TWENTY 65 Annual Conference 2021

TWENTY65

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Day 1 - 15th March 2021

10:00 – 10:05 **Event Opens - Joby Boxall**

10:05 – 10:10 **Introduction - Liz Sharp**

10:10 – 11:00 **Plenary Session: Why the water sector cannot do without social science**

Chair: Liz Sharp, *The University of Sheffield*
Keynote Speaker: Sarah Bell, *University of Melbourne*
Keynote Speaker: Vittoria Danino, *Anglian Centre for Water Studies*
Keynote Speaker: Jess Phoenix, *Defra*

11:00 – 11:40 **Discussant & Panel Discussion: Why the water sector cannot do without social science**

Discussant: Zoë Sofoulis, *Western Sydney University*
Panellists: Sarah Bell, Vittoria Danino, Jess Phoenix, Zoë Sofoulis

11:40 – 12:30 **Break for Lunch**

12:30 – 16:15 **Social Science Day presentations & workshop**

Requires separate registration

Day 2 - 16th March 2021

09:30 – 10:00 **Event Opens**

10:00 – 10:10 **Introduction - Prof. Joby Boxall**

10:10 – 11:00 **Plenary Session: Innovation in the water sector**

Chair: Paul Horton, *Future Water Association*
Keynote Speaker: Baroness McIntosh, *All Party Parliamentary Water Group*
Keynote Speaker: John Russell, *Ofwat*

11:00 – 12:00 **Panel Discussion: Innovation in the water sector**

John Russell, *Ofwat*
Caroline Wadsworth, *Isle Utilities*
Peter Skipworth, *Environmental Monitoring Solutions*
Kamal Birdi, *The University of Sheffield*

12:00 – 12:30 **Break for Lunch**

12:30 – 13:30 **Parallel Sessions 1A – 1C**

13:30 – 13:45 **Refreshment Break**

13:45 – 14:45 **Parallel Sessions 1D – 1F**

Day 3 - 17th March 2021

09:30 – 10:00 **Event Opens**

10:00 – 10:10 **Introduction - Laura Roberts**

10:10 – 11:00 **Plenary Session: Roadmap for the future of water innovation**

Chair: George Ponton, *Scottish Water*
Keynote Speaker: Joby Boxall, *The University of Sheffield*
Keynote Speaker: Vanessa Speight, *The University of Sheffield*

11:00 – 12:00 **Panel Discussion: Roadmap for the future of water innovation**

Joanna Clark, *University of Reading*
Michael Templeton, *Imperial College London*
Richard Dawson, *Newcastle University*

12:00 – 12:30 **Break for Lunch**

12:30 – 13:30 **Parallel Sessions 2A – 2C**

13:30 – 13:45 **Refreshment Break**

13:45 – 14:45 **Parallel Sessions 2D – 2F**

Day 4 - 18th March 2021

09:30 – 10:00 **Event Opens**

10:00 – 10:30 **TBC**

Chair: Vanessa Speight, *University of Sheffield*

10:30 – 11:30 **Parallel Sessions 3A – 3C**

11:30 – 11:45 **Refreshment Break**

11:45 – 12:45 **Gathertown Networking Lunch**

12:45 – 13:45 **Parallel Sessions 3D – 3F**

13:45 – 14:00 **Refreshment Break**

14:00 – 15:00 **Fireside Chat: How does the water sector move forward?**

Chair: Tony Conway, *The University of Sheffield*
Panellists: Joby Boxall, *The University of Sheffield*
Vanessa Speight, *The University of Sheffield*
Tony Harrington, *Welsh Water*
Nicole Ballantyne, *KTN*
Tony Green, *National Grid*

15:00 **Close**

Day 1 - 15th March 2021

12:35 | 12:45 | 12:55 | 13:05 | 13:30

Quick Fire Talks and Main Presentation (1)

Chair: Claire Hoolohan

Enacting community water governance on the street: Exploring the experiences of 'street-level bureaucrats' in Scotland
Kirsty Holstead, University of St Andrews, The James Hutton Institute
Shona Russell, University of St Andrews
Kerry Waylen, The James Hutton Institute

Understanding the social legitimisation of the circular economy for the water sector
Heather Smith, Paul Jeffrey, Marine Poncet, Cranfield Water Science Institute, Cranfield University, Bedfordshire

Household water practices among the middle-class in Abuja Nigeria
Emmanuel Maiyanga, The University of Sheffield

New social science for the new hydro-social paradigm
Jamie Linton, University of Limoges
Liz Sharp, The University of Sheffield
Zoë Sofoulis, Western Sydney University, and
Ali Browne, The University of Manchester

BREAK

13:50 | 14:20 | 14:50

Main Presentations (2)

Chair: Heather Smith

Public-Private Catchment Partnerships for multiple benefits: new ambitions, same challenges
Blackstock* K.L., Juarez-Bourke, A., Marshall, K. and Waylen, K.A., James Hutton Institute, University of Aberdeen

The Change Points Approach
Hoolohan* C., The University of Manchester
Browne A., The University of Manchester
Sharp L., The University of Sheffield

BREAK

15:10 | 15:40 | 16:10

Main Presentations (3) & Reflections

Chair: Vitty Danino

Evidencing water impacts of small-scale urban gardens
Bell S., University College London
Johnson C, University College London
Butler A., Imperial College London
Watson C., Kaleem R., and Yousaf J., British Geological Survey

Reflections on the day

Day 2 - 16th March 2021

12:30 | 12:45 | 13:00 | 13:15 | 13:30 | 13:45 | 14:00 | 14:15 | 14:30 | 14:45

Session 1A

Engagement

Workshop: What's flood got to do with it?

Chair: Phiala Mehring, Reading University

This workshop will take attendees through understanding how flooding is constructed from their perspective, through the lens of flood communities and flood authorities. We will do a similar exercise understanding the constructions of flood risk management.

Session 1B

Climate Change

Workshop: The move to net zero carbon emissions: harvesting heat energy from water infrastructure

Chair: Simon Tait, University of Sheffield

Low grade heat recovery is one of the established technologies anticipated to be crucial in achieving the carbon emission target of net zero by 2050. The aim of this workshop is to bring together recent research in harvesting heat energy from water infrastructure to lower carbon emissions.

Fei Liu, Alma Schellart, Will Shepherd, Simon Tait, University of Sheffield; and Ross Stirling, Newcastle University

Session 1C

Emerging Solutions

Innovations in sensors and data
Chair: Mike Strahand, Smartwater

Dense data for improved wastewater monitoring and autonomous intervention
Samuel Shelley, Nuron

Digitally connected drainage: how sensors in SuDS can help to monitor and control run-off
Alex Stephenson, SUDSPlanter

Characterisation of water infrastructure using impedance spectroscopy
Shiyao Wang, University of Sheffield

Biosensors: the advantages of tracking your microbiology in real time
Tom Williams, Enebio

Session 1D

Engagement

Green Infrastructure,
Chair: Chris Digman, Stantec

Challenges of implementing participatory, adaptive and integrated urban water management in South Eastern Australian seaboard
Bao Anh Nong, University of Technology Sydney

Actions speak louder than words: raintanks and community engagement with flood resilience
Christine Sefton, University of Sheffield

Tuber-charging sub-Saharan Africa's transition into green stormwater infrastructure systems: the policy-practice gap in a Ghanaian water catchment
Alhassan Ibrahim, University of Adelaide

Evaluating a co-produced community rainwater management intervention - learning why we need to evaluate, how and for whom
Jo Birch, University of Sheffield

Session 1E

Climate Change

Workshop Continued: The move to net zero carbon emissions: harvesting heat energy from water infrastructure

Chair: Simon Tait, University of Sheffield

Interactive Discussion

Session 1F

Emerging Solutions

Workshop: Pervasive sensing of buried pipes and AI

Chair: Kirill Horoshenkov, University of Sheffield

Pervasive sensing of pipes with robot swarms, *Simon Langdale, Synthotech*
Pervasive sensing of pipes with fibre-optic nervous system, *Paul Dickenson, Nuron*

Interactive Discussion

Day 3 - 17th March 2021

12:30 | 12:45 | 13:00 | 13:15 | 13:30 | 13:45 | 14:00 | 14:15 | 14:30 | 14:45

Session 2A
Collaborative Innovation

Case Studies
Chair: Arlene Goode, Arup

The Hydropolitics of Trust: Changing modes of public trust in drinking water
Zoë Sofoulis, Institute for Culture and Society, Western Sydney University

Predicting Pollution from Combined Sewer Overflows: An academia-industry success story
Adam Cartwright, Siemens

COVID-19 : UK water sector organisational response
Elizabeth Lawson, University of Exeter

Becoming an informed customer on available technologies
Iain Naismith, IKT

Session 2B
Engagement

Workshop: Not such strange bedfellows: public involvement meets applied water resources science to inform better practice
Chair: Tally Palmer, Rhodes University

High quality public and community involvement and engagement (PCIE) can make a real difference to research, policy and practice. The workshop will introduce the Adaptive Systemic Approach (ASA) and give real examples of constructive ways to engage with PCIE in applied research regarding water use inequity and contestation.

Ana Porroche-Escudero, Lancaster University and Bukho Gusha, Rhodes University

Session 2C
Emerging Solutions

Technology Innovations
Chair: Jonathan Abra, KTN

The use of self-healing in water infrastructure systems
Lauren McMillan, University College London

The feasibility of domestic raintanks contributing to urban flood resilience
Liz Sharp, University of Sheffield

Intelligent autonomous control of wastewater treatment processes for phosphorus removal
Sonja Ostojin, Environmental Monitoring Solutions Ltd

A Practical Biofilm Monitoring Device for Water Distribution Systems
Fran Pick, University of Sheffield

Session 2D
Collaborative Innovation

Workshop: Collaborative innovation in the water sector: from research to practice
Chair: Kamal Birdi, University of Sheffield

The water sector's need for collaborative innovation is increasing yet our understanding of how best to do this has been lacking. In this session, we will present our new research-based Guide to Collaborative Innovation and work with participants to identify how to turn it into an effective training programme.

Tony Conway and Kamal Birdi, University of Sheffield

Session 2E
Climate Change

Green infrastructure and resilience
Chair: Phil Sellwood, Energy Savings Trust

Carbon Capture in the Water Industry
David Hodkin, WRc

Designing blue green infrastructure for water management, health and wellbeing
Liz Sharp, University of Sheffield

Ecological infrastructure as a sustainable solution for water security: Research from South Africa
Sukh Mantel, Rhodes University

City of London Climate Action Strategy - Water Sector
Rob Casey, Worshipful Company of Water Conservators

Day 4 - 18th March 2021

10:30 | 10:45 | 11:00 | 11:15 | 11:30 | 12:45 | 13:00 | 13:15 | 13:30 | 1345

Session 3A

Green Infrastructure

Workshop: Research and practice

Chair: Virginia Stovin, University of Sheffield

This session will share information and experience about current research and practitioner case studies related to green infrastructure, with topics ranging from quantifying stormwater management performance to community engagement, followed by an open discussion.

Virginia Stovin, University of Sheffield; Daniel Green, Newcastle University; Ross Stirling, Newcastle University; Hamza Askari, University of Sheffield

Session 3D

Collaborative Innovation

Workshop: Valuing Water

Chair: Claire Walsh, Newcastle University

A series of presentations and discussion about valuing water around the world, in keeping with the theme of World Water Day 2021.

Claire Walsh, Newcastle University

Session 3B

Emerging Solutions

Technology Innovations

Chair: Steve Kaye, UKWIR

Immobilised complexes of Earth-abundant copper as antibacterial photosensitisers for water treatment
Martin V Appleby, University of Sheffield

DMA flushing helps understand and reduce upstream discolouration risk
Manar Al-Saffar, Yorkshire Water

Nature-based processes for treating contaminated stormwater from an informal settlement, South Africa
Kevin Winter, University of Cape Town

AMBI-ROBIC –direct, ambient, anaerobic treatment for municipal wastewater – now an available alternative
B. Conall Holohan, NVP Energy

Session 3E

Emerging Solutions

Catchments

Chair: Nigel Graham, Imperial College

Real-time flow forecasting informed surface water abstraction operation
Mohammed Yassin, University of Sheffield

Estimating the productivity of communally-managed, unimproved rangelands of north Eastern Cape, South Africa
Gusha Bukho, Rhodes University

Catchment scale land use optimisation using genetic algorithm to mitigate acute diffuse pollution
Vaida Suslovaite, University of Sheffield

Monitoring leaky barriers for natural flood management within a community-led, Defra-funded project
Gabrielle Powell, University of Reading

Session 3C

Collaborative Innovation

Workshop: Enabling innovation in the water sector

Chair: Caroline Wadsworth, Isle Utilities

Led by the delivery team of the Ofwat Innovation Fund, this interactive session will explore how to support and accelerate innovation across the water sector. Share your thoughts and hear from others about the steps we need to take to overcome current barriers to innovation, the technologies and industries that hold the most promise for innovative solutions to sector issues and more.

Caroline Wadsworth, Isle Utilities; Catherine Thompson, Nesta Challenges; Tom Doyle, Arup