

# INNOVATE

[Re-Invent Water]

  
**innovation  
showcase**

@  **weftec** 2019  
the water quality event

Providing a platform for water sector innovation is at the heart of WEF's mission. WEFTEC is the opportunity to showcase dynamic thinking, facilitate conversations that transform ideas into solutions, and make new connections to solve your operational challenges now.

The WEFTEC Innovation Showcase puts the spotlight on water sector innovation and provides access to the leaders and the technologies making it all happen. Embrace learning through exhibits, educational sessions, and networking events covering:

- 1 Innovation trends in the industrial and municipal markets
- 2 Financial innovation and investment opportunities
- 3 Piloting and partnering with new technology companies
- 4 Building the regulatory environment to support innovation
- 5 Using data to underpin industrial and municipal system upgrades

# WEF CHATS

WEF Chats will facilitate informal discussions to give you a chance to share your ideas and meet experts with solution.

## MONDAY, SEPTEMBER 23

10:00 am - 10:30 am	<b>WRF Booth</b> "Workforce of the Future", Walter Graf
10:00 am - 10:30 am	<b>Beer Garden, Booth 7748</b> "Accelerate H2O", Richard Seline
12:00 pm - 12:30 pm	<b>Workforce Pavilion</b> "Operator Training Solutions at Small and Medium Sized Utilities", Becky Haugen
12:00 pm - 12:30 pm	<b>Beer Garden, Booth 7748</b> "IndianaWater.org", Erik Hromadka
12:30 pm - 1:00 pm	<b>WRF Booth</b> "Risk Communications for Water Sector Leaders", Alice Fulmer/Allison Deines
1:00 pm - 1:30 pm	<b>Workforce Pavilion</b> "Water Warriors Initiatives: Recruiting Veterans", James Barsanti (NEWEA)
1:00 pm - 1:30 pm	<b>Video Studio, Booth 5168</b> "Value of Water in Space", Kathleen Schubert (NASA)
1:00 pm - 1:30 pm	<b>Beer Garden, Booth 7748</b> "Gwinnett County Water Innovation Center", Melissa Meeker
2:00 pm - 2:30 pm	<b>Beer Garden, Booth 7748</b> "Meet the Brewers", Sharon Waller, Paul Strome, Valerie Lucas
3:00 pm - 3:30 pm	<b>Beer Garden, Booth 7748</b> "Cleveland Water Alliance", Bryan Stubbs
3:00 pm - 3:30 pm	<b>WRF Booth</b> "Agricultural Research and Technology Innovation", Fidan Karimova
3:10 pm - 3:30 pm	<b>Workforce Pavilion</b> "Maintaining Your Workforce", Matthew Phillips

## TUESDAY, SEPTEMBER 24

9:00 am - 9:30 am	<b>Workforce Pavilion</b> "Growing Sectors in the Water Industry", Val S. Frenkel
9:30 am - 10:00 am	<b>Beer Garden, Booth 7748</b> "DOE DeSalination Hub Discussion", Diana Bauer, Melissa Klembara
10:00 am - 10:30 am	<b>Workforce Pavilion</b> "Benefits of Credentialling - PEs", Matthew Phillips
10:00 am - 10:30 am	<b>Workforce Pavilion</b> "Benefits of Credentialling - Environmental Engineers and Scientists", AAEES, Andy Shaw
10:00 am - 10:30 am	<b>Workforce Pavilion</b> "Benefits of Credentialling - Green Infrastructure", NGICP, Jeff Greenwald
10:00 am - 10:30 am	<b>Workforce Pavilion</b> "Benefits of Credentialling - Underground Infrastructure Maintenance and Rehabilitation", NASSCO, Sheila Joy
10:00 am - 10:30 am	<b>Workforce Pavilion</b> "Benefits of Credentialling - Certified Operators", ABC, Paul Bishop
10:00 am - 10:30 am	<b>Workforce Pavilion</b> "Benefits of Credentialling - Certified Mission Critical Professionals, CMCP", Bryan Kainrath and Lisa McFadden
10:00 am - 10:30 am	<b>Workforce Pavilion</b> "Benefits of Credentialling - Tribal Nation Certifications", Margaret Washko, PE
10:00 am - 10:30 am	<b>WRF Booth</b> "Occurrence, Removal, Fate, and Transport of Microplastics in Wastewater and Drinking Water Treatment", Lola Olabode/Ashwin Dhanasekar/Alice Fulmer

10:00 am - 10:30 am	<b>Beer Garden, Booth 7748</b> "PureBlue", Ryan Vogel/ Egils Milbergs
12:00 pm - 12:30 pm	<b>Beer Garden, Booth 7748</b> "The Water Council", Karen Frost
12:15 pm - 12:45 pm	<b>Workforce Pavilion</b> "Using Employee Resource Groups and Other Tools to Help Engage Your Workforce", Ari Copeland
12:30 pm - 1:00 pm	<b>Workforce Pavilion</b> "Tribal Nations Utilities: A Growing Workforce", Margaret Washko, PE
12:30 pm - 1:00 pm	<b>Workforce Pavilion</b> "Working with Local Corps Networks to Develop a Local Workforce", Mary Ellen Sprenkel
1:00 pm - 1:30 pm	<b>Workforce Pavilion</b> "Capturing the Value of Diversity in Your Workforce", Larry Bullock, Minority Contractors Assoc.
1:00 pm - 1:30 pm	<b>Beer Garden, Booth 7748</b> "TMA BlueTech", Tamara Kahn
1:00 pm - 1:45 pm	<b>US EPA Booth (Hall B, 7921)</b> "Water Sector Funding and Financing", Sonia Brubaker, Jorianne Jernberg, Tara Johnson, Alison Souders - EPA's Office of Wastewater Management
1:30 pm - 2:00 pm	<b>Beer Garden, Booth 7748</b> "Food and Water Synergy: Ideas and Opportunities", Haley Falconer lead, speakers: N. Green, M. Nalesso, J. Crawford, G. Macdonald
2:00 pm - 2:30 pm	<b>Beer Garden, Booth 7748</b> "Meet the Brewers", Patrick Dube, Mark Jockers
3:00 pm - 3:30 pm	<b>Workforce Pavilion</b> "How to Write Successful Grant Applications", Karl Rockne
3:00 pm - 3:20 pm	<b>Workforce Pavilion</b> "Supply and Demand of the Workforce", Matthew Phillips
3:00 pm - 3:30 pm	<b>WRF Booth</b> "Hydrothermal Processing - Transforming Wastewater Sludge into BioFuels", Aaron Fisher(WRF)/Jeff Moeller(WRF)/Jim Oyler (Genifuel)
3:00 pm - 3:45 pm	<b>US EPA Booth (Hall B, 7921)</b> "Draft National Water Reuse Action Plan", John Ravenscroft - EPA's Office of Science & Technology

## WEDNESDAY, SEPTEMBER 25

10:00 am - 10:20 am	<b>Workforce Pavilion</b> "Tools for Operator Professional Development ", John Bennett, Chair, Ops Challenge Committee"
10:00 am - 10:30 am	<b>WRF Booth</b> "Food - Energy - Water (FEW) Nexus: What's all the hype about?", Ashwin Dhanasekar/Kristan VandenHeuval/ Stephanie Fevig
10:00 am - 10:45 am	<b>US EPA Booth (Hall B, 7921)</b> "EPA Action on Water Workforce", Martha Shimkin, Acting Deputy Office Director - EPA's Office of Wastewater Management; Yu - Ting Guilaran, P.E., Acting Deputy Office Director - EPA's Office of Ground Water & Drinking Water
10:10 - 10:30 am	<b>Workforce Pavilion</b> "How to Approach a Job Search", Matthew Phillips
12:30 pm - 1:00 pm	<b>WRF Booth</b> "Integrated Stormwater Management and Flood Resilience: Best Practice and Innovative Approach", Harry Zhang

# INNOVATION SHOWCASE AT-A-GLANCE

Participate in presentations and discussions related to innovative technologies and problem solving in the Innovation Theater, and when the presentations are over, head “back stage” to continue the conversation.

## MONDAY, SEPTEMBER 23

10:00 am – 11:00 am	<b>IP01</b>	Don't Hate, #Innovate: What's Happening in the Innovation Neighborhood
11:00 am – 11:30 am	<b>IP02</b>	The SDGs, Circular Economy, and ReNEW
11:30 am – 12:30 pm	<b>IP03</b>	Pure Water Brewing Alliance and the World's Most Sustainable Beer
12:30 pm – 1:00 pm	<b>IP04</b>	Considerations to Successfully Supply Water in One of the Fastest Growing Metro Areas in the US: The San Antonio to Austin Corridor
1:00 pm – 1:30 pm	<b>IP05</b>	Hydrofaction Advanced Renewable Transportation Fuels From Sewage Sludges and Urban Organic Solids
1:30 pm – 2:00 pm	<b>IP06</b>	Accelerating Innovation in the Water Sector Using Utility-University-Industry Partnerships
2:00 pm – 2:30 pm	<b>IP07</b>	Out of Industry, Pivoting Into Water
2:30 pm – 3:00 pm	<b>IP08</b>	We Got Bought, Now What? Stories from Innovation Pavilion Alumni
3:00 pm – 3:30 pm	<b>IP09</b>	“C” Suite View on Fostering Innovation
3:30 pm – 4:00 pm	<b>IP10</b>	Disruptive Innovation in Water Technology: A Meaningful or Meaningless Term?
4:00 pm – 5:00 pm	<b>IP11</b>	The CROC Tank: Imagine H <sub>2</sub> O Water Start-Ups Pitch to Our Experts

## TUESDAY, SEPTEMBER 24

9:00 am – 9:30 am	<b>IP12</b>	DOE SWIFt Accelerator: Tools & Planning for Infrastructure Improvement in the Wastewater Sector
9:30 am – 10:00 am	<b>IP13</b>	LIFT SEE IT: Seeing the World of Innovation
10:00 am – 11:00 am	<b>IP14</b>	Get Connected with the Dutch on Water Tech Innovation
11:00 am – 11:30 am	<b>IP15</b>	LATAM Spotlight: Water and Sanitation Company of the 21st Century
11:30 am – 12:00 pm	<b>IP16</b>	Imagine H <sub>2</sub> O's Urban Water Challenge: Tomorrow's Solutions Today
12:00 pm – 1:00 pm	<b>IP17</b>	Challenging the Status Quo: Smart Water Technology Advancements
1:00 pm – 2:00 pm	<b>IP18</b>	A Look Inside The Water Council's Startup Accelerator
2:00 pm – 2:30 pm	<b>IP19</b>	Brave Blue World: The Journey of Re-Inventing Water
2:30 pm – 3:00 pm	<b>IP20</b>	TWENTY65: Achieving Sustainable Clean Water for All by the Year 2065
3:00 pm – 3:30 pm	<b>IP21</b>	Working for the Watershed: How Utilities Have Built Transformational Partnerships to Meet Water Quality Standards on a Watershed Scale
3:30 pm – 4:00 pm	<b>IP22</b>	Controversial Questions: Three Water Luminaries Take on Some of the Biggest and Most Controversial Questions Facing the Industry Today
4:00 pm – 5:00 pm	<b>IP23</b>	The CROC Tank: BlueTech Water Start-Ups Pitch to Our Experts

## WEDNESDAY, SEPTEMBER 25

9:00 am – 10:00 am	<b>IP24</b>	Israel – US Water Initiative
10:00 am – 11:00 am	<b>IP25</b>	G2G Panel: Water Reuse in Israel and the US – Lessons Learned and Opportunities
11:00 am – 11:30 am	<b>IP26</b>	CMCP Awards: Excellence of Mission Critical Operations
11:30 am – 12:30 pm	<b>IP27</b>	Operator Excellence: Operations Ingenuity Contest Winners
12:30 pm – 1:00 pm	<b>IP28</b>	ABC Professional Operator Pinning Ceremony
1:00 pm – 2:00 pm	<b>IP29</b>	Cybersecurity - It's More Than Just Compliance

# Beer Menu



**Pure Water Brew samples will be poured:**

**Monday & Tuesday 12:00 - 4:00 PM | Wednesday 11:00-3:00 PM.**

**SUSTAINABLE SYSTEMS LLC/UNRECONCILED BREWING**

**Astro Amber Ale—Drink Like an Astronaut**

Brewed using water from the North Shore Channel, Astro Amber Ale is the first effluent home brewed beer made in Chicago!

**CDM SMITH**

**12-Log Lager and RO-AOP**

Home-brewed by Tim Rynders, Process Engineer (CDM Smith; Denver, CO) (Visit CDM SMITH in the Innovation Pavilion Booth 8249)

**CLEAN WATER SERVICES/PURE WATER WAGON**

**4 different beer styles: Lager/Pilsner, Belgian/French, American Ale, Light Hybrid**

Home-brewed in cooperation with the Oregon Brew Crew (Portland, OR) (Visit Clean Water Services' Pure Water Wagon, Booth 8346, North Hall)

**WATER ENVIRONMENT FEDERATION**

**To Infinity and Blonde!**

Home-brewed by Patrick Dube, Technical Program Manager (WEF; Alexandria, VA)

**KENTUCKY-TENNESSEE WEA & HOLSOPPLE BREWING**

**Rerun Rye IPA—"NE Style IPA"**

Kentucky-Tennessee WEA and Holsopple Brewing teamed up to brew a New England Style IPA with water from Louisville MSD.

## PURE WATER BREWING ALLIANCE

Booth 7751, North Hall  
McCormick Place

Monday-Tuesday  
8:30 am - 5:00 pm

Wednesday 8:30 am-3:00 pm

Unwind in this new lounge environment, where you can experience industry and utility partners' recycling and reuse innovations. Sample Pure Water Brews—the world's most sustainable beer made from 100% pure recycled wastewater.

Pure Water Brew is a collaboration between pioneering brewers and water utilities that have teamed-up to build public understanding of the water cycle, showcase water treatment, and advance water sustainability

Beer Garden Sponsor

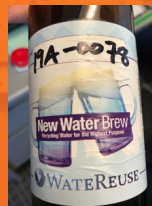
**xylem**  
Let's Solve Water

## HISTORY OF PURE WATER BREWS AT WEFTEC



Clean Water Services created the very first Pure Water Brew and has had a beer at WEFTEC every year since 2015

Milwaukee Sewerage District brewed "Activated Sludge" and squared off against Clean Water Services in the Sustainable Beer Smackdown in 2015 and 2016



Hillsborough County (FL) provided water to homebrewers and poured their beers at WEFTEC in 2016 and 2017.



CDM Smith employees have home-brewed beers under the FAT Cali-fornian label for WEFTEC from 2016-2018 using water from Long Beach, CA.

WEF Program Manager Patrick Dube Homebrewed two beers for WEFTEC 2018, "What Hoppins at WEFTEC" and "Of Kolsch Its Reuse"



# INNOVATION SHOWCASE

23 SEPTEMBER 2019

10:00 AM - 11:00 AM

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**IP01: Don't Hate, #Innovate: What's happening in the Innovation Neighborhood**

We are kicking things off with the Innovation Showcase Preview! Hear from our Innovation Pavilion partners about some of the new technologies you can see throughout the week both in our Pavilion and in the Technical Sessions. This session will end with a guided tour of the Innovation Pavilion, where you can hear from and chat with our 20 featured companies.

**Moderators:**

Tom Ferguson, *Imagine H2O*  
Jeff Guild, *BlueTech Research*

11:00 AM - 11:30 AM

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**IP02: The SDGs, Circular Economy, and ReNEW**

In 2015, the United Nations member states adopted the 2030 Development Agenda titled "Transforming Our World: the 2030 Agenda for Sustainable Development," as a call to action for all countries to work towards peace and prosperity for people and the planet. This agenda outlined 17 Sustainable Development Goals (SDGs) related to thematic areas such as water, energy, and climate; with associated targets and indicators. SDG 6 - Clean Water and Sanitation, features targets for water reuse, affordability, resiliency, integrated water resources management, reduction in untreated wastewater, and enhanced research and development for water technologies. This session will tie together the SDGs, circular economy, and WEF's ReNEW efforts.

**Moderator:**

Barry Liner, *Water Environment Federation*

**Speaker:**

Patrick Dube, *Water Environment Federation*

11:30 AM - 12:30 PM

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**IP03: Pure Water Brewing Alliance and the World's Most Sustainable Beer**

Before the Pure Water Brewing Alliance Beer Garden starts pouring beer, learn about the history of Pure Water Brew and

hear from a panel featuring Pure Water Brewing Alliance members as they detail the who, when and why around their own Pure Water Brew programs. This session will feature representatives from Clean Water Services, City of Boise, Pima County and Louisville MSD in a facilitated discussion about reuse beer.

**Moderator:**

Patrick Dube, *Water Environment Federation*  
Mark Jockers, *Clean Water Services*  
Haley Falconer, *City of Boise*  
Jeff Prevatt, *Pima County*  
Robert Bates, *Louisville MSD*

12:30 PM - 01:00 PM

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**IP04: Considerations to Successfully Supply Water in One of The Fastest Growing Metro Areas in the US - The San Antonio to Austin Corridor**

This session includes a panel discussion of how to integrate a myriad of suppliers and supply sources in one of the fastest growing regions of the US in terms of population, housing, and water needs. The session will start off with a brief presentation by Dr. Raul Deju, Hydrologist, who will discuss the water needs of the San Antonio to Austin Corridor and the approaches to meet these needs followed by a panel of experts who will provide alternatives and various points of view on how to provide a rational, cost effective and environmentally conscious approach to water supply and integrated water management for this important corridor in Texas.

**Moderator:**

Raul Deju, *Bright Star Capital Partnerships*

**Speakers:**

Ed McCarthy, *McCarthy & McCarthy, LLP*  
Michael Thornhill, *Thornhill Group*  
William Gehrmann, *Texas Water Supply*

01:00 PM - 01:30 PM

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**IP05: Hydrofaction Advanced Renewable Transportation Fuels from Sewage Sludges and Urban Organic Solids**

Steeper Energy is leading the era of the Circular Economy with its proprietary advanced biofuel technology, Hydrofaction®, a proven approach for

the production of energy-dense bio-crude and finished fuels from low-value bio-organic wastes, such as sewage sludge as well as sustainable feedstocks such as forest or agricultural residues, or other urban wastes, by harnessing the unique chemistry of super-critical water via hydrothermal liquefaction (HTL). Perry Toms, CEO of Steeper Energy, will share the last 8 years of experience of developing, and now commercializing, Hydrofaction® with different strategic partners, as well as the thinking and insights of the application for Hydrofaction® in the waste/wastewater management sectors. The talk will focus on the benefits of utilizing Hydrofaction® for the disposal of sewage sludge while producing high-value renewable transportation fuels.

**Moderator:**

Perry Toms, *Steeper Energy*

01:30 PM - 02:00 PM

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**IP06: Accelerating Innovation in the Water Sector using Utility-University-Industry Partnerships**

Utility-university-industry partnerships are helping accelerate the implementation of innovative solutions. This session will explore the unique relationship of the Nevada water industry with utilities and universities and how it is driving innovation within the state.

**Moderator:**

Dwayne Smith, *Washoe County (Nevada) Engineering & Capital Projects*

**Speakers:**

Eric Hansen, *Silicon Valley Clean Water*  
Rick Warner, *Nevada Water Innovation Institute*

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02:00 PM - 02:30 PM

**IP07: Out of Industry, Pivoting Into Water**

To better understand the water industry, sometimes you need an outsider's perspective. In this unique session, hear from three entrepreneurs who have recently pivoted their careers, companies, and technologies into the water sector. They'll share their stories on why they decided to take the plunge into water, and their perspectives on how we as an industry function, are perceived, and how we can better recruit others to join the water workforce.

**Moderator:**

Bri Nakamura, *Water Environment Federation*

**Speakers:**

Megan Glover, *120Water Audit*  
Meena Sankaran, *KETOS*  
Alex Liff, *Advantageous Systems LLC*

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02:30 PM - 03:00 PM

**IP08: We Got Bought, Now What? Stories from Innovation Pavilion Alumni**

Now in its 8th year, the Innovation Pavilion has seen many startups throughout its tenure, while some have remained privatized, others have folded, transitioned, or even been acquired. Hear from several SMEs (Small to Medium Enterprises) alumni, as they discuss their journey post-acquisition, including some of their experiences with integration, working with "gorillas", the benefits, and even opportunities to re-privatize.

**Moderator:**

Diane d'Arras, *IWA*

**Speakers:**

Adam Tank, *Organica*  
Corey Williams, *Optimatics*  
Doug Wilton, *TECTA-PDS*

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03:00 PM - 03:30 PM

**IP09: "C" Suite View on Fostering Innovation**

How do you drive innovation? For many companies fostering innovation, starts from the top. Hear from some of today's most innovative leaders in the both the utility and consulting sector on how they foster innovation from within and are building innovation structures to drive the future of the industry.

**Moderator:**

George Hawkins, *Moonshot*

**Speakers:**

Frank DeOrio, *Ramboll*  
Joone Lopez, *Moulton Niguel Water District*

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03:30 PM - 04:00 PM

**IP10: Disruptive Innovation in Water Technology - a Meaningful or Meaningless Term?**

The term 'disruptive innovation' has been misused to the point where its original meaning has become lost in the mists of time. Most of what we see in water is sustaining innovation. The technology disruptions are often driven by legislation. The real potential for disruption is at a systems level. We use the analogy of using a chainsaw to cut a pound of butter to illustrate systems level efficiency thinking. Much of the energy goes into thinking of how we can make the chainsaw more efficient.

**Moderator:**

Paul O'Callaghan, *BlueTech Research*

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04:00 PM - 05:00 PM

**IP11: The CROC Tank: Imagine H2O Water Start-Ups Pitch to Our Experts**

These start-ups have won awards, but can they win over our panelists of investors, advisors, industrial, and municipal customers? Each company will pitch for 3-5 minutes after which the panel will grill them about their business model, technology, intellectual property, marketing strategy, and more. Nothing is off limits in these lightning fast pitches that are modeled after the successful Shark Tank TV show. This session is sponsored by Imagine H2O and their winners will be featured.

**Judges:**

Lynn Broadus, *President, Broadview Collaborative*  
Ifetayo Venner, *Water Sustainability Leader, Arcadis*  
Peter Gross, *Water Skipper, Emerson Collective*  
Snehal Desai, *Chief Growth Officer, Evoqua*  
Vinod Ramachandran, *Global Open Innovations Leader, Suez*

**Moderator:**

Tom Ferguson, *Imagine H2O*

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05:00 PM - 06:00 PM

**Innovation Pavilion Reception, Sponsored by Brave Blue World**

Resource Recovery in a Brave Blue World: Join the Monday reception at the Innovation Pavilion to hear how WEF's hyper-focus on advancing resource recovery and raising public awareness led the organization to be a major production partner of the Brave Blue World documentary, due for release in November. Attendees will hear how beer can be used to change perceptions about water reuse and see the official trailer for the film that shows how we are headed for a sustainable water future through innovation and technology. Registered attendees and exhibitors are welcome to enjoy complimentary beer, wine, and soft drinks during the reception.

BRAVE BLUE  WORLD

# 24 SEPTEMBER 2019

9:00 AM - 9:30 AM

## IP12: DOE SWIFT Accelerator: Tools & Planning for Infrastructure Improvement in the Wastewater Sector

Since 2016, DOE's Better Buildings Sustainable Wastewater Infrastructure of the Future (SWIFT) Accelerator has been engaging utilities to promote and accelerate a pathway toward sustainable infrastructure through improving the energy efficiency of participating water resource recovery facilities by at least 30 percent and integrating at least one resource recovery measure. This session provides an update on the tools and planning processes that assist in innovative and best-practice approaches in data management, technologies, and financing for infrastructure improvement.

### Moderator:

Alice Dasek, *Department of Energy*

9:30 AM - 10:00 AM

## IP13: LIFT SEE IT: Seeing the World of Innovation

This session features unique and interesting stories from 2019 LIFT SEE IT awardees (Scholarship Exchange Experience for Innovation and Technology). A new round of scholarship funding is available and applications are due in the fall of 2019.

### Moderator:

Fidan Karimova, *Water Research Foundation*

10:00 AM - 11:00 AM

## IP14: Get connected with the Dutch on water tech innovation

Get connected on innovation. Dutch innovators working on algae bloom, in-house water recycling, radar sensing and machine learning & AI for smart water management, will share their innovations and experiences on R & D needed for innovation. International partnerships strengthen innovation and business opportunities and in this session Dutch innovators share their experiences and wishes. Are you ready for it?

### Moderators:

Hein Molenkamp &  
Renske Verhulst, *Water Alliance Netherlands Water Partnership*

### Speakers:

Greg Eiffert, *LG Sonic*  
Jerome Mol, *HAL24K*  
Sabine Stuiver, *Hydraloop Systems BV*  
Martin Van Rijn, *Staal Instruments B.V.*

11:00 AM - 11:30 AM

## IP15: LATAM Spotlight: Water and Sanitation Company of the 21st Century

This session will kick off with an introduction to the top water and sanitation management issues utilities are dealing with in the greater LATAM region. Perspectives from a leading water utility and project developer in the region will highlight their vision for the Water and Sanitation Company of the 21st Century and how and what step change solutions they are delivering to meet the needs of their communities, the environment, and industry.

### Moderator:

Cristina Ahmadpour, *Isle, Inc.*

### Speakers:

Marco Aurelio Pereira da Silva, *Aegea Saneamento*  
Mauro Nalesso, *Inter-American Development Bank*

11:30 AM - 12:00 PM

## IP16: Imagine H2O's Urban Water Challenge – Tomorrow's Solutions Today

In partnership with Bluewater and 11th Hour Racing, Imagine H2O conducted a global call for startups with solutions to urban water management issues. With 226 companies vying for \$250,000 in deployment funding and a program of visibility and development at Stockholm World Water Week, it was highly competitive. Hear the story of the Challenge, the founders and the impact these companies are having on our urban water future.

### Moderator:

Kelly Trott, *Imagine H2O*

12:00 PM - 01:00 PM

## IP17: Challenging the Status Quo: Smart Water Technology Advancements

Open Innovation and competitions are helping speed the adoption of intelligent water technologies. This session features winners of high profile challenges across North America. With support from leading water Clusters, come learn from the entrepreneurs and intrapreneurs who led the 2nd annual LIFT Intelligent Water Challenge (sponsored by the Water Council) and the 2019 Erie Hack competition (presented by the Cleveland Water Alliance). WEF Innovation Award winners Flygt will feature their smart

pumps, and Aquasight will discuss the latest advances in artificial intelligence from their work with the Massachusetts Clean Energy Center's (MassCEC) Wastewater Treatment Pilot program.

### Moderator:

Marcia Silva, *University of Wisconsin-Milwaukee*

### Speakers:

Elkin Hernandez, *DC Water*  
Max Herzog, *Cleveland Water Alliance*  
Kristel Saman, *Xylem*  
Mahesh Lunani, *Aquasight*

01:00 PM - 02:00 PM

## IP18: A look inside The Water Council's startup accelerator

There are countless startup accelerators around the world. But very few focus on water entrepreneurs. The Water Council has been doing just that for more than six years through its BREW (Business - Research - Entrepreneurship - in Water) Accelerator. Over that time, 40 companies have completed the program. Get to know the most recent cohort—their technologies and personalities—and everything else about the BREW in an engaging talk show style conversation.

### Moderator:

Steve Glynn, *The Water Council*

### Speakers:

Jared Cacciatore, *Latitude Power*  
Paige Peters, *Rapid Radicals Technology*  
Kelvin Okamoto, *Gen 3 Bio*  
Joe Diekfuss, *P4 Infrastructure*  
John Barelli, *Watersurplus*

02:00 PM - 02:30 PM

## IP19: Brave Blue World: The Journey of Re-Inventing Water

In a world of apocalyptic headlines about drought and scarcity, it's easy to think that the future of water is bleak. Brave Blue World – a new, feature length documentary filmed across six continents, will instead show there's hope. Join us on a journey of discovery as we unearth innovative thinking and nature-inspired solutions around the world. In this session find out about the vision for the cinematic documentary, watch the official trailer and engage in our panel discussion where we unearth the role of creative communication in the water sector and the potential of video to galvanize wider societal change.

Brave Blue World is supported by its production partners, WEF, DuPont Water Solutions, SUEZ and L'Oréal; impact

partners, Xylem and Aqualia and also its collaboration partners, Water.org and the Water Alliance.

**Moderator:**

Paul O'Callaghan, *BlueTech Research*

**Speakers:**

Ralph Exton, *SUEZ*

Kimberly Kuipeicki, *Dupont Water Solutions*

02:30 PM - 03:00 PM

**IP20: TWENTY65: Achieving sustainable clean water for all by the year 2065**

Learn about a UK based collaborative research project which is tackling the 'grand challenges' faced by the water sector and is aiming to pave the way for a future in which clean water is available, sustainably, for all by the year 2065. At the heart of the collaboration is the Water Innovation Hub. Bridging the gap between industry and academia, the Hub works to create new collaborations and strengthen existing, inform Policy and Regulation, accelerate the commercialization of emerging solutions and facilitate access to critical market information to assist researchers and direct future research and funding programmes. The Hub is the 'glue' between the different stakeholders at play, providing access and advice with regards to sources of academic support and input, test facilities, potential industry partners and routes to market. It is extensively networked at a national and international level. Join us to hear more detail about the research taking place and how the Hub is helping.

**Moderator:**

Caroline Wadsworth, *The University of Sheffield*

03:00 PM - 03:30 PM

**IP21: Working for the Watershed: How utilities have built transformational partnerships to meet water quality standards on a watershed scale**

It's clear that flexible tools are needed to and advance the health of our watersheds. The Clean Water Act has been effective dealing with parts of the ecosystem, but we cannot restore the health of ecosystems by targeting point sources alone. Today's pollution challenges require working on a watershed scale—by examining a holistic approach to point and non-point sources of pollution, something current regulatory tools do not have the flexibility to do.

Learn how Clean Water Services of Hillsboro, OR and The Madison Metropolitan Sewerage District of Madison, WI have worked with state and federal regulators, farmers, municipalities and other watershed stakeholders to build robust partnerships to harness the power of natural systems to control nutrients, cool water and meet the water quality challenges of the 21st century.

**Moderator:**

Kathryn Harrington, *Clean Water Services*

**Speakers:**

Mark Jockers, *Clean Water Services*

Martin Griffin, *Madison Metropolitan Sewerage District*

03:30 PM - 04:00 PM

**IP22: Controversial Questions: Three Water Luminaries take on some of the biggest and most controversial questions facing the industry today.**

Three Water Luminaries take on some of the biggest and most controversial questions facing the industry today. Each of the panelists will have to commit to agree or disagree with a given statement, and defend their position to the other panelists and the audience. Expect sparks to fly.

**Moderator:**

Tom Ferguson, *Imagine H2O*

04:00 PM - 05:00 PM

**IP23: The CROC Tank: BlueTech Water Start-Ups Pitch to Our Experts**

These start-ups have won awards, but can they win over our panelists of investors, advisors, industrial, and municipal customers? Each company will pitch for 3-5 minutes after which the panel will grill them about their business model, technology, intellectual property, marketing strategy, and more. Nothing is off limits in these lightning fast pitches that are modeled after the successful Shark Tank TV show. This session is sponsored by BlueTech Research and their winners will be featured.

**Judges:**

Christine Foss, *Evoqua*

Jodi Glover, *Real Tech*

Judith Herschell-Cole, *Cerahelix*

**Moderator:**

Divya Inna, *BlueTech Research*

05:00 PM - 06:00 PM

**Innovation Pavilion Reception, Sponsored by the Milwaukee Water Council**

The Water Council (TWC), a world-class organization driving economic, technology and talent development to support the global water industry, has been curating ideas through a variety of global freshwater challenges for five years. Water Tech Hub is a one-stop portal for all application-based TWC competitions and challenges, including the Water Tech Challenge sponsored by Badger Meter, A.O. Smith, and Zurn. The BREW (Business Research Entrepreneurship in Wisconsin) Accelerator and Pilot Test Challenges are also on the platform. The Water Council also sponsored the LIFT Intelligent Water Systems Challenge presented on Monday at WEFTEC. Registered attendees and exhibitors are welcome to enjoy complimentary beer, wine, and soft drinks during the reception.



# 25 SEPTEMBER 2019

9:00AM - 10:00AM

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## IP24: Israel – US Water Initiative

Learn about Israel's water and wastewater ecosystem and technology breakthroughs and about US industry leaders' challenges and success stories of deploying innovative technologies. Take a glimpse at the future of water and wastewater industries.

### Moderator:

Gili Elikin, *Israel-Colorado Innovation Fund*

### Speakers:

Ari Goldfarb, *KANDO*  
Kishia Powell, *City of Atlanta*  
Niko Melitas, *Sanitation Districts of LA County*  
Jim McQuarrie, *Metro Wastewater Reclamation District (Denver)*  
Barb Martin, *AWWA*  
Kyle Perez, *HACH*

10:00AM - 11:00AM

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## IP25: G2G Panel: Water Reuse in Israel and the US – Lessons Learned and Opportunities

A joint panel between Israeli Ministry for Environmental Protection, the Israeli Water Authority and USEPA on Water Reuse will be held which will highlight lessons learned from Israel and opportunities in the US for Water Reuse.

### Moderator:

Claudio Ternieden, *Water Environment Federation*

### Speakers:

Alon Zask, *Israeli Ministry for Environmental Protection*  
Danny Greenwald, *Israel Water Authority*  
Jeffery Lape, *EPA*  
Jane Nishida, *USEPA*

11:00AM - 11:30AM

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## IP26: CMCP Awards - Excellence of Mission Critical Operations

The Certified Mission Critical Professional (CMCP) credential is awarded to those mastering a high level of expertise in mission critical operations. The certification covers IT and OT, as well as a broad range of factors that might impact critical infrastructure.

### Moderator:

Brian Kainrath, *Global Skills Exchange*

11:30AM - 12:30PM

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## IP27: Operator Excellence: Operations Ingenuity Contest Winners

Operators are the source of many ideas and innovations. WEF started a contest to hear about those clever ideas that can help to make the facility run smoother, be safer, lower costs, and solve some very pesky problems. Many of the ideas are simple and can be easily replicated. WEF is pleased to celebrate the winners of the 8th annual Operator Ingenuity Contest in this session where they will share their award-winning inventions and ideas and receive accolades from the audience and from WEF.

### Winners:

"The Bottle Bump", J. Petalio, *Rodeo Sanitary District (CA)*  
"The Goody Bag", B. Paddock & RTP's O&M Staff, *South Orange County Wastewater Authority (Dana Point, CA)*  
"The Sewer Sailor", J. Segrest Jr., *City of Auburn (AL)*  
"The Tight Squeeze", J. McHone, *City of Charlotte (NC)*  
"The Smooth Move", G. Pelzowski and J. Presta, *Regional Municipality of Durham, Works Department (Ontario, Canada)*  
"The Muckraker", M. Wenner, *City of Napoleon (OH)*  
"The Rag Spear", M. Haggler, *City of Meridian (ID)*

### Moderator:

Deb Houdeshell, *City of Canton (OH)*

12:30PM - 01:00PM

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## IP28: ABC Professional Operator Pinning Ceremony

Join the Association of Boards of Certification (ABC) for a special event celebrating Professional Operators! These unsung heroes of the water industry have voluntarily earned their PO certification and designation by meeting specific eligibility requirements, passing a challenging exam, and adhering to the Professional Operator Code of Conduct.

### Moderator:

Paul Bishop, *ABC*

01:00PM - 02:00PM

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## IP29: Cybersecurity - It's more than just compliance

Cybersecurity is more than just compliance. It's about protecting critical infrastructure. It's about ensuring the availability and reliability of municipal water and wastewater systems. This session includes presentation that inform attendees on the cyber threat landscape, and upcoming cybersecurity requirements per America's Water Infrastructure of 2018. Useful resources from various industry groups for cybersecurity guidance and best practices will be highlighted. Additionally, attendees will learn about the specific components of a comprehensive cybersecurity plan for protecting critical infrastructure.

### Moderator:

Pavol Segedy, *ISA*

### Speaker:

Rick Hidalgo, *Signature Automation*

All WEF members and water professionals contribute to the UN Sustainable Development Goals (SDGs) every day they go to work. To highlight the value of water, WEF is offering a SDG educational certificate to WEFTEC attendees who attend at least 3 SDG related sessions. When identifying sessions, virtually all WEFTEC programming is related to SDG 6: Clean Water and Sanitation. However, we have selected an extensive list of sessions that directly address a key target for multiple SDGs. Please select which sessions you attended and WEF will e-mail you the WEFTEC SDG Awareness Professional Development Certificate.



**Attend 3 SDG sessions and receive \$4 off an SDG Shirt**

## 2 - ZERO HUNGER



- 222** Food Water Nexus: What's on the Menu?
- 302** Solving Food and Beverage Wastewater Challenges Using Innovative Process Technologies

## 3 - GOOD HEALTH AND WELL-BEING



- 212** Knowledge Development Forum: What are PFAS and What Do We Need to Know?
- 231** Evaluating Microbes: Working Out the Bugs in a Reuse System
- 323** Worker Safety and Public Health
- 512** Next Generation Disinfection: What's on the Horizon
- 521** Ozone/BAF: Proving the Technology for Direct and Indirect Potable Reuse Systems
- 527** Disinfection Disentangled

## 5 - GENDER EQUALITY



- 420** People as an Asset: Where is YOUR Workforce?

## 6 - CLEAN WATER AND SANITATION



- 106** Reuse on the Storm: Opening the Doors for Stormwater Reclamation Across America
- 219** Small Communities: Processes for Nutrient Removal
- 220** IPR/DPR: Resistance is Futile!
- 221** Future of Reuse: Economics, Decentralized Systems, and IPR

## 317 What Is Beyond Integrated Planning?

**319** Utility Management: Seeing (and Using) the Right Information Through the Forest of Systems and Data

**321** Treatment for Groundwater Recharge: So the Well Won't Run Dry

**403** Industrial Wastewater Reuse? Really, Really, Really!

**419** Integrated Planning Round Table

**501** The 3 Ps: Plastic, Pharmaceuticals, and Pesticides

**502** Metals Removal From Leachate, Uranium Contaminated Water, and Gold Mine Wastewater

**522** Water Scarcity and Treatment Challenges in the Automotive Industry

**617** A Tale of One Water

## 7 - AFFORDABLE AND CLEAN ENERGY



**100** WEF/AEESP Master Lecturer: Bruce Logan

**101** Exploring Solutions Within the Water-Energy-Food Nexus

**209** Department of Energy (DOE) Solutions for Water Sector Energy Recovery

**210** More Applications and Studies in THP Yield New Insights

**227** Maximizing Energy Savings Through Advanced Aeration Control Strategies

**407** Knowledge Development Forum: From Research to Practice - Energy Sustainability

**IP12** DOE Update on the Sustainable Wastewater Infrastructure of the Future (SWIFT) Accelerator (Innovation Pavilion)

**511** Biogas Quality and Finance

## 9 - INDUSTRY, INNOVATION AND INFRASTRUCTURE



<b>GC</b>	Dealing with Declining Flows: Lessons from Japan (Global Center)
<b>213</b>	Inflow and Infiltration Assessment: Finding and Removing Sources of Leakage
<b>216</b>	Make No Little Plans: CSO Planning With Stormwater Management Focus
<b>229</b>	Case in Point: Current CSO Case Studies
<b>310</b>	Advancements in Staged, Thermophilic, and Aerobic Digestion Processes
<b>314</b>	Flow Analysis Methods to Solve Collection System Flow Problems: Rainfall, RDII, Climate Change, and Hydraulics
<b>326</b>	Small Communities: Planning for Upgrades and Replacements Ensures Compliance
<b>409</b>	Exciting Asset Management Case Studies! Installation and Maintenance Practices for Ensuring Equipment Reliability
<b>414</b>	Sewer Rehabilitation and Construction
<b>GC</b>	US-China Clean Energy Research on Non-Traditional Water Management (Global Center)
<b>610</b>	Tunnels: What Lies Deep Beneath Your Feet

## 11 - SUSTAINABLE CITIES AND COMMUNITIES



<b>320</b>	Small Communities: Compliance and Innovative Treatment
<b>328</b>	Stakeholder Inclusive Planning for Sustainable Water Solutions

## 12 - SUSTAINABLE CONSUMPTION AND PRODUCTION



<b>232</b>	ReNEW: Measuring Our Impact on Nutrient, Energy, and Water Recovery
<b>401</b>	Knowledge Development Forum: Interaction of the Carbon, Nitrogen, and Phosphorus Cycles for Intensified Treatment and Resource Recovery
<b>412</b>	Resource Recovery From Biosolids: Phosphorus/Energy
<b>GC</b>	The EU is Moving Fast on Circular Economy legislation. Are You Ready? (Global Center)

## 13 - CLIMATE ACTION



<b>322</b>	Shared Experiences: 7 Years Post Super Storm Sandy
<b>514</b>	Staying High and Dry: Approaches for Flood Resiliency
<b>528</b>	Keeping Our Heads Above the Water: Dealing With Urban Storm Events

## 14 - LIFE BELOW WATER



<b>208</b>	Emerging Trends in Phosphorus Removal and Recovery: Outcomes From the James Barnard Phosphorus Forum
<b>307</b>	Mainstream P Removal: Modeling to Operation
<b>402</b>	Alternate Nitrogen Removal and Pathways
<b>410</b>	Sidestream Success! N and P Removal Case Studies
<b>422</b>	Solutions for Coastal City Resiliency
<b>424</b>	Novel Approaches for Mainstream Phosphorus: Removal and Recovery
<b>506</b>	Fundamentals: ABC's of BNR - From Conventional to the Next Frontier
<b>508</b>	Fundamentals of Nitrogen and Phosphorus Recovery and Tools for Assessment
<b>524</b>	Nutrient Removal and Recovery: Municipal Planning and Implementation
<b>605</b>	Overcoming Challenges To Meet Effluent Phosphorus Targets

## 15 - LIFE ON THE LAND

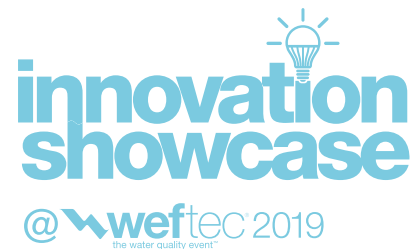


<b>516</b>	We're Lookin' at YOU, Watershed: Technology Enhancements for Monitoring and Stakeholder Engagement
<b>SP02</b>	Mitigating Flood Disaster Through a Renewed Approach (Stormwater Pavilion)

## 17 - PARTNERSHIPS FOR THE GOALS



<b>IP02</b>	The SDGs: What's in it for Me? (Innovation Pavilion)
<b>GC</b>	Global Collaboration through Innovation (Global Center)
<b>GC</b>	Imagine H2O Asia – Building a Bridge for International Technology (Global Center)
<b>IP14</b>	Innovation with the Dutch: Connecting the Hubs (Innovation Pavilion)
<b>IP20</b>	TWENTY65: Achieving sustainable clean water for all by the year 2065 (Innovation Pavilion)



# INNOVATION SHOWCASE EXHIBITORS

## DISCOVERY ZONE EXHIBITORS

Advantageous Systems | 7848  
AMG Environmental | 7548  
BioFiltro | 7847  
Burge Environmental | 7747  
Digested Organics | 7549  
GENAQ | 7749  
H&H Chemical LLC | 7849  
Hycura | 7547  
KETOS, Inc. | 7648  
LIFT Innovation Clusters | 7748  
MicroHAOPS, Inc. | 7647  
Steeper Energy | 7649

## INNOVATION PAVILION EXHIBITORS

120WaterAudit | 7739g  
Acuva Technologies Inc. - Advanced UV-LED  
Water Disinfection Solutions | 7739n  
Aqua Metrology Systems | 7739j  
AquaFortus Technologies Limited | 7739i  
BlueTech Research | 7739b  
EasyMining | 7739d  
Imagine H<sub>2</sub>O | 7739c  
LG Sonic | 7739f  
Noria Water Technologies | 7739e  
Orb | 7739m  
Perlemax Ltd | 7739l  
PowerTech Water | 7739o  
Sedron Technologies | 7739h  
Staal Instruments B.V. | 7739k  
SwiftComply US Opco, Inc. | 7739q  
Water Harvesting Inc. | 7739p  
WEF Innovation Pavilion | 7739

## INNOVATION ROW EXHIBITORS

Analog Devices | 8140  
Aqua Membranes Inc. | 8047  
Aquacycl | 8049  
AquaSight | 8239  
Baswood | 7949  
Biorock | 8241  
Cerahelix, Inc. | 8344  
Clean Water Services | 8346  
Clearas Water Recovery | 8148  
Drylet | 8048  
Genifuel Corporation | 8139  
Hydro Systems, Inc | 8141  
Imagine H<sub>2</sub>O Asia | 7947  
Isle Utilities | 8342  
Jiangxi JDL Environmental  
Protection Co., Ltd. | 8339  
Lapeyre Stair | 7541  
Real Tech Inc. | 7644  
Tech4 LLC | 8343  
Tomorrow Water | 7539  
The Water Research Foundation | 8145

## INNOVATIVE TECHNOLOGY AWARD WINNER

Xylem | 1248

## WORKFORCE PAVILION EXHIBITORS

American Society of Civil Engineers | 7761c  
City of Atlanta, Department of  
Watershed Management, 7761f  
The Corps Network, 7761g  
Storm Water Services -  
City of Charlotte | 7761d  
US Minority Contractors Assoc. | 7761b  
Water Environment Federation | 7761e  
WaterTALENT | 7761a

## OFFICIAL INNOVATION PARTNERS



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