

**Dr. STEPHEN P GREAVES, Ph.D.**

**PERSONAL DETAILS**

**Date of Birth:** June 25<sup>th</sup>, 1968

**Place of Birth:** Stafford, UK

**Nationality:** British/Australian

**Occupation:** Associate Professor in Transportation Management, Institute of Transport & Logistics Studies, University of Sydney, Australia.

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**Qualifications**

- **Doctor of Philosophy** in Engineering Science. Major in Transportation Planning, Minor in Geography and Statistics (December 2000). Department of Civil & Environmental Engineering, Louisiana State University, Baton Rouge, Louisiana, United States.
- **Master of Science** in Urban & Regional Transportation (June, 1994) Department of City & Regional Planning, University of Wales - College of Cardiff, Cardiff, Wales, United Kingdom.
- **Bachelor of Arts** (July 1989) School of Geography, University of Leeds, Leeds, United Kingdom.

**Bio**

Stephen is an Associate Professor in Transport Management, having joined ITLS-Sydney in 2004. He has extensive teaching experience in a wide variety of transportation-related courses at both the undergraduate and postgraduate levels as well as industry-based short courses. Currently, he coordinates TPTM6470 [Sustainable Transport & Logistics Systems] and TPTM6180 [Geographic Information Systems] in the postgraduate MTM program and is program director of the industry-based teaching program in transport. Stephen's current research interests are focused on exploring behavioural responses to different road-user charging mechanisms focused around safety, the use of new technologies to enhance the collection of travel survey data, and the environmental impacts of freight transport. He currently holds two ARC grants, advises four PhD students and continues to publish in a range of mediums. Stephen also provides transport consulting services to government and industry and regularly provides media commentary on contemporary transport policy issues in Sydney.

**RESEARCH & TRAINING**

**Current Grants**

***Driving Style, Driver Personality and Accidents: An Empirical Investigation (Greaves)***

- Faculty Research Grants
- November 2008 – November 2009
- 2009 - 6K

The aim of this research is to investigate the links between objective measures of driving style derived from GPS technology, driver demographics, driver personality and accident history.

***Developing a modal contestability index for transport options (Greaves)***

- Faculty Research Grants

- September 2009 – September 2010
- 2009 – 11K

This research aims to develop a modal contestability index for comparing the relative competitiveness of different transport options.

***Modelling the Environmental Impacts of Commercial Vehicle Tours and Freight Management Policies in Urban Areas (Greaves)***

- Australian Research Council (ARC)-Discovery Project#0881883<sup>1</sup>
- January 2008 – December 2010
- 2008: \$62,568; 2009: \$66,774; 2010: \$71,112

The aim of this research is to develop a new methodology to assess the environmental impacts of urban freight transport policies. The major innovations offered by the approach are 1) the development of an exposure-based module within the environmental evaluation component, 2) an integrated emissions and noise model that is based on the operational characteristics of trucks, and 3) a mathematical modelling approach that incorporates greater behavioural reality into the different tour/stop profiles of trucks. The outcomes of the research will be of importance to freight operators, local councils and road authorities charged with managing freight traffic, and public health authorities.

***Exploring Behavioural Response of Motorists to Exposure-Based Charging Mechanisms (Greaves, Stopher, Hensher, AAMI Insurance Ltd)***

- Australian Research Council (ARC)-Linkage Project#0775055 (with AAMI Ltd)<sup>2</sup>
- January 2007 – December 2009
- 2007: \$95,000; 2008: \$100,000; 2009: \$35,000

Our continued reliance on cars is estimated to cost the Australian economy around \$50 billion per year in accidents, congestion and air pollution. This project delivers a new approach to reduce these externalities, in which charges are levied on drivers based on their accident history, the kilometres driven and the circumstances under which these kilometres are driven. In addition to the safety and congestion benefits, the outcomes of the project will be of importance to those charged with raising revenue to support infrastructure maintenance and development, and the insurance industry as a basis for reducing risks in driving and making premiums more equitable.

***Using Artificial Neural Networks to Predict Exposure to Fine Particulates in Roadway Environments (Greaves)***

- Faculty Research Grants
- April 2007 – April 2008
- 2007 - 15K

Over the last three years, we have conducted a number of trials using GPS technology and portable pollution monitors to assess exposure to pollution at highly disaggregate spatio-temporal levels on various modes of transport in Sydney. The issue under investigation here is the identification and adaptation of appropriate statistical techniques for analysing these data, which by their very nature exhibit a highly complex data structure. Here, we investigate the potential for applying methods based on Artificial Neural Networks (ANNs) to this problem.

***Profiling Driving Risk Using Passive In-Vehicle Measurement (Greaves)***

- SBUS Research Grants
- April 2006 – April 2007
- 2007 - 7K

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<sup>1</sup> The ARC Discovery program is a nationally competitive federally-funded grant program for all disciplines (excluding medicine). Project success rate is 15-20%.

<sup>2</sup> The ARC-Linkage program requires that you first find an industry partner willing to commit funds and provide significant in-kind support and then apply to the ARC for funding. Project success rate is around 40%.

The aim of this project is to identify driver exposure to potential risk of a collision based on in-vehicle usage information (i.e., how much, when, where, and how they drive) collected using GPS technology. This is a pilot project designed to provide baseline critical information for the successful ARC-Linkage application (LP0775505) in which I am working with a national motor vehicle insurance company to look at how we might facilitate reductions in risk exposure through usage-based pricing mechanisms.

***Investigation of Technological Options for Implementing Pay-as-You Drive Charging Schemes (Greaves)***

- SBUS Research Grants
- April 2005 – April 2006
- 2006 - 14K

There is increasing talk of pay-as-you-go charging schemes both as a strategy to try to mitigate congestion and as a means for raising revenue to fund road infrastructure improvements. Devising appropriate technological solutions for implementing such schemes is both extremely challenging and is likely to make or break these schemes if seen as flawed or unreliable by the public. The purpose of this research is to investigate the various options including roadside options (i.e., those commonly used on toll-roads), in-vehicle options (e.g., in-vehicle electronic odometer readers, vehicle-based Global Positioning Systems (GPS), vehicle-based GPS augmentations such as dead-reckoning, GPS enabled mobile phones, and assisted GPS (AGPS)).

**Completed Grants**

***A Stated Choice Approach to Measure the Social Costs of Aircraft Noise Disturbances (Greaves, Rose, Collins)***

- Uni Sydney R&D
- January 2006 – December, 2006
- 2006 - 20K

This pilot project proposes an innovative stated choice approach to address the shortcomings of current methods used to assess the social costs of aircraft noise. The innovations include, 1) use of visualisation cues to represent noise in a more comprehensible manner to respondents, 2) the design of stated choice experiments that are tailored more closely to the actual noise-level experiences of residences and 3) the derivation of distributions of willingness to pay to reduce exposure to noise that account for the heterogeneity in preferences (noting that all previous studies focussed on a single point or average estimate for the population).

***GPS component for the development of a Freight Model for Melbourne (Greaves, Fitzgerald, Zhang)***

- Victorian DOI
- July 2005 – December, 2006
- 2006 - 18K

As part of the development of new freight forecasting procedures in Victoria, ITLS has been sub-contracted to collect GPS data for a sample of trucks delivering goods in and around the Melbourne region. These data will be used to extract several items of data in particular trip origin/destination, route, and time and trip length, using customised GIS programming procedures. The data will be among the first publicly-collected data set collected on freight movements in Australia.

***Combining GPS and Portable Pollution Monitors – New Insights on Personal Exposure in Travel Micro-environments (Greaves, Public Health)***

- NHMRC Equipment Grant
- July 2006 – December, 2006
- 2006 – 56K

There is growing evidence of a causal link between short-duration exposures to particulate matter less

than 2.5 microns in aerodynamic diameter (PM2.5) and adverse health consequences. It is thought that much of these elevated levels occur while traveling and it is therefore critical from an overall health perspective to understand how travel choices (e.g., mode, departure time, route selection) impact potential exposure to PM2.5. I have developed an approach to study the intra-trip variability of PM2.5 through combining a personal GPS receiver with a portable PM2.5 counter, which is capable of recording second-by-second concentrations. I have completed one study for Sydney car-drivers and am currently working on a collaborative project with public health researchers to look at this issue from the perspective of cyclists and pedestrians.

### ***Disaggregate Assessments of Population Exposure to Aircraft Noise (Greaves, Collins)***

- SBUS Research Grants
- January 2005 – December 2005
- 2005 - 12K

Disturbance from aircraft activity in Sydney has and will continue to be a problem for segments of the population. Taking advantage of new spatially-referenced, disaggregate information on aircraft activity and advances in GIS technology this project aims to assess exposure at a more disaggregate spatial and temporal level than current aggregate methods permit. The expected outcomes are that this will provide a more accurate picture of exposure and to particular noxious events and subsequently health problems attributable to those events.

## **Publications**

### ***Book Chapters***

- Greaves, S.P. (2009) Development and Application of a Strategic Modelling Tool for the Evaluation of Air Pollution Mitigation Strategies for Urban Freight in Sydney. In *Urban Transport XV* C.A. Brebbia (ed), WIT Press, 529-540.
- Greaves, S.P. (2006) Simulating Household Travel Survey Data. In *Travel Survey Methods -- Quality and Future Directions*, P. Stopher and C. Stecher (eds), Elsevier, Oxford, 625-650.
- Greaves, S.P. (2006) Capturing the Spatiotemporal Variability of Fine Particulates in Travel Microenvironments. In *Urban Transport XII* C.A. Brebbia and V. Dolezel (eds), WIT Press, 849-858.
- Murakami, E., S.P. Greaves, and T. Ruiz (2006) Moving Panel Surveys from Concept to Implementation. In *Travel Survey Methods -- Quality and Future Directions*, P. Stopher and C. Stecher (eds), Elsevier, Oxford, 399-412.
- Greaves, S.P. (2004) GIS and the Collection of Travel Survey Data. Chapter prepared for *Transport Handbook 5* (D.Hensher and K.Button (Eds.)).
- Greaves, S.P. (2003) Road Capacity. Chapter prepared for *Traffic Engineering and Management* (W. Young (Eds.)).

### ***Refereed Journal Articles***

- Greaves, S.P. and S. Fifer (accepted 03/10) Development of a kilometre-based charging regime to encourage safer driving practices. *Transportation Research Record, journal of the Transportation Research Board*, Washington DC.
- Greaves, S.P., S. Fifer, R. Ellison and G. Germanos (accepted 02/10) Development of a GPS/Web-based Prompted-Recall Solution for Longitudinal Travel Surveys.
- Pucher, J., J. Garrard and S.P. Greaves (accepted 2/10). "Cycling Down Under: A Comparative Analysis of Bicycling Trends and Policies in Sydney and Melbourne," *Journal of Transport Geography*, Vol. 18, 2010, in press.
- Greaves, S.P. and Figliozzi, M. (2008) Collecting Commercial Vehicle Tour Data with Passive Global Positioning System Technology: Issues and Potential Applications. *Transportation Research Record* **2049**, 158-166.
- Stopher, P.R., K. Kockleman, S.P. Greaves and E. Clifford (2008) Reducing Burden and Sample

- Sizes in Multiday Household Travel Surveys. *Transportation Research Record* **2064**, 12-18.
- Greaves, S.P., T. Issarayangyun and WQ. Liu (2008). Exploring Variability in Pedestrian Exposure to Fine Particulates (PM<sub>2.5</sub>) Along a Busy Road. *Atmospheric Environment* **42(8)**, 1665-1676.
  - Greaves, S.P., and A. Collins (2007) Disaggregate Spatio-temporal Assessments of Population Exposure to Aircraft Noise. *Journal of Air Transport Management* **13(6)**, 338-347.
  - Issarayangyun, T. and S.P. Greaves, (2007) Analysis of Minute-by-Minute Pollution Exposure inside a Car – a Time-Series Modelling Approach. *Transportation Research Part D* **12(5)**, 347-357.
  - Collins, A. and S.P. Greaves (2007) Daytime Population Tracking for Planning and Pollution Exposure Assessment. *Road and Transport Research*, **16(1)**, 55-68.
  - Stopher, P.R. & S.P. Greaves (2007) Household Travel Surveys: Where are We Going? *Transportation Research, Part A*, **41**, 367-381.
  - Stopher, P.R. & S.P. Greaves (2007) Guidelines for Samplers: Measuring a Change in Behaviour from Before and After Surveys. *Transportation*, **34(1)**, 1-16.
  - Greaves, S.P. (2006) Variability of Personal Exposure to Fine Particulates for Urban Commuters inside an Automobile. *Transportation Research Record* **1987**, 161-170.
  - Stopher, P.R., S.P. Greaves, C. FitzGerald, N. Swann, and A. Perkins (2006) A Pilot Survey of a Panel Approach to Evaluating TravelSmart Initiatives in the Short Term in South Australia. *Road and Transport Research (special issue)*, **15(2)**, 21-34.
  - Stopher, P., S.P. Greaves, and N. Swann (2006) Designing a Procedure for Long-Term Monitoring of Travel Behaviour Change Policies. *Road and Transport Research (special issue)*, Volume **15(2)**, pp. 6 -20.
  - Stopher, P.R., S.P. Greaves, & M. Xu (2006) Using National Data to Simulate Metropolitan Area Household Travel Data. *Journal of Transportation Statistics* **8(3)**, 83-96.
  - Greaves, S.P. and Stopher, P.R. (2000) Creating a Synthetic Household Travel/ Activity Survey - Rationale and Feasibility Analysis. *Transportation Research Record* **1706**, 82-91.
  - Greaves, S.P. and Stopher, P.R. (1998) A Synthesis of GIS Technology and Activity-Based Travel-Forecasting. *Geographical Systems Journal*, **5(1-2)**, 59-90.

### **Refereed Conference Proceedings**

- Greaves, S.P. and A. Ellison (2010) Personality, risk aversion and speeding: An empirical investigation. Proceedings of the 12<sup>th</sup> World Conference of Transport Research, Lisbon, 11-15 July, 2010.
- Greaves, S.P., S. Fifer, R. Ellison and R. Familiar (2010) Development and Implementation of a GPS/Internet-based Design for Longitudinal Before-and-After Travel Behaviour Studies. Proceedings of the 12<sup>th</sup> World Conference of Transport Research, Lisbon, 11-15 July, 2010.
- Greaves, S.P., S. Fifer, R. Ellison and G. Germanos (2010) Development of a GPS/Web-based Prompted-Recall Solution for Longitudinal Travel Surveys. Proceedings of the 89<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington DC.
- Greaves, S.P. and S. Fifer (2010) Development of a kilometre-based charging regime to encourage safer driving practices. Proceedings of the 89<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington DC.
- Greaves, S.P., S. Fifer, R. Ellison, Y. Zhang and G. Germanos (2009) Development of a GPS/GPRS Prompted-Recall Solution for Longitudinal Driving Behaviour Studies. Proceedings of the 2009 Australian Transport Research Forum, Auckland, 2009.
- Stopher, P. and Greaves, S.P. (2009) 'Missing and Inaccurate Information from Travel Surveys – Pilot Results', 32<sup>nd</sup> Australasian Transport Research Forum ATRF 2009, Auckland, New Zealand, 29 September - 1 October.
- Greaves, S.P. (2009) Development and Application of a Strategic Modelling Tool for the Evaluation of Air Pollution Mitigation Strategies for Urban Freight in Sydney. Proceedings of the Transport Planning, Land Use and Air Quality Conference, Denver, 2009.
- Stopher, P.R., K. Kockleman, S.P. Greaves and E. Clifford (2008) Reducing Burden and Sample

- Sizes in Multi-day Household Travel Surveys. Proceedings of the 87<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington DC.
- Greaves, S.P. and M. Figliozzi (2008) Urban Commercial Vehicle Tour Data Collection Using Passive GPS Technology: Issues and Potential Applications. Proceedings of the 87<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington DC.
  - Liu, Q. and S.P. Greaves (2007) Pedestrian Exposure to Fine Particulates in heavily-Trafficked Microenvironments. CD-ROM Procs of the 14<sup>th</sup> International Union of Air Pollution Prevention World Congress, Brisbane, 2007.
  - Issarayangyun, T. and S.P. Greaves, (2007) Using Artificial Neural Networks to Predict PM<sub>2.5</sub> Concentrations near a Busy Intersection. Proceedings of the 2007 Australian Transport Research Forum, Melbourne, 2007.
  - Greaves, S.P. and J. Hamers (2006) Variability of Exposure to Fine Particulates While Cycling. Proceedings of the 2006 Australian Transport Research Forum, Gold Coast, 2006.
  - Greaves, S.P., A. Collins and N. Bhatia (2006) Disaggregate Assessments of Population Exposure to Aircraft Noise. Proceedings of the 2006 Australian Transport Research Forum, Gold Coast, 2006.
  - Collins, A. and S.P. Greaves (2006) Daytime Population Tracking for Planning and Pollution Exposure Assessment. Proceedings of the 2006 Australian Transport Research Forum, Gold Coast, 2006.
  - Stopher, P., C. FitzGerald, S.P. Greaves, and T. Biddle (2006) What Can We Learn From GPS Measurement of Travel? Proceedings of the 2006 Australian Transport Research Forum, Gold Coast, 2006.
  - Biddle, T., T. Bertoia, S.P. Greaves and P. Stopher, P. (2006) The Costs of Infill versus Greenfield Development – a Review of Recent Literature , Proceedings of the 2006 Australian Transport Research Forum, Gold Coast, 2006.
  - Greaves, S.P. (2006) Variability of Personal Exposure to Fine Particulates for Urban Commuters inside an Automobile. Proceedings of the 85<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington DC.
  - Greaves, S.P. and T. Bertoia (2005) Variability of Personal Exposure to Fine Particulate Matter for Urban Commuters inside an Automobile. Proceedings of the 2005 Australian Transport Research Forum, Sydney, 2005.
  - Stopher, P., S.P. Greaves, M. Xu, C. FitzGerald, and N. Lauer (2005) A Panel Approach to Evaluating TravelSmart Initiatives in the Short Term – South Australia Pilot Survey. Proceedings of the 2005 Australian Transport Research Forum, Sydney, 2005.
  - Stopher, P., S.P. Greaves, M. Xu, and N. Lauer (2005) Designing a Procedure to Undertake Long Term Evaluation of TravelSmart Interventions. Proceedings of the 2005 Australian Transport Research Forum, Sydney, 2005.
  - Greaves, S.P. and P.R. Stopher (2004) Sample Size Requirements for Measuring a Change in Behaviour. Proceedings of the 2004 Australian Transport Research Forum, Adelaide, 2004.
  - Greaves, S.P. and A. Somers (2003) Insights on driver behaviour: What Can Global Positioning System (GPS) Data Tell Us? CD-Rom Proceedings of the 21<sup>st</sup> ARRB & 11<sup>th</sup> REAAA Conference, Cairns, 18-23 May 2003.
  - Stopher, P.R., S.P. Greaves, P. Bullock, (2003) Simulating Household Travel Survey Data: Application to Two Urban Areas. Proceedings of the 82<sup>nd</sup> Annual Meeting of the Transportation Research Board, Washington DC.
  - Greaves, S.P. and C DeGruyter (2002) Profiling driving behaviour using passive Global Positioning System (GPS) technology. CD Rom proceedings of the Institute of Transportation Engineers International Conference, Melbourne, 2002.
  - Greaves, S.P. (1997) Applications of GIS Technology in Recent Household Travel Surveys. Proceedings of the annual Geographic Information Systems for Transportation (GIS-T) Symposium, March 1997, pp. 95–133.

### **Other Publications**

- Issarayangyun, T. and S.P. Greaves, (2006) Analysis of Minute-by-Minute Pollution Exposure inside a Car – a Time-Series Modelling Approach., 28<sup>th</sup> CAITR, UNSW, 6-8 December, 2006.
- Greaves, S.P. and Q. Liu (2006) Assessing Pedestrian Exposure to Fine Particulates at fine levels of Spatio-temporal Resolution. 28<sup>th</sup> CAITR, UNSW, 6-8 December, 2006.
- Greaves, S.P. (September, 2000) Simulating Household Travel Survey Data in Metropolitan Areas. *Ph.D. Dissertation*, Louisiana State University.
- Greaves, S.P. (September, 1993). Can Public Bus Transportation Provide a Cost-Effective Means of Meeting the Mobility Needs of Disabled Persons? *MS. Thesis*, University of Wales - College of Cardiff.

### **Invited Presentations**

- Greaves, S.P. (2008) 'A Strategic-Level Approach for Evaluating Air Quality Mitigation Policies for Urban Road Freight Transport in Sydney'. Green Transport & Logistics Conference organised by Lloyd's List DCN, 3 - 4 December 2008, Melbourne.
- Greaves, S.P. (2007) Exploring Variability in Exposure to Fine Particulates (PM2.5) Within Travel Microenvironments. Invited seminar, University College London.
- Greaves, S.P. (2007) 'Climate Change: Transport's Role and Mitigation Strategies'. Invited presentation for the Spring back to Spring Alumni reunion, University of Sydney.
- Greaves, S.P. (2006) Using GPS Technology to Study the Risk of Exposure to Fine Particulates Within Travel Microenvironments. Invited seminar, University of Leeds.
- Greaves, S.P. (2006) Capturing the Variability of Fine Particulates Within Travel Microenvironments Using GPS Technology. Invited seminar, University of West of England.
- Greaves, S.P. (2006) Synthesizing a Household Travel Survey Database. Invited participant at the Transportation Research Board (TRB) Sunday workshop, 'Transferability of Household Travel Survey Data: Getting by Without a Travel Survey'.
- Greaves, S.P. (2005) Global Positioning Systems: Automating the Collection of Personal Travel Information. Invited presentation as part of the Modelling for Better Transport Planning Workshop organized by the Bureau of Transport and Regional Economics, Canberra, 6-7 September 2005.
- Greaves, S.P. (2003) Characterising Driver Behaviour Using Global Positioning System (GPS) Data. Invited seminar, University of Sydney.
- Greaves, S.P. (2003) Travel Survey Data Collection in Victoria in the New Millennium – Old Challenges, New Opportunities Part I. Invited presentation, VicRoads, Melbourne.

### **Research Students**

- Primary Supervisor for Simon Fifer (PhD). Thesis title, 'Investigating hypothetical bias in stated choice experiments: Is it a problem? And if so, how do we deal with it?' Expected to complete in 2010.
- Primary Supervisor for Claudine Moutou (PhD). Thesis title, 'Reducing transport emissions and increasing profitability amongst small and medium-sized enterprises (SMEs) through green logistics and travel demand management'.
- Associate Supervisor for Joe Poon (PhD). Thesis title, 'Analysing the effects of travel information on travellers' decision making and learning'. Expected to complete in 2012.
- Associate Supervisor for Qian Liu (PhD). Thesis title, 'Investigating environmental/health externalities of transport.' Expected to complete in 2012.

### **Awards**

- Dwight David Eisenhower Transportation Fellow (August, 1996 to May, 1997).
- Research Award for MS Studies from Frank Graham & Associates (June 1993).

## TEACHING EXPERIENCE

### Formal Qualifications

- **Graduate Certificate** in Higher Education (December 2002). Monash University, Melbourne, Australia.

### Experience

#### *Undergraduate (face-to-face)*

- Engineering Investigations (3<sup>rd</sup> Year undergraduate, 100 students, course co-ordinator). Course covers understanding and application of statistical techniques to assist in the analysis of civil engineering-based problems.
- Rural Road Design (3<sup>rd</sup> Year undergraduate, 100 students, course co-ordinator). Course covers the fundamentals of highway planning and geometric design with an emphasis on rural roads. Includes use of MX\_Roads, road design software.
- Civil Engineering Practice (4<sup>th</sup> Year undergraduate, 80 students, transportation component). Final year integrated civil engineering design subject where students have to develop a conceptual and final design for a civil engineering project.
- Engineering Context (1<sup>st</sup> Year undergraduate, 100 students, course tutor).

#### *Postgraduate (face-to-face)*

- Sustainable Transport and Logistics Systems (50 students, course coordinator). Addresses sustainability issues associated with the movement of goods and people at both a local and global level focusing on both developed and developing nations.
- Transport Policy, Decision Making and the Environment (16 students, course coordinator). Covers contemporary transport issues (e.g., congestion, global warming, pollution, safety, and public health) and policy responses.
- Land-Use and Transportation Planning, (20 students, course coordinator). Covers land-use and macro-modelling approaches for transportation analyses.
- Geographic Information Systems (GIS) for Transport Planning & Logistics, (40-50 students, course coordinator). Covers use of GIS in transportation and logistics, with a large computer-based component using MapInfo and TransCAD.
- Traffic Engineering & Safety Management (20 students, course coordinator). Covers traffic engineering with a particular focus on current road safety issues.
- Special Research Project (2-3 students per semester). Students work on a one semester research project under my supervision. Involves preparation of a proposal, interim report, final report and professional presentation.

#### *Postgraduate (distance education)*

- Quantitative Methods (Distance Education, 20-25 students, course coordinator). Covers application of mathematical and statistical methods in transportation and traffic engineering.
- Transportation Models (Distance Education, 10-15 students, course coordinator). Covers macro- and micro-modelling approaches for transportation analyses.

#### *Industry-Based Courses*

- Modules 1&2 of the Advanced Certificate in Traffic and Transportation Management (Block mode, 10-15 students, instructor). Covers traffic engineering and control systems, road safety and fundamentals of geometric design.
- Module 4 of Advanced Certificate in Traffic and Transportation Management (Block mode, 10-15 students, instructor). Covers transport policy and environmental issues.

#### **Other Initiatives**

- 2007: Podcasts of lectures to assist students, particularly those for whom English is not a first language.

- 2006: Initiated a scholarship program sponsored by a local consulting organisation designed to encourage students to pursue studies in transport.
- 2005: Organisation of a forum on Block Mode Teaching.
- 2005: Organisation of a forum on attracting PhD students.

## ADMINISTRATIVE AND COMMUNITY SERVICE

### University Positions

- **Chair** of the ITLS Teaching & Learning Innovations Committee. The committee discusses ways we can develop and enhance the day-to-day learning environment at ITLS.
- **Program Director** of industry-based transport educational program attended by 15 working transportation professionals (primarily from the RTA) per annum.
- **Committee Member** of the Faculty Teaching & Learning Committee. The committee sets policies and provides assistance to staff and students designed to enhance the learning experience within the faculty.
- **Discipline Representative** of the Faculty Management Committee.
- **Discipline Representative** on the Faculty IT committee.
- **Treasurer** of the Sustainable Management of Organisations Group (SMOG). The research group shares ideas on how sustainability can be embedded into management functions across the faculty.
- **Mentor** for junior academic staff under the faculty mentor/mentee initiative.
- **Performance Management and Development reviewer** for research staff. I am responsible for annual performance reviews of several research staff within ITLS.

### Conference & Workshop Activities

- **Invited speaker** for 'New Frontiers in Transportation Modelling', a one-day workshop, Monash University, Melbourne, January 29<sup>th</sup>, 2010.
- **Member of the national ATRF conference organising committee** The conference is the largest gathering of transportation professionals in Australia.
- **Member of organising committee** for 2001 CAITR, 2005 ATRF conferences.

### Committee Membership and Expert Advice

- **Expert Advisor** to the NSW Department of Environment and Climate Change (DECC) on transportation component of Action for Air.
- **Member** of the Sustainable Management of Organisations Group (SMOG). With colleagues from other disciplines within my faculty, we applied for and were successful in obtaining funding to set up a research network focused on sustainability issues within organisations.
- **International Committee Member** of Transportation Research Board (TRB) Committees, ABJ40-4 [New Technologies in Travel Surveys], and ADC20 [Air Quality]. Committees comprise international experts in these fields and organize conferences, set calls for papers and establish directions for research in these topic areas.
- **Reference panellist** for the Bicycle Federation of Australia (BFA) fact-sheets on environmental and health issues associated with bicycle use.
- **Invited discussant** for a seminar given by Prof. Larry Frank to public health officials on public health, transport and urban planning. May, 2006.
- **Invited discussant** by the Lord Mayor of Sydney about the potential for light-rail in the city. December, 2006.
- **Participant** in meeting with Lord Mayor to discuss transportation issues in Sydney. February, 2006.
- **Advisor** on transport issues associated with the 2003 and 2007 New South Wales Action for Air initiatives. Includes proposing and commenting on strategies (e.g., pricing, technological, behavioural) designed to mitigate air pollution and greenhouse gas impacts from transportation.
- **Invited commentary** with Prof. David Hensher on the AAMI 2005 Crash Index (<http://www.aami.com.au>).

### Media

- **Feature article** on 24/06/07 in the Sunday Telegraph on my research into exposure to air pollution while driving, “Car Drivers Being Poisoned by Roads”.
- **Radio interview** on 25/06/07 related to the article appearing in the Sunday Telegraph.
- **Feature article** on 08/05/06 for article on Sydney’s traffic problems in the Inner West Courier, a local newspaper in Sydney.
- **Invited panellist** on 10/05/07: for a public debate on Sydney’s transport at the Powerhouse Museum. Debate available as a podcast.
- **Participant:** “Using radio, television and online forums to share your work.” This one-day practical course provides guidance on how to respond to topical and contentious issues as well as communicating a new message to the community. February, 2007.

### Referee/Reviewer

- Large Grant application for the Carnegie Trust in Scotland on transport and emissions. March, 2007.
- Annual Meeting of the Transportation Research Board (average 5 reviews/year)
- Journal of Transport Statistics (3 reviews)
- Transportation (1 review)
- Road and Transport Research (4 reviews)
- Australasian Transport Research Forum (average 3 reviews per year)
- Thinking on Two Wheels Conference (1 review per year)
- IEEE Transactions on Intelligent Transport Systems Journal (1 review)

### CONSULTING SERVICES

- 2008: Assessment of policies for reducing externalities of road-based freight in Sydney sponsored by the New South Wales Department of Environment and Climate Change (DECC), \$30K.
- 2007: A pilot survey using GPS technology to validate travel data captured by traditional diary-based methods sponsored by the State Government of Victoria, \$75K.
- 2006: A GPS pilot survey of trucks sponsored by the State Government of Victoria, \$20K.
- 2006: Feasibility study for a GPS component of a planned travel survey in Hobart sponsored by the State Government of Tasmania, \$5K.

### EXPERIENCE

#### **Senior Lecturer, Institute of Transport & Logistics Studies – Faculty of Economics & Business, University of Sydney (January 2004 – Date)**

- Responsible for teaching transportation, traffic and GIS courses at the postgraduate level and to industry through formal education programs, development of a research program (securing of funds, writing and presenting papers), administrative duties, and promotion of activities in the wider professional community.

#### **Lecturer, Institute of Transport Studies - Department of Civil Engineering, Monash University, Melbourne, Australia (January 2001 – January 2004)**

- Responsible for teaching at both undergraduate and postgraduate levels, development of a research program (securing of funds, writing and presenting papers), administrative duties, and promotion of activities in the wider professional community.

#### **Graduate Research Assistant (October, 1999 to April, 2000)**

- Ph.D. dissertation: Developed and tested a method to simulate household travel data for metropolitan areas using local socio-demographic characteristics in conjunction with a national travel survey data set. The approach enables areas with unavailable/inadequate data to estimate

new regional travel-demand models that are an improvement over the current practices of borrowing models or national/regional default values.

**Transportation Planner, Lafayette Metropolitan Planning Organization (MPO) (June, 1997 to December, 2000)**

- Organised pilot program to collect trip information for current modelling efforts using low-cost Global Positioning Systems (GPS) technology.
- Developed procedures for the translation of current travel-demand modelling operations from TRANPLAN to TransCAD format.

**Eisenhower Research Fellow (August, 1996 to May, 1997)**

- Investigated the current and potential use of Geographic Information System (GIS) technology to support the design, implementation and analysis of household activity/travel surveys.

**Transportation Planner, Baton Rouge MPO (October, 1994 to May, 1996)**

- Designed and implemented enhanced modelling capabilities to meet federal air quality conformity regulations.
- Technical analysis to support short and long-range transportation planning programs.
- Assisted with the implementation of a Congestion Management Scheme (CMS) for the Baton Rouge metropolitan region.

**Graduate Research Assistant (June, 1994 to December, 1994)**

- Assisted on a National Cooperative Highway Research Program (NCHRP) project to improve the transportation data required for mobile source emissions estimates.