



Recreational Water Quality Advisory Committee Members – Disclosed Interests

Name/Position	Area of Expertise	Declaration of Interest
<p>Professor Stuart Khan (CHAIR)</p> <p>Water Research Centre, The University of New South Wales</p> <p>Fellow of the Australian Academy of Technology and Engineering (FTSE)</p>	<p>Trace Chemical Contaminants in Water; Risk Assessment and Risk Management; Environmental Engineer</p>	<ul style="list-style-type: none"> Lectures at the University of New South Wales on topics closely related to the activities of the Water Quality Advisory Committee and the Recreational Water Quality Advisory Committee including water and wastewater quality and analysis. Works closely with many Australian and international water industry participants including water utilities, health regulators, environment regulators and private consultants. Committee/Advisory member of: WHO – Water Quality and Technical Advisory Group 2015 – present; Water Quality Research Australia – Project Quality Review Team 2012 – present; U.S. WaterReuse – Technical Advisory Committee 2015 – 2017; Gold Coast Commonwealth Games Independent Expert Panel – Water Quality and Monitoring Programme 2016 – present; the National Water Grid Advisory Body 2020 – present (The Advisory Body provides independent expert advice to the Australian Government via the Deputy Prime Minister on specific water infrastructure policy, projects and investment priorities). Member of: Australian Water Association; International Water Association; Engineers Australia. Honorary (unpaid) role as an adviser to the Parramatta River Catchment Group. Past Committee/Advisory member of: U.S. WaterReuse Foundation – Project Advisory Committee 2010 – 2014; Australian Water Recycling Centre of Excellence – Project Advisory Committee 2011 – 2014; CSIRO and NSW Environmental Trust – Project Advisory Committee 2010 – 2013; South East Queensland Urban Water Security Research Alliance – Project Advisory Committee – Purified Recycled Water Project 2008 – 2012. Consultant: undertook work for members of the Australian Water Industry in relation to water quality. Provided expert opinion to Water Research Australia on PFAS chemicals. This includes contributing to a current water industry fact-sheet on these chemicals and their relevance to the water industry. In the past, made comments to the media regarding the safety and risks associated with PFAS in drinking water. Journal Editorships: Associate Editor – Environmental Science – Water Research and Technology; Journal of Water Supply – Research Technology. Participation in national and international academic and industry conferences. Publication of numerous journal articles, reports and book chapters; also presentations at international and national conferences, seminars and workshops. Recipient of research grants from government and non-government agencies – including Australian Research Council and Water Research Australia. Applications for NHMRC funding are much less frequent, but not excluded.
<p>Dr Ben van den Akker</p> <p>Lead Scientist, SA Water Corporation (waste water)</p> <p>Adjunct Senior Lecturer at Flinders University</p>	<p>Areas of expertise: urban water systems (waste/recycled water), microbiology, quantitative microbial risk assessments</p>	<ul style="list-style-type: none"> SA Water or its activities could reasonably be perceived to be an influence due to a competing interest either for or against the issues being considered by the committee. For example, SA Water utilises ocean outfalls to discharge treated effluent into recreational waters and have guidelines/requirements on how to manage access to recreational waters during events associated with spills/overflow.



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<p>Adjunct Research Fellow at University of South Australia</p>		<ul style="list-style-type: none"> • Holds adjunct positions at Flinders University and University of South Australia. • Worked for the University of South Australia (until December 2020) on research related to recreational waters, antibiotic resistance, and risk assessment of water reuse schemes. • Conducts consultancy for and provides technical advice to Australian water utilities. • Published numerous journal articles and book chapters as well as presented at international and national conferences and seminars.
<p>Dr Meredith Campey Manager Beachwatch Programs, Department of Planning, Industry and Environment, NSW</p>	<p>Areas of expertise in marine science and recreational water quality</p>	<ul style="list-style-type: none"> • Manager of Beachwatch Programs, implementing state-wide recreational water quality monitoring programs for swimming sites along the NSW coast, under the NSW Department of Planning, Industry and Environment, in accordance with the NHMRC (2008) Guidelines for Managing Risks in Recreational Waters. This includes working with councils to implement recreational water quality monitoring programs under the Beachwatch Partnership Program and producing annual NSW State of the Beaches reports which provide a long term assessment of how suitable coastal swimming sites are for recreation. • Provides advice on recreational water quality to cross agency working groups, local government and the community and publish annual reports.
<p>Dr Christine Cowie Senior Research Fellow, Sydney South West Clinical School, Ingham Institute, UNSW Australia. Senior Research Fellow, Woolcock Institute of Medical Research, The University of Sydney.</p>	<p>Expertise in environmental epidemiology and air pollution epidemiology</p>	<ul style="list-style-type: none"> • Conducted consultancy for Sydney Water Corporation (SWC) Sewer Workers Health Study which consisted of field work, a literature review and biological and chemical risk assessment of the health risks posed to Sydney Water (SWC) sewage workers. Many of the recommendations were implemented by SWC. • Former manager, Water Unit, NSW Health Ministry. • Former member of the Australian Water Association. • Former member of various interdepartmental committees specific to water issues; NHMRC Committee for the Rolling Revision of the Australian Drinking Water Guidelines, NHMRC Committee for development of the Recycled Water Quality Guidelines, Strategic Liaison Group/ Joint Operational Groups with SWC and SCA, Beachwatch Advisory Committee, NSW Drought Committee and Rural Water Supply Advisory Committee. • Published papers in peer reviewed journals, submissions to government, and reports and presented at local and international conferences, seminars and workshops.
<p>Dr Dan Deere Independent Consultant Director Water Futures. Visiting Fellow, The University of New South Wales</p>	<p>Water Quality and Risk Management, water and recycled water auditing.</p>	<ul style="list-style-type: none"> • Consultant – Water Futures Visiting Fellow – UNSW • Current projects for: University of Technology Institute for Sustainable Futures 2019 – present; Monash Medical School (DHHS): 2019 – present; University of Bristol, Kathmandu University and Haramaya University (funded by UK Aid): 2020-present; University of Adelaide, (for Seqwater): 2019 – present; University of Adelaide and Australis Consulting (for Central Coast Council): 2019 – present; University of New South Wales, Monash University and Natural Logic (for Water Research Australia): 2019 – present; New Zealand Ministry of Health and Department of Internal Affairs: 2019 – present; Hastings District Council and New Zealand Ministry District Health Board: 2017 – present; Hong Kong Water Supplies Department: 2017 – present; NT Government (Power Water with Department of Local Government, Housing and Community and Department of Health): 2018 – present; NSW Health: 2019 – present; Department of Health and Human Services, EPA and Department of Environment, Land, Water and Planning: 2019 – present; Department of Health and Human Services, EPA and



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		<p>Department of Environment, Land, Water and Planning: 2019 – present; University of Queensland: 2009 – present.</p> <ul style="list-style-type: none"> • Current major unfunded projects/activities: World Health Organization Guidelines for Safe Recreational Water Environments Working Group; National Health and Medical Research Council Guidelines for Managing Risks in Recreational Water, Water Quality Advisory Committee; COVID-19 technical support for multiple agencies in Australia and internationally on an as needs basis relating to general microbiology and WASH aspects. This to date has been in the US, UK, China, HK, Australia and NZ. • Additional minor funded activities past and present include peer reviews, training, workshop facilitation, regulatory audits of water suppliers for health departments, contributions to research projects and specific technical assessments and validation, with the work mostly related to microbial pathogens. • Occasionally undertakes work for members of the Australian Water Industry as a consultant. This includes Health Departments, Water Agencies and Water Utilities and related to water quality risk assessment and management and other aspects of water quality science. This also involves Water Research Australia: Drinking water catchment source assessment tool; Hong Kong Development Bureau and Department of Health: assessment of risks from using seawater for non-potable uses; NSW Health: support for councils to implement the ADWG Framework; Power Water (Northern Territory): Catchment source water assessments to identify pollution sources; Vic DHHS: Drinking water supply risk management plan regulatory audits for water utilities (funded by the utility but undertaken for DHHS); SA Health/SA Water: Drinking water supply risk management plan regulatory audit for SA Water; Queensland Health: Advising Qld councils on implementing Health-based Targets; NSW EPA and Sydney Water: QMRA relating to biosolids application as part of guideline revision; Vic EPA: QMRA relating to recreational water guidelines; NSW IPART: Drinking water supply risk management plan regulatory audits for water utilities (funded by the utility or IPART but undertaken for IPART); WHO: Western Pacific Regional Office Water Safety Plan Training of Trainers Program for AusAID (DFAT) and UK AID. • Occasionally provides expert witness statements in court for the interpretation of the Australian Drinking Water Guidelines or Guidelines for Managing Risks in Recreational Water in relation to water quality protection. • Member of Seqwater Water Security Program - Independent Review Panel, NSW Health Cryptosporidium and Giardia Expert Panel, the Australian Water Association, the International Water Association and Water Research Australia. • Publications include numerous journals and technical reports and presented at international and national conferences, seminars, webinars and workshops. Focus is on providing practical guidance founded in objective, best available evidence for water quality management.
<p>Ms Sarah Holland-Clift Corangamite Catchment Management Authority, VIC</p>	<p>Former community group representative with expertise in environmental consultancy program coordination, weed management, carbon and emissions in</p>	<ul style="list-style-type: none"> • Current General Manager Community and Catchment Services at Corangamite Catchment Management Authority. • Statutory responsibilities of this role include management of the Barwon River through Geelong (including recreational water quality monitoring) and rural drainage schemes, education and information provision and implementation of the Corangamite Waterways Strategy. • Previously managed the development of the Parramatta River Masterplan, which included commissioning a strategic analysis of



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	agriculture and river health.	water quality monitoring in the Parramatta River catchment and development of a framework for river swimming site activation. This work worked within existing NHMRC Guidelines but also proposed potential new directions that would provide more tailored monitoring and management solutions for the Parramatta River.
<p>Associate Professor Andrew Humpage Independent Consultant, SA</p>	Expertise in clinical biochemistry, histopathology, in vivo and in vitro toxicology, and genotoxicity, particularly in cyanobacterial toxins	<ul style="list-style-type: none"> Received travel and accommodation support from WHO and Singapore Utilities Board to attend meetings in relation to my membership of the WHO Guidelines for Drinking Water Quality Chemicals Committee. Provided expert advice and drafted background documents or book chapters for WHO Guidelines for Drinking Water Quality Chemicals Committee in relation to my expertise in cyanobacteria and their toxins.
<p>Dr Greg Jackson Director, Water Unit, Prevention Division Department of Health, Queensland Adjunct Associate Professor in the Queensland Alliance for Environmental Health Sciences at the University of Queensland</p>	Expertise in regulation and environmental science	<ul style="list-style-type: none"> Permanent employee of the Queensland Department of Health, as Director of the Water Unit, within the Health Protection Branch. This role includes some regulatory responsibilities under the Public Health Act 2005 (Qld). Appointment as Adjunct Associate Professor in the Queensland Alliance for Environmental Health Sciences at the University of Queensland. This appointment involves the development of applications for research funding under the Alliance. Member of the enHealth Water Quality Expert Reference Panel, as the Queensland jurisdictional representative. This is an advisory role, with no regulatory or funding responsibilities. Designated representative of Queensland Health as a General Member of Water Research Australia.
<p>Dr Muriel Lepesteur-Thompson Senior Health Risk Advisor – Microbial at EPA Victoria Adjunct Associate Professor, RMIT University</p>	Expertise in microbial risk assessment (including QMRA) and risk management	<ul style="list-style-type: none"> Senior Health Risk Advisor with EPA Victoria. Involved in the development of environmental policies and guidelines. Provides advices for microbial pollution events, future developments and may assist the Court as an Expert Witness. Also involved in research projects related to recreational waters in partnership with universities. Senior Health Risk Advisor – Microbial at EPA Victoria, contributes to the development of future environmental public health policies and guidelines such as: SEPP Waters of Victoria, Guidelines for managing human health risks in recreational waters, Guidelines for assessing human health risks for wastewater discharge into waterways, Guidelines for composting facilities, Waste to land regulations Provides advice in relation to emergency and pollution events, development proposals and prosecution (expert witness statements for VCAT or Supreme Court). Member of the Project Steering Committee for the RMIT-ECP-SEW/MW joint project "Managing Microorganisms in Victoria's recycled water assets" and partner(ed) with various research organisations in projects related to public health and waters: Quantitative Microbial Risk Assessment for recreational users of Port Phillip Bay, Source Tracking in Port Phillip Bay, Significance of the environment as a reservoir for Antimicrobial Resistance (proposal submitted), A national approach to tackling antimicrobial resistance in the water cycle (proposal submitted for ARC funding), Modelling Risks to Recreational Users of Port Phillip Bay (proposal submitted), Development of a rapid, low-cost, portable detection method for E. coli and enterococci (proposal submitted).



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<p>Dr Richard Lugg Independent Consultant, WA</p>	<p>Areas of expertise in water quality and human health</p>	<ul style="list-style-type: none"> Previously worked on quantitative modelling of free-living organisms in recreational water. The review and guidelines update may propose something that conflicts this previous work.
<p>Associate Professor Susan Petterson Associate Professor, School of Medicine, Griffith University Director, Water & Health Pty Ltd Editor, Journal of Water and Health (IWA Publishing)</p>	<p>Expertise in Quantitative Microbial Risk Assessment and risk assessment software tool development</p>	<ul style="list-style-type: none"> Affiliated with Griffith University. Consultant to: Viega Plumbing and KG Plumbing and Heating Systems Attendorn, Germany on opportunistic pathogens; the City of Edmonton, Canada – on recreational water; expert testimony for AGL Macquarie on opportunistic pathogens. Consultant for application of QMRA for vulnerability mapping of Cryptosporidium risks associated with NSW water supplies for NSW Health. Current projects for: Global Water Pathogens Project; Public Health Agency of Sweden 2012 – present; Sydney Water Corporation 2012 – present; NSW Health 2012 – present; WHO 2009 – present. Past projects for: Government of Alberta, Canada 2013 – 2014; INTARES EU 2011 – 2014; Water Research Australia 2011 – 2013; Swedish Water and Wastewater Association – Stockholm Water Ltd 2011. Review of QMRA for recreational water quality at Hunter Beaches for Hunter Water looking at health risk assessment of sewage discharges. Microbial Risk Assessment for Comparison of Sewer Overflow Management Options: Consulting work for Queensland Urban Utilities applying QMRA to assess overflow impacts on recreational sites. Serves as an advisor for WHO Water Sanitation Hygiene and Health on risk assessment and microbial aspects in water: Past participant in the WHO Guidelines Development Group for Sanitation Guidelines Participant in the Microbial Aspects Advisory of the Guidelines for Drinking Water Quality Member of the JEMRA (Joint FAO/WHO Expert Meetings on Microbial Risk Assessment) roster of experts. Member of the independent peer review panel (human health) for Sydney Water. Publications on numerous journals and reports; also presentations at international and national conferences, seminars and workshops including teaching for IWES industry training courses.
<p>Ms Rachael Poon Senior Scientist, Water Unit, Health Protection Branch, Department of Health & Human Services, VIC</p>	<p>Water regulator with expertise in regulation, microbiology and biotechnology</p>	<ul style="list-style-type: none"> Senior Scientist at the Water Unit at the Department of Health and Human Services Victoria. Project Lead for the Wastewater Surveillance for SARS-CoV-2 in Wastewater. Member of the EPA State Environment Protection Policy Recreational Water Technical Reference Group, Victorian Pool Operators' Handbook Steering Committee and the Aquatic Facility Regulators Working Group. Published journal articles, and developed guidelines, factsheets and guidance material for DHHS. Presented at national and international conferences, workshops and seminars. Published numerous journal articles from 2005-2013 when researching bacterial toxins and pathogenesis at Monash University (2003-2008).
<p>Associate Professor Anne Roiko Associate Professor and Discipline Lead,</p>	<p>Expertise in environmental epidemiology, quantitative microbial</p>	<ul style="list-style-type: none"> Board member of the Health-related Water Microbiology (HRWM) Special Interest Group, of the International Water Association (IWA). The work of this group included the scientific review of abstracts submitted to the 2019 IWA Symposium of the



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Environmental Health at School of Medicine, Griffith University	risk assessment and risk management	<p>Health-related Water Microbiology Special Interest Group – some of which is related to recreational water quality.</p> <ul style="list-style-type: none"> • Chair of the Public Health Scientific Expert Panel for Healthy Land and Water and have been involved in the development of related guidelines, standards, education materials or fact sheets, writing of publications, delivering speeches, or engagement in public debate on advice regarding Recreational Water Safety. • Appointed to the Commonwealth Games Water Working Group and was responsible for providing advice regarding water-related risk registers for use during the Commonwealth Games on the Gold Coast. • Theme leader for Urban Water and Waste Management within the Cities Research Institute, Griffith University. • Griffith University’s representative for Water Research Australia. • Applied and received funding for research projects related to recreational water management. • Responded to requests and received funding for consultancies that could be perceived to have a bearing on recreational water management. • Published material that relates to recreational water management.
Dr Jenny Stauber Chief Research Scientist CSIRO Land and Water, Lucas Heights NSW	Expertise in microbiology, environmental contamination and risk assessments	<ul style="list-style-type: none"> • Involved in the development of toxicant guidelines for aquatic ecosystem protection for the Australian government, and am a member of several government advisory committees. This previously included chairing the SEPP waters and groundwater’s of Victoria science advisory panel, which concluded in Dec 2016. • CSIRO group currently receives funding from the international nickel association (NIPERA) and the International Zinc Association, not for profit associations, to develop a Ni and Zn water quality guidelines for aquatic ecosystem environmental protection. • Supervises PhD students through the UOW, UTS and Latrobe University on topics unrelated to recreational water quality. • Involved in the development of toxicant guidelines for aquatic ecosystem protection for the Australian government, and am a member of several government advisory committees. This previously included chairing the SEPP waters and groundwaters of Victoria science advisory panel, which concluded in Dec 2016. • Works at CSIRO Land and Water in the same research program and business unit as the contracted reviewers for free-living organisms.
Dr Cameron Veal Lead Water Quality (Public Health), Seqwater, QLD.	Expertise in water quality and public health.	<ul style="list-style-type: none"> • Development of Seqwater’s Cyanotoxin Based Recreational Water Quality Management Response including the Publication of 1 Peer Review Paper, 2 Conference Presentations, Development of Cyanotoxin guidelines for recreation and fact sheets for Seqwater’s recreational users including educational material and/ or fact sheets. • Employment with a Bulk Drinking Water Supply Authority which permits a range of primary and secondary recreational opportunities and follows the NHMRC’s Guidelines for Managing Risks in Recreational Waters • Member of three committees (one as chairperson) run by Healthy Land and Water, all of which (Scientific Expert Panel, Monitoring and Evaluation Steering Committee and Healthy Waterplay Committee) focus on water quality monitoring, recreation, public health, management and science in South East Queensland. • PhD Supervisor of a Griffith University PhD Student who is "Evaluating the application microbial source tracking with quantitative microbial risk assessment to characterise health risks in recreational waters".



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		<ul style="list-style-type: none">• Individual Member of the Australian (AWA) and International Water Associations (IWA) and institutional member of Water Research Australia.• Recipient of research grants from government and non-government agencies, as well as named industry partners on several current Australian Research Council Linkage Grant Applications (none currently funded).• Honorary Research Fellow at the School of Civil Engineering (University of Queensland) and Cities Research Institute (Griffith University).• Publications in several journals and reports; also presentations at international and national conferences, seminars and workshops.• Role at Seqwater has several active programs with CSIRO researchers in the microbial spaces, of note due to CSIRO staff undertaking of expert reviews.