



Health Related Water Microbiology Specialist Group Newsletter

Volume 19 – April 2019

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Message from our chair

It is almost 2 years after we had our HRWM meeting in North Carolina and the Vienna meeting is fast approaching. The HRWM management committee and the Vienna conference organizing team are collaborating to prepare for the meeting in September this year. I am personally very much looking forward to seeing many of the group members there.

Our research field is now developing very fast, together with related fields such as molecular technology including metagenomics, regulation in microbial risk management and advanced water and wastewater treatment technologies.

As the chair of the HRWM group, I am very excited to learn more about the advances in this field at the upcoming WaterMicro conference and to see you in Vienna.

Hiro Katayama

20th International Symposium on Health Related Water Microbiology

15 – 20 September 2019,
Vienna, Austria

We are delighted that the 20th International Symposium on Health-Related Water Microbiology (HRWM) will take place in Vienna, Austria from 15-20 September 2019. The Symposium organized by the IWA HRWM Specialist Group will be hosted by the Interuniversity Cooperation Centre (ICC) Water and Health and supported by the Austrian Society of Hygiene, Microbiology and Preventive Medicine (OGHMP).



The Health-Related Water Microbiology Specialist group is involved in all aspects of public health where water has the role as a vector or reservoir of pathogens. The symposium will bring together researchers, policy makers, water practitioners from academia, industry, engineers, water utilities, public authorities and administration to exchange latest scientific findings, experience and knowhow. We expect around 300 delegates from all around the world.

The quality of water used for drinking, irrigation, aquaculture, food processing or recreational purposes has a significant impact on public health on a global scale. Faecal pollution is a primary health concern in the environment, in water and in food. The development of new indicators of faecal contamination, source tracking, risk, treatment, will also be a topic that is being discussed. Main topics include among others research on pathogenic bacteria, parasites and viruses, microbial indicators, modelling associated risk and microbial source tracking tools, as well as water treatment and disinfection, water reuse, recreational water, water management in disaster situations and extreme events, antimicrobial resistance, as well as water quality and infection

control in health care facilities. Contributions related to the UN Sustainable Development Goals (SDG) are particularly welcome.

Conference Topics

The symposium program will cover all aspects of health-related water microbiology in the whole water cycle, applied and basic research on water and microorganisms as it affects human health.

- Water transmittable pathogens
- Survival, persistence, transport, fate and occurrence
- Epidemiology of water associated diseases
- Catchment protection
- Microbial fecal pollution diagnostics and source tracking
- Antimicrobial resistance
- Water treatment and disinfection
- Modelling and prediction
- QMRA, decision analysis, water safety plans and surveillance
- Biostability
- Criteria, standards, surveillance and monitoring
- Metagenome, microbiome and community analysis
- Recreational water and health
- Water reuse and health concerns
- Water, food and health
- Tools and measures supporting water and sanitation in developing countries
- Water management in disaster situations and extreme events
- Water quality and infection control in health care facilities

All abstracts will be reviewed and summarized in an abstract booklet. After the symposium, board members will recommend authors of excellent studies to submit full paper to WST or JWH. In the submission a recommendation letter from HRWM board members will be included.

The IWA Young Water Professionals (www.iwa-network.org/young-water-professionals) are an active part in the symposium organization and program and are especially encouraged to submit abstracts. The three best abstracts authored by an YWP will be awarded with free registration fee. Submit your abstract on-line (Conference Website) and send your application and CV to: YWP@hrwm.eu Deadline 31/05/2019.

Five scholarships for authors of best abstract from developing countries will be funded by our SG HRWM. The bursary includes free registration fee and a financial support of EUR 1,500. Submit your abstract on-line (Conference Website):

www.hrwm.eu) and send your application and CV via email to: scholarships@hrwm.eu Deadline: 31/05/2019.

Registration fees

The registration includes attendance at conference sessions, booklet of abstracts, welcome reception, coffee/tea breaks and lunches. Registration of Young Water Professionals (participants born 1984 and under) includes attendance at conference sessions, booklet of abstracts, welcome reception, coffee/tea breaks and lunches, Viennese Heurigen Evening, YWP evening and the Conference Dinner.

For details, please visit the conference website at: www.hrwm.eu

A Workshop will be held on the topic: “QMRA_catch approach” and a Demonstration of the tool “Pathogen flow modelling and mapping” will be presented. Workshops in cooperation with WHO: “Antibiotic Microbial Resistance” and “Coliphages as additional faecal indicators” are under preparation.

We are pleased that the **IWA Specialists Groups** SG Disinfection (Chao Chen, China and Andrea Turolo, Italy) and SG Resource Oriented Sanitation (Günter Langergraber, Austria) have expressed their interest in contributing to the symposium program.

We invite you cordially to submit abstracts!

Important dates are:

22 April 2019: **Submission closes**
 30 May 2019: Notification of acceptance
 30 June 2019: Early Bird Registration Deadline

Besides the scientific program enough time for networking, enjoying company and good food in a relaxing atmosphere is foreseen. Possibilities for technical excursions will be offered. The open meeting of the SG HRWM will be held on Wednesday, September 18, 2019.

The **conference venue** is the Campus of the University of Vienna (founded in 1365), which combines modern infrastructure and historic flair. The campus is located within walking distance to the city centre and can be easily reached by public transport. Address: 1090 Vienna, Spitalgasse 2.

The Austrian Society for Hygiene, Microbiology and Preventive Medicine supports our symposium in organizational matters.

We are looking forward to welcome you at HRWM 2019 in Vienna! Regina Sommer and Andreas Farnleitner (conference chairs) for the Team of ICC Water & Health



Invitation to Host WaterMicro 2021

**Call for applications to host WaterMicro2021
(Closing Date 31 May, 2019)**

Contact: Daisuke Sano at
daisuke.sano.e1@tohoku.ac.jp

Health-Related Water Microbiology (HRWM) is one of the Specialist Groups of the International Water Association (IWA). Our group was the first of the specialist groups, installed in 1977 as Water Virology Specialist Group (within the former IAWPRC). The Specialist Group is a forum for the exchange of scientific information in the field of health-related water microbiology. This encompasses many fields of expertise: from environmental to clinical virology, bacteriology and parasitology, from infectious diseases epidemiology to risk assessment methodology; from water treatment engineering to environmental health practice.

The IWA SG on HRWM organizes the international symposium biennially and our members play a key role in deciding on the venue and planning the symposia. We cordially invite our SG members to propose venues to host WaterMicro2021. In order to host the conference, it is necessary to ensure you can provide the following:

- Team (including experience running conferences)
- Suitable venues and facilities for the conference session for about 300 participants.
- What country can offer (water issues/experience/differences)
- How above fits into global HRWM
- Hotel accommodation for approximately 300 participants.
- Meals (i.e. coffee/tea breaks and lunch) for approximately 300 participants.
- A social-cultural programme.

The venue for WaterMicro2021 will be decided by a vote in the open business meeting during WaterMicro2019 at Vienna. HRWM Management committee will ask the applicants to give an invitation speech prior to the vote.

You can find the application form at <https://hrwm-watermicro.com>, or ask HRWM Secretary via email: daisuke.sano.e1@tohoku.ac.jp

Applications should be submitted to the Secretary of HRWM SG via email (daisuke.sano.e1@tohoku.ac.jp) by 31 May, 2019.



Become an IWA member

Not yet a member and interested in joining IWA and specifically HRWM ? Then click on the link below and see how you can become a member of this family.

<http://www.iwa-network.org/membership.php>

Huw Taylor Prize

Closing Date:

31 May, 2019)

No late submissions will be accepted.

Contact:

Nicholas Ashbolt at ashbolt@ualberta.ca



Background

The Health-Related Water Microbiology (HRWM) Specialist Group of the International Water Association (IWA) honored Huw Taylor by establishing a continuing award to be presented in his name every two years to a deserving investigator. It was the HRWM Board's unanimous decision to establish this prize and awarded Professor Huw Taylor with the first prize in recognition of his exceptional contribution to the

Health-Related Water Microbiology science field and to the HRWM Specialist Group.

His outstanding research has been instrumental to the development of Microbial Source Tracking as scientific method and later application tool to identify contamination sources, both in developed and developing settings, from mapping contamination sources in river and marine systems in the UK and Europe, to mapping and managing disease transmission in Indian megacities. His research is providing water and sanitation solutions in Haiti, West Africa, Brazil, Malawi, Kenya, Nepal and India. He assisted the NGO Médecins Sans Frontières in Haiti during the cholera outbreak that followed the 2010 earthquake to design a safe treatment system for cholera hospital wastewaters. He coordinated an international WHO expert team to advise on the sanitation response in the Ebola outbreak in West Africa in 2014-2016. He also developed novel-low cost approaches to disinfecting human waste in emergency settings and microbial source tracking methods.

The second Prize will be announced during the HRWM biennial meeting in Vienna, Austria in 2019. Details (see below) pertaining to the prize will be described to the HRWM membership in the HRWM newsletter.

Objective

To assist and encourage using outstanding research in the field of health-related water microbiology that is applied to provide water and/or sanitation solutions in emergency and/or developing settings.

Criteria

- Nominees may be students and researchers that have produced outstanding research in the field of HRWM to provide water and/or sanitation solutions in emergency and/or developing settings.
- Nominees have conducted research in the abovementioned settings and the research has led to (or is leading to) tangible solutions in water and/or sanitation to improve the health of the population in this setting.
- Nominees should generally have published their research in peer-reviewed journals.
- Nominees must be members in good standing of the IWA-HRWM Specialist Group.

Nomination Process

- Candidates may be nominated by IWA-HRWM members, their institution of higher

learning, or other organization involved in the HRWM field.

- Nominations must include the name, address, age, educational background, relevant employment history, and HRWM experience of the nominee.
- Nominations must include a narrative summary, not to exceed two typed pages, supporting the qualifications of the nominee and the basis for the nomination.

Selection Process

- A standing committee to be known as the Huw Taylor Prize Committee will review nominations for the award.
- The Huw Taylor Prize Committee will consist of HRWM members recommended by the existing nominations/recruitment committee and appointed by the HRWM chair.
- The Huw Taylor Prize Committee will consist of at least three members, at least one of which will be an HRWM board member or officer.
- Huw Taylor Prize Committee members will serve four year terms and one member will be replaced every two years.
- The Huw Taylor Prize Committee will be the final authority in the selection of the awardee.
- A successful candidate will be notified of the award by the HRWM Chair.

Nature of Prize

- The award will consist of a prize statue, a framed certificate identifying the recipient, and a stipend for registration costs associated with the IWA-HRWM Specialist Group meeting scheduled for the year of award.
- Huw Taylor Prize recipients are expected to give a presentation on their work during the meeting for which they receive the award.

Prize jury

- Prof. Nicholas Ashbolt (Chair), Canada
- Dr. Celia Barardi (Secretary), Brazil
- Dr. James Ebdon, UK
- Prof. Gertjan Medema, Netherlands

Deadlines

Application Deadline: 31 May, 2019

Award Notification: 30 June, 2019

Applications should include the following:

- Completed Nomination Form
- At least one letter of support, giving the basis for nomination and supporting the qualifications on research on which the nomination is based (free format).

- Curriculum vitae of the nominee (free format).

You can find the application form at <https://hrwm-watermicro.com>, or ask HRWM Secretary via email: daisuke.sano.e1@tohoku.ac.jp

Curriculum Vitae

Enclose a current CV for the candidate.

Letter(s) of Support

Enclose at least one letter in support of the nomination, testifying the contributions of the candidate to the Health-Related Water Microbiology field and work in developing countries if applicable.

Applications should be submitted to the Chair of the Prize Jury via email (ashbolt@ualberta.ca) by 31 May, 2019.

IWA-HRWM Willie Grabow Young Investigator Award

Closing Date 31 May,
2019)

No late submissions will
be accepted.

Contact: Bettina Genthe
at bgenthe@csir.co.za



Background

The IWA-HRWM Willie Grabow Young Investigator Award was officially announced in June 2009 during the 15th International Symposium on Health Related Water Microbiology, WaterMicro 2009, in Naxos, Greece. Professor Willie Grabow, a brilliant environmental virologist, dedicated part of his professional life to implementing the IWA and specialist group concept, and giving technical and scientific support to developing countries in the environmental microbiology field. He continues to inspire emerging scientists. The award, generously sponsored by IDEXX Laboratories, Inc. is presented biennially in conjunction with the HRWM Symposium.

Objective

The IWA-HRWM Willie Grabow Young Investigator Award is made for the purpose of assisting and encouraging young scientists, who

are doing outstanding research in the field of health-related water microbiology, specifically in developing countries.

Award

The award consists of a stipend for travel, lodging and registration costs for the HRWM Symposium the year of the award (not to exceed US \$4,000 (four thousands US dollars)). In addition, a plaque will be presented to the recipient at the Symposium's Gala dinner. The Award winner will be asked to give a presentation on their work applicable to developing countries during the Symposium.

Nomination Process

A candidate must be nominated. Nominators may be HRWM members, schools or other organizations involved in the Health Related Water Microbiology field.

Selection Criteria

Candidates need not be a current Member of IWA, although they should preferably have some past involvement in the HRWM Specialist Group and are encouraged to become an IWA member.

To be eligible for the Award, a nominee shall not be older than 35 years on the deadline date for applications (31 May, 2019).

Candidates conducting research in a developing country will have advantage in the selection process.

Research published in peer-reviewed journal(s) will be considered an advantage in the selection process.

Evaluation Process

Award Submissions will be received by the Chair of the Award Committee. Submissions will be compiled/organized and distributed for review by the Committee. Candidates not in compliance with application rules will be disqualified. The selection criteria will drive the evaluation process. In judging the candidates research the originality shown and the major contributions in the area of health related water microbiology will be considered. Results of the application will be sent to the applicants. The decision of the Award Committee will be final.

Award Committee

- Ms. Bettina Genthe (Chair), South Africa
- Dr. Andreas Farnleitner, Austria

Deadlines

Application Deadline: 31 May, 2019

Award Notification: 30 June, 2019

Applications should include the following:

- Completed Nomination Form
- At least one letter of support, giving the basis for nomination and supporting the qualifications on research on which the nomination is based.
- Curriculum vitae of the nominee.

You can find the application / nomination form at <https://hrwm-watermicro.com>, or ask HRWM

Secretary via email:

daisuke.sano.e1@tohoku.ac.jp

Curriculum Vitae

Enclose a current CV for the candidate.

Letter(s) of Support

Enclose at least one letter in support of the nomination, testifying the contributions of the candidate to the Health-Related Water Microbiology field and work in developing countries if applicable.

Applications should be submitted to the Chair of the Award Committee via email (bgenthe@csir.co.za) by 31 May, 2019.

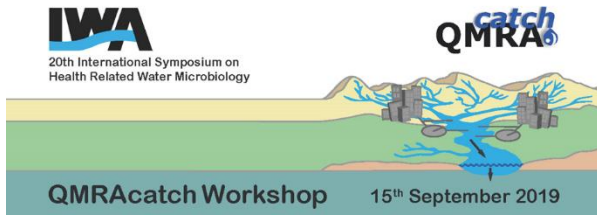
Call for Nominations – HRWM Management Committee (MC)

We are looking for members for the Management Committee! Open call starting in June 2019!

An open call for Nominations to Management Team will be sent via email to all IWA members by Lisa Andrews, IWA Specialist Groups Officer.

If you are interested in group management and would like to contribute to our group success please submit your nomination. **Young Water Professionals** are especially encouraged to participate.

The current Management Team (MT) members will be able to re-nominate themselves as well to express their interests to continue. After the new MT is elected, MT members among themselves will self-nominate and elect for the group chair and secretary position.



Sunday, September 15th, 2019

Catchment and process-based water quality models including quantitative microbial risk assessment (QMRA) are increasingly needed for supporting proactive water safety management. QMRACatch is an interactive user-friendly computational tool for simulating microbial concentrations in a river including quantitative microbial risk assessment (QMRA). The tool was jointly developed by the Interuniversity Cooperation Centre for Water and Health (www.waterandhealth.at) and the Dutch National Institute for Public Health and the Environment targeting users from drinking water companies, research, and policy makers worldwide.

The workshop will take place on Sunday, 15th September 2019, the day of the welcome reception of the 20th International Symposium on Health Related Water Microbiology in Vienna.

The participants will gain an insight into the modelling approach and hands-on experience in calibrating the tool and simulating management scenarios for water safety planning. QMRACatch allows simulating concentrations of health-related bacteria, viruses and protozoa in rivers and river/floodplain systems. It integrates data on faecal indicators, microbial source tracking (MST)-markers and pathogens to elucidate optimal catchment protection and treatment requirements (log-reductions) for health-related water safety management.

Further Information:

On-line registration until July 15th, 2019:
<http://www.hrwm.eu/>

Places are limited.

Contact: derx@hydro.tuwien.ac.at

Citations: DOI: 10.2134/jeq2015.01.0048;
 DOI: 10.2134/jeq2015.11.0560



Conference Workshop - Coliphages, a viral indicator to improve the Microbiological Water Quality

Friday, September 20th, 2019

For more than 75 years, coliphages have been studied and considered as indicators of microbial quality of water. Standardized methods have been developed for different national and international standardization bodies that allow to address them for its application in directives and regulations. In the last years, they have been formally proposed as viral indicators of water quality in different guides for water safety and have also been incorporated into regional or national regulations for the management of water, bio-solids and shellfish (Australia, Canada, North Carolina, France, Colombia).

Recently, the determination of coliphages has been included as one of the core microbiological parameters in the proposal of the European directives for drinking water and reuse water. Also, the determination of coliphages in the management and monitoring of recreational waters in the USA has been proposed. Moreover, they have been proposed as MST (cultivable or molecular targets) host-associated markers, and they have an important role in the horizontal transmission of antibiotic resistance genes. In view of all this, the interest of coliphages as microbial indicators in different regulations and environmental questions is a current high-lined issue.

In this workshop, the use of coliphages not only as indicators of the microbial quality of water but also for food and biosolids will be presented and discussed. New approaches and emerging considerations will be debated, as well as new approaches for their detection and enumeration, their role in the dispersion of resistance to antibiotics and their use as host-specific markers in microbial source tracking prediction models.

Organisers

Jennifer de France, Gertjan Medema, Mark Sobsey, Sharon Nappier, Anicet R. Blanch

Developing rapid on-site diagnostics for the molecular detection of fecal indicators and MST markers

Methods for the molecular detection of pathogens and (source-associated) indicators for fecal pollution are a growing field in health-related water microbiology. Their application however is currently restricted to specialised labs and research institutions which have the necessary equipment (e.g. qPCR cyclers) and expertise. In an effort to role out molecular diagnostics into the field the TU Wien and the ICC Water & Health (www.waterandhealth.at) have recently launched an initiative for rapid on-site diagnostics in the water microbiology field.

Isothermal DNA amplification methods are used to detect genetic markers and the products can be visualised by simple staining or lateral flow devices. To date assays for the detection of intestinal enterococci and for a ruminant-associated source tracking marker have been developed. The next steps are the implementation of rapid and simple DNA extraction procedures and the implementation of the detection methods in a low-cost portable device that allows DNA extraction, target amplification and data readout on site and can be used by non-specialists.

The mid-term aim is to give a broad range of users from water quality labs and water utilities to public authorities access to the vast possibilities of molecular DNA-based detection methods for water quality assessment.

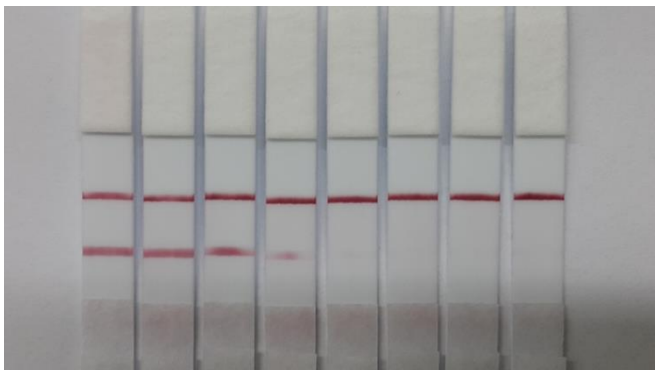


Figure 1: Lateral flow strip tests for the detection of BacR markers amplified by isothermal amplification.

Citations:



DOI: 10.1007/s00216-018-1553-1
 DOI: 10.1038/s41598-018-36749-7
 DOI: 10.1007/s00216-018-1553-1
 DOI: 10.1016/j.watres.2017.05.023

HRWM Board

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Editor's note

We would like to make this newsletter relevant, with a balance of news and technical input from all SG members. If you have news or contributions that may be relevant or feedback to improve the newsletter, please mail your information to msteyn@csir.co.za. The next newsletter is planned for October 2019.