



Water
Research
Australia

next water

12-13 February 2019
Melbourne

Event Program

TIME	SESSIONS	
8:30am	Delegate Registration	
9:15am	Welcome and Housekeeping	
9:20am	Welcome to Country	
9:30am	Opening - Karen Rouse, CEO, Water Research Australia	
9:50am	Morning Keynote - Prof Joan Rose, international water quality expert	
10.30am	MORNING TEA BREAK	
	STREAM 1 (Olympic Room B)	STREAM 2 (Olympic Room A)
	MORNING STREAMS	
11.00am	Climate Change	Water and Wastewater Treatment
	<p>Climate change is affecting weather patterns, seasonal changes, ecosystems and posing challenges to the world's fresh water supplies. Hear from leaders of climate change related research who are tackling the challenges of decision making in the face of an uncertain future, and the environmental impacts arising from climate change.</p> <p>TOPICS AND SPEAKERS INCLUDE: Better data-driven decision making under future climate scenarios <i>Leon van der Linden</i> SA WATER</p> <p>Preparing for future challenges in an uncertain world <i>Prof Holger Maier</i> UNIVERSITY OF ADELAIDE</p> <p>Top-down versus bottom-up scenarios: how do they impact decision-making? <i>Cameron McPhail</i> UNIVERSITY OF ADELAIDE</p> <p>Integrated modelling to compare health risks associated with alternative approaches to managing sewer overflows <i>A/Prof Anne Roiko</i> GRIFFITH UNIVERSITY</p> <p>Adapting catchment monitoring and potable water treatment to climate change <i>Dr Sina Moradi</i> UNIVERSITY OF NEW SOUTH WALES</p>	<p>Treatment advances enabling water service innovation - from operations to operators. Time for smart workings and working smart.</p> <p>SPONSOR: Water Corporation</p> <p>TOPICS AND SPEAKERS INCLUDE: Treatment advances and contributions towards the SDGs <i>Luke Zappia</i> WATER CORPORATION</p> <p>Insights into Algal Treatment through Floc Property Analysis <i>A/Prof Rita Henderson</i> UNIVERSITY OF NEW SOUTH WALES</p> <p>Interactions between wastewater particles and pathogens <i>A/Prof Fiona Young / Paul Monis</i> FLINDERS UNIVERSITY / SA WATER</p> <p>Using Graphene Oxide to Improve Nanofiltration Flow Rates <i>Wang Zhao</i> MONASH UNIVERSITY</p> <p>Is Granular Sludge Suitable for Wastewater Treatment in Australia <i>Ben Thwaites</i> UNIVERSITY OF NEW SOUTH WALES</p> <p>Transforming drinking water treatment - rethinking the application of biological treatment processes <i>Dr Katrin Doederer</i> UNIVERSITY OF QUEENSLAND</p> <p>Drinking water and wastewater treatment operators in the future - the value of competency <i>Sally-Anne Bartlett</i> WATERQ PLUS</p> <p>Artificial Neural Networks - Machine learning for Sludge Rheology <i>A/Prof Nicky Eshtiaghi</i> RMIT</p> <p>POSTER PITCH Detecting UVT-reducing Trade Wastes for maintenance of UV disinfection efficiency the easy way! <i>Prof Felicity Roddick</i> RMIT</p>
12.30pm	LUNCH	

AFTERNOON STREAMS		
1.30pm	Water Security	Resource Recovery
	<p>What are the innovations for Integrated Water Management (IWM), and where can they lead us? Is our urban water secure? Understand how leading researchers and water utilities are confronting the challenges of water security.</p> <p>TOPICS AND SPEAKERS INCLUDE: Research informing long-term water security planning in south east Queensland <i>Joint presenters:</i> <i>Dr Deb Gale & Paul Fisher</i> SEQWATER</p> <p>Bespoke tastes transforming community engagement <i>Dr Kelly Newton</i> SA WATER</p> <p>PANEL SESSION: Tackling Urban Water Security through Integrated Management <i>Prof Peter Scales</i> UNIVERSITY OF MELBOURNE <i>David Sheehan</i> COLIBAN WATER <i>Pam Kerry</i> SOUTH EAST WATER <i>Dr Kathy Northcott</i> GHD <i>Dr Meenakshi Arora</i> UNIVERSITY OF MELBOURNE</p>	<p>Channelling the reuse/recycle culture to maximise our resources. How can we harness the value of wastewater to underpin economic growth, reduce environmental impacts and generate healthy liveable communities?</p> <p>TOPICS AND SPEAKERS INCLUDE: Shifting waste perception to resource and opportunity <i>Dr Rachel Miller</i> WATER CORPORATION</p> <p>Investigation of synergistic effects of rheology and chemistry on anaerobic digestion: Process improvement and monitoring <i>Samira Miryahyaei</i> RMIT</p> <p>Robust Rheological Characterisation of Sewage Sludge <i>Dr Kris Coventry</i> MELBOURNE WATER</p> <p>Improving the performance of anaerobic digesters using hydraulic mixing <i>Prof Raj Parthasarathy</i> RMIT</p> <p>Multiple use of iron salts in wastewater systems <i>Prof Zhiguo Yuan</i> ADVANCED WATER MANAGEMENT CENTRE</p> <p>Concentrated algal systems for nutrient removal and recovery from wastewater <i>Matthew Kube</i> RMIT</p> <p>Levels of PFAS and precursor compounds in Australian biosolids <i>Damien Moodie</i> RMIT</p> <p>SA Water's journey to zero operational energy costs by 2020 <i>Henry Anderson</i> SA WATER</p>
3.00pm	AFTERNOON BREAK	
3.30pm	Sanitary Surveys and Operational Monitoring in Catchments Workshop	Data Science into Strategy Workshop
	<p>WORKSHOP Dr Dan Deere & Karla Billington WATER FUTURES & NATURAL LOGIC An introduction to Health-based Targets Guidelines, Sanitary Surveys and Vulnerability Assessments. How can we tackle the challenge of developing a National approach for the continued improvement in source water protection? Participants will leave with a greater understanding of the requirements and opportunities for improvement. Along with an understanding of various methodologies currently being used.</p>	<p>WORKSHOP Dr Peter Prevos & Jenny Fogarty COLIBAN WATER This workshop will introduce participants to the principles of good data science and discuss the technical tools available to implement a data science strategy. Participants can increase knowledge, improve skills and learn how to develop a data science strategy within their business.</p>
5.00pm	END	
	<p>GALA DINNER 12th February 2019 6:30pm Jim Stynes Room MCG</p> <p>This celebratory evening will acknowledge the 10th anniversary of Water Research Australia. Enjoy a delicious three-course dinner with drinks and entertainment.</p>	

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8:30am	Delegate Registration	
9:15am	Welcome and Recap	
9:20am	Morning Keynote - Virginia Whewey, Manager Data Science & Analytics, Thiess	
10.00am	MORNING TEA BREAK	
	STREAM 1 (Olympic Room B)	STREAM 2 (Olympic Room A)
	MORNING STREAMS	
10.30am	Alternative Water Sources	Data Science
	<p>A look at how to successfully and safely develop and alternative water sources for diverse applications and a panel discussion around the next move for Australia in finding alternative water supplies.</p> <p>SPONSOR: City West Water</p> <p>TOPICS AND SPEAKERS INCLUDE: Perth's Groundwater Replenishment Scheme – From Concept to Reality <i>Dr Stacey Hamilton</i> WATER CORPORATION</p> <p>Full Scale Validation of a Media Filter for Pathogen Removal: A Case Study <i>Raj Mahendrarajah</i> COLIBAN WATER</p> <p>Direct Potable Reuse – a more cost effective water supply than long distant water transfer or Desalination <i>Reba Paul</i> INSTITUTE FOR SUSTAINABLE FUTURES</p> <p>The triple bottom line for alternative water <i>Prof Stuart Khan</i> UNIVERSITY OF NEW SOUTH WALES</p> <p>PANEL SESSION: Translating research into improved water supply approaches <i>Dr Annalisa Contos</i> ATOM CONSULTING <i>Annette Davison</i> RISK EDGE <i>Prof Stuart Khan</i> UNIVERSITY OF NEW SOUTH WALES <i>Ian Law</i> IBL SOLUTIONS <i>Prof Joan Rose</i> WATER QUALITY EXPERT <i>Dr Steve Capewell</i> WATER CORPORATION</p>	<p>Showcasing enablers for transitioning utilities of today to those of the future, including satellite technology, online decision support systems, open sourcing software and virtual reality technology for operator training.</p> <p>TOPICS AND SPEAKERS INCLUDE: How military technology became mainstream and how the water industry can benefit <i>Maira Smith</i> D-CAT</p> <p>Surface enhanced raman spectroscopy-based methods for water pollution detection in treated wastewater <i>Tim Ong</i> RMIT</p> <p>Improving Melbourne sewage quality and load forecasting using a co-designed, online decision support system <i>Chris O'Neill</i> HYDRONUMERICS</p> <p>Open source software development to accelerate data science innovation <i>Dr Peter Prevos & Jenny Fogarty</i> COLIBAN WATER</p> <p>Remote and collaborative virtual reality (VR) operator training <i>A/Prof Ben Horan</i> CADET Virtual Reality Lab</p> <p>PANEL SESSION: Diagnosis water and everything! <i>A/Prof Helen Stratton</i> GRIFFITH UNIVERSITY <i>A/Prof Fred Leusch</i> GRIFFITH UNIVERSITY <i>A/Prof Joanne McDonald</i> USC <i>Prof Nam Trung</i> GRIFFITH UNIVERSITY <i>Dr Cameron Veal</i> SEQWATER <i>Dr Greg Jackson</i> QHEALTH</p> <p>POSTER PITCH: Graphene Quantum Dot embedded hydrogel as a solid state sensor for dissolved iron contamination <i>Dr Martin Sweetman</i> UNIVERSITY OF SOUTH AUSTRALIA</p>
12.00pm	LUNCH	

AFTERNOON STREAMS		
1.00pm	One Health	Catchment and Source Water Management
	<p>The concept of 'one health' is gaining traction. How can its application help us ensure the safe reuse or discharge of treated wastewater?</p> <p>TOPICS AND SPEAKERS INCLUDE: Comparison of norovirus and adenovirus diversity in clinical and wastewater samples <i>Jennifer Lun</i> UNIVERSITY OF NEW SOUTH WALES</p> <p>Investigation of PFAS in Australian wastewater treatment plants <i>Timothy Coggan</i> RMIT</p> <p>Prioritisation of contaminants <i>Prof Stuart Khan</i> UNIVERSITY OF NEW SOUTH WALES</p> <p>Tracking the fate of drugs of addiction through wastewater treatment processes <i>Meena Yadav</i> UNIVERSITY OF SOUTH AUSTRALIA</p> <p>Behaviour of illicit drugs and psychopharmaceuticals in wastewater treatment <i>Prof Cynthia Joll</i> CURTIN UNIVERSITY</p> <p>Antibiotic resistance <i>A/Prof Erica Donner</i> UNIVERSITY OF SOUTH AUSTRALIA</p> <p>A global perspective on the One Health approach <i>Dr Stephanie Rinck-Pfeiffer</i> GLOBAL WATER RESEARCH COALITION</p> <p>A Victorian perspective on one health - Antibiotic resistance, Climate change and more <i>Dr Angie Bone</i> DEPARTMENT OF HEALTH AND HUMAN SERVICES, VICTORIA</p>	<p>A look into cyanobacteria, DNA barcoding, next generation sequencing and guidelines for managing risk in recreational water, followed by a future thinking session including virtual reality, satellite data options and a data science panel session.</p> <p>TOPICS AND SPEAKERS INCLUDE: Water treatment options for cyanobacteria and associated taste and odour metabolites <i>Dr Cameron Veal</i> SEQWATER</p> <p>Towards next generation natural organic matter characterisation techniques for treatment optimisation under a changing climate <i>Anthony Agostino</i> UNIVERSITY OF NEW SOUTH WALES</p> <p>Rediscovering invertebrate biodiversity with DNA barcoding for advanced management of streams <i>Eddie Tsyrlin</i> UNIVERSITY OF MELBOURNE</p> <p>Understanding bloom-forming E. coli: improved detection, bloom prediction, treatment significance and management strategies <i>Dr Martha Sinclair</i> MONASH UNIVERSITY</p> <p>Smart Monitoring for microbial risk assessment <i>Dr Brendon King</i> SA WATER</p> <p>Population genetics of a cyanobacterial bloom in the River Murray in Victoria in 2016 <i>Dr Nijoy John</i> UNIVERSITY OF MELBOURNE</p> <p>Update on the review of the NHMRC Australian Drinking Water Guidelines and Guidelines for Managing Risk in Recreational Water <i>Dr Elaine Stone</i> NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL</p> <p>POSTER PITCH: Microbial diversity profiling and taxonomy evaluation of macropods <i>Christian O'Dea</i> USC</p>
2.30pm	AFTERNOON TEA	
	AFTERNOON PLENARY	
3.00pm	Driving Impact Through Collaboration	
	<p>Opening and Introduction - Karen Rouse, CEO, WaterRA</p> <p>Afternoon Keynotes - <i>Rosie Wheen</i>, Chief Executive, WaterAid <i>Sarah Howard</i>, Manager Research Excellence, Australian Research Council (ARC)</p> <p>SPEAKER & PANEL DISCUSSION: Driving Impact Through Collaboration</p> <p>TOPICS AND SPEAKERS INCLUDE: Developing a high-performance project team <i>Michael Thomas</i> BARWON WATER</p> <p>Generating industry aware water scientists: a collaborative model for developing next generation water professionals <i>Abigail Morrow</i> HUNTER WATER <i>Craig Evans</i> UNIVERSITY OF NEWCASTLE</p> <p>Structured collaboration – industry, government, researchers and community <i>Shaun Cox</i> INXURE STRATEGY GROUP <i>Rosie Wheen and Sarah Howard will be joining the Panel Discussion</i></p>	
4.35pm	Stream Findings and Closing Remarks	
4.45pm	Close and Thank you – Shaun Cox, Chair, WaterRA	
4.50pm	END	



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