in mind that most state licensing boards require the 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.

## CONTINUING EDUCATION

### Are WEF Continuing Education Credits Approved in My State?

WEF applies for approval in many states and will be happy to work with individuals and Member Associations for additional state or agency approvals upon request. In addition, WEF has been approved as a Training Provider through the following:

The Florida Board of Professional Engineers, the New York State Department of Education, and the Ohio EPA. Several states typically accept WEF PDH and CEU credits as issued by WEF. For example: California (CWEA), Florida and New Jersey.

### What Else Do I Need to Know?

WEF follows the International Association of Continuing Education and Training (IACET) guidelines along with state-specific regulations to achieve strict policies and procedures regarding its Continuing Education Program. 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](mailto:csc@wef.org).

### State Credit Calculations:

Each state has its own set of CE credit requirements. Some state licensing boards will accept CEUs for session under 3 hours in length. Some use different acronyms for 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 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).*

**For more information regarding WEF's Continuing Education Program, please visit [www.wef.org/publichealth](http://www.wef.org/publichealth).**

## WEF PUBLIC HEALTH MY SHOW PLANNER

### New Online Planner Launching for #WEFPublicHealth



WEF is pleased to offer the mobile-friendly online *WEF Public Health My Show Planner*.

View full program details, speakers, exhibitors, and sponsors.

Set up your My Show Planner account to begin saving your favorite sessions, speakers, exhibitors, and sponsors to your plan and receiving recommendations.

Scan the QR code to access the site, or visit <https://ph22.mapyourshow.com>

## ONLINE PROCEEDINGS

Conference proceedings consisting of manuscripts, extended abstracts, or presentation summaries from many of the technical sessions have been made available through an online portal. Advance registrants will receive an email with instructions on how to access to the Public Health and Water Conference and Wastewater Disease Surveillance Summit 2022 online proceedings before the start of the conference. Onsite registrants will receive an email with instructions to access proceedings following the event's conclusion.

Not attending this year's Conference or Summit? Copies of proceedings may be ordered on Access Water after the conference ends. You may call 1-800-666-0206 or visit [www.AccessWater.org](http://www.AccessWater.org) to place your order.

## GET INVOLVED WITH WEF

The Water Environment Federation offers many ways to get engaged, build a network, and improve your skills as a water professional. See below for just a few examples.

### **Become a WEF Member**

WEF is your access to water knowledge and invaluable networking opportunities with more than 30,000 professionals and thought leaders in water quality. For more information about membership categories, pricing, and member benefits, visit [www.wef.org/membership/join-wef](http://www.wef.org/membership/join-wef).

### **Join a WEF Committee**

More than 2,500 WEF members participate in WEF committee activities, developing conference programs, writing technical manuals and books, developing training materials and program content, and many other WEF program activities. Committees include Disinfection and Public Health, Laboratory Practices, Public Communications and Outreach, and more! To learn more about joining a committee, visit [www.wef.org/committees](http://www.wef.org/committees). WEF membership is required to participate.

### **Submit to Water Environment Research**

Published since 1928, Water Environment Research (WER) is an international multidisciplinary water resource management journal for the dissemination of fundamental and applied research in all scientific and technical areas related to water quality and resource recovery. In addition to original research articles, short communications, case studies, reviews, and perspectives are encouraged.

### **Continue your Education Online**

In addition to in-person conferences, WEF also offers a variety of technical and leadership courses online. Through the WEF Learning Center, members and non-members can sign up to join webcasts, online courses, and virtual workshops. Visit <https://learn.wef.org> for more information. In addition, WEF also offers a blending learning program called the Water Leadership Institute which brings together water professionals from around the US, Canada, and world. Learn more at [www.wef.org/wli](http://www.wef.org/wli).

### **Attend WEFTEC**

WEFTEC is WEF's largest and most comprehensive conference, featuring dozens of technical sessions, a massive exhibit hall, and plenty of networking opportunities. WEFTEC 2022 will be held October 8-12, 2022 in New Orleans, Louisiana. More information can be found at [www.weftec.org](http://www.weftec.org).

## SPONSORS

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



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## SESSIONS AT A GLANCE

Session Number	Session Title	Start Time	End Time	CE Credits
<b>Monday, March 21</b>				
WDS Summit	Wastewater Disease Surveillance Summit	8:30 a.m.	5:00 p.m.	<b>6 PDHs</b>
<b>Tuesday, March 22</b>				
OGS	Opening General Session	8:30 a.m.	10:00 a.m.	<b>1.5 GCHs</b>
Session 01	Water Professionals Guide to Infectious Disease Outbreaks Panel	10:45 a.m.	11:45 a.m.	<b>1 PDH</b>
Session 02	Lessons on Lead from the Frontlines in Flint: A Community-led Perspective	10:45 a.m.	11:45 a.m.	<b>1 PDH</b>
	Technology Spotlight I	12:45 p.m.	1:30 p.m.	
Session 03	Standards for Wastewater Surveillance	1:30 p.m.	3:00 p.m.	<b>1.5 PDHs</b>
Session 04	Exploring the Role of Various Models in Wastewater-based Surveillance to Evaluate Epidemiological Control Strategies	1:30 p.m.	3:00 p.m.	<b>1.5 PDHs</b>
Session 05	Laboratory Methods	3:45 p.m.	4:45 p.m.	<b>1 PDH</b>
Session 06	Climate Will Change the Game: Threats to Public Health & the Water Sector's Role in Solutions	3:45 p.m.	4:45 p.m.	<b>1 PDH</b>
<b>Wednesday, March 23</b>				
Session 07	Equitable Access to Basic Sanitation – SE/Black Belt Focus	8:30 a.m.	10:00 a.m.	<b>1.5 PDHs</b>
Session 08	Legal, Ethics, Privacy and Environmental Justice Issues Related to Wastewater Surveillance for Public Health Protection	8:30 a.m.	10:00 a.m.	<b>1.5 PDHs</b>
Session 09	Localized Case Studies	10:45 a.m.	11:45 a.m.	<b>1 PDH</b>
Session 10	Water Reuse	10:45 a.m.	11:45 a.m.	<b>1 PDH</b>
	Technology Spotlight II	12:45 p.m.	1:30 p.m.	
Session 11	Seeing Challenges and Progress with Data	1:30 p.m.	3:00 p.m.	<b>1.5 PDHs</b>
Session 12	Status Update on PFAS Challenges and Opportunities: Looking Beyond Documented Occurrence	1:30 p.m.	4:45 p.m.	<b>2.5 PDHs</b>
Session 13	State Cases and Practice Innovations	3:45 p.m.	4:45 p.m.	<b>1.5 PDHs</b>

## SESSIONS AT A GLANCE

Session Number	Session Title	Start Time	End Time	CE Credits
<b>Thursday, March 24</b>				
Session 14	Breaking Down Silos: A Push for Water/Wastewater Equity	8:30 a.m.	11:15 a.m.	<b>2.5 PDHs</b>
Session 15	Theory of Wastewater Surveillance	8:30 a.m.	10:00 a.m.	<b>1.5 PDHs</b>
Session 16	Wastewater, Health and Environmental Justice across the U.S.	10:15 a.m.	11:15 a.m.	<b>1 PDH</b>

# WASTEWATER DISEASE SURVEILLANCE SUMMIT

*(Additional registration required)*

**Monday, March 21, 2022**

**Room: West 263**

**8:30 a.m. - 5:00 p.m.**

**6 PDHs**

- 8:30 a.m.            Implementation of the National Wastewater Surveillance System**  
Amy Kirby, Centers for Disease Control and Prevention
- 8:50 a.m.            Compendium of U.S. Wastewater Surveillance to Support COVID-19 Public Health Response**  
Smiti Nepal; Kathryn Kazior; Sally Gutierrez, United States Environmental Protection Agency
- 9:10 a.m.            Utilities Community of Practice**  
Naoko Munakata, LACSD
- 9:20 a.m.            Laboratories Community of Practice**  
Sarah Wright, APHL
- 9:30 a.m.            Executive Summary of Testing Methods**  
Scott Jackson, NIST
- 9:50 a.m.            Q&A for Status of Wastewater Surveillance in the US**
- 10:00 a.m.           Networking and Coffee Break**
- 10:30 a.m.           Intro to Clinical Forecasting**
- 10:35 a.m.           Enumerating Asymptomatic COVID-19 Cases and Estimating SARS-Cov-2 Fecal Shedding Rates Via Wastewater-Based Epidemiology**  
Bradley Schmitz, University of Arizona; Gabriel Innes, Rutgers University; Sarah Prasek, Walter Betancourt, Erika Stark, Aidan Foster, University of Arizona; Alison Abraham, University of Colorado Anschutz Medical Campus; Charles Gerba, Ian Pepper, University of Arizona
- 10:55 a.m.           Clinical Testing Underestimates COVID-19 Incidence and Variant Prevalence: Insights from Wastewater Surveillance in Southern Nevada**  
Katerina Papp, Daniel Gerrity, Southern Nevada Water Authority

*Summit agenda continues on the following page*



# WASTEWATER DISEASE SURVEILLANCE SUMMIT

*(Additional registration required)*

**Monday, March 21, 2022**  
**8:30 a.m. - 5:00 p.m.**

**Room: West 263**  
**6 PDHs**

*Summit agenda continued from previous page*

- 11:15 a.m.**      **Correlation between SARS-CoV-2 Concentration in Wastewater and COVID-19 Case Incidences in Six California National Wastewater Surveillance System (NWSS) Sewersheds**  
*Angela Rabe, [Sindhu Ravuri](#), Seema Jain, Tomas Leon, Duc Vugia, Alexander Yu, California Department of Public Health*
- 11:35 a.m.**      **Estimating the Number of Infections Using Wastewater Surveillance Data**  
*[Ali Zarei-Baygi](#), John Sheets, Greta Zornes, CDM Smith*
- 12:00 p.m.**      **Break for Lunch on Own**  
*Nearby lunch options are provided in the back of this program and additional locations and details are available at the Registration Desk.*
- 1:30 p.m.**      **Intro to Variant Tracking in Wastewater**
- 1:35 p.m.**      **SARS-CoV-2 Variant Tracking in Ohio Wastewater**  
*[Nichole Brinkman](#), US EPA*
- 1:55 p.m.**      **Wastewater Surveillance of SARS-CoV-2 and Quantitative Analysis of the Alpha Variant in Ohio**  
*[Chloe Hart](#), Maitreyi Nagarkar, Scott Keely, Nichole Brinkman, USEPA*
- 2:15 p.m.**      **COVID-19 and Variants in a College Community Wastewater**  
*[Nishita D'Souza](#), Matthew Flood, Rebecca Ives, Samantha Carbonell, Ryan Julien, Jade Mitchell, Michigan State University; Linda Vail, Ingham County Health Department; Joan Rose, Michigan State University*
- 2:35 p.m.**      **NWSS Approach to Variant Tracking**  
*[Rory Welsch](#), Centers for Disease Control and Prevention*
- 3:00 p.m.**      **Networking and Coffee Break**

*Summit agenda continues on the following page*

# WASTEWATER DISEASE SURVEILLANCE SUMMIT

*(Additional registration required)*

**Monday, March 21, 2022**  
**8:30 a.m. - 5:00 p.m.**

**Room: West 263**  
**6 PDHs**

*Summit agenda continued from previous page*

- 3:30 p.m.**      **What's next for NWSS?**  
Amy Kirby, Centers for Disease Control and Prevention
- 3:45 p.m.**      **Wastewater-based epidemiology (WBE) as a Public Health Tool for Characterizing Opioid and Other Drug Use: Pilot-Studies from Three Communities in the United States**  
Clifton Dassuncao, Rebecca Devries, Eastern Research Group, Inc.; Cindy Hu, Aparna Keshaviah, Mathematica; Todd Miller, University of Wisconsin- Milwaukee
- 4:05 p.m.**      **Where Next? Wastewater-Based Epidemiology as a Tool for Antimicrobial Resistant Pathogen Surveillance**  
Helena Steeves, Jordan Schmidt, LuminUltra; Bradley Brown, Jennifer Hill, Kerri Cabrera, ChromaCode, Inc.
- 4:25 p.m.**      **Wastewater Surveillance for Tracking Markers of Population Health**  
Rolf Halden, Arizona State University
- 4:45 p.m.**      **Panel Discussion**
- 5:00 p.m.**      **Summit Adjourns**

## OPENING GENERAL SESSION

**Tuesday, March 22, 2022**

**Room: West 263**

**8:30 a.m. – 10:00 a.m.**

**1.5 GCH**

- 8:30 a.m.            WEF Public Health and Water Conference Chairs Welcome**  
Kari Brisolara, Louisiana State University  
Maya Carrasquillo, University of California, Berkeley  
Lee Gary, Tulane University  
Andrew Sanderson, Water Environment Federation
- 8:35 a.m.            WEF Welcome**  
Shellie Chard, WEF Board of Trustees, Oklahoma Department  
of Environmental Quality
- 8:40 a.m.            OWEA Welcome**  
Jason Tincu, Greene County Ohio
- 8:45 a.m.            Welcome, EPA Lab and Research Legacy**  
Gregory Sayles, Center for Environmental Solutions and  
Emergency Response
- 8:55 a.m.            National Perspectives on Health and Water**  
Amy Kirby, Centers for Disease Control and Prevention
- 9:20 a.m.            Overview of Ohio’s Wastewater Surveillance Program**  
Rebecca Fugett, ODOH
- 9:40 a.m.            Bridging the Gap between Wastewater Surveillance and  
the Department of Health**  
Richard Harrison, Ohio River Valley Water Sanitation  
Commission
- 9:55 a.m.            Rapid Wastewater SARS-CoV-2 Testing Challenge Winner  
Announcement and Closing Remarks**  
Anna Mehrotra, Water Environment Federation
- 10:00 a.m.           Session Adjourns for Networking Break**

## TECHNICAL SESSIONS

**Session 01: Water Professionals Guide to Infectious Disease  
Outbreaks Panel**

**Tuesday, March 22, 2022**

**10:45 a.m. - 11:45 a.m.**

**Room: West 261**

**1 PDH**

**Moderators:** Lola Olabode, Water Research Foundation

This session will focus on the emerging science and management information on the COVID-19 pandemic and potential hazards in the water industry with particular attention to guidance and direction from CDC.

**Speakers include:** Christopher Owen, University of Illinois Chicago; Akin Babatola, City of Santa Cruz; Naoko Munakata, LACSD; and Amy Kirby, Centers for Disease Control and Prevention

**Session Adjourns at 11:45 a.m. for Networking Luncheon in Exhibit Hall**

## TECHNICAL SESSIONS

**Session 02: Lessons on Lead from the Frontlines in Flint: A  
Community-led Perspective**

**Tuesday, March 22, 2022**

**10:45 a.m. - 11:45 a.m.**

**Room: West 263**

**1 PDH**

**Moderators:** Emily Simonson, US Water Alliance; Andrew Sanderson, Water Environment Federation

The work of students and community leaders running the Flint Community Water Lab is a model for how utilities and water quality professionals can improve trust and engagement with communities most impacted by lead in water. These lessons implicate multiple workstreams at a typical utility: workforce development, public engagement as distinct from communications, accountability and system governance, and water quality monitoring. This session will feature a case study on this work and also discuss the future of the Lead and Copper Rule and its implications for water equity and water professionals.

**10:45 a.m. Welcome and Context**

Dr. Andrew Sanderson, Chief Medical Officer, Water Environment Federation

**10:55 a.m. The Flint Water Crisis and the Flint Community Water Lab**

Michael Harris, Partner, Flint Development Group; Makayla Watson, Principal Chemist, McKenzie Patrice Croom Flint Community Water Lab

**Panel Introductions and Q&A**

Emily Simonson, Director of Strategic Initiatives, US Water Alliance

**11:30 a.m. BIL Opportunities and Updates on the Lead and Copper Rule**

Emily Simonson, Director of Strategic Initiatives, US Water Alliance

**11:45 a.m. Session Adjourns for Networking Luncheon in Exhibit Hall**

## TECHNOLOGY SPOTLIGHT

### Technology Spotlight I

Tuesday, March 22

Room: Exhibit Hall

12:45 p.m. - 1:30 p.m.

The three exhibitors listed below will each be holding the same 20-minute presentation two times in a row. Participants are invited to join a different presentation at each of the times listed below. Choose the top two you would like to attend. Each presentation happens at the exhibitor's booth. To see the location of each booth, please see the Exhibit Hall Floor Plan on page 39. Presentations kick-off concurrently at: **12:50 PM and 1:10 PM** in each of the three booths.

12:45 PM	Mobile Session Introduction at entrance to exhibit hall
12:50 PM	3 Simultaneous Presentation A
1:10 PM	3 Simultaneous Presentation B

**Booth 104**      **Sampling for Wastewater Based Epidemiology. Selection of type of sampler and sampling methodology based on purpose and location**  
Kaushal Trivedi, *Teledyne*

**Booth 102**      **The Need for Wastewater Quality Monitoring as Part of Wastewater-based Epidemiology Best Practice**  
Anne-Li Steutel, *Kando*

**Booth 106**      **One-Step SARS-CoV-2 Wastewater Testing Using Automated Extraction and Measurement Technology**  
James Harbridge, *Hach*

## TECHNICAL SESSIONS

**Session 03: Standards for Wastewater Surveillance**

**Tuesday, March 22, 2022**

**Room: West 263**

**1:30 p.m. - 3:00 p.m.**

**1.5 PDHs**

**Moderator:** Ishi Keenum, National Institute of Standards and Technology

**1:30 p.m. Opening Remarks**

Philip Mattson, US Department of Homeland Security, Science and Technology Directorate

**1:35 p.m. Overview and Findings of the Standards for Wastewater Surveillance (SWWS) Workshop**

Nancy J. Lin, Scott Jackson, Katrice Lippa, Paulina Piotrowski, Stephanie Servetas, National Institute of Standards and Technology; Phil Mattson, US Department of Homeland Security, Science and Technology Directorate

**1:53 p.m. Standards for Pathogen Detection and Environmental Surveillance at NIST**

Jason Kralj, Stephanie Servetas, Samuel Forry, Monique Hunter, Blaza Toman, Scott Jackson, National Institute of Standards and Technology; Dieter Tourlousse, National Institute of Advanced Industrial Science, Japan

**2:11 p.m. Development and Performance Assessment of NIST SRM® 2917**

Orin C. Shanks, Jessica Willis, Mano Sivaganesan, U.S. Environmental Protection Agency, Office of Research and Development; Jason Kralj, Stephanie Servetas, Monique E. Hunter, Scott Jackson, National Institute of Standards and Technology; Interlaboratory Consortium

**2:30 p.m. Panel Discussion**

Speakers: Jason Kralj, NIST; Orin Shanks, EPA; Bradley Schmitz, University of Arizona; Rehka Singh, Virginia Dept. of Health

**3:00 p.m. Session Adjourns for Networking Break**

## TECHNICAL SESSIONS

**Session 04: Exploring the Role of Various Models in Wastewater-Based Surveillance to Evaluate Epidemiological Control Strategies**

**Tuesday, March 22, 2022**

**Room: West 261**

**1:30 p.m. - 3:00 p.m.**

**1.5 PDHs**

**Moderators:** Lola Olabode, Water Research Foundation; Jim Harbridge, Hach Company

**1:30 p.m. The Role of Hydraulic Models in Wastewater Based Epidemiology: Opportunities and Limitations**

Joe Shuttleworth, Olivia Bailey, Vikki Williams, Arup

**1:45 p.m. Building-Level Wastewater Surveillance Modeling for SARS-CoV-2**

Ryan Julien, Dennise Celis-Lugo, Jade Mitchell, Michigan State University

**2:00 p.m. Spatial and Temporal Measurements of SARS-CoV-2 in a Sewershed**

Blythe Layton, Scott Mansell, Clean Water Services; Devrim Kaya, Oregon State University; Jason Cook, Hannah Ferguson, Andrea George, Clean Water Services; Matthew Geniza, Dana Alegre, Oregon State University; Adriana Piemonti, Clean Water Services, Christine Kelly, Tyler Radniecki, Oregon State University; Kenneth Williamson, Clean Water Services

**2:15 p.m. Exploring the Effects of Natural Stressors on Indicators and Pathogens in Surface Waters with Persistence Modeling**

Kara Dean, Jade Mitchell, Michigan State University

**2:30 p.m. Fireside Chat on the State of Modeling Tools as a Predictive and Forecasting Tools During Outbreaks and Pandemics**

**3:00 p.m. Session Adjourns for Networking Break**



## TECHNICAL SESSIONS

### **Session 05: Laboratory Methods**

**Tuesday, March 22, 2022**

**3:45 p.m. - 4:45 p.m.**

**Room: West 261**

**1 PDH**

**Moderator:** Jim Harbridge, Hach Company; Kari Brisolaro, Louisiana State University

**3:45 p.m. Removing Barriers to Laboratory Analysis for Wastewater Monitoring for SARS-CoV-2**

Joaquin Bradley Silva, Rose Kantor, University of California, Berkeley; Kara Nelson, Dept. Of Civil And Env. Eng.; Sasha Harris-Lovett, University of California, Berkeley

**4:05 p.m. SARS-CoV-2 Variant Tracking from Wastewater**

Rose Kantor, Sanaiya Islam, Joaquin Bradley Silva, Sasha Harris-Lovett, Kara Nelson, University of California, Berkeley

**4:25 p.m. Variability of RNase P, PMMoV and CrAssphage Concentration in Wastewater across Distinct Urban Sewershed Scales, Kentucky, USA**

Rochelle Holm, University of Louisville; Maitreyi Nagarkar, United States Environmental Protection Agency; Ray Yeager, University of Louisville; Daymond Talley, Louisville & Jefferson County MSD; Adam Chaney, Sanitation District No. 1 of Northern Kentucky; Jayesh Rai, Anish Mukherjee, Shsesh Rai, Aruni Bhatnagar, Ted Smith, University of Louisville

**4:45 p.m. Session Adjourns for Networking Reception**

**Alternate Comparison of Two Rapid Virus Concentration Methods for Implementing SARS-CoV-2 Wastewater-based Epidemiology**

Md Ariful Islam Juel, Kevin Lambirth, Jessica Schlueter, Cynthia Gibas, Mariya Munir, University of North Carolina at Charlotte

## TECHNICAL SESSIONS

**Session 06: Climate Will Change the Game: Threats to Public Health & the Water Sector's Role in Solutions**

**Tuesday, March 22, 2022**

**Room: West 263**

**3:45 p.m. - 4:45 p.m.**

**1 PDH**

**Moderators:** Lola Olabode, Water Research Foundation; and Katie Bollmer, Jacobs

**3:45 p.m. Responding to Change: Innovative Operational Controls to Prevent Sewer Basement Backups**

John Barton, Metropolitan Sewer District of Greater Cincinnati

**4:05 p.m. Implementing Decentralization as Part of Climate Adaptive Water Systems**

Jay Garland, US EPA

**4:25 p.m. Water Quality Impacts to Recreational Marine Waters Following the 2018 Woolsey Fire**

Christine Lee, NASA Jet Propulsion Laboratory

**4:45 p.m. Session Adjourns for Networking Reception**

**Session 07: Equitable Access to Basic Sanitation - SE/Black Belt Focus**

**Wednesday, March 23, 2022**

**Room: West 261**

**8:30 a.m. - 10:00 a.m.**

**1.5 PDHs**

**Moderators:** Andrew Sanderson, Carly Truyens, Water Environment Federation

**8:30 a.m. Effectively Conducting Soil-Transmitted Helminth Infection Surveillance in the United States**

Amy Chatham, Claudette Poole, University of Alabama, Birmingham

**9:00 a.m. Onsite Sewage in Lowndes County in Alabama's Black Belt - UNLEASH Hack**

Anniestacia Miskel, Arcadis

**9:30 a.m. Roundtable Discussion**

**10:00 a.m. Session Adjourns for Networking Break**

## TECHNICAL SESSIONS

**Session 08:      Legal, Ethics, Privacy and Environmental Justice Issues  
Related to Wastewater Surveillance for Public Health  
Protection**

**Wednesday, March 23, 2022**

**Room: West 263**

**8:30 a.m. - 10:00 a.m.**

**1.5 PDHs**

**Moderator:**      Sally Gutierrez, USEPA

**8:30 a.m.            Session introduction**  
Sally Gutierrez, USEPA ORD

**8:35 a.m.            Overview of the World Health Organization “Guidelines on  
Ethical Issues in Public Health Surveillance and the  
Canadian Water Network Ethics and Communications  
Guidance for Wastewater Surveillance to Inform Public  
Health Decision-making About COVID-19**  
Sally Gutierrez, USEPA ORD

**8:50 a.m.            Lessons Learned in Implementing Wastewater  
Surveillance in Underserved Communities as Summarized  
in the USEPA Wastewater Surveillance Compendium**  
Smiti Nepal, USEPA Office of Water, Office of Wastewater  
Management, Water Infrastructure Division

**9:00 a.m.            Building Community Trust for Wastewater Surveillance,  
Experience from Tempe, Arizona**  
Rosa Inchausti, City of Tempe, Arizona

**9:25 a.m.            U.S. Federal Clean Water Act Authorities Relevant to  
Wastewater Surveillance**  
Simma Kupchan, USEPA Office of General Counsel, Water  
Law Office

**9:50 a.m.            General questions and discussion – All speakers**

**10:00 a.m.           Session Adjourns for Networking Break**

## TECHNICAL SESSIONS

**Session 09: Localized Case Studies**

**Wednesday, March 23, 2022**

**10:45 a.m. - 11:45 a.m.**

**Room: West 263**

**1 PDH**

**Moderators:** Anna Mehrotra, Water Environment Federation; Lee Gary, Tulane University

**10:45 a.m. Wastewater Disease Surveillance in Distinct Urban Sewershed Scales, Louisville, KY**

Rochelle Holm, Anish Mukherjee, Jayesh Rai, Ray Yeager, University of Louisville; Daymond Talley, Louisville & Jefferson County MSD; Shesh Rai, Aruni Bhatnagar, Ted Smith, University of Louisville

**11:05 a.m. COVID-19 Containment on a College Campus Via Wastewater-Based Epidemiology, Targeted Clinical Testing and an Intervention**

Walter Betancourt, Bradley Schmitz, University of Arizona; Gabriel Innes, Rutgers University; Sarah Prasek, Kristen Pogreba Brown, Erika Stark, Aidan Foster, Ryan Sprissler, David Harris, University of Arizona; Samendra Sherchan, Tulane University; Ian Pepper, Charles Gerba, University of Arizona

**11:25 a.m. Early Detection And Quicker Response: Highlights and Lessons Learned from COVID-19 Wastewater Surveillance of Congregate Settings in New Mexico**

Rebecca Devries, Jessica Gray, Eastern Research Group Inc; Justin Garoutte, New Mexico Environment Department; David Freedman, Clemson University; Anda Quintero, LuminUltra Technologies

**11:45 a.m. Session Adjourns for Networking Luncheon in Exhibit Hall**

**Alternate Wastewater Surveillance to Support Public Health Response: COVID-19 Case Studies**

John Sheets, Greta Zornes, Ali Zarei-Baygi, CDM Smith

## TECHNICAL SESSIONS

**Session 10: Water Reuse**

**Wednesday, March 23, 2022**

**10:45 a.m. - 11:45 a.m.**

**Room: West 261**

**1 PDH**

**Moderator:** Kari Brisolara, Louisiana State University; **Arun Hindupur, Jacobs**

**10:45 a.m. Partners in Protecting Public Health: How the Water Sector and Health Professionals Can Effectively Communicate the Safety of Water Reuse**

Bart Weiss, Hillsborough County; Heather Strathearn, WateReuse Association

**11:15 a.m. Molecular Methods for Measuring Pathogen Viability/Infectivity**

Nicole Rockey, University of Pittsburgh

**11:45 a.m. Session Adjourns for Networking Luncheon in Exhibit Hall**

## TECHNOLOGY SPOTLIGHT

**Technology Spotlight II**  
**Wednesday, March 23**  
**12:45 p.m. - 1:30 p.m.**

**Room: Exhibit Hall**

*The three exhibitors listed below will each be holding the same 20-minute presentation two times in a row. Participants are invited to join a different presentation at each of the times listed below. Choose the top two you would like to attend. Each presentation happens at the exhibitor's booth. To see the location of each booth, please see the Exhibit Hall Floor Plan on page 39. Presentations kick-off concurrently at: **12:50 PM and 1:10 PM** in each of the three booths.*

12:45 PM	Mobile Session Introduction at entrance to exhibit hall
12:50 PM	3 Simultaneous Presentation A
1:10 PM	3 Simultaneous Presentation B

**Booth 107**      **Flushing Out the Nuances of Detecting SARS-CoV-2 in Wastewater: A Total Workflow Solution from Sample Extraction to Detection with Digital PCR & Sequencing**  
Bi Linton, *QIAGEN, Inc.*

**Booth 100**      **Wastewater based Epidemiology for population health surveillance - opportunities and challenges**  
Douglas Workman, *Modern Water Inc*

**Booth 105**      **A Direct Capture Method for Efficient Concentration and Purification of Nucleic Acid from Wastewater Samples**  
Sameer Moorji, Brigitta Saul, Subhajan Mondal, Eric Vincent,  
*Promega*

## TECHNICAL SESSIONS

**Session 11: Seeing Challenges and Progress with Data**

**Wednesday, March 23, 2022**

**Room: West 261**

**1:30 p.m. - 3:00 p.m.**

**1.5 PDHs**

**Moderators:** Michael Jahne, USEPA

**1:30 p.m. W-SPHERE (Wastewater - SARS Public Health Environmental Response): a Global Data Center for SARS-CoV-2 Detection in Wastewater and Environmental Samples**

Andri Taruna Rachmadi, Michigan State University; Kristen Kadonsky, Colleen Naughton, UC Merced; Gertjan Medema, KWR; Panagis Katsivelis, Venthic IT; Joan Rose, Michigan State University

**2:00 p.m. Wastewater Surveillance You Can Trust: Data Definitions, Structure, and Transparency**

John Norton, Great Lakes Water Authority; Russell Faust, Oakland County Health Division; Stacey McFarlane, Macomb County Health Department; Scott Withington, Randy David, Detroit Health Department; Andrea Busch; Xavier Fonoll Almansa, GLWA

**2:30 p.m. Supporting a Nationwide Covid-19 Wastewater Monitoring Program**

Scott Olesen, Max Imakaev, Katherine Stansifer, Claire Duvallet, Biobot Analytics

**3:00 p.m. Session Adjourns for Networking Break**

**Alternate Applying Established Frameworks for Surveillance Ethics to Wastewater Monitoring Campaigns**

Cresten Mansfeldt, University of Colorado Boulder

## TECHNICAL SESSIONS

**Session 12: Status Update on PFAS Challenges and Opportunities:  
Looking Beyond Documented Occurrence**

**Wednesday, March 23, 2022**

**Room: West 263**

**1:30 p.m. – 4:45 p.m.**

**2.5 PDHs**

**Moderators:** Andrew Sanderson, Water Environment Federation; Jenny Reina, Jacobs

**1:30 p.m. State of the Science on the Health Effects Associated with PFAS exposure**  
Jason Lambert, US EPA

**1:50 p.m. Gaps in Understanding and how to Address PFAS in Rural Communities**  
Linda Lee, Purdue University

**2:10 p.m. Research Updates on PFAS-selective Adsorbents**  
Mohamed Ibrahim, US EPA

**2:30 p.m. PFAS Forensics Approaches Update**  
Kavita Dasu, Battelle

**2:50 p.m. Q&A Session**

**3:00 p.m. Networking and Coffee Break**

**3:45 p.m. PFAS Fate and Transport Characteristics in Wastewater**  
Erica McKenzie, Temple University

**4:05 p.m. Interaction of PFAS and Microplastics**  
Onur Apul, University of Maine System

**4:25 p.m. Q&A with All Speakers**

**4:45 p.m. Session Adjourns**



## TECHNICAL SESSIONS

### Session 13: State Cases and Practice Innovations

Wednesday, March 23, 2022

Room: West 261

3:45 p.m. - 4:45 p.m.

1 PDH

**Moderators:** Lee Gary, Tulane University

**3:45 p.m. Ready and Willing: New York State Wastewater Treatment Plants Show High Capacity to Pull and Ship Samples as Part of a Public Health Wastewater Surveillance Network**

Dustin Hill, Syracuse University; Hannah Cousins, Case Western University; Bryan Dandaraw, SUNY ESF; Catherine Faruolo, Alex Godinez, Sythong Run, Simon Smith, Megan Willkens, Syracuse University; Shruti Zirath, SUNY ESF; David Larsen, Syracuse University

**4:00 p.m. Missouri's COVID-19 Sewershed Surveillance Project**

Elizabeth Semkiw; Anthony Belenchia, Hwei-Yiing Johnson, Melissa Reynolds, Jeff Wenzel, Jessica Klutts, Sally Zemmer, Missouri Department of Natural Resources

**4:15 p.m. Midstream Transformation of Colorado's Wastewater Data Pipeline**

Brian Erly, Devon Williford, Allison Wheeler, Colorado Department of Public Health and Environment

**4:30 p.m. Tracking and Surveillance SARS-CoV-2 Variant-Associated Mutations from Wastewater Whole Genome Sequencing in Colorado**

Laura Bankers, Shannon Matzinger, Brian Erly, Molly Hetherington-Rauth, Diana Ir, Alexandria Rossheim, Sam Baird, Cristal Salatas, Kevin Andresen, Allison Wheeler, Colorado Department of Public Health and Environment; Carol Wilusz, Susan DeLong, Philip Fox, Colorado State University; Sarah Totten, Emily Travanty, Colorado State University

**4:45 p.m. Session Adjourns**

**Alternate COVID-19 Outbreak Monitoring through SARS-CoV-2 Wastewater Surveillance: A Case-Study for Medium Outbreaks in Small Urban Environments**

Lambros Nousis, Christina Diamanti, Petros Bozidis, University of Ioannina School of Medicine; Maria Kyritsi, University of Thessaly; Anastasia Koursolioutsou, National Public Health Organisation of Greece; Christos Hatjichristodoulou, University of Thessaly; Aristides Bartzokas, University of Ioannina; Gartzonika Konstantina, Evangelia Ntzani, University of Ioannina School of Medicine

## TECHNICAL SESSIONS

**Session 14: Breaking Down Silos: A Push for Water/Wastewater Equity**

**Thursday, March 24, 2022**

**Room: West 261**

**8:30 a.m. – 11:15 a.m.**

**2.5 PDHs**

**Moderator:** Kevin White, University of Alabama

**8:30 a.m. How a Consortium of Institutions (and Individuals) Fostered Communication and Initiated Sanitation Changes in the Alabama Black Belt**

Kevin D. White, University of South Alabama

**8:55 a.m. Water, Sanitation, and Household Exposures in Alabama's Black Belt**

Joe Brown, University of North Carolina

**9:15 a.m. A Case Study on Cross-Sector Collaboration: UNLEASH Hacks USA – Alabama Black Belt**

Anniestacia MIskel, ARCADIS

**Developing a Model Program for Wastewater System Implementation and Management In Unincorporated Areas of the Alabama Black Belt**

**9:40 a.m.**

Sherry Bradley, Alabama Department of Public Health

**Networking and Coffee Break in Exhibit Hall**

**10:00 a.m. An Elected Official's Perspective on Fostering Improved Wastewater Management in Uniontown, AL**

**10:15 a.m.** Ben Eaton, City of Uniontown

**Citizen-Involvement in Community Wastewater Decisions in Uniontown, AL**

**10:45 a.m.** Portia Shepherd, BlackBelt Women Rising

**Conference Adjourns**

**11:15 a.m.**

## TECHNICAL SESSIONS

**Session 15: Theory of Wastewater Surveillance**

**Thursday, March 24, 2022**

**8:30 a.m. - 10:00 a.m.**

**Room: West 263**

**1.5 PDHs**

**Moderators:** Anna Mehrotra, Water Environment Federation, John Sheets, CDM Smith

**8:30 a.m. Coupling Freedom from Disease Principles and Early Warning from Wastewater Surveillance to Improve Health Security**

David Larsen, Syracuse University; Mary Collins, SUNY ESF; Qian Du, Quadrant Biosciences; Tabassum Insaf, New York State Department of Health; Pruthvi Kilaru, Brittany Kmush, Syracuse University; Frank Middleton, SUNY Upstate; Abigail Stamm, New York State Department of Health; Maxwell Wilder, SUNY ESF; Teng Zeng, Syracuse University; Hyatt Green, SUNY ESF

**9:00 a.m. Interpreting Covid-19 Wastewater Monitoring Data from Buildings to Support Disease Mitigation**

Scott Olesen, Noriko Endo, Claire Duvallet, Biobot Analytics, Inc.

**9:30 a.m. From Waste to Wisdom: The Utility of Wastewater Surveillance for Community-Level Health Information**

Shirley Clark, Sabina Dahal, Penn State Harrisburg; Heather Preisendanz, Kathryn Hayden, Michael Shreve, Matthew Jones, Andrew Read, Tom Richard, Justin Silverman, David Swisher, Irmgard Seidl-Adams, Penn State University

**10:00 a.m. Session Adjourns for Short Networking Break**

**Alternate Wastewater Surveillance for Infectious Disease: A Systematic Review**

Pruthvi Kilaru, Syracuse University; Dustin Hill; Kathryn Anderson, SUNY Upstate; Mary Collins, Hyatt Green, SUNY ESF; Brittany Kmush, David Larsen, Syracuse University

## TECHNICAL SESSIONS

**Session 16: Wastewater, Health and Environmental Justice across the U.S.**

**Thursday, March 24, 2022**

**Room: West 263**

**10:15 a.m. - 11:15 a.m.**

**1 PDH**

**Moderators:** Carly Truyens, Water Environment Federation, Maya Carrasquillo, University of California, Berkeley

**10:15 a.m. Wastewater Disease Surveillance for Greater Health Equity in California**

Krystin Kadonsky, Colleen Naughton, UC Merced; Linnea Tucker, UC Davis; Clara Y. Medina, UC Merced; Rachel Olson, Julio Reyes, C. Winston Bess, Lezlie Rueda, UC Davis; Ali Boehm, Stanford University; Krista Wigginton, University of Michigan; Marlene Wolfe, Emory University; Heather Bischel, UC Davis

**10:45 a.m. Characterizing the Chemical and Microbial “Fingerprint” of Unsheltered Homelessness in an Urban Watershed**

Daniel Gerrity; Katerina Papp, Southern Nevada Water Authority; Eric Dickenson

**11:15 a.m. Conference Adjourns**

## EXHIBITION INFORMATION

### EXHIBITION SCHEDULE

The Exhibit Hall is located in Grand Ballroom B on Level 3 of the Duke Energy Convention Center.

#### Tuesday, March 22

<b>10:00 a.m. – 6:15 p.m.</b> .....	<b>Exhibit Hall Open</b>
10:00 a.m. – 10:45 a.m. ....	Networking Break
11:45 a.m. – 1:30 p.m. ....	Networking Luncheon
12:45 p.m. – 1:30 p.m. ....	Technology Spotlight I
3:00 p.m. – 3:45 p.m. ....	Networking Break
4:45 p.m. – 6:15 p.m. ....	Networking Reception

#### Wednesday, March 23

<b>10:00 a.m. – 3:45 p.m.</b> .....	<b>Exhibit Hall Open</b>
10:00 a.m. – 10:45 a.m. ....	Networking Break
11:45 a.m. – 1:30 p.m. ....	Networking Luncheon
12:45 p.m. – 1:30 p.m. ....	Technology Spotlight II
3:00 p.m. – 3:45 p.m. ....	Networking Break

*Children under 18 entering the Exhibition must be accompanied by a parent or guardian at all times. The parent or guardian must obtain a child badge at registration, and assumes all risk and responsibility for the child's safety.*

*Due to the proprietary nature of the displays, photography of displays and materials is forbidden without exhibitors' express permission.*

## EXHIBITOR DIRECTORY

As of March 3, 2022

For Companies Descriptions, view Exhibitors in online planner:

<https://ph22.mapyourshow.com>

**Bio-Rad Laboratories, Inc** ..... **Booth 101**

[www.bio-rad.com](http://www.bio-rad.com)

Phone: 800-424-6723

*2000 Alfred Nobel Dr*

*Hercules, CA 94547*

**Hach**..... **Booth 106**

[www.hach.com](http://www.hach.com)

Phone: 970-227-0325

*5600 Lindbergh Dr*

*Loveland, CO 80538*



Inspiring People. Impacting Lives.

**Kando** ..... **Booth 102**

[www.kando.eco](http://www.kando.eco)

Phone: 424-384-8370

*320 E Vine Dr, Ste 101*

*Fort Collins, CO 80524*



**Modern Water, Inc** ..... **Booth 100**

[www.modernwater.com](http://www.modernwater.com)

Phone: 302-669-6901

*15 Reads Way*

*New Castle, DE 19720*

**Promega** ..... **Booth 105**

[www.promega.com](http://www.promega.com)

Phone: 608-274-4330

*2800 Woods Hollow Rd*

*Madison, WI 53711*

*Exhibitor Directory Continues on Next Page...*

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As of March 3, 2022

For Companies Descriptions, view Exhibitors in online planner:

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**QIAGEN**

**QIAGEN, Inc** ..... **Booth 107**

[www.qiagen.com](http://www.qiagen.com)

Phone: 248-369-9659

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# EXHIBITION FLOOR PLAN

## LUNCHEON

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## CONFERENCE SCHEDULE-AT-A-GLANCE

*Registration, networking activities, and the Exhibit Hall are located on Level 3 of the venue. All other sessions, meetings, and activities are located on Level 2.*

### **Monday, March 21**

7:30 a.m. – 5:00 p.m.	Registration
8:30 a.m. – 5:00 p.m.	Wastewater Disease Surveillance Summit
12:00 p.m. – 1:30 p.m.	Lunch on your own

### **Tuesday, March 22**

7:30 a.m. – 5:00 p.m.	Registration
8:30 a.m. – 10:00 a.m.	Opening General Session
10:00 a.m. – 6:15 p.m.	Exhibit Hall Hours
10:45 a.m. – 11:45 a.m.	Technical Sessions 1 & 2
11:45 a.m. – 1:30 p.m.	Networking Luncheon
12:45 p.m. – 1:30 p.m.	Technology Spotlight I
1:30 p.m. – 3:00 p.m.	Technical Sessions 3 & 4
3:35 p.m. – 4:45 p.m.	Technical Sessions 5 & 6
4:45 p.m. – 6:15 p.m.	Networking Reception

### **Wednesday, March 23**

8:00 a.m. – 5:00 p.m.	Registration
8:30 a.m. – 10:00 a.m.	Technical Sessions 7 & 8
10:00 a.m. – 3:45 p.m.	Exhibit Hall Hours
10:45 a.m. – 11:45 a.m.	Technical Sessions 9 & 10
11:45 a.m. – 1:30 p.m.	Networking Luncheon
12:45 p.m. – 1:30 p.m.	Technology Spotlight II
1:30 p.m. – 3:00 p.m.	Technical Session 11
1:30 p.m. – 4:45 p.m.	Technical Session 12
3:45 p.m. – 4:45 p.m.	Technical Session 13

### **Thursday, March 24**

8:00 a.m. – 12:00 p.m.	Registration
8:30 a.m. – 10:00 a.m.	Technical Session 15
8:30 a.m. – 11:15 a.m.	Technical Session 14
10:15 a.m. – 11:15 a.m.	Technical Session 16
11:15 a.m.	Conference Adjourns

## NEARBY DINING OPTIONS



## NEARBY DINING OPTIONS

There are numerous nearby dining locations within walking distance or a short cab ride from the Duke Energy Convention Center. Below are several of the closest in proximity to the convention center. Please visit the Registration Desk for additional locations and details.

- ❖ Red Roost Tavern (#33 on map, \$\$)  
Located within the Hyatt Hotel: 151 W. 5<sup>th</sup> Street, 513-579-1234
- ❖ Rebel Meettle Brewery (#30 on map, \$)  
412 Central Avenue, 513-412-2739
- ❖ Deeper Roots Coffee (#31 on map, \$)  
338 W. 4<sup>th</sup> Street, 513-381-2141
- ❖ Plum Street Café (#32 on map, \$)  
423 Plum Street, 513-651-4341
- ❖ FB's Kitchen & Lounge (#10 on map, \$\$)  
126 W. 6<sup>th</sup> Street, 513-721-2253
- ❖ Maplewood Kitchen and Bar (#20 on map, \$\$)  
525 Race Street, 513-421-2100



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### **Collection Systems Conference**

April 19-22, 2022

Detroit, Michigan

[www.wef.org/collectionsystems](http://www.wef.org/collectionsystems)

### **Residuals and Biosolids Conference**

May 24-27, 2022

Columbus, Ohio

[www.wef.org/residualsbiosolids](http://www.wef.org/residualsbiosolids)

### **Innovations in Process Engineering Conference**

June 20-23, 2022

Miami, Florida

[www.wef.org/processengineering](http://www.wef.org/processengineering)

### **Stormwater Summit**

June 27-29, 2022

Minneapolis, Minnesota

[www.wef.org/stormwatersummit](http://www.wef.org/stormwatersummit)

### **WEFTEC**

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[www.weftec.org](http://www.weftec.org)

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