

# GCRF Frontiers of Engineering for Development: Sustainable Global Wellbeing

Attendee List and Bios  
Oxford Union, 17-20 September 2017

## Event Chairs



**Professor Jennifer Whyte**

Jennifer is the Laing O'Rourke / Royal Academy of Engineering Professor of Systems Integration. Her research focuses on infrastructure projects, systems approaches to their design and delivery, and the digital transformation of infrastructure. Based in the Department of Civil and Environmental Engineering at Imperial College London, she is Director of the Centre for Systems Engineering and Innovation. She is a Fellow of the Institution of Civil Engineers (ICE); was a Shimizu Visiting Professor at Stanford University in 2015; and

is co-curator of the World Economic Forum Engineering and Construction transformation map

## Professor David Clifton

David is an Associate Professor in the Department of Engineering Science of the University of Oxford, and a Governing Body fellow of Balliol College, Oxford. He is a Research Fellow of the Royal Academy of Engineering. His research focuses on the development of 'big data' machine learning for tracking the health of complex systems. His previous research resulted in patented systems for jet-engine health monitoring, used with the engines of the Airbus A380, the Boeing 787 Dreamliner, and the Eurofighter Typhoon. Since 2008, he has translated his work



into the biomedical context for healthcare applications. He has worked on the world's first FDA-approved multivariate patient monitoring system, and systems that are now used to monitor 20,000 patients each month in the NHS. Prof. Clifton was recently awarded a Grand Challenge award from the UK Engineering and Physical Sciences Research Council, which is a personal award that provides long-term strategic support for nine 'future leaders in healthcare'.

## Session Co-Chairs

### The Future of Global Health

#### Maoyi Tian

Maoyi's main research areas focus on mHealth and healthcare technology for chronic disease prevention and management. He received his BEng from University of York and his MSc from University of Oxford. He graduated with his PhD of Biomedical Engineering from University of New South Wales in Australia.



#### Louise Thwaites

Louise is a Clinical Research Fellow based at the Oxford University Clinical Research Unit Ho Chi Minh City where her research interests include improving management of critically ill patients in resource-restricted settings.

### Sustainable Cities and Infrastructure

#### Ana Mijic

Ana is a Senior Lecturer in Urban Water Management at Imperial College London. She has a first class degree in Civil Engineering from the University of Belgrade, Serbia. Before commencing her MSc, Ana worked at the same University as a teaching assistant in Fluid Mechanics and Hydrometry. She obtained a master's degree with distinction in Hydrology for Environmental Management from Imperial College London in 2009 and a PhD in Earth Science and Engineering in 2013. Ana's research interests are focused on systems modelling and full-scale experiments to develop water management strategies for sustainable development. She leads the IAHS Panta Rhei programme Working Group on Energy and Food Impacts on Water. She is also leading the Imperial College London initiative, with partners, to address the issue of groundwater infiltration into urban infrastructure.



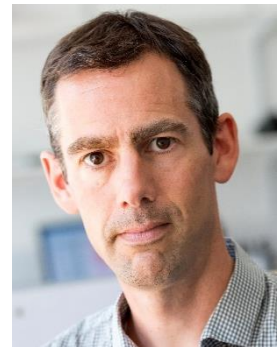
#### Rodrigo Velasco

Rodrigo is an Architect and M.Eng in Computational Design. He has over 15 years of experience in the use of new technologies in sustainable construction. His professional career includes teaching and research work at various universities, and several international publications. Currently, in addition to his work as a researcher at Universidad Piloto de Colombia he is director at Frontis3d.

## **Innovation for Sustainable Development**

### **Jim Watson**

Jim is Director of the UK Energy Research Centre and a Professor of Energy Policy at the University of Sussex. He has 20 years' research experience on climate change, energy and innovation policy. He is a member of the Global Challenges Research Fund strategic advisory group and the UK government's fossil fuel price projections panel.



### **Marialena Nikolopoulou**



Marialena is an architectural engineer specialised in environmental design. She is Director of the Research Centre for Architecture and Sustainable Environment at the University of Kent. She has extensive experience in managing large collaborative research projects funded by different national and international funding bodies on sustainability, comfort in complex environments, energy in the urban environment and environmental quality. She is author of over 100 publications including co-author of the revised 2015 CIBSE Guide A, Chapter A1 "Environmental Criteria for Design" and Chair of Chapter A8 "Health Issues". Her work has received awards from diverse bodies (International Society of Biometeorology, Royal Institute of British Architects).

# Participant and speakers

## **Hein Badenhorst, University of Pretoria**

Lecturer in Chemical Engineering in South Africa, research focus is on carbon materials with application in thermal energy storage and seawater desalination. Current work includes phase change and chemical reaction based energy storage using novel heat exchanger design. Developing small scale, low cost, desalination unit for off-grid, rural operation.



## **Will Bateman, Zyba Ltd**

Will is the Founder and CEO of Zyba Ltd, which designed the curved CCell wave energy device. Together with BioRock, their system provides coastal protection, electricity, and grows coral reefs. Will has a PhD from Imperial College in Extreme Ocean Waves and is a fellow of IMarEST.



## **Amadou Boly, African Development Bank**

Amadou is a Principal Research Economist at the African Development Bank (Cote d'Ivoire). He previously worked for UNU-WIDER (Finland) and UNIDO (Austria). He holds a PhD in economics from the University of Montreal (Canada), with publications in top journals; including Economic Journal, European Economic Review and International Economic Review.



## **Paolo Bombelli, University of Cambridge**

Paolo has a multidisciplinary background with specific interests in energy conversion and photosynthesis. His work is instrumental in studying the integration of biological and photobiological elements with physical components for the direct generation of electrical current, drive electrosynthesis, wastewater treatment, food production and as bio-environmental sensors.



## **Helen Bridle, Heriot-Watt University**

Helen Bridle works on microfluidic systems for large-scale processing of cells. The main applications she targets are: (1) water quality monitoring, especially detection and removal of pathogens; and (2) bioprocessing purification, e.g. clean up of stem cells.



## **Qiong Cai, University of Surrey**

Senior Lecturer at University of Surrey with prior experience including research associate at Imperial College London, PhD at University of Edinburgh and MEng at Tsinghua University. Her research interest is multi-scale materials design for energy conversion and storage, by using a combined modelling and experimental approach.



**Neil Carhart, University of Bristol**

Neil is a Teaching Fellow and Senior Research Associate within the University of Bristol’s Department of Civil Engineering. Following a period within the civil nuclear industry his research focuses on the development of Systems Engineering practice and the application of the Systems Approach to infrastructure resilience, sustainability and interdependency challenges.



**Vanesa Castan Broto, University College London**

**George Chagaluka, Queen Elizabeth Central Hospital**

George is a specialist Paediatrician working as a Deputy Clinical Head of Department, a Clinical Lecturer, Researcher and National Advisor to Bubble CPAP project (Malawi)



**Suman Chakraborty, Indian Institute of Technology, Kharagpur**

Suman is a Professor at IIT Kharagpur, and the Head of the School of Medical Science and Technology. His research interests are in microfluidics for bio-medical applications, including medical diagnostics. He has been awarded the Bhatnagar Prize; the highest Scientific Award from the Government of India.



**Albert Chen, University of Exeter**

Albert is a Senior Research Fellow at the Centre for Water Systems, University of Exeter, with over 15 years of experience in urban flood management. His research interests include urban drainage, hydrology and hydraulic modelling, flood forecasting and early warning, flood risk management, hazard mitigation, and resilience strategies.



**Carlos A. Cifuentes, Colombian School of Engineering Julio Garavito**

Carlos is a Professor at Colombian School of Engineering Julio Garavito. He has been Visiting Professor at Universidade Federal do Espírito Santo (UFES) and Plymouth University. Prior to that, he was a postdoc at UFES. He is interested in movement analysis, human-robot interaction and rehabilitation robotics.



**Esther Colombini, Unicamp - Brazil**

Esther is an Associate Professor with the University of Campinas (UNICAMP-Brazil) and her research interests include machine learning, autonomous robotics, cognitive modelling and robotics in education. She was President of RoboCup Brazil and co-founder of the Brazilian Robotics Olympiad, a public initiative that involves 145,000 students in Brazil.



**Nattapong Damrongwiriyanupap, University of Phayao**

Nattapong is currently an Associate Professor in Department of Civil Engineering, School of Engineering, University of Phayao, Thailand. His research interests focus on green concrete structures for sustainability and reutilization of various solid wastes in concrete structures



**Kelvin Gacheru, MobiTech Water Solutions**

Kelvin is a Water Resource Engineer keen on integrating Mobile IOT and Big Data to improve access to water in Africa. He founded MobiTech Water Solutions and developed Mobi-Water, a remote real-time water solution that allows monitoring of water levels in tanks and reservoirs on your Mobile Phone.



**Brittany Harris, Buro Happold**

Brittany works for Buro Happold in their water team and has worked with Engineers Without Borders and World Merit in partnership with the UN. She is focused on the role of engineers in achieving global sustainable development and is using her role as ICE presidents apprentice and NCE Graduate of the Year to drive change in the civil engineering industry.



**Priyanka Jamwal, Ashoka Trust for Research in Ecology and The Environment**

Priyanka is a Fellow in the Centre for Environment and Development at ATREE. Her work focuses on identification of contaminant sources in surface water bodies, modelling the fate and transport of contaminants in urban hydrological systems and assessing the risk to human health due to exposure to contaminants.



**Walter Karlen, ETH Zurich**

Walter is an Assistant Professor in the Department of Health Sciences and Technology at ETH Zurich where he heads the Mobile Health Systems Lab. His interest is in biomedical automation at the point-of-care and encompasses research on biomedical sensors and signals, human-machine interfaces, decision support, and big data.



**Anil Kumar Parakkad, Data Template Infotech**

Anil founded Data Template Infotech Private Limited in 2011. He has an IT background with experience of delivering complex software technology solutions for large, mid-sized and start-up environments, as well as guiding and mentoring multi-disciplinary teams in a range of technologies and verticals. He has experience across many sectors including healthcare, finance, analytics, and IoT.



**Mante Kgaria, Mintek/University of the Witwatersrand**

Mante (PMP®) has over 9 years’ experience in hydrometallurgical processes research. She is a Superintendent: Uranium and Precious Metals processing at Mintek, responsible for managing research, desktop and pre-feasibility projects aimed at developing cost effective processing technologies. She holds a BSc Metallurgy (Honours) and currently enrolled for Masters in Innovation Studies at Wits University.



**Mark Larsen, Black Dog Institute**

Mark is a Research Fellow at the Black Dog Institute in Sydney. His research explores the ways in which technology can deliver effective mental health interventions to reduce the risk of suicide among young people, particularly in those that have made a previous attempt.



**Maria Fabiola Leyva-Mendivil, University of Southampton**

Mechanical Engineer with experience in the Aerospace Industry. Studied a Master’s degree in Advanced Mechanical Engineering Sciences with specialisation in Biomechanics. Developed a PhD project for industrial applications of tribological interactions of the human skin with consumer products. Currently, works on computational modelling of the biophysical response of the skin.



**Alison MacEwen, Department of Health**

Alison is Global Health Research Programme Manager at the UK Department of Health (DH). DH was allocated Official Development Assistance (ODA) to commission internationally outstanding applied global health research, through the National Institute for Health Research (NIHR), to directly benefit people in low and middle income countries. She is interested in health applications of engineering.



**Peter Mbiria Maina, Voltarent Engineering Ltd**

Innovation, creativity, love and passion describes the character of Peter. He is a religious gentleman and "I'll be the best I can be" is his motto. Having Electronics Engineering background, he is currently working on a State of the art Smart E-con Wheelchair that has ground-breaking features. Watch this space!



**Ali Maraci, University of Oxford**

Ali is a graduate of Oxford’s Department of Engineering Science, where he carried out his doctoral research in medical image analysis and machine learning, supervised by Professor Alison Nobel. He is currently a postdoctoral researcher and his research is focused on developing data analytics and machine learning tools to tackle healthcare challenges in limited-resource settings.



**Claudia Mejia Ortiz, Universidad de Los Andes**

Claudia is an Architect from Universidad de los Andes, Colombia, with a Master of Architecture in Urban Design (MAUD) from Harvard University Graduate School of Design. Since 2006 she has worked at the Universidad de los Andes and is now Associate Professor and the Director of the Architecture program.



**Saim Memon, London South Bank University**

Saim is a lecturer and researcher in low-energy technologies for Sustainable Building retrofits and Solar-Thermal Energy-Storage applications in Thermo-Electric Generators to establish a validated and comprehensive mechanism to reduce energy requirements. He specialises in Vacuum-Insulated Glazing & Solar-Thermal Energy applications in buildings, and Electrical Power Generation.



**Mehran Moazen, University College London**

Moazen is a Lecturer in Biomedical Engineering and RAEng Research Fellow at UCL. His research is focused on the biomechanics of bones and joints, particularly to understand the underlying mechanisms of growth, adaptation and repair, using computational and experimental techniques. This involves multidisciplinary projects in collaboration with biologists, clinicians and industrial partners.



**Million Mafuta, University of Malawi - The Polytechnic**

Million is an electrical engineer specializing in instrumentation and control systems and works at the University of Malawi. He has research experience in deployment of sustainable off-grid community-based PV systems. His interest is in the application of WSNs in healthcare delivery. Million designs and builds healthcare devices for low-resource settings.



**Hindu Nabaluba, Yaaka Digital Network (Innovation)**

Co-founder of Yaaka Digital Network, an award-winning platform. 4 years’ experience in journalism and more than 3 years in digital communications-spanning, digital platforms, ICT as well as digital media training (Makerere University and journalism groups). Passionate about solutions that help women and the world at large





**Nikos Nanos, University of Portsmouth**

Nikos completed his PhD thesis in "Earthquake Engineering and Structural Dynamics" with MScs in "New Technologies in Antiseismic Engineering Design" and "Civil Engineering". With over 10 years of industrial expertise in structural monitoring and rehabilitation he currently works in developing vulnerability assessment methodologies that don't rely on expert knowledge.



**André Nel, Eco-V**

André has a Master's degree in Engineering from the University of Pretoria and is Technical Director at Eco-V. He is the inventor of GreenTower technology and recipient of several awards. GreenTower Microgrids affordably provide electricity, fresh water, hot water and sanitation from renewable resources for self-sustainable communities.



**Vinh-Chau V Nguyen, Hospital for Tropical Diseases, Viet Nam**

Vinh-Chau is senior clinician, specialized on infectious diseases and tropical medicine. He is a Director of the Hospital for Tropical Diseases in Ho Chi Minh City, Viet Nam. This is a tertiary referral hospital for infectious diseases of the Southern Viet Nam.



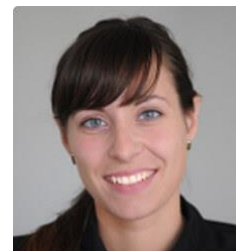
**Sameer Rahatekar, Enhanced Composites Structures and Composites Centre, Cranfield University**

Sameer is a research lecturer at Cranfield University. He is working on natural fibres and agricultural waste products to manufacture strong composites for affordable, sustainable housing. He is also working with low cost natural polymer fibres which can be used for water purification environmental remediation.



**Sylvia Roberge, Engineers Without Borders**

International Partnerships Manager at Engineers Without Borders UK. Since she joined the organisation in 2013, Sylvia has supported the delivery of the EWB educational programmes and, in her current role, manages the coordination and implementation of our overseas engineering volunteer programmes. She is based in London, UK.



**Eduardo Rocha Tamayo, Sociedad Colombiana de Arquitectos B y C**

Eduardo is an architect at Universidad de Los Andes with over 25 years of professional experience in design, building and consulting in sustainable projects. He has been a member of the Colombian Society of Architects since 2007, is an LEED Green Associate, and has a Master's degree in Bioclimatic Architecture



**Paola Rojas Mateus, Camcol B&C**

Sustainability director, Colombian Chamber of construction Camacol B&C, Industrial Engineer, with a master's degree in Corporate Social Responsibility and candidate to Magister in Sustainable development management. 10 years of experience in the field, currently she leads Camacol B&C strategies for social and environmental sustainability, and training for competitiveness construction companies and their employees.



**Vijayata Sengar, Department of Foods and Nutrition, The Maharaja Sayajirao University of Baroda**

Vijayata has an M.Sc. and Ph.D. in Foods and Nutrition from The M.S. University of Baroda. Her research interests are public health nutrition especially maternal, child health and adolescent nutrition as these are the most vulnerable groups in urban and rural areas of developing countries of Asia and Africa.



**Tse-Hui Teh, University College London**

Tse-Hui is a lecturer in the Bartlett School of Planning, University College London. She uses coevolutionary actor-network theory to understand the persistence and reconfiguration of the materiality of space; and create new methods of public participation for changing urban infrastructure. Her research focuses on water, sanitation and well-being.



**Phan Anh Tuan, Hanoi University of Science and Technology**

Graduated with a Bachelors from Hanoi University of Science and Technology (HUST) in 2002, a Masters from Bandung Institute of Technology in 2005, a Doctor of Engineering from Tokyo University of Marine Science and Technology in 2009. Now, he works as an associate professor at HUST. His fields of interest include small wind turbines, autonomous underwater vehicles.



**Ajay Vamadevan, Centre for Chronic Disease Control (CCDC), India**

Ajay is a public health scientist from India, who focuses on improving access and quality of chronic disease care in primary care through mHealth/e-health technologies, electronic clinical decision support systems, and big-data analytics. His research work led to the development of the mPower Heart mHealth System for chronic disease care.



**Wilfred G. van der Wiel, University of Twente**

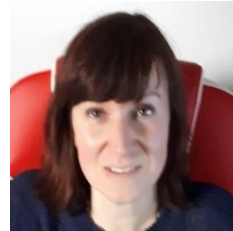
Wilfred is full professor of nanoelectronics at the University of Twente, the Netherlands. His research interests cover neuromorphic computing, hybrid inorganic-organic electronics and surface acoustic wave electronics. He is an author of more than 100 journal articles receiving over 5,000 citations.



**Evi Viza, University of the West of Scotland**

Evi is a Mechanical and Manufacturing Engineer, a Chartered Quality Professional and an EFQM (European Foundation for Quality Management) assessor.

She started her career in Quality Management in Fraunhofer in Stuttgart. She then moved to industry and public sector before joining academia in 2017.



**Yanfang Wang, Peking University**

Yanfang Wang is a Professor and Associate Director of the Peking University Clinical Research Institute, Beijing China. Dr. Wang obtained both her Master and PhD degree from Cornell University in nutrition epidemiology, later a degree of Mater of Health Sciences (MHSc) from Duke University, United States.



**Timothy Whitehead, Aston University**

Lecturer in Product Design, with research into ways in which design can increase value and uptake of essential products in Low Income Economies, such as; solar lighting, cook stoves and the potential impact of a digital design process and ways in which 3D printing can be utilised in these markets.



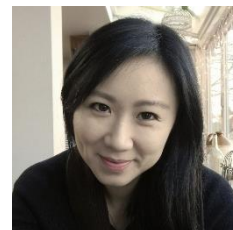
**Li-Qun Xu, Research Institute of China Mobile**

Li-Qun Xu became Chief Scientist of China Mobile Research Institute in 2010. He leads primarily R&D activities in broad areas of mHealth and Smart healthcare concerning setting business strategy, building partnership and core research competence, as well as technology, applications and service innovation towards delivering end-to-end optimized healthcare services



**Tingting Zhu, University of Oxford**

Tingting is a junior research fellow in the Institute of Biomedical Engineering at the University of Oxford. Her interests lie in machine learning for healthcare applications. Tingting's research currently investigates how statistical methods can be used for understanding complex patient data acquired from sensors in a resource-constrained setting.



# RAEng Staff

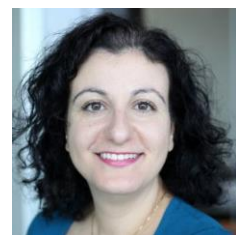
**Samantha Frost**, International Partnerships and Missions Manager



**Rebecca Gaitch**, GCRF Programme Officer



**Christina Guindy**, Head of Research



**Katie Jones**, Events Coordinator



**Russel Lamb**, GCRF Programme Officer



**Alice Marks**, GCRF Programme Officer

**Shane McHugh**, Head of International Activities



