



International Water Association

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www.iwa-microbiology.org



WaterMicro 2011

September 18 - 23, 2011

Rotorua, New Zealand

HRWM Disaster Response

A HRWM member's response to the Haiti 1/12/2010 earthquake

Contributing Author: Ryan Sinclair, Assistant Professor, Environmental and Occupational Health, Loma Linda University, Loma Linda, California



Above: A successful trench latrine program involves camp residents in every step of the planning and training processes. Although a significant amount went into digging the latrines, an equal amount of effort went into logistics and communication with camp leaders. Photo courtesy Ryan Sinclair.

The Loma Linda University (LLU) Center for Public Health Preparedness sent a rapid response team to the Carrefour region of Haiti in response to the January 12, 2010 earthquake. The rapid response team consisted of five team members to assess and respond to water, sanitation, maternal and child health and food security in an Internally Displaced Person (IDP) camp. Ryan Sinclair, an active member of the HRWM group and recent graduate of the CAMRA summer seminar, traveled with the team as the water and sanitation advisor.

The Adventist Development Relief Agency (ADRA) requested the LLU team. ADRA responded immediately to the January earthquake by distributing supplies and setting up purified water stations around the Carrefour IDP camp, a stone throw away from the ADRA office. The principal task of the LLU team was to conduct an assessment and then rapidly communicate the findings to ADRA and the relevant United Nations cluster groups.

The LLU group arrived to find an estimated 25,000 IDPs informally assembled at the Adventist University camp in the Carrefour region. This ...
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Important Dates

June 28 - July 2, 2010

Singapore International Water Week Convention, Singapore

September 15, 2010

Deadline for applying to host WaterMicro 2013

September 19 - 24, 2010

IWA World Water Congress, Montreal, Canada and HRWM Business Meeting

September 30, 2010

Willie Grabow Award Application Deadline

April 8, 2011

Willie Grabow Award Notification

April 30, 2011

WaterMicro 2011 Deadline for Oral Presentation Abstracts

WaterMicro 2011 Deadline for Bursary Applications

Deadline for Nominations for Vice Chair

June 30, 2011

WaterMicro 2011 Deadline for Poster Presentation Abstracts

WaterMicro 2011 Notification of Acceptance for Oral Presentations

WaterMicro 2011 Notification of Bursary Recipients

July 22, 2011

WaterMicro 2011 Notification of Acceptance for Poster Presentations

August 5, 2011

WaterMicro 2011 Early Registration Discount Deadline

September 18-23, 2011

WaterMicro 2011 Symposium, Rotorua, New Zealand

HRWM Board Member Spotlight

HRWM Vice-Chair focuses on pathogen transmission and educating the next generation of water engineers

Contributing Author: Dr. Gertjan Medema, HRWM Vice-Chair, Chief Science Officer and Principal Microbiologist, KWR Watercycle Research Institute and Chair on Water and Health, Delft University of Technology

In an effort to meet our newly elected board members we have asked them to compile a short summary of their current research efforts. Below HRWM Vice-Chair, Dr. Gertjan Medema shares his work at KWR Watercycle Research Institute.



Dr. Gertjan Medema. Photo from TU Delft.

The research in our group at KWR Watercycle Research Institute focuses on the transmission of pathogens through the water environment and the efficacy of barriers in urban water systems to prevent the spread of water-borne disease. We develop (large volume) methods for pathogens and indicators in water, where we aim to get quantitative information about the presence of pathogens in water in different steps of the water cycle (sewage, treated effluent, surface water, ground water, bioaerosols, drinking water) and their fate in the environment. Current focus is on Cryptosporidium, Giardia, Campylobacter, Coxiella, Adenovirus, Norovirus and Influenza virus. We collect information about the efficacy of barriers (water treatment, soil passage) in the water cycle by experimental work in lab and pilot systems and in full scale systems of the water utilities.

We embed the experimental data in a Quantitative Microbial Risk Assessment (QMRA) framework. This integrates the environmental exposure data into an assessment of the system safety and helps water utilities to design and operate safe water systems. That is also the mission of my new chair on Water and Health at Delft University of Technology, to educate new generations of water engineers in health-related water microbiology and QMRA. This goes beyond the university students, in June we are organizing a QMRA Summer School in Delft for scientists that are already working in environmental health.

HRWM Business Meeting

HRWM will hold a business meeting at the IWA World Water Congress in Montreal, Canada, for those who can attend. The tentative date and time is Monday September 20, 2010 during the lunch hour. Please look to your email and the Congress website (<http://www.iwa2010montreal.org>) for schedule updates. Should you have any matters of business you feel should be discussed please email Joan Rose at hrwm@msu.edu.

Young Investigators Award

Call for Nominations for the IWA-HRWM Willie Grabow Young Investigators Award

The IWA-HRWM Willie Grabow Young Investigator Award was officially announced in June 2009 during the WaterMicro 2009 Symposium, 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 IWA-HRWM Willie Grabow Young Investigator Award is made for the purpose of assisting and encouraging young scientists, especially those from developing countries, who are doing outstanding research in the field of health-related water microbiology. The award is generously sponsored by IDEXX and consists of a stipend for travel, lodging and registration costs for the HRWM Symposium the year of the award. In addition, a framed certificate will be presented to the recipient at the WaterMicro Gala dinner. The Award winner may also be asked to give a presentation on their work during the Symposium. The first award will be officially presented at WaterMicro2011, in Rotorua, New Zealand.

A candidate must be nominated. Nominators may be HRWM members, schools or other organizations involved in the Health Related Water Microbiology field. Candidates need to be a current Member of IWA, preferably with past involvement in the HRWM Specialist Group and to be eligible for the Award, a nominee shall not be older than 35 years on the deadline date for applications.

Please visit the HRWM website (www.iwa-microbiology.org) to download the official nomination form. Applications should be submitted to the Bettina Genthe, Chair of the Award Committee, via email (bgenthe@csir.co.za or hrwm@msu.edu) by September 30, 2010. The successful applicant will be notified no later than April 8, 2011.

Call to Host WaterMicro 2013

If you are interested in hosting WaterMicro 2013 please notify Joan Rose via email at hrwm@msu.edu by September 15, 2010. You will need to submit a brief written plan with details regarding the following logistics:

- City/Country
- Venue Location
- Dates
- Topics
- Tours/Social Events
- Accommodations

In addition you should be prepared to present a brief PowerPoint presentation at the WaterMicro 2011 Symposium in New Zealand.

WaterWiki

The IWA WaterWiki, a platform for the global water community to interact and share knowledge online, is up and running.

The site aims to be the online reference point for all areas of water, wastewater and environmental science and management issues. Through the WaterWiki you can find, correct, edit and expand existing articles or create a new article on the topic of your choice. You can also bookmark subject categories and articles to keep up to date with new edits in your area of interest.

In addition we have created an organization profile for HRWM to help share information about our group. To get started please register and create your own personal profile on the WaterWiki website at: www.iwawaterwiki.org.



HRWM Disaster Response (cont.)

... was not a coordinated assembling point; rather, it is a safe space relatively clear of tall cement structures, which many people now fear. The settlement was unorganized and for many weeks after the earthquake, there were only three unsuitable latrines for the entire camp.

The rapid catch survey determined that diarrhea prevalence was approaching 60%. Although the prevalence was 30% before the earthquake, an increase in diarrhea disease from 30 to 60 represents a 100% increase in childhood diarrhea. Other psychosocial and maternal child health indicators were also alarming, but with the many flies and poor shelter, an unquestionable intervention point was latrines.

After finishing the assessment, the LLU team and ADRA began constructing emergency trench latrines. The LLU team spent the remainder of its 10-day trip coordinating logistics for latrine digging, educating health volunteers on latrine maintenance, water distribution points, and camp organization. By communicating through the UN WASH cluster meetings in Petionville, other NGOs including OXFAM and Save The Children arrived to assist ADRA with latrines. Four weeks after the earthquake, over 100 latrines were being dug, being used, or planned. This amount was still insufficient and six weeks after the earthquake, many of the trench latrines were full and needed de-sludging.

The majority of the team's time was spent in the Carrefour IDP camp coordinating sanitation projects, water distribution points and camp management. The LLU team left Haiti only to return a few weeks later for an extended stay. Currently, the LLU team is coordinating with ADRA for continued relief efforts in terms of food distribution, shelter, WASH, and logistics. For the future, the LLU team is coordinating with many other NGOs including the relief organization Global Medic, and the US based NGO Water Charity, which is organizing some long-term development projects in the area.

HRWM took a brief survey of other efforts of our members in response to the earthquake in Haiti. Of note, P&G committed to providing 6 million packets of PUR Purifier of Water to the people of Haiti. They worked with Red Cross, World Vision, CARE, PSI, Global Medic, UMCOR, ADRA, PUR Compassion Ministries, Hope for Haiti's Children, Matthew 25 Ministries, KONPAY, and Americares to distribute them. In addition, TrojanUV provided two self-contained water treatment systems capable of providing clean, safe water for an estimated more than four thousand people per day. To make sure the systems arrived safely, were set up and operating properly, TrojanUV worked with both the Christian Reformed World Relief Committee and World Vision. Several fundraising and matching efforts were also organized by TrojanUV and their associates. We also received word from several members who were not currently involved in the efforts in Haiti but would be willing to do what they could should the opportunity arise. This is truly a wonderful representation of the many efforts of HRWM members to provide aid.

Left: The sediment, carbon, and UV drinking water system has a pump powered from a motorcycle battery. Aquatabs are distributed to chlorinate the camp resident's drinking water. The NGO ADRA paid local motorcycle owners to run these water distribution points (top and 2nd from top). Emergency trench latrines consist of a 2-meter deep trench topped with simple latrine slabs with privacy screens between them (3rd from top and bottom). Although it is possible to make latrine slabs with local materials, the premade fiberglass latrine slabs save much time in a relief situation (bottom inset). These are temporary solutions and it is important to have a sustainable sanitation plan in the near future. Photos courtesy Ryan Sinclair.



International Collaboratory for Sewage

An effort to improve sanitation on a global scale

Contributing Author: Asli Aslan Yilmaz, PhD, Post Doctoral Fellow, Department of Fisheries and Wildlife, Michigan State University



Children collecting water in India.
Photo from tribuneindia.com.

An International Collaboratory for Sewage initiative (IC Sewage) has been established as a part of the HRWM group. The overall mission of IC Sewage is 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.

As a part of this collaboration, the group is developing and demonstrating how new genomics tools such as microbial source tracking methodologies can be used to characterize and quantify human fecal pollution in water in order to advance understanding of the impacts of wastewater and sanitation on human health. IC Sewage is currently in the process of initiating several projects including documentation and assessment of microbial source tracking protocols, identification of pilot studies for mapping indicator bacteria, and identification of a consensus molecular target to be used as a sewage marker.

The IC Sewage initiative has gained great interest worldwide from scientists that are pioneers in the water quality and public health field. The initiative has also gained

members from water utilities, government and private laboratories. Currently there are 41 laboratories from 28 countries (Austria, Australia, Botswana, Brazil, Canada, Denmark, Germany, Greece, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Singapore, South Africa, South Korea, Spain, Swaziland, Thailand, Turkey, UK, USA, Venezuela and Zambia) who have agreed to collaborate. IC Sewage membership is open to any individual or group working on water pollution monitoring and looks forward to expanding this initiative globally. Members may join and cooperate at different levels according to their laboratory capabilities and interest.

For more information about the IC Sewage initiative and become a member please visit the IC Sewage website hosted by the Michigan State University Center for Water Sciences at <http://cws.msu.edu/IC-Sewage.htm>.

Water Prize Awarded to Woman Microbiologist

2010 Stockholm Water Prize awarded to Dr. Rita R. Colwell

Dr. Rita R. Colwell, one of the most influential microbiologists in the world, was awarded the 2010 Stockholm Water Prize, announced on World Water Day, March 22, 2010. Dr. Colwell is recognized worldwide for her promotion of science and her leadership in integrating science, technology, and medicine toward secure and safe water. Best known for the advancement of knowledge and control of cholera, having advanced mathematics, genetics and remote sensing technology in relation to these bacteria and others, she is the first to recognize the phenomena which she termed “viable but non-culturable” (VBNC).

Furthermore she has been a leader in shaping the direction of science and science policy, having assisted in epidemic outbreaks, developed drinking water criteria and served as President of both the American Society for Microbiology and the American Association for the Advancement of Science and as Director of the National Science Foundation. Also of note, she has published more than 700 publications and given thousands of talks, and served as a mentor for over 100 graduate students and postdoctoral research associates. Dr. Colwell’s work has certainly had a profound impact on the field of health-related water microbiology and on the protection of global waters.

For more information on the Stockholm Water Prize and Dr. Colwell’s many accomplishments please visit the Stockholm International Water Institute at <http://www.siwi.org>.



Board Members

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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.



assessment; Microbial quality of shellfish growing areas, Applications of nanotechnology; Water and energy; Zoonoses.

Special Events:

Joint day with Diffuse Pollution Group; HRWM Workshop (topic to be decided).; Combined WHO/HRWM Workshop

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. Visit www.rugbyworldcup.com for further information regarding match locations and dates.

Recommended Reading

National Geographic Water Issue. Publication Date: April, 2010. Access: <http://ngm.nationalgeographic.com/2010/04/table-of-contents>

Elimination of Micro-organisms by Drinking Water Treatment Processes. Authors: Wim A M Hijnen and Gertjan J Medema. Publication Date: May 10, 2010. ISBN: 9781843393733

Outbreak Investigations Around the World: Case Studies in Infectious Disease Field Epidemiology. Author: Mark L. Wilson. In: Environmental Health Perspectives. Publication Date: March 2010; 118(3) A138. PMID: PMC2854793

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*Next Newsletter coming
 November 2010*

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