**COLLABORATIVE WATER GOVERNANCE IN THE ERA OF BIG DATA ANALYTICS**
Workshop & Conference | Dec. 6-8, 2022
900 North Glebe Road, Arlington, VA

*Ensuring water security, affordability, and equity by utilizing quality data, advanced analytical platforms, and trained workforce to enable collaborative risk-based management decisions.*

The SWIM Annual Workshop & Conference will address one of the most pressing societal needs: How will we transform the way we manage water to build a more sustainable and resilient society?

Please click this image for registration and sponsorship

**SWIM** Sustainable Water Infrastructure Management    **VT VIRGINIA TECH.**

At the SWIM Center, our mission is more important than ever to help the water sector transform and adapt the broad spectrum of our social, physical and digital infrastructure systems to become more intelligent, sustainable and resilient to the impacts of extreme events. Attendees will walk away feeling engaged, informed, and better connected to others.

## CONFERENCE THEMES:

- **Governance of Watershed/River-Basin**
- **Climate Change Resilience**
- **Innovation Ecosystem**
- **Stakeholder Engagement**
- **Governance and Policy**
- **Sustainability and Resilience**
- **Data Analytics and Artificial Intelligence**

> **Anyone interested in learning the practices and strategies for Collaborative Governance, Big Data Analytics and Artificial Intelligence Applications should plan to attend.**

## Substantial Benefits for Participants:

- *Contribute to the transformation of intelligent water through artificial intelligence applications*
- *Understand the "Best Use" of leading practices for resilient and sustainable water sector systems*
- *Learn from "Case Studies" related to integrated and smart one water management practices*
- *Participate in "Panel Discussion" for Governance, Innovation, Workforce, & Stakeholder Engagement*
- *Network opportunities with "Your Colleagues and Friends" at other leading water utilities and industry*

Please Register for the Workshop & Conference at: https://tinyurl.com/swimvt
The early registration fee for the conference is $350 per person (through Nov. 15th and $400 after), which includes all event materials, lunch, coffee, reception and a 1.6 CEUs certificate upon completion of the conference. SWIM Center Member Rate $250 per person (through Nov. 15th and $300 after).

## Contact Information:
Sunil Sinha | Professor & Director | SWIM Center | Virginia Tech | Cell: (814) 404-2150; Email: *ssinha@vt.edu*

# SWIM ANNUAL WORKSHOP AGENDA

## Water and Wastewater Pipeline Asset Management with Big Data Management, Analytics, and Artificial Intelligence Applications

## WORKSHOP, Tuesday, December 6th 7:30 am – 5:00 pm

The goal of the workshop is to improve the practice of water and wastewater pipeline infrastructure management using utility data and web-based, standardized, centralized data analytics platform called "PIPEiD". PIPEiD assists water and wastewater utility to understand pipeline infrastructure systems for performance, resiliency, and sustainability within the context of their own data and benchmark performance versus other utilities. PIPEiD provides a secured, robust, and centralized artificial intelligence-enabled platform to address all three major infrastructure asset management levels: strategic, tactical, and operational, and for water utilities of all sizes (small, medium and large). The workshop will include discussions on historical data verification, standardization for data collection of pipe infrastructure performance, analysis of utility pipe systems, and planning for pipe system management. A live, interactive demonstration of PIPEiD will be conducted to help utility engineers in understanding what PIPEiD can and cannot do as well as how they can put PIPEiD to work for themselves.

## WORKSHOP AGENDA

**7:30 am: Continental Breakfast**
**8:00 am: Welcome Address and Opening Remark** – Sunil Sinha
**8:15 am: Water & Wastewater Pipeline Asset Management – Graham Bell**
**8:30 am: Washington Suburban Sanitary Commission – Fred Pfeifer**
**8:45 am: Portland Water Pipeline Asset Management – Eric Brainich**
**9:00 am: Louisville Water Pipeline Asset Management - Jordan Basham**
**9:15 am: Metropolitan Water District of Southern California – Mark Bushyeager**
**9:30 am: HRSD Wastewater Pipeline Asset Management – Anas Malkawi**
**9:45 am: Houston Wastewater Pipeline Asset Management – Pratistha Pradhan**
**10:00 am: Baltimore City Department of Public Works – Brian Ball**
**10:15 am: District of Columbia Water and Sewer Authority (DC Water) - Alireza Parhami**

### 10:30 am-11:00 am: Coffee Break

**11:00 – 12:30 pm: Panel Session 1 – Drinking Water Pipeline Infrastructure Asset Management**
*Panelist: Alireza Parhami, Mark Bushyeager, Brian Ball, Craig Daily, Celine Hyer, Gregg Horn*
*Moderator: Hugh Sinclair, Vice President, National Practice Lead - Asset Management, Arcadis*
*Discussion on Data, Likelihood & Consequence of Failure, Risk and Asset Management Practices, AI/ML*

### 12:30 pm-1:30 pm: Lunch Break

**1:30 – 3:00 pm: Panel Session 2 – Wastewater Pipeline Infrastructure Asset Management**
*Panelist: Pratistha Pradhan, Fred Pfeifer, Anas Malkawi, Walter Graf, Chris Dermody, Jay Pravez*
*Moderator: Gage Muckleroy, Principal, Integrated Water & Asset Management, GHD*
*Discussion on Data, Likelihood & Consequence of Failure, Risk and Asset Management Practices, AI/ML*

### 3:00 pm-3:30 pm: Coffee Break

**3:30 pm: Summary of Activities and Discussion on Path Forward for PIPEiD Project**
*Moderators: Sunil Sinha, and Graham Bell*

### 4:30 pm: Workshop Wrap-Up

# SWIM ANNUAL CONFERENCE AGENDA

| Wednesday, December 7th, 2022 | Thursday, December 8th, 2022 |
|---|---|
| **7:30 am: Continental Breakfast** | **7:30 am: Continental Breakfast** |
| **8:00 am: Climate Change, Water Crisis, and Equity** | **8:00 am: New Blue Ridge PBS Documentary** |
| *Ben Grumbles, Exec. Dir., Environmental Council of States* | *William Anderson, President & CEO, Blue Ridge PBS* |
| **8:15 am: Smart One Water Management & Governance** | **8:15 am: Big Data Analytics & Artificial Intelligence** |
| *Sunil Sinha, Professor and Director. SWIM Center, VT* | *Sunil Sinha, Professor and Director. SWIM Center, VT* |

### 8:30 am: Federal/State/Regional Initiatives | ### 8:30 am: Utility Initiatives

| Wednesday | Thursday |
|---|---|
| *CISA – Stephen Cauffman, Chief, Resilience Branch* | *DC Water – William Elledge, Env. Engineering Executive* |
| *USGS – Richard Niswonger, Water Resource Mission Area* | *WSSC – Mike Harmer, Chief Engineer* |
| *USACE - Gene Stakhiv, Institute for Water Resources* | *South Bend Water Works – Kieran Fahey, Dir., Control Plan* |
| *NOAA – Josh Murphy, Manager, Coastal Management* | *Buffalo Sewer Authority – Oluwole McFoy, General Manager* |
| *NIST – Michael Dunaway, IoT Devices and Infra. Group* | *Halifax County Service Authority - Mark Estes, Exec. Dir.* |
| *ORNL – Yarom Polsky, Division Director, Energy Sci & Tech* | *SUEZ – Jennifer Steffens, Director, Smart & Env. Solutions* |
| **10:00 am:** *Moderator: Celine Hyer, ARCADIS* | **10:00 am:** *Moderator: Walter Graf, GHD* |

### 10:30 – 11:00 am – Coffee Break | ### 10:30 – 11:00 am – Coffee Break

### 11:00 am:  Water Industry Initiatives | ### 11:00 am: Organization & Association Initiatives

| Wednesday | Thursday |
|---|---|
| *ARCADIS – John McCarthy, Business Area Director* | *NACWA – Adam Krantz, Chief Executive Officer* |
| *XYLEM – Chris Angell, Dir., Strategy and Business Dev.* | *Internet of Water - Peter Colohan, Executive Director* |
| *JACOBS – Susan Moisio, Global Vice President - Water* | *NRWA - Jennifer Palmiotto, Senior Federal Policy Advisor* |
| *AECOM – Beverly Stinson, Ex. Vice President - Water* | *SWAN - Shirley Ben-Dak, VP Strategy & Innovation* |
| *Black & Veatch – Kent Lackey, Sr. Vice President* | *AWWA – Adam Carpenter, Energy and Env. Policy* |
| *GHD – Freddie Guerra, Digital Water Market Leader* | *WEF – Lisa McFadden, Water Science & Engineering* |
| **12:30 pm:** *Moderator: Lindsay Birt, XYLEM* | **12:30 pm:** *Moderator: Chris Dermody, JACOBS* |

### 1:00 – 2:00 pm – Lunch Break | ### 1:00 – 2:00 pm – Lunch Break

### SMART ONE WATER | ### CLIMATE CHANGE, SUSTAINABILITY & RESILIENCE

| Wednesday | Thursday |
|---|---|
| **2:00 pm: Expert Panel Discussion** | **2:00 pm: Expert Panel Discussion** |
| *2:10: Clean Water Services – Ting Lu, Digital Tech Leader* | *2:10: HRSD – Bruce Husselbee, Director of Engineering* |
| *2:20: Miami-Dade – Hardeep Anand, One Water Director* | *2:20: City of Richmond – Eric Whitehurst, Deputy Director* |
| *2:30: Carollo - Beate M. Wright, Vice President* | *2:30: Arcadis – Edgar Westerhof, National Director* |
| *2:40: AECOM - Srini Vallabhaneni, Vice President, Water* | *2:40: Xylem – Patrick Decker, President & CEO* |
| **2:50: Structured Panel Discussion** | **2:50: Structured Panel Discussion** |
| *Panelist: Utility, Consultant, & Technology Provider* | *Panelist: Utility, Consultant, & Technology Provider* |
| *Moderator: David Dzombak, Prof., Carnegie Mellon Univ* | *Moderator:  Ting Lu, CLEAN WATER SERVICES* |
| **3:20: Panel Wrap-up** | **3:20: Panel Wrap-up** |

### 3:30 – 4:00 pm – Coffee Break | ### 3:30 – 4:00 pm – Coffee Break

### WATERSHED/RIVER-BASIN SCALE GOVERNANCE | ### BIG DATA ANALYTICS & ARTIFICIAL INTELLIGENCE

| Wednesday | Thursday |
|---|---|
| **4:00 pm: Expert Panel Discussion** | **4:00 pm: Expert Panel Discussion** |
| *4:10: NV Governor Office - Kristen Averyt, Climate Advisor* | *4:10: Houston Water -. Fazle Rabbi, Managing Engineer* |
| *4:20: DRBC - Kristen Kavanagh, Deputy Exec. Director* | *4:20: NYCDEP - Brian O'Malley, Chief, Data Operations* |
| *4:30: EPA – Kandis Boyd, Dir. Chesapeake Bay Program* | *4:30: Jacobs – Raja Kadiyala, Global Director Digital* |
| *4:40: NYDEP - Paul Rush, Deputy Commissioner* | *4:40: IBM – Rebekah Eggers, Innovation Director* |
| **4:50: Structured Panel Discussion** | **4:50: Structured Panel Discussion** |
| *Panelist: Utility and State Commissions* | *Panelist: Utility, Consultant, & Technology Provider* |
| *Moderator:  Ken Thompson, JACOBS* | *Moderator:  Jim Cooper, ARCADIS* |
| **5:20: Panel Wrap-up** | **5:20: Panel Wrap-up** |

| **5:30 pm: SWIM Center Award Ceremony** | **5:30 pm: SWIM Conference Wrap-Up** |
|---|---|

| **6:00 – 7:30 pm Networking Reception** | **6:00 – 7:30 pm Networking Opportunity** |
|---|---|

# Conference Location:



**Virginia Tech Research Center**
— *Arlington National Capital Region*
**ncr.vt.edu**

**The Virginia Tech Research Center — at 900 N. Glebe Road, Arlington, Virginia is a state-of-the-art conference facility.**





# Hotel Information:

**HOLIDAY INN ARLINGTON AT BALLSTON**
**4610 FAIRFAX DR, ARLINGTON, VA 22203, Phone: 866-876-4238**
*A limited block of rooms has been secured at the discounted rate of $131/night++.*

**THE WESTIN ARLINGTON GATEWAY**
**801 North Glebe Road, Arlington, VA 22203, Phone: 888-627-7076**
*A limited block of rooms has been secured at the discounted rate of $175/night++.*

# Directions and Parking Information:

**Parking information can be found *here*.**

# Conference Host: