

10th IWA-ASPIRE Conference and Water New Zealand Conference & Exhibition

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1. Introduction

I was deeply honored to be selected as a recipient of the Kyoto Conference Memorial Fund Travel Grant, which enabled me to attend the 10th IWA-ASPIRE Conference & Water New Zealand Conference & Expo 2025, held from 29 September to 3 October 2025 in Christchurch, New Zealand. The main theme of this conference — *“Empowering Tomorrow: Smart Water Solutions for Resilient Communities”* — resonates closely with my ongoing research on antimicrobial resistance (AMR) in urban wastewater in Viet Nam and Japan.

My original plan was to attend the conference from the Opening Ceremony until my oral presentation on the final day. However, due to unexpected flight cancellations and rebooking, I could only arrive in time to join the Cultural Gala Dinner and the final day's sessions. Despite the shortened stay, it was a highly valuable and inspiring experience. I would like to express my sincere gratitude to Japan Society on Water Environment and the conference organizers for their generous support and understanding.

2. Conference review

The 10th IWA-ASPIRE Conference, jointly organized by the International Water Association (IWA) and Water New Zealand, brought together around nearly 2,500 delegates and exhibitors from nearly 50 countries, representing academia, government, utilities, and industry. The conference program was rich and diverse, offering over 200 technical presentations distributed among 13 streams. These covered a wide spectrum of topics, ranging from digital transformation and artificial intelligence to asset management, resilience, and the integration of indigenous knowledge in water governance. Alongside the oral sessions, the exhibition area featured more than 270 booths, where universities, government agencies, and private companies presented cutting-edge technologies, tools, and case studies on water and wastewater management.

The conference took place at the Te Pae Christchurch Convention Centre, located in the heart of the city, bringing together researchers, industry representatives, and policymakers from across the Asia-Pacific region. Despite my limited participation, I could feel the vibrant international atmosphere and the strong focus on innovation, data-driven management, and sustainable solutions in water and wastewater sectors.

3. The Experience During the Conference

3.1 Plenary and Technical Sessions

On the morning of 3 October 2025, I attended the plenary session *“Strengthening Regulatory Frameworks: A Focus on Regulating Sustainable Sanitation Services”*, held at the Town Hall. The session discussed strategies to reinforce regulatory systems along the sanitation chain, exploring practical challenges and experiences from across the Asia-Pacific region. The plenary began with an introduction to the WHO Roadmap for Sanitation Regulation by Dr. Robert Bos (IWA Senior Advisor), followed by keynote presentations. A panel discussion that followed included representatives from Xylem, SPAN Malaysia, Veolia, Tohoku University, PUB Singapore, and the University of Technology Sydney, providing diverse perspectives on governance, public-private partnerships, and regulatory harmonization.

Later in the morning, I also attended the session *“Smart Solutions: Opportunities at the Interface of the Water/Wastewater-Energy Nexus”*, where presenters shared case studies on digital control systems and energy-efficient treatment technologies integrating water-energy management.

During the lunch break, I also had the chance to briefly walk around the exhibition booths set up along the main corridor of the venue. Several international companies and research institutions showcased innovative technologies related to wastewater treatment, digital monitoring, and circular water management. It was fascinating to see how industry and academia are jointly addressing emerging challenges in water sustainability.

3.2 Oral Presentation: “Risk & Resilience: Wastewater Surveillance”

In the afternoon, I presented in the session titled *“Risk & Resilience: Wastewater Surveillance”*. My presentation, *“Wastewater Surveillance of Antimicrobial Resistance Genes by High-Throughput Quantitative PCR in Five Cities in Viet Nam”*, introduced the application of high-throughput qPCR (HT-qPCR) to characterize AMR gene profiles across multiple urban wastewater samples in Viet Nam. The study also compared resistome diversity between Viet Nam and Japan and discussed implications for environmental AMR monitoring in urbanizing regions. During the Q&A, I received questions regarding the selection of target antibiotic classes in the HT-qPCR array and the

current status of wastewater treatment systems in Viet Nam. Session chair Prof. Joan B. Rose (Homer Nowlin Chair in Water Research, Michigan State University) kindly suggested that septic tank samples should be investigated to better capture AMR trends in decentralized sanitation systems, which is very helpful for my future research.

Other presentations in this session came from researchers in China, New Zealand, and Singapore, focusing on pathogen tracking, leak detection, and viral transmission modeling, collectively demonstrating the broad application of wastewater-based monitoring for public health and infrastructure resilience. The discussions were highly engaging and provided me with fresh perspectives on how wastewater surveillance frameworks can be expanded beyond AMR monitoring to integrated risk management.

4. IWA-ASPIRE Cultural Gala Dinner

On the evening before the final day, I attended the IWA-ASPIRE Cultural Gala Dinner, held at the Te Pae Christchurch Convention Centre. The event provided a warm and festive atmosphere for delegates to relax and connect. A highlight of the evening was the traditional New Zealand *poi* dance performance, in which performers swung tethered balls on cords in rhythmic patterns accompanied by live music. The performance expressed Māori cultural heritage and symbolized unity and balance – themes that also resonate with the conference's spirit of harmony between water, people, and environment. The dinner also served as a meaningful networking opportunity. I met researchers and professionals from various countries, including several scholars and alumni who are currently studying or working in Japan. The event strengthened global and regional connections within the water research community.



Fig. 1. IWA-ASPIRE Cultural Gala Dinner

5. Reflection and lessons learned

Although my attendance period was limited due to unforeseen travel delays, the experience at IWA-ASPIRE 2025 was highly rewarding both academically and personally. The sessions I attended broadened my understanding of global initiatives in sanitation regulation, smart water management, and wastewater surveillance. Through discussions with international experts, I gained valuable insights into data standardization, cross-country collaboration, and potential integration of AMR surveillance into broader public-health frameworks. The suggestions from senior researchers will be invaluable for advancing my ongoing research.

Christchurch itself, a city beautifully rebuilt after devastating earthquakes, symbolizes resilience and renewal, a reflection of the conference theme.

I am sincerely grateful to the Kyoto Conference Memorial Fund for supporting my participation and enabling me to present my research to an international audience. I intend to apply the knowledge and connections gained through this conference to strengthen future research collaborations and contribute to wastewater-based AMR monitoring and environmental health in the Asia-Pacific region.

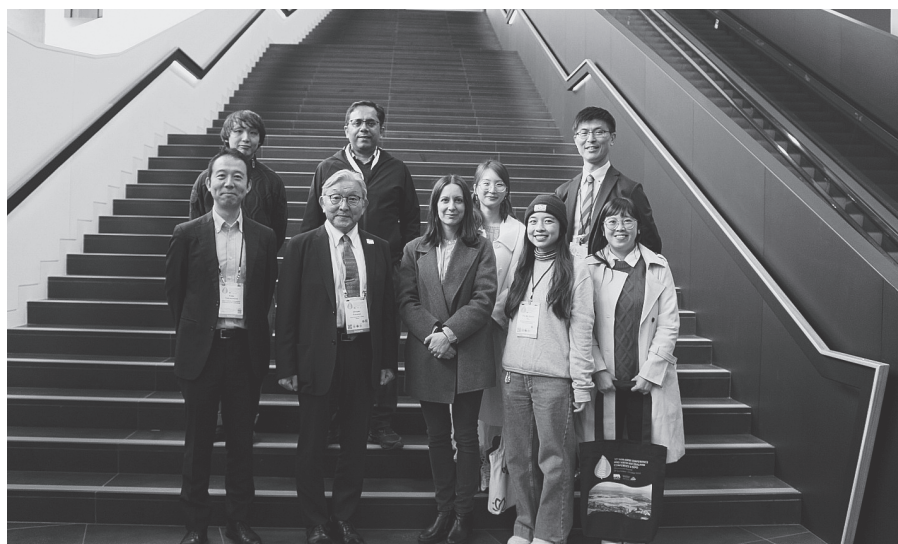


Fig. 2. Researchers and alumni from Japan attending the 10th IWA-ASPIRE conference