

My Research Impact

Prof Graham Currie FTSE,
Director Public Transport Research Group
Director SEPT-GRIP
Director Monash Infrastructure
Monash University, Australia
November 2018



Professor Graham Currie

- Professor of Public Transport (Monash University) since 2003 (Industry Chair)
- Director Public Transport Research Group
- Director Monash Infrastructure
- Chair – Light Rail Transit Systems Committee, US Transportation Research Board
- Member – Singapore Land Transport Authority Research Advisory Committee
- 2017; Fellow Academy of Technology and Engineering (ATSE)
 - Chair, Infrastructure Forum ATSE

Prior:

- Senior Associate Booz Allen Hamilton/Strategy& Price Waterhouse Coopers
- Manager Victoria; Travers Morgan Pty Ltd
- Network Planner – West Midlands Passenger Transport Executive UK
- Network Planner – London Transport UK

Key experience

- Transport expert; 35 years experience
- No. 1 Author in public transport research publications (161 journal papers, 271 conference papers)



FOCUS

**ARE WE
ON TRACK?**
Our experts
talk transport

AUSTRALIAN ACADEMY OF
TECHNOLOGY AND ENGINEERING





**PUBLIC TRANSPORT
RESEARCH GROUP**



MONASH University

CONNECTING CITIES

PTRG is the name for researchers at Monash University who are engaged in research on public transport systems, users, planning and policy.

DISCOVER MORE

A Scientometric Analysis of Public Transport Research

Leonard Heilig, University of Hamburg, Germany
Stefan Voß, University of Hamburg and PUCV, Valparaiso, Chile

Abstract

Public transport research involves a lot of disciplinary and interdisciplinary research applying methods, techniques, and technologies to investigate, regulate, and advance public transport. The importance of research in this area has led to a huge amount of publications in recent years. In this study, we conducted a comprehensive scientometric analysis of related literature published in 2009–2013 to empirically explore the consistency, focus areas, and key contributors of public transport research from a meta-perspective, providing novel insights into publication patterns, major topics, research impact, and productivity by focusing on short-term developments. As such, the results of this study provide a novel perspective on public transport research and may help achieving an overview on important characteristics.

Keywords: Public transport, public transport research, scientometric analysis, scientometrics, keyword cluster analysis.

Introduction

Public transport, as a mode of transportation moving people from one place to another for providing sustainable transport forms (Levinson et al. 2015), plays an essential role not only in inter-urban travel needs of those who are dependent on efficient transport systems, but also for supporting social equity principles (Webster and Bly 1982). The perception of local public transport in terms of accessibility, safety, and efficiency of visitors and business travelers and tourists (Thompson and Schofield 2007). Further, the perception of public transport as well as the interplay between different inter-urban and urban transportation systems, including car and bike sharing systems, become increasingly important not only in our modern society, but also in developing countries (Sohail et al. 2015). Public transport demand is stimulated by social and economic conditions (e.g., city income, car ownership, land use) as well as by direct demand factors such as service quality (Webster and Bly 1982). Against this backdrop, public transport

Journal of Public Transportation, Vol. 18, No. 2, 2015 111

World Review of Public Transport Research (2009-2013)

Heilig L and Vos S (2015) 'A Scientometric Analysis of Public Transport Research' *Journal of Public Transportation* Vol 18 No 2

Top 3 world Universities in Public Transport Research

- Uni of Toronto, UCal Berkeley, MONASH UNIVERSITY

Most Productive Authors (World Ranking)

- PTRG Staff - Graham Currie 2nd, Alexa Delbosc 11th
- PTRG Associates – Avi Ceder 3rd, John Nelson 10th

Most Cited World Authors

- Graham Currie 5th

Other International Awards

TRB Largest Transport Conference in the World (13,000 delegates)

- Best Paper in Public Transport
 - 2012
 - 2017

World Conference on Transport Research

- Best research paper in Transport Policy 2016

ARRB Transport Research

- Research Impact Award 2017



PTRG is part of a wider collaborative framework in transport research across multiple groups/ faculties

Key Research Groups



Institute of Transport Studies



Institute of Railway Technology



MONASH ART DESIGN & ARCHITECTURE



Key Research Themes

Railway
Engineering &
Technology

Public Transport
Policy & Operations

Traffic &
Transport
Systems

Intelligent
Transport
Systems

Design in
Public
Transport

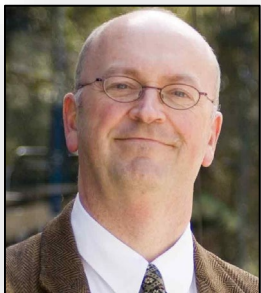
Model Data
Fusion

Light Weight
Vehicles

Aerodynamics

Transport
Safety

Key staff, the associate team & students



Prof Graham Currie
Chair of Public
Transport



Nicholas Fournier
Research Fellow



Dr Alexa Delbosc
Senior Lecturer
DECRA Fellow



James Reynolds
Research Fellow



Katerina Pavkova
Research Fellow

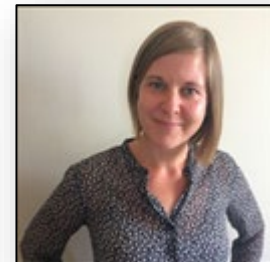


Wendy Walker
Website
Manager



Dr Farhana Naznin
Research Fellow

- 27 PhD students
- 52 Research associates across Monash University (e.g. ITS, MADA, MUARC), International Universities, and external experts
- 48 Masters Students; most in China
- 10+ final year civil engineering undergraduate research students per year

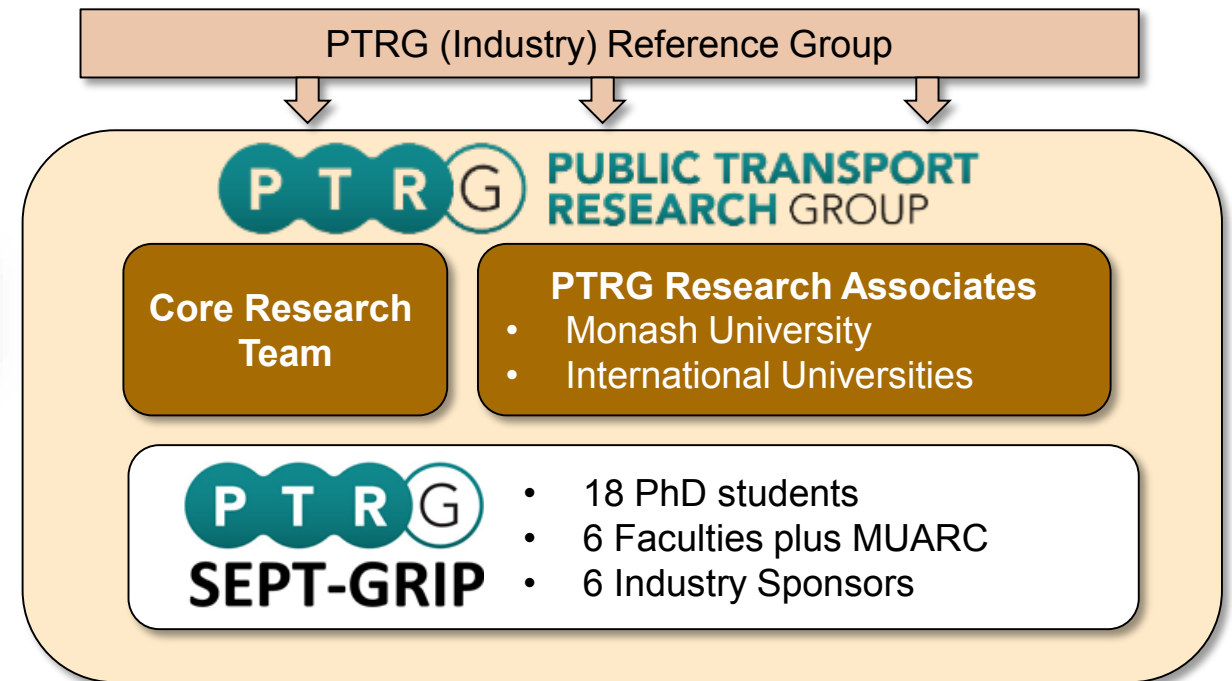


Laura McCarthy
Research Fellow



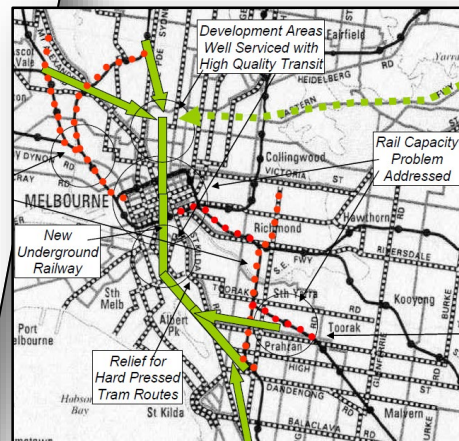
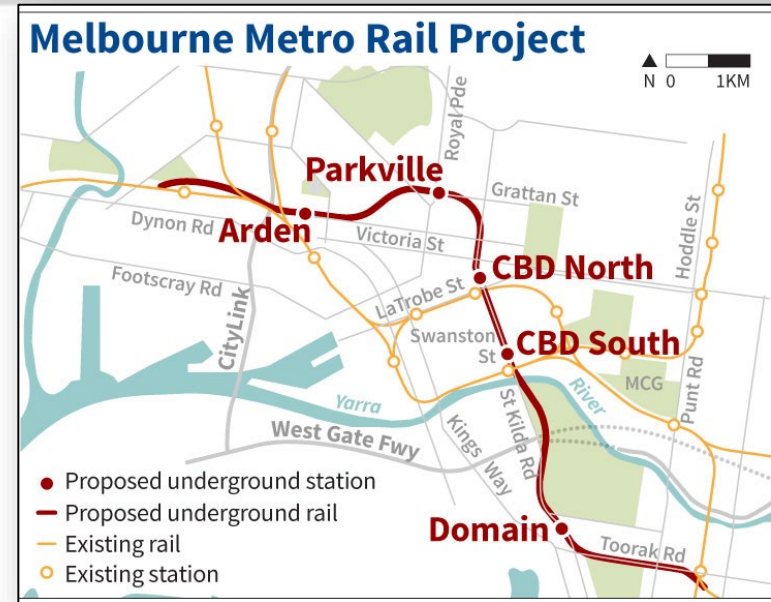
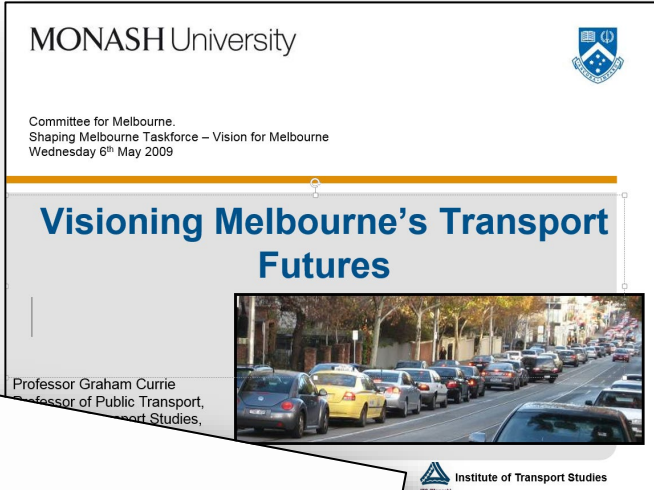
Dr Kun An
Lecturer

Rebadged in 2015 as the TFM-Monash Public Transport Research Group (PTRG)



- World First joint Authority/Uni. Research and Training Initiative
- Starts March 1st 2015 for 5 years; then continues subject to review
- \$5M total funding - \$ 2.5M PTV seed funding provided, \$2M Monash \$0.5M Industry

Example Projects: Melbourne Metro – Concept Development (City of Melbourne, 2005)



PTRG special event planning and research

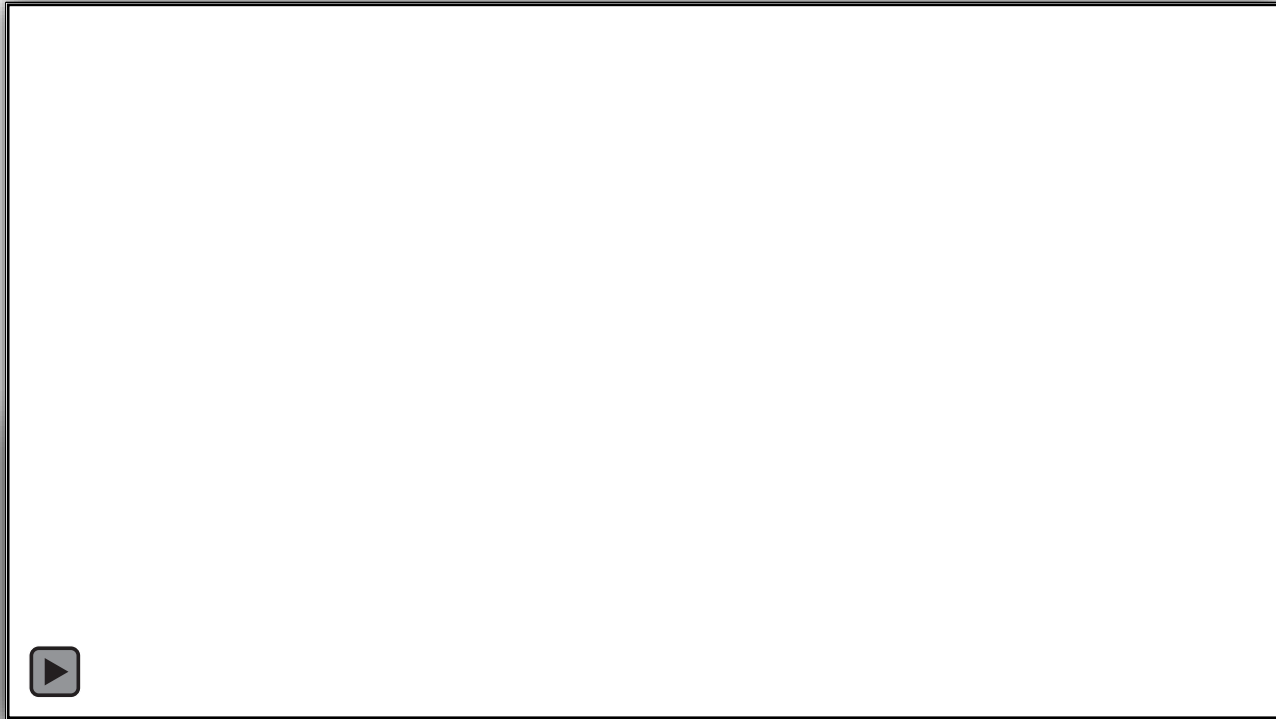
London 2012 Olympic Games Travel Demand Management Reviewers



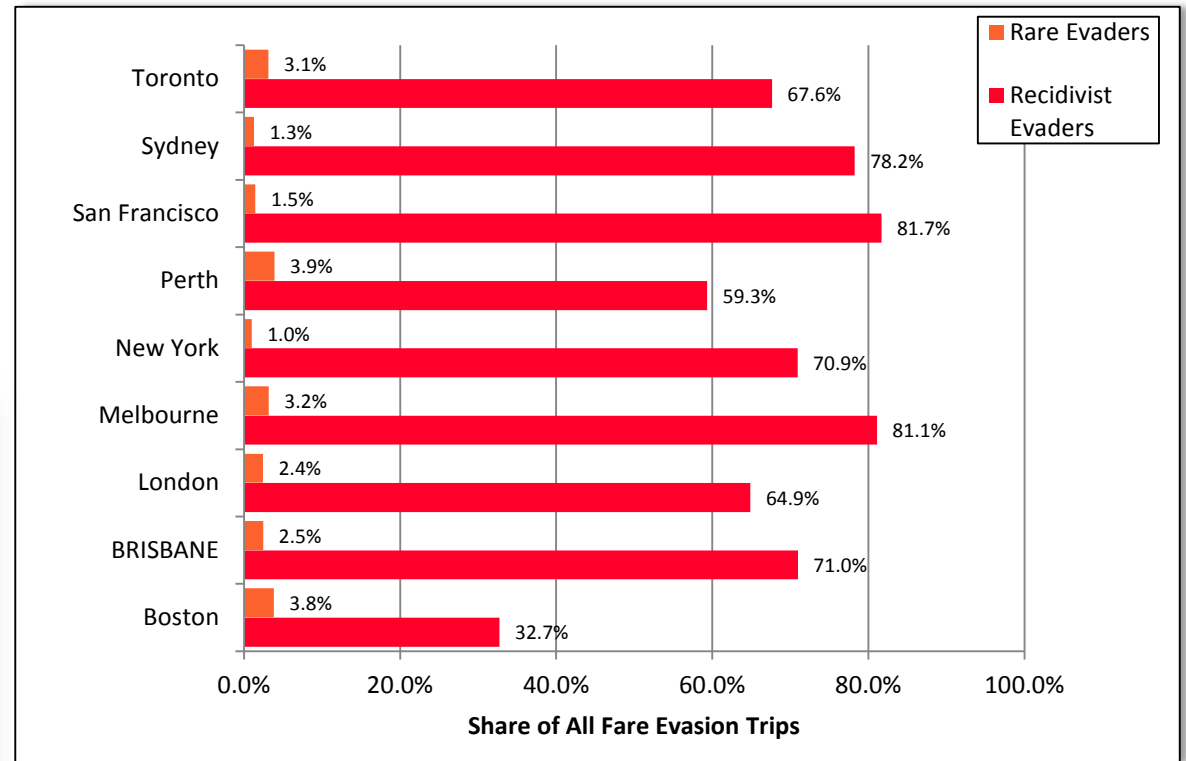
Mecca – Hajj/Umrah Events Synthesis of Lessons from Olympic and Hajj Planning



Example Projects: Understanding the Psychology of Fare Evasion Behaviour



IMPACT – Over \$105mp.a. in savings in Australia ; much larger in overseas cities

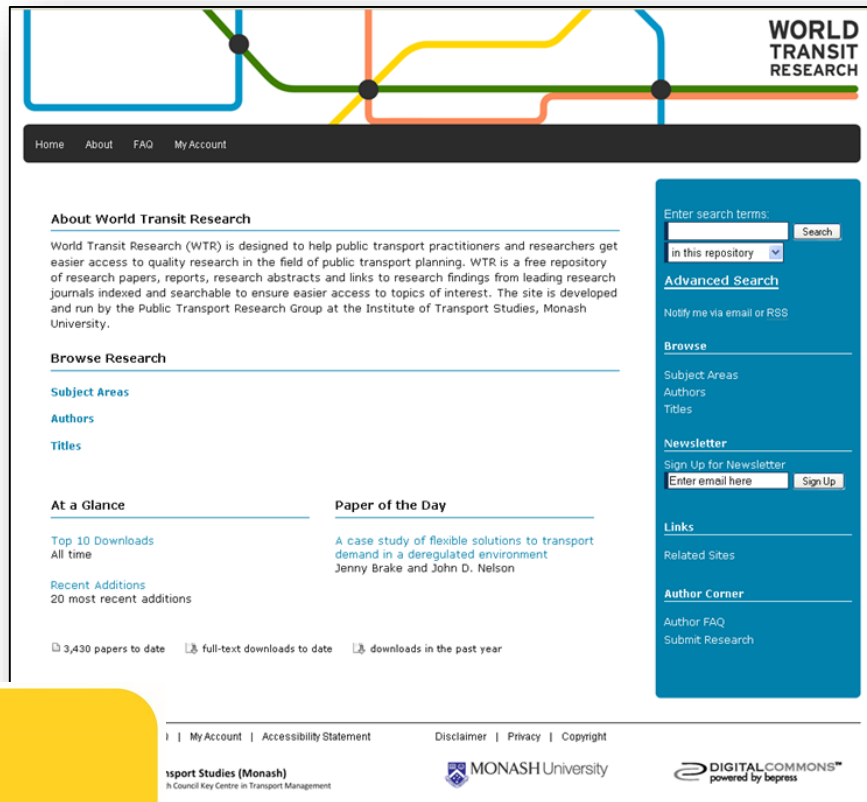


IMPACT - Large improvement in revenue protection ~\$105M savings in Melbourne and Sydney since 2015 EVERY YEAR ; more reductions internationally

Research Awards:

- 2016 - Best Research Paper – World Conference on Transport Research
- 2017 - ARRB Inaugural Research Impact Award
- 2017 - Vice Chancellors Award for Research Impact

PTRG runs World Transit Research; the global research clearinghouse for public transport research



World Transit Research

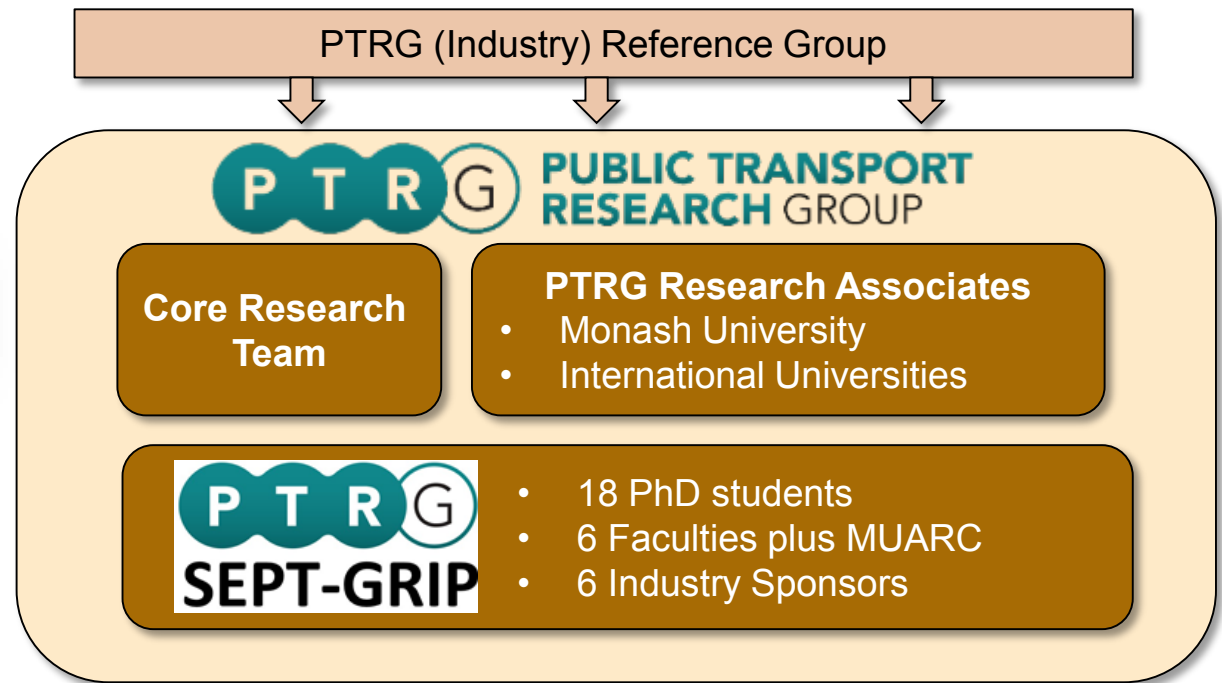
- Commenced 2010
- 256,639 site users
- 8,000 towns and cities from 170 countries
- 6,896 journal papers
- World index of authors and topics

2025=PTx2

UITP Showcase Award
Winner

www.worldtransitresearch.info

SEPT-GRIP is an initiative of the Public Transport Research Group (PTRG) at Monash and TfV/PTV



It has 18 research topics...

1. TOD & Transit

Laura Aston



2. Big Data & Visualisation

Homayoun Rafati



3. Network Synchronisation

Rejitha Ravindra



4. Shared Mobility

Taru Jain



5. Changing Travel Behaviour

Laura McCarthy



6. Tourism & Public Transport

Victoria Radnell



7. Reliability Engineering Approaches in Best Practice Railways

Maryam Nawaz



8. Improving Gender Diversity in the Public Transport Workforce

Rachel Mence



9. Future Train

Lisa Fu



10. Designing Urban Rail to Reduce Vandalism

Amy Killen



11. Bus & Tram Priority Implementation

James Reynolds



12. Simulating Bus & Tram Priority

Samithree Rajapaksha



13. Placemaking & Street Redesign

Matthew Diemer



14. Passenger Falls in Trams

Luke Valenza



15. Transit Network Design

Nora Estgfäller



16. Future Bus

Sarah Roberts



17. The New Bus Rider

Prudence Blake



18. Road Safety Impacts of Bus Safety Inspections

Jianrong Qiu



...with 6 industry partners...

1. TOD & Transit

Laura Aston



2. Big Data & Visualisation

Homayoun Rafati



3. Network Synchronisation

Rejitha Ravindra



4. Shared Mobility

Taru Jain



5. Changing Travel Behaviour

Laura McCarthy



6. Tourism & Public Transport

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7. Reliability Engineering Approaches in Best Practice Railways

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TRANSPORT FOR VICTORIA



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12. Simulating Bus & Tram Priority

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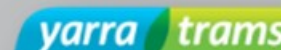
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18. Road Safety Impacts of Bus Safety Inspections

Jianrong Qiu



Monash Infrastructure



Monash Infrastructure

Monash University's infrastructure research strengths are:

Transport

Water

Structures

Information and
communications

Planning and
management

Energy*



Transport

- Public transport
- Railway engineering
- Modelling and optimisation
- Intelligent transport systems
- Safety
- Mobility design

Theme coordinator: Professor Hai Le Vu



Structures

- Railways, mining equipment, water pipes, bridges and port structures
- Construction materials
- Structural health monitoring
- Corrosion
- Modular construction

Theme coordinator:
Professor Jayantha Kodikara



Planning and management

- Data modelling and visualisation of city systems
- Architecture and urban design
- Designing infrastructure for diverse communities
- Environmental and social impacts
- Finance, investment and public-private partnership
- Logistics and supply chain management
- Workforce development

Theme coordinator: Professor Amrik Sohal



Water

- Water Sensitive Urban Design
- Membrane technologies and wastewater management
- Pathogens in water systems
- Integrated water modelling
- Remote sensing of soil moisture
- Water pipe asset management

Theme coordinator: Professor Xiwang Zhang



Information and communications

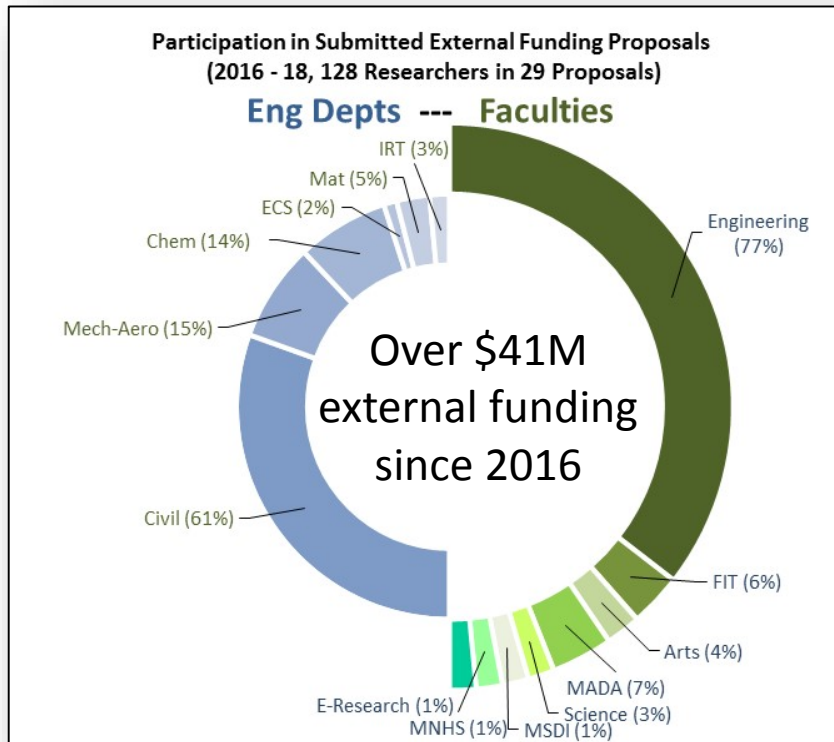
- Data systems and cybersecurity
- Machine learning
- Immersive analytics and visualisation
- Modelling and optimisation
- Telecommunications technologies
- Robotics and drones

Theme coordinator: Professor Mark Wallace

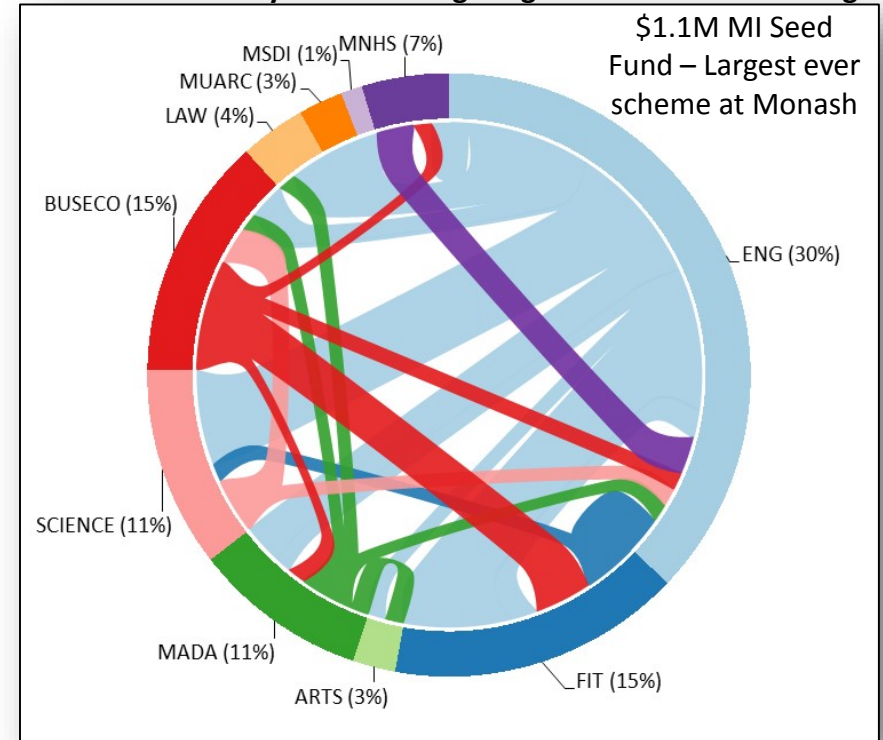


Impact

MI Facilitated External Research Funding by Faculty Dept



MI 2018 Cross Faculty Seed Funding Program – Researcher Linkages



New ARC Industry Transformation Research Hubs Facilitated by Monash Infrastructure



'SPARC Hub'
(Smart Pavement Australia Research Collaboration)



**ARC RESEARCH HUB
ENERGY-EFFICIENT SEPARATION**



Industry Interaction Skills

- Need to chat, meet, discuss, understand
- Clear Comms
- Focus on objectives
- Keep it simple stupid; pictures not words
- Long term engagement in depth
 - Find a trusted partner with longevity
- Attitude:
 - Be collaborative, open and work hard
 - Be considerate; understand the other guy/gals problems
 - Be enthusiastic, positive and solution oriented

Industry/Research Engagement Tools

- Media
- Social media
 - LinkedIn, Twitter
- Industry conferences
- Public speaking
- Leverage Monash Industry Engagement Staff

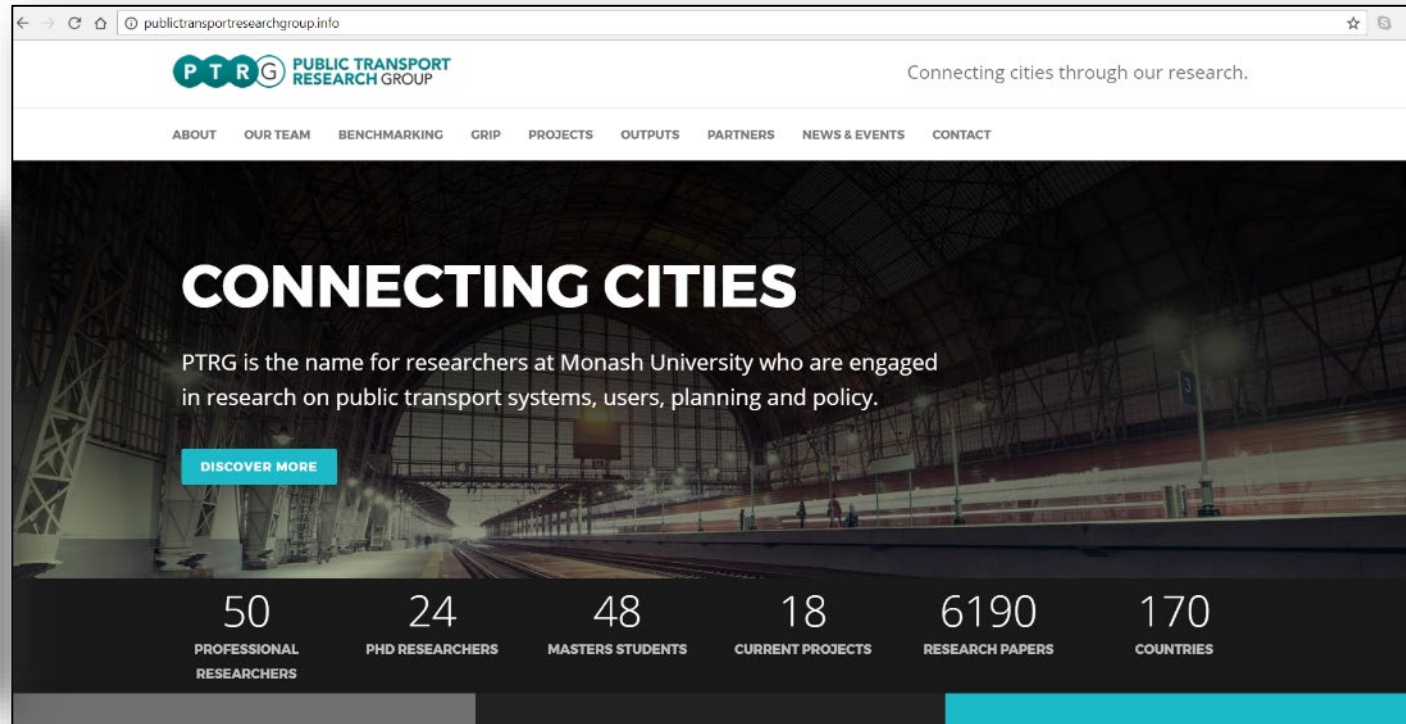
Learn more on our website PTRG.INFO, LinkedIn or Twitter

Professor Graham Currie
FTSE

Director, SEPT-GRIP, PTRG



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