Global Water Pathogen Project

- PART ONE. THE HEALTH HAZARDS OF EXCRETA: THEORY AND CONTROL
  - Introduction to the Importance of Sanitation
  - A QMRA Framework for Sanitation Treatment Decisions
  - Environmental Aspects and Features of Critical Pathogen Groups
  - Gender, Women and Sanitation
- PART TWO. INDICATORS AND MICROBIAL SOURCE TRACKING MARKERS
  - Microbial Indicators - “Workhorses” in the Field of Health-related Water Quality Testing
  - General and host-associated bacterial indicators of faecal pollution
  - General and host-associated bacteriophage indicators of faecal pollution
  - Human and animal enteric viral markers for tracking the sources of faecal pollution
  - Using indicators to assess microbial treatment and disinfection efficacy
  - Evaluation of subsurface microbial transport using microbial indicators, surrogates and tracers
- PART THREE. SPECIFIC EXCRETED PATHOGENS: ENVIRONMENTAL AND EPIDEMIOLOGY ASPECTS
  - SECTION I. VIRUSES
    - Adenoviruses
    - Hepatitis A
    - Hepatitis E
    - Norovirus and other Caliciviruses
    - Papillomavirus
    - Polioviruses and other Enteroviruses
    - Polyomavirus
    - Rotavirus and Astrovirus
    - Summary of Excreted and Waterborne Viruses
  - SECTION II. BACTERIA
    - Overview of issues for water bacterial pathogens
    - Aeromonas
    - Arcobacter
    - Members of the family Campylobacteraceae: Campylobacter jejuni, Campylobacter coli
    - Pathogenic members of Escherichia coli & Shigella spp. Shigellosis
    - Helicobacter pylori
    - Leptospira and Leptospirosis
    - Salmonella, Enteric Fevers, and Salmonellosis
    - Vibrio cholerae and Cholera biotypes
    - Antimicrobal Resistance: Fecal Sanitation Strategies for Combatting a Global Public Health Threat
  - SECTION III. PROTISTS
    - Balantidium coli
    - Blastocystis
    - Cyclospora cayetanensis
    - Cryptosporidium spp.
    - Entamoeba histolytica
    - Giardia duodenalis

        - Microsporidia
        - Toxoplasma gondii
    - SECTION IV. HELMINTHS
        - Cestodes
            - Diphyllobothriidae
            - Echinococcus spp.
            - Taenia spp.
        - Nematodes
            - Ascaris spp.
            - Hookworms
            - Toxocara spp.
            - Trichuris trichiura
        - Trematodes
            - The Liver Flukes: Clonorchis sinensis, Opisthorchis spp, and Metorchis spp.
            - Intestinal Flukes: Heterophyidae and Echinostomatidae
            - Paragonimus spp.
            - Schistosoma spp.
- PART FOUR. MANAGEMENT OF RISK FROM EXCRETA AND WASTEWATER
    - Persistence
        - Persistence of Pathogenic Microorganisms in Fecal Wastes and Wastewater Matrices: An Introduction and Overview of Data Considerations
        - Persistence of Pathogens in Sewage and Other Water Types
        - Pathogen Specific Persistence Modeling Data
        - The Persistence of Indicators and Pathogens in Wastewater Biosolids-amended Soil
    - Sanitation System Technologies
        - Overview and Introduction
            - Understanding Pathogen Reduction in Sanitation Systems: Units of Measurement, Expressing Changes in Concentrations, and Kinetics
            - Collection and Conveyance of Excreta and Wastewater in On-Site and Off-Site Systems
        - Pathogen Reduction in Non-Sewered (On-site) System Technologies
            - Pit Toilets (Latrines)
            - Composting and Dry Desiccating Toilets (Latrines)
            - Cesspits and Soakpits
            - Septic Systems
        - Pathogen Reduction in Sewered System Technologies
            - Sludge Management: Biosolids and Fecal Sludge
            - Preliminary Treatment and Primary Sedimentation
            - Anaerobic Sludge Blanket Reactors
            - Activated Sludge
            - Membrane Bioreactors
            - Media Filters: Trickling Filters and Anaerobic Filters
            - Waste Stabilization Ponds
            - Constructed Wetlands
            - Pathogen Reduction and Survival in Complete Treatment Works
    - Disinfection
        - Physical Agents
        - Chemical disinfectants
        - Emergency Response
- PART FIVE. CASE STUDIES
    - A framework for safe sanitation systems
        - How to use the GWPP knowledge? A risk management approach for safe sanitation

- Application of the risk-based framework - is it safe?
  - Disease burden due to gastroenteritis infections among people living along wastewater reuse system in Hanoi, Vietnam
  - Health risk of biogas effluent exposure and handling in Vietnam
  - Wastewater reuse in agriculture and health risk in Vietnam
  - Can farmers in Bolivia safely irrigate non-edible crops with treated wastewater?
  - Is it safe to use untreated greywater to irrigate vegetables in my backyard?
  - Salmonella/Shigella/Vibrio in treated effluents and impact on downstream water users (South Africa)
- Regulation for safe system design
  - Australian guidelines for water recycling – setting health based performance targets and safe use of wastewater
  - Building a safe recycled water scheme
  - How do I ensure my existing recycled water scheme is safe?
- System planning: evaluation of alternative scenarios
  - Tiered approach for integral assessment of sanitation, water supply and hygiene health risks in rural Brasil
  - Mapping pathogen emissions to surface water using a global model with scenario analysis
  - The QMRAcatch approach for guiding sustainable water safety management options at a large river
  - Validation of high rate algal ponds as an efficient wastewater treatment option to improve public health in rural communities
  - Pathogen flows in urban environments and their public health risks: A new conceptual approach to inform sanitation planning
- Managing risks by targeting pathogen sources
  - E. coli and enterococci subtyping to discriminate contamination sources in wastewater treatment ponds
  - Using genetic microbial source tracking (MST) markers to identify fecal pollution sources in spring water of a large alpine karst catchment
  - Pollution Source-Targeted Water Safety Management: Characterization of Diffuse Human Fecal Pollution Sources with Land Use Information, Strategic...
