2025

WATER MICRO

2025 WATER MICRO

Welcone to Watermicro2025

We are delighted to host Watermicro25, the 22nd edition of the Health-Related Water Microbiology Specialist Group of the International Water Association in the Netherlands. Health-related water microbiology has a long and strong history in the Netherlands. Living in a country with a dense human and (farm) animal population, in the delta of several international rivers, yields a multitude of pressures on the microbial safety of water systems. Climate change is increasing the pressure, with more intense precipitation events and prolonged dry periods. At the same time, the Dutch people want to safely swim and recreate in the many bodies of water, including the canals of the cities, natural lakes and swimming pools. Consumers want safe drinking water (without the use of chlorine). Farmers need safe water (reuse) to irrigate the crops and cities want safe urban water systems to cope with heavy precipitation events.

Watermicro25 will bring together the global experts in the field of Health-Related Water Microbiology to exchange the latest developments in science and discuss their path to impact for the benefit of the global citizens. We hope you enjoy the exchange and experience.

Conference co-chairs
Ana Maria de Roda Husman
Gertjan Medema

2025

WATER MICRO

Sunday June 15

Side events Programme

2025 WATER MICRO

Side event 1:
Viral clues: Innovative Indicators for Detecting Fecal Pollution in Water

10:30 - 12:00

Location: Theater
Workshop organizers: Maite Muniesa, Hiroyuki Katayama, Cristophe Gantzer, Anicet Blanch, James Ebdon

Bacteriophages are non-pathogenic viruses that have gained attention as effective viral fecal indicators in water quality monitoring. Phages offer great specificity, high resistance to environmental conditions and some are human specific. Somatic coliphages and F-specific RNA bacteriophages have been extensively studied as fecal indicators signaling the presence of pathogens linked to human waste.
New viral markers for fecal detection have appeared in the recent years. Among them crAssphage, a *Bacteroides*-infecting phage discovered *in silico*, very specific and abundant in human wastes, and Pepper Mild Mottle Virus (PMMoV), a plant virus that passes through the human digestive and is abundant in wastewater. Advances in detection techniques, make the identification of these viral indicators more rapid and sensitive, streamlining the process for routine environmental monitoring.

The side event aims to establish the current context of viral indicators in water management. Participants will examine the state of the science and potential application of the newest and most promising viral indicators. In a third talk, participants will be introduced to one of the most effective methodologies aiming to the detection of viral markers and, finally, the side event will conduct the audience through practical applications of viral markers, in a developing country and one in a high-income country. The final objective is to provide insights of the newest advances in the use of viral fecal indicators and to generate discussion that will encourage their use and the adoption of new methodologies that helps in preventing waterborne disease outbreaks, by offering earlier and more accurate warnings of human fecal pollution.

12:00 – 13:00

Lunch break
Location: Foyer

Side event 2:

Water Pathogen Modelling: building blocks for stakeholder-driven and climate-aware analysis

10:30 - 12:00

Location: Balcony second floor
Workshop organizers: Nynke Hofstra, Stijn Peeters, Panagis Katsivelis, Majedul Islam, Daniel Okaali

Assessing microbial water quality is essential for tracking progress towards the Sustainable Development Goal (SDG) 6. Knowledge on pathogen levels in surface and drinking water and linking them to disease risk can advocate for the adoption of more effective WASH, water management and treatment practices. However, data on pathogens and faecal indicators are limited and unevenly distributed, particularly in low- and middle-income countries, resulting in knowledge gaps from data through to policy-making levels. Scientific modelling can be put to use to reduce the knowledge gaps.
In the WaterPath project we develop with stakeholders, a toolkit that brings scientific modelling closer to the users. The Global Waterborne Pathogen (GloWPa) model is the basis for the toolkit and is extended to model the concentrations of pathogens in the surface water and consequent health risks. Additionally, scenarios can be incorporated using the latest knowledge on socio-economic development and climate change, including extreme events. This toolkit should help the users with understanding pathogen patterns, sources, future trends and the usefulness of interventions.
The workshop aims to provide a holistic view on the topic of pathogen modelling and its challenges, from the perspectives of the modeller and the user. By demonstrating the case of the WaterPath Toolkit as an example of modelling and decision-support software, we will discuss the following topics: a) General aspects of water pathogen modelling, covering different geographical scales and future scenarios b) Scientific foundation on pathogen modelling, including climate, hydrology and risk assessment; c) Working with existing, global data sources; d) Effective communication of modelling outcomes for decision support; e) Stakeholder engagement, particularly in low and middle income countries.

12:00 – 13:00

Lunch break
Location: Foyer

2025 WATER MICRO

Side event 3:
Let’s team up to unlock unknown outbreak with the wastewater code

10:30 - 12:00 Location: Balcony first floor
Workshop organizers: Henry-Michel Cauchie, Blandine Fauvel, Leslie Ogorzaly, Wim Meijer, Márta Vargha, Tarja Pitkänen, Jose Antonio Baz Lomba, Pikka Jokelainen

This is an outreach activity of the EU-WISH Joint Action. This European project entitled “EU-Wastewater Integrated Surveillance for Public Health” gathers 62 participants from 26 countries in Europe with the aim to strengthen capacity to prevent, prepare for and respond rapidly to serious cross-border health threats. The considered threats are mainly pathogenic microbes and viruses and the link with the topic “Water as information source for health” of the conference is strong.
In this side-event, we want to highlight the multiple facets of wastewater and environmental surveillance of waterborne pathogens, notably aiming efficient epidemic preparedness. It includes not only knowledge and know-how about water microbiology but also many other aspects linked to capacity building, standardization, networking, communication between actors and sustainability.
The aim of this event is to conduct an enriching conversation between participants on the importance of the different facets of (waste)water surveillance and epidemic preparedness. Serious gaming appears to be an adequate way to get participants actively engaged and motivated. The side-event will consist of a collaborative, scenario-based simulation. This serious gaming will consider possibilities of wastewater-based surveillance in mitigating an emerged public health crisis caused by an infectious agent emerging simultaneously in different countries.

12:00 – 13:00 Lunch break
Location: Foyer

2025 WATER MICRO

Side event 4:
Infectivity Determination of Viruses: Cell Culture vs. Molecular Methods (PCR)

13:00 - 14:30 Location: Balcony first floor
Workshop organizers: Charles Gerba, Gertjan Medema

The application of polymerase chain reaction (PCR) has seen widespread application in assessing the occurrence of viruses in water. Regulatory agencies in the United States and elsewhere require demonstration of virus removal for recycling of wastewater or drinking water supply from surface water. The reductions required range from 6 to 20 logs of infectious human pathogenic viruses depending on intended recycling objective (i.e. landscape irrigation vs. direct potable reuse) or drinking water source. It has been suggested that PCR could be used to obtain credits for log reduction for the individual treatment processes. But how well PCR can determine the removal of infectious viruses in the environment remains debatable. Methods have been developed with the purpose of PCR only detecting infectious viruses (i.e. treatment of samples with nucleases), but their performance needs to be better understood and methods for their assessment need to be developed. The state in which the viruses are present in the environment seems to play an important role in their persistence and detectability.

The goal of this side event is to:

1) Review the methods and limitations of cell culture for assessing infectivity.
2) Review methods and limitations of PCR for virus detection of both non-infectious and infectious virus.
3) Review how well cell culture and PCR detect viruses in environmental matrices, after being subjected to environmental stresses and water treatment processes.
4) How do we select the best approach for assessing virus removal by treatment processes.
5) Define uncertainty of both assay methods and research needs.

14:30 – 15:00 Tea break
Location: Foyer

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Side event 5:
Water Quality Management: research into action!

13:00 - 14:30 Location: Balcony second floor
Workshop organizers: the Young Water Professionals in the Watermicro2025 team

This side-event is designed to tackle pressing water quality challenges related to health risks by designing different approaches through collaboration and innovative thinking.
The purpose of this event is to foster interdisciplinary dialogue and harness the collective knowledge of both the audience with diverse backgrounds and the panel of water quality experts (including YWP) to tackle one of the most pressing water quality issues—health risks in recreational waterways. Experts from diverse fields will come together to engage with a complex, real-world water quality scenario, working towards practical solutions. The scenario of this side-event focuses on the health risks of swimming in recreational open water like the iconic Amsterdam canals.

- Develop practical and actionable solutions: Encourage participants to brainstorm and propose actionable strategies accounting for the different stakeholders to reduce health risks, such as improving water monitoring systems, implementing better sanitation, or creating public health advisories.
- Enhance knowledge exchange: Facilitate the exchange of knowledge and experiences between participants and expert panelists, particularly around best practices and emerging trends in water quality management.
- Strengthen networks: Build and strengthen professional relationships among participants, fostering long-term collaborations across sectors and regions.
- Inspire new approaches: Encourage innovative thinking by exposing participants to different approaches and perspectives on water quality, potentially influencing their future work or research.

14:30 – 15:00 Tea break
Location: Foyer

2025 WATER MICRO

Side event 6:
Identifying and addressing challenges in wastewater and environmental surveillance (WES) population representation and data interpretation

13:00 - 14:30 Location: Theater (hybrid)

Workshop organizers: Alexandra Kossik, Maya Ramaswamy, Molly Cantrell, Graeme Prentice-Mott, Heather Reese, Megan Gerdes, Megan Bias, Stacie Reckling, Ariel Christenson, Mami Taniuchi, Md Ohedul Islam

Disease surveillance programs around the world are increasingly turning to WES as a potential cost-effective disease detection tool, but the discipline still lacks established methods for estimating populations represented by a WES sample. We will bring together government, non-governmental, and academic partners offering perspectives from the U.S. national, state, and local levels, and international levels to discuss challenges in wastewater and environmental surveillance (WES) population representation and data interpretation. Understanding population representation – identifying who is contributing human excreta to a sewershed or non-sewered sampling site – is essential to interpreting WES data and aligning it with other public health data sources for public health action. While some projects have been able to demonstrate approaches for identifying contributors to wastewater and fecally-impacted environmental waters, significant challenges remain. This session will present challenges in common WES settings in the U.S. and globally and possible strategies to address WES data use and interpretation.

This session has the following objectives, to:

1. Build awareness of differing WES settings in the U.S. and globally
2. Discuss the importance of understanding population representation to interpret WES data.
3. Highlight challenges faced in different WES settings and varying resource contexts in determining population representation
4. Offer feasible approaches to address challenges in understanding population representation and data interpretation

14:30 – 15:00 Tea break
Location: Foyer

2025 WATER MICRO

Side event 7:
Innovation in sampling for water surveillance of pathogens and AMR

15:00 - 16:30 Location: Theater
Workshop organizers: David McCarthy, Gertjan Medema, Ana Maria de Roda Husman

This side event focuses on innovative sampling techniques for wastewater, stormwater, and receiving water bodies, with a particular emphasis on wastewater-based epidemiology (WBE) and microbial monitoring. Recent global events, including the COVID-19 pandemic and emerging threats like MPOX and avian influenza, have highlighted the critical role the water surveillance and WBE in improving public health outcomes. As demonstrated in recent studies, novel sampling methods like passive samplers have shown great potential in detecting pathogens in water systems.
This side event aims to explore these emerging sampling technologies and their applications across various water matrices, with special attention to developing accessible, cost-effective, and accurate methods suitable for resource-limited settings. We will discuss the challenges and opportunities in creating more sensitive and representative sampling methods, particularly for low-prevalence settings and informal settlements.
The side event is designed to bring together diverse backgrounds to share knowledge on recent advancements and to strategize on future sampling innovations that can address current and emerging global health challenges. We aim to improve how appropriate sampling fosters our understanding of microbial dynamics in water systems and enhance early warning capabilities for disease outbreaks worldwide.

16:45 – 17.45 **Conference opening**
Location: Theater

Water works – An (under)water concert (Mallet collective)
Welcome and opening

17.45 – 18.00 Travel to reception by foot or tourist train

18.00 – 20.00 **Welcome reception**
Location: De Vier Broers, Lieve Vrouwekerkhof 8-10. 3811 BS, Amersfoort

2025 WATER MICRO

Side event 8:
Who bears the burden? Using DALYs to assess risk tradeoffs in water reuse management

15:00 - 16:30 Location: Balcony first floor (hybrid)
Workshop organizers: Kyle McGaughy, Sam Arden, Ben Morelli, Cissy Ma, Michael Jahne, Jay Garland

Pathogen treatment targets for onsite non-potable reuse (NPR) systems are based on quantitative microbial risk assessment (QMRA) models. In the U.S., treatment targets have typically been based on a benchmark infection rate of users exposed to treated water, but recently have also been expressed in terms of the more globally ubiquitous disability adjusted life year (DALY) metric. DALYs can also be used within a life cycle assessment (LCA) framework to characterize distal impacts to wider populations that result from the construction and operation of the treatment systems themselves, such as air pollution or greenhouse gas emissions from energy use. By expressing direct health risks to the end users of water (referred to here as “proximal” risk) in the same units as the distal life cycle risks, we can not only directly compare tradeoffs in total DALY burden but also start to explore more subjective and challenging questions such as how these more distal risks should be considered, if at all, in future water management decisions.

16:45 – 17.45 **Conference opening**
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Side event 9:
How to create useable irrigation water safety plan for growers?

15:00 - 16:30 Location: Balcony second floor
Workshop organizers: Imke Leenen, Stijn Peeters, Nynke Hofstra

We all use risk assessment of water quality in our daily lives: we look at, smell and taste water in a glass and we take action if some undefined standard is reached “this cup of water doesn’t smell right…”. Evaluating a glass of water is a simple example of the critical process that involves evaluating potential hazards to ensure safe water use, protect public health, and guide policy decisions regarding water resources.

We are creating irrigation water safety plans for fresh produce growers. The current framework, GlobalGAP, is complex and doesn’t fully ensure water quality. For instance, it allows irrigation water with under 1000 cfu’s/100ml but only requires testing once a year, which is inadequate.

Our goal is to create a comprehensive irrigation water safety plan that helps growers achieve GlobalGAP certification while enhancing water safety beyond its requirements. In this side event, we seek input on translating GlobalGAP policies into practical water safety plans through case studies, and we welcome feedback from the health-related WaterMicro community.

Join us to explore case studies aimed at translating risks into guidelines that safeguard irrigation water quality and contribute to effective communication strategies for target users.

16:45 – 17.45 **Conference opening**
Location: Theater

Water works – An (under)water concert (Mallet collective)
Welcome and opening

17.45 – 18.00 Travel to reception by foot or tourist train

18.00 – 20.00 **Welcome reception**
Location: De Vier Broers, Lieve Vrouwekerkhof 8-10. 3811 BS, Amersfoort

2025

WATER MICRO

Monday June 16

Morning programme

08:00 - 09:00 **Registration**
Location: Foyer

09:00 - 09:30 **Keynote Climate change and health**
Location: Theater
Track: Global change and water safety
Dr. Aleksandra Kazmierczak is an expert in climate change and human health at the European Environment Agency (EEA). She coordinates the European Climate and Health Observatory – a partnership between the European Commission, the European Environment Agency (EEA), and several other organisations.

09:30 - 09:50 **Climate change and pathogen health risks**
Location: Theater
Chair: Jesse Limaheluw
Track: Global change and water safety

A Comprehensive QMRA Tool for Assessing Risks in Drinking Water Supply Systems Under Changing Climate and Socio-Economic Conditions.
M M Majedul Islam, Mia Bondelind, Ekaterina Sokolova

Future microbial water quality: modeling the effects of climate and socioeconomic changes on a drinking water source
Ekaterina Sokolova, Viktor Bergion, Mia Bondelind

Assessing the effectiveness of green infrastructure in mitigating human health risks during aquatic recreational activities in urban areas using QMRA
Justine Petrucci, Julia Derx, Hannes Müller-Thomy, Regina Sommer, Sarah Dorner, Jonathan Jalbert, Françoise Bichai

Impact of rising atmospheric temperature on the occurrence of Vibrio and Shewanella infections in Norway, 2014-2024
Ettore Amato, Rasmus Benestad, Hans Olav Hygen, Susanne Hyllestad, Umaer Naseer, Beatriz Valcarcel Salamanca

09:50 - 10:20 **Panel discussion on climate change and health risks**
Location: Theater
Chair: Jesse Limaheluw
Moderator: Ana Maria de Roda Husman
Track: Global change and water safety

10:20 - 10:50 **Coffee break**
Location: Foyer

10:50 - 11:50 **Climate change and pathogen health risks**
Location: Theater
Co-chairs: Heather Murphy, Justine Petrucci
Track: Global change and water safety

Water Safety Planning and Quantitative Microbial Risk Assessment at European and African case study sites under climate change
Lucie Vermeulen, Jerome Lock-Wah-Hoon, Harold van den Berg, Ana Maria de Roda Husman

Inactivation of different Enterovirus genotypes in river water under regular flow and extreme weather conditions
Aina Astorch-Cardona, Tamar Kohn

Quantitative microbial risk assessment reveals potential differences in enteric infection risks following rainfall events in Kibera, Kenya
Syed Anjerul Islam, Sarah Lebu, Joe Brown

Do Heat Islands Impact Microbial Quality? A Montreal Case Study
Michele Prevost, Catalina Ortiz, Ludovica Palma, Fatemeh Hatam

A new Bayesian approach for managing microbial safety at river bathing locations vulnerable to short-term pollution under data-scarce situations.
Wolfgang Seis, Marie-Claire ten Veldhuis, Pascale Rouault, David Steffelbauer, Gertjan Medema

11:50 - 12:00 **TBD**
Location: Theater
Track: Global change and water safety

12:00 - 12:30 **Poster pitches Global change and water safety**
Location: Theater
Co-chairs: Hao Wang, Silvia Monteiro
Track: Global change and water safety

Investigating Fecal and Antimicrobial Resistance Bacteria from Tidal Flooding in Coastal North Carolina
Jenna Kraemer, Natalie Nelson, Megan Carr, Julia Harrison, Katherine Anarde, Angela Harris

Intermittent Contamination of Drinking Water Supplies: Challenges and Implications for Effective Monitoring
Raphaela Betz, Saskia Nowicki, Jamie Bartram, Katrina Charles, Li Ann Ong

Prevalence and Spatial Distribution of Opportunistic Pathogens in Full-scale Municipal Drinking Water Distribution Systems
Tiong Gim Aw, Fernanda Mac-Allister Cedraz, Mélodie Nasr, Cate Boisjolie, Keegan Brighton

Evidence for residential drinking water as infectious source for community-acquired Legionnaires' disease - results of the case-control "LeTriWa" study, Berlin, Germany
Christina Förster, Benedikt Schaefer, Ann-Sophie Lehfeld, Bonita Brodhun, Markus Petzold, Walter Haas, Udo Buchholz

Regrowth of Indicator Bacteria in Tropical Environments
Sumayyah Binte Mohd Faisal, Sumedha Bhatia, G Reuben Gangesh, Benjamin Chun Min Lim, Karina Yew-Hoong Gin

Machine Learning Model to Predict the Impact of Rising Temperatures on Opportunistic Pathogens Presence and Chlorine Demand
Ludovica Palma, Fatemeh Hatam, Catalina Ortiz, Michele Prevost

Applicability of intI1 as an indicator gene for the removal of extracellular antimicrobial resistance genes in full-scale wastewater treatment plants
Rongxuan Wang, Mardalisa Mardalisa, Hiroe Hara Yamamura, Norihisa Matsuura, Ryo Honda

Long-term Survival of Simian Rotavirus, Murine Norovirus and Porcine Sapovirus in Drinking Water
ZIWEI ZHAO, Linda J Saif, Leena Maunula

Rapid alternative parameters for HPC22 to determine the microbial water quality after repairs in the drinking water distribution system
Marcelle van der Waals, Nikki van Bel, Frits van Charante, Jeroen van Rijn, Anita van der Veen, Paul van der Wielen

Water safety planning in buildings: chronicle of best practices to prevent exposure to drinking water pathogens
Marianne Grimard-Conea, Michèle Prévost

12:30 - 13:30 **Lunch break**
Location: Foyer

2025

WATER MICRO

Monday June 16

Afternoon programme

parallel sessions

Monday June 16

Afternoon programme
parallel sessions

2025 WATER MICRO

Drinking water and health

13:30 - 15:00 Location: Theater
Co-chairs: Catalina Ortiz, Peter Vikesland
Track: Global change and water safety

Effect of supply frequency on biofilm and bulk water microbiomes in a simulated intermittent water supply system
S.N. Corimayo, D. Cheng, J. Cai, Y. Woo, B. Kudukad, N. Nadhirah, E. Hill, M.C. Cruz, V.B. Rajal, S. Wuertz

Targeting enhanced water quality from eutrophic sources through conventional and advanced treatment processes at a full-scale drinking water treatment plant
Alejandra Ibarra Felix, Nadia Farhat, Emmanuelle Prest, Johannes Vrouwenvelder

Characterizing fecal contamination of drinking water and its impact on health through integrated microbiological, household survey, and earth observation data
Timothy R. Julian, Sheena Conforti, Esther Greenwood, Thomas Lauber

Evaluation of microbial biodiversity in drinking water reservoirs for a holistic analyses of water quality
Michael Hügler, Johannes Ho, Chiara Holzer, Claudia Stange, Julia Nuy, Alexander Probst, Andreas Tiehm

MIQROWSEQ 'MIcrobial Quality gROundWater abstraction sites with SEQuence analyses'
Anneke Roosma, Anniek de Jong, Adrie Atsma

A Simple, Rapid Field Culture Test to Enumerate Pathogenic Vibrio cholerae Bacteria in Drinking Water
Mark Sobsey, Fuchih Hsu, Rebecca Wong

Intermittent Community-managed Water Supply in Rural Indonesia: Unveiling Hidden Microbial Risks and Pathways to Safer Water Service
Rioneli Ghaudenson, Cindy Rianti Priadi, Iftita Rahmatika, Akna Mumtaz Ilmi, Tim Foster

Advanced Water Safety Management: Proactive Legionella Monitoring and Risk Mitigation in Barcelona's Drinking Water Supply Network
Ane López, Gemma Saucedo, Marta Ganzer, Sergio Montes, Xavier Pardo

15:00 - 15:30 Tea break

Monday June 16

Afternoon programme
parallel sessions

2025 WATER MICRO

Epidemiology of waterborne diseases

13:30 - 15:00 Location: Balcony 1st floor
Co-chairs: Benjamin Clark, Luz Chacon
Track: Global change and water safety

Soil Transmitted Helminths in Fecal Sludge Treatment Plants and Nearby Soils: A Study in Rohingya Camps, Cox's Bazar, Bangladesh
Md. Sakib Hossain, Nafisa Nawal Labiba, Hajbiur Rahman, Ashrin Haque, Tahani Tabassum, Md. Shafiqul Islam, Rodoshi Hayat, Claire Furlong, Christine Maria Hooijmans, Zahid Hayat Mahmud

Assessing the Prevalence of S. haematobium infections Among School-Going Children in Nelson Mandela Bay: A Comprehensive Diagnostic Approach.
Maryline Vere, Wilma ten Ham-Baloyi, Lucy Ochola, Opeoluwa Oyedele, Lindsey Beyleveld, Siphokazi Tili, Takafira Mduluza, Paula Melariri

Health Effects and Water Quality Associated with Low Pressure Events in Drinking Water Distribution Systems in the United States
Mia Mattioli, Katharine Benedict, Shanna Miko, Catherine Barrett, Alexis Roundtree, Sunkyung Kim, Sarah Collier, Elizabeth Adam, Julia Gargano, Jonathan Yoder, Deborah Vacs Renwick, Kenneth Rotert, Mike Sullivan, Sharon Sweeney, Michael Beach, Vincent Hill

Impact of Integrated Interventions on Prevalence of Diarrhea among Children Aged Below Five Years in a Resource-Constrained Setting in Kenya
Betty Muriithi

Does the epidemic spreading of norovirus within the population impact the drinking water quality ? 3 years of follow-up
Morgane Levert, Marion Goulet, Nathalie Fagour, Jean Marie Mouchel, Laurent Moulin, Sebastien Wurtzer

The effects of climate factors on the incidence of enteric disease in Pennsylvania, USA (2010- 2019)
Miriam Wamsley, Robin Taylor Wilson, Heather Murphy

Impact of an educational intervention on hygiene knowledge and practices among municipal waste workers in Nelson Mandela Bay, South Africa.
Alive Ntunja, Wilma ten Ham-Baloyi, June Teare, Paula Melariri

Impact of community-wide drinking water treatment on bacterial strain-sharing between Kenyan households
Daehyun Kim, Colin Worby, Hannah Wharton, Arjun Miklos, Benard Chieng, Sammy Njenga, Ashlee Earl, Amy Pickering, Belen Galofré

15:00 - 15:30 Tea break

Monday June 16

Afternoon programme
parallel sessions

2025 WATER MICRO

Pathogen fate

13:30 - 15:00 Location: Balcony 2nd floor
Co-chairs: Daniela Morales, Silvia Bofill-Mas
Track: Global change and water safety

Quantification of human pathogenic viruses and potential indicator viruses in sewage and their removal in WWTP
Nikki van Bel, Daniëlle van der Linde, Gertjan Medema

GWPD: a multifunctional platform to unravel biological risk factors in global engineered water systems
Fang Huang, Aijie Wang, Shu-Hong Gao, Lu Fan

Monitoring Aichi Virus in Portuguese Wastewater: Post-Pandemic Trends and Genotype Dynamics (2020–2024)
Inês Costa, Filipa Nunes, Silvia Monteiro, Ricardo Santos

The Fate of Viral RNA during In-Sewer Transport: a Field Study Focusing on Sewer Biofilms
Melissa Pitton, Charlie Gan, Tim Julian, Christoph Ort

Exploring the Inactivation Mechanisms of Human Adenovirus 2 in Solar Disinfection: The Role of Genome Repair in the indirect pathway
Sujin Shin, Yunho Lee, Tamar Kohn

Aggregation and Virus Susceptibility to Disinfectant: Insights from simulation study
Ren Suzuki, Syun-suke Kadoya, Daisuke Sano

Persistence of viruses in water microcosms and the effect of microplastics contamination
Ines Giron-Guzman, Sandra Ballesteros, Enric Cuevas-Ferrando, Regino Barranquero, Alba Perez-Cataluña, Irene Falco, Gloria Sanchez

To be determined

15:00 - 15:30 Tea break

2025

WATER MICRO

Monday June 16

Afternoon programme

workshop & posters

2025 WATER MICRO

Workshop:
The impact of climate change on waterborne diseases

13:30 - 15:00

Location: Theater
Workshop organizers: Sam Sherchan, Daisuke Sano
Track: Global change and water safety

The purpose of this workshop is to explore the direct and indirect impacts of climate change on food and waterborne diseases. This workshop aims to raise awareness about the increasing risk of diseases such as cholera, giardia, and leptospirosis, which are linked to changes in climate, water quality and availability.
This issue is highly relevant to LMICs prone to climate-induced flooding, hurricanes, and rising temperatures, droughts, where vulnerable communities may face heightened exposure to contaminated water. Attendees will gain insights into how climate change alters the dynamics of waterborne diseases, affecting public health at both local and global levels. The event will offer actionable strategies for mitigating risks, climate change adaptation, protecting water resources, and implementing health interventions to prevent future outbreaks. By bridging science and policy, this workshop will equip participants with the knowledge to better anticipate and respond to emerging challenges in waterborne disease management.

Poster sessions

17:00 - 18:00

Location: Foyer
Track: Global change and water safety

Poster session 1A Safe drinking water

Poster session 1B Legionella & biofilms

Poster session 1C Safe bathing water and surface water

Poster session 1D Safe water (re)use

Poster session 1E Climate change impact

The poster presentation programme can be found on the screens near the poster boards

18:00 - 23:00

YWP social event (YWP only)
Location: Foyer

Poster session 1A Safe drinking water
Track: Global change and water safety

[1A-1]
Disruptive effects of sewage intrusion into drinking water
Mengqing Fan, Gang Liu

[1A-2]
Dynamics of microbial water quality at sensor faucets driven by short stagnation at different temperatures
Anran Ren, Gang Liu

[1A-3]
Rapid alternative parameters for HPC22 to determine the microbial water quality after repairs in the drinking water distribution system
Marcelle van der Waals, Nikki van Bel, Frits van Charante, Jeroen van Rijn, Anita van der Veen, Paul van der Wielen

[1A-4]
Crenothrix polyspora, the "water pest bacterium": Once feared, now nearly forgotten - A rediscovery through a systematic and multiparametric field study
Sophia D. Steinbacher, Mats Leifels, Katarina Priselac, Katalin Demeter, René Mayer, Julia Vierheilig, Wolfgang Kandler, Regina Sommer, Gerhard Lindner, Rita B. Linke, Karen Zuser, Margaret Stevenson, Claudia Kolm, Domenico Savio, Alfred Paul Blaschke, Alexander K. T. Kirschner, Andreas H. Farnleitner

[1A-5]
Microbial Risks in Drinking Water Induced by Short-Term Warming Experiments in the Context of Global Warming
xiaoxuan Wang, gang Liu

[1A-6]
Detection of microbiological hazards in drinking water treatment plants: A three year pilot study
Alba Pérez-Cataluña, Inés Girón-Guzmán, Enric Cuevas-Ferrando, Irene Falcó, Azahara Díaz-Reolid, Pablo Puchades-Colera, Sandra Ballesteros, Violeta García-Muñoz, Gloria Sánchez

[1A-7]
Assessing the Microbial Safety of Urban Drinking Water in China: A Nationwide Study Based on Nanopore Sequencing and Flow Cytometry
PENG SHI, Shuyu Jia

[1A-8]
Drifting intersection interfaces: High-frequency water quality disturbance hotspots formed by multiple supply water sources in a mega-city.
Jiaxing Fang, Zihan Dai, Dragan Savic, Walter van der Meer, Gang Liu

[1A-9]
Assessing the cost and effectiveness of recruitment strategies of a large scale RCT on childhood health and private water wells
Kristin Skiendzielewski, Peter Husnik, Townley Sorge, Debbie Lee, Donna Denno, Jingwei Wu, Mark Borchardt, Joel Stokdyk, Phillip Tarr, Heather Murphy

[1A-10]
Passive samplers for hepatitis viral surveillance in drinking water sources in India
Ignasi Estarlich Landajo, Aakanksha Pathinia, Gisela Juliachs-Torroella, Cristina Mejías-Molina, Marta Rusiñol, Guy Howard, Sílvia Bofill-Mas

[1A-11]
Potential of ATA foil in removal of viruses from drinking water in underserved communities measured by the phage indicator
Hiroshi Hirotani

[1A-12]
Community-led improvement of drinking water safety in Cameroon
Andrea Rechenburg, Guy Valerie Djumyom Wafo, Anne Ayo, Christian Timm

[1A-13]
Intermittent Contamination of Drinking Water Supplies: Challenges and Implications for Effective Monitoring
Raphaela Betz, Saskia Nowicki, Jamie Bartram, Katrina Charles, Li Ann Ong

[1A-14]
Long-term Survival of Simian Rotavirus, Murine Norovirus and Porcine Sapovirus in Drinking Water
ZIWEI ZHAO, Linda J Saif, Leena Maunula

[1A-15]
RT-PCR for the detection of faecal indicator bacteria in drinking water: Key Performance Indicators and Operational challenges
Eline Stroobach

[1A-16]
Early Warning System for Detecting Fecal Contamination Using Online Flow Cytometry
Sandra Strating

[1A-17]
Validation and practical application of continuous monitoring of microbial water quality of drinking water
Nikki van Bel, Jeroen van Rijn, Leonie Marang, Jentina Schuurman, Paul van der Wielen

[1A-18]
Prevalence and Antifungal Resistance of Yeast in Groundwater from Mahikeng, South Africa: Implications for Public Health and Water Quality Management
Letlhogonolo Mokaleng

[1A-19]
Automating Oversight of Distribution Reservoir Critical Control Points: Enhancing Transparency and Nailing Compliance
Sarah Loder, Phil Krasnostein, Caro Wiggins, Russell Deans, James Lucas, Annette Davison

[1A-20]
Forecasting E.coli in karst springs using a spatio-temporal machine learning approach
Anna Pölz, Katalin Demeter, Alfred Paul Blaschke, Andreas H. Farnleitner, Julia Derx

[1A-21]
Unsafe Drinking Water for Children Under 5 in a Rural Area of São Paulo's Metropolitan Region, Brazil.
Bruna Breternitz, Milena Dropa, Solange Martone-Rocha, Francisca Francisca Alzira dos Santos Peternella, Miriam Lopes da Silva, Pedro Smith Pereira Ferraro, MariaTereza Pepe Razzolini

[1A-22]
Challenges in Water Security: Pandemic Legacies and Impact on Vulnerable Populations
Geyse A.C. Santos, Francisca A. dos S. Peternella, Miriam Lopes da Silva, Maria Tereza Pepe Razzolini, Luiz Sérgio Osório Valentim

[1A-23]
Evaluating Machine Learning Models for E. coli Detection in Household Drinking Water in Bangladesh
Iqramul Haq, Md. Yusuf Hossain Ador, Diego Nobrega

Poster session 1B Legionella & biofilms
Location: Foyer
Track: Global change and water safety

[1B-1]
Neochlamydia as Probiotic for _L. pneumophila_ in Premise Plumbing?
Fernando Roman, Thomas Byrne, Rebekah Martin, Didier Mena, Rania Smeltz, Amy Pruden, Marc Edwards

[1B-2]
Interactive effects of temperature and trace disinfectant on _Legionella_ control in hot water systems
Krystin Kadonsky, Darel Snead, Tolulope Odimayomi, Amy Pruden, Marc Edwards

[1B-3]
Evidence for residential drinking water as infectious source for community-acquired Legionnaires' disease - results of the case-control "LeTriWa" study, Berlin, Germany
Christina Förster, Benedikt Schaefer, Ann-Sophie Lehfeld, Bonita Brodhun, Markus Petzold, Walter Haas, Udo Buchholz

[1B-4]
Unveiling the influence of heating temperature on biofilm formation in shower hoses through multi-omics
Mingchen Yao, Gang Liu, Martin Pabst

[1B-5]
Water safety planning in buildings: chronicle of best practices to prevent exposure to drinking water pathogens
Marianne Grimard-Conea, Michèle Prévost

[1B-6]
Prevalence and Spatial Distribution of Opportunistic Pathogens in Full-scale Municipal Drinking Water Distribution Systems
Tiong Gim Aw, Fernanda Mac-Allister Cedraz, Mélodie Nasr, Cate Boisjolie, Keegan Brighton

[1B-7]
Presence and abundance of _Legionella spp_. and _L. pneumophila_ in wastewater treatment plants
Rosa M Araujo, Ayalkibet Hundesa, Yexenia I Cardenas, Javier Mendez

[1B-8]
Control of bacterial communities in drinking water distribution systems
Sallamaari Siponen, Anna-Maria Hokajärvi, Jenni Ikonen, Ari Kauppinen, Ilkka T. Miettinen, Mikko Kolehmainen, Tarja Pitkänen, Eila Torvinen

[1B-9]
Microbial growth control in drinking water distribution networks: the biological stability approach
Emmanuelle Prest, Matthijs Rietveld, John Boogaard

[1B-10]
Stability and optimization of poly(N-isopropylmethacrylamide) nanohydrogels as an anti-adhesive coating against microorganisms in drinking water systems.
Rodrigo N. Nobre, Olga Sójka, Henny Van der Mei, Wiebe M.de Vos, Maria Cristina Gagliano

[1B-11]
Modeling Legionella anisa and Aeromonas in distribution pipes in urban environments influenced by climate change
Joost van Summeren, Djordje Mitrovic, Mirjam Blokker, Paul van der Wielen

[1B-12]
Can we predict _Legionella pneumophila_ at high-risk points of use?
Catalina Ortiz, Fatemeh Hatam, Marianne Grimard-Conea, Michèle Prévost

[1B-13]
Integrating Qualitative Microbial Risk Assessment (QMRA) to assess legionella risks and prevention in healthcare settings
Abebe Aberra

Poster session 1C Safe bathing water and surface water
Location: Foyer
Track: Global change and water safety

[1C-1]
Non-toxinogenic *Vibrio cholerae* in Hungarian natural bathing waters
Bernadett Khayer, Judit Henczkó, Panna Sütő, Gabriella Csoltkó, Károly Józsa, Lívia Vidács, Enikő Éva Lókiné Nagy, Csaba Kiss, Márta Vargha

[1C-2]
Bathing water quality monitoring in Slovenia and risk communication management in case of inadequate water quality
MATEJA POJE

[1C-3]
Can online cATP and turbidity measurement be used to safeguard the microbiological water quality in a non-chlorinated public swimming pool.
Maarten Keuten, Ciska Schets

[1C-4]
Influence of Environmental Factors on Enterococci Levels in two Adjacent Recreational Beaches of Abu Dhabi
Rajasekhar Thankamony, Hessa Al Khaled, Hamad Abdulla Al Hammadi, Abdulsalam Husain Al Hashmi, Ponpandi Perumal, Maha Abdulkhaleq Al Yafei, Kholood Khaled AlJaberi, Mohamed Rashid Al Neyadi, Yaqoob Al Hosani

[1C-5]
Spatiotemporal distribution of Escherichia coli, and fecal and non-fecal pathogens in the urban surface water system of Amsterdam
Sha Gao, Thomas Wagner, Paul van der Wielen, Nick Siscanu, Huub Rijnaarts, Nora Sutton

[1C-6]
Developing Predictive Models to Estimate Real-time Fecal Contamination in Estuarine Waters
Julia Harrison, Natalie Nelson, Angela Harris, Christopher Osburn, Beth Darrow, Elise Morrison

[1C-7]
Tracing fecal contamination of recreational water at a bathing site in Helsinki
Rauni Kivistö, Annastiina Rytkönen, Pauliina Tomberg, Sari Front, Heidi Öjst, Tarja Pitkänen

[1C-8]
Efficacy of UV-Disinfection for inactivation of microorganisms for discharge of wastewater effluent into surface bathing water
Michael Reiter, Gerhard Lindner, Elisabeth Holzhammer, Alois Schmalwieser, Andreas H. Farnleitner, Regina Sommer

[1C-9]
Influence Of Water Physicochemical Properties And Vegetation Type On The Distribution Of Schistosomiasis Intermediate Host Snails In Nelson Mandela Bay
Prince Campbell, Janine Adams, Melusi Thwala, Opeoluwa Oyedele, Paula Ezinne

[1C-10]
The Impact of polystyrene on the Growth of Microcystis aeruginosa, Disinfection Byproduct Formation, and Toxin Release
Baoling Yuan, Decai Liu

[1C-11]
Schistosomiasis knowledge, attitude, practices and associated risk factors among school-going children, aged 5-14 years in Nelson Mandela Bay, South Africa.
Maryline Vere, Wilma ten Ham-Baloyi, Lucy Ochola, Opeoluwa Oyedele, Paula Melariri

[1C-12]
Analysis of water quality of rivers in Turrialba, Costa Rica
Carlos Sánchez Romero, Ariel Romero Guerrero, Eduardo Corrales Brenes

[1C-13]
Citizen science as a tool for understanding cyanobacterial bloom dynamics
Zineb Bazza, Elliston Vallarino Reyes, Sebastien P. Faucher

[1C-14]
Transboundary River Water Quality Assessment: A Case Study of Kabul River Basin, Pakistan
Muhammad Shahid Iqbal, Hussain Kashif, Munir Sarfraz

[1C-15]
Cyanobacteria and Cyanotoxins in the Human Respiratory Tract: A New Avenue for Environmental Toxin Exposure
Dayun Kang, Surye Park, GyuDae Lee, Min-Ji Kim, Jae-Ho Shin, Seungjun Lee

[1C-16]
Assessment of bacterial diversity in water, sediments and Clarias gariepinus in Owena multipurpose dam in Igbara-Oke, Nigeria
Adewale Olalemi

[1C-17]
Investigating Fecal and Antimicrobial Resistance Bacteria from Tidal Flooding in Coastal North Carolina
Jenna Kraemer, Natalie Nelson, Megan Carr, Julia Harrison, Katherine Anarde, Angela Harris

[1C-18]
Deteriorating Water Quality and Associated Health Issues in a Tropical Coastal Wetland Region
Shadananan Nair Krishnapillai

[1C-19]
MetaMST: Strengthening Hazard Identification with Source-Specific Faecal Indicator Bacteria Insights
Timothy J. Y. Lim, Johanna Engels, Muriel Lepesteur, Darren Cottam, Miriam Jones, Kelly Zuccala, Caroline Martino, Chris Garland, Anne Roiko, Alison Kemp, Fiona Lynch, Rebekah Henry

Poster session 1D Safe water (re)use
Location: Foyer
Track: Global change and water safety

[1D-1]
Perceptions on the usability and applications of Rain Water Harvesting a Comprehensive Literature Review
Shafraaz Khan

[1D-2]
Proximal and Distal Risk Tradeoffs of Onsite Non-potable Reuse
Kyle McGaughy, Sam Arden, Ben Morelli, Cissy Ma, Michael Jahne, Jay Garland

[1D-3]
The Rain Revolution: Theoretical Models for Water Empowerment in Fiji
Shafraaz Khan

[1D-4]
Assessing Colistin Resistance Host Range Across Three Geographically Distinct Water Reclamation Facilities
Sarah E. Philo, Michael A. Saldana, Siyi Zhou, Lauren B. Stadler, Jeseth Delgado Vela, Adam L. Smith

[1D-5]
A comprehensive microbiological safety assessment of reusing greywater treated by nanofiltration after greywater heat recovery
Shuoguang Yang, Lucía Hernández Leal, Henny C. van der Mei, Maria Cristina Gagliano

[1D-6]
WWTP reclaimed water for use in aquaponic systems: virological analysis
Marta Lois, Jesus L Romalde

[1D-7]
Insights of ecological and environmental risks in the process of reclaimed water replenishment in an artificial reservoir
Dan Qin, Qian Sun

[1D-8]
Evaluating the benefits and health risk trade-offs of wastewater reuse in agriculture through the use of predictive risk models
Joanna Harrison, Julia Farias, Clinton Williams, Aditya Kuppravalli, Nicole Novak, Rebecca Muenich, Treavor Boyer, Wendy Smith, Yawen Liu, Warish Ahmed, Kerry Hamilton

[1D-9]
Water-Soil-Food Nexus: Toxic cyanobacteria journey from water to crops via soil colonization
Jiyoung Lee, Yuehan Ai, Nicholas Basta

[1D-10]
Validating virus removal in a full-scale membrane bioreactor for greywater reuse
Émile Sylvestre, Anne Vescovi, Eva Reynaert, Shwetha Nayagar, Eberhard Morgenroth, Tim Julian

[1D-11]
Applicability of *intI1* as an indicator gene for the removal of extracellular antimicrobial resistance genes in full-scale wastewater treatment plants
Rongxuan Wang, Mardalisa Mardalisa, Hiroe Hara Yamamura, Norihisa Matsuura, Ryo Honda

[1D-12]
Translating policy into useable guidelines for safe water use.
Stijn Peeters, Imke Leenen

[1D-13]
Using Indigenous Virus Markers to Safeguard the Integrity of Membrane Treatment Plants
Aleida Hommes-de Vos van Steenwijk, Leo Heijnen, Danny Harmsen, Erwin Beerendonk, Dwani Venkataswamy Gowda, Emile Cornelissen, Gertjan Medema

Poster session 1E Climate change impact
Location: Foyer
Track: Global change and water safety

[1E-1]
EU Horizon SPRINGS project: Tackling the effect of climate change on diarrheal diseases
Lucie Vermeulen, Jerome Lock-Wah-Hoon, Harold van den Berg, Ana Maria de Roda Husman

[1E-2]
Understanding the impact of human wastewater emissions on the microbiological water safety along the Danube amid future change
Julia Derx, Sophia Steinbacher, Peter Valent, Ahmad Ameen, Anna-Maria König, Katalin Demeter, Rita Linke, Regina Sommer, Gerhard Lindner, Alois W. Schmalwieser, Julia Walochnik, Alexander K. Kirschner, Robert Mach, Sílvia Cervero-Aragó, Matthias Zessner, Steffen Kittlaus, Günter Blöschl, Margaret E. Stevenson, Alfred Paul Blaschke, Andreas H. Farnleitner

[1E-3]
Machine Learning Model to Predict the Impact of Rising Temperatures on Opportunistic Pathogens Presence and Chlorine Demand
Ludovica Palma, Fatemeh Hatam, Catalina Ortiz, Michele Prevost

[1E-4]
Modelling microbiological water quality in the Bega river under a changing climate
Aude Lemme, Rik Oldenkamp, Bas Teusink

[1E-5]
Regrowth of Indicator Bacteria in Tropical Environments
Sumayyah Binte Mohd Faisal, Sumedha Bhatia, G Reuben Gangesh, Benjamin Chun Min Lim, Karina Yew-Hoong Gin

[1E-6]
Acclimatize 2: Investigating Pollution Pressures Impacting Dublin Bay
Hannah Murphy, Deepak Kumar Prasad, Xin Tao, Tristan M. Nolan, Niamh A. Martin, Laura Sala-Comorera, Liam J. Reynolds, John J. O'Sullivan, Wim G. Meijer

[1E-7]
From the pasture to the water: multiparametric rainfall experiments to determine microbial release and transport from feces
Yanhe Zhou, Rita Linke, Regina Sommer, Gerhard Lindner, Peter Strauss, David Ramler, Alba Hykollari, Gabrielle Stalder, Katarina Priselac, Mats Leifels, Margaret Stevenson, Katalin Demeter, Alfred Paul Blaschke, Jack Schijven, Andreas Farnleitner, Julia Derx

[1E-8]
Influence of Rainfall on Fecal Contamination in a Watershed: A Microbial Source Tracking Study
Wenjing Ren, Rebecca Riggi, Nishita D'Souza, Joan Rose, Emilia Emerson

[1E-9]
The effect of seasonal variation on the occurrence rates of Dengue Fever transmission in Fiji
Shafraaz Khan

2025

WATER MICRO

Tuesday June 17

Morning programme

08:00 - 09:00 **Keynote recreational water & health**
Location: Theater
Track: Global change and microbial hazards
Adriaan van der Linden, Leisurelands & Swimmable cities. He is Manger Developments at Leisurelands and part of the Swimmable Cities alliance, a collective effort of experts in urban swimming environment design, public mediation, community building, policy, safety, public health, waterway restoration and water quality to promote swimming in the urban environment.

09:00 - 09:30 **Recreational water & health**
Location: Theater
Chair: Fariba Raesi
Track: Global change and microbial hazards

Quantitative Microbial Risk Assessment for Inhalation of *Aspergillus fumigatus* aerosolized by Recreational Water Activities
David Kahn, Charles Haas

An Updated Quantitative Microbial Risk Assessment for Recreational Water Quality in New Zealand
Brent Gilpin, Margaret Leonard, Beverley Horn, Meg Devane, Anthony Pita

Sand quality as the new criterion of the new Blue Flag recreational water sites in Portugal. It's happening!
João Brandão, Ana Silva, Konstantina Sarioglou, Márcia Vieira, Catarina Gonçalves

Understanding sources of faecal pollution in recreational setting through advanced microbial monitoring
Dusan Jovanovic, Rebekah Henry, Peter Kolotelo, Christelle Schang, Toby Prosser, Trish Grant, David McCarthy

09:30 - 09:50 **Panel discussion on recreational water & health**
Location: Theater
Chair: Fariba Raesi
Moderator: Laurent Moulin
Track: Global change and microbial hazards

09:50 - 10:20 **Coffee break**
Location: Foyer

10:20 - 10:50 **Pathogens in surface water**
Location: Theater
Co-chairs: Jean Baptiste Burnet, Songtao Mei
Track: Global change and microbial hazards

Using the proteolyticfingerprint of Lake Geneva to investigate the mechanisms of virus inactivationin lake water
Josephine Meibom, Natalie Wichmann, Michael Zumstein, Tamar Kohn

Pathogen dispersal and distribution in estuarine systems – A modelling approach
Xiaorong Li, Peter Robins, Jessica Kevill, Shelagh Malham, Davey Jones

Modelling rotavirus concentrations from sanitation sources to surface waters in Uganda: assessing change impacts, management and associated disease burden
Daniel Okaali, Nynke Hofstra

Estimation of the source of antibiotic-resistant *E. coli* isolated from Urado Bay in Japan
Yoshimoto Ryusei, Sorn Sovannlaksmy, Ihara Masaru

Bacterial antimicrobial resistance in coastal waters of two contrasting temperate environments.
Alisson Godino Sanchez, Michèle Gourmelon, Melody Le Brun, Alexandre Mrozinski, Joelle Serghine, Julien Quéré, Emilie Rabillier, Claire Labry, Sophie Schmitt, Marie Latimier, Florian Caradec, Alexandre Cormier, David Goudenege, Sabine Delannoy, Patrick Fach, Dominique Hervio-Heath, Cyril Noël, Stéphanie Madec, Gwenaelle Le Blay

11:50 - 12:00 **Rapid Legionella test**
Location: Theater
Track: Global change and microbial hazards
Role playing

MICA Advance Legionella, an innovative and rapid method for enumeration of Legionella pneumophila in drinking water
Sam Dukan, Fanny Passot, Audrey Dumont, Sabine Peslier

12:00 - 12:30 **Poster pitches Global change and microbial hazards**
Location: Theater
Co-chairs: Aina Astorch-Cardona, Jade Mitchell
Track: Global change and microbial hazards

Seawater virus surveillance using sensitive and cost-effective passive samplers
Ignasi Estarlich-Landajo, Marta Itarte, Cristina Mejías-Molina, Júlia Verdaguer, Ona Torrejon-Llorens, Sílvia Bofill-Mas, Marta Rusiñol

Factors affecting norovirus accumulation from seawater in oysters and its depuration: virus concentration, feeding, depuration periods, and growth stage
Toru Watanabe, Ichiro Yoneda, Maya Yamada, Kota Hisai, Masateru Nishiyama, Yu Ueki, Akie Sakagami

Towards antibiotic-resistance in drinking tap water: evidence of a neglected public health issue
Ileana Federigi, Silvia Bonetta, Marina Tesauro, Osvalda De Giglio, Gea Oliveri Conti, Nebiyu Tariku Atomsa, Francesco Bagordo, Sara Bonetta, Michela Consonni, Giusy Diella, Margherita Ferrante, Alfina Grasso, Manuela Macrì, Maria Teresa Montagna, Marco Verani, Annalaura Carducci

Microplastics as Vectors for Fecal Bacteria and ARGs in Urban Aquatic Environments
Elisenda Ballesté, Hongxia Liang, Laura Sala-Comorera, Pablo Gómez-Herrmann, Javier Mendez, William P. de Haan, Anna Sanchez-Vidal, Cristina García-Aljaro

Bacteriophages as vehicles of antibiotic resistance transmission
Joana Pires, Filipa Nunes, Ricardo Santos, Sílvia Monteiro

A Novel Hybrid Approach Combining Cultivation-Based and Molecular Techniques for Determining Antibiotic Resistant Bacteria and Resistance Genes in Wastewater
Alexandra Fobe, Michael Koller, Claudia Kolm, Theresa Hohl, Julia Vierheilig, Barbara Ströbele, Marlene Kalkgruber, Roland Martzy, Michael Ante, Andreas Farnleitner, Gernot Zarfel, Alexander Kirschner

Detection of multidrug-resistant *Escherichia coli* from river water samples in Japan using a five-plex digital PCR
Yadpiroon Siri, Niva Sthapit, Yuka Sakamaki, Bikash Malla, Sunayana Raya, Eiji Haramoto

Experimental Considerations for Quantifying Sunlight-Mediated Decay of Plasmid-bound DNA Targets
Alma Rocha, Andrea Silverman

Fate and transport of antimicrobial-resistant bacteria and resistance genes through a municipal wastewater treatment plant, in New Zealand
Louise Weaver, Isabelle Pattis, William Taylor, Erin McGill, Christina Straub, Angela Cornelius, Lee Liaw, Kristin Dyet

Ecology and antibiotic resistance of *Acinetobacter* in a patient-river continuum
Marie-Sarah Cayette, Anne-Laure Guenin, Sandra Da Re, Elodie Couve-Deacon

12:30 - 13:30 **Lunch break**
Location: Foyer

GWPP reboot 2.0
Location: Balcony 1st floor

2025

WATER MICRO

Tuesday June 17

Afternoon programme

parallel sessions

Tuesday June 17

Afternoon programme
parallel sessions

2025 WATER MICRO

Antimicrobial resistance in water

13:30 - 15:00 Location: Theater
Co-chairs: Ismail Rabiu, Mats Leifels
Track: Global change and microbial hazards

Degradation and deactivation of antibiotic resistance genes during water treatment and health- and personal-care disinfection: Kinetics, mechanisms, and prediction models
Huan He, Michael Dodd

Protozoan communities and their contribution to biological predation in aerobic granular sludge
Zhaolu Feng, Yi Yang, Norbert de Ruijter, Nora Sutton, Mark van Loosdrecht, Heike Schmitt

Identification of shared genes among *Escherichia coli* in water environments
Yu Tang, Ryota Gomi, Yoshinori Sugie, Chih-Yu Ma, Fumitake Nishimura, Masaru Ihara

Assessing Antimicrobial Resistance in hospital and community settings using wastewater-based epidemiology to correlate with pharmaceutical data
Sreelakshmi Babu, Kelly Jobling, Elizabeth Heidrich, Greg O'Donnell, Richard Hixson, Barbara Kasprzyk-Hordern, Vanessa Speight, David Graham

The Utility of *Escherichia coli* as an Indicator of Safe Water for Healthcare Use: Evidence from Bangladesh
Li Ann Ong, Md. Sakib Hossain, Zahid Hayat Mahmud, Jiwon Park, Catrin E Moore, Maya Vandenent, Katrina Charles

Quantifying Antibiotic Resistance Genes in Small-Scale Communal and Primary Healthcare Wastewater Treatment Plants using High-Throughput qPCR
Iftita Rahmatika, Isravani Valencia, Shafa Amusyah, Farah Chairunnisaa, Cindy Rianti Priadi, Windi Muziasari

The occurrence and fate of antimicrobial resistant organisms and antimicrobial resistance genes in Advanced Water Treatment Systems and supply networks.
Stephanie Faulks, Anne Roiko, Samantha Low-Choy

Effects of cigarette smoking on the spread of antimicrobial resistance in human lung and environmental settings
Peiju Fang, Diala Konyali, Bing Li, Thomas U Berendonk, Uli Klümper

15:00 - 15:30 Tea break
Meet the IWA Publishing editors
Location: Foyer
Meet and discuss with the editors serving on editorial boards of journals of the International Water Association Publishing, such as the Journal of Water and Health. Bring your ideas and suggestions and questions about publishing in scientific journals, special issues and learn about the latest developments in scientific publishing. You can find them at the registration desk.

Tuesday June 17

Afternoon programme
parallel sessions

2025 WATER MICRO

Water in buildings

13:30 - 15:00 Location: Balcony 1st floor
Co-chairs: Michele Prevost, Rajashree Hajare
Track: Global change and microbial hazards

Near/Real-time monitoring of microbiological and chemo-physical water quality parameters in mobile water purification systems
Georg Reischer, Lena Campostrini, Claudia Kolm, Lena Piglmann, Stefan Jakwerth, Dominik Kugler, Luigino Grasso, Wolfgang Vogl, Christoph Wagner, Monika Finsterwald, Georg Zepke, Johannes Bousek, Jeldrik Moritz, Martin Weiler, Gerald Bauer, Andreas Farnleitner, Alexander Kirschner

New passive sampling strategies to investigate the groundwater virome.
Marta Rusiñol, Cristina Mejías-Molina, Sandra Martínez-Puchol, Ignasi Estarlich-Landajo, Rosina Girones, Sílvia Bofill-Mas

Implementing QMRA in drinking water treatment decision-making: Enhancing monitoring, assessing treatment sufficiency and responding to extreme events
Dafne de Brito Cruz, Philip Schmidt, Kelsey Kundert, Norma Ruecker, Monica Emelko

Biofilm Formation and Opportunistic Pathogens in Hot and Cold Rainwater Harvesting Systems: impact of UV-C LED disinfection and premise pipework
Christelle Schang, Tristan Nolan, David McCarthy, Karl Linden, Nick Crosbie, Heather Murphy, Debbie Lee

Risk-based monitoring frequencies for on-site greywater treatment and reuse
Eva Reynaert, Émile Sylvestre

Effect of ventilation on the persistence of Clostridioides difficile bioaerosols and surface contamination after toilet flushing.
Elizabeth Paddy, Oluwasola Afolabi, M. Sohail

Single point mutations increase copper resistance in Legionella pneumophila
Gillian Cameron, Sébastien Faucher

Non-tuberculous mycobacteria in UK hospital water systems
Laura Steege, Simon Waddell, Ginny Moore

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Tuesday June 17

Afternoon programme
parallel sessions

2025 WATER MICRO

One health

13:30 - 15:00 Location: Balcony 2nd floor
Co-chairs: Helen Stratton, Mengyang Zhang
Track: Global change and microbial hazards

Impact of Animal Husbandry, Sanitation, and Drinking Water Practices on the Human Gut Resistome in Ecuadorian Households
Irmarie Cotto, Ana Durán-Viseras, Kelsey J. Jesser, Nicolette Zhou, Gabriel Trueba, Christine S. Fagnant-Sperati, Gwenyth Lee, Joseph N. S. Eisenberg, Janet K. Hatt, Konstantinos T. Konstantinidis, Karen Levy, Erica Fuhrmeister

Waterborne and fecal-borne zoonotic pathogens in lemurs, people, and domestic animals in Ankarafantsika National Park, Madagascar
Amilcar Bisekere, J. Scott Weese, Elizabeth Finnis, Marek Smieja, Travis Steffens, Heather. M Murphy

Identifying ESBL-E. coli Hotspots in Integrated Livestock Farming Using a One Health Approach
Yudith Paramitadevi, Iftita Rahmatika, Cindy Priadi, Andriansjah Rukmana

Modelling the concentration of antibiotics and (antimicrobial-resistant) E. coli in rivers in China
Songtao Mei, Kai Wang, Heike Schmitt, Nynke Hofstra

Assessment of Human, Canine, and Avian Microbial Source Tracking Markers During COVID-19 Beach Closures in Chicago
Abhilasha Shrestha, Samuel Dorevitch, Orin Shanks

ESBL E. coli source tracking in Metro, Indonesia
Benjamin Clark, Akna Ilmi, Cindy Priadi, Angela Harris

A risk-based framework for comparing the direct and indirect wastewater reuse in agriculture by integrating microbial and chemical risks
Luca Penserini, Beatrice Cantoni, Manuela Antonelli, Jade Mitchell

New method for the rapid quantification of coliphages in water samples in one working day. Validation against the reference method.
Miriam Pascual-Benito, Julia Martín-Díaz, Ariadna Jorba-Plassa, Anicet R. Blanch

15:00 - 15:30 Tea break

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Location: Foyer
Meet and discuss with the editors serving on editorial boards of journals of the International Water Association Publishing, such as the Journal of Water and Health. Bring your ideas and suggestions and questions about publishing in scientific journals, special issues and learn about the latest developments in scientific publishing. You can find them at the registration desk.

2025

WATER MICRO

Tuesday June 17

Afternoon programme

workshop & posters

Tuesday June 17

Afternoon programme
workshops and posters

2025 WATER MICRO

Workshop:
AMR surveillance in (waste)water - options for implementation, including in the European Urban Wastewater Treatment Directive

13:30 - 15:00

Location: Theater
Workshop organizer: Heike Schmitt
Track: Global change and water safety

In the current version of the recast of the European urban wastewater treatment directive (uwwtd), monitoring of health-related parameters is foreseen, with monitoring of antibiotic resistance as a mandatory requirement. In this workshop, we will provide updates on the current status of the implementation guidelines for AMR surveillance which are to be set up in 2024/2025. Furthermore, we will share current efforts within two large European Joint Actions (EU-WISH and JA JAMRAI) in which purposes, sampling strategies and indicators for wastewater surveillance of AMR are established based on current experience of Member States. JAMRAI not only addresses wastewater surveillance, but also wider environmental surveillance of AMR.
Last, the participants will engage in a joint priority setting exercise to gather views on opportunities and challenges of future implementation of AMR (waste)water surveillance, and to lay out and prioritize possible concrete setups.

QIAGEN workshop:
How to detect low-abundance microbes with a versatile workflow

13:30 - 15:00

Location: Balcony 2nd floor
Track: New tools
Conventional molecular techniques for sample enrichment and DNA-based quantification coupled with advances in sequencing technologies have expanded the boundaries of microbial and infectious disease research, public health and epidemiology. However, low microbe concentrations, complex sample matrices, lack of streamlined end-to-end workflows and limited throughput capabilities have hindered fast and sensitive identification and profiling of microbes (e.g., pathogen detection from recreational water, AMR surveillance in wastewater).
In this workshop, you'll discover the new technologies with hands-on demos and detailed explanation from our experts.

This workshop is sponsored by QIAGEN

Tuesday June 17

Afternoon programme
workshops and posters

2025 WATER MICRO

Poster sessions

17:00 - 18:00 Location: Foyer
Track: Global change and microbial hazards

Poster session 2A Environmental pathogens & resistance

Poster session 2B Microbes in engineered systems

Poster session 2C Genomics and molecular insights

Poster session 2D Health risks

Poster session 2E Transmission pathways

The poster presentation programme can be found on the screens near the poster boards

19:00 - 23:00 **Science Fiesta** (registration required)
Location: St. Joris Church, Hof 1, 3811 CJ Amersfoort

Poster session 2A Environmental pathogens & resistance
Location: Foyer
Track: Global change and microbial hazards

[2A-1]
Distribution of Antibiotic Resistance Genes in the Peñas Blancas River: Implications for Aquatic Biodiversity and Ecosystem Health
Seiling Vargas-Villalobos, Frank Solano-Campos, Denis Salas-González, Daniel Sánchez-González, Manuel Spínola, María Arias-Andrés, Kinndle Blanco Peña

[2A-2]
Occurrence and Key Drivers of Antibiotic Resistance Genes along 2300 km of the Danube River
Alexander Kirschner, Iris Schachner-Groehs, Michael Koller, Claudia Kolm, Rita Linke, Julia Vierheilig, Stoimir Kolarevic, Margareta Kracun-Kolarevic, Wolfgang Kandler, Erika Toth, Clemens Kittinger, Gernot Zarfel, Andreas Farnleitner

[2A-3]
Spread Patterns of Antibiotic Resistance Elements in Riverine Habitat of Small Watershed Japan: Case Study at Yasu River
Adelia Anju Asmara, Dhandhun Wacano, Fumitake Nishimura, Dongbeom Im

[2A-4]
Assessing pathogenic bacteria and antibiotic resistance through river water analysis in valley ecosystems
Niva Sthapit, Sunayana Raya, Bikash Malla, Sadhana Shrestha, Norhayati Binti Mohd Nazar, Eiji Haramoto, Sakiko Yaegashi

[2A-5]
Diapers are hiding dangerous secrets: Case study in Indonesia's Brantas River
Anniek de Jong, Annelotte van der Linden, Kees Wesdorp, Julia Dorigo, Herto Dwi Ariesyady, Concepcíon Marínez Gomez, Bas van der Zaan

[2A-6]
Potential risk of spreading antibiotic-resistant genes from biosolids fertilizer to rhizosphere zone of soil
Kraiwut Jansriphibul, Chris Krohn, Andy Ball

[2A-7]
Differences in survival in water of wild *Escherichia coli* strains isolated from rivers
Ichiro Yoneda, Yasunari Shikanai, Masateru Nishiyama, Toru Watanabe

[2A-8]
Detection of multidrug-resistant *Escherichia coli* from river water samples in Japan using a five-plex digital PCR
Yadpiroon Siri, Niva Sthapit, Yuka Sakamaki, Bikash Malla, Sunayana Raya, Eiji Haramoto

[2A-9]
Limited evidence of farm-associated antimicrobial-resistant *E. coli* in Welsh river water
Oliver Mounsey

[2A-10]
NON-TUERCULOUS MYCOBACTERIA IN URBAN RIVERS IN QUEBEC: IDENTIFICATION OF THEIR ENVIRONMENTAL ORIGINS
Nisrine El Haje Mohamad, Sarah Dorner, Emilie Bédard, Mounia Hachad

[2A-11]
Detection of pathogenic *Legionella pneumophila* from a wide variety of water sources in Bangladesh
Zahid Hayat Mahmud, Tahani Tabassum, Hajbiur Rahman, Md. Sakib Hossain, Amanta Rahman, Rodoshi Hayat, Md. Shafiqul Islam

[2A-12]
Survival of Extraintestinal Pathogenic *Escherichia coli* in Diverse Aquatic Environments
Jade St-Laurent, Ryu Kanghee, Simon Otto, Patrick Hanington, Norman Neumann

[2A-13]
Prevalence of selected fecal pathogens, liver flukes and fecal indicator bacteria in aquatic environments at sheep farms in Finland
Essi Roininen, Rauni Kivistö, Tarja Pitkänen

[2A-14]
The Emergence of Heavy Metal-Resistant Bacteria in the Coastal Waters of North Sulawesi
Henry Palandeng, Billy Kepel, Desy Mantiri, Robert Bara

[2A-15]
Fungi, Flow, and Resistance: What's Lurking in Wales' Waters?
Pooja Padmakumar, Kata Farkas, Reshma Silvester, Davey L. Jones, Ellie Jameson

[2A-16]
Impact of rotational grazing on pathogen prevalence in surface water, groundwater, soil, and fecal samples taken from beef cattle farms
Carly Dinga, Nicole Ricker, Kari Dunfield, Heather Murphy

[2A-17]
Impact of environmental contamination by *Giardia* and *Cryptosporidium* on drinking water supplies: a case study
Ana Tereza Galvani, Ronalda Silva de Araújo, Mikaela Renata Funada Barbosa, Renan Lourenço Oliveira Silva, Maria Inês Zanoli Sato

[2A-18]
Factors affecting norovirus accumulation from seawater in oysters and its depuration: virus concentration, feeding, depuration periods, and growth stage
Toru Watanabe, Ichiro Yoneda, Maya Yamada, Kota Hisai, Masateru Nishiyama, Yu Ueki, Akie Sakagami

[2A-19]
Impacts of Feeds Cultivated Using Resources from Municipal Wastewater and Its Treatment on Antibiotic Resistance of *Escherichia coli* in Pigs
Ritsu Yokoyama, Masateru Nishiyama, Hiroki Matsuyama, Ichiro Yoneda, Toru Watanabe

[2A-20]
Does *Clostridium perfringens* cycle between the water environment, soil, crops and humans ? As a pathogen and indicator.
Masataka Tomozawa, Hiroyuki Suzuki, Kenji Oonaka, Atsushi Hashimoto

[2A-21]
Escherichia coli migration in saturated porous media: mechanisms of humic acid regulation
Tongtong Li, Huijuan Xin, Weigao Zhao

[2A-22]
Determinants of Microbial Community Composition in Karst Groundwater: Predicting Baseline Communities for Early Detection of Environmental Disturbances and Antibiotic Resistance
Riley Drake, Katarina Kosič Ficco

[2A-23]
Ecology and antibiotic resistance of *Acinetobacter* in a patient-river continuum
Marie-Sarah Cayette, Anne-Laure Guenin, Sandra Da Re, Elodie Couve-Deacon

Poster session 2B Microbes in engineered systems
Location: Foyer
Track: Global change and microbial hazards

[2B-1]
Susceptibility of yeast strains to fluconazole in a wastewater treatment plant in Mahikeng, South Africa
Deidre Van Wyk

[2B-2]
Socio-Environmental Determinants and Wastewater-Based Oncogenic Microorganisms of the US-Mexico border.
Linda Lara Jacobo, Matthew Banegas, Theresa Medina-Cisneros, Jesus Miramontes, Kai Cheng

[2B-3]
Host Tracking of Antibiotic Resistance and Virulence Factor Genes in Bioaerosols Generated from Diffused and Surface Aerated Wastewater Treatment Plants
Puseletso Constance Kumalo, Nonsikeleko P Mthethwa-Hlongwa, Isaac D Amoah, Fazial Bux, Sheena Kumari

[2B-4]
Detection and Analysis of AntimicrobialResistance Genes in Wastewater from Border Communities in California, USA
Linda Lara Jacobo, Jesus Miramontes, Theresa Medina Cisneros, Kai-Chung Cheng

[2B-5]
The effect of propidium monoazide (PMA) pre-treatment on qPCR-based survival monitoring of Pseudomonas aeruginosa in ozone-treated wastewater effluent
Elfy Ly, Denise van de Pol, Mark van Loosdrecht, Lucia Hernandez-Leal, Heike schmitt, Pieter van Veelen

[2B-6]
Strain-level multidrug-resistant pathogenic bacteria in urban wastewater treatment plants: transmission, source tracking and evolution
Yanmei Zhao, Lu Fan, Shu-Hong Gao, Fang Huang, Zelin Lei, Wenxiu Wang, Rui Gao, Qian Li, Bin Liang, Aijie Wang

[2B-7]
Occurrence of norovirus, hepatitis E virus and SARS-CoV-2 in river water (River Vantaa) and treated wastewater, in Finland
Ankita Gupta, Heli Vahtera, Jari Männynsalo, Leena Maunula

[2B-8]
Susceptibility of viruses to wastewater-derived proteolytic enzymes
Jordan Boeck, Wenting Li, Heather Bischel

[2B-9]
Seasonal variations of AMR pathogens in hospital wastewater biofilms
Rande Dzay, Reshma Silvester, Kata Farkas, Ellie Jameson, Davey L. Jones

[2B-10]
Biofilm Formation of Disinfection Resistance Bacteria Promoted by Non-oxidative Biocide: From the Perspectives of Metabolism and Adhesion
Yu-Qing Xu, Yin-Hu Wu, Hong-Ying Hu

[2B-11]
Impact of residual disinfection on antibiotic resistance genes and pathogens in biofilm and planktonic phases within drinking water distribution systems.
Sam Walsh, Katherine Fish, Frances Pick, Cindy Smith, Joby Boxall

[2B-12]
Antimicrobial Resistance in Intermittent Drinking Water Systems and Household Water Storage
Gabriel Mesole, Karina Chavarria, Emily Kumpel

[2B-13]
Effect of aquathermy on microbiological drinking water quality
Frits van Charante, Danielle van der Linde, Paul van der Wielen

[2B-14]
Pathogenic yeasts in drinking groundwater from Mahikeng, South Africa.
Rebaone Mofokeng

[2B-15]
Germination of chlorine-resistant fungal spores in drinking water: stimulation effect by chlor(am)ination and associated taste & odor issues
Hengxuan Zhao, Minyuan Pan, Huan He, Chao Zeng, Tianyang Zhang, Bin Xu

[2B-16]
Abstraction method impacts microbial community composition in shallow sand aquifers used for rural water supply in low-income countries
Reuben Duncan, Alison Parker, Francis Hassard

[2B-17]
Dynamics of cooling tower microbiomes influence the presence of Legionella.
Elliston Vallarino Reyes, Xavier Lefebvre, Sara Matthews, Mélanie Rivard, Dominique Charron, Émilie Bédard, Michèle Prévost, Sébastien Faucher

[2B-18]
Evaluating water softeners as ecological niches for the formation of biofilm and persistence of *L. pneumophila*.
Vishnu Kotta, Caitlin Proctor, Kerry Hamilton

[2B-19]
Assessment of the biostability of ultrapure water piping materials in the semiconductor industry and their vulnerability to *Ralstonia* growth
Sung-Kyu Maeng

[2B-20]
Balancing Energy Efficiency and Water Safety: Hot Water Quality in a Zero-Emission Building
Michael Waak, Sondre Wibe Langelo, Karolina Stråby, Cynthia Hallé

[2B-21]
Detection of Antibiotic-resistant Enterococci from Households Impacted by Sanitary Sewer Overflow or Water Intrusion Events in Maryland, USA
Nick An, Claire Barlow, Kathryn Dixon, Hana Fisaha, Raisa Haq, Brienna Anderson-Coughlin, Priscila Alves, Marccus Hendricks, Rachel Goldstein

[2B-22]
Non-destructive biofilm thickness measurement in drinking water pipes
Konstantinos Glynis, Mirjam Blokker, Zoran Kapelan, Dragan Savić

[2B-23]
Sustainable Magnetic Treatment Selectively Increase the Growth of K-strategist LNA Bacteria in Stagnated Tap Water
Xiaoxia Liu

Poster session 2C Genomics and molecular insights
Track: Global change and microbial hazards

[2C-1]
Epigenetic Modifications and Metabolic Gene Mutations Drive Resistance Evolution in Response to Stimulatory Antibiotics
Yaohui Bai, Hui Lin

[2C-2]
H2S drives the dissemination of plasmid-borne antibiotic resistance genes among wastewater microbiota via the hijacking of intracellular glutamine
Haining Huang, Qimeng Liu, Xinyi Li, Litao Wei, Yinguang Chen

[2C-3]
Genetic contexts of plasmid-mediated quinolone resistance genes in environmental *Escherichia coli*
Ryota Gomi, Fumie Adachi

[2C-4]
Metagenome sequencing to evaluate the diversity of *Legionella* in engineered water systems
Sebastien Faucher, Jeffrey Liang, Elliston Vallarino Reyes, Michele Prevost

[2C-5]
Charasteristics of the Microbiome and Antibiotic Resistome in a Reclaimed Water Distribution System Deciphered by Metagenome Assembly and HT-qPCR
Yue Zhang, Gang Liu

[2C-6]
Insight into antimicrobial resistance and phylogenomic landscape of Klebsiella species from One health perspective
Kgaugelo Lekota, Tshepang Mothlaping, Tsepo Ramatla, Oriel Thekiseo, Carlos carlos.bezuidenhout@nwu.ac.za

[2C-7]
Investigating the role of Horizontal Gene Transfer in the evolution of *Legionella pneumophila* modeled by Adaptive Laboratory Evolution
Maria Najeeb, Sébastien Faucher

[2C-8]
Genomic Analysis of Escherichia coli Harboring mcr-1 and blaOXA-48 Resistance Genes from Environmental Sources in Ecuador
William Calero-Cáceres, Keyla Villacís, Vivian Jaramillo, Gabriela Jerez, Gabriela Lagla, Jennifer Medina

[2C-9]
Assessing Microbial Communities and Fecal Contamination in the Cutuchi River Using 16S rRNA Metabarcoding and Traditional Indicators
William Calero-Cáceres, Jennifer Medina, Anabell Medina

[2C-10]
Using Metagenomic Approaches to Investigate AMR in Urban Water Environment
Bing Li, Jin Huang, Jiayu Zhang, Hebin Liang, Peiju Fang, Jie Feng

[2C-11]
Urban Pollution as a Driver of Antibiotic Resistance in a Tropical River: Insights from (Meta)Genomic Approaches
Bradd Mendoza, Kenia Barrantes, César Rodriguez, Keilor Rojas, Maria Arias

[2C-12]
Pathogenicity and Virulence factors of Escherichia coli discovered using Next Generation Sequencing Technologies and Proteomics
Khuthadzo Mudau

[2C-13]
Metagenomics insights into microbiome and antibiotic resistance genes from free living amoeba in chlorinated wastewater effluents
Thobela Biyela, Muneer Malla, Oluyemi Awolusi, Mushal Allam, Arshadi Ismail, Thor Stenstrom, Faizal Bux, Sheena Kumari

[2C-14]
A Genomic Exploration of Virulence Factors in Environmental Strains of the Opportunistic Pathogen *Stenotrophomonas Maltophilia*
Brittany Hicks, Nancy Love, Ameet Pinto

[2C-15]
Global diversity, coexistence and consequences of resistome in inland waters
Binghao Wang, Hangjun Zhang

[2C-16]
Deciphering Resistome Structuring Mechanism and Increased Health Risk from Coastal Rivers to Estuary and Bay
Feng Ju, Xinyu Huang

[2C-17]
***Bdellovibrio*-Based Bioassay for Quorum Sensing Signal Detection to Support Risk Assessment of Pathogen and Antimicrobial Resistance Dissemination in Water Environments.**
Yuki Hoshiko, Kiwao Kadokami, Rodolfo Garcia-Contreras, Viviana Sanchez-Torres, Tae Moriya, Takashi Furukawa, Kazunari Sei, Toshinari Maeda

[2C-18]
Enhancing faecal pollution management in UK river bathing waters through molecular microbial techniques
Isabel Douterelo Soler, Laura Diaz Garcia, Carlos Rubio Paniagua, Claire Campbell, Rick Battarbee

[2C-19]
A Novel Hybrid Approach Combining Cultivation-Based and Molecular Techniques for Determining Antibiotic Resistant Bacteria and Resistance Genes in Wastewater
Alexandra Fobe, Michael Koller, Claudia Kolm, Theresa Hohl, Julia Vierheilig, Barbara Ströbele, Marlene Kalkgruber, Roland Martzy, Michael Ante, Andreas Farnleitner, Gernot Zarfel, Alexander Kirschner

[2C-20]
Development and Application of a 3D-Printed Maze for the Study and Isolation of Wild Ciliates
Madison Schacter, Steve J. Charette, Sebastien P. Faucher

[2C-21]
Seawater virus surveillance using sensitive and cost-effective passive samplers
Ignasi Estarlich-Landajo, Marta Itarte, Cristina Mejías-Molina, Júlia Verdaguer, Ona Torrejon-Llorens, Sílvia Bofill-Mas, Marta Rusiñol

[2C-22]
Molecular methods for pathogen detection and verification from grazed environments
Annastiina Rytkönen, Eveliina Nurmi, Essi Roininen, Anna-Maria Hokajärvi, Marika Laurila, Rauni Kivistö, Tarja Pitkänen

[2C-23]
Experimental Considerations for Quantifying Sunlight-Mediated Decay of Plasmid-bound DNA Targets
Alma Rocha, Andrea Silverman

[2C-24]
Comparing phenotypic virulence between river- and human-isolated strains of *Candida albicans*
Heidi Steffen, Corné Van Deventer, Alfred Botha, Cleo Conacher

[2C-25]
Investigating the role of lake microbial communities on virus inactivation using continuous culture systems
L. Daniela Morales, Htet Kyi Wynn, Josephine Meibom, Joseph A. Heffron, Tamar Kohn

[Poster session 2D Health risks
Track: Global change and microbial hazards

[2D-1]
Antimicrobial Resistance Genes and Pharmaceutical Residues in Costa Rican Rivers: A Potential Contamination Pathway for Felines.
Seiling Vargas-Villalobos, Félix Hernández-Hernández, Denis Salas-González, Francisco Quesada-Alvarado, Fernando Esperón, Kinndle Blanco-Peña

[2D-2]
Prevalence of ESBL-Producing E. coli in Jakarta's Water Environment: Implications for Public Health and Wastewater Management
Iftita Rahmatika, Rosantia sarassari, Yustinus Maladan, Dodi Safari

[2D-3]
A One Health Perspective on Carbapenem-Resistant Pseudomonas aeruginosa(SAMPAN study)
Silvia Zelli, Desy De Lorenzis, Giulia Menchinelli, Giulia De Angelis, Maurizio Sanguinetti, Anneloes van Veen, Selvi N. Shahab, Amber Rijfkogel, Anne Voor in 't holt, Cornè H.W. Klaassen, Margreet C. Vos, Yulia Rosa Saharman, Anis Karuniawati, Merel Kemper, Anniek E. E. de Jong, Sima Mohammadi, Valentin Renaud, Irena Kukavica, Marianne Potvin, Guillaume Q. Nguyen, Jeff Gauthier, Roger C. Levesque, Heike Schmitt, Juliëtte A. Severin

[2D-4]
Citizen Science Project: Assessing Pathogen Risk and Public Perception.
Jessica Kevill, Reshma Silvester, Kate Herridge, Finn Mannion, Kata Farkas, Shelagh Malham, Davey Jones

[2D-5]
Scoping human and animal health concerns in waterways and wastewater in the Cradle of Humankind, South Africa
Jenny Coetzee, Minja Milovanovic, Nkateko Maholobela

[2D-6]
The importance of monitoring fungi considered critical by the WHO in hospital wastewater
João Brandão, Ana Ascenso, Débora Gil, Pedro Teixeira, Elisabete Valério

[2D-7]
Waterborne antimicrobial resistance in Africa and human exposure: a scoping review
Ismail Rabiu, Mark C.M. van Loosdrecht, Heike Schmitt

[2D-8]
The dynamics of microbiological groundwater contamination in the earth critical zone and impact on human health: the DY.MI.CR.ON Project
Marco Verani, Osvalda De Giglio, Maria Clementina Caputo, Giorgio Cassiani, Mirco Milani, Annalaura Carducci, Ileana Federigi, Alessandra Pagani, Alessandra Angori, Francesco Triggiano, Antonella Francesca Savino, Francesco Bagordo, Antonella De Donno, Tiziana Grassi, Silvia Brigida, Lorenzo De Carlo, Antonella Celeste Turturro, Mert Cetin Ekiz, Valentina Prigiobbe, Alessandro Ghirotto, Alessandro D'Emilio, Simona Consoli, Salvatore Barresi, Federica Bivona, Maria Teresa Montagna

[2D-9]
Towards antibiotic-resistance in drinking tap water: evidence of a neglected public health issue
Ileana Federigi, Silvia Bonetta, Marina Tesauro, Osvalda De Giglio, Gea Oliveri Conti, Nebiyu Tariku Atomsa, Francesco Bagordo, Sara Bonetta, Michela Consonni, Giusy Diella, Margherita Ferrante, Alfina Grasso, Manuela Macrì, Maria Teresa Montagna, Marco Verani, Annalaura Carducci

[2D-10]
Particulate Matter Continuum as Distinct Colonization Niches for Antibiotic Resistome, Mobilome and Virulence Factor Genes in Wastewater
Yiliang He, Kaifeng Yu

[2D-11]
A conceptual framework on the spread of AMR on riverine microplastics
Jakob Grosfeld, Frank Bruggeman, Anniek De Jong, Matti Gralka, Rik Oldenkamp, Frans Buschman

Poster session 2E Transmission pathways
Track: Global change and microbial hazards

[2E-1]
Bacteriophages as vehicles of antibiotic resistance transmission
Joana Pires, Filipa Nunes, Ricardo Santos, Sílvia Monteiro

[2E-2]
Global Efforts in Plastisphere-related AMR Research - A Systematic and AI-facilitated Review
Luise Nottmeyer, Aishwarya Girish, Marina Treskova

[2E-3]
Source-oriented risks of heavy metals and their effects on resistance genes in natural biofilms
Xia Luo

[2E-4]
Microplastics as Hubs Enriching Antibiotic-Resistant Bacteria and Pathogens in Municipal Activated Sludge
Dung Ngoc Pham, Mengyan Li

[2E-5]
Persistence and Transmission Risk of Influenza Viruses in Milk
Mengyang Zhang, Alessandro Zulli, Catherine Blish, Alexandria Boehm

[2E-6]
Microplastics as Vectors for Fecal Bacteria and ARGs in Urban Aquatic Environments
Elisenda Ballesté, Hongxia Liang, Laura Sala-Comorera, Pablo Gómez-Herrmann, Javier Mendez, William P. de Haan, Anna Sanchez-Vidal, Cristina García-Aljaro

[2E-7]
Persistence of viruses in water microcosms and the effect of microplastics contamination
Ines Giron-Guzman, Sandra Ballesteros, Enric Cuevas-Ferrando, Regino Barranquero, Alba Perez-Cataluña, Irene Falco, Gloria Sanchez

[2E-8]
Human population density as a driver of the emergence and persistence of antimicrobial resistance genes in karst groundwater
Riley Drake, Katarina Kosič Ficco, David Yang, Felipe Barscevicius, Elizabeth Truchan, Rebecca Li, Tommy Moriarty, Emmett Krupczak, Emma Chant, Lulu Russell, Max Kenngott, Devra Heyer, Antonio Chavez, Celeste Flores, Sam Littman, Rachel Bowens-Rubin, Jason Delafield, Emily Tencate, Alexander Krolick, Cindy Wu, Denny Luan, Sierra Heimel, Darren Zhu, Ramon Armen, John Dunham

[2E-9]
Fate and transport of antimicrobial-resistant bacteria and resistance genes through a municipal wastewater treatment plant, in New Zealand
Louise Weaver, Isabelle Pattis, William Taylor, Erin McGill, Christina Straub, Angela Cornelius, Lee Liaw, Kristin Dyet

[2E-10]
Transferability of carbapenemase-harboring plasmids via *Aeromonas* spp. isolated from hospital wastewater in Japan
Shotaro MAEHANA, Masato Suzuki, Mako Koyama, Hiroki Izawa, Ryotaro Eda, Takashi Furukawa, Mohan Amarasiri, Kazunari Sei, Makoto Kubo

2025

WATER MICRO

Wednesday June 18

Morning programme

08:00 - 09:00 **Registration**

09:00 - 09:30 **Keynote Health risks of drinking water disinfection**
Location: Theater
Track: Control options in a changing world
Cristina Villanueva, expert in water quality and health, with a strong focus on exposure assessment to chemicals, such as disinfection by-products, in water and environmental epidemiology.
Associate Research Professor Non-communicable Diseases and Environment of the Barcelona Institute for Global Health (ISGlobal), Barcelona, Catalonia, Spain.

Disinfectant-free drinking water
Location: Theater
Chair: Arijana Filipić
Track: Control options in a changing world

Assessing Drinking Water Biostability: Case Study on the Transition from Cl2 to UV Disinfection in an Austrian Municipal Distribution System
Angelika Bauer, Lena Campostrini, Stefan Jakwerth, Andreas Farnleitner, Alexander Kirschner

Full-scale spatiotemporal investigation of biostability in a drinking water distribution system using online flow cytometry and 16S gene sequencing
Jean-Baptiste Burnet, Thomas Bodziuch, Zuzana Dedova, Aude Corvisy, Sébastien Balbeur, Marc Schroeder, Henry-Michel Cauchie

Moving to chlorine-free drinking water: what does the absence of chlorine in water distribution systems reveal?
Sophie Courtois, Cecile Darchy, Oceane Nicolitch, Patrick Chevalier, Philippe Piriou, Samuel Robert, Karl Glucina, Jean-Francois Loret, Catherine Giorni

Impact of monochloramine removal on biostability in a drinking water distribution system
Caroline Schleich, Niklas Gador, Margareta Björksund-Tuominen, Catherine J. Paul

09:30 - 09:50 **Panel discussion Disinfectant-free drinking water**
Location: Theater
Chair: Arijana Filipić,
Moderator: Patrick Smeets
Track: Control options in a changing world

09:50 - 10:20 **Coffee break**
Location: Foyer

10:20 - 10:50 **Sanitation**
Location: Theater
Co-chairs: Claire Furlong, Iftita Rahmatika
Track: Control options in a changing world

Assessment and optimisation of faecal sludge treatment, using Hydrated Lime Ca(OH)2 at Rohingya refugee camp, Cox's Bazar (Bangladesh)
Diogo Trajano Gomes Da Silva, Nick Schreiner, Kit Caulfield, Muhammad Zial Haque, N. Absar, N. Amin, Fatima Ushin, Samrat Mohiuddin, Toha Rubayet, Kausar Shamim, Dewan Tanoy, James Ebdon

Elimination of antibiotic resistances, pathogens and faecal indicators in advanced wastewater treatment
Johannes Ho, Claudia Stange, Dana Diadko, Yara Eghbaria, Abidelfatah Nasser, Andreas Tiehm

Synergistic Risk Control of Antibiotics in Biological Treatment Processes through Micro-aeration Coupled with Electrostimulation
Ke Shi

Managed Aquifer Recharge Using Reactive Barriers as a Sustainable Approach to Enhance Water Quality and Pathogen Removal
Cristina García-Aljaro, Paola Sepúlveda-Ruíz, Lurdes Martínez-Landa, Cristina Valhondo, Elisenda Ballesté, Jesús Carrera, Silvia Díaz Cruz, Miquel Salgot, Montserrat Folch

Combined disinfection processes for the reduction of microbial indicators and antibiotic resistant genes from wastewater effluents
abidelfatah Nasser, Yara Eghbaria, Claudia Stange, Andreas Tiehm

11:50 - 12:00 **What are you waiting for? Superplasma is here!**
Location: Theater
Track: Control options in a changing world
Storytelling/comedy
Arijana Filipić, David Dobnik, Gregor Primc, Rok Zaplotnik

12:00 - 12:30 **Poster pitches Control options & Water as information source**
Location: Theater
Co-chairs: Kumiko Oguma
Track: Control options in a changing world

Differences in inactivation kinetics observed for wastewater-sourced and laboratory-cultured *E. coli* and *Enterococcus* spp. with exposure to commonly used disinfectants
Andrea Silverman, Mwanarusi Mwatondo

Surface Properties of Performance Indicator Viruses and Possible Effect on Removal Efficiencies
Midori Yasui, Tatsuya Sakai, Takashi Hashimoto, Sadahiko Itoh

Spectral Dependent UV-LEDs Inactivation Efficiencies of Enveloped and Non-enveloped Viruses
Surapong Rattanakul, Kumiko Oguma

A novel field approach for the evaluation of the impact of inland navigation on the feacal pollution of rivers
Sophia D. Steinbacher, Ahmad Ameen, Katalin Demeter, David Lun, Julia Derx, Gerhard Lindner, Regina Sommer, Rita B. Linke, Claudia Kolm, Karen Zuser, Günter Blöschl, Alfred Paul Blaschke, Alexander K.T. Kirschner, Andreas H. Farnleitner

Occurrence of pepper mild mottle virus in raw and treated waters in full-scale drinking water treatment plants in Japan
Takayuki Miura, Daiki Shirakawa, Syun-suke Kadoya, Mayumi Tojo, Takanori Masuda

Insights on the potential role of crAssBcn phages as markers of human fecal contamination
Clara Gomez-Gomez, Maria Dolores Ramos-Barbero, Laura Sala-Comorera, Sara Morales-Cortes, Gloria Vique, Elisenda Ballesté, Cristina Garcia-Aljaro, Maite Muniesa

Persistence of bacterial and viral genetic MST and cultivation-based standard faecal indicators in microcosms simulating a complex river matrix
Mats Leifels, Sophia Steinbacher, Katalin Demeter, Gerhard Lindner, Rita Linke, Karen Zuser, Claudia Kolm, Regina Sommer, Andreas Farnleitner

Selection, characterization and application of DNA aptamers against main waterborne enteric viruses: a promising tool for rapid water quality monitoring
Leslie Ogorzaly, Arghya Sett, Catherine Mulholland, Cécile Walczak, Delphine Collard, Henry-Michel Cauchie

Simultaneous detection of protozoa, bacteria and viruses in tap and river waters by membrane adsorption and direct nucleic acid extraction
Shotaro Torii, Masaaki Kitajima, Kumiko Oguma, Hiroyuki Katayama

A workflow for benchmarking isothermal amplification methods for environmental and clinical molecular diagnostics
Lena Piglmann, Johanna Kreuter, Lena Campostrini, Regina Sommer, Alexander Kirschner, Andreas H. Farnleitner, Claudia Kolm, Georg H. Reischer

12:30 - 13:30 **Lunch break**
Location: Foyer

2025

WATER MICRO

Wednesday June 18

Afternoon programme

parallel sessions

Wednesday June 18

Afternoon programme
parallel sessions

2025 WATER MICRO

Wastewater surveillance studies

13:30 - 15:00

Location: Theater
Co-chairs: Brakemi Egbedi, Masaaki Kitajima
Track: Water as information source

Wastewater Surveillance of Clinically Relevant Antibiotic Resistance Gene Abundance across the United States
Sooyeol Kim, Alessandro Zulli, Elana Chan, Dorothea Duong, Rebecca Linfield, Bradley White, Marlene Wolfe, Alexandria Boehm, Amy Pickering

Monitoring non-polio enterovirus circulation in Ireland using Wastewater-Based Epidemiology following the COVID-19 Pandemic.
Niamh A. Martin, Hannah Murphy, Mariela Gutiérrez Araya, Sukanya Dudeja, Gabriel Gonzalez, Ursula Morley, Charlene Bennett, Michael Carr, Daniel Hare, Jonathan Dean, Alan Rice, Laura Fahey, Cillian F. De Gascun, Gwendoline Deslyper, Eve Robinson, John J. O'Sullivan, Eadaoin Joyce, Joanne Chadwick, Wim G Meijer

Divergent Circulation Patterns of Hepatitis E Virus in Wastewater and Clinical Samples in Sweden
Hao Wang, Marianela Patzi Churqui, Timur Tunovic, Kristina Nyström, Martin Lagging

A Two Year Longitudinal Study of Rotavirus RNA in Wastewater Solids Across the United States: Implications for Rotavirus Infection Occurrence
Alexandria Boehm, Alessandro Zulli, Marlene Wolfe, Amanda Bidwell

Enhancing Respiratory Syncytial Virus Surveillance by Tracking Mutations in Wastewater
Jolinda de Korne-Elenbaas, Auguste Rimaite, David Dreifuss, Ivan Topolsky, Niko Beerenwinkel, Timothy Julian

Antimicrobic Resistance Genes (ARG) Surveillance Digital Map Data in Albanian Rivers
Erinda Lika

Norovirus GII in Wastewater and Its Association with Gastroenteritis Cases: Insights from 8 Years Wastewater Surveillance
Aken Puti Wanguyun, Putri Shafa Kamila, Jarin Tasnim, Chikako Maruo, Yifan Zhu, Daisuke Sano

Lessons learned from extensive wastewater-based genomic surveillance of SARS-CoV-2 in the Netherlands: April 2021 to December 2023.
Auke Haver, Gino Raaijmakers, Steff van Blokland, Ivo D. Grift, Rick Theijn, Max van Velzen, Arno Wijsmuller, Sieuwerd A.E. Hooyman, Yu-Ling Z. Beck, Elsa Poorter, NRS Consortium, Jaap T. van Dissel, Wouter A. Hetebrij, Dirk Eggink, Jeroen F.J. Laros, Willemijn J. Lodder

15:00 - 15:30

Tea break
Location: Foyer

Wednesday June 18

Afternoon programme
parallel sessions

2025 WATER MICRO

New tools

13:30 - 15:00 Location: Balcony 1st floor
Co-chairs: Karina Gin, Sijia Kong
Track: New tools

Development of Human-Specific Genetic Markers in *Clostridium perfringens* for Microbial Source Tracking
Thi Thu Huong Nguyen, Tomohiro Nakanishi, Ryota Gomi, Sadahiko Itoh

Performance of near-real-time flow cytometry for operational monitoring of alpine karstic drinking water resources
Lena Campostrini, Katalin Demeter, Rita Linke, Anna Pölz, Alfred Paul Blaschke, Julia Derx, Stefan Jakwerth, Adrian Shajkofci, Luigino Grasso, Alexander Kirschner, Andreas Farnleitner

Evaluating the Sensitivity and Specificity of Microbial Source Tracking Markers in Tropical Urban Environments
Sumedha Bhatia, Lingfeng Gong, Shin Giek Goh, Karina Gin Yew-Hoong

Surfing the UV Wave: Susceptibility of Waterborne *Mycobacterium avium* to UV Disinfection Unveiled with a Novel pre-rRNA Method
Nuha Alfahham, Kati Bell, Katherine Mudge, Aisha Sandila, Reem Suleiman, Glen Daigger

Indigenous viruses as indicator for removal of pathogenic viruses by soil passage
Bas van der Zaan, Alex Hockin, Sijia Kong, Martin van der Schans, Gertjan Medema

Effects of chlorination on microbial functional repertoire and gene expression profile in treated sewage effluents
Mandy Tang, Stanley Lau

Assessments of fecal indicator organism concentrations and microbial source tracking markers in tributaries and groundwaters of the Mitchell Creek watershed.
Rebecca Riggi, Sarah U'ren, Heather Smith, Christine Crissman, Joan Rose

Title: Influent, Effluent, and Evaluation - Direct Quantification of Viral Removal and Inactivation Across Wastewater Treatment Processes Through Viability Digital PCR
Keegan Brighton, Tiong Gim Aw

15:00 - 15:30 Tea break
Location: Foyer.

Wednesday June 18

Afternoon programme
parallel sessions

2025 WATER MICRO

Drinking water safety

13:30 - 15:00 Location: Balcony 2nd floor
Co-chairs: Gang Liu, Johanna Engels
Track: Control options in a changing world

Flushing drinking water networks: solving one problem, creating another?
Fien Waegenaar, Thomas Pluym, Bart De Gusseme, Nico Boon

Monitoring the pathogen removal and integrity of spiral-wound (nanofiltration) membranes in drinking water production
Leonie Marang, Giovanni Sandrini, Aleida Hommes, Bert van der Wal

Inline ozonation for producing safe drinking water from turbid water with high levels of *E. coli*
Samuel Dorevitch, Pamela Richa, Mahboobeh Karsaee Gilakjani, Delia Akyea, Abhilasha Shrestha, Sung-Jin Park

Microbial fingerprinting as a tool for evaluating and predicting water quality changes in practice
Katrien De Maeyer, Fien Waegenaar, Koen Joris, Karel Goos

***In situ* validation of UV reactor efficiency in tap water treatment plant using naturally occurring viruses**
SEBASTIEN WURTZER, Marion Goulet, Nathalie Fagour, Gabriel Bon, Sandra Manco, Laurent Moulin

In-Line Chlorination for Drinking Water in Rural Odisha, India: a Randomized Controlled Implementation Trial
Jeremy Lowe, Vaishnavi Prathap, Akito Kamei, Sidhartha Giri, Krushna Sahoo, Michael Kremer, Elisa Maffioli

UV254 and turbidity as proxies of faecal pollution at alpine karst springs
Katalin Demeter, Anna Pölz, Julia Derx, Margaret Stevenson, René Mayer, Alfred P. Blaschke, Andreas Farnleitner

N-Acetyl-L-Cysteine: A Promising Alternative for Disinfection in Drinking Water Distribution Systems
Pamela Moussa, Cristina Gagliano, Adriaan Minnaard, Marthe Walvoort

15:00 - 15:30 Tea break
Location: Foyer

2025

WATER MICRO

Wednesday June 18

Afternoon programme

workshop & posters

Wednesday June 18

Afternoon programme
workshops and posters

2025 WATER MICRO

Workshop:
Realising the benefits of nature-based solutions in microbial public health risk management: conducting the research and translating it into guidance.

13:30 - 15:00

Location: Theater
Workshop organizers: Daniel Deere, Kate Medlicott, Kathy Cinque, Jonathan Porter, Kelly Hill
Track: Control options in a changing world

We all need to play our small part in humanity's urgent collective responsibility to reduce energy and resource utilisation and protect and enhance biodiversity. Nature-based solutions often use minimal energy and resources, and can even be net-beneficial in terms of their biodiversity and cultural values. However, their public health benefits are often overlooked due to the complex and poorly understood mechanisms by which they achieve beneficial outcomes. As a result they are often under-utilised, underpromoted, and do not attract their fair share of investment. Part of this relates to political and financial considerations – beyond the scope of this event. But a large part of this relates to the scientific complexity of validating and recognising nature-based solutions. Rapid enhancement and application of the state of the art in health-related environmental microbiology, coupled to modelling and monitoring, is required to avoid losing opportunities to promote and support the use of nature-based solutions in health-related microbial public health risk management.
The immediate objective, i.e. within the workshop, is to agree a prioritised action plan for sectoral research, guidance and regulation, to promote the enhancement and application of nature-based solutions to support public health environmental microbiology risk management. The intermediate objective is to publish that to help guide and promote action. The long-term objective is for the HRWM community to play our part in enabling nature-based solutions as our contribution to protecting public health whilst protecting and enhancing biodiversity, improving resilience, and reducing water and sanitation servicing costs.

Poster sessions

17:00 - 18:00

Location: Foyer
Tracks: New tools & Control options in a changing world

Poster session 3A Methods for microbial detection

Poster session 3B Microbial source tracking

Poster session 3C Microbial water quality monitoring

Poster session 3D Molecular tools

Poster session 3E Treatment technologies

The poster presentation programme can be found on the screens near the poster boards

18:00 - 19:30

Open meeting of the IWA Health-Related Water Microbiology Specialist Group

Poster session 3A Methods for microbial detection
Track: New tools

[3A-1]
Field Evaluation of Aquagenx ESBL Compartment Bag Test and Aquagenx ESBL GEL in Surface Water
Emily Bailey, Mark Sobsey

[3A-2]
UV resistant bacteria (URB) in wastewater and reclaimed water: Fundamental traits, resistance mechanisms, and control strategy
Ke-Fan Cao, Bang-Hao Huang, Zhuo Chen

[3A-3]
Bacterisk: Comparing a rapid water quality assessment with reference methods
Christian Good, Alistair White, Joao Brandao, Simon Jackson

[3A-4]
A Novel Method for Simultaneously Concentrating Pathogenic Bacteria and Viruses from Wastewater using Solid-phase Extraction Method
Sorn Sovannlaksmy, Yoshiaki Nihei, Ryusei Yoshimoto, Fumitake Nishimura, Masaru Ihara

[3A-5]
Isolation, characterisation and performance of *P. saccharolyticum*, a novel degrader of the micropollutant aminomethyl phosphonic acid (AMPA)
Miles Folkes, Laura Pickering, Victor Castro-Gutiérrez, John Haley, Anna Staples, Bruce Jefferson, Francis Hassard

[3A-6]
Enumera-coli Kit validation for *Escherichia coli* Quantification, with Integrated Analysis of Intestinal Enterococci and Somatic Coliphages Using a Unified Platform
Julia Martín-Díaz, Miriam Pascual-Benito, Ariadna Jorba-Plassa, Anicet R. Blanch

[3A-7]
Methods Development to Enhance Virus Detection following Advanced Water Purification
Simran Singh, Walter Betancourt, Luisa Ikner

[3A-8]
Development of a Poly-γ-Glutamic Acid Flocculation Method for Enhanced Virus Recovery from Wastewater
Cathleen Horng, Minola M. Motha De Silva, Nicola K Beck, John Scott Meschke

[3A-9]
Surface-Modified Biopolymer Surrogates: A Potential Tool for Studying *L. pneumophila* and *C. parvum* in Engineered Water Systems
Sujani Ariyadasa, Beth Robson, Aruni Premaratne, Richard Sutton, Panan Sitthirit, Gayan Abeysekera, Conan Fee, Craig Billington, Liping Pang

[3A-10]
Development and validation of flow cytometry for rapid enumeration of viruses in water
Dominik-A. Kugler, Georg Reischer, Regina Sommer, Lena Campostrini, Andreas H. Farnleitner, Alexander K. T Kirschner, Claudia Kolm

[3A-11]
Fast and sensitive *Legionella pneumophila* detection in wastewater.
Frits van Charante, nikki van bel, Jeroen van Rijn, Darron Steggles, Silvana Gloor, Fanny Passot, Max van der Ploeg, Paul van der Wielen

[3A-12]
Somatic Coliphages in Norwegian Raw Water sources: Detection challenges and Implications for Implementation of EU Drinking Water Directive
Hanne Kvitsand, Mette Myrmel, Stein Østerhus

[3A-13]
Concentrating water samples for on-site quantification of intact bacteria using crossflow filtration
Hetty KleinJan, Gilles Quabron, Lena Brouwir, Jean-François Gérard

[3A-14]
Strengthening Environmental Microbiology Laboratory Capacity in Low Resource Countries: Approaches and Lessons Learned
Javier Gallard-Góngora, Alex Kossik, Molly Cantrell, Troy Barker, Augustino Msanga, Manise Pierre, Thania Nassor, Salha Mohammed Kassim, Jen Murphy

[3A-15]
How to build a National Preparedness Laboratory for Water Microbiology
Josefine Elving, Mats Forsman, Maria Hellmér, Erik Eriksson, Emelie Salomonsson, Ronnie Eriksson

Poster session 3B Microbial source tracking
Track: New tools

[3B-1]
USING GIS TO TRACK AND STOP MICROBIAL CONTAMINATION IN WATER SYSTEMS
SOLOMON DABILLAH

[3B-2]
Phage-Bacteria Dynamics and Natural Selection in Sequencing Batch Reactors: Insights from CRISPR-Cas System and Phage Outbreaks
Xuhan Deng, Guanglei Qiu, Gang Liu

[3B-3]
Persistence of bacterial and viral genetic MST and cultivation-based standard faecal indicators in microcosms simulating a complex river matrix
Mats Leifels, Sophia Steinbacher, Katalin Demeter, Gerhard Lindner, Rita Linke, Karen Zuser, Claudia Kolm, Regina Sommer, Andreas Farnleitner

[3B-4]
A new approach for determining host-associated fecal microbiome sequence populations for microbial source tracking
Katarina Priselac, Andreas Farnleitner, Georg Reischer

[3B-5]
Insights on the potential role of crAssBcn phages as markers of human fecal contamination
Clara Gomez-Gomez, Maria Dolores Ramos-Barbero, Laura Sala-Comorera, Sara Morales-Cortes, Gloria Vique, Elisenda Ballesté, Cristina Garcia-Aljaro, Maite Muniesa

[3B-6]
Development and optimisation of a pollutant source apportionment approach, utilising cutting-edge source tracking tools.
Sara Tajrourti, Sarah Purnell, James Ebdon, Andrew Hesketh

[3B-7]
Microbial tracking of E. coli sources: combining bacterial and DNA analysis (human, dog, cow, pig, ruminant) in stream samples
Alexis Porter, Leah Wilson, Brian Scull, Brendan May, Ryan Otter

[3B-8]
Assessing the Efficacy of Tomato Brown Rugose Fruit Virus in Tracking Human Sewage Sources
Phongsawat Paisantham, Supitchaya Theplhar, Thitima Srathongneam, Montakarn Sresung, Skorn Mongkolsuk, Kwanrawee Sirikanchana

[3B-9]
The Reliability of CrAssphage in Human Fecal Pollution Detection: A Cross-Regional MST Marker Assessment
Daniel Toribio-Avedillo, Elisenda Balleste, Cristina Garcia-Aljaro, Claudia Stange, Andreas Thiem, Concepcion Sánchez-Cid Torres, Edgar Mulogo, Abidelfatah Nasser, Ricardo Santos, Magnus Simonsson, Anicet R. Blanch

[3B-10]
Validation of passive samplers for microbial source tracking of illicit discharges: laboratory tests, modelling and field trial
William Walujono, Christelle Schang, Rebekah Henry, Brandon Winfrey, David McCarthy

[3B-11]
From the pasture to the water: multiparametric laboratory experiments to determine microbial release from feces
Rita Linke, Yanhe Zhou, Gerhard Lindner, Nadine Hochenegger, Tamara Borovec, Georg Reischer, Katarina Priselac, Alba Hykollari, Gabrielle Stalder, Regina Sommer, Julia Derx, Andreas Farnleitner

[3B-12]
Seal microbial communities and identification of a Microbial Source Tracking marker for detection of seal faecal contamination in coastal waters.
Michèle Gourmelon, Alisson Godino Sanchez, Joelle Serghine, Cécile Le Mennec, Cyril Noël, Julien Schaeffer, Herlé Goraguer, Cécile Vincent, Françoise S. Le Guyader

[3B-13]
Mitigating Microbial Contamination Risks in Urban Drinking Water Sources: A Comprehensive Analysis and Action Plan for Southern Quebec Watersheds
Raja Kammoun, Sarah Dorner, Natasha Mcquaid, Anne-Sophie Madoux-Humery

[3B-14]
Impact of Urban Discharges on Pathogen Loads: Leveraging SARS-CoV-2 data for pathogen transport model development
Fariba Raeisi, Mariam Hajj-Mohamad, Raja Kammoun, Mounia Hachad, Thanh Luan Nguyen, Sarah Dorner

[3B-15]
Utilizing Bacteroidales and Mitochondrial DNA for Comprehensive Microbial Source Tracking via Metabarcoding in Water Bodies
Akihiko Hata, Ginichiro Fukahori, Seiya Hanamoto, Kenshi Sankoda, Keisuke Kuroda

[3B-16]
Bacteroides-based community fingerprinting and SourceTracking for MST
Tristan Nolan, Christelle Schang, Yussi Delgado, Rebekah Henry, David McCarthy

[3B-17]
Where should we control fecal pollution sources on the Lake Biwa Watershed?: First Escherichia coli–based search in Japan
Dongbeom Im, Fumitake Nishimura, Hiroaki Tanaka

[3B-18]
Evaluating the performance of 5-plex digital PCR of microbial source tracking markers to identify sources of fecal contamination of water
Sunayana Raya, Bikash Malla, Niva Sthapit, Eiji Haramoto

[3B-19]
Spatiotemporal Dynamics of Human, Animal, and Rodent-Associated Fecal Contamination: Advancing qPCR RatMT for Microbial Source Tracking in Coastal Watersheds
RONELL BRIDGEMOHAN, Matthew Deitch, dave bachoon, andrew quicksall

[3B-20]
Development of microbial source tracking assays for detecting animal fecal and manure pollution in Slovenia
Tanja Zlender, Lucija Brezočnik, Vili Podgorelec, Maja Rupnik

[3C-14]
Usefulness of Sediment Core Samples as a Naturally Preserved Biobank Reflecting the Historical Emission of Health-Related Microorganisms
Shotaro Torii, Vu Duc Canh, Shin Takahashi, Michinobu Kuwae, Masaaki Kitajima, Michio Murakami

[3C-15]
Simultaneous detection of protozoa, bacteria and viruses in tap and river waters by membrane adsorption and direct nucleic acid extraction
Shotaro Torii, Masaaki Kitajima, Kumiko Oguma, Hiroyuki Katayama

Poster session 3D Molecular tools
Track: New tools

[3D-1]
Viral-Particle Interaction and Bacterial, Viral, and Fungal Population Dynamics during Activated-Sludge Wastewater Treatment at Different Hydraulic Retention Times Nutrient Recovery
Emilia Emerson, Joan Rose, Tiong Aw, Yan (Susie) Liu, Wei Liao

[3D-2]
Aerobic Degradation of Cefpirome Sulfate by *Sphingomonas melonis* P33: Performance, Pathways, and Genomic characterization
Yuyang Wang, Hongchao Min, Qi Wang, Lin Lin, Xiaoyan Li, Bing Li

[3D-3]
A workflow for benchmarking isothermal amplification methods for environmental and clinical molecular diagnostics
Lena Piglmann, Johanna Kreuter, Lena Campostrini, Regina Sommer, Alexander Kirschner, Andreas H. Farnleitner, Claudia Kolm, Georg H. Reischer

[3D-4]
ViOTUcluster: A High-Speed All-in-One Pipeline for Virome Analysis from Metagenomic Data
Sihang Liu, Siqing Xia, Hong Wang

[3D-5]
ISO/TS 16099: An introduction to the new International Standard for PCR-based methods in the water sector
Adrie Atsma, Laura Mout, Rik de Vries, Gabi van Pelt, Sander Heeman, Goffe Elzinga

[3D-6]
Global survey on genetic microbiological testing in the water sector: why is adoption so slow?
Katalin Demeter, Mats Leifels, Claudia Kolm, Regina Sommer, Rosina Girones, Daisuke Sano, Ricardo Santos, Anicet R. Blanch, Ana Maria de Roda Husman, Gertjan Medema, James Ebdon, Orin C. Shanks, Alexandria Boehm, John Scott Meschke, Amy Pruden, Thomas Edge, Veronica Rajal, Maria Ines Sato, Douglas Mushi, Maronel Steyn, Kwanrawee Sirikanchana, Megan Devane, Warish Ahmed, Stefan Wuertz, Monika Finsterwald, Joan Rose, Andreas Farnleitner

[3D-7]
Genetic Methods in Water Quality Testing: from Science to Practice. Part II – A Comparative Analysis Among Application Areas.
Andreas Farnleitner, Joan Rose, Katalin Demeter, Mats Leifels, Claudia Kolm, Gertjan Medema

[3D-8]
Evaluation of propidium monoazide real-time PCR for quantification of viable *Acanthamoeba* spp. in drinking water treatment process
Eun-Sook LEE, Ji-yeon Lee, Young-ae Baek, Seok-ju Cho

[3D-9]
Selection, characterization and application of DNA aptamers against main waterborne enteric viruses: a promising tool for rapid water quality monitoring
Leslie Ogorzaly, Arghya Sett, Catherine Mulholland, Cécile Walczak, Delphine Collard, Henry-Michel Cauchie

[3D-10]
Can enrichment steps during library preparation enhance viral sequence identification in metagenomic sequencing runs of environmental samples?
Julien Schaeffer, Fulvia Troja, Marion Desdouits, Valentina Indio, Alessandra De Cesare, Soizick Le Guyader

[3D-11]
Molecular Tools for Advanced Wastewater Management
Anita Larbi, Khushbu Sharma, Maggy McGrath, Carolina Ontiveros, Nicole Allward, Amina Stoddart

[3D-12]
Enhancing the Usability of the cc-QMRA Tool for Water Quality Management in a Changing Climate: Stakeholder Feedback and Tool Refinement
Caitlin MacMillan Maartens

[3D-13]
Restoring Specificity: A Novel qPCR Assay for Pseudomonas aeruginosa Following New Species Boundaries
Denise van de Pol, Marta Cardoso, Elfy Ly, Corne Klaassen, Heike Schmitt, H. Pieter J. van Veelen

[3D-14]
Rapid and Quantitative Detection of Intact Legionella Using a Novel Viability Quantitative PCR Assay
Nathan Feirer, Nishanth Kuchi, Matthew Poole, Nadine Godin, Sunil Paladugu, Brigitta Saul, Thomas Kirkland, Mike Scurria, James Cali, Attiq Rehman, Subhanjan Mondal

[3D-15]
Generation of human norovirus GI and GII aptamers for portable sensor development
Andri Rachmadi, Hamish Dunham

[3D-16]
Material extrusion-based 3D printing for the fabrication of heterotrophic nitrifying bacteria into functional biomaterials
Yan Li, Chang-Ping Yu, Lixin Wu

[3D-17]
Using microbial community shifts to predict changes in water quality
Judith Webber, Katharina Dost, Theo Sarris, Joerg Wicker, Phil Abraham, Louise Weaver

[3D-18]
A Rapid DNA/RNA Extraction Method for Bacteria in Environmental and Clinical Molecular Diagnostics
Johanna Kreuter-Mrkonjic, Regina Sommer, Andreas H. Farnleitner, Claudia Kolm, Georg H. Reischer

[3D-19]
Building AI-based framework with contrastive learning for predicting and discovering microbial gene function and pathogenic bacteria from (meta)genomic data
Ao DONG, Feng JU

[3D-20]
Closing gaps in AMR detection: A hybrid capture sequencing platform for comprehensive quantification of resistance markers in water and wastewater
Claudia Kolm, Iris Schachner-Gröhs, Ines Ferreira, Theresa Stelzer, Roland Martzy, Michael Ante, Johannes Weinberger, Alexander K.T. Kirschner, Andreas H. Farnleitner

[3D-21]
Novel real-time sensing and water quality monitoring technologies for drinking water
Aleida Hommes-de Vos van Steenwijk, Connor de Adelhart Toorop, Marc van Bemmel, Hetty Kleinjan, Jean-François Gérard, Marc Legal, Luigino Grasso

[3D-22]
Development of a semi-automated analyser based on qPCR technology for on-site monitoring of faecal contamination in sources of drinking water
Connor de Adelhart Toorop, Gabi Boekhorst, Marc van Bemmel, Rajashree Hajaree, Goffe Elsinga, Aleida Hommes-de Vos van Steenwijk

[3D-23]
Applications of microbial community analysis as a sentinel for drinking-water quality assessment
Megan Devane, William Taylor, Kathryn Russell, Brent Gilpin

Poster session 3E Treatment technologies
Track: Control options in a changing world

[3E-1]
Sustainable Energy Generation through Wastewater: A situation in the Urban City of Lagos, Nigeria
Timothy Ajayi, Olajumoke Owoeye, Micheal Ijaduola, Sulaeman Akinde, Daniel Olaniyan

[3E-2]
Antibiotic Resistance Gene Dynamics in Costa Rican Wastewater Systems: A Comparative Study of Septic Tanks and Treatment Plants
Mary-Luz Barrios-Hernandez, Luz Chacon

[3E-3]
A Novel O3/PMS-BAC Process for AMR Control in Treated Effluent
xinyang zhang, Jiangyong Hu

[3E-4]
Boosting ferrous-activated peroxydisulfate reaction via tea extract for Shigella flexneri biofilm inactivation
Zheng Ji, Xuan Liu

[3E-5]
Differences in inactivation kinetics observed for wastewater-sourced and laboratory-cultured *E. coli* and *Enterococcus* spp. with exposure to commonly used disinfectants
Andrea Silverman, Mwanarusi Mwatondo

[3E-6]
Sunlight Inactivation of Influenza Virus on Surfaces
Mengyang Zhang, Claire Anderson, Gang Zheng, Catherine Blish, Alexandria Boehm

[3E-7]
RO AND NF MEMBRANES PERFORMANCE MONITORING IN WATER REUSE APPLICATIONS BY CONTINUOUS MEASURING OF ADENOSINE TRIPHOSPHATE
Bart Verdonk, Luis Navarro

[3E-8]
Impact of water concentration and process on pathogenic bioaerosol emission and concentration in wastewater treatment plants
Arthur Ouradou, Salim Khaddouma, Emie Lachance, Marc Veillette, Caroline Duchaine, Émilie Bédard

[3E-9]
Antibiotic resistance genes in superficial water in Brazil: impact of membrane treatment
Pedro Antônio Alves Fernandes, Juliana Calábria de Araújo

[3E-10]
A novel full-scale (400 m3/d) auto-aerated down flow-based sponge system for pathogens removal from high strength domestic wastewater for reuse
Ahmed Tawfik

[3E-11]
Disinfection of spore-forming clostridia in sewage effluents using peracetic acid.
Hiroyuki Suzuki, Masataka Tomozawa, Kenji Oonaka, Atsushi Hashimoto

[3E-12]
Reduction of antibiotic resistances in wastewater through the application of the Retention Soil Filter plus
Christiane Schreiber, Sarah M. Essert, Alexander Ahring, Thomas Kistemann, Nico T. Mutters, Nicole Zacharias

[3E-13]
Spectral Dependent UV-LEDs Inactivation Efficiencies of Enveloped and Non-enveloped Viruses
Surapong Rattanakul, Kumiko Oguma

[3E-14]
Ultrafiltration as a robust method to eliminate the norovirus from seawater
Joanna Ollivier, Mathias Monnot, Hugo Taligrot, Pascal Garry, Clémence Cordier, Christophe Stavrakakis, Philippe Moulin, Soizick Le Guyader

[3E-15]
The development and application of models for predicting virus removal in water treatment processes
Krista Wigginton, Mira Chaplin, James Hendersen, Brian Pecson, Tim Dinh, Nicole Rockey

[3E-16]
Effect of filamentous algae in a microalgal-bacterial granular sludge systemtreating saline wastewater: Assessing stability, lipid production andnutrients removal
Fansheng Meng

[3E-17]
Microbial Removal in Septic Systems: Insights on Treatment Performance
Maria Eloisa Sia, Heather M. Murphy, Caetano C. Dorea

[3E-18]
Modeling the Impact of Heterogeneity on Pathogen Transport and Setback Distances in Riverbank Filtration
Veerle Troelstra, Anna Störiko, Gertjan Medema, Boris van Breukelen

[3E-19]
Killing two birds with one stone: Waste shells as low-cost materials for nutrient and bacteria removal in wastewater.
Brakemi Egbedi, Michael Kinsella, Shiau Pin (Graece) Tan, Helen Hughes

[3E-20]
Protonated carbon nitride elicits microalgae for water decontamination
Mao jie

[3E-21]
The Hidden Importance of Waterpans: Mitigation of Human Health Risks using a One Health Approach
Claire Furlong, Jack van de Vossenberg, Edith Kurui, Faith Sharon Akaranga, Lucy Gwen Gillis, Ellen Pfeiffer, Mary Birdi, Silvia L. Ceppi, Vallentina Massanja Chaya, Giorgio Colombo, Konstantina Katsanou, Zabdiel Kitonga, Gretchen Gettel, Tumaini Gwatalile, Leon Hermans, Hellen Ipara, Shauku Starford Kihombo, Sonja Leitner, Msamba Chacha Machura, Frank Frank Masese, Shreedhar Maskey, Alais Morindat, Johanes R. Mtete, Paolo Paron, Hans van der Kwast, Elizabeth Wambui Wanderi, Kelvin Moenga, Ken Ken Irvine

[3E-22]
Impact of Skimming Methods on Cryptosporidium Oocyst Retention in Slow Sand Filters
Francis Hassard, Sophie Bretagne, Jim Harris, Michael Chipps

2025

WATER MICRO

Thursday June 19

Morning programme

2025 WATER MICRO

08:00 - 09:00 **Registration**

09:00 - 09:30 **Keynote New perspectives on sanitation**
Location: Theater
Track: Water as information source

Barbara Evans holds the chair in Public Health Engineering in the School of Civil Engineering at the University of Leeds in the United Kingdom. Her work is centred on the delivery of the United Nations' Sustainable Development Goal 6, with a particular focus on resilient and equitable sanitation services.

09:30 - 09:50 **Sanitation and surveillance**
Location: Theater
Chair: Maarten de Jong
Track: Water as information source

Assessing the Theoretical Detectability, Persistence, and Recovery of Malaria in Wastewater: Insights for Future Wastewater-Based Epidemiology Applications
William Chen, Kyle Bibby

Environmental surveillance of vectorborne diseases in a non-sewered system: a case study in Mozambique
Silvia Monteiro, Filipa Nunes, Nidia Cangi, Clemencio Nhantumbo, Dinis Juizo, Ricardo Santos

Methodology matters: Wastewater surveillance for viral and non-viral targets
Joanne Chapman, Laurel Julian, Feya Durkin, William Taylor, Joshua Freeman, Brent Gilpin

Disease-X surveillance: Analysis of University campus wastewater samples by targeted oligo-capture enrichment metagenomics and group-agnostic RdRp phylotyping
Desmond Chua, Krithika Arumugam, Jia Wei Cai, Eric Hill, Wei Lin Lee, Martin Tay, Chui Ching Judith Wong, Lee Ching Ng, Stefan Wuertz, Rohan Williams, Janelle Thompson

09:50 - 10:20 **Panel discussion Sanitation and surveillance**
Chairs: Maarten de Jong
Moderator: tbd
Track: Water as information source

10:20 - 10:50 **Coffee break**
Location: Foyer

10.50 – 11.50 **Water as information source for health**
Location: Theater
Co-chairs: Nguyen Thi Thu Huong, Tim Julian
Track: Water as information source

Assessing the Opportunities and Challenges of Antimicrobial Resistance Surveillance in Airport and Aircraft Wastewater
Margaret Knight, Kata Farkas, Matthew Wade, Gordon Webster, Daniel Pass, William Perry, Peter Kille, Andrew Singer, Davey Jones

Genotyping norovirus populations in English wastewater samples
David Walker, George Scott, David Ryder, Richard Hill

Antibiotic resistance profile in microorganisms prevalent in wastewater from different sources, Cochabamba, Bolivia
Eunice Flores Gallo, Luis Fernando Perez, Alvaro Rodolfo Mercado, Cesar Perez, Adriana Teran, Mercedes Iriarte

Detection of a circulating vaccine-derived poliovirus type 2 and other health-significant enteroviruses in Metropolitan Barcelona sewage
Albert Carcereny, David Garcia-Pedemonte, Maria Isabel Costafreda, Carme Chacón, Jacobo Mendioroz, Margarita Palau, Belén Galofré, Miquel Paraira, Susana Guix, Rosa M Pintó, Albert Bosch

Epidemiology study of cVDPV2 outbreak in Israel (2022-2023) through enhanced environmental surveillance.
Itay Bar-Or, Neta Zuckerman, Lester Shulman, Yaniv Lustig, Danit Sofer, Oran Erster, Merav Weil

11:50 - 12:00 **Spatiotemporal and Climate Influences of FIB Using Microbial Source Tracking Tools and a Novel RatMT Marker in Subtropical Coastal Watersheds**
Location: Theater
Track: New tools
Caribbean calypso
Ronell Bridgemohan

12:00 - 12:30 **Poster pitches Water as information source**
Location: Theater
Co-chairs: Surapong Rattakanul, William Amoah
Track: Water as information source

Monitoring poliovirus in wastewater to support poliomyelitis epidemiological surveillance
Mikaela Renata Barbosa, Suzi Cristina Garcia, Ronalda Silva de Araujo, Eduardo Volotao, Edson Elias da Silva, Taina Venas, Elizabeth Valentin, Jessica Barreto Dias, Renan Lourenço Silva, Alessandra Lucchesi Franco, Maria Ines Sato

Wastewater-based epidemiological studies on pathogens and their use in public health decision making: a scoping review
Anne-Merel R. van der Drift, Anne Welling, Erwin Nagelkerke, Rudolf F.H.J. van der Beek, Ana Maria de Roda Husman

From Crisis to Clarity: Tackling the Sampling Strategy Challenge in Airport Wastewater Surveillance During COVID-19
Kira Zachmann, Susanne Lackner, Shelesh Agrawal

Strengthening Pathogen Surveillance in Sub-Saharan Africa through Environmental Monitoring: Insights from a Stakeholder Survey and Pilot Study
Taru Miller, Ananda Tiwari, Outi Nyholm, Kristiina Valkama, Vito Baraka, Marc Tahita, Vivi Maketa, Berenger Kabore, Palpouguini Lompo, Eric Lyimo, Hillary Sebukoto, Adriana Krolicka, Ana Maria de Roda Husman, Tarja Pitkänen

Unveiling Antibiotic Resistance in the Ruhr area: A metagenomic catalog from wastewater surveillance
Josefa Welling, Sara Tahtaci, Katharina Block, Miriam Balzer, Folker Meyer, Ivana Kraiselburd

Use of passive samplers as sewage surveillance tool to monitor hepatitis A outbreak at a school in Amsterdam, the Netherlands
Maarten de Jong, Maarten F. Schim van der Loeff, Rémy Schilperoort, Harry Vennema, Charlie van der Weijden et al

Detection of ESBL, AmpC-β-lactamase and carbapenemases genes among ESBL-producing E. coli and Klebsiella isolated from clinical specimen and hospital wastewater
Zakaria GARBA, O. J. Isidore Bonkoungou, Solange Kakou-N'Gazoa, Palpouguini Lompo, Nicolas Barro, Halidou Tinto

High-resolution wastewater-based surveillance of two influenza seasons (2022-2024) reveals distinct seasonal patterns of viral activity in Munich, Germany
Jessica Neusser, Jasmin Javanmardi, Astrid Zierer, Raquel Rubio-Acero, Annemarie Bschorer, Merle Boehmer et al

The ARISE project: Pioneering wastewater-based AMR surveillance in alignment with upcoming EU regulatory changes
Theresa Hohl, Julia Vierheilig, Alexander Kirschner, Gernot Zarfel, Barbara Ströbele, Norbert Kreuzinger et al

Quantitative microbial risk assessment using three-dimensional reservoir modelling to inform decisions on recreational access to a drinking water source
Kathy Cinque, Daniel Deere

12:30 - 13:30 **Lunch break**
Location: Foyer

2025

WATER MICRO

Thursday June 19

Afternoon programme

parallel sessions

Thursday June 19

Afternoon programme
parallel sessions

2025 WATER MICRO

Wastewater surveillance methods

13:30 - 15:00 Location: Theater
Co-chairs: Sarah Philo, Scott Meschke
Track: Water as information source

Long-read, targeted sequencing of extended-spectrum beta-lactamase alleles, CTX-M, in Seattle wastewater
Angelo Ong, Sarah Philo, Ruohan Hu, Anysiah Taylor, Scott Meschke, Erica Fuhrmeister

Comparing Outbreak Surveillance Tools: RT-ddPCR, Short Read Sequencing, and Long Read Sequencing for SARS-CoV-2 Detection in Wastewater and Clinical Samples
Temi Ibitoye, Ariel Christensen, Angela Harris

Antimicrobial resistance in wastewater, aquatic environments, and shellfish: Assessing environmental and public health risks
Reshma Silvester, Kata Farkas, Andrew Weightman, Davey Jones

Antibiotic resistance determinant analysis in solid and liquid wastewater components towards methodology improvement and harmonization
Andrea Naziri, Popi Karaolia, Theoni Mina, Sotirios Vasileiadis, Despo Fatta-Kassinos

Characterization of Norovirus GI.3 and GII.12 Variants Detected in Cameroon Wastewater 2017-2018
Putri Ayu Fajar, Ray Izquierdo-Lara, Nathalie Worp, Claudia Schapendonk, Gijsbert van Nierop, Global Sewage Surveillance Consortium -, Frank Møller Aarestrup, Marion Koopmans, Miranda de Graaf

Use of passive samplers for wastewater surveillance of SARS-CoV-2 and antibiotic resistance genes
Claudia Stange, Chiara Holzer, Johannes Ho, Andreas Tiehm

Multipathogenic wastewater surveillance: method optimization for multiple targets from a single sample
Ábel Csongor Németh, Eszter Róka, Bernadett Khayer, Balázs Seres, Boglárka Pollák, Eszter Schuler, Bernadett Pályi, Judit Henczkó, Márta Vargha

SARS-CoV-2 outcompetition efficiency across variants: a virus population assessment in wastewater
Rosa M Pintó, Albert Carcereny, David Garcia-Pedemonte, Maria Isabel Costafreda, Gloria Sánchez, Ana Allende, Margarita Palau, Jacobo Mendioroz, Albert Bosch, Susana Guix

15:00 - 15:30 Tea break
Location: Foyer

Thursday June 19

Afternoon programme
parallel sessions

2025 WATER MICRO

Enhancing wastewater surveillance for disease control

13:30 - 15:00 Location: Balcony 1st floor
Co-chairs: Anne-Merel van der Drift, Tarja Pitkanen
Track: Water as information source

How to set alarm thresholds for respiratory and enteric viruses in wastewater ? An application to 3 French cities
Olivier Schlosser, Sophie Courtois, Jean-François Loret

Viral Uptake Kinetics of CrAssphage, PMMoV, Human Adenovirus 40/41, Norovirus GGII and Enterovirus on Electronegative Membrane Passive Samplers
Adnan Ege Sener, Gertjan Medema

Is crAssphage a good normalization factor for wastewater surveillance? A long-term perspective from the New York State
Yifan Zhu, Catherine Faruolo, Dustin Hill, Hyatt Green, David Larsen

Wastewater-based Epidemiology: Deriving a SARS-CoV-2 Data Validation Method to Assess Data Quality and to Improve Trend Recognition
Cristina Saravia, Peter Pütz, Nathan Obermaier

Wastewater Surveillance in Costa Rica: Monitoring Viral Pathogens and Public Health Risks in Urban a Wastewater Treatment Plant
Luis Rivera-Montero, Jose Montiel-Mora, Ernesto Alfaro, Pablo Rivera, Kenia Barrantes, Luz Chacon

Impact of hospital wastewater in the spread of emerging pathogens and antibiotic resistance
Filipa Nunes, Sílvia Monteiro, Ricardo Santos

Maximizing the benefits of sustained wastewater surveillance in a resource-limited urban setting: SARS-CoV-2, Norovirus and Rotavirus circulation in Salta, Argentina
María Maidana-Kulesza, Diego Sanguino-Jorquera, Hugo Poma, Mercedes Cruz, Mónica Aparicio González, Verónica Irazusta, Verónica Rajal

The integration of Wastewater Based Epidemiology in the prevention and control of viral respiratory infections in enclosed settings
Annalaura Carducci, Ileana Federigi, Alessandra Pagani, Nebiyu Tariku Atomsa, Beatrice Conte, Alessandra Angori, Francesco Pistelli, Claudia Meschi, Laura Carrozzi, Lara Tavoschi, Marco Fornili, Laura Baglietto, Tommaso Lomonaco Lomonaco, Matyas Ripszam Ripszam, Guglielmo Arzilli, Antonello Agostini, Riccardo Pisetta, Caterina Rizzo, Marco Verani

15:00 - 15:30 Tea break
Location: Foyer.

Thursday June 19

Afternoon programme
parallel sessions

2025 WATER MICRO

Modelling & QMRA

13:30 - 15:00 Location: Theater
Co-chairs: Emile Sylvestre, Solomon Dabillah
Track: New tools

A Data-Driven Framework for Predicting Case Number of Infectious Disease Using Hybrid Feature Selection and Wastewater Surveillance Data
Luyao Wang, Syun-suke Kadoya, Yifan Zhu, Albert Bosch, Rosa Pinto, Susana Guix, Gloria Sanchez, Walter Randozzo, Charlotte Sakarovitch, Olivier Schlosser, Sophie Courtois, Jean Francois Loret, Daisuke Sano

Assessing Microbial Risks of *Escherichia coli*: A Spatial-Temporal Study of Virulence and Resistance Genes in Surface Water in Resource-Limited Regions
Eric Morales-Mora, Luis Rivera-Montero, Kenia Barrantes-Jiménez, Luz María Chacón-Jiménez

Modeling the biochemical control of fecal indicator bacteria
Hao Wang, Anouk Blauw, Jos van Gils, Eline Boelee, Gertjan Medema

Urine diversion - on the crossroads between a circular economy and introducing microbial health risks
johanna engels, Anne Roiko

QMRA-modelling to simplify treatment processes and reduce costs without compromising drinking water health safety in northern Stockholm
Johan Åström, Daniel Hellström, Linda Holmer, Mikael Danielsson, Lisa Wåhlander, David Heldt

Quantitative Microbial Risk Assessment of Stored Household Drinking Water
Yarrow Linden, Courtney Victor, Christine Fagnant, Sandra McGunegill, Karen Levy, Matthew Freeman, Rassul Nalá, Joe Brown

Evaluating technical requirements in wastewater-based epidemiological surveillance for accurate COVID-19 incidence estimation
Masaaki Kitajima, Michio Murakami, Hiroki Ando, Ryo Yamaguchi

New approaches to maximize the value of PCR-based data for quantification of low microorganism concentrations: Lessons learned from wastewater surveillance
Philip Schmidt, Hadi Dhiyebi, Mark Servos, Trevor Charles, Rachel Dawe, Andrew Doxey, Jenn Knapp, Monica Emelko

15:00 - 15:30 Tea break
Location: Foyer

2025

WATER MICRO

Thursday June 19

Afternoon programme

workshop & posters

Thursday June 19

Afternoon programme
workshops and posters

2025 WATER MICRO

Workshop:
Genetic Methods in Water Quality Testing: from Science to Practice. Part II – A Comparative Analysis Among Application Areas.

13:30 - 15:00

Location: Theater
Workshop organizers: Andreas Farnleitner, Joan Rose, Katalin Demeter, Mats Leifels, Claudia Kolm, Gertjan Medema
Track: New tools

Genetic methods, such as PCR and DNA sequencing, have revolutionised health-related water microbiology research, enabling fast, specific, and sensitive analysis of genetic faecal indicators/markers or DNA signatures of microbial faecal pollution (Demeter et al.,2023 [DOI:10.1093/femsre/fuad028]).
However, water utilities and government agencies still primarily rely on standardised, cultivation-based methods. To investigate the slow adoption of genetic methods, we, the IWA HRWM SG, the Austrian ICC Water & Health, and the Global Water Pathogen Group (GWPP), along with researchers from five continents, have initiated a series of events. We conducted a global survey across the water sector (WaterSurvey), which was planned and discussed at WaterMicro23 (Darwin, AU, June 2023) and conducted from November 2023 to March 2024. The preliminary results were debated in a workshop at the World Water Congress (WWC, Toronto, CA, August 2024).
The investigation so far revealed strong interest in genetic methods across the water sector but also identified sectorial, geographical and income-related topics and barriers. The aim of the current workshop is to systematically and comparatively discuss the way from science to practice across three key application areas: (1) Drinking Water Supply (including water resources protection, treatment and distribution), (2) Recreational Water, and (3) Wastewater (wastewater-based epidemiological surveillance). The overarching aim is to provide a visible platform for shaping the future of microbiological water testing. Specifically, the goal is to identify general and area-specific advantages and limitations of genetic methods.

Poster sessions

17:00 - 18:00

Location: Foyer
Tracks: Water as information source

Poster session 4A QMRA

Poster session 4B Wastewater and environmental surveillance - respiratory pathogens

Poster session 4C Wastewater and environmental surveillance - enteric pathogens

Poster session 4D Wastewater and environmental surveillance - AMR

Poster session 4E Wastewater and environmental surveillance – Methods

Poster session 4F Water and environmental surveillance - Public health value

The poster presentation programme can be found on the screens near the poster boards

19:00 - 23:30

Conference dinner & party

Location: Stadszaal

Poster session 4A QMRA
Track: Water as information source

[4A-1]
Is It Safe to Play? A Quantitative Microbial Risk Assessment of Flooded Soil to Guide Public Health Strategies
Julia Harrison, Angela Harris

[4A-2]
Developing a fit-for-purpose QMRA for a large unfiltered, chlorinated only, drinking water supply
Mellisa Steele, Melita Stevens, Shane Haydon, Kathy Cinque, Aaron Ward, Fiona Lynch, Rebekah Henry

[4A-3]
Quantitative microbial risk assessment using three-dimensional reservoir modelling to inform decisions on recreational access to a drinking water source
Kathy Cinque, Daniel Deere

[4A-4]
ASSESSMENT OF HEALTH RISKS CAUSED BY MICROBIOLOGICAL FACTOR IN DRINKING WATER: EXPERIENCE OF THE REPUBLIC OF BELARUS
Alena Drazdova

[4A-5]
Modelling background immunity and heterogeneity in susceptibility through dose-response analysis
Fuminari Miura, Don Klinkenberg, Jacco Wallinga

[4A-6]
Trade-off between Microbial and Chemical Risks in On-Site Disinfection Systems: A Systematic Review Database for Legionella Control in Drinking Water
Lucia Bellazzi, Emile Sylvestre, Gertjan Medema, Beatrice Cantoni

[4A-7]
A Risk-Based Approach to Humanitarian Sanitation Decision Making
Claire Furlong, Christine Maria Hooijmans, Aisha Nalugya, Zahid Hayat Mahmud, Md. Shafiqul Islam, Md. Sakib Hossain, Rubayet Monzur Toha, Rezaul Karim, Md. Afser Ali, Tanoy Dewan, Iftiaz Ahammad Rabby, Shohana Islam Dana, Richard K. Mugambe, John C. Ssempebwa, Winnie Kansiime, John Bosco Isunju, Nazarious Mbona Tumwesigye, Grace Kyagaba, Marij Zwart, Joe Brown, Syed Anjerul Islam, Benedict Tuffuor, Ato Kwamane Senayah

[4A-8]
Plant-scale Microbial Risk Considerations Inform Operational Opportunities for Enhanced Treatment Resilience
Monica Emelko, Dafne de Brito Cruz, Philip Schmidt

[4A-9]
The potential of viability and infectivity metrics to improve Quantitative Microbial Risk Assessments (QMRA)
Jaime Van Loon, Rachael Young, Amber Park, David McCarthy

[4A-10]
Temperature-driven escalation of microbial risk in an arid and semi-arid river: a metagenomic framework for assessing microbial hazard risks
Yuying Ma, Longmian Wang

Poster session 4B Wastewater and environmental surveillance - respiratory pathogens
Track: Water as information source

[4B-1]
National Wastewater Surveillance Programme: Monitoring the Prevalence of Respiratory Syncytial Virus, Influenza and SARS-CoV-2 in the Republic of Ireland
Mariela Gutiérrez-Araya, Hannah Murphy, Niamh A. Martin, Sukanya Dudeja, Gwendoline Deslyper, Eve Robinson, Darren Dahly, Eadaoin Joyce, Daniel Hare, Jonathan Dean, Gabriel Gonzalez, Michael Carr, Alan Rice, Laura Fahey, Cillian F. De Gascun, Joanne Chadwick, Wim G. Meijer

[4B-2]
Tracking SARS-CoV-2 Variants and Viral Loads over Time at Domestic and International Airports in Thailand
Chaw Su Thin, Kwanrawee Sirikanchana, Jatuwat Sangsanont

[4B-3]
Monitoring of highly pathogenic avian influenza virus in environmental waters at migratory bird gathering sites
Ion Gutierrez Aguirre, Nina Prezelj, Živa Lengar, Maja Ferle, Brigita Slavec, Uroš Krapež, Denis Kutnjak

[4B-4]
Wastewater-based Epidemiology: Considering Spatial and Temporal Variability of SARS-CoV-2 Concentrations in Sampling
Cristina Saravia, Alexander Kerndorff, Christopher Heinrich, Nathan Obermaier

[4B-5]
From Crisis to Clarity: Tackling the Sampling Strategy Challenge in Airport Wastewater Surveillance During COVID-19
Kira Zachmann, Susanne Lackner, Shelesh Agrawal

[4B-6]
Expanding Wastewater Surveillance Capacity to Monitor Respiratory Viruses of Concern in Michigan, USA
Nishita D'Souza, Spencer Kuehn, Rebecca Riggi, Wenjing Ren, Joan B. Rose

[4B-7]
Optimizing environmental surveillance of respiratory viruses in wastewater and air for closed settings
Alessandra Pagani, Marco Verani, Ileana Federigi, Nebiyu Tariku Atomsa, Annalaura Carducci

[4B-8]
Influenza A in wastewater correlates to health outcomes in two sub-populations (Michigan, USA): Analysis of Influenza A & B, RSV, SARS-CoV-2
Ryan Otter, Alexis Porter

[4B-9]
Early Detection of SARS-CoV-2 by Wastewater Surveillance in Albanian Districts
Erinda Lika, Paola Xhelili, Irida Goxhaj, Irena Duka, Claudia Stange, Karmen Craffert, Chiara Holzer

[4B-10]
High-resolution wastewater-based surveillance of two influenza seasons (2022-2024) reveals distinct seasonal patterns of viral activity in Munich, Germany
Jessica Neusser, Jasmin Javanmardi, Astrid Zierer, Raquel Rubio-Acero, Annemarie Bschorer, Merle Boehmer, Martin Hoch, Patrick Dudler, Alexander Klaus, André Klima, Elisabeth Waldeck, Thomas Kletke, Bernhard Boehm, Caroline Herr, Andreas Sing, Michael Hoelscher, Katharina Springer, Andreas Wieser

[4B-11]
Parallel deployment of passive and grab samplers for variant profiling of SARS-CoV-2 in sewers of two French cities
Françoise VINCENT-HUBERT, El Hacene Djaout, Marion Desdouits, Julien Schaeffer, Valentin Tiloy, Marie Courbarioux, Virginie Lattard, Sionfoungo Soro2, Elodie Monchatre-Leroy, . GIS OBEPINE, Soizick Le Guyader, Vincent Maréchal

[4B-12]
Roadmap to proteomics-based wastewater epidemiology: SARS-CoV-2 detection and semi-quantification
Wenting Li, Gabriela Grigorean, Carolyn Fisher, Heather Bischel

[4B-13]
First winter season of SARS-CoV-2, influenza and RSV monitoring in Belgian wastewaters
Raphael Janssens, Hadrien Maloux, Marie Lesenfants, Laura Van Poelvoorde, Nancy Roosens, Bavo Verhaegen, Koenraad Van Hoorde, Veronik Hutse

[4B-14]
Comparative investigation and trends of respiratory viruses using wastewater-based epidemiological surveillance in Patras, Greece
Zoi Anastopoulou, Rafail Fokas, Apostolos Vantarakis

[4B-15]
Expanding Wastewater-Based Epidemiology for Influenza: Whole-Genome Sequencing to Detect Emerging Subtypes and Genetic Diversity
Carrie Moore, Shelesh Agrawal, Susanne Lackner

[4B-16]
Localised Wastewater SARS-CoV-2 Levels Linked to COVID-19 Cases; a large long-term multisite study in England
iain lake, natalia jones, paul hunter

[4B-17]
SARS-CoV-2 concentrations and variant dynamics in three populations that are geographical similar, but demographically very different (Michigan, USA)
Alexis Porter, Ryan Otter

[4B-18]
Leveraging Passive Sampling and Multiplex RT-qPCR for Early Detection of Avian Influenza in Surface Waters
Madison Gouthro, Emalie Hayes, Megan Fuller, Amina Stoddart, Graham Gagnon

Poster session 4C Wastewater and environmental surveillance - enteric pathogens
Track: Water as information source

[4C-1]
Wasterwater-based surveillance of Hepatitis A and E in Munich, Germany
Jasmin Javanmardi, Mathias Schemmerer, Karina Wallrafen-Sam, Jessica Neusser, Raquel Rubio Acero, Bernhard Boehm, Michael Schneider, Jan Hasenauer, Juergen Wenzel, Andreas Wieser

[4C-2]
Using Environmental Surveillance and Shotgun Metagenomics to Characterize Enteric Pathogens in Harare, Zimbabwe
Samantha Cheung, Nicolette A Zhou, Vurayai Ruhanya, Kelsey J Jesser, Ignitious Nezomba, John Musvibe, Brendon Manyisa, George Nyandoro, Paradzai Chibukira, Arnold Mukaratirwa, Simon T Muserere, Kudzai Masunda, Angelo Ong, John Scott Meschke

[4C-3]
Monitoring poliovirus in wastewater to support poliomyelitis epidemiological surveillance
Mikaela Renata Barbosa, Suzi Cristina Garcia, Ronalda Silva de Araujo, Eduardo Volotao, Edson Elias da Silva, Taina Venas, Elizabeth Valentin, Jessica Barreto Dias, Renan Lourenço Silva, Alessandra Lucchesi Franco, Maria Ines Sato

[4C-4]
Monitoring Enteric Viruses (Norovirus and Adenovirus) in wastewater samples in Ireland
Sukanya Dudeja, Niamh A. Martin, Mariela Gutiérrez-Araya, Hannah Murphy, Gwendoline Deslyper, Eve Robinson, John O'Sullivan, Eadaoin Joyce, Jonathan Dean, Daniel Hare, Gabriel Gonzalez, Alan Rice, Laura Fahey, Michael Carr, Cillian F. De Gascun, Joanne Chadwick, Wim G. Meijer

[4C-5]
Wastewater and surface water surveillance for the detection of Giardia and Cryptosporidium in Northwest Argentina
Diego Sanguino-Jorquera, María Maidana-Kulesza, Mónica Aparicio González, Hugo Poma, Verónica Rajal

[4C-6]
Utilizing Wastewater Analysis for Epidemiological Monitoring of Enteric Pathogens
Loretta Varga, Balázs Seres, Eszter Róka, Bernadett Khayer, Márta Vargha, Tamás Pándics

[4C-7]
Wastewater surveillance of re-emerging viral and bacterial pathogens for the Public Health Services of the City of Vienna
Gabriela Eder, Vera-Lise Ihm, Philipp Raunjak, Maximilian Rumetshofer, Miklos Papp, Otto Krenek, Jörg Krampe, Julia Vierheilig

[4C-8]
Strengthening Pathogen Surveillance in Sub-Saharan Africa through Environmental Monitoring: Insights from a Stakeholder Survey and Pilot Study
Taru Miller, Ananda Tiwari, Outi Nyholm, Kristiina Valkama, Vito Baraka, Marc Tahita, Vivi Maketa, Berenger Kabore, Palpouguini Lompo, Eric Lyimo, Hillary Sebukoto, Adriana Krolicka, Ana Maria de Roda Husman, Tarja Pitkänen

[4C-9]
Tracking emerging viruses through Wastewater and EnvironmentalSurveillance
Guadalupe Sastre, Rosa Bermejo, María Masip, Ruben Cañas

[4C-10]
Tracking viral diversity in urban rivers: what environmental surveillance reveals about public health
Mikaela Renata Funada Barbosa, Antonio Charlys da Costa, Ronalda Silva de Araújo, Suzi Cristina Garcia, Renan Lourenço Oliveira da Silva, Maria Inês Zanoli Sato

[4C-11]
From sewers to surveillance: Estimating pathogen prevalence through wastewater-based modelling
Nancy Mondragon, Nynke Hofstra, Nikkie van Bel, Gertjan Medema

[4C-12]
What lies beneath? HEV RNA screening in Belgian Wastewaters to survey hidden shifts in Hepatitis E infections
Noor ul Hudda, Naomi De Roeck, Koenraad Van Hoorde, Steven Van Gucht, Veronik Hutse, Raphael Janssens, Hadrien Maloux, Bavo Verhaegen, Arno Furquim d'Almeida, Michael Peeters, Inge Roukaerts, Marie De Smedt, Thomas Vanwolleghem, Peter Delputte

[4C-13]
Enhancing SARS-CoV-2 Detection in Wastewater: The Impact of Inhibitor Removal on Different Concentration Methods
Noor Ul Hudda, Naomi De Roeck, Veronik Hutse, Marie De Smedt, Peter Delputte

[4C-14]
Wastewater-Based Surveillance for Viral Pathogens in São Tomé and Príncipe: A Pilot Study
Ignasi Estarlich-Landajo, Katia Toancha, Adjaia Borges, Lazismino Lázaro, Nilton Teixeira, Anery Katia-Lima, Anabela Gonçalves, Doris Winter, Asmiralda Santos, Marcos do Nascimento, Andreza Batista de Sousa, Jürgen May, Yardlene Sacramento Sequeira, Rosa Maria Afonso Neto, Katherin Schuldt, Xavier Fernandez-Cassi

Poster session 4D Wastewater and environmental surveillance - AMR
Track: Water as information source

[4D-1]
Strain-Level Profiling of Wastewater-Dwelling Clinically Important Antibiotic Resistant Bacteria with Long-Read Metagenomics of Mock Community
Huilin zhang, Feng Ju

[4D-2]
Towards a pathogen-drug framework for wastewater surveillance of antibiotic resistance with PCR: a critical review
Caroline McCormack, Sophia Roy-Burman, Sooyeol Kim, Amy Pickering

[4D-3]
The ARISE project: Pioneering wastewater-based AMR surveillance in alignment with upcoming EU regulatory changes
Theresa Hohl, Julia Vierheilig, Alexander Kirschner, Gernot Zarfel, Barbara Ströbele, Norbert Kreuzinger, Alexandra Fobe, Irina Dielacher, Michael Koller, Mats Leifels, Marlene Kalkgruber, Monika Finsterwald, Georg Zepke, Andrea Manica, Roland Martzy, Michael Ante, Sascha Klee, Uwe Graichen, Reinhild Strauß, Angela Lehner, Julia Weber, Heide Müller-Rechberger, Lia Nykyforuk, Andreas Farnleitner, Claudia Kolm

[4D-4]
Healthcare setting wastewater surveillance for antimicrobial resistance and *Candida auris*: Best practices, considerations, and wastewater access (United States)
Angela Coulliette-Salmond, Florence Whitehill, Amanda Lyons, Bethelhem Abera, Colin Adler, Margaret Williams, Maroya Walters, Magda Medrzycki, Michael Lin, Rachel Poretsky, Adam Horton, Jennifer Weidhaas, James VanDerslice, Scott Benson, Erin Driver, Rolf Halden, Kerry Hamilton, Judith Noble-Wang

[4D-5]
Wastewater-based epidemiology surveillance of antibiotic resistance through metagenomics
Rubén Cañas, Rosa Bermejo, Ester Méndez, Lola Beltrán, Florencia Yerle

[4D-6]
Determining antibiotic resistance profiles of sexually transmitted infections in Los Angeles County using wastewater-based epidemiology
Michael Saldana, Sarah Philo, Adam Smith

[4D-7]
Pandemic-Era Wastewater Surveillance: Uncovering Shifts in Antibiotic Resistance Gene Profiles from 2020 to 2024
Janina Mattersdorf, Susanne Lackner, Shelesh Agrawal

[4D-8]
Wastewater-based surveillance of Antibiotic Resistance Genes: Insights on Public Health and Environmental risks
Zoi Anastopoulou, Apostolos Vantarakis

[4D-9]
Time Series Surveillance of Antibiotic Resistance linked with 16S in Hospital Wastewater using epicPCR
Adrian Dörr, Jan Kehrmann, Ivana Kraiselburd, Folker Meyer

[4D-10]
Examination of the relationship between antimicrobial use and AMR in two neighboring wastewater treatment plants
Peter Vikesland, Amy Pruden, Liqing Zhang, Ayella Maile-Moskowitz, Connor Brown, Monjura Rumi

[4D-11]
Antimicrobial Resistance Profile of Gram-Negative Bacteria in Municipal Sewage and Primary Healthcare Unit Samples
Pedro Smith Pereira Ferraro, Milena Dropa, Solange Martone-Rocha, Dalton Walan, Beatriz Meiwald, Maria Julia Jordão de Souza Aguiar, Ana Luiza Circuncizão Marques, Guilherme Vasconcelos Damico, Gabrielly Lacerda de Aragão, Nazareno Scaccia, Leticia Fernandes da Britto-Costa, Vitor Falcão de Oliveira, Marta Angela Marcondes, Fabio Eudes Leal, Gabriela Tornon de Oliveira Xavier, Cibele Cristina Remondes Sequeira, Regina Maura Zetone Grespan, Maria Clara Padoveze, Fatima L.S. Nunes, Silvia Figueiredo Costa, Anna S. Levin, Maria Tereza Pepe Razzolini

[4D-12]
Wastewater based surveillance of antibiotic resistance in the Netherlands – validation by modeling and insight in methods and trends
Hetty Blaak, Nimrod de Wit, Floor Biemans, Guusje Jacobs, Ana Maria de Roda Husman, Heike Schmitt

[4D-13]
Comparing Antibiotic Resistance Genes in Wastewater Samples from WWTPs in Finland, Norway, and Iceland
Ananda Tiwari, Adriana Krolicka, Anastasia Karavaeva, Elisa Salmivirta, Ásta Margrét Ásmundsdóttir, Tarja Pitkänen

[4D-14]
Profiling Antibiotic Resistant Bacteria and Antibiotic-Resistant Genes associated with sewage and sewage-related environments in Valencia City using shotgun metagenomics.
Carmen Ivorra, Jose Alonso, Laura Moreno, Pau Rubio, Yolanda Moreno

[4D-15]
WASTEWATER-BASED ASSESSMENT OF ANTIMICROBIAL RESISTANCE IN URBAN AND RURAL AREAS
Maya Petricciuolo, Agnese Carnevali, Alessia Guasticchi, Sofia Barigelli, Ermanno Federici

[4D-16]
Detection of ESBL, AmpC-β-lactamase and carbapenemases genes among ESBL-producing E. coli and Klebsiella isolated from clinical specimen and hospital wastewater
Zakaria GARBA, O. J. Isidore Bonkoungou, Solange Kakou-N'Gazoa, Palpouguini Lompo, Nicolas Barro, Halidou Tinto

[4D-17]
Pathogen and ARG surveillance of two sewersheds in Raleigh, North Carolina, USA
Benjamin Clark, Judy Kays, Angela Harris

[4D-18]
Spatio-temporal analysis of the ESBL-producing Escherichia coli resistome and virulome found in urban and suburban wastewater treatment plants
Temi Ibitoye, Angela Harris

[4D-19]
Unveiling Antibiotic Resistance in the Ruhr area: A metagenomic catalog from wastewater surveillance
Josefa Welling, Sara Tahtaci, Katharina Block, Miriam Balzer, Folker Meyer, Ivana Kraiselburd

[4D-20]
Persistence and transmission of antibiotic resistance genes associated with bacterial membrane vesicles in wastewater treatment
Hongyue Zhang, Yun Shen

[4D-21]
Occurrence of Antibiotic Resistence Genes in Wastewater and Surface Waters
Štěpánka Šabacká, Kateřina Sovová, Izaro Perez Montero, Hana Zvěřinová Mlejnková

[4D-22]
Anthropogenic Pollution-Driven Dynamics of Pathogens and Antimicrobial Resistance Genes in the Periyar River: A Metagenomic and qPCR-Based Wastewater-Based Epidemiology Approach
Aparna Chakkamadathil Rajeev, Ilora Ghosh, Suma Arun Dev

Poster session 4E Wastewater and environmental surveillance - Methods
Track: Water as information source

[4E-1]
Wastewater monitoring using digital PCR
Helena Block, Silvia Magyar, Stefanie Schroeer, Dominic O` Neil

[4E-2]
Capturing a broad set of pathogens with whole influent, centrifuged influent, and wastewater solids-based methods
Sooyeol Kim, Denise Garcia, Caroline McCormack, Rui Xin Tham, Megan O'Brien, Erica Fuhrmeister, Kara Nelson, Rose Kantor, Amy Pickering

[4E-3]
Evaluation of Comprehensive workflows for Pathogen RNA Recovery for Wastewater-based Surveillance
Petra Choi, Katherine Scott, Matthew Blair, Connor Brown, Haoqiu Song, Clayton Markham, Amber Amaral-Torres, Andrew Glasgow, Amy Pruden, Peter Vikesland

[4E-4]
Evaluating different sampling and processing approaches for robust surveillance of antibiotic resistance genes and faecal pollution markers in wastewater
Julia Vierheilig, Irina Dielacher, Kasia Slipko, Theresa Hohl, Roland Martzy, Rita Linke, Helene Holzwarth, Sonia Galazka, Markus Wögerbauer, Jörg Krampe, Andreas Farnleitner, Claudia Kolm

[4E-5]
Optimising the use of passive sampling for the detection of SARS-CoV-2
Christelle Schang, David McCarthy, Monica Nolan, Rachael Poon, Kent Tseng, M Martinie, E Roibinson, C Sumpton, C Agostinhoantao, Dan West, Susie Sarkis, Yitian Yuan

[4E-6]
Effect of pasteurization on viral RNA fragments in milk and wastewater: implications for influenza virus wastewater surveillance
Katherine Graham, Caitlyn Gibson, Alexandra Szczuka

[4E-7]
Oxford Nanopore Technologies sequencing of adenovirus, norovirus and rotavirus detected in wastewater from the nine provinces of South Africa
Walda van Zyl, Lercalya Balakrishna, Janet Mans

[4E-8]
Bridging Gaps in Viral Monitoring: Passive Sampling and Future Directions for Water Surveillance
Emalie Hayes, Madison Gouthro, Megan Fuller, Graham Gagnon

[4E-9]
Harnessing non-standard nucleic acids for a highly sensitive icosaplex (20-plex) environmental surveillance assay
Hinako Kawabe, Luran Manfio, Sebastian Magana Pena, Nicolette Zhou, Kevin Bradley, Cen Chen, Chris McLendon, Steven Benner, Karen Levy, Zunyi Yang, Jorge Marchand, Erica Fuhrmeister

[4E-10]
Variability of clinical metrics in small population communities drive perceived wastewater and environmental surveillance data quality: Ontario, Canada-wide study.
Nada Hegazy, Elizabeth Renouf, Robert Delatolla

[4E-11]
Paper microfluidic device for virus detection in wastewater
Yuwei Pan, Zhugen Yang

[4E-12]
A novel use of a BIOFIRE® FILMARRAY® research configuration panel for real time surveillance of respiratory analytes in influent wastewater.
Cody Firmage, Franck Chatigny

[4E-13]
A machine learning approach for the early detection of significant changes in microbial abundance in wastewater
Ann-Kathrin Dörr, Sultan Imangaliyev, Utku Karadeniz, Folker Meyer, Ivana Kraiselburd

[4E-14]
Influence of cell concentration on the performance of different DNA extraction approaches for water and wastewater samples
Moritz Pellegrini, Claudia Kolm, Theresa Hohl, Irina Dielacher, Roland Martzy, Michael Ante, Barbara Ströbele, Rita Linke, Jörg Krampe, Andreas Farnleitner, Julia Vierheilig

[4E-15]
Diversity and abundance of phages in hospital and community wastewaters in Brazil
Ana Paula Carvalho, Mariana Almada, Ana Luiza Queiroz, Cintia Dutra Leal, Vagner Fonseca, Maria Giovanetti, Luiz Carlos Alcântara, Juliana Calábria Araújo

Poster session 4F Water and environmental surveillance · Public health value
Track: Water as information source

[4F-1]
Wastewater-based epidemiological studies on pathogens and their use in public health decision making: a scoping review
Anne-Merel R. van der Drift, Anne Welling, Erwin Nagelkerke, Rudolf F.H.J. van der Beek, Ana Maria de Roda Husman

[4F-2]
Estimations of the wastewater-based reproduction number
Sjors Stouten, Jantien Backer, Erwin Nagelkerke, Michiel van Boven, Willemijn Lodder, Wouter Hetebrij

[4F-3]
Virus surveillance in airport wastewater in Brazil: a potential for monitoring in high-traffic environments
Ana Paula Carvalho, Mariana Almada, Ana Luiza Queiroz, Cintia Dutra Leal, Vagner Fonseca, Marta Giovanetti, Luiz Carlos Alcântara, Juliana Calábria Araújo

[4F-4]
A Digital Health Framework for Predictive Surveillance and Diagnosis of RNA viruses
Jonathan Wijaya, Seungdae Oh

[4F-5]
From pipe to policy: wastewater microbiome monitoring and interventions for human and environmental health
Berna de Vries

[4F-6]
The answer to X virus: transmission mechanism within uninfected community revealed by wastewater surveillance during the policy change's window period
Yahan Yu, Xuhan Deng, Gang Liu, Lujing zhang, Peng Li, Hongtao Pang

[4F-7]
Saving Lives and Costs: Respiratory Syncytial Virus Wastewater Surveillance to Guide all infant immunoprophylaxis in Ontario, Canada
Elisabeth Mercier, Shen Wan, Robert Delatolla

[4F-8]
HEPATITIS C VIRUS RNA DECAY DYNAMICS AND PERSISTENCE IN WASTEWATER
Samendra Sherchan, rakshya baral

[4F-9]
Wastewater surveillance for addressing health disparities
Samendra Sherchan

[4F-10]
Use of passive samplers as sewage surveillance tool to monitor hepatitis A outbreak at a school in Amsterdam, the Netherlands
Maarten de Jong, Maarten F. Schim van der Loeff, Rémy Schilperoort, Harry Vennema, Charlie van der Weijden, Jeroen Langeveld, Matthijs Welkers, Maria Prins, Ana Maria de Roda Husman, Ewout Fanoy, Gertjan Medema

[4F-11]
Public health actions in response to pathogen detection in sewage: a scoping review
Maarten de Jong, Jolinda de Korne-Elenbaas, Ewout Fanoy, Gertjan Medema, Miranda de Graaf, Amrish Baidjoe, Maria Prins, Maarten Schim van der Loeff, Joost Daams, Ana Maria de Roda Husman, Janneke Heijne

[4F-12]
Using washing machine water to detect scabies (Sarcoptes scabiei)
George Sips, Wilma Stolk, Maarten de Jong, Remy Schilperoort, Paul Bijkerk, Aimee Tjon-A-Tsien, Miranda de Graaf, Jeroen Langeveld, Ewout Fanoy, Gertjan Medema

[4F-13]
The Environmental Biosurveillance Design Framework: Designing Scalable Programmes for Pathogen Monitoring in Wastewater and Other Environmental Matrices
David Walker

2025

WATER MICRO

Friday June 20

Side events Programme

WHO workshop: Priority waterborne pathogens

10:30 - 12:00

Location: Theater
Workshop organizers: Sophie Boisson, Jennifer De France

WHO has recently published pathogen background documents for the WHO Guidelines for drinking-water quality and Sanitation and health guidelines. This series of publications, to be launched at this session, is the key input for the updated Guidelines for drinking-water quality.

In addition, to support communication around the series and the updated WHO Guidelines, WHO is preparing a fact sheet that highlights priority drinking-water and sanitation pathogens, including proposing a “top 10”. In this session, key Guidelines updates and criteria that informed the selection of the top 10 pathogens will be presented. The focus of the session will be to discuss research priorities on drinking-water and sanitation-related pathogens with the view to identify priority research areas. It is hoped the session outputs will also inform prioritization for the update of WHO’s pathogen background documents.

Side event 10: Implementation of RT-PCR methods for drinking water quality monitoring under the EU Drinking Water Directive

10:30 - 12:00

Location: Balcony first floor
Workshop organizers: Gertjan Medema, Joao Brandao, Tarja Pitkanen, Rik de Vries

Although rapid detection of micro-organisms with PCR methods is well established in research, the application in the practice of water utilities lacks far behind, despite obvious potential benefits (fast, sensitive, specific) of these methods for water safety management. The drinking water sector of the Netherlands has recently received approval for the use of RT-PCR methods for *Escherichia coli* and intestinal enterococci, and have gained experience with both the steps needed to ensure the validity of the RT-PCR methods as well as their application in drinking water practice, with testing of drinking water samples after repairs or (potential) contamination events. At the European level, several institutes, health and water agencies and utilities have collaborated in an interlaboratory trial to test the comparability of the RT-PCR method for *E. coli*.
This workshop is organised with each of the parties involved in the journey towards (accepted) implementation of RT-PCR methods for statutory monitoring in drinking water practice. Each party will show their view on the strengths, limitations and feasibility of RT-PCR methods for drinking water quality monitoring. The goal is to discuss added value, feasibility and limitations of the use of RT-PCR methods for E. coli and intestinal enterococci in drinking water practice, the steps that are needed to obtain regulatory acceptance and the next steps in the development and implementation of these methods.

12:00 – 13:00

Lunch break
Location: Foyer

2025 WATER MICRO

WHO workshop: Evidence needs for updating the WHO guidelines on safe use of excreta, wastewater, and greywater in agriculture

13:00 - 14:30

Location: Theater
Workshop organizers: Sophie Boisson, Kate Medlicott

A large amount of wastewater is generated globally each year, but only a small portion is treated, and an even smaller fraction is safely reused. With growing water scarcity driven by climate change, wastewater is increasingly seen as a valuable resource for agriculture, especially in areas near cities. However, much of its reuse is informal and unsafe, contributing to the spread of disease, water pollution, and loss of economic opportunities. The current low formal utilization of wastewater, especially in Africa and Asia, presents an untapped opportunity to enhance food and water security through safe reuse. As global development shifts toward circular economies, wastewater reuse must be aligned with safety standards to avoid undermining public and environmental health. Since the 1970s, the UN system, led by WHO, FAO, and UNEP, has issued landmark guidelines on safe use of wastewater in agriculture. These have influenced national and regional policies, but no comprehensive update has been made since 2006. This workshop aims to discuss and identify key evidence gaps and needs to inform a scoping phase for updating the 2006 WHO guidelines on safe use of excreta, wastewater, and greywater in agriculture.

Side event 11: H2Omics: a refreshing dive into the water microbiome

13:00 - 14:30

Location: Balcony second floor
Workshop organizers: Pieter van Velzen, Jippe Silvius, Alicia Borneman, Elfy Ly, Adel Bou Alia, Stijn Teunissen

Microbiomes are not straightforward to look into. Still, microbiomes have become widely acknowledged in science and in society as key indicators of environmental, animal and human health. Digging in the information treasures of microbiomes routinely for tracking water quality can serve as an early warning system for pathogen circulation to the public health domain. Safe and clean water demand turned into a global top priority. This transformation includes leveraging microbiomes in bioprocesses to clean waste(water) streams, and reshaping microbiomes into intervention tools to tackle environmental challenges. To facilitate this further, this Side Event aims to bring microbiomes closer to water professionals by zooming in on water-borne disease pathogens. Participants will experience how to take a look into the water microbiome, and to dive a little deeper by incorporating a quantitative axis.

14:30 – 15:00

Tea break and farewell
Location: Foyer

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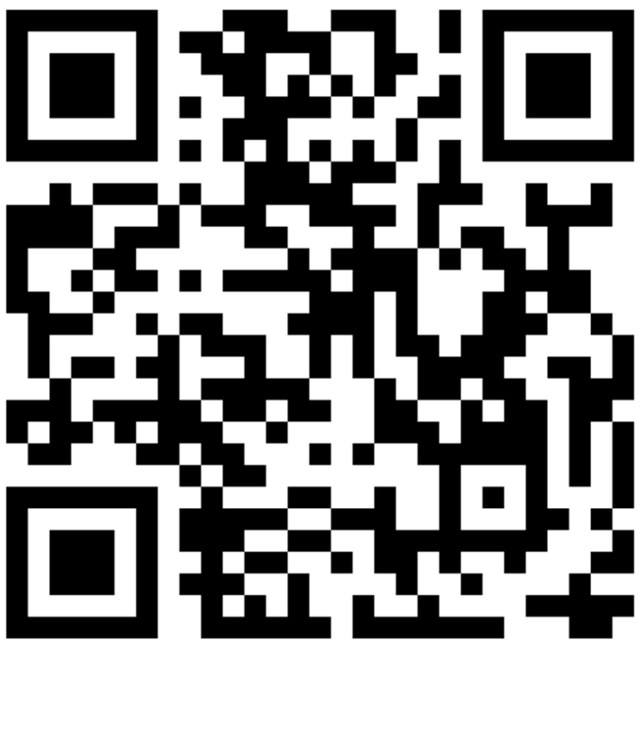
the international water association



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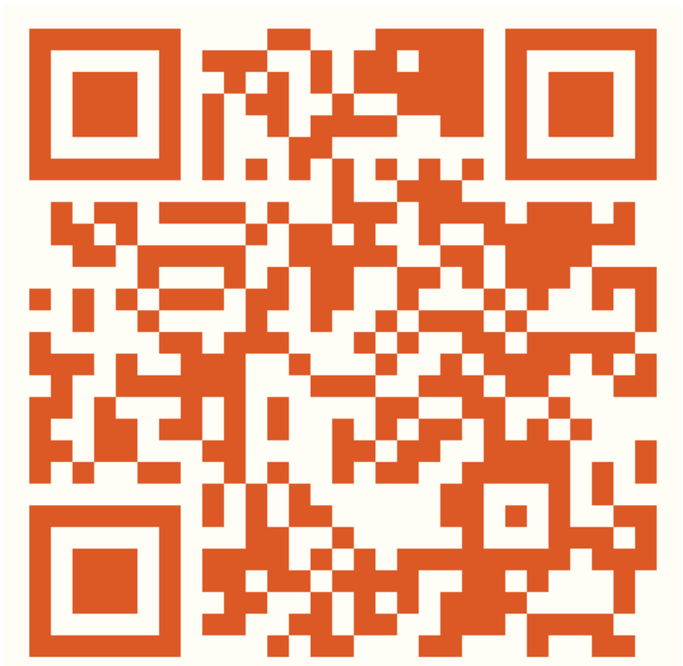

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