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## Message from the NEW Chair

"The long and Winding Road" may remind many of you of a Beatles song; however, it is also a story of the Health-Related Water Microbiology. The story is long, and our Group has been piloted by many excellent leaders through some windy times, and through some excellent times. Our planet is in peril as a result of mostly greed and mismanagement by those in power, but we are doing something as a group that fills me with excitement and pride. Many ideas, approaches, methods have been discussed at our meetings, and many of these have helped improve the water situation in many places around the world. Every two years, our group meets and we see old friends, make new ones, but mostly, we discuss our research and ideas. These discussions are the heart of our meetings. Our group survives on the shoulders of the Steering Committee and the many volunteers who give their time and effort completely out of the goodness of their hearts; even as a conference is closing, the next one is being planned, and it takes a lot of effort to eventually make it. We have been so incredibly fortunate, since all meetings have gone smoothly, with some bumps along the way. I, as the incoming Chair of our group have been involved for several decades at different levels, and have seen the good, the bad and the ugly, but kept going because I know that my contribution, however small, is magnified 1000X by the contributions of all of you. I indicated in Lisbon that our group is only as good as the members, and I would like to remind all of you that I expect your full cooperation.

New ideas? bring them up. Problems? talk to the Past-Chair...., no, bring them up as well. This is YOUR Group, and what you do, or what you do not is reflected on all of us. Water Micro2017 is being planned, and the bids for later ones are streaming in as well; Australia, Italy, Canada have thrown their hats in the ring, and I wish them good luck. As I get into the time of my life when "senior moments" become more prevalent, I would like to see one more effort from the young scientists; let us keep our group as one where the historical memory remains active forever, where bio-informatisists meet those who are using media plates, since both are needed to make sense of our complex data. Young scientists need to have a more active role in our group, as do students. Talk to us, let us prepare the next generation of scientists together, since all of you eventually will be in the "senior moments" group, sooner than you think.

I am looking forward to an exciting two years working hand-in- hand with every single one of you. I also take the time to thank the Past-Chair, Marion Savill, who did a great job, especially behind curtains to lead us these past two years. Marion had to deal with lots of unexpected problems, but she came out on top!

I take this opportunity to thank her for her work on behalf of our Group. And to you all, I would like to say that the hard work has just started. Thanks for being in the same boat, and I hope we all paddle in the same direction".



Gary A. Toranzos, Ph.D.

Chair



## Inspiration from the PAST Chair

Farewell but not Good Bye.....

I have loved being your Chair for the last two years. It has been an honour. I would like to leave you with a final thought of where our group can have significant input. It is "One Water One Health". A growing area of importance internationally" is where water as a whole is assessed and not the individual silos. The concept is becoming increasingly important with climate change occurring impacting on water scarcity. From the international perspective, the transition to the Sustainable Development Goals (SDG) and the content of SDG6 reflect that the world is nearer a true One Water concept. The medical world is also starting to think about "One Health" where humans, animals and the environment are all considered as a whole. Our group also focusing on the health aspects adds a new dimension so that we have "One Water One Health". This concept is starting to be addressed at different symposia and is one we in HRWM need to focus on in the future. We have the microbiological skill sets required to address this. By working with the IWA Clusters and Programs and incorporating all skills our Board plans to develop the "One Water One Health" theme.

I'd like to leave you with a photo from our HRWM meeting in Rotorua having fun.



You all keep having fun with your work

Marion,

Past Chair

## Conferences

World Water Week,  
Stockholm

**28 August – 2 September 2016**

<http://www.worldwaterweek.org/>

2016 Water & Health  
Conference

**10 – 14 October 2016**

<http://waterinstitute.unc.edu/conferences/waterandhealth2016/>

5<sup>th</sup> Food and Environmental  
Virology (FEV) Conference  
(ISFEV) 2016

**13 -16 September 2016**

<http://isfev2016.isfev.org/>

IWA World Water Congress,  
and Exhibition

**9 – 14 October 2016**

<http://www.iwa-network.org/event/world-water-congress-exhibition-2016/>

IWA Microbial Ecology in  
Water Engineering &  
Biofilms

**4 – 7 September 2016**

<http://www.mewe2016.org/>

## Best Presentation Award WaterMicro2015

Tamar Kohn

## Best Poster Award WaterMicro2015

Rebecca Scott

## Grabow award 2015

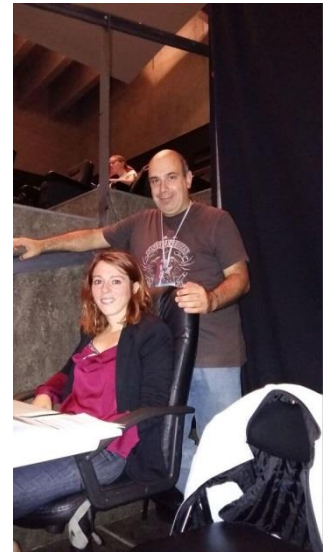
Dr. Kwanrawee Joy Sirikanchana from Thailand won the 2015 IWA-HRWM Willie Grabow Young Investigator Award sponsored by IDEXX.



Photo: Manja Blazer (Honorary HRWM Board member, representing the sponsors of the award, IDEXX); Dr Kwanrawee Joy Sirikanchana; and Bettina Genthe (ex Board Member).

## WaterMicro 2015 Highlights

2015 has seen yet another fantastic conference of the IWA HRWM SG come to a close. The conference, which was held in Lisbon Portugal was organised by two valuable SG members, Ricardo Santos and Silvia Patricia Nunes Monteiro. WaterMicro 2015 was attended by 250 people from all over the world representing 36 countries (14 developing countries). It was marked by a full technical programme. Of the 254 abstracts received, 63 was accepted for oral presentations, 190 posters and 12 invited speakers. The conferences was concluded by two WHO workshops 1) Ebola and 2) Antimicrobial resistance genes.



## Ebola and water: Key questions concerning Sanitation and Hygiene

HRWM Workshop,  
September 18<sup>th</sup> 2015



The workshop, organized in the group by Rosina Girones, discussed key questions related to the recent Ebola epidemic in Africa. Invited speakers were, Marion Savill, Paul Hunter, Mark Sobsey, Kelly Edmunds and Kate Medlicott. The workshop ended with a round table to discuss open questions, the present and future of WASH and emerging diseases, co-chaired by Gary Toranzos and Rosina Girones. Recommendations on WaSH protocols were discussed and clarified as well as the need of new experimental data for improving protocols for disinfection and management in the context of Ebola epidemics.



## Professor Joan Rose wins 2016 Stockholm Water Prize



The former chair of our specialist group, Professor Joan Rose, Michigan State University, was announced the winner of the 2016 Stockholm Water Prize. The Stockholm Water Prize, the world's most prestigious water award, honors distinguished researchers who have largely contributed to the well-being of the whole planet through the water-related activities, including the conservation and protection of water resources.

Stockholm Water Prize was founded by the Stockholm Water Foundation, and is supported by the Royal Swedish Academy of Sciences, the International Water Association, the Water Environment Federation and the City of Stockholm. The Founders of the Stockholm Water Prize are united in their conviction towards a water wise world, according to the website of Stockholm International Water Institute (<http://www.siwi.org/prizes/stockholmwaterprize/>).

H.M. King Carl XVI Gustaf of Sweden, Patron of Stockholm Water Prize, will present the prize to Professor Joan Rose in the prize ceremony held at the Stockholm City Hall on August 31, 2016. The laureate will also have the privilege of presenting a lecture at the Opening Plenary of the World Water Week in Stockholm later this year.

Text: Daisuke Sano

## WaterMicro 2015 Highlights

### Eating



### Networking



### Dancing



Photos: Wolfgang Vogl



## HRWM 2017 Update

The 2017 IWA Health Related Water Microbiology Conference will take place May 15-19 at the University of North Carolina at Chapel Hill, USA. The Conference is hosted by The Water Institute at UNC and will be under the leadership of Drs. Mark Sobsey, Jamie Bartram, Rachel Noble and Jill Stewart.

The HRWM will coincide with UNC's 2017 Water Microbiology Conference. IWA participants will be able to participate in all conference sessions as well as several IWA only sessions. The conference will comprise verbal and poster presentations, as well as side event sessions, all of which will be selected from submitted abstracts and proposals. The conference will also contain several events geared specifically at networking. Opportunities will also exist for arranged visits and tours of labs and other sites of interest. Information regarding abstract and proposal submission, as well as registration fees will be announced in mid-2016.



## Call to host WaterMicro 2019

Are you interested in hosting the 2019 HRWM Symposium? If so, please email your interest to the HRWM board at [gary.toranzos@upr.edu](mailto:gary.toranzos@upr.edu)

You will then be sent details on submitting a full proposal and budget outline. The deadline for proposals is **June 2, 2016**.

## HRWM SG Young Water Professionals (YWP)

Are you interested in playing a more active role as a young water professional, specifically in the IWA Health Related Water Microbiology Specialist Group? Well now is your chance. Please familiarise yourself with the rules of the game at: <http://www.iwa-network.org/young-water-professionals.php>

Please email your interest and specific ideas to [msteyn@csir.co.za](mailto:msteyn@csir.co.za) You will then be included in a mailing list specifically for HRWM SG YWP and you will then be contacted to form part of the forum to generate ideas towards WaterMicro 2017.

### General information: Connect and Contribute

As an IWA member we encourage you to connect and contribute to:

**Thematic Programmes** – IWA is pleased to offer our YWPs the ability to get some work experience by contributing to the projects in the programmes. Please contact the programme coordinator in case you are willing to offer support.

**YWP Country Chapters** – Find out if IWA is active in your country and whether they have specific YWP activities you can become involved in.

**YWP Events** – Attend, participate and organise YWP dedicated events.

**Specialist Groups (SG)** – Find the SG in your field and get in contact with its members, bring in new ideas and offer to organise other YWPs under the group. Read about our YWPs previous experiences in the Newsletter.

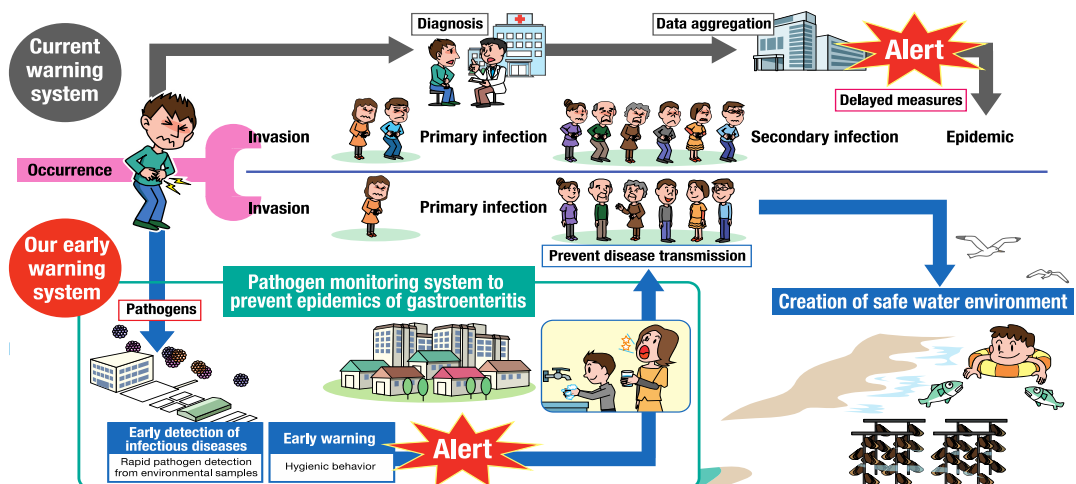
## Research spotlight




## Development of an early warning system for acute gastroenteritis by monitoring human enteric viruses in sewage

In Japan, current surveillance systems for acute gastroenteritis is based on the report from pediatric clinics, and the division of health and welfare in a local government issues an alert when the number of gastroenteritis cases reaches 20 per clinic per week. This alert encourages local residents to take preventive measures such as hand washing, and it has been issued in late January or early February in the middle of norovirus season every year. To further reduce the number of gastroenteritis cases, a warning should be issued on the rise in a community telling that the gastroenteritis season has started. Human enteric viruses are shed in feces of infected individuals at a high concentration, and concentration of viruses in sewage may reflect the occurrence of infections in a catchment area. Therefore, monitoring of enteric virus concentration in sewage can be used as one of the parameters to detect the increase of gastroenteritis cases (**Figure 1**).

A research project “Innovation of water monitoring systems with rapid, highly precise, and exhaustive pathogen detection technologies” supported by the Japan Science and Technology Agency (JST) through Core Research for Evolutional Science and Technology (CREST) program is aimed at developing the early warning system for gastroenteritis on the basis of sewage monitoring. The research director of this project is Professor Tatsuo Omura (Tohoku University) and principal leaders are Professor Hitoshi Oshitani (Tohoku University) and Professor Toru Watanabe (Yamagata University).



**Figure 1.** An early warning system for acute gastroenteritis by monitoring human enteric viruses in sewage.



Since the project was launched in 2011, analytical techniques such as microfluidic quantitative PCR and second-generation sequencing have been optimized, and environmental and clinical surveillance data which support the early warning system have been accumulated for over 4 years. The research team is now in the stage of pilot study that the gastroenteritis warning is issued in a community based on the weekly monitoring of viruses in sewage.

### Meeting with local stakeholders

On February 19th, 2016, the research team organized the first meeting with stakeholders such as people from a local government (public sewage division), food hygiene, fishery, and tourism associations, and a clinic in a community. The community is located in an estuary and is famous for beautiful scenery and oyster production. Therefore, viral contamination of water environment is of great concern. The stakeholders gave comments and suggestions and agreed to conduct the pilot study in the community. Some stakeholders were concerning that tourists may refrain from visiting this community when they misunderstand the warning for the situation that viruses are spreading in the community. The greatest care should be taken in the explanation of warning when it is issued.

### Symposium for local residents

To gain wider understanding of research project, the research team held symposium for local residents on the same day of the meeting with stakeholders (**Photos**). Prof. Omura explained the early warning system and Prof. Oshitani gave a basic talk about infectious diseases and preventive measures. The local stakeholders from fishery and tourism associations commented on the pilot study and local residents asked questions to the research team. Close to 300 people participated in the symposium. The research team found that 89% participants feel the necessity for additional measures against norovirus infections and 67% have high hopes for the early warning system based on sewage monitoring according to a questionnaire survey in the symposium.



**Photos.** Symposium for local residents. Prof. Omura and Prof. Oshitani gave talks to the participants, and the local stakeholders from fishery and tourism associations commented on the pilot study.

*CREST is a funding program supported by the Japan Science and Technology Agency (JST) and the research team of Prof. Omura received the grant of 520 million JPY (4.6 million USD) in a research area of "Innovative Technology and System for Sustainable Water Use" supervised by Prof. Shinichiro Ohgaki (President, Japan Water Research Center). If you want to know more about this research area in CREST program, visit the website: <http://www.water.jst.go.jp/en/index.html>*

The research team members: Fukushi, K.; Inaba, M.; Ito, E.; Ito, H.; Kanaya, Y.; Kazama, S.; Konta, Y.; Kubota, K.; Liu, X.; Manaka, T.; Masago, Y.; Miura, F.; Miura, I.; Miura, T.; Okimura, Y.; Omura, T.; Oshitani, H.; Pu, J.; Saito, M.; Tohma, K.; Ueki, Y.; Watanabe, T.



## Research spotlight

### Microbial source tracking using Bacteroidetes



Motivated by recent collaborative work on the evaluation of Bacteroidetes genetic faecal markers targeting ruminant and human sources (Reischer et al. 2013) a group of HRWM researchers around Andreas Farnleitner, René Mayer and Georg Reischer from the TU Wien, Austria, started a new collaborative effort to investigate the occurrence of human-associated microbial source tracking markers in untreated and treated wastewater. Collaboration partners from 13 countries around the globe have collected raw and treated sewage samples from rural and urban biological wastewater treatment plants. The concentrations of 5 different human-associated genetic markers were then determined in the collected wastewater samples. The project that is currently in its final stages and shows that most of the investigated markers are highly prevalent around the globe and occur at very comparable concentrations.

This idea for these studies originated at meetings of the Health-Related Water Microbiology Specialist Group and is dedicated to the spirit of the IC sewage ([www.cws.msu.edu/ic-sewage](http://www.cws.msu.edu/ic-sewage)) supporting intelligent faecal pollution diagnostics of the future.

#### Cited literature

**Reischer, G.H.**, Ebdon, J.E., Haider, J.M., Schuster, N., Ahmed, W., Åström, J., Blanch, A.R. Blöschl, G., Byamukama, D., Coakley, T., Ferguson, C., Goshu, G., Ko, G., de Roda Husman, A.M., Mushi, D.W., Poma, R., Pradhan, B., Schade, M.A., Sommer, R., Taylor, H., Toth, E.M., Vrajmasu, V., Wuertz, S., Mach, R.L., Farnleitner, A.H. (2013) Performance characteristics of qPCR assays targeting human- and ruminant-associated Bacteroidetes for microbial source tracking across sixteen countries on six continents. *Environ Sci Technol* 47(15):8548-8556.







## Global Trends and Challenges

The Second Edition of the “Global Trends & Challenges in Water Science, Research and Management” by SGs and Clusters was written by Gary Toranzos, Marion Savill, Hiroyuki Katayama, Gertjan Medema, Rosina Girones, on behalf of the Specialist Group.

The following key global trends and challenges are described and the full text will be available on the IWA website:

- Microbial Risk Assessment
- New emerging pathogens and NGS techniques
- New indicators of fecal contamination/risk/treatment
- Contamination Sources and Microbial Source Tracking
- Antibiotic resistance in water

## HRWM at the IWA, World Water Congress and Exhibition, Brisbane Queensland, Australia

9 – 14 October 2016

A proposal from Marion Savill for a workshop entitled “The Practical Use of Water Safety Plans being Implemented in Asia/Pacific Region and their Use in Managing the Effect’s of Extreme Events” has been accepted by the World Water Congress and Exhibition 2016 Programme Committee in Brisbane, Australia.



## 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>

### Editors 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](mailto:msteyn@csir.co.za) The next newsletter is earmarked for September 2016.

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