



THE UNIVERSITY OF  
**SYDNEY**  
—  
Business School



**MONASH**  
University

# Key Centre Annual Report 2022

The Commonwealth Key Centre  
of Teaching and Research  
in Transport Management

Institute of Transport Studies  
Monash University

<https://www.monash.edu/engineering/its>

Institute of Transport and Logistics Studies  
The University of Sydney

<http://sydney.edu.au/business/itls>

Institute of Transport and Logistics Studies  
University of Sydney Business School  
The University of Sydney  
NSW 2006

March 2023

Centres Coordinator  
Australian Research Council  
GPO Box 2702  
Canberra ACT 2601

Dear Centres Coordinator,

I hereby present to you, in accordance with the Australian Research Council's requirements for continued Key Centre status, the report of the proceedings and outputs for the Commonwealth Key Centre of Teaching and Research in Transport Management (established 1995) for the year ended 31 December 2022.

A significant highlight in 2022 was a donation of nearly \$8m from Neil Smith, an Alumni as well as a globally successful business person in the bus and ferry sectors. We have established the Neil Smith Chair in Sustainable Transport Futures as well as the Neil Smith Lectureship in Sustainable Mobility and Accessibility.

A growth focus in 2022 was on designing and piloting new short courses including two micro-credentials on modern industrial automation that we won through a competitive process from the New Education and Training Model (NETM) linked to the new airport precinct in Sydney. The market for such courses is growing given a skill shortage and a desire by many to upskill without having to undertake a length award program.

Following on from the success of the past 15-year funding arrangement with Transport for NSW, the Chair in Public Transport role has been extended for a further three years representing a continuation of our very strong and productive partnership with TfNSW. The Chair is involved in delivering relevant programs and briefings through collaborative events in transport policy, strategy and planning, designed to both upskill and refresh within the TfNSW transport ecosystem.

Our research portfolio continues to grow with a diverse suite of projects, and I want to especially thank the iMOVE CRC for its great support with our many projects. We had two of the four best posters and was a winner of the video competition at their annual conference. I am proud to top the list in the Logistics and Transportation field for the recently released "Updated science-wide author databases of standardized citation indicators" by John Ioannidis (Stanford). Professor Mike Bell also made the Top 20.

I want to thank all of my colleagues who have supported me over the last 32 years, and I am deeply proud to be appointed a Member (AM) of the Order of Australia (OA) in 2023.

I commend this Annual Report to all readers who will seek the breadth and depth of the contributions from Sydney and Monash.



A handwritten signature in black ink that reads "D Hensher". The signature is written in a cursive style.

Professor David Hensher AM

Key Centre Director  
Director, Institute of Transport and Logistics Studies

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# Constitution

The primary object of the Key Centre is to undertake graduate teaching, executive programs, grant and contract research and development in the fields of transport, logistics and supply chain management studies.

The work of the Key Centre also has the following objectives:

- To provide a focus for University work in areas of transport and logistics management and to establish an ambience attractive to those committed to excellence in graduate transport, logistics and supply chain management programs and research.
- To collaborate, to the fullest extent possible, with other parties having an interest in transport, logistics and supply chain management studies and its applications.
- To offer specialised training courses, workshops, short courses and seminars on topics of interest in the area of transport, logistics and supply chain management.
- To seed the development, in Australia, of innovative ideas in transport, logistics and supply chain policy and professional practice in which the Key Centre plays a role.

These objectives are achieved by the Key Centre through:

- developing and offering graduate transport and logistics management programs, industry programs, certificates, executive programs and short courses;
- bringing high quality transport, logistics and supply chain management programs to people outside Sydney and Melbourne (both nationally and globally), as well as widening the offerings of courses within Melbourne and Sydney, through access to courses provided by both ITLS-Sydney and Monash ITS;
- contributing to Australia's growing participation in the Asia Pacific region in a leadership role in transport, logistics and supply chain management;
- widening the range of courses available for middle level professional managers in critical areas of transport, logistics and supply chain management not currently served;
- equipping managers in all disciplines (i.e., engineering, economics, planning), the small business sector and local government to succeed in the face of technological, economic and institutional change;
- building on the recognised need for stronger links between education of engineers, planners, policy analysts and managers in transport, logistics and supply chain management;
- undertaking research to develop state-of-the-art management practices and technical methods; and
- transferring the knowledge developed through research to client groups through the Key Centre's publications, workshops, conferences, seminars, and by participation in networks of transport, logistics and supply chain stakeholders.

# ITLS Board of Advice

The ITLS **Board of Advice** actively supports the continued development and utilisation of ITLS as a centre of excellence adding value to the community. The academic and commercial membership of the Board gives a broad network for the sharing of expertise and experience. Our final meeting for 2022 was a Future Focus Workshop using the Board's industry expertise to help inform and shape the ten-year strategic direction of ITLS.

This year we welcomed a number of new members and said farewell to some others.

## New members

Gareth Jude  
HDR Representative, ITLS

Professor Michael Kennedy  
Director, Monash ITS

Veronica Schulz  
HDR Representative, ITLS

David Tucker  
Chief of Project Advisory & Evaluation, Infrastructure Australia

## Retirements

Sherrri Fields  
Senior Manager, Universities and Research, Transport for NSW

Alicja Gajewska  
HDR Representative, ITLS

Professor Hai Vu Director, Monash  
Director, Monash ITS



Future Focus Workshop 2022

(Image: Andre Pinto)

# Teaching and Learning

## Award Programs

### Undergraduate

In 2022 the Monash Institute of Transport Studies continued to deliver transport units in the Bachelor of Engineering program on both the Australian (Clayton) and Malaysian (Kuala Lumpur) campuses. Over 600 students completed the two core units (CIV2282 Transport and Traffic Engineering and CIV3282 Road Engineering) in 2022 and over 50 completed a final year elective (CIV4284 Traffic Systems). Those units are part of undergraduate civil engineering degrees co-accredited under both the Australian and Malaysian Engineering Education Accreditation Systems.

### Postgraduate Coursework

As part of an adjustment in the postgraduate programs offered by the Faculty, the Master of Transport and Traffic was closed to further enrolments. Monash ITS also offers a Master of Transportation Systems degree in conjunction with South-East University in China. The program exceeded its enrolment cap of 80 students in 2022.

In 2022, ITLS-Sydney continued to offer a suite of postgraduate units of study in Logistics and Supply Chain Management, Transport and Infrastructure. The Master of Logistics and Supply Chain Management launched in 2021 with a suite of new units including more emphasis on resilient and sustainable supply chains. In the Master of Commerce, ITLS-Sydney offers a specialisation in Global Logistics, which has a strong managerial focus. ITLS also offers the Master of Transport in conjunction with the Faculty of Engineering and the Faculty of Architecture, Design and Planning. Our programs are designed to allow students to tailor their learning experience, with the ability to enter at Graduate Certificate, Graduate Diploma or Masters level. Students can also choose from a range of online and part time friendly units. ITLS academics also teach an undergraduate unit on Managing Food and Beverage Supply Chains and also teach into the highly ranked Master of Management and Master of Business Administration (MBA) programs.

### Postgraduate Research

The Key Centre has the largest higher degrees by research program in the transport and/or logistics field in Australia. Monash ITS had 29 continuing student enrolments. At ITLS, there were three PhD graduations with 24 continuing students.

### Enrolments

Degree	Enrolments
<b>Institute of Transport Studies, Monash University</b>	
Doctor/Master of Philosophy	29
Master of Advanced Engineering (Transport)	35
Master of Transport Systems	80
<b>Institute of Transport and Logistics Studies, University of Sydney</b>	
Doctor/Master of Philosophy	24
Master of Commerce	
Specialisation in Global Logistics	25
Specialisation in Global Logistics (Extension)	83
Master of Logistics and Supply Chain Management	166
Master of Transport	24
Graduate Diploma in Commerce	29
Graduate Certificate in Commerce	44
Graduate Diploma in Logistics and Supply Chain Management	19
Graduate Certificate in Logistics and Supply Chain Management	5

<b>Unit of study</b>	<b>Enrolments</b>
<b>Institute of Transport Studies, Monash University</b>	
<b>Undergraduate:</b>	
Traffic and Transport Engineering (CIV2282) (Clayton and Malaysia Campuses)	250
Road Engineering (CIV4287) (Clayton and Malaysia Campuses)	260
Traffic Systems (CIV4284) (Clayton)	54
<b>Postgraduate:</b>	
Advanced Traffic Engineering (CIV5301)	6
Traffic Engineering and Management (CIV5302)	9
Intelligent Transport Systems (CIV5304)	14
Planning Urban Transport Systems (CIV5314)	16
Road Engineering (CIV5177)	14
Intelligent Tsp Systems: Eng. and Management (CIV5318)	80
Quantitative Methods (CIV5319)	80
Case Studies in Transportation Systems (CIV5320)	80
Modelling Transportation Systems (CIV5406)	80
Sustainable Tsp Systems Planning (CIV5321)	80
Urban Public Transportation Systems (CIV5322)	80

<b>Institute of Transport and Logistics Studies, University of Sydney</b>	
<b>Undergraduate:</b>	
Managing Food & Beverage Supply Chains (ITLS2000)	21
<b>Postgraduate:</b>	
Production and Operations Management (ITLS5020)	90
Introductory Supply Chain Analysis (ITLS5050)	91
Transport & Infrastructure Foundations (ITLS5100)	70
Foundations in Global Logistics (ITLS5250)	65
Supply Chain Planning and Design (ITLS6002)	76
Logistics and Supply Chain Management Systems (ITLS6010)	80
Managing Supply Chain Distribution (ITLS6015)	119
Logistics and Future Cities (ITLS6016)	48
Logistics & Supply Chain Project (ITLS6090)	71
Global Freight Logistics Management (ITLS6101)	143
Transport Modelling and Forecasting (ITLS6102)	14
Transport, Sustainability and Health (ITLS6103)	8
Spatial Analytics (ITLS6111)	57
Global Distribution Strategy (ITLS6201)	145
Sustainable Logistics and Procurement (ITLS6202)	146
Analytic Methods for Logistics (ITLS6203)	55
Maritime Management and Logistics (ITLS6300)	41
Aviation Management and Logistics (ITLS6410)	49
Decision Making on Mega Projects (ITLS6500)	8
Infrastructure Financing (ITLS6501)	11
Global Logistics Capstone (ITLS6600)	26

# Professional Development

## Bus Safety Management Program (BSMP) for Bus Operators

The BSMP provides bus operators with the appropriate skills to offer public bus services which meet regulatory and compliance requirements in Victoria. The program was introduced in 2011, established by Monash ITS in consultation with Transport Safety Victoria (TSV). The program comprises two subjects: Introduction to Bus Safety and Safety Risk Management for Bus Operators.

To maintain the integrity and relevance of the program, Monash ITS staff work closely with Transport Safety Victoria and the Bus Association of Victoria (BusVic). Developing and maintaining a proactive safety culture is now a key focus. The integrity requirements of the program have been strengthened, to ensure that it is the enrolled program participant who is completing assessment tasks, without undue influence or assistance. The flexible, online format has been well received by TSV, the bus industry and course participants. Commencing in late 2020 new software was introduced for program content, to simplify access for program participants.

Existing bus businesses continued to enrol staff in the program, as part of the professional development programs.

## Bus Business Management Program (BBMO) for Bus Operators

This program was launched by Monash ITS in 2012, providing potential bus service contractors with business management skills appropriate to the industry. It is an essential requirement for all service bids by Victorian bus companies. The course incorporates the two subjects from the Bus Safety Management Program for Bus Operators (mentioned above), along with two additional subjects: Financial Management for Bus Operators and Business Development for Bus Operators.

## Bus and Coach Accreditation Scheme Online Training Course

Transport for NSW is responsible for the regulation of public passenger bus services in NSW (including long distance, tourist and charter services). Under the Passenger Transport Act 2014, all operators of public passenger bus services must be accredited to be able to provide services legally in NSW. This online course is approved by Transport for NSW as meeting the accreditation requirement of competency to operate bus and coach services; applicants must pass the course examination. The course includes four modules: i) Accreditation; ii) Management Information System; iii) Vehicle Maintenance Management System; and iv) Safety Management Systems. The training is delivered through online learning materials including notes, case studies, online quizzes and a discussion board. The Bus and Coach Operator Accreditation Scheme (BOAS) Online Training Course attracted 87 completed enrolments in 2022 with 105 enrolled students in the process of completing their training. At the moment we can only run computer-based exams on our campus. However, under these current circumstances (COVID-19), we are able to allow students to sit a paper-based version of the final examination without travelling to Sydney under the supervision of a suitable person who must have a connection to Australia (i.e. is registered to practise). This has allowed 27 students locally and in regional NSW to successfully complete this course and will ensure that they have accomplished a level of understanding of the obligations of an accredited operator with privileges to provide bus and coach services in NSW.

## Discrete Choice Analysis: Models, Estimation and Applications

Almost without exception, everything human beings undertake involves a choice. In recent years there has been a growing interest in the development and application of quantitative statistical methods to study choices made by individuals or groups with the purpose of gaining a better understanding both of how choices are made and of forecasting future choice responses. Courses in discrete choice modelling and choice experiment design have been offered by ITLS-Sydney since 2006 and are presented by world experts in the field: Professor David Hensher, Professor John Rose, Professor Michiel Bliemer and Dr Andrew Collins. In 2022 we returned to teaching the DCA course in person across four days in July and welcomed **40 participants** from around the world, from as far afield as Sweden and the United States.



## Certificate of Railway Planning and Operations

The Railways Planning and Operations Program which introduces students to the key elements of railway planning and operations was launched in 2018. In 2022 we offered a three-day course in June prepared and delivered in person by Dr Nigel Harris, one of Britain's leading railway planners. Topics covered included management and business planning, understanding the railway market/environment, passenger behaviour, infrastructure design and timetabling. The course attracted **26 enrolments** including participants from NSW, Victoria and Singapore.

## Travel Demand Management Course

The Travel Demand Management (TDM) short course was run on 20-21 October. This successful collaboration between ITLS and **Transport for NSW** showcased the latest developments in TDM and educated participants on the techniques available in the TDM toolkit especially as we experience new challenges coming out of COVID-19. Along with the thought-provoking topics presented, the class of **38 participants** enjoyed a stimulating panel discussion with TfNSW receiving some interesting insights on future innovations. The course was wrapped up with a field visit to Macquarie Park organised by ITLS Chair in Public Transport John Nelson and David Surplice from TfNSW to see TDM policy implementation in practice. Arriving by public transport participants were treated to a stimulating guided tour of key points of interest by John Brown from the City of Ryde Council. Participants gained an increased awareness of the toolkit of measures to promote sustainable mobility, the complex interactions of transport land use and transport, and the positive impact of TDM measures.

## Infrastructure

The inaugural run of ITLS's newly developed Infrastructure Short Course designed by our Adjunct Professor Martin Locke was run across three days in October. Through guest speakers, panel discussions and group exercises the participants got the opportunity to increase their knowledge on everything from the structure and key elements of a business case to understanding important fundamentals when making an investment decision and how to successfully manage and deliver operating projects. The first run of our course attracted **16 participants**.

## Certificate of Transport Management

Due to popular demand, the Certificate of Transport Management short course was run twice in 2022 hitting full capacity with **54 student enrolments in July and 42 in November**. This program has been designed by the Institute of Transport and Logistics Studies, in close co-operation with Transport for NSW and BusNSW enlisting the wisdom of over ten leading experts in various transport industries to enhance participants knowledge and skills for operating in the bus and coach industry in NSW. In 2022 the CTM is in its 28th year. As well as the speaker presentations the course delivered engaging panel discussions, gathered the team for a networking event and rounded off the last day with an interactive Networking Planning exercise allowing the students to put theory to paper.

# Student Awards

The Key Centre recognises the achievements of its students and alumni through industry and government sponsored prizes that are presented at annual award ceremonies where our students and alumni joined our Board members, industry partners, and the sponsors of prizes to celebrate the success of our students.

ITS-Monash's awards include:

- Ramisa Bhuiyan - ITEANZ - Trafficworks University Award - 'Bike Safety Around Trams'
- Mahsa Naseri - APR internship at Aurecon

ITLS-Sydney's 2022 Awards Presentation Evening was held on election eve in May and the following prizes were awarded to:

- Quynh Chi - GS1 Australia Prize for the highest academic achievement in the Contemporary Procurement unit of study (ITLS6010)
- Anna Butler- GS1 Australia Prize for the highest academic achievement in the Production and Operations unit of study (ITLS6201)
- Zhuojun Wang - Mrs Ma Ching Prize to an international student for the highest academic achievement in a transport, infrastructure and/or logistics and supply chain management specialisation in the Master of Commerce
- Yen Hue Tran - Supply Chain & Logistics Association of Australia Award for Excellence for the highest academic achievement in the Master of Logistics and Supply Chain Management
- Peter James Davis – Wendy and Christopher Adam Prize for the highest academic achievement in the Master of Transport program.
- Peter Silk – Peter Koning Memorial Award for the domestic student with the highest academic achievement in a transport, infrastructure and/or logistics and supply chain management specialisation in the Master of Commerce.
- James Bushell – ITLS Studies Prize for excellence in postgraduate research in transport, logistics or supply chain management.
- David Li – The Wendy and Christopher Adam Prize (HDR Students)



L-R: Peter Silk, Quynh Chi Luu, Yen Hue Tran, Anna Butler, James Bushell (Image: Louise Cooper)

# Research and Consultancy

FUNDING AWARDED IN 2022

## Australian Research Council Linkage Project Grants

### Healthy, Equitable and Sustainable Urban Mobility

(2022-25, AU\$282,298)

Professor John Nelson (with the Australian National University and Transport for NSW)

This Project will develop and implement an evaluation framework to explore the extent to which the implementation of “pop-up” cycleways and other measures to promote Active Travel, including as part of journeys by public transport, in both green field and established locations, may result in long-term behaviour change and bring public health benefits.

## Other External Research Funding

### Neil Smith Chair and Neil Smith Fellowship in Sustainable Transport

(2022-2034, AU\$7,963,676)

International transport business owner, Neil Smith has donated \$7.9 million to ITLS to support research in driving government and industry action on sustainable transport. The donated money has been used to establish a ten-year chair in sustainable transport futures and a number of other positions. It will fund research and education in the field of sustainable transport technology as well as provide leadership and translation of research with a view to influencing policy at all levels of government.

### Improving Cardiovascular Health Through Increased Transport-Related Physical Activity: A Codesigned Randomised Controlled Trial for the Commonwealth of Australia MRFF Cardiovascular Health Mission

(2022-2025, AU\$767,132)

Professor Stephen Greaves (with University of Tasmania)

Regular physical activity plays a key role in cardiovascular disease and stroke prevention, yet over one third of Australians are insufficiently active. This project aims to establish the impact on physical activity of a novel incentives-based strategy to increase public transport use through a single-blinded parallel group randomised controlled trial. Findings will provide public health and transport authorities with evidence to inform decisions around the use of incentives-based strategies.

### VKT Stabilisation Policy Exploration – Future Transport 2061 for Transport for NSW

(2022, AU\$50,000)

Professor David Hensher, Professor Emerita Corinne Mulley, Professor John Nelson, Dr Chinh Ho

A research review of the modelling work conducted for Future Transport – which includes strategic demand modelling (STM and RTM modelling and the preparation of a post COVID scenario, and successive VKT stabilisation scenarios to goal-seek a stabilisation of VKT in the Sydney GMA by 2061), and greenhouse gas emissions modelling (through DPE). Economic modelling undertaken by PWC provides selective outputs and case-study research that can be made available in confidence.

### E-Scooter Trial Evaluation for Transport for NSW

(2022-2023, AU\$240,000)

Professor John Nelson, Professor Emerita Corinne Mulley, Miguel Loyola, Yuting Zhang

This project will develop an evaluation framework which clearly maps the objectives of the trial to measurable indicators thus ensuring the evaluation process provides the evidence required. The outcome of this project will provide a clear and succinct picture of the implementation of the trial on E-Scooters as part of the transport system into the future with reference to social and sustainability impacts and any effects on safety and driver behaviour that may be attributable to the trial.

### BRT Centre of Excellence, Pontificia Universidad Catolica de Chile, Chile

(2022, US\$49,000)

Professor David Hensher. Professor Emerita Corinne Mulley

The purpose of the BRT+ CoE is to develop, disseminate and make efficient use of the best social, technical, practical and political knowledge to guide policy and support the planning, design, finance, implementation and evaluation of BRT-based systems.

## Significant Continued Research Funding

### **iMOVE Co-operative Research Centre (CRC) (2017-2026)**

The Federal Government has granted a group of nearly fifty leading industry and research organisations known as the iMOVE Co-operative Research Centre (CRC), a total of \$55 million over ten years to explore intelligent transport systems including self-drive vehicles. Key members of the iMOVE CRC include Institute of Transport and Logistics Studies (ITLS) and the University of Sydney's Faculty of Engineering and IT.

In 2022, ITLS continued to work on the following iMOVE projects:

- **Promoting Sustainable University Travel Choices (PSUTS) (AU\$200,000)**  
Professor John Nelson, Professor David A Hensher, Professor Matthew Beck, Dr Camila Balbontin
- **Design of a Regional Town and Rural Hinterland (RTRH) MaaS Blueprint (AU\$300,000)**  
Professor John Nelson, Professor David Hensher, Dr Chinh Ho, Dr Camila Balbontin, Professor Emerita Corinne Mulley
- **Working from Home (WFH) and Implications for Revision of Metropolitan Strategic Transport Models (AU\$280,000)**  
Professor David Hensher, Professor John Nelson, Associate Professor Matthew Beck, Dr Camila Balbontin, Andre Pinto

### **The long-term effects of autonomous cars on land use, access and travel (ARC DP 2020-23, AU\$199,962)**

Professor Graham Currie and Dr Md. Kamruzzaman

Autonomous vehicles are a major world trend which will significantly impact Australian communities. Current research is focused on autonomous vehicle technology and short-term benefits (reduced crashes, congestion relief). This project explores long-term disruptive effects with a focus on land use and travel impacts to ensure wider social, economic and environmental impacts are better managed. Findings from this project will help Australian cities prepare for the long-term disruptions of autonomous vehicles.

### **Who Benefits from the Sharing Economy? Disruption in Australian Cities (ARC DP 2020-2024, AU\$115,000)**

Professor Rico Merkert (with University of Queensland)

Technological disruption has created new possibilities for employment and social interaction in cities yet comes with many associated challenges for policymakers. This project aims to formulate a critical understanding of the sharing economy as a disruptive social, economic, and political process in Australian cities. The project team will apply advanced spatial analytics and theoretical approaches to three distinct facets of the sharing economy, providing new empirical evidence to explain transformative change in cities. It applies a geographical lens to create new knowledge regarding who benefits from the sharing economy, and how progressive regulation can enhance the outcomes of disruptive technologies.

### **Context-aware verification and validation framework for autonomous driving (ARC DP 2021-23, AU\$448,958)**

Professor Tsong Chen; **Professor Hai Vu**; Dr Huai Liu; Dr Xi Zheng; Associate Professor Zhiquan Zhou

This project aims to enhance the reliability and safety of emerging self-driving vehicles, through a framework that supports the validation and verification of autonomous driving systems. This project expects to generate new knowledge in areas of software engineering, intelligent transport, and machine learning, using a multi-disciplinary research combining expertise from various fields. Expected outcomes of this project are a family of new context-aware techniques to verify and validate complex behaviours in autonomous driving. This should provide significant benefits, such as safe autonomous driving systems and the improved journey experience and security for road users.

## University Research Grants

### **Micro-Freight Delivery Solutions: A Tale of Two Cities (2022, AU\$10,000)**

#### **Partnership Collaboration Award with University College, London**

Professor Stephen Greaves and Professor Bani Anvari

Small parcels, food and other micro-freight items delivered by motorised transport (cars, vans etc) has become both a panacea and victim of unsustainable last-mile delivery systems around the world. This collaboration initiates an international investigation into the use of e-bicycles, e-scooters and other micro-mobility modes for

delivering freight, comparing/contrasting experiences from Sydney and London. This project will form the basis of a new and sustainable collaboration between multiple researchers and centers at each University.

**Future Transport Research Group (FTRG)**

**(2022, \$25,000)**

Professor Michiel Bliemer, Professor Michael Bell and Professor David Levinson

The multi-disciplinary FTRG looks for opportunities and sustainable, socially responsible transport solutions in a technology-enabled world. In 2022, it was awarded funding by the Business School to support a range of initiatives.

# Engagement

## Public Lectures and Seminars

### **ITLS Leadership and Policy Seminar Series and Research Seminar Series**

Established in 2003, the ITLS-Sydney Leadership and Policy Seminar Series benefits from leading national and international experts (CEOs, Visiting Professors etc.) speaking on topical transport and logistics issues relevant to business and academia. The seminar series attracts a broad audience from industry, government and academia as well as our own faculty and research students. The seminar conveners are Professors Rico Merkert and John Nelson.

Established in 2018, the ITLS-Sydney Research Seminar Series brings leading national and international research experts to share their current and most exciting research projects. The seminar series attracts a broad audience from industry, government and academia as well as faculty and research students. The seminar convener is Professor Michael Bell.

The following presentations were given in 2022. All sessions were held in a hybrid format:

#### **Virgin Australia's Transformation Journey**

9 March, 2022

Jayne Hrdlicka, CEO, Virgin Australia Group

#### **A Modelling and Algorithmic Framework for Integrating Long-Haul Transshipment and Local Transportation**

21 April 2022

Dr Stephen Maher, University of Exeter, United Kingdom

#### **Sydney's Public Transport Buses - Past, Present and Future**

11 May 2022

Byron Rowe, Managing Director, Busways

#### **Neighbourhood Hubs**

22 June 2022

Elke Kroft and Minze Walvius, Advier, The Netherlands

#### **Major Infrastructure in NSW**

29 June 2022

Marina van der Walt, Infrastructure NSW

#### **Few Reasons to Use Multi-Leader-Follower Models for Energy and Transport Problems**

8 September 2022

Professor Didier Aussel, University of Perpignan, France

#### **Crisis? What Crisis**

19 October 2022

Mike Axon, Managing Director, Vectos, United Kingdom

#### **Governance of Uncertainty in Implementing Mobility Innovations: A Comparative Dutch Study**

25 October 2022

Ruben Akse, University of Sydney Business School

#### **Reappraising Our Data Sources for Value of Travel Time Estimation**

16 November 2022

Professor Stephane Hess, University of Leeds, United Kingdom

#### **Combine and Conquer: Bringing Together Choice Modelling, Machine Learning and Mathematical Psychology for Better Demand Forecasting**

17 November 2022

Professor Stephane Hess, University of Leeds

**Controversial Policies: Growing Support After Implementation**

24 November 2022

Professor Bert van Wee, Delft University of Technology, The Netherlands

**Monash ITS Staff Seminars**

**Advanced modelling and optimization techniques for transport systems**

Dec 2022, 1-day on-campus workshop includes 4 overseas guest speakers (from Hong Kong, New Zealand and Japan) and Monash speakers.

Host: Assoc Professor Dong Ngoduy

**Perception and the use of On-Demand Mobility**

14 September 2022

Nejc Gerzinic, Delft University of Technology, The Netherlands

**Ownership and Procurement of Electric Buses in Scandinavia**

16 September 2022

Vendela Aslund K2 Sweden and Lund University

**Exploring factors influencing urban transit travel time and demand on mixed traffic**

28 October 2022

Yaiza María Montero Lamas, University of A Coruña (UdC) Spain

**COVID-19 and its long-term effects on activity participation and travel behaviour: A multiperspective view**

14 December 2022

Professor Bert van Wee, Delft University of Technology, The Netherlands

**Transport Research Association of NSW(TRANSW) Annual Symposium**

23 November 2022

The 2022 TRANSW Symposium was held with 50 presentations by transport research students and post-docs at the University of Sydney, UNSW, Wollongong and UTS. This year, the Symposium returned to an in person format with 150 delegates from government, industry and academia attending.

**ITLS HDR Supply Chain Symposium**

28 November 2022

This year's event took place in person with five presentations covering a range of topics including managing airline-supplier relations and investigating modern slavery risks in Australia.



# Thredbo 17

The postponed 17th conference of the International Conference Series on Competition and Ownership in Land Passenger Transport (The Thredbo Series) - originally meant to be held in Kobe, Japan - was held in Sydney from 4th – 8th September, 2022 and was hosted by the Institute of Transport and Logistics Studies. The conference brought together a broad audience of policy makers, planners, decision makers on infrastructure and service operators, consultants, researchers, academics and students. One hundred and twenty five delegates from 25 countries gathered at the Grace Hotel to participate in this important global transport forum.

Valuable insights were provided by a list of eminent speakers including a keynote address by The Hon Natalie Ward (NSW Minister for Metropolitan Roads) as well as three engaging plenary panels of key industry players and regulators focusing on “Bus Contracts Under a Zero Emission Future”, “MaaS and its Challenges” and “Regulatory Reform in Bus and Rail”. Professor Annamarie Jagose, Provost and Deputy Vice Chancellor of the University of Sydney presented a welcome speech during the Conference dinner, also attended by Rob Sharp, Secretary at Transport for NSW and other dignitaries.

Workshops were split across seven themes where fruitful discussions took place over two days with final reports being presented on the closing morning of the conference. After four and a half days of intensive debate, there emerged many new ideas and a highlighting of approaches to date that might need greater consideration going forward into a future that is increasingly more uncertain with climate change and mobility disadvantage being central issues.

The Thredbo series was established in 1989 by Professors David Hensher FASSA and Michael Beesley CBE and since then it has become the premier international forum dedicated to the analysis and debate of competition and ownership in issues in land passenger transport. This influential forum attracts high quality participation and delivers a large portfolio of impressive material synthesising developments not only from developed economies but increasingly from developing economies. The conference series is directed towards a broad audience of industry players (government and public transport operators), policy makers, planners, decision makers on infrastructure and service operators, consultants, researchers, academics, and students. The mix at Thredbo 17 was 63% academia and 37% industry, government and consultancy.

We warmly thank our corporate sponsors (Kelsian, Volvo Australia, Transport for NSW, BusNSW, BusVic, Busways and Piper Alderman) without whom the conference would not have been possible. A special thank you to the Local Organising Committee for coordinating such a stimulating and memorable event. We are also indebted to the Workshop Chairs, Rapporteurs and Runners for their outstanding contribution to the eight workshops.



1. Thredbo17 banner
2. Professor Hensher and The Hon Natalie Ward
3. Delegates enjoy the Conference Dinner harbour cruise aboard The Jackson
4. Delegates on the last day

Images: Glauber Fernades



# Committees

- **Dr Matthew Beck**  
United States Transportation Research Board Committees: Stated Response (Chair)
- **Prof Behnam Fahimnia**  
IEEE Technology & Engineering Management Society, Board Member; Supply Chain Association of Australia, Director and Board Member
- **Professor Michael Bell**  
International Symposium on Transport Network Reliability Scientific Committee (Chair, International Advisory Committee); United States Transportation Research Board Committee: Intermodal Freight; Member of International Advisory Committee, Hong Kong Society for Transport Studies (HKSTS)
- **Professor Michiel Bliemer**  
International Scientific Committee of the Dynamic Traffic Assignment Conference, Chair of the Transport Research Association for NSW, Member of the organising committee of the TRANSW Symposium 2022, Director Future Transport Research Group, Director Travel Choice Simulation Laboratory
- **Dr Geoffrey Clifton**  
Member Australasian Transport Research Forum – Public Transport Research Committee
- **Professor Graham Currie**  
United States Transportation Research Board Committee: Light Rail Transit Systems (Chair); Land Transport Authority of Singapore, International Advisory Board Member; K2 Swedish National Centre for Research and Education on Public Transport - International Advisory Board Member, Conference Organising Committee - National Streetcar and Light Rail Conference, New Jersey USA; Track Chair - Public Transport – President, Australasian Transport Research Forum, Committee for Melbourne - Transport Task Force
- **Professor Stephen Greaves**  
Travel Survey Conference International Steering Committee; Australasian Transport Research Forum Executive Committee
- **Professor David Hensher**  
Advisory Board, Institute of Transport and Logistics Studies (Africa), South Africa; International Conference Series on Competition and Ownership in Land Passenger Transport, International Steering Committee (Chair), Partner, Volvo, Educational and Research Foundation Centre of Excellence in Bus Rapid Transit, Chile
- **Dr Chinh Ho**  
Permanent Scientific and Technical Committee, Cooperation for Urban Mobility in the Developing World
- **Dr Marilyn Johnson**  
Amy Gillett Foundation Research and Policy Committee, Australasian College of Road Safety (Victorian Chapter), Australasian Road Safety Conference (Organising Committee, Scientific Committee (Chair)), CLOCS-A National Working Group, Road Safety Education Scientific Advisory Committee
- **Martin Locke**  
Board member, Infrastructure Partnerships Australia, Australia
- **Professor Rico Merkert**  
United States Transportation Research Board Committees: Air Cargo, Aviation Economics
- **Professor Corinne Mulley**  
Partner, Volvo, Educational and Research Foundation Centre of Excellence in Bus Rapid Transit, Chile; Executive Board, World Symposium of Transport and Land Use Research (former Chair)

- **John Nelson**  
ITS Australia, MaaS National Reference Committee, Chair, Mobility Working Group, Business Council for Sustainable Development Australia, Member, American Society of Civil Engineers (ASCE) Mobility Innovation Committee (USA), Member and sub-group leader, International Transport Forum (ITF) Working Group on Innovative Mobility for the Periphery (OECD, Paris), Member Australasian Transport Research Forum – Public Transport Research Committee
- **Professor Geoff Rose**  
Australasian Transport Research Forum: National Executive Committee; United States Transportation Research Board Joint Sub-committee: Emerging Vehicles and Low Speed Transportation
- **Professor John Kenneth Stanley**  
Member, Advisory Committee, Institute of Transport Studies, Monash University, Australia, 1995 - present.
- **Dr Susi Susilawati**  
United States Transportation Research Board Committees: Geographic Information Science and Applications (Friend); United States Transportation Research Board Committees: Urban Transportation Data and Information Systems (Friend); Indonesia: International Symposium on Transportation Studies for Developing Countries
- **Professor Hai L. Vu**  
United States Transportation Research Board Committees: Artificial Intelligence and Advanced Computing Applications: ABJ70 (Member)

# Awards

- **Dr Jyoti Bhattaharjya, ITLS**
  - Fellowship of the Higher Education Academy, United Kingdom
- **Dr Geoffrey Clifton, ITLS**
  - Fellowship of the Higher Education Academy, United Kingdom
- **Dr Chinh Ho, ITLS**
  - Fellowship of the Higher Education Academy, United Kingdom
- **Professor Rico Merkert, ITLS**
  - Excellence in Research for HDR Supervision, University of Sydney Business School. The award recognises outstanding research supervision and leadership in higher degree research in the Business School.
- **Veronica Schulz, ITLS**
  - Business School Tutorial Award 2022, University of Sydney Business School

## Industry Sponsored PhD Scholarships - Monash

### **IP-GRIP Program (Bus Association Victoria)**

Ha Anh Nguyen

Exploring the Safety Impacts of Bus Asset Ownership Models

## Industry Sponsored PhD Scholarships – University of Sydney

### **Metro Trains**

James Bushell

How to better coordinate operators in the passenger transport industry to provide better mobility as a service

### **Qantas**

Alicja Gajewska

Determinants of successful performance measurement and management with the use of strategic management approaches: Visualized performance benchmarking in the airline context

### **Thales**

Syed Mujtaba Hussain

An empirical analysis of drone ecosystems in 4PL logistics involving warehouse and last-mile delivery operations

### **Forest Coach Lines**

Thiranjaya Kandanarachchi

Improving Trust and Collaboration among stakeholders in the Mobility as a Service Eco-system

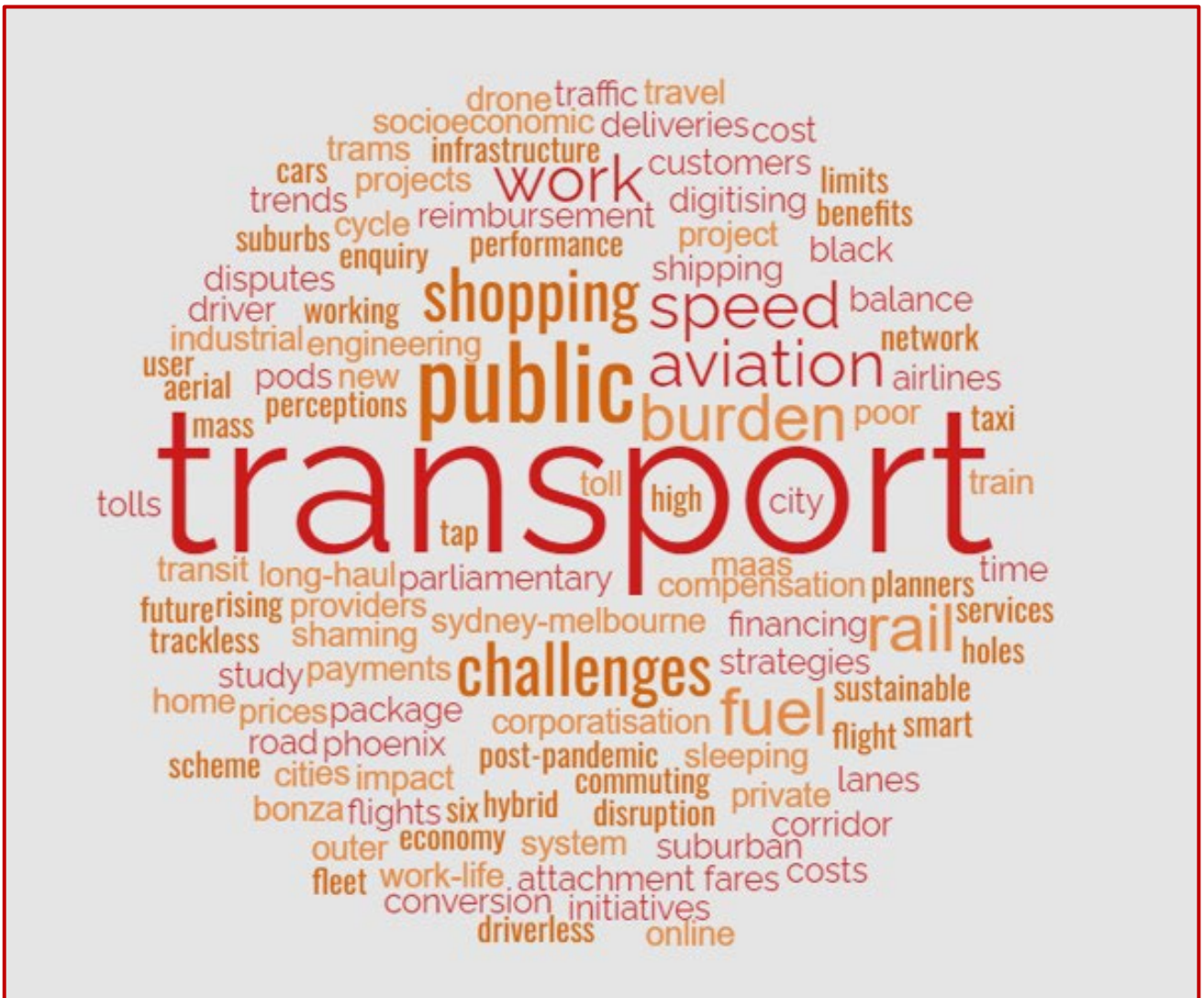
### **Air New Zealand**

David Li

Adopting blockchain technology for enhancing airline sustainability and supply chain/customer confidence

# Media

The following word cloud represents the main themes and topics from media coverage featuring ITLS and Monash researchers in 2022. Ten ITLS researchers and one Monash researcher featured in 100 separate media appearances including national and international newspapers, television, radio and websites. This is an important achievement as increasing our media presence and in turn, our research impact, is a key component of the ITLS five-year strategic plan.



## Centre Outputs



**Australian Government**

**Australian Research Council**  
***ARC Centres of Excellence***

Centre Outputs and Detailed Income and Expenditure  
Report  
(CODIE)

Centre Name:		ARC Centre of Excellence of Teaching and Research in Transport Management
Centre ID: (eg CE1100006)		NO95/08214
Calendar Year Reported:		2022
Centre Admin. Organisation:		The University of Sydney

## CENTRE OUTPUTS AND DETAILED INCOME AND EXPENDITURE REPORT (CODIE) GUIDE

CODIE data from individual Centres is for use within the ARC and will not be published. Consolidated figures may be published, used for evaluation purposes or to promote the overall achievements and/or outcomes of the ARC Centres.

The ARC is interested in tracking the development of the Centre as a focal point for research and as an attractive destination for high-quality researchers. The Outputs categories align Centre outputs with the outputs of other ARC schemes.

### Reporting requirements

- Centres **receiving** ARC centre funding must submit a completed CODIE (Certification, Outputs, Income, Expenditure, In kind, Personnel and Other ARC grants worksheets) along with five (5) copies of the Annual Report
- Centres **no longer receiving** ARC centre funding, but retaining their title, must submit a completed Outputs worksheet only from this CODIE along with one (1) copy of the Annual Report.

### To be noted when completing the CODIE:

- The CODIE is NOT a balance sheet. The total income does not necessarily have to balance the total expenditure.
- Headings should not be modified. New headings must only be entered under the "Other" category.
- Leave blank any rows that are not applicable to your Centre.
- New rows may be added to tables if more entries are required.
- All data must be for the 2022 calendar year ONLY.
- Insert Centre Details on sheet 1 (Title Page) before completing the remainder of the CODIE. These details will auto-fill across the worksheet.
- Example worksheets are provided. Please note the data in these examples are illustrative only and do not represent indicative amounts.

### Submitting your CODIE (due by 31 March each year)

To submit your CODIE please:

- Check the Centre name below is correct.
- Print this page and sign the Certification below.
- Print one (1) copy of each worksheet.
- Post this with the signed Certification page and five (5) paper copies (one for Centres no longer receiving ARC Centre funding) of the Centre's Annual Report to:  
Centres Coordinator  
Australian Research Council  
GPO Box 2702  
Canberra ACT 2601
- [Email an electronic copy of this file to centres@arc.gov.au](mailto:centres@arc.gov.au)

### Certification

To be signed by an authorised officer of the Centre.

I hereby certify that the following sheets are an accurate representation of the outputs, income and expenditure of the:

ARC Centre of Excellence of Teaching and  
Research in Transport Management

covering the calendar year 2020 and that I am authorised to approve their submission.

Certified by:

Signature



Print Name

Professor David Hensher

20 March 2023

**Instructions**

- **Include outputs for ALL Centre activities (including those arising from Centre staff not named as Cis or PIs).**
- **Do not include any outputs from other ARC-funded projects or from work predominately completed before commencement of the Centre.**
- **If you are unable to differentiate between Centre outputs from other ARC-funded projects, these may be included in Column A. In these cases, the (double counted) outputs should also be acknowledged in Column D.**
- **Include only 2022 accepted and in-print books/articles. Do not include outputs that were listed in the 2022 CODIE.**

Code	Type of Output	A Number of Centre outputs	B Number of outputs in Column A that included overseas involvement (i)	C Number of outputs in Column A that involved personnel external to the Centre (ii)	D Number of outputs in Column A also attributed as outputs of other ARC Projects (iii)
A1	Book – authored research	1	1	1	0
A2	Book – authored other	0	0	0	0
A3	Book – edited	1	0	0	0
A4i	Book – revision/new edition	0	0	0	0
A4	Book - translation	0	0	0	0
B	Book chapter	8	1	2	0
C1	Journal article – articles in scholarly refereed journal	100	48	54	5
C2	Journal article – other contribution to refereed journal	7	3	4	0
C3	Journal article – non-refereed article	0	0	0	0
C4	Journal articles – letter or note	1	0	5	0
C5	Unpublished reports (including commercial consultancies)	1	0	0	0
D	Major review	0	0	0	0
E1	Conference – full written paper-refereed proceedings	20	7	15	0
E2	Conference – full written paper-non-refereed proceedings	0	0	0	0
E3	Conference – extract of paper	0	0	0	0
E4i	Conference – edited volume of conference proceedings	0	0	0	0
E4	Conference – unpublished presentation	1	0	0	0
F	Audio-visual recording	0	0	0	0
G	Computer software (including digital maps, data, web outputs)	0	0	0	0
H	Designs	0	0	0	0
H2	Technical drawings	0	0	0	0
I	Patents - filed	0	0	0	0
I2	Patents - pending	0	0	0	0
J1i	Other creative works – major written or recorded work	0	0	0	0
J2i	Other creative works – minor written or recorded work	0	0	0	0
J3i	Other creative works – individual exhibition or original art	0	0	0	0
J4i	Other creative works – representation of original art	0	0	0	0
J1	Major creative works	0	0	0	0
J2	Creative work including in group exhibition, performance, recording or anthology	0	0	0	0
J3	Exhibition curatorship	0	0	0	0
K	Number of national collaborating institutions (iv)	7/5	0	0	0
L	Number of international collaborating institutions	31/23	0	0	0
M	Number of countries involved in collaboration	17/10	0	0	0
N	Number of countries from which international visitors originated	4/3	0	0	0
O	Number of international visitors	5/10	0	0	0
P	Number of overseas visits by Centre personnel	4/10	0	0	0
Q	Number of countries visited by Centre personnel	4/7	0	0	0
R1i	Training programs/teaching packages conducted	6/2	0	0	0
R1	Number of PhD students graduated	3/4	0	0	0
R2	Number of Masters students graduated	167/0	134	0	0
R3	Number of Honours students graduated	0	0	0	0
S1	Number of PhD students enrolled	24/29	14/20	0	0
S2	Number of Master students enrolled	298/0	260/0	0	0
S3	Number of Honours students enrolled	0	0	0	0
T	Number of early career researchers (within 5 years of PhD completion)	2/3	1/3	0	0

- (i) Outputs with overseas involvement – e.g., #journal articles with international co-authors, # international students enrolled/graduated  
(ii) Outputs with involvement from outside the Centre – e.g. # journal articles with co-authors not affiliated with the Centre  
(iii) Outputs which have been attributed elsewhere in ARC reporting, - e.g. Linkage Project final reports  
(iv) Codes K-Q = Sydney/Monash