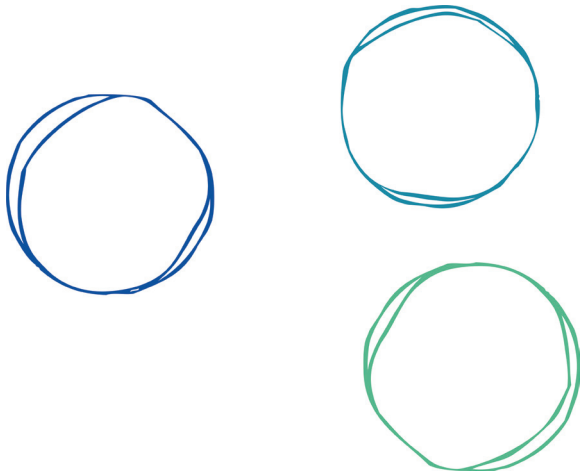
Research to Reality

CRC LCL Expo, Adelaide 15 May 2019

Speaker Introductions

LOW CARBON LIVING CRC

University of South Australia



Theme: Legacy

Cooperative Research Centres are designed to build capacity to address significant national and international challenges. The CRC for Low Carbon Living is no exception. Across the seven years of this CRC we have established a new generation of expert, industry connected early career researchers; we have built new and enduring links between industry, government and research; we have created new tools for measuring our impacts; and we have created new knowledge that will help deliver a low carbon future. In this session our speakers will highlight some of the legacy of this CRC at both a local and national level.

The Hon Dean Brown AO
Chairman of the SMC for the UniSA Research Node for Low Carbon Living

Dean Brown is a former Premier of South Australia. He was in Parliament for 27 years and held numerous Ministerial Portfolios. Dean is the chairman of the SMC (Strategic Management Committee) for the Research Node for Low Carbon Living at UniSA. Dean's education and background is in agricultural research and management. His qualifications include a Master of Rural Science from the University of New England, a Post-graduate Fellowship Diploma in Business Administration from the University of South Australia and a Doctor of Science (honoris causa) from the University of New England. Dean is currently Chairman of SkillsIQ, Foodbanks SA and a Fellow of the Australian Institute of Company Directors. He was previously Chairman of Hillgrove Resources Ltd. and the not-for–profit Playford Memorial Trust (which offers numerous scholarships for higher education), as well as a Director of Scantech Ltd. and the Mission Australia Board. Dean takes a particular interest in innovation, energy efficiency, training and corporate governance.

Subject Area: **Welcome & Legacy**

Presentation:

Welcome & Acknowledgement of Country

Engaging Locally - The experience of the UniSA Research Node for Low Carbon Living
with Professor Wasim Saman

Professor Wasim Saman
UniSA

Wasim Saman is professor of sustainable energy engineering, University of South Australia. His career has focussed on sustainable energy education and industry targeted research since the 1980s. His research has focussed on solar thermal generation and storage and sustainable use of energy in buildings. He has been leading research teams developing thermal storage materials and systems for building, industry and solar thermal applications, low energy air conditioning systems and developing smart demand management technologies. He has been a founding research leader for the CRC for Low Carbon Living and led a number of research projects as well as establishing and leading the SA Research Node for Low Carbon Living until July 2018. He has been leading industry focussed research into low energy housing which involved the establishment and performance monitoring of the Lochiel Park Green Village, Australia's most environmentally sustainable housing development. His sustainable housing case study scored the highest assessment for both impact and engagement in the recent ARC research impact evaluation process. He is Fellow of the Australian Institute of Energy, Fellow of the Australian Institute for Refrigeration, Air Conditioning and Heating. He received the Pioneer Award from the World Renewable Energy Network in 2012.

Subject Area: **The UniSA Reasearch Node for LCL and Adelaide Living Laboratory Hub**

Presentation:
Engaging Locally - The experience of the UniSA Research Node for Low Carbon Living
with The Hon Dean Brown AO

Lochiel Park, Bowden & Tonsley
with Andrew Bishop

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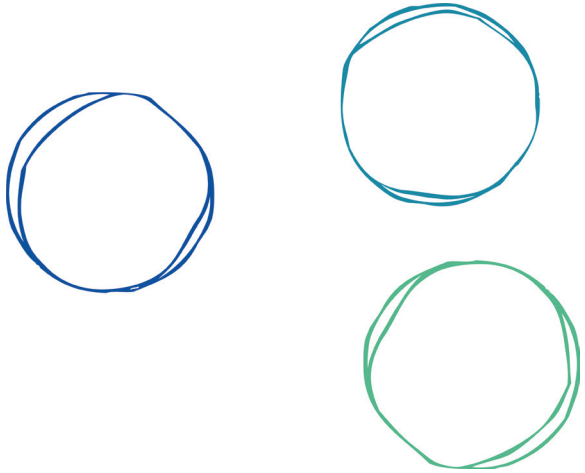
Dr Stephen White
CSIRO

Stephen leads CSIRO's Energy Efficiency research and is a Program Leader in the Low-Carbon-Living Cooperative Research Centre. He chairs the Sustainable Housing Task Group for the Australian Sustainable Built Environment Council (ASBEC) and he oversees a range of tools for supporting efforts to encourage increased demand for environmentally sustainable housing. His research has resulted in IP commercialisation through a number start-up companies. He is a member of the Australian Refrigeration and Building Services (ARBS) "Hall of Fame".

Subject Area: **CRCLCL legacies**

Presentation: **Celebrating and accelarating the CRCLCL's success**



Theme: Physical and Social Infrastructure

To create a low carbon built environment we will need new ways of thinking and acting. The CRC for Low Carbon Living has created a legacy of new knowledge, tools, systems, technologies and programmes to reduce our impact on the planet. In this session our speakers will highlight some of the innovative projects we have developed to create the physical and social infrastructure that can help shape a low carbon future.

Dr Ke Xing
UniSA

Dr Ke Xing is a Program Director at UniSA. He is dedicated to research and education on sustainability in engineering and resource efficiency. He leads the development of the precinct carbon assessment tool supported by the CRCLCL project Integrated Carbon Metrics.

Subject Area: **Energy and embodied carbon**

Presentation: **The Integrated Carbon Metrics (ICM) project**

The Integrated Carbon Metrics (ICM) project is providing knowledge about direct and embodied carbon emissions in the built environment to inform decisions makers from industry and government. The ICM project has developed two tools for the building, precinct and city level, which integrate embodied carbon emissions and provide NCOS-suitable functionality. The Embodied Carbon Explorer (ECE) tool rapidly evaluates Scope 3 emissions related to a building project and shows in detail how different product groups contribute to carbon emissions. The Precinct Carbon Assessment (PCA) tool examines the whole life cycle of carbon emissions at precinct scale and evaluates low carbon scenarios.

Dr Vanessa Rauland
Curtin University

Vanessa is a Research Fellow at Curtin University Sustainability Policy Institute (CUSP). She has a vast background in sustainability and climate change, and a PhD in low carbon cities. She is also the founding Director of ClimateClever, an EdTech startup.

Subject Area: **Low Carbon Schools**

Presentation: **The ClimateClever Initiative:**
Students leading the way to a low carbon future!

Vanessa will showcase 'The ClimateClever Initiative', a program developed through research supported by the CRC for Low Carbon Living, designed to help schools and their communities to reduce their carbon footprint and utility costs and work together to create a low carbon future. Vanessa will summarise the results of a two-year 'Low Carbon Schools' pilot program and provide an overview of the ClimateClever App, which enables users to measure their carbon emissions from energy, water and waste, audit their buildings, and create an evidence-based action plan to reduce their carbon footprint. The program is expanding to households in 2019 and is seeing a growing number of partners, including local governments and utility companies, collaborating with ClimateClever. Vanessa will talk about the exciting developments underway.

Associate Professor John Merson
UNSW

Dr John Merson is Executive Director of the Blue Mountains World Heritage Institute, and Hon Associate Professor in Environmental Studies at the University of NSW. He is the author of a number of studies on Climate Change impacts, and was a research leader for the Social, Economic and Institutional network of the National Climate Change Adaptation Research Facility (NCCARF)

Subject Area: **LCL Australia program**

Presentation: **Low Carbon Tourism and Communities**

Dr Merson will discuss the carbon reduction strategy of the Low Carbon Living – Australia program, that was piloted as a CRC Living Lab within the tourism industry in the Blue Mountains. This community-based projects uses a double incentive scheme to support small and medium businesses and households to understand and reduce their carbon footprint. The program now operates as a self-funding social enterprise in the Blue Mountains and Southern Highlands of NSW, and from June will be extended to Port Douglas in North Qld, and other regions in coming years.

Dr Michael Short
UniSA

Michael's core research interests and expertise are in urban wastewater systems, environmental microbiology and quantitative sustainability assessment methods. His research broadly seeks to improve the technical, economic and environmental performance of 'human–environmental' systems, with a particular focus on urban and impacted waters and how they can be managed and regulated in a more sustainable way. He has a keen interest in translating science into evidence-based policy and to this end is currently serving as Australia's Lead Author on the Wastewater chapter of the 2019 Refinement of the IPCC Guidelines for National Greenhouse Gas Inventories.

Subject Area: **Energy benchmarking for water recycling project**

Presentation: **Application of Aerobic Granular Sludge for energy efficient wastewater treatment and reuse**

Wastewater treatment provides an essential public and environmental service which can have a major impact on the energy and carbon footprint of the urban water cycle. Treatment requirements were originally focused on minimising disease and nuisances (e.g. odour). Gradually, treatment requirements have increased to protect receiving environments. Today, sustainability requirements (energy efficiency, water reuse, greenhouse gas emissions) to minimise climate impacts are gaining importance. Faced with population growth and urbanisation, the challenge for the industry is how to achieve these goals while maintaining affordability for customers. Accordingly this presentation will present an overview of a PhD study that investigated the role of new wastewater treatment technology called Aerobic Granular Sludge which is an intensification process designed to provide efficient and cost effective wastewater treatment. In particular, performance of this technology was assessed against new criteria expected for our future wastewater treatment plants.

Dr Ben van den Akker
SA Water

Dr van den Akker is a Lead Wastewater Scientist at SA Water where he conducts research to improve the performance and stainability of wastewater treatment. His work also seeks to improve the public health performance of water reuse schemes. Ben currently serves as an Adjunct Senior Lecturer at Flinders University, an Adjunct Research Fellow at UniSA, and was recently appointed to the NHMRC Recreational Water Quality Advisory Committee to support revision of the Recreational Water Quality Guidelines.

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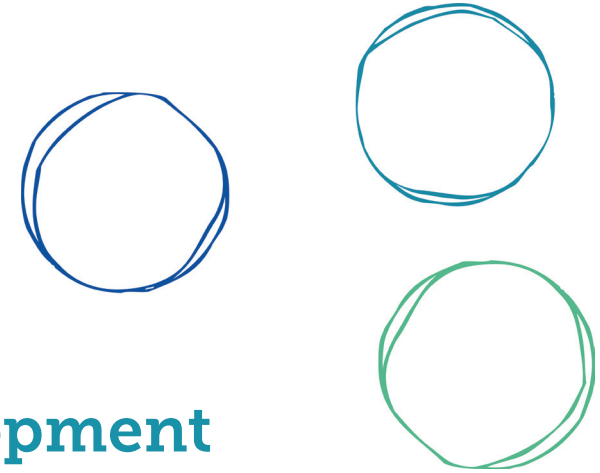

Theme: Urban Development

Australia is one of the most urbanised nations, with 90 per cent of the population living in just 0.22 per cent of the country's land area, and our carbon impact acutely driven by how we develop our cities. By utilising the concept of Urban Living Laboratories, the CRC for Low Carbon Living has been able to build a more detailed understanding of how to create productive, safe, affordable and above all low carbon urban developments. In this session our speakers will highlight new tools, new knowledge and new ways of thinking about low carbon urban development.

Dr Henry Petersen
UNSW

Dr. Henry Petersen is a Research Fellow at UNSW Built Environment. He has expertise in modelling and simulation of the Urban Heat Island Effect, and in decision-support systems. He is developing the UHI decision support tool project within the CRCLCL.

Subject Area: **Urban Heat/Cooling Cities**

Presentation: **UHI Decision-Support Tool & Index**

The "Microclimate and Urban Heat Island Decision-Support Tool" assists governments and the built environment industry with a systematic and structured scenario analysis to inform urban policy, development assessment and planning practices related to potential building and urban interventions. The tool integrates scientific models with a range of mitigation techniques to perform urban heat island mitigation analysis across both building and urban scales.
It considers building coatings and roofs, urban form and density, greenery and infrastructure.

Associate Professor Anne Sharp
UniSA

Dr Anne Sharp is an Associate Professor of the Ehrenberg-Bass Institute for Marketing Science at the University of South Australia. Anne leads the Institute's research in sustainable marketing, with a particular interest in interventions encouraging behaviour change for improved environmental outcomes. Her recent work includes the evaluation of retail bans on single use plastic bags, householder waste and recycling behaviour, food waste and developing measures for repairing, reusing and waste avoidance, and the sharing economy and transport choices. Anne also researches retail shopper behaviour, with current work looking at the effect of consumer goods carbon labelling on choice. Anne's work has the common theme of applying marketing science knowledge to sustainable marketing.

Subject Area: **Sharing economy mobility services project**

Presentation: **Sharing Economy Mobility Services - Normal brands or a true behaviour disruption? Contributions from Marketing and Psychology**

This research explores how shared mobility options are transforming choices in the inner-city precinct. Specifically, the research examines the patterns of sharing economy mobility services brand usage against known patterns in buyer and consumer behaviour, built over the last 30 years. These patterns have been found to hold across countries, markets and time. From this, it can be established if the new shared mobility transport options are acting as "normal" brands or if they are disrupting the known patterns and, in effect, creating a new market. This helps to identify the best path to raising awareness of them and growing their adoption and gives clear direction for marketing's role within this.

Andrew Bishop
Renewal SA

Andrew Bishop is Senior Project Manager at Renewal SA. He has 26 years of experience in the development and housing industry having worked in the public and private sectors. He was responsible for the delivery of the Lochiel Park project is currently working on the Bowden mixed use development. Andrew has a keen interest in environmental sustainability in the development industry and has assisted with a number of research projects in these developments.

Subject Area: **Adelaide Living Laboratory Hub**

Presentation: **Lochiel Park, Bowden & Tonsley**

Theme: Behaviour Change

Our carbon impact is the sum of millions of individual decisions made by us on a daily basis. It is our behaviour, the choices we make, that determines the impact of the built environment. In this session our speakers will highlight ways we can rethink the concept of renovations, or what we choose as a new home, and showcase how we utilise the partnership of the CRC to engage more widely to create a lower carbon built environment. Residential and commercial building retrofits, as well as successful implementation in low carbon affordable retrofits.

James McGregor
Blue Tribe

When his dreams of becoming an ice trucker were crushed by climate change, James McGregor decided to become Chief Sustainability Innovator, Founder and CEO of the Blue Tribe Company and helps leading companies and governments to design and implement successful sustainability strategies by unlocking the potential of research innovation.

Subject Area: **Behaviour change and demonstration projects**

Presentation: **Reality TV: changing the world? Making the world a better place one renovation at a time Making the world a better place one renovation at a time**

How do you drive mainstream uptake of sustainable housing options? In this talk James McGregor will discuss two CRC projects that are both using the latest behavioural science insights into consumer attitudes towards sustainability and building solutions using lean innovation practices to drive mainstream uptake of sustainable housing solutions. One project uses a Lifestyle/Reality TV show concept to drive mass market demand for sustainable housing and the other uses a digital marketplace to help consumers plan and estimate the cost of a renovation, find professional tradies, and manage their renovation.

Dr Josh Byrne
Curtin University

Dr Josh Byrne is environmental scientist, researcher and TV presenter. Well known for his role on ABC TV's Gardening Australia program, Josh is also a Research Fellow at Curtin University with expertise in high performance housing and urban sustainability. His work showcases how comfortable, energy efficient housing is cost effective and accessible now.

Subject Area: **ZEH (Zero Emissions Homes)**

Presentation: **Warm, cool, comfortable – mainstreaming high performance housing**

Six years ago, Josh Byrne built a 10 star solar passive house using a volume builder and typical materials to demonstrate that high performance houses are cost effective and accessible now. His family home functions as a living laboratory to collect data and test new technologies such as solar-electric vehicle charging and battery storage, with the results being widely shared. Josh and his colleagues have expanded their research into mainstreaming high performance housing by working with builders land developers around Australia to unpack cost and consumer interest barriers in different regions and markets. His presentation will cover the major findings of his work supported by expansive project resources.

The Hon Robert Hill AC
Chair CRCLCL

The Hon Robert Hill AC is independent Chairman of CRC for Low Carbon Living, Chair of the CRC's Nominations Committee, and member of the Research Advisory Committee. He is a former Australian Senator and Minister for the Environment. He was Australian Ambassador to the United Nations and is Past President of United Nations Association of Australia. Upon returning to Australia he was Chancellor of the University of Adelaide. His long-standing interest in sustainability led to him serving as Chairman of the Australian Carbon Trust Ltd. (later to become Low Carbon Australia Ltd.). He is Asia Pacific Board member of The Nature Conservancy and Chair of NSW Biodiversity Conservation Trust.

Subject Area:

Presentation: **Closing Speech**

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Hosted by the UniSA Research Node for LCL

https://www.unisa.edu.au/IT-Engineering-and-the-Environment/School-of-Engineering/Research/Research-Node-for-Low-Carbon-Living/

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