

CAR symposium

Friday 31 May 2019



Woolcock Institute of Medical Research
Level 5, 431 Glebe Point Road, Glebe, NSW

Changing urban and transport landscapes: air quality and health challenges

8:30-9:30	SYMPOSIUM REGISTRATION	
9:30-9:40	Welcome Professor Guy Marks, CAR Principal Investigator	
	KEYNOTE PRESENTATIONS	
9:40-10:20		Cities, transport and population health: Opportunities to enhance air quality Professor Mark Stevenson, Professor of Urban Transport and Public Health, University of Melbourne
10:20-11:00		City analytics and smart cities: Informing urban planning and air quality improvements Professor Chris Pettit, Professor of Urban Science, UNSW
11:00-11:30	Morning tea	
11:30-12:30	CONCURRENT PAPER PRESENTATIONS	
	<p>1A: Air pollution and health impact</p> <p>Chair: Rachel Tham</p> <p>Ivan Hanigan: The impact on life expectancy from reducing anthropogenic PM_{2.5} in Australia over the coming century 2020-2140</p> <p>Ariadna Curto: Ambient particulate air pollution and blood pressure in peri-urban India</p> <p>Mona Elbarbary: Ambient air pollution and anaemia prevalence and haemoglobin levels in Chinese older adults</p> <p>Nathan Cooper: Marginalised groups are most exposed to air pollution in Australian cities</p>	<p>1B: Exposure assessment</p> <p>Chair: Amanda Wheeler</p> <p>Luke Knibbs: National PM_{2.5} exposure models for Australia using satellite-based LUR</p> <p>Fabienne Reisen: An educational initiative to learn about biomass burning impacts on communities: Evaluation of low-cost particle sensors</p> <p>Nicholas Dal Sasso: Experience of global small sensor co-location comparison studies and applications with AQMesh</p> <p>David Donaire-Gonzalez: Agreement between static and dynamic modelling and personal measurements of air pollution</p>

12.30-1.45	Lunch (Poster session)	
1.45-3.00	CONCURRENT PAPER PRESENTATIONS	
	<p>2A: Air pollution, energy and health</p> <p>Chair: Geoff Morgan</p> <p>Amanda Wheeler: Can portable air cleaners improve residential indoor air quality resulting from woodsmoke emissions?</p> <p>Rachel Tham: Health co-benefits and impacts of energy transition from polluting fuels to cleaner energy forms in higher-income countries</p> <p>Tom Cole-Hunter: Acute changes in heart rate variability and cardiac repolarisation following controlled exposure to cookstove air pollution</p> <p>Ben Ewald: Bringing the health voice to the energy debate</p> <p>Tom Cole-Hunter: Evidence to support clean-energy transition and related health co-benefits: air quality monitoring in Suva, Fiji</p>	<p>2B: Transport emissions and health</p> <p>Chair: Luke Knibbs</p> <p>Ruby Kan: Development of a vehicle emissions model for NSW</p> <p>Scott Bainbridge: Use of remote sensing for whole-of-city vehicle fleet emission health checks</p> <p>Robin Smit: Measuring on-road vehicle emissions and on-road air quality in Brisbane with multiple instruments</p> <p>Clare Walter: Traffic pollution near childcare centres in Melbourne</p> <p>Abigail McCarthy: WestConnex - Insights from Inquiry Submissions 2019</p>
3.00-3.15	Afternoon tea	
	PLENARY SESSION	
3.15-3.45	 <p>Chair: Bin Jalaludin</p> <p>What we can learn from the War on Waste series? Craig Reucassel</p>	
3.45-4.45	<p>Panel discussion: What health research is needed to inform urban and transport planning policy that improves air quality and energy use?</p> <p>Moderator: Craig Reucassel</p> <p>Panellists: Mark Stevenson, (University of Melbourne), Chris Pettit (UNSW), Wendy Bacon (community representative), Ingo Koernicke, (Sutherland Council), Christine Cowie (CAR)</p>	
4.45-5.00	<p>Summary of day and close of symposium</p> <p>Professor Guy Marks</p>	



Co-sponsor: Office of the NSW Chief Scientist & Engineer, NSW Department of Industry
www.industry.nsw.gov.au

CAR symposium



Changing urban and transport landscapes: air quality and health challenges

Plenary speakers



**Professor
Mark Stevenson**

University of Melbourne

Cities, transport and population health: Opportunities to enhance air quality

Mark Stevenson is an epidemiologist and Professor of Urban Transport and Public Health at the University of Melbourne. He is the Director of the University's Transport, Health and Urban Design research group. His appointment is across the Melbourne Schools of Design, Engineering and Population and Global Health. Before this appointment, he led the prestigious Monash University Accident Research Centre. He holds senior leadership roles including as expert adviser for injury to the Director General of the WHO. Professor Stevenson is internationally renowned as acknowledged by the numerous keynote invitations at international meetings including invitations to present at the 71st meeting of the United Nations and the International Congress of Physical Activity and Public Health. He has published more than 220 peer-reviewed articles, books, book chapters and technical reports and procured more than \$31 million in competitive research.



**Professor
Chris Pettit**

University of New South Wales

City analytics and smart cities: Informing urban planning and air quality improvements

Chris Pettit is Professor of Urban Science, Faculty of Built Environment, UNSW. He is the Director of the City Analytics Masters Program, which trains the next generation of practitioners and policy makers to use data-driven approaches to understand the inherent complexity of the city. He established the City Analytics Lab, a dedicated space designed to support collaborative city planning and user-centred design. He is also an Associate Director of the City Futures Research Centre at UNSW. Professor Pettit's expertise is in the convergence of the fields of city planning and digital technologies, including Geographical Information Sciences. For the past 25 years, he has conducted research and development in the use of digital planning tools to support the envisioning of future city scenarios. These tools including the online 'What if?' scenario GIS-based planning support system. He has given numerous keynote addresses at conferences around the world and has published more than 180 peer-reviewed papers.



Craig Reucassel
Writer and comedian

What can we learn from *The War on Waste* series?

Craig Reucassel is an Australian writer and comedian who is best known for his work with *The Chaser* and for going through your bins on *The War on Waste*. Craig attended the University of Sydney and graduated with honours in Bachelor of Economics (Social Science) and Bachelor of Laws.

Concurrent paper presentations

11:30 – 12:30

1A: Air pollution and health impact

Ivan Hanigan, The University of Sydney; Centre for Air pollution, energy and health Research (CAR)

The impact on life expectancy from reducing anthropogenic PM_{2.5} in Australia over the coming century 2020-2140

Ariadna Curto, ISGlobal, Universitat Pompeu Fabra, CIBER Epidemiología y Salud Pública, Barcelona, Spain

Ambient particulate air pollution and blood pressure in peri-urban India

Mona Elbarbary, The University of Sydney

Ambient air pollution and anaemia prevalence and haemoglobin levels in Chinese older adults

Nathan Cooper, University of New South Wales

Marginalised groups are most exposed to air pollution in Australian cities

1B: Exposure assessment

Luke Knibbs, University of Queensland

National PM_{2.5} exposure models for Australia using satellite-based LUR

Fabienne Reisen, Climate Science Centre, CSIRO Oceans & Atmosphere

An educational initiative to learn about biomass burning impacts on communities: Evaluation of low-cost particle sensors

Nicholas Dal Sasso, Environmental Instruments Ltd

Experience of global small sensor co-location comparison studies and applications with AQMesh

David Donaire-Gonzalez, Utrecht University

Agreement between static and dynamic modelling and personal measurements of air pollution

1:45 – 3:00

2A: Air pollution, energy and health

Amanda Wheeler, University of Tasmania; Australian Catholic University

Can portable air cleaners improve residential indoor air quality resulting from woodsmoke emissions?

Rachel Tham, Centre for Air pollution, energy and health Research (CAR); The University of Melbourne; Australian Catholic University

Health co-benefits and impacts of energy transition from polluting fuels to cleaner energy forms in higher-income countries

Tom Cole-Hunter, Centre for Air pollution, energy and health Research (CAR); Queensland University of Technology; Colorado State University

Acute changes in heart rate variability and cardiac repolarisation following controlled exposure to cookstove air pollution

Ben Ewald, University of Newcastle; Doctors for the Environment Australia

Bringing the health voice to the energy debate

Tom Cole-Hunter, Centre for Air pollution, energy and health Research (CAR); Queensland University of Technology

Evidence to support clean-energy transition and related health co-benefits: air quality monitoring in Suva, Fiji

2B: Transport emissions and health

Ruby Kan, Office of Environment and Heritage, NSW

Development of a vehicle emissions model for NSW

Scott Bainbridge, Department of Water and Environmental Regulation, WA

Use of remote sensing for whole-of-city vehicle fleet emission health checks

Robin Smit, Department of Environment and Science, Qld

Measuring on-road vehicle emissions and on-road air quality in Brisbane with multiple instruments

Clare Walter, The University of Melbourne, The University of Queensland

Traffic pollution near childcare centres in Melbourne

Abigail McCarthy, The University of Sydney

WestConnex - Insights from Inquiry Submissions 2019

Posters

Philippa Nicole Barr, Macquarie University

L'opera del rallentamento: changing mobilities, air quality and health in Milan 2019

Yik Chan, University of Technology Sydney, Woolcock Institute of Medical Research

Impact of traffic related air pollutant exposure on lung inflammation and mitochondrial wellbeing in mouse lungs

Tom Cole-Hunter, Centre for Air pollution, energy and health Research (CAR), Queensland University of Technology

Waste-to-Energy processes: what is the impact on air pollutants and health? A critical review of the literature

Simin Maleknia, Woolcock Institute of Medical Research

Water-based filters: Solution to chemical pollutants and particulates

Robin Smit, Department of Environment and Science, Qld

Shipping fuel consumption and emissions modelling and assessing air quality impacts

Baoming Wang, University of Technology Sydney, Woolcock Institute of Medical Research

Low dosage maternal particulate matter exposure induced high lung remodelling in mum and inflammation in offspring mice