SYMPOSIUM ISSUE
HRWM 2003 CAPE TOWN
REGISTER NOW!

• Final oral and poster programme
• WHO Seminar details
• Minutes of the Melbourne Open Meeting and agenda for Cape Town

The final oral and poster programmes are given below which hopefully will encourage you to register for this most important Symposium! Delegates and presenters are advised to check their documentation when they arrive in Cape Town and register at the convention centre for the latest in any changes.

Registration details can be found on the Symposium web page at

www.iwaconferences.co.za/water/Health_1.html

If you have any difficulties with the site please contact Willie Grabow at grabow@med.up.ac.za.

PLATFORM PRESENTATIONS

SUNDAY 14 SEPTEMBER 2003-07-21

Registration at Convention Centre
Opening Ceremony
Welcome Reception
MONDAY 15 SEPTEMBER 2003

0900 Welcome
Joan Jofre - Group Chair

0910 Presidential address - 25 years of water virology
Willie Grabow (South Africa)

Session 1
INTERVENTION STRATEGIES
WASTEWATER TREATMENT
Chair: Joan Jofre (Spain)
Related posters: 1 - 3, 103

0950 Paper 1: Pathogen removal efficiency from USB+BF effluent using conventional and UV post-treatment systems
Regina Keller, RF Passamani-Franca, F Passamani, L Vaz, ST Cassini, N Sherrer, K Rubim, TD Sant'Ana & FR Gonçalves (Brazil)

1010 Paper 2: The development of a quantitative RT-PCR assay for the detection of norovirus in wastewater and its application to studies on virus removal during sewage treatment
Kathy Henshilwood, L Cross & DN Lees (UK)

1030 Coffee

Session 2
MICROBIAL ECOLOGY
Chair: Nick Ashbolt (Australia)
Related posters: 4 - 20

1100 Paper 3: Dispersion and transport of Cryptosporidium oocysts from faecal pats under simulated rainfall events
Cheryl M Davies, C Kaucner, CM Ferguson, N Altavilla, D Deere & NJ Ashbolt (Australia)

1120 Paper 4: Genotypic analyses of Escherichia coli isolated from tropical soils
Clarivel Lasalde, H Smith & GA Toranzos (Puerto Rico; US Virgin Islands)

1140 Paper 5: Indigenous soil bacteria and low moisture may limit but allow faecal bacteria to multiply and become a minor population in tropical soils
M Byappanahalli & Roger Fujioka (USA)

1200 Paper 6: Sources and occurrence of Campylobacter spp in impoundment reservoirs used for drinking water production
Gertjan J Medema, L Heijnen & HAM Ketelaars (The Netherlands)

1220 Paper 7: Prevalence of human adenoviruses in raw and treated water
Juanita van Heerden, MM Ehlers, WB van Zyl & WOK Grabow (South Africa)

1240 Lunch

Session 3
WATERBORNE DISEASE
Chair: Paul Hunter (UK)
Related posters: 21 - 24
1400  Paper 8: **Outbreaks associated with private water supplies in England and Wales**  Bengü Said, F Wright, GL Nichols, M Reacher, W Smerdon & M Rutter (UK)

1420  Paper 9: **Norovirus outbreak among primary school children after playing in an interactive recreational water fountain**  Ana Maria de Roda Husman, CJPA Hoebe, H Vennema & YTHP van Duynhoven (The Netherlands)

1440  Paper 10: **Detection of noroviruses in waterborne outbreaks**  L Maunula, I Miettinen, Carl-Henrik von Bonsdorff (Finland)

1500  Paper 11: **Genetic analysis of norovirus (NV) taken from patients of gastroenteritis, river water and oysters**  You Ueki, K Akiyama, T Watanabe & T Omura (Japan)

1520  Paper 12: **Investigation of factors influencing the 2001 cholera epidemic in South Africa - development of a predictive risk model using GIS technology**  Shannon Rushworth & IW Bailey (South Africa)

1540  Coffee  

**Session 4**  
**MANAGEMENT OF DRINKING WATER SAFETY**  
Chair: Ian Bailey (South Africa)  
Related posters: 25 - 28

1610  Paper 13: **Application of HACCP principles as a management tool for monitoring and controlling microbiological hazards in water treatment facilities**  Corinne Jagals & P Jagals (South Africa)

1630  Paper 14: **HACCP as a tool for assuring microbiologically safe drinking water: the Vivendi Water experience**  Laurence de Beir, M-C Müller, H de Mascureau & J-C Joret (France)

1650  Paper 15: **Investigation of opportunistic pathogens in municipal drinking water under different supply and treatment regimes**  M Pryor, Susan Springthorpe, S Riffard, T Brooks, Y Huo, G Davies & SA Sattar (USA; Canada)

1710  **Meeting of the HRWM Group Steering Committee**

**TUESDAY 16 SEPTEMBER 2003**

**Session 5**  
**INTERVENTION STRATEGIES EFFECTS ON DISEASE CONTROL**  
Chair: Maureen Taylor (South Africa)  
Related posters: 29

0850  Paper 16: **The impact of introducing treated water on aspects of community health in a rural community in KwaZulu-Natal, South Africa**  Ian W Bailey & L Archer (South Africa)
Paper 17: Are waste stabilisation ponds sources or barriers for toxigenic Vibrio cholerae? Efficiency of recovery and preliminary performance data
S Islam, SB Neogi, S Islam, M Barer & Thomas P Curtis (Bangladesh; UK)

Paper 18: The effect of engineering and educational interventions on the microbiological quality of container-stored water in developing world households
Ntombifuthi P Nala & P Jagals (South Africa)

SHELLFISH
Related posters: 30 - 33

Paper 19: Sewage impact on microbial contamination in a shellfish harvesting area
Monique Pommepuy, MP Caprais, F Dumas, P Camus, C Le Mennec, S Parneaud, B Sarrette, P Vilagines, E Kholi, R Brachet & F Le Guyader (France)

1010
Paper 20: Viral clearance during depuration at elevated temperatures determined by an index organism and direct quantitation of norovirus
William J Doré, K Henshilwood & DN Lees (UK)

1030
Coffee

Session 6
INTERVENTION STRATEGIES
WATER TREATMENT
Chair: Mark Sobsey (USA)
Related posters: 34 - 42

1100
Paper 21: Elimination of viruses, bacteria and protozoan oocysts by slow sand filtration
Wim AM Hijnen, JF Schijven, P Bonné, A Visser & GJ Medema (The Netherlands)

1120
Paper 22: Removal of F-specific RNA bacteriophage in artificial recharge of groundwater: a field study
RM Niemi, A Kytövaara, J Pääkkönen & Kirsti Lahti (Finland)

1140
Paper 23: Microbicidal efficacy of advanced oxidation process using ozone/hydrogen peroxide in water treatment
Regina Sommer, W Pribil, S Pfleger, T Haider, P Gehringer & M Werderitsch (Austria)

1200
Paper 24: Aerobic bacterial spores as process indicators for protozoan cysts in water treatment plants
B Galofré, S Israel, J Dellundé & Ferran Ribas (Spain)

1220
Paper 25: Using ultra violet light for disinfection of finished water
Zia Bukhari, F Abrams & M LeChevallier (USA)

1240
Lunch

Session 7
TRACING SOURCES OF MICROBIAL CONTAMINATION
Chair: Paul Jagals (South Africa)
Related posters: 43 - 50
Paper 26: Determining the origin of faecal pollution source in waters by selective detection of Bifidobacterium spp
Anicet R Blanch, X Bonjoch, F Lucena & J Jofre (Spain)

Paper 27: A simplified low-cost approach to antibiotic resistance profiling for faecal source tracking
James E Ebdon, JL Wallis & HD Taylor (UK)

Paper 28: Pathogenic Escherichia coli isolates from environmental and human sources in the Limpopo region of South Africa
C Larry Obi, E Green, PO Bessong, E Igumbor & N Potgieter (South Africa)

Paper 29: Escherichia coli O157:H7 isolated from private drinking water supplies in the Netherlands
Ciska Schets, M During, JFM Versteegh, L Heijnen, FAM Swinkels & AM de Roda Husman (The Netherlands)

Paper 30: Tracking Campylobacter in the environment
M Devane, JA Hudson, M Baker, N Garret, JK Klena, C Nicol, P Scholes, D Williams & Marion Savill (New Zealand)

Coffee

Session 8
MICROBIAL INTERACTIONS WITH BIOFILMS
Chair: Maggy Momba (South Africa)
Related posters: 51 - 53

Paper 31: Biofilms, thermophilic amoebae and legionellae: a quantitative risk assessment for distributed water
Michael V Storey, NJ Ashbolt & T-A Stentröm (Sweden; Australia)

Paper 32: Control of Legionella in biofilms: evidence for disinfection inefficiencies in a pilot hot water distribution system
Sebastien Saby, A Vidal, J Kittel, S Gilouppe & M Lotierzo (France)

Paper 33: Interaction of Cryptosporidium oocysts with drinking water biofilms
J Chandy, M Warnecke & Mark Angles (Australia)

Paper 34: Investigation of Helicobacter pylori by culture and PCR in potable water and biofilm samples from water distribution systems in England
Claire L Watson, RJ Owen, S Lai, JV Lee, S Surman, G Nichols, B Said, D Drury & A Lloyd (UK)

Open meeting of the Health-related Water Microbiology Group

WEDNESDAY 17 SEPTEMBER 2003

Session 9
VIRUSES
Chair: Ana-Maria de Roda Husman (The Netherlands)
Related posters: 54 - 61

Paper 35: Adequacy of membrane specifications for predicting the removal of infectious viral agents in drinking water systems
Debra Huffman, J Bae, J Seiter, T Idocks, A Madec, J Jacangelo & K Schwab (USA)
Paper 36: *National sample survey of viruses and the influences on the Korean water supplies*
Hyenmi Chung, Y Rim & DK Rhee (Korea)

Paper 37: *Indicator of viral contamination in river water*
S Skraber, L Schwartzbrod & Christophe Gantzer (France)

Paper 38: *Development and evaluation of methods to detect coliphages in large volumes of water*
Mark D Sobsey, SD Pillai, A Margolin, D Batigelli, S Goyal, MV Yates, F-C Hsu, G Lovelace & N Nwachuku (USA)

Paper 39: *Potential transmission of human polyomaviruses through water or food contaminated with urban sewage*
S Bofill-Mas, N Albiñana-Giménez, M Formiga-Cruz & Rosina Girones (Spain)

1030
Coffee

Session 10
**CRYPTOSPORIDIUM**
Chair: Debra Huffman (USA)
Related posters: 62 - 70

Paper 40: *Die-off of Cryptosporidium spp in tapwater, in seawater and in soil: comparison between infectivity and viability*
Abid M Nasser, E Teuto, L Tenenbaum & Y Netzan (Israel)

Paper 41: *Cryptosporidium distribution among HIV patients in Rostov region (southern Russia) and detection of oocysts in tap water samples*
V Kartashev, R Mitov, C Kourenti, S Gusarev, Y Ponomarenko, L Kushnir, Y Ambalov & Panagiotis Karanis (Russia; Germany)

Paper 42: *Giardia and Cryptosporidium in source waters of São Paulo State, Brazil*
EM Hachich, Maria IZ Sato, AT Galvani, JRN Menegon & JLN Mucci (Brazil)

Paper 43: *Case control study of sporadic cryptosporidiosis with genotype analysis*
Paul R Hunter, S Hughes, Q Syed, S Woodhouse, R Chalmers & N Verlander (UK)

1200
Lunch

Session 11
**RISK ASSESSMENT**
Chair: Gertjan Medema (The Netherlands)
Related posters: 71 - 74

Paper 44: *A monitoring system of Cryptosporidium proposed from the quantitative risk assessment from the counted data in purified water in Japan*
Yoshifumi Masago, H Katayama, T Hirata & S Ohgaki (Japan)

Paper 45: *Assessment of microbial infection risks posed by ingestion of water during domestic water reuse and full-contact recreation in a mid-southern African region*
Maronel Steyn, P Jagals & B Genthe (South Africa)
BATHING WATERS AND HEALTH
Related posters: 75 - 81

1440
Paper 46: *A marine water quality and health study in South Africa: a summary*
Bettina Genthe & N Strauss (South Africa)

1500
Paper 47: *Area-integrated sampling and calculation of time-integrated quality scores: proposal for a new way of monitoring and classifying fresh and sea water bathing sites based on epidemiological evidence*
Albrecht Wiedenmann & K Botzenhart (Germany)

1520
Paper 48: *Hepatitis A virus in surface recreational water in South Africa: what is the risk?*
Ilze Venter, JC Vivier, WOK Grabow & MB Taylor (South Africa)

1540
Coffee

1700
Symposium dinner

THURSDAY 18 SEPTEMBER 2003

Session 12
IDENTIFICATION OF MICROBIAL CONTAMINANTS
Chair: Bettina Genthe (South Africa)
Related posters: 82 - 91

0850
Paper 49: *Evaluating real-time PCR for the quantitation of distinct pathogens and indicator organisms in environmental samples*
Michael Lebuhn, M Effenberger, A Gronauer & PA Wilderer (Germany)

0910
Paper 50: *Detection, isolation and characterisation of stx2 phages in sewage*
Maite Muniesa, C García-Aljaro, AR Blanch & J Jofre (Spain)

0930
Paper 51: *Investigation of faecal pollution detection techniques for enumeration and presumptive identification of coliforms and Clostridium perfringens in different aquatic habitats in a tropical country, Uganda*
Denis Byamukama, RL Mach, F Kansiime, M Manafi & AH Farnleitner (Uganda; Austria)

0950
Paper 52: *Development of a multiplex-PCR assay for the detection of enterohaemorrhagic E coli and E coli O157:H7 virulence factors from water sources and faecal samples*
Etienne E Müller, MM Ehlers & WOK Grabow (South Africa)

1010
Paper 53: *Development of a TaqMan® RT-PCR for the detection and quantitation of viable Campylobacter jejuni in environmental waters*
S Lin, B Gilpin & Marion Savill (New Zealand)

1030
Coffee

Session 13
LEGIONELLA
Chair: Susanne Surman (UK)
Related posters: 92
<table>
<thead>
<tr>
<th>Time</th>
<th>Paper</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100</td>
<td>Paper 54</td>
<td><em>Is Legionella a threat in South Africa?</em></td>
<td>Estelle le Roux &amp; P Coubrough (South Africa)</td>
</tr>
<tr>
<td>1120</td>
<td>Paper 55</td>
<td><em>Molecular typing of the Legionella pneumophila population isolated from several locations in a contaminated water network</em></td>
<td>Anne-Sophie Lepeuple, M Jovic &amp; M-R de Roubin (France)</td>
</tr>
<tr>
<td>1140</td>
<td>Paper 56</td>
<td><em>Pathogenic Legionella species in dental unit waterlines</em></td>
<td>Tanusha Singh &amp; MM Coogan (South Africa)</td>
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**MOLECULAR STUDIES**

Related posters: 93 - 95

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper 57</th>
<th>Title</th>
<th>Authors</th>
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</thead>
<tbody>
<tr>
<td>1200</td>
<td>Paper 57</td>
<td><em>Rotavirus VLPs as tracers in studies of virus persistence in the environment</em></td>
<td>Albert Bosch, S Caballero, FX Abad, J Cohen, F Le Guyader &amp; RM Pintó (Spain; France)</td>
</tr>
<tr>
<td>1220</td>
<td>Paper 58</td>
<td><em>Assessment of virulence-factor activity relationships (VFARs) for waterborne disease</em></td>
<td>TM Jenkins, TM Scott, JR Cole, SA Hasham &amp; Joan B Rose (USA)</td>
</tr>
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1240 Lunch

**Session 14**

**INTERVENTION STRATEGIES**

CONTROL AT POINT OF USE

Chair: Bruce Keswick (USA)

Related posters: 96 - 103

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper 59</th>
<th>Title</th>
<th>Authors</th>
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</thead>
<tbody>
<tr>
<td>1400</td>
<td>Paper 59</td>
<td><em>Toward a new water and sanitation paradigm: the role of point-of-use water quality interventions in the prevention of diarrhoea</em></td>
<td>Rob E Quick (USA)</td>
</tr>
<tr>
<td>1410</td>
<td>Paper 60</td>
<td><em>A randomised health outcome trial of a household-based flocculant disinfectant for drinking water treatment</em></td>
<td>Steve Luby, TM Chiller, CE Mendoza, MB Lopez, M Alvarez, R Hoekstra &amp; BH Keswick (USA; Guatemala)</td>
</tr>
<tr>
<td>1430</td>
<td>Paper 61</td>
<td><em>A trial of point-of-use chlorination and safe water storage for diarrhoea prevention in a high risk rural Kenyan population</em></td>
<td>P Makutsa, V Garrett, P Ogotu, P Barasa, Samwel Ombeki, A Mwaki, G Aluoch &amp; R Quick (Kenya; USA)</td>
</tr>
<tr>
<td>1450</td>
<td>Paper 62</td>
<td><em>Comparison of the effectiveness of two point-of-use water treatment systems in the developing world</em></td>
<td>Daniele S Lantagne (USA)</td>
</tr>
<tr>
<td>1510</td>
<td>Paper 63</td>
<td><em>The impact of a safe water system (SWS) on household water quality and diarrhoea among persons with and without HIV in rural Uganda</em></td>
<td>John R Lule, J Mermin, S Malamba, A Coutinho, F Kizito, D Nakanjako, P Ekwaru, B Waiswa, R Ransom &amp; R Quick (Uganda; USA)</td>
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1530 Discussion and conclusions

1540 Coffee
World Health Organization (WHO) Seminar on Water and Health
Friday 19 September 2003 Cape Town

Introduction
Water is essential for life, a basic human right and a critical element of a healthy and sustainable society. Yet water continues to be a major route of transmission of infectious diseases and a major contributor to the global burden of disease.

Consistent with the broad scope of this Health-related Water Microbiology Symposium and the theme of "Water as the Key to Sustainable Development in Africa", this 1-day seminar focuses on four main topics that address water and health in the developing and developed World:

- The newly revised, broadened and health risk-based WHO Guidelines for Drinking-water Quality,
- Emerging waterborne infectious diseases and approaches to their prevention and control,
- Household water treatment and safe storage to improve microbial quality and reduce drinking waterborne infectious disease, and
- Recreational water quality, with a focus on international guidelines and improved management systems

Schedule of Seminar Topics, Presentation Titles and Speakers

8:30-8:45: Welcome, Opening Remarks and Introduction
J Bartram

8:45-10:25 WHO Guideline for Drinking-water Quality: Health risk-based rolling revisions, 2003
- 8:45-9:10 Introduction, overview and highlights, emphasizing the Stockholm Framework, the integrated, risk-based approach, the relationship of drinking water to sanitation, and incremental improvements to water quality and its management. T-A Stenström, session moderator
- 9:10-9:35 Catchments and source protection M Savill
- 9:35-10:00 Treatment and Distribution Z Bukhari (for M LeChevallier)
- 10:00-10:25 Water Safety Plans G Medema

Session 15

MISCELLANY
Chair: Joan Rose (USA)

1610 Paper 64 Inactivation of pathogens and indicator organisms in drinking water stored in rural household containers
Natasha Potgieter, MM Ehlers & WOK Grabow

1630 Paper 65 Bioaerosols from the land application of biosolids in the desert southwest USA
John Brooks, B Tanner, K Josephson, CP Gerba & I Pepper (USA)

1650 Paper 66 Evaluation of electrochemically generated ozone for the disinfection of water and wastewater
Benjamin D Tanner, S Kuwahara, CP Gerba & KA Reynolds (USA)

1710 Paper 67 Application of a molecular method for the detection of group A rotaviruses in raw and treated water
Walda B van Zyl, PJ Williams, WOK Grabow & MB Taylor (South Africa)
Break: 10:25-10:45

10:45-12:30 Emerging Waterborne Pathogens and their Infectious Disease Risks
• 10:45-11:00 Overview, Introduction and Background
  J Bartram, session moderator
• 11:00-11:20 New technologies and water supply practices influencing pathogen occurrence, control and proliferation
  S Ohgaki
  • 11:20-11:40 New microbial detection technologies for pathogens and microbial water quality indicators
    G Toranzos
  • 11:40-12:00 Changing human ecology in relation to environmental change and socio-political and economic disruption
    Speaker to be Named
• 12:00-12:30 Panel discussion; questions and comments

LUNCH 12:30-13:30

13:30-15:30 Household Water Treatment and Safe Storage of Drinking Water for Health
• 13:30-13:50 Introduction, Overview and Network Description
  M Sobsey, session moderator
• 13:50-14:10 Sources and Safe Storage for Disease Reduction
  P Jagals
• 14:10-14:30 Treatment Methods and Disease Reduction
  T Clasen
• 14:30-14:50 Assessing microbial quality and treatment efficacy
  W Grabow
• 14:50-15:10 Education, Behavior, Sustainability and Dissemination
  R Quick
• 15:10-15:30 Panel discussions, questions and comments

BREAK 15:30-15:50, 20 minutes

15:50-18:00 Recreational Water Quality and Health
• 15:50-16:10 Introduction and WHO Guidelines Development (Annapolis Protocol)
  N Ashbolt, session moderator
• 16:10-16:30 Microbial indicators of recreational water quality
  R Fujioka
• 16:30-16:50 Epidemiological studies of recreational water quality; evidence base
  B Genthe
• 16:50-17:10 Water quality monitoring for management decisions
  Speaker to be Named
• 17:10-17:30 Panel Discussions, questions and comments

17:30-17:45 Summary and Close
• J Bartram

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POSTER PRESENTATIONS

Poster 1: Disinfection of sludge using lime stabilisation and pasteurisation in a small wastewater treatment plant
R Keller, RF Passamani-Franca, ST Cassini & FR Goncalves
Poster 2: The effects of sanitation management in expanding urban areas on the microbiological water quality of the Modder River - what does ten years of monitoring tell us? M Griesel & P Jagals

Poster 3: Feasibility study of the use of effluent from an Anaerobic Baffled Reactor (ABR) for irrigation in a peri-urban community (Cato Manor, Durban) N Mackay, A Smith, N Rodda & C Buckley

Poster 4: Occurrence of pathogens in surface water F Dangendorf, A Queste, I Stalleicken, T Kistemann & M Exner

Poster 5: Effects of rainfall and animal faeces on the microbiological quality of small rural water supplies in the United Kingdom – implications for water quality monitoring R Morris, K Shepherd, J Watkins & AP Wyn-Jones

Poster 6: Survival of microorganisms in soil amended with sewage sludge and their subsequent persistence in crops B Chale-Matsau & H Snyman

Poster 7: Quality of source water in a rural area of Guatemala B López, M Álvarez, C Mendoza, CP Gerba, J Naranjo, S Luby & R Klein WITHDRAWN

Poster 8: Detection and quantification of Microcystis in Florida lakes through microbiological methods MR Woodall, TM Scott & JB Rose

Poster 9: First records of the recent species Aeromonas culicicola in drinking water MJ Figueras, A Suarez-Franquet, MR Chacón, L Soler, M Navarro, C Alejandre, B Grasa & J Guarro

Poster 10: Antibiotic resistance of bacteria in surface water and wastewater FF Reinthaler, G Wüst, J Posch, G Feierl, D Haas, P Mascher, F Pichler-Semmelrock, O Feenstra & E Marth

Poster 11: Bacteria present in hospital water supplies M Gomila, J Gil, J Gascó & J Laluca

Poster 12: A study of the microbial contamination in non-sterile pharmaceuticals by culture and polymerase reaction A Abdulraheem

Poster 13: Salmonella enterica subsp enterica survives in, and is readily released from, river sediments I Kgottagomang, LM Burke, VS Brözel & SN Venter

Poster 14: Adhesion of Enterococcus faecalis in the non-culturable state to zooplankton is the main mechanism responsible for its persistence in both lake and seawater C Signoretto, G Burlacchini, M del Mar Lleò, G Franzini, C Pruzzo, L Pane & P Canepari
Poster 15: *Persistence of adhesive properties in Vibrio cholerae after long-term exposure to seawater*

C Pruzzo, R Tarsi, P Canepari, C Signoretto, RR Colwell & M del Mar Liéó

Poster 16: *Environmental Aeromonas and Vibrio spp isolated from Mai Po Nature Reserve and Inner Deep Bay of Hong Kong, and their responses to environmental factors*

Y Wang, MY Lai & J-D Gu

Poster 17: *The role of aquatic eco-systems as reservoirs of antibiotic resistant bacteria and antibiotic resistance genes*

PT Biyela & J Lin

Poster 18: *Persistence of E. coli in deep backshore sand of two Southern Lake Michigan beaches*

R Whitman, D Shively, M Nevers & M Byappanahalli

Poster 19: *Seasonal variation of faecal pollution in the Plankenbrug River using Escherichia coli as indicator organism - interpretational difficulties when assessing sanitation interventions*

JM Barnes, MM Slabbert, A Huisamen, PD Haasbroek & L Liebowitz

Poster 20: *The microbiological quality of ice for human consumption from food and drink premises in London*

S Surman, L Gordon & S Platt

Poster 21: *Waterborne gastroenteritis outbreak in Albania*

M Divizia, R Gabrieli, D Donia, A Bosch, S Guix, C Villena, RM Pintó, L Palombi, E Buonomo, F Cenko & S Bino

Poster 22: *The relationship between drinking-water quality and gastrointestinal disease in children*


Poster 23: *Linking a hospital outbreak of norovirus to its distribution in the community and presence in the environment*

J Sellwood & J Shore

Poster 24: *Mapping sporadic cryptosporidiosis in Wales and northwest England*

S Hughes, Q Syed, S Woodhouse, PR Hunter, I Lake, R Chalmers & K Osborn

Poster 25: *The surveillance of water quality for private drinking water supplies in England and Wales*

B Said, C Lane & GL Nichols

Poster 26: *To boil or not to boil?*

K Osborn, A Godfree & C Kerr

Poster 27: *Changing household knowledge, attitudes and practices towards hygienic handling of container-stored water*

M Moabi, NP Nala, P Jagals & TJ Tsubane

Poster 28: *Water quality in peri-urban communities: interaction of water supply devices and water use behaviours for users supplied by communal standpipes and household ground tanks in Cato Manor (Durban)*
Poster 29: *Is it useful to disinfect the dental unit water systems? A study of the dental unit water systems of Barcelona City*
RM Araujo & N Contreras

Poster 30: *Probing Norwalk-like virus presence in shellfish with artificial neural networks*
G Brion, S Lingeriddy, TR Neelakantan, M Wang, R Girones, DN Lees, A Allard & A Vantarakis

Poster 31: *Comparison of different primer sets for the RT-PCR detection of hepatitis A virus and astrovirus in mussel tissues*
JL Romalde, C Ribao, L Vilariño & JL Barja

Poster 32: *Virological analysis of shellfish for food safety and control*
A Carducci, N Lucchesi, B Casini, F Mazzoni & M Verani

Poster 33: *Environmental factors influencing human viral pathogens and their potential indicator organisms in the Blue Mussel, Mytilus edulis: first Scandinavian report*
BE Hernroth, A-C Conden-Hansson, A-S Rhenstam-Holm, R Girones & AK Allard

Poster 34: *Evaluation of the efficiency of removal of Giardia cysts and Cryptosporidium oocysts by slow sand filtration processes in pilot units*
MBCM Vieira & L Heller

Poster 35: *Microbiological quality of ground and surface water used for domestic purposes in rural areas of South Africa*
MA Vrey, MM Ehlers, WB Van Zyl, MB Taylor, DN Pavlov, J Van Heerden, JME Venter, JC Vivier, JC De Villiers, E Van Zyl & WOK Grabow

Poster 36: *Evaluation of the microbial quality of water supplies to municipal, mining and squatter communities in the Bindura urban area, Zimbabwe*
H Nyati

Poster 37: *Repressive effects of yeast extract on photoreactivation of Escherichia coli*
K Oguma, H Katayama, H Mitani & S Ohgaki

Poster 38: *Microbicidal effect of hydrogen peroxide, silver and the combination of both in water*
W Pribil, S Pfleger & R Sommer

Poster 39: *Evaluation of factors affecting the performance of small water supplies for the removal of indicator bacteria in rural developing areas of South Africa: case study - Alice WTP*
MNB Momba, N Makal & B Brouckaert

Poster 40: *Water quality monitoring at Blantyre Water Board, Malawi*
AD Kalea

Poster 41: *Removal efficiencies of endocrine disruptors in drinking water treatment plants and incidence of microbial contaminants in Arizona, USA*
A Alum, H Ryu & M Abbaszadegan

Poster 42: Microbial quality of reclaimed water distribution systems and treatment efficacy
M Abbaszadegan, H Ryu, A Alum & J Brereton

Poster 43: Differentiation of faecal Escherichia coli from humans and animals by Random Amplified Polymorphic DNA-PCR (RAPD-PCR)
D Venieri, A Vantarakis & M Papapetropoulou

Poster 44: F-RNA coliphages and faecal sterols used as indicators in tracing the source of faecal pollution to either animal or human origin in the Umgeni water catchment area
A Sundram, N Jumanial, W John, IW Bailey, MM Ehlers & WOK Grabow

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OPEN MEETING OF THE HRWM GROUP
Tuesday 16 September 2003 at 1720

Draft Agenda

1. Apologies
2. Minutes of the Melbourne Open Meeting
3. Matters arising not on the agenda  
   • Journal of Water and Health (Joan Jofre)
4. Group Constitution
5. IWA Strategic Council (Willie Grabow)
6. Results of election of new Group Chair
7. Marrakech 2004 (Joan Rose)
8. Swansea 2005 (Ray Morris)
9. 2007 venue
MINUTES OF THE MELBOURNE OPEN MEETING
April 9 2002

Present:
Steering Committee members (Nicholas Ashbolt, Willie Grabow, Konrad Botzenhart, Bella Ho, Mark Sobsey, Joan Jofre, Gertjan Medema, Tatsuo Omura, Gary Toranzos) and approx. 50 Group members.

Agenda
- Steering Committee
- Group opinion statements
- Journal
- Future meetings
- Other business
- Website

Steering Committee
- Ray Morris has been re-elected as secretary. Joan Jofre proposes to appoint Gertjan Medema as assistant secretary to share the workload. The Steering Committee has agreed and also the group agrees.
- It was also suggested to appoint a chairman-elect. The group also agrees.
- As recognition of all the effort that Willie Grabow has put into our Group for many years, Joan Jofre suggests that he is elected as Honorary President of the Group. The Group agrees with an ovation.

The Group started in 1978 as Water Virology symposium. That means the Group has its 25 anniversary in 2003. It was suggested to organise a Virology session at the Cape-Town symposium in 2003 with some form of celebration. This will be discussed between Steering Committee and Symposium organisers. Group members are requested to nominate topics/papers to microbe@ntlworld.com

To bring new blood and enthusiasm to the Group's activities, the idea is to invite people to nominate topics that they would like to be involved in. The idea is to expand the Steering Committee with people that want to put some time into activities that support the Group. New energy is needed, as there is now increased awareness on water quality issues. It was agreed to put this forward to the Group and to solicit ideas from the Group on the type of activities. Group members that would like to be involved and/or have ideas about activities are asked to contact one of the Steering Group members.

There are also opportunities for additional funding. One of the areas is Water Utilities that are interested in health-related water microbiology. To increase the sustainability this could be organised as a fund. The Steering Committee solicits somebody that organises this fund. This was discussed also in the last Group meeting in Paris. Colin Fricker was asked to do organise this, but he found no time/possibility to do so. Hence, a new Group member is sought for this task.

Group opinion statements in Water 21
The Steering Committee suggested to make Group opinion statements, according to the ASM example: they have a scientific and public affairs board. This will promote visibility of the Group in other areas and allow the Groups microbiologists to share their microbiological view on important topics. A small group should be selected that is responsible for selecting topics to be published and solicit the scientists to write this or will be interviewed by Water 21. The document should be approved by the Steering Committee and presented to Group members. A
system was discussed to ensure that the publication can be regarded as Group opinion. It was decided that this would be done by e-mail consultation of the Group members with acceptance as Group opinion when <25% of the respondents disapprove.

Potential topics: Climate change, Microbial source tracking etc. The Group members are asked to bring in ideas (microbe@ntlworld.com).

**Journal**

The Steering Committee has been discussing on a journal dedicated to health-related water microbiology. The general consensus was that this was a welcome addition to the available scientific journals. Michael Dunn (IWA publishing) is enthusiastic about publishing a journal on water & health.

The question was raised if there are no journals at present that could serve the function of “Group platform”. If this is restricted to IWA journals it is felt that there are no journals that could serve this purpose. One important aspect to consider for a new journal is that the impact factor should be high enough to attract high quality papers. Maybe Water Research could be an option as this has a high impact factor, but IWA has less control over this journal. People will be solicited for the editorial board. Charles Gerba (Univ. of Arizona) was proposed as editor-in-chief. 3 other regional editors will be sought by the Steering Committee. Members for the editorial board (approx. 30 people) will be solicited through IWA-publishing. Editors should not only review papers but should also try to solicit papers and critical review articles on selected topics.

The Group supported the idea of a "Group-journal" and stressed the need for a high impact factor to make the journal attractive. The Group also suggested it could be the forum for the publication of the Group's symposia.

During the Melbourne symposium a meeting is arranged with Michael Dunn by Joan Jofre, Nick Ashbolt, Mark Sobsey and Gertjan Medema. Also WHO is very supportive of this journal, so Jamie Bartram will be asked to participate in the meeting with Michael Dunn.

**Future Group meetings**

**IWA Strategic Council**

IWA is now more than ever aware of the relevance of the Specialist Groups. They have decided on several actions to support Specialist Groups. One of the actions is to support the organisation of Group symposia and help in the organisation. Discussed was also to give the Specialist Groups the incentive to do this, in the sense that if you make money with symposia this will be earmarked as Specialist Group money to be used for future symposia of the Group. Another idea is to apply this money to support position papers of the Group. Hence, we are well positioned in organising our own Group meetings.

Keith Robertson is the IWA contact for Group matters.

**Future meetings**

The Steering Committee proposes that the next 2 biennial meetings will be Group meetings, rather than symposia in conjunction with the IWA World Water Congress. The Steering Committee feels that the organisation of separate symposia with relatively low fees is preferable over combined symposia with high fees. This was agreed by the Group.

Three proposals were presented to the Group:

- **2003: Cape Town**, South Africa by Willie Grabow. This meeting is combined with an international symposium on microbial ecology (ISME). It is a little over 1 year after the Melbourne meeting, but the combination with the other symposia makes it possible to offer low fees in a very new venue and offers some exchange possibilities with the other symposia in a country with a high number of active group members. The Group accepted this proposal with content.

The Group also accepted the biennial scheme of 2003 and 2005; so we have biennial meetings in the years in between the IWA biennial meeting years.

- **2005: Tokyo**, Japan by Tatsuo Omura. This venue at the university also offered low prices and good accommodation in an area where the Group has not organised symposia before.
• 2005: Swansea, UK. Due to the absence of the organisers only the slides were presented to the Group. Again, this University venue offers low prices and a good venue. There was discussion on the voting for the 2005 venue. It was decided that, since the announcement of this Group meeting indicated only voting for the next venue (South Africa), the Group members that were not present should be given the opportunity to vote. The voting is to be arranged through the Group's website and members will be notified through the Newsletter.

Other business
The IWA AWWA meeting on waterborne pathogens (in Portugal in September 2002) has very similar content as the Group meetings. As they follow a triennial scheme, we will make contact with the organisers to discuss the place of the different meetings on health-related water microbiology.

Encouragement of student participation in the Group's meetings and other activities will be done by special fees for the Group's meetings.

Group's website
Gertjan Medema presented the Group's own website with information on the Group's activities (past and future symposia, publications, newsletter) and some useful microbiology links and a discussion forum. The url for this website is: http://www.iwa-microbiology.org

Next Group meeting
This will be organised at the Cape Town symposium in 2003.

[Minutes prepared by Gertjan Medema]

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Next issue deadline
30th September 2003

Please send contributions to Ray Morris at microbe@ntlworld.com