

# Clean Water

## **Abstract:**

Having clean water on tap is something most of us here take for granted. It is estimated that in 2015 91 percent of the world's population had access to an improved source of drinking water. That leaves the remaining nine percent, well over half a billion people, without. Likewise, it was estimated that in 2015 almost a billion people lacked any sort of sanitation facility. Water and sanitation are at the core of sustainable development, and ensuring the provision and long-term sustainability of water and sanitation to all, is an enduring challenge.

Achieving a goal of this scale and complexity, while protecting the freshwater resources essential to the task at hand under the pressure of climate change and population growth, makes for a wicked problem. Engineering has its role to play in reaching these goals. However, all technical solutions reside within a social and political context, an understanding of which is critical if the desired outcomes are to be achieved.

In this session we will explore how the multi-disciplinary problem of clean water provision must be approached holistically. By taking examples from across the globe we will examine how context informs interventions, influences outcomes and ultimately leads to better engineering.

## Session Co-chairs:

**Patrick Thomson** is Lead Researcher for the Water Programme at Oxford University's SSEE. Patrick's research focuses on the use of improved data to drive institutional change and improved public health in the rural water sector. Patrick invented the first 'Smart Handpump' and leads the continuing technical development and operational implementation of the Smart Handpumps research. He is a Chartered Engineer with an MEng and MSc from the University of Oxford.



**Askwar Hilonga** appeared on the RAEng Because Engineering video with Bill Gates and other world renowned dignitaries like His Royal Highness The Duke of York, Prince Andrew. He is the winner of five reputable awards, including the 2015 Africa Prize for Engineering Innovation from the British Royal Academy of Engineering – he invented the low-cost water filter Nanofilter®. He has published 41 articles and is a role model for Academia for Society and Industry, an approach promoted by NM-AIST.

## Speakers:

**Wendy Jepson, Texas A&M University:** Wendy is a Professor of Geography at Texas A&M University where she has been on faculty since receiving her Ph.D. from UCLA in 2003. Her research examines water insecurity and environmental justice challenges in socially excluded, low-income communities in the US and Latin America.



**Alison Parker, Cranfield University:** Although trained as a hydrogeologist (MEng, Earth Science, University of Oxford; PhD, University of Leeds) Alison also works in the field of water and sanitation, particularly in rural water supply and urban sanitation. She is interested in the human and environmental elements of these services



**Richard Rushforth, Northern Arizona University:** Richard is an Assistant Research Professor at Northern Arizona University. He co-leads the Holistic Water Solutions project, sponsored by USAID, a 2-year effort bringing clean water to vulnerable and refugee host communities in Jordan and Lebanon. He holds PhD in civil, environmental and sustainable engineering from Arizona State University.

