

Frontier Applications of AI and Water Management

Water Science and Technology Board Fall Meeting 2025

MEETING OBJECTIVE

This event will convene experts to share frontier applications of artificial intelligence (AI) and machine learning (ML) across water management. The discussions will highlight ways that AI can help us use existing water infrastructure more effectively, while laying the groundwork for emerging tools that will enable entirely new paradigms for future water management. Join members of the National Academies' Water Science and Technology Board and prominent experts as they map critical research frontiers and discuss pathways and barriers to AI adoption.

THURSDAY, OCTOBER 30, 2025

1:00 pm ET Welcome

David Sedlak, WSTB Chair

1:10 pm Demystifying AI: Building a Common Starting Point and Vocabulary

Branko Kerkez, University of Michigan, WSTB member

1:25 pm AI for Real-time Water Resources Management

- *AI is Enabling a New Science of Real-time Hydrology*

Matt Bartos, University of Texas, Austin

- *From Data to Decisions: Advancing and Adopting Real-Time Digital Twins in Smart Water Networks*

Luis Montestruque, Hydrodigital

2:10 pm AI for Wastewater Treatment and Resource Recovery

- *Emerging Challenges and Research Frontiers for Artificial Intelligence in Water and Wastewater Treatment*

Kate Newhart, Oregon State University

- *Applied AI at HRSD: Achievements, Challenges, and the Road Ahead*

Jeff Sparks, Hampton Roads Sanitation District

2:55 pm Break

3:15 pm The Art of the Possible for AI and Water Management

- *Democratizing Knowledge, Automating Work, Expanding What is Possible: Recent Observations and New Directions in AI for Water Resources*

Marcus Quigley, Environmental Financial Consulting Group

3:35 pm NSF Initiatives Related to AI and Water

Sunny Jiang, NSF

3:50 pm Panel Discussion with All Speakers

4:45 pm Closing Thoughts

David Sedlak, WSTB Chair

5:00 pm Adjourn