

# HRWM News

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International  
Water Association

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## WaterMicro 2011

September 18 - 23, 2011

Rotorua, New Zealand

WWW.HRWM2011.ORG

## WaterMicro 2011

**Invitation to the 16th International Symposium on  
Health-Related Water Microbiology  
September 18-23, 2011. Rotorua, New Zealand**

Dear HRWM members,

We welcome you to join us in Rotorua, New Zealand for the 16th International Symposium on Health-Related Water Microbiology, WaterMicro 2011. Rotorua, the tourist capital of the North Island of New Zealand has much to offer visitors including famous geysers, mud pools, and thermal springs, lakes, mountain biking and hiking trails, excellent food, and the traditions of the Maori culture.

Many of you will have heard the news about the devastating earthquake which struck Christchurch on February 22nd. Christchurch and Rotorua are on separate Islands and we assure international delegates that the conference will not be affected. If you have any concerns or questions please feel free to contact the conference organizer, Lea Boodee at [lea@on-cue.co.nz](mailto:lea@on-cue.co.nz).

In light of this natural disaster and others in the past months, the WaterMicro 2011 Symposium will include a Natural Disasters Workshop (Earthquake and Tsunami). In addition, symposium highlights include a joint session with the Diffuse Pollution Group, Catchment Microbial Modeling workshop, a welcome reception held at one of New Zealand's most loved buildings, the Blue Baths faithfully restored to their unique 1930's ambience, and a Gala dinner with traditional entertainment.

WaterMicro 2011 has been scheduled in accordance with the 2011 Rugby World Cup in New Zealand, thus to guarantee cheap flights we recommend you book your flights as soon as possible. We have secured special rates for delegates at various hotels, motels and backpackers around Rotorua and these can be booked with your registration. If you would like to book accommodations before you register or require any assistance with travel to Rotorua please contact Lea Boodee at [lea@on-cue.co.nz](mailto:lea@on-cue.co.nz).

**Early bird Registrations close on 5th August 2011.** To register please visit the WaterMicro 2011 website at [www.hrwm2011.org](http://www.hrwm2011.org).

We look forward to welcoming you to Rotorua in September.

Best Regards,  
Conference Chair  
Marion Savill  
Affordable Water

## Important Dates

**August 5, 2011**

WaterMicro 2011 Early Registration  
Discount Deadline

**August 31, 2011**

Absentee voting closes

**September 18-23, 2011**

WaterMicro 2011 Symposium,  
Rotorua, New Zealand

**September 18, 2011**

Catchment Microbial Modeling  
Workshop

**September 20, 2011**

HRWM and Diffuse Pollution  
Joint Session

**September 21, 2011**

IC Sewage Meeting

**September 22, 2011**

HRWM Business Meeting  
HRWM Gala Dinner

**September 23, 2011**

Extreme Events Workshop

**September 16-21, 2012**

IWA World Water Congress &  
Exhibition, Busan, Korea

## Business Meeting

HRWM will hold it's annual business meeting during the WaterMicro 2011 Symposium in Rotorua, New Zealand on **Thursday September 22nd at 4:30pm**.

In addition updates, voting will take place for the Vice Chair position and the WaterMicro 2013 destination. See page 3 for election and voting details. All WaterMicro 2011 attendees are invited to attend the business meeting however please note you must be a registered member of IWA to cast a vote.



## Water Micro 2011 Rotorua, New Zealand

### Venue:

Rotorua Energy Centre

### Dates:

September 18-23, 2011

### Topics:

Water pollution and diseases; Microbial source tracking; Catchment protection; Biofilm studies; Water and sanitation in developing country; Climate change and water quality; Recreational water and health; Epidemiology of waterborne diseases; Microbial risk assessment; Microbial quality of shellfish growing areas, Applications of nanotechnology; Water and energy; Zoonoses.



### Workshops:

Catchment Microbial Modeling: Sunday, September 18

Extreme Events: Friday, September 23

### Joint session with Diffuse Pollution:

Tuesday, September 20

### Registration:

Please visit [www.hrwm2011.org](http://www.hrwm2011.org) to register securely online. **Early bird rates apply through August 5, 2011.**

### Travel/Accommodations:

To ensure affordable flights and availability please book your travels as soon as possible. We recommend booking your flights online with Expedia: [www.expedia.co.nz](http://www.expedia.co.nz). Special rates for delegates have been secured at various hotels, motels and backpackers around Rotorua and these can be booked with your registration. If you would like to book accommodations before you register please contact Lea Boodee at [lea@on-cue.co.nz](mailto:lea@on-cue.co.nz).

### Entertainment:

Rotorua, the tourist capital of the North Island of New Zealand has much to offer visitors including famous geysers, mud pools and thermal springs, lakes, mountain biking and hiking trails, excellent food, and the traditions of the Maori culture. In addition, the 2011 Rugby World Cup will be taking place in New Zealand. Match locations and dates can be found at [www.rugbyworldcup.com](http://www.rugbyworldcup.com). For travel information contact Wendy Dobson at [wendy@artoftravel.co.nz](mailto:wendy@artoftravel.co.nz) or visit [www.artoftravel.co.nz](http://www.artoftravel.co.nz).

## Candidate Statements



### **Christobel Ferguson, GAICD, PhD, MSc, BAppSc**

Christobel Ferguson is the Research and Development Director and Water Sector Brand Manager for the ALS Water Resources Group. Christobel develops novel and innovative products and services to deliver strategic outcomes to water industry clients. She has more than 15 years experience managing research and development projects focused on the needs of the water industry. She specialises in quantitative microbiology and co-developed a

mathematical model to estimate pathogen loads from drinking water catchments. She is currently involved in business development and commercialisation activities and recently graduated from the Company Directors Course with the Australian Institute of Company Directors. Christobel has been a member of the International Water Association and a member of the Health Related Water Microbiology group since 2002. She was a board member of the Australian Water Association (2005-2009). She is also an Adjunct Research Fellow at the Fenner School of the Australian National University.



### **Marion Savill, PhD**

I worked for 2 Government agencies for 25 years and in last year established a water company "Affordable Water" with 3 other directors. Working with the HRWM steering committee again, as Vice Chair, I would promote the observations I have formed over the 4 years (2005-2009) working as secretary. Priorities of the HRWM group include: being the leaders in environmental microbiology of water and health; mentoring developing scientists;

forging links with other specialty groups; creating an international profile for the group; listening to the emerging needs and desires of our members and how we can incorporate them; raising new scholarship money for students and young scientists in developing countries; ensuring our written publications have global impact. In this time of global recession, it is very important to keep these priorities moving forward. This is what my contribution will add and my goals will be: 10% increase in membership; 10% increase in reserve funds to allow for scholarships, assist mentoring and linkages; involve at least 3 new nations; share our skills with these new countries, learning of their aims, issues and working with them forming solutions; continue raising our high scientific profile. All of the above will assist identify and develop where new areas of research are needed and where the world is going. I would love to work with you all doing this.

## Elections

Our group will elect and announce a new Vice Chair at the WaterMicro 2011 Symposium in Rotorua, New Zealand. This person will serve HRWM for 6 years total: 2 years as Vice Chair, followed by 2 years as Chair, and 2 years as Past Chair.

We have two candidates running for the Vice Chair position; Christobel Ferguson and Marion Savill. Please view their profiles to the left and on our website at [www.iwa-microbiology.org](http://www.iwa-microbiology.org).

Voting will also take place at the WaterMicro 2011 Symposium for the WaterMicro 2013 destination. Brazil is the only country offering to host at present. Please view details regarding their bid to host on page 4 and a complete proposal presentation on our website at [www.iwa-microbiology.org](http://www.iwa-microbiology.org).

## Voting

You must be a registered member of IWA to cast a vote. Regular voting will take place at the HRWM Business Meeting in Rotorua on **Thursday September 22, 2011 at 4:30pm**.

Absentee voting will be available only for those members *unable* to attend the HRWM Business Meeting in Rotorua. Please send your votes (Vice Chair and 2013 destination) along with name or IWA membership number\* via email to [hrwm@msu.edu](mailto:hrwm@msu.edu) **no later than August 31, 2011**. Votes received after August 31 via email will not be counted.

\*IWA membership numbers and votes will be kept confidential and solely used for the purposes of voting and to preventing duplicate casting of votes.



## WaterMicro 2013

**Proposed Location:**  
Florianópolis, Brazil

**Venue:**  
Majestic Palace Hotel

**Dates:**  
September 15-20, 2013

**Organizers:**  
CETESB, University of São Paulo, FIOCRUZ, Federal University of Santa Catarina, and AIDIS

**Topics:**  
Water pollution and diseases; Microbial source tracking; Catchment protection; Water reuse and health concerns; Biofilms studies; Water and sanitation in developing country; Climate change and water quality; Recreational water and health; Epidemiology of waterborne diseases; Microbial risk assessment; Microbial quality of shellfish growing areas.

**Technical Tour:**  
Oyster marine farms:

Florianopolis provides the Brazilian economy with approximately 80 percent of its oyster production. Aid programs for the creation and maintenance of a healthy seafood culture are developed at Federal University of Santa Catarina. Sea food is the base for most of the typical dishes and follows the traditions of the Portuguese Azorean people who colonized the island.

**Entertainment:**  
Florianópolis is the island of one thousand charms, featuring gorgeous beaches, islands, lagoons, dunes, historic buildings, and nature sports – a true entertainment park at open sky. Sea food is part of the local gastronomical culture, from the most exotic options to the refinement of the best international cuisines.



## Bursary Awards

Bursary awards are given to students and scientist going to school and/or working in developing countries/regions. The 2011 recipients were selected from a pool of eleven applicants, representing eight different countries. Each will receive a stipend to attend the WaterMicro 2011 Symposium to present their work and be honored at the Gala Dinner.

Congratulations to our 2011 Bursary Award recipients: Celia Berardi and Vanessa Moresco (student-scientist team, Brazil), Cornelius Carlos Bezuidenhout (scientist, South Africa), Nicholas Kiulia (student, Kenya), and Mayuna Srisuphanunt (scientist, Thailand).

Please look for their presentations at WaterMicro 2011 and commend them on their work.

## IC Sewage

The International Collaboratory for Sewage: IC Sewage is an initiative started amongst IWA members to advance our understanding of the impact of wastewater on water quality and health throughout the world and to set the stage to meet and document improved sanitation, sewerage, and wastewater treatment for the global community.

The IC Sewage Group will meet during WaterMicro 2011 on **Wednesday September 21st at 12:30pm**.

For additional information or to become a member please visit the IC Sewage website at [cws.msu.edu/ic-sewage](http://cws.msu.edu/ic-sewage) or email Asli Aslan at [aayilmaz@msu.edu](mailto:aayilmaz@msu.edu).



## WaterMicro 2011 Workshops

### Catchment Microbial Modeling: Sunday September 18

This will be a series of invited addresses by experienced exponents. The workshop's objective is "Identify some structure and direction for this increasingly important topic, so that its results can better inform development and implementation of public policy". Issues to be addressed will include:

- Purpose of the modeling (contact recreational, shellfish consumption, drinking water supply)
- IP and lack of open source code frameworks
- Lack of quantitative microbiological data and access to hydro/geospatial data
- Calibration and testing of models
- Sensitivity analysis and estimation of uncertainty
- Use of modeling outputs - are the regulators going to accept model outputs?
- Incorporation of model outputs into risk frameworks that meet policy/regulatory requirements.

The Keynote address will be given by Dr Christobel Ferguson (Australia). The closing will be given by Prof David Kay (UK), and this will aim to produce a declaration for the desired future of this increasingly important topic.

### Extreme Events: Friday, September 23

This workshop will focus on how extreme events affect all water quality and seek to identify how the international expertise of the HRMW members could assist countries when they occur again. This workshop will have presenters from the following major earthquakes, hurricanes, and floods which have occurred around the world recently.

- Hurricane Katrina
- The Haitian Earthquake
- The Chinese Earthquake
- The Christchurch Earthquake
- The Japanese Earthquake, Tsunami and RadioActive Leaks
- The Spanish Earthquake
- The Queensland Floods

The presenters will discuss what happened, how the water was effected (waste and drinking) and what assistance would have helped them. In the afternoon an open floor will seek to draw the whole audience to develop a strategy of how the HRWM group could assist countries in the future address such a situation.

## HRWM Members Affected by 2011 Extreme Events

2011 has presented several natural disasters. Specifically a 6.3 magnitude earthquake striking Christchurch, New Zealand on February 21st and a 9.0 magnitude earthquake striking off the coast of Japan on March 11th, followed by a Tsunami resulted in devastation beyond comprehension.

Some of our HRWM colleagues were affected by these tragic natural disasters as many more IWA colleagues were as well. Marion Savill, our past secretary and organizer for WaterMicro 2011, lives and works in Christchurch, New Zealand. The day of the earthquake she lost power, water, etc. but was able to evacuate safely to Wanaka by the following morning where she has stayed as needed during the aftershocks which continue to date. Hiroyuki Katayama, our current secretary, lives and works in Tokyo, Japan where he experienced limited damage and is safe. However the Tohoku area was seriously damaged where Tohoku University is located. Fortunately, our HRWM colleagues in the Tohoku are all safe as well.

Marion and Hiroyuki have contributed brief summaries (pages 6-7) of the extreme events which affected their countries. If you have an idea as to how HRWM could assist countries prior to, during, and after future extreme events, please plan to attend the Extreme Events Workshop at WaterMicro 2011 or email HRWM at hrwm@msu.edu.



Damage to the Christchurch Cathedral after the February, 2011 earthquake.

Image from <http://www.flutrackers.com>

### *Drinking Water*

The magnitude 7.1 and 6.3 earthquakes of 4<sup>th</sup> September 2010 and 22<sup>nd</sup> February 2011 in Christchurch severely damaged both the water and waste infrastructures. After Feb 22<sup>nd</sup> parts of the city remained without reticulated water for weeks; these were mainly concentrated in the suburbs near the sea. The whole city was under a Boil Water Notice for some six weeks. At the end of this period services had been restored but in recognition that some repairs were temporary and with waste services also affected, chlorination was introduced as an additional barrier across approximately half of the city. This is expected to continue until August (approx. 5 months). to allow more repairs to be completed and the security of the network improved. Investigations are also being undertaken to access any underlying changes to the water quality and aquifer structures.

### *Wastewater and Recreational Water*

The Christchurch earthquakes of 4 September 2010 and 22 February 2011 caused considerable damage to sewerage pipes and sewerage treatment systems in and around Christchurch and Kaiapoi. This resulted in both primary and secondary treatment of wastewater being halted and untreated human sewage being discharged directly into several waterways (rivers, estuary and beaches). Environment Canterbury monitored a range of sites for *E.coli* and enterococci after both earthquakes to track levels of bacterial contamination. They continue to monitor these sites, plus additional sites as the sewerage system comes back on line. These results have been used to advise the public of the potential health risk associated with recreational water activity sites as well as being able to clear sites for recreational water use.

Currently (June) full primary wastewater treatment and partial secondary treatment is occurring with the treated effluent being discharged to sea through the ocean outfall. A small proportion of the flow is not reaching the wastewater treatment plant and is being discharged into the city rivers, estuary and beaches. As expected the recreational water quality is impacted along the coastlines of the city with varying degrees of human sewage contamination. The safety of recreational water activities will be compromised until the sewerage infrastructure is repaired and the direct discharge of human sewage ceases. Microbiological monitoring results will also need to indicate a return to pre-earthquake levels before safe access to popular waterways for contact recreational activities can be resumed. It is hoped that people will be able to safely re-access recreational water spots by summer 2011/12.

The Christchurch City Council with ESR, is investigating the microbial water quality in the city rivers to determine the level of microbial pollution occurring and hence the potential health risks to people from recreational water.

## Extreme Events: Christchurch, New Zealand

### Drinking water, wastewater, and recreational waters severely affected by earthquakes in Christchurch, New Zealand

Contributing Authors: Christchurch Crown Public Health, Christchurch City Council, Christchurch New Zealand Water, and Marion Savill, Affordable Water, New Zealand



A building collapses in Christchurch after a 6.3 magnitude earthquake struck the city in February, 2011. Image from <http://www.sustainabilityninja.com>

## Extreme Events: Japan

### Japan strategizes the future of its water supplies following Earthquake, Tsunami, and Nuclear Power Plant disasters

Contributing Author: Hiroyuki Katayama, University of Tokyo, Japan

On March 11, 2011 at 2:46 pm, a great earthquake struck east Japan, which turned out to be a magnitude of 9.0. The hypocenter was near the northeast coast of Japan mainland, Tohoku area. This earthquake triggered a Tsunami which attacked and heavily damaged the northeast coast of Japan, where more than 20,000 people were killed or missing. More than 370,000 people evacuated to schools or public utilities as tentative shelters. Under such situation, infectious disease is one of the serious concerns. There were small influenza outbreaks but no waterborne disease outbreak reported. In Japan, we have many experiences of such risk on public health after a big natural disaster, but very few are reported to have caused waterborne infectious disease.

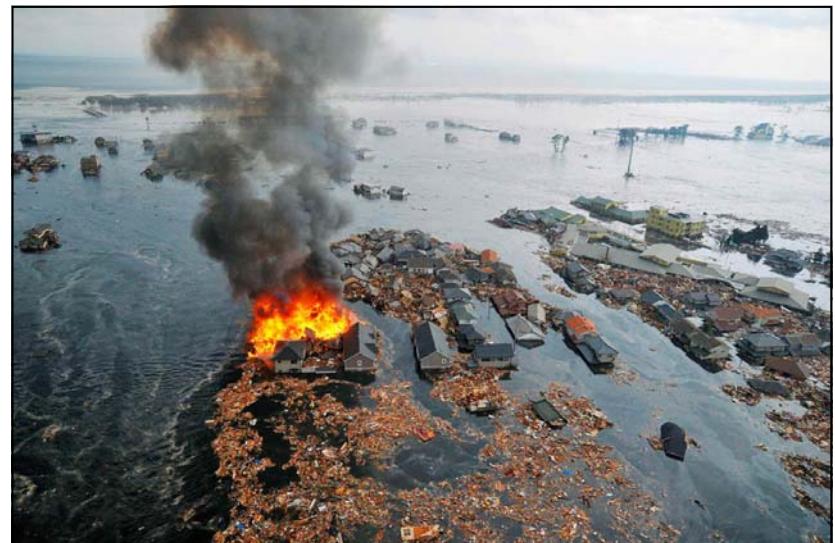
Another major concern and problem was the nuclear power plant in Fukushima. There were 3 nuclear power plants along the Tsunami-attacked coast. Two of them, Fukushima II and Onagawa plant were safely shut down. However, Fukushima I plant lost the electricity source and failed to control. Explosion was not directly caused by atomic reaction so that the leakage of radioactive species into the air was relatively small, but Fukushima coastal area was contaminated and now became a restricted area. Leakage of radioactives into water environment is not estimated yet.

Lifelines in the coastal area suffered serious damages. Water supply systems are usually located in upper land, but wastewater treatment plants are often built near the coast. Due to the great Tsunami resulting from the earthquake, many wastewater treatment plants were heavily destroyed. It will take 2 years or longer to recover the damages, and until then wastewater will be discharged without secondary treatment. Now some plants apply chlorination to disinfect the primary treated wastewater. There are no beaches open near these plants, but we need to establish a better system to enjoy safe beaches next summer. In addition, the Tohoku area is a famous place that supplies raw oysters. We believe wastewater treatment plants play a very important role to produce a safe water environment in this location.

In Tokyo, all the railway systems stopped until midnight the day of the earthquake. This forced some people to walk back home a long distance, some bought a bicycle, and others stayed in their offices or bars until morning.

The Japan Society on Water Environment, especially its HRWM members, are now working on the recovery and improvement of wastewater treatment plants in the disaster area, together with Ministry of Land and Construction and local government in Tohoku area. Short term vision as well as long term vision of water environment and the sewer system is now being discussed.

Risk communication has been a key issue in Japan after the great earthquake, and this may be its turning point. People believed the safety in Japan and the policy makers tried to establish "theoretical safety" at any cost so far. However, now we are discussing the safety issue, economic aspect, cost, and CO<sub>2</sub> emission at the same time around nuclear power plants. This will promote our literacy of risk communication, which may in the future better influence management of pathogens in water.



Homes and debris are swept up by tsunami waters resulting from a 9.0 magnitude earthquake off the coast of Japan in March, 2011. Image from <http://richerramblings.files.wordpress.com>

## Young Investigator Receives Award

### Dr. Masaaki Kitajima selected as the first IWA-HRWM Willie Grabow Young Investigator Award recipient

Professor Willie Grabow, a brilliant environmental virologist, has 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. In honor of his dedication and continued support, the IWA-HRWM Willie Grabow Young Investigator Award has been established for the purpose of assisting and encouraging young scientists who are doing outstanding research in the field of health-related water microbiology.

On behalf of the award committee led by Ms. Bettina Genthe, it is our pleasure to announce Dr. Masaaki Kitajima was selected as the recipient of the first IWA-HRWM Willie Grabow Young Investigator Award. The award, generously sponsored by IDEXX, consists of a stipend for travel, lodging, and registration costs to attend the 16th International Symposium on Health Related Water Microbiology, WaterMicro 2011, in Rotorua New Zealand. We had a pool of seven nominations, all representing different countries with several very strong applications.

Dr. Masaaki Kitajima received a Ph.D. in urban environmental engineering from the University of Tokyo in March 2011, under a supervision of Dr. Hiroyuki Katayama. His research experience involves molecular detection of waterborne viruses in Japan as well as in Southeast Asian developing countries, namely, Vietnam and Cambodia, which is highly regarded as an outstanding accomplishment in the Health-Related Water Microbiology field. He is currently a postdoctoral fellow funded by the Japan Society for the Promotion of Science and working with Dr. Charles Gerba at the University of Arizona. Dr. Kitajima is now mainly working on the detection and genetic analysis of viruses in groundwater, reclaimed water, and irrigation water in Arizona.

Dr. Kitajima will present his research in an oral format at the WaterMicro 2011 Symposium and be honored by Professor Willie Grabow at the Symposium Gala Dinner.

## Recommended Reading

**Microbial Source Tracking: Methods, Applications, and Case Studies**  
Hagedorn, Charles; Blanch, Anicet R.; Harwood, Valerie J. (Eds.), 1st Edition. 2011. ISBN 978-1-4419-9385-4

**Quantification of Pathogens and Sources of Microbial Indicators for QMRA in Recreational Waters**  
Stefan Wuertz, Woutrina Miller, Dustin Bambic, Graham McBride. WERF Report PATH2R08. 2011. ISBN: 9781843395430

**Comparative Evaluation of Molecular and Culture Methods for Fecal Indicator Bacteria for Use in Inland Recreational Waters**  
Julie Kinzelman. WERF Report PATH7R09. Jun 2011. ISBN: 9781843395454

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## Contact HRWM

### Email:

hrwm@msu.edu

### Website:

[www.iwa-microbiology.org](http://www.iwa-microbiology.org)

## Newsletter Staff

### Editors:

Rachel M. McNinch, M.S.

Joan B. Rose, PhD

### Design:

Rachel M. McNinch, M.S.

**Next Newsletter coming  
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