1999

ANNUAL REPORT

A report on the 1999 activities of the Institute of Transport Studies: The Australian Key Centre in Transport Management, ITS Sydney and ITS Monash.

Established and supported under the Australian Research Council's Key Centre Program.

INSTITUTE OF TRANSPORT STUDIES

The Australian Key Centre in Transport Management

The University of Sydney and Monash University

IN THIS REPORT

1. ABOUT THE KEY CENTRE

ITS: The Australian Key Centre of Teaching and Research in Transport Management was established in July 1995 as a joint venture between the University of Sydney and Monash University. ITS grew out of two existing centres – the Institute of Transport Studies within the Graduate School of Business at the University of Sydney, and the Monash Transport Group within the Department of Civil Engineering at Monash University. The Institute at Sydney and the Monash Transport Group were leading Australian centres in transport management and traffic education and research in their own right prior to the establishment of the Australian Key Centre. In 1998, ITS Sydney relocated to the Faculty of Economics, renamed in January 2000 as the Faculty of Economics and Business.

The Institute of Transport Studies (ITS) has nodes at the University of Sydney and Monash University. The Director of ITS is Professor David Hensher FASSA, Professor of Management at the University of Sydney. Dr Geoff Rose is head of ITS Monash.

The Key Centre is guided by an Advisory Committee of eminent academic, industry and government representatives, chaired by Professor John Taplin, AM. Its role is to provide advice on any matters referred to it by the Key Centre Executive, as well as to initiate matters for consideration that are of interest to the Key Centre, such as the teaching and research program and opportunities for participation of industry and government.

ITS provides education programs at a range of levels: PhD, Masters and Graduate Diploma, Graduate Certificate, continuing education workshops, management development seminars and Certificate programs. In addition, ITS also conducts transport and logistics related research. The Institute has an extensive program of related activities including publications, participation at conferences, software development and links to other leading transport and logistics research institutes around the globe.

2. DIRECTOR'S REPORT

1999 has been an important year to review the structure of ITS, especially at the Sydney node as it settles into the Faculty of Economics. With the support of the new Dean of the Faculty, Professor Peter Wolnizer, we advertised two Chairs in Organisational Logistics and Transport Planning. I am delighted to have Professor Ann Brewer appointed to the Chair in Organisational Logistics and Professor Tony Richardson (previously Director of the Transport Research Centre at RMIT University) appointed to the Chair in Transport Planning. The appointment of Bill Young to a Chair at ITS Monash provides a strong line up of Professors and bides well for the intellectual leadership of ITS into the future.

As part of the broad initiative in developing a logistics and supply chain management program, we officially launched the graduate program in July with Professor Alan McKinnon (Professor of Supply Chain Management, Heriot Watt University in Scotland) as guest speaker. We also announced ITS' participation with Deakin Australia in the delivery of logistics courses throughout Australia. ITS is now very well placed to deliver high quality executive and graduate programs in logistics, complementing the transport management program.

This year also marked the 30th anniversary of the establishment of the transport program at Monash University. It was 1969 when Ken Ogden joined the Civil Engineering Department as the first transport staff member. Although Ken has left Monash he has retained a strong link as an Adjunct Professor and member of the ITS Advisory Committee. At a seminar and dinner organised to celebrate the 30th anniversary, the Vice Chancellor of Monash University, Professor David Robinson, announced that beginning 2000 ITS Monash will organise an annual "Ogden Transport Lecture" in recognition of the contribution that Professor Ken Ogden has made over the 30 years of the Transport Program. It is very appropriate that 30th anniversary was marked with this special initiative, one which recognises the individual whose involvement has largely defined the transport program at Monash.

ITS Monash has continued to expand its role as a major provider of distance education courses for transport professionals. During 1999 the Transport Management Course in Bus and Coach operations, which is offered by ITS Monash as a distance education program, has grown to involve over 800 students. The groundwork has also been laid by ITS Monash for the roll out of a new postgraduate program in transport by distance education that will be offered nationally as of the start of the 2000 academic year.

A strong feature of ITS is its visiting academic program. The ITS Visiting Professor for 1999 was Professor Peter Stopher, a leading expert on travel survey methods and transport planning. Peter spent 4 months with ITS and delivered numerous addresses as well as teaching in the transport management program. The exposure of our student body to visiting experts continues to add value to the quality and diversity of our programs. Professor Alan McKinnon's executive program in international supply chain management was a highlight, attracting 30 participants.

On the research front, ITS continues to undertake a large number of projects and produce papers for publication in scholarly journals and books. The record is impressive. Two substantial manuscripts were accepted by top international publishers – a book on Transport: An Economics and Management Perspective (Oxford University Press) and one on Stated Choice Methods (Cambridge University Press), to appear in 2000.

The TRESIS (Transportation, Land Use and Environmental Impact Strategy Simulator) project has reached a major threshold with the first application runs in late 1999. ITS now has an in-

house capability in urban area-wide land use, transport and environmental modelling in the passenger sector. TRESIS project team members are developing travel demand models to explain household decisions in respect to where they live and work, what modes are used for commuting and non-commuting, departure time for travel, what types of cars are used and vehicle kilometres travelled. Together with GIS-based travel networks for road and public transport and an equilibration process in the travel, location and vehicle markets, we have embedded the set of demand and supply models into an object-oriented software architecture. TRESIS has the capability to evaluate the impact of many policy instruments such as congestion pricing, carbon tax, fuel taxes, improvements in vehicle technology (e.g. fuel efficiency, breaking), changes in public transport facilities (e.g. light rail, transitways) and service and fare levels; and even the impact of telecommuting. A series of performance measures such as reductions in greenhouse gas emissions, improvements in air quality, increased accessibility and reductions in accidents provide the necessary benchmarks to compare particular policy instruments.

ITS has prepared itself well for the next century. To all of my colleagues in Sydney and Monash, we can be proud of the success we have achieved in an academic environment that is becoming more demanding, especially for research centres. The fact that we have continued to progress and diversify is a great credit to the staff of ITS and the entrepreneurial flair that we have demonstrated.

On 24 September a great friend of ITS passed away in England – Professor Michael Beesley. I have paid my respect to Michael in the tribute below.

David A. Hensher
Director

Professor Michael E. Beesley, CBE

3 July 1924- 24 September 1999

David A. Hensher

November 4, 1999

Professor Michael Beesley, one of the transport's most illustrious and influential academics passed away on 24 September 1999. Michael was on ITS' Systemwide advisory board, and an annual visitor to ITS-Sydney. He will be much missed.

Commencing his academic career as a lecturer in Commerce at Birmingham University, then Reader in Economics at London School of Economics he became the UK Department of Transport's Chief Economist for a spell in the 1960's. Michael Beesley was a founding Professor of Economics at the London Business School and subsequently Emeritus. His main teaching interest was the contribution of economics to developing organisations' strategy. He started the Small Business Unit and was Director of the PhD programme from l985-l989 at the London Business School.

His widely known work in transport economics has had a major impact on the literature and the way we think of the transport task. He advised the UK Government on approaches to deregulation of buses in 1984/5. Among his numerous academic and other publications have been many dealing with the question of evaluating Government policies for industries in which the public interest is a major concern. His work at the London Business School centred on the

implications for management in, and the management by the Government of organisations receiving public financial support, and issues of deregulation and privatisation in telecoms, transport, water and electricity. He became Economic Adviser to the UK electricity regulator, OFFER immediately the office was established in 1989. This involved him in addressing a wide range of competition policy and economic efficiency issues. In September 1994, Michael was appointed Economic Adviser to OFGAS (the UK Office of Gas Supply).

He was Managing Editor of the Journal of Transport Economics and Policy from 1975 to 1987; and was on the editorial board member of that Journal and of several other academic journals up to his passing.

His 1993 book on Urban Transport: Studies in Economic Policy (Butterworths) brought together his major contributions in transport economics. In 1992 his book on Privatisation, Regulation and Deregulation (Routledge), summed up much of his work in those areas up till 1991. A second, expanded and revised edition was published in 1997. As a leading authority on regulation, industry restructuring and competition policy, he was appointed CBE in the Birthday Honours List of 1985. In 1999 he was presented with an Honorary Doctorate of Laws at Birmingham University.

Michael was a market economist to the limit, arguing that many economists and those not fully acquainted with the subtleties of markets failed to understand the dynamics of competition, relying heavily on the existence of stable equilibrium in the search for solution to efficient markets. While not denying the importance of equilibrium, Michael saw it as nothing more that a moving feast that never exists but which can usefully reinforce the notion of competitive dynamics in which we strive for an efficiency outcome based on some neoclassical principles of *static* efficiency. Michael also had a great deal of concern about competitive regulation (eg tendering) as a way of securing the real benefits of efficient markets (as best illustrated by the debate between Beesley-Glaister and Gwilliam-Mackie-Nash in Transport Reviews (1985). Beesley and Glaister argued from theory for economic deregulation in contrast to competitive tendering for the provision of local scheduled bus services (Michael's influence came through in the early drafts of the Bus Act in Britain in 1986 – I was privileged to see the first draft that he penned before the government advisers got to it).

The obituaries in the press in Britain by Stephen Littlechild, Harold Rose, Christopher Foster and David Currie speak volumes of Michael's contributions: ' the most influential industrial economist of his generation in the field of transport and public utility policy', ' he was the intellectual architect of the privatisation, competition, and deregulation of the utility industries in the 1980s', 'in 1983 he published with Stephen Littlechild the principles for RPI-X (price cap) regulation, which became the fundamental tenet of the UK regulatory model', and 'many informed commentators see Michael Beesley as the grandfather of the British model of regulation'.

References

Beesley, M.E. and Glaister, S. (1985) Deregulating the bus industry in Britain - (C) a response, *Transport Reviews*, **5**, 105-132.

Gwilliam, K.G., Nash, C.A. and Mackie, P.J. (1985) Deregulating the bus industry in Britain - (B) the case against, *Transport Reviews*, **5**, 105-132.

3. ENROLMENTS FOR 1999

A summary of student numbers is given below for the various programs.

Sydney:

Graduate Program

	GradCertTM			GradCertLM			GradDipTM		
Year	**Local**	**Internat.**	**Total**	**Local**	**Internat.**	**Total**	**Local**	**Internat**	**Total**
1998	2	0	2	na	na	na	24	3	27
1999	15	0	15	7	0	7	16	2	18

	MTM			PhD		
Year	**Local**	**Internat.**	**Total**	**Local**	**Internat**	**Total**
1998	26	7	33	3	1	4
1999	22	11	33	2	1	3

Certificate Programs

Year	CTM (bus & coach)	CCM	CLM
1998	48	189	27
1999	53	167	**

** GradCertLM was introduced during Semester 2, 1999.*
*** Two executive programs were ran.*

Monash:

Year	MEngSc (Research)	MEngSc (Coursewk)	GradDip	PhD	Cert Parking	Cert Bus
1998	1	18	3	4	10	27
1999	4	16	2	2	9	723

4. MEETING OBJECTIVES

Objectives

The primary objective of the Institute is to undertake graduate teaching, management development programs, grant and contract research and development in the fields of transport and logistics studies.

The work of the Institute also has the following objectives:

- To provide a focus for University work in areas of transport and logistics management and to establish an environment attractive to those committed to excellence in graduate transport and logistics programs and research;
- To collaborate with key players having an interest in transport and logistics studies and its applications;

- To offer specialised training courses, workshops, short courses and seminars on topics of interest in the area of transport and logistics management; and
- To seed the development of innovative ideas in transport and logistics policy and professional practice in Australia, in which the Institute of Transport Studies plays a role.

Achieving objectives

These objectives are achieved by:

- Developing and offering graduate transport and logistics programs, certificate, management development programs and short courses at both ITS Sydney and ITS Monash;
- Bringing high quality transport and logistics management programs to people outside Sydney and Melbourne as well as widening the offerings of courses in Melbourne and Sydney through access to courses provided by both ITS Monash and ITS Sydney;
- Contributing to Australia's growing participation in the Asia Pacific region in a leadership role in transport and logistics management;
- Widening the range of courses available for middle level professional managers in critical areas of transport and logistics not currently served;
- Equipping managers in all disciplines (e.g. 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 technical specialists and managers in transport and logistics;
- Undertaking research to develop state-of-the-art management practices and technical processes;
- Transferring the knowledge developed through research to client groups through the Institute's publications, workshops, conferences, seminars, and by participation in networks of transport and logistics managers and engineers; and
- Conducting activities that are directly or indirectly related to the attainment of the above objectives.

Objectives and performance measures

The following table summarises performance measures to show how the Key Centre is meeting the objectives outlined in its application. More detail is provided in specific sections throughout the annual report.

Objective	Performance measure
Australian transport and logistics management expertise highly regarded	• Requests for working papers • Requests for involvement in research and consultancy projects • Strong enrolments in all levels of education programs from PhD, Graduate program, Certificate programs and short courses • Requests for speaking at a large number of venues • Editorial positions held by staff on leading international journals
Programs outside Melbourne/Sydney	• Completion of second year of Transport Management Course in Bus and Coach Operations in Victoria • Introduction of Education Program in Parking throughout Australia • Delivery of Certificates of Bus and Coach Management for Western Australia • Delivery of courses in Massey University's Graduate Diploma in Transport Planning • Introduced four web-based courses for Sydney Graduate Programs
Contribute leadership in Asia Pacific	• Participation in Asia Pacific Conferences • Aviation and Maritime research for Asia Pacific countries • Supervision of PhD students in India and Indonesia
Courses in critical areas for middle managers and small business	• Executive Programs in Logistics Management/Supply Chain Management and Freight Management conducted • Design of Certificate of Aviation Management and Logistics • Short courses and workshops conducted to meet specific needs • Launch of new graduate degrees in Logistics Management • Signed partnership with Deakin Australia to conduct jointly badged Certificate of Logistics and Supply Chain Management • Short course on Discrete Choice Modelling (35 attendees from 7 countries)
Link transport engineering and management education	• Short courses and workshops integrating engineering and management • Short course on travel surveys
State of the art research	• Many research projects for range of government and private clients • Publications in leading journals • 2 new PhD commencements in 1999

Transfer of research to transport community	• Through publications including working papers, conferences, journals and books such as *Operating a Bus and Coach Business*, *Roads and the Community* and *Traffic Engineering and Management* • Books contracted with major publishers on *(i) Transport: An Economics and Management Perspective (Oxford University Press) and (ii) Stated Choice Methods (Cambridge University Press)* • Through presentations and attendance at conferences and seminars • ITS Sydney organising the 9th International Association of Travel Behaviour Research Conference; to be held in Gold Coast, Queensland in July, 2000

5. THE ITS TEAM

ITS Sydney

Academic and research staff

David Hensher, BCom(Hons), PhD, FASSA FCIT FAITPM CompIEAust MAPA
Professor of Management
Director, Institute of Transport Studies (Sydney)

A Fellow of the Academy of Social Sciences in Australia, Immediate Past President of the International Association of Travel Behaviour Research and Vice-Chair of the International Scientific Committee of the World Conference of Transport Research, David has published extensively (over 240 papers) in the leading international transport journals and key journals in economics as well as six books. He has two books in press - *Stated Choice Methods* (with Jordan Louviere and Joffre Swait), Cambridge University Press and a book on *Transport: An Economics and Management Perspective* (with Ann Brewer), Oxford University Press.

Major areas of teaching and research are transport economics, transport strategy, transport policy, sustainable transport, productivity measurement, discrete choice methods, stated choice experiments, privatisation and deregulation. David has advised numerous government and private sector organisations on matters related to transportation.

Ann Brewer, BA MCom(Hons), PhD, MCIT
Professor of Organisational Logistics, Director, Industry Programs and Director, Graduate Program in Logistics Management

A specialist in organisational behaviour, human resource management, Ann has experience in a number of industries, with major projects on current issues such as teleworking, generational issues in business, value chain management, educational needs of adult learners, all of which are pertinent to transport and logistics management. Ann has published numerous papers and five books. Ann is co-author (with David Hensher) of *Operating a Bus and Coach Business* (Allen and Unwin) completed in 1997 and *Transport: An Economics and Management Perspective*, Oxford University Press.

Tony Richardson, BE(Hons) MEngSc PhD
Professor of Transport Planning

Tony's research interests cover the broad areas of Transport Planning and Management and Travel Behaviour. He has researched and published widely in the area of Transport Planning and is recognised internationally as an expert in the design, conduct and analysis of large-scale travel

surveys. He is principal author of the most widely recognised text on travel survey methods. In addition to his transport research activities, Tony is also an accredited trainer/facilitator in Lateral Thinking and the Six Thinking Hats methods developed by Edward de Bono.

Tu Ton, BE, MEngSc, PhD
Senior Research Fellow

Tu has skills in traffic and transport engineering; EIA of transport infrastructure; and traffic and transport computer modelling using artificial intelligence technology including object-oriented programming, artificial neural networks and knowledge based expert systems. In 1997 Tu established the ITS Sydney Geographical Information System (GIS) and computing laboratory as well as promoting GIS to bus operators. Tu is leading an ITS team developing a new strategic transport planning decision support system – ITS' Transport and Environment Strategy Impact Simulator (TRESIS). In 1999 Tu edited a book on *GIS Applications in Transportation*.

Jenny King, BBuild (Hons), GradDipCom *UNSW*, MTM *Sydney*
Senior Research Analyst

Jenny coordinates various research program in ITS. Jenny has skills in survey design, data collection and analysis, and desktop publishing. She is currently involved in managing ITS' International Benchmarking Program in Bus and Coach as well as a number of research and consultancy projects, such as the M2 Marketing study, parking strategies for the CBD, and the ABCA Fact sheet.

Kirk Bendall, BBus., MTM *Sydney*
Research Analyst

Kirk joined ITS in November 1997 after completion of the Master of Transport Management at The University of Sydney. He is working on the TRESIS project; acquiring primary data, acquiring ABS Census data, acquiring Sydney rail, bus, light rail and ferry physical timetables, acquiring vehicle data, data format conversion and transformation to fulfil TRESIS required inputs, electronically mapping Sydney rail, bus, light rail and ferry route systems, documenting current scrappage model, developing digital networks of Sydney's major roads with lane, capacity and speed attributes, and coordinating with the TRESIS team and visiting interns. His fields of interest include intelligent transportation systems and standardization and advanced traveller information systems (ATIS). Kirk is also a representative of the Consumers Federation of Australia on the Standards Technical Committee for Transport Information and Control Systems. He has also been selected as a NOC Assistant for the Malawi Olympic team during the Sydney 2000 Olympic Games.

Carlos Funes, BE
Research Analyst

Carlos joined ITS in March 1998. He is programming the core model and the User Interface for the TRESIS project. He has developed a vehicle replacement system for bus companies which uses vehicle data from bus companies and predicts a replacement order for vehicles over a user specified period. His interests lie in transport engineering and Visual C++ Object-Oriented computer programming. In 1997 Carlos completed his Bachelor of Engineering, majoring in Traffic and Transport Engineering, at Monash University. He was awarded the Scholars Award for Victoria at the 1997 Australian Institute of Transport Planning and Management Conference in Melbourne and the Best Undergraduate Paper at the 19th Conference of Australian Institutes of Transport Research, also held in Melbourne in 1997.

Cam Ngo, BEngSc *Vietnam*, MEng *USA*, MEngSc, PhD

Research Analyst

Cam joined ITS in September 1998. Cam's major field is highway, traffic and transport engineering and local area traffic management. His interests lie in artificial intelligence and knowledge-based expert systems. He is working on the TRESIS project; which included entering the speed data and lane data into the Sydney road network, collecting and entering bus-headway of bus routes in Sydney into the bus route database, entering bus routes into map layers, preparing and creating busway layer for rapid bus routes and analysing and classifying the vehicle data for the scrappage model.

Paola Prioni, PhD
Visiting Scholar (until August)

After obtaining her PhD in Economics at the University of Zurich in February 1998, she joined ITS under a Post-Doctoral scholarship to work in the area of public transport costs and service quality. She has developed a revised cost model for the local bus industry in NSW with David Hensher; which involved the measurement of bus service quality and its incorporation in a model of a firm's productive efficiency. She also co-authored a paper based on this research at the 6th International Conference on Competition and Ownership in Land Passenger Transport held in Cape Town in September, as well as presenting the results of her research to the Bus and Coach Association (NSW) and to various bus operators.

Rahaf Almghawech, BSc(Hons)
Research Analyst (until June)

Rahaf joined ITS in January 1999. She completed her Bachelor of Science degree, in applied economic geography, at the University of New South Wales in 1998. Her major interests lie in the transport land use area, especially in relation to the concept of ecologically sustainable development (esd). She worked on a number of projects investigating issues in telecommuting and management difficulties, in family owned bus, coach and road freight businesses.

Michelle Coulson, BA, MTM *Sydney,* MCIT, CTM
Course Co-ordinator, Industry Programs

Michelle joined ITS in January 1998. She commenced work in the bus industry as a trainee at John J Hill Bus Service prior to commencing employment with the Busways Group of Companies. Michelle was more recently employed as the Operations Manager (Sydney Region) with Busways. Michelle's tertiary qualifications include a Bachelor of Arts from The University of Wollongong and a Master of Transport Management from The University of Sydney. Michelle is the first point of client contact for ITS' Industry programs and coordinates the industry programs on a daily and continuous basis; including the revision of notes, marking of assignments, providing help desk services, liaising with lecturers, clients and participants, marketing, conducting major mail outs and booking venues.

Lesley Watson, BA, GDipLib/IM
Resources Officer and Graduate Programs Advisor (from April 1999)

Leslie is responsible for ITS' library resources, looking after all aspects of student support in graduate programs, undertaking library searches, participating in the web-based learning system for distance education as well as providing research support.

Stephen Leonard
Computer Systems Officer (until February 1999)

Stephen joined ITS in 1996. He is responsible for server administration at the network level and user support and workstation maintenance at the user level. He also worked on the Institute's web

pages, provided general technical support for user tasks, troubleshooting problems as required and organised and implemented ITS' online course content to enhance the quality of teaching ITS offers its graduate students.

Gary Mariano
Computer Systems Officer (from May 1999)

Gary is responsible for server administration at the network level and user support and workstation maintenance at the user level. He is also responsible for the design and maintenance of the homepage.

Full-time PhD students

Chackrit Duangphastra, MTM *Sydney*

Chackrit is a scholar from Thailand. He holds a Bachelor degree in Business Administration from Chulalongkorn University, Thailand and a Master of Transport Management from the University of Sydney. Before joining the PhD program at ITS, he worked for the Ministry of Transport and Communications and taught at Chulalongkorn University. His PhD research is on 'Developing strategies for the ASEAN aviation sector post the 1998 economic downturn'.

Baojin Wang, MEng

A registered engineer in civil engineering, Baojin has experience in highway and transport engineering. He has consulted on 26 engineering projects and has skills in project management. His PhD research is on the development of risk taking modeling framework for road safety.

Part-time PhD students

Seu Cheng, BA MA (Econ) *University of Manitoba, Canada*

Seu's PhD research focuses on the issue of integrated logistics management and its implications on shippers' choice of freight intermediary service attributes and the valuation of time in the supply chain.

Administrative staff

Julie McKone
Personal Executive Assistant (until 24 December 1999)

Julie provides administrative and secretarial support to the Director and ITS academics, coordinate the day to day administration of the graduate program, coordinate the ITS Systemwide and local node Advisory Committee meetings, produce desktop materials for the graduate program, certificate program, short courses, ITS functions and generic ITS flyers and maintaining the ITS homepage and publishing course information on the web.

Bruno Sirianni, BIT&C
Administration Associate/Finance Coordinator

Bruno is responsible for all of the Institute's finances, personnel and travel details. He maintains and assists in the design of the accounts database, processes purchase orders, invoices, receipts and banking, and maintains all personnel records of all staff. He is also responsible for budgeting and financial planning, reconciliation of monthly statements and provides accounts and general administrative support.

Hetty Read, BA(Hons) *Camtab*
Research Assistant (from November)

Hetty provides research, administrative and secretarial support to the Director and ITS academics. She is assisting in a research project as part of the development of an assessment centre for State Transit Authority, New South Wales. She completed her Bachelor of Arts degree in Social Anthropology at Cambridge University in 1996 and is working at ITS as part of a year-long trip abroad; she will continue to work at ITS until the end of May, 2000.

Adjunct Faculty

Peter Forsyth, MEc *Sydney*, DPhil *Oxon*
Department of Economics, Faculty of Business, Monash University

Peter is Professor of Economics, Monash University. Much of Peter's research has focused on aviation and tourism, and he has published extensively on these industries. He has undertaken consulting work for government agencies, and for firms in these industries, both in Australia and overseas.

Trevor Heaver, BA *Oxon*, MA, PhD *Indiana*
UPS Foundation Professor of Transportation &
Director of the Centre of Transportation Studies

Trevor is Professor Emeritus, University of British Columbia. He is a past Chairman of the World Conference on Transportation Research, the Past President of the International Association of Maritime Economists and was recently Francqui Chair Professor, University of Antwerp. Trevor is focusing his research on issues related to ports, shipping and international supply chain management. Particular topics include: performance measurement and benchmarking port terminals; interface problems between container terminals and inland carriers; the restructuring of the liner shipping industry in response to market and regulatory changes; organisational issues for exporters in international supply chain management.

John M.C. King, LLB *ANU*, MTM *Sydney*
Managing Director, Aviation and Tourism Management

John is a consultant who concentrates on aviation and tourism policy, strategy and management. He is the Chairperson of the Travel Compensation Fund and has in the past served as an advisor or Board member of a number of industry associations, including the Pacific Asia Travel Association, the Board of Airline Representatives of Australia, Australia National Travel Association (now Tourism Council of Australia). John's clients include The World Bank, The World Tourism Organisation, foreign governments, international and domestic airlines and a number of travel agencies. He has worked as a consultant in the following countries – Samoa, Papua New Guinea, Pakistan, Ethiopia, Thailand, Philippines, China and the South Pacific generally. Prior to setting up his own consultancy, John worked for 20 years as an airline executive.

Gordon Mills, MA
Professor of Economics
Director, Centre for Microeconomic Policy Analysis, Faculty of Economics, University of Sydney

Gordon has published extensively in transport economics, and has taken a particular interest in the economics of airports. He has served on two independent committees of inquiry appointed by the Australian government: National Road Freight Industry Inquiry and Independent Review of Economic Regulation of Domestic Aviation. In recent years he has undertaken consulting roles for Trade Practices Commission, Federal Airports Corporation, Master Builders Association of NSW, Prices Surveillance Authority, and the Roads and Traffic Authority of NSW. At various times, Gordon has been a member of the editorial boards of Review of Economic Studies and Journal of the Operational Research Society, and is presently on the editorial board of Journal of Transport Economics and Policy.

Douglas Seeley, BASc, MASc, PhD
Director, InterDynamics Pty. Ltd.

Doug is a founding Principal of InterDynamics, and the author of the software development program Planimate which is used to develop decision support tools for supply chain and transportation logistics, as well as applications in all sectors of industry and business. Over the last seven years, Doug has enjoyed responsibilities in the areas of on-going development of the software platform, the development of design methodologies for systems understanding to the workplace, and the articulation of InterDynamics 'whole systems wisdom' approach. Doug has previously worked as the acting head of Computer Systems Engineering at The University of South Australia. Prior to moving to Australia from Canada in 1986, Doug held similar positions at The University of British Columbia and Simon Fraser University.

Jay Sankaran, B.Tech *Madras*, M.S *Iowa*, PhD *Chicago*
Visiting Lecturer
Senior Lecturer in Operations Management, Faculty of Business and Economics, University of Auckland

Jay is Senior Lecturer in Operations Management at the Faculty of Business and Economics, University of Auckland. Jay is currently pursuing both empirical and modeling-based research in logistics and supply chain management. The former concerns an inductive investigation into third party logistics contracts. The latter concerns the application of mathematical models for inventory control at a leading Australasian manufacturer of printed circuit boards. Jay runs an intensive 4 week course on Logistics Management in the graduate program.

Alastair Stone, MSc, DEng
Visiting Fellow
Managing Director, Pacific Infrastructure Corporation

Alastair has over thirty years experience in banking, economics and engineering. He has successfully initiated, implemented and participated in major projects and infrastructure deals. He has also advised various international and domestic agencies and governments; including the Asian Development Bank, World Bank, Jakarta Municipal Government, Shanghai Municipal Government, and several Australian State Governments, on private sector participation policies and strategies. His career has covered all facets of urban affairs including senior positions with the World Bank, Lend Lease and Merill Lynch. Alastair teaches in the area of joint ventures in public infrastructure projects. Alastair presents in the graduate program in the Transport Policy Workshop with Ann Brewer and in the Infrastructure Planning, Financing and Tendering course with Rodney Swan.

Rodney Swan, BSc (Hons) Mtech
Visiting Fellow
Managing Director, BGP Pty Ltd

Rodney is one of Australia's leading strategists in competitive bidding for public and private sector service projects, with a number of successful infrastructure projects to his credit. He is highly experienced in the financial and operational requirements of projects, with expert knowledge of opportunities in the transport, health and environment sectors. Rodney teaches in the graduate program in infrastructure planning and outsourcing.

David Walters, BA *Alberta*, MSc *Bradford*, PhD *Cranfield*
Professorial Fellow in Marketing

David is Professorial Fellow at Macquarie University, School of Economics and Financial Studies. David has published a number of books and articles in the field of distribution and logistics management. He is a member of the review committee for the European Journal of Marketing. His current research interests are concerned with interface between marketing and finance, and marketing and operations management. David currently teaches supply chain management in our graduate & certificate program courses.

In addition, Professor Tony Richardson contributed annually to our graduate program prior to taking up the Chair in Transport Planning on August 30.

Dr Tu Ton and Julie McKone are funded by the Key Centre.

ITS Monash

Geoff Rose, BEng MSc PhD, MIEAust CPeng
Senior Lecturer (40% at ITS)
Head, ITS Monash

Geoff's professional interests cover intelligent transport systems, travel behaviour and non-motorised transport. His experience spans government, consulting and academia. In 1999, he completed a national study of the implementation of 'Safe Routes to School' in Australia for the Federal Office of Road Safety. He is Director of the new postgraduate program in transport being offered by distance education and is the author for the subject on Intelligent Transport Systems to be offered as part of that program in the 2000 academic year.

William Young, BE GradDipMgt MSc PhD, FIEAust FCIT CPEng
Head, Department of Civil Engineering, Monash University

Bill is a recognised specialist in parking and transport land use interaction. His research interests also cover infrastructure management and computer systems. Since being promoted to the Chair in Civil Engineering, Bill has taken on the role of Head of the Department of Civil Engineering.

Samantha Taylor, BE MEngSc (Hons), GradIEAust MITE
Lecturer (100% ITS)

Samantha has a keen interest in a variety of transportation areas and has over 20 publications including those in the areas of traffic engineering, porous pavements, life-cycle costing, transport policy and her specialty of urban goods movement. She is currently international secretary of the World Conference on Transportation Research, Special Interest Group in urban goods movement (WCTR SIG UGM), and is also Chair of The Institution of Engineers, Transport Branch (Victoria). Samantha is joint editor with Professor Ken Ogden of the textbook Traffic Engineering and Management (1996), successor to the extremely popular Traffic Engineering Practice (1989).

Peter Daly, BE (Hons), GradIEAust MITE Assoc. Fellow ACRS PEng
Lecturer (30% at ITS) (until November 1999)

Peter is a civil engineer who has specialised in road safety, road engineering and transport modelling. He is currently completing his PhD on activity based transport demand models. Peter's interests include road safety and the environmental aspects of transport. He recently taught in an AUSAID sponsored road safety course in Thailand, and directed the Accident Investigation and Prevention Workshop at Monash in July.

Yvonne Correlje,
Program Director, Transport Management Course in Bus and Coach Operations

Yvonne joined ITS Monash in July 1999. She previously worked with Lend Lease Corporation and the ANZ Bank and her background is in human resource management and adult education/training. Prior to joining the ITS Monash staff Yvonne had contributed to the module on human resource management that forms part of the Transport Management Course.

Andrew Haines, BSc
Technical Support

Andrew provides technical support in the computing and systems area.

Brenda O'Keefe
Administrative Manager

Brenda is responsible for managing administrative support at ITS Monash. She has a major involvement in the Transport Management Course in Bus and Coach Operations where she handles general course enquiries, student enrolment and record keeping as well as all written communications with students throughout the semester.

Adjunct Faculty

Professor Ken Ogden,
Manager (Public Policy), RACV

Ken has over 30 years of experience in Transport and public policy. He is Group Manager (Public Policy) in the Royal Automobile Club of Victoria, where he has responsibility for the Club's advocacy activities and research in such areas as road and vehicle safety, traffic engineering, transport planning and policy and traffic safety education.

PhD students

Peter Daly, Olle Norojono and Darryn Paterson.

6. RESEARCH AND POLICY

New in 1999

Equipment Grant (ITS Sydney)

ITS Sydney won a University equipment grant to develop the new IWISH program which is linked to the on-line teaching program.

Development of Assessment Centre (ITS Sydney)

For State Transit Authority, New South Wales, ITS Sydney is undertaking the development of an assessment centre. This project will continue into the year 2000.

Parramatta CBD Parking and Public Transport Surveys (ITS Sydney)

For Parramatta City Council, ITS Sydney undertook the design and analysis of a parking and public transport survey in Parramatta City Centre. The Council is currently developing its strategic approach to its operations and planning and it is therefore undertaking a comprehensive study of parking demand in the City Centre as part of the development of a Parking Strategy for Parramatta.

Web-based learning (ITS Sydney)

ITS Sydney received a $15,000 grant entitled “Interactive Learning (Problem-Based Learning) PLB Module: A Prototype” from the Education Sub-Committee of the Information Technology Centre, The University of Sydney to develop web-based materials and resources.

Perth Travel Survey (ITS Sydney)

In 2000, Perth will commence a continuous survey of urban travel patterns, following on the lead set in Melbourne and Sydney. Given his experience in setting up the Victorian Activity & Travel Survey (VATS) in Melbourne in 1993, Prof. Richardson was commissioned by the Western Australia Department of Transport to advise them on issues involved in the design and conduct of continuous travel surveys.

On-Board Survey Data (ITS Sydney)

As a result of the privatisation of train and tram operations in Melbourne, there is a need for a method of allocating fare-box revenue to the individual operators, given the multimodal time-based ticketing system used in Melbourne. An ongoing sample survey of public transport ticket usage (the Public Transport Revenue Allocation Survey) has been in operation since February 1998. As the designer of the original survey, Professor Tony Richardson has been engaged by Hillside Trains to investigate variations in the survey results over the first two years of the survey.

Development of Most-Recent-Trip Survey Method for Long-Distance Travel (ITS Sydney)

In the United States and Europe, increasing attention is being paid to the measurement of long-distance travel behaviour. Such measurement poses special problems which are not encountered in the measurement of daily mobility in urban areas, which has been the focus of attention of most previous household travel surveys. Because long-distance travel is a relatively rare event, a major issue has been the selection of the period of observation. Unlike daily mobility surveys, where the most common survey period is a single 24-hour period, long-distance travel surveys have used survey periods from several weeks to several months. However, selection of too short a period means that many respondents have no long-distance trips to report, while selection of too long a period means that frequent long-distance travellers have many trips to report, some of which occurred a long time before the conduct of the survey.

In response to these problems, Prof. Tony Richardson has proposed an alternative survey design which seeks to obtain information from all respondents about the most recent long-distance trip they have made, irrespective of when that trip was made. This project investigates, theoretically and empirically, how the data obtained from this survey design can be used to obtain unbiased estimates of long-distance trip rates. It then compares these results with what would have been obtained from more conventional long-distance travel survey designs. The Most-Recent-Trip survey method is being tested for adoption in the 2000 American Travel Survey of long-distance travel, and is also being considered for the 2000 European Long-Distance Travel Survey.

Standardisation of Travel Survey Processes (ITS Sydney)

The objective of this project undertaken by Prof. Tony Richardson is to develop standardised procedures for improving the conduct, evaluation and reliability of personal travel surveys. The project is based on the premise that improvements in the quality of personal travel surveys will not come about by improvements, or standardisation, of individual components of the survey process. Rather, a holistic view of the travel survey process must be taken, from several different perspectives. These perspectives include the respondents, the survey team, and the Commissioning Agency. These three actors form a data supply chain where, in response to a Request for Proposal issued by the Commissioning Agency, information is obtained from the respondents by the survey team and then passed onto the Commissioning Agency. The two way flows of instructions and information in this supply chain create a complex situation. Only by taking such a broad view, however, can significant and sustainable improvements be made to the conduct of personal travel surveys.

Views on Environmental Issues (ITS Sydney)

As part of the University's commitment to promoting environmental sustainability, the University wished to obtain its stakeholders' views on a number of environmental issues. ITS Sydney undertook the design and analysis of a survey of stakeholders' views on environmental issues.

Determining the demand for regional air services in Samoa (ITS Sydney)

The Government of Samoa and the Samoa Airport Authority (SAA) have received an infrastructure related loan from the World Bank to undertake a study titled 'Minor Airports Economic, Financial and Policy Study'. As part of this larger study, a passenger market survey was undertaken. The Institute of Transport Studies was engaged by Aviation and Tourism Management Pty. Ltd. to develop a series of survey questions and a survey instrument for implementation at the key airports in Samoa. Discrete choice models were estimated to obtain estimates of values of travel time savings for use in a benefit-cost study to evaluate the closure of the airport at Fagalii.

Identifying Passenger Flows at a City-Pair Level for a Regional Airline's New Hub (ITS Sydney)

For the ACT Government and Canberra Airport, ITS developed a route choice model at a city-pair level based on existing service connectivity and applied the model to a new hubbing configuration to establish potential gains in passengers.

Identifying Policies to Reduce Car Use in New Zealand (ITS Sydney)

Funded via Dr Carolyn O'Fallon of Pinnacle Research (NZ), ITS undertook a study into identifying policies to reduce car use in New Zealand. A stated preference design was developed to evaluate alternative options to car use for various trips when faced with a range of levels of parking availability and price, public transport fares, fuel prices, etc.

Valuation of Travel Time Savings for Car Drivers in New Zealand (ITS Sydney)

For Transfund New Zealand in conjunction with Booz Allen, ITS developed a computerised stated choice experiment to evaluate the trade-offs in travel time decomposed into free flow, congested circumstances, uncertainty of arrival time, operating costs and other road user charges. The data collected was used to estimate a series of discrete choice models to obtain new estimates of value of time for each trip purpose for urban and long distance settings, distinguishing mean estimates and variances due to the distribution of reliability and congestion.

Review of the Proposed Amendments to Parking Policy in Sydney CBD (ITS Sydney)

For Secure Parking and World Square, reviewed the proposed Amendment No. 9 Public Car Parking documents of Sydney City Council and identified the weakness of inverse pricing as a generic policy. Identified the benefits of a pricing scheme that allowed for the time of day that parking commenced in order to minimise the impact of parkers on traffic during periods of high congestion.

Estimation of the Sydney Travel Model System – Stages 1 and 2 (ITS Sydney)

In partnership with Hague Consulting Group (HCG) estimated the new suite of travel demand models for commuting behaviour as input into the updated STM system, being implemented for the Transport Data Centre of the NSW Department of Transport.

Shiftwork Study (ITS Sydney)

ITS was commissioned by Cumberland Health and Research Centre to investigate shiftwork in Sydney and to recommend the shiftlength and rostering for a large temporary workforce for the 2000 Olympic Games.

Work Practices and Travel Behaviour (ITS Sydney)

This research undertaken by Ann Brewer with Dr Paul Jackson, Brunel University and Marteen Botterman, European Commission is an European-Australian study investigating work practices and travel behaviour.

TRESIS (ITS Sydney)

ITS is developing an urban passenger transport model system called TRESIS – Transport and Environmental Strategy Impact Simulator. The model system is a combined set of models for representing travel, location and vehicle decisions of individuals and households to reflect the growing interest in the environment. The urban passenger transport system contributes to the achievement of broader goals of urban management and the performance of urban areas. It also

supports the evaluation of an expansive set of identified policy instruments. The system differentiates and evaluates both aspatial and spatial strategies via Geographical Information Systems (GIS) and system linkage, as well as urban versus spillover impacts beyond the urban area. It emphasizes the system-wide impacts of particular policies as well. The project team members are David Hensher, Tu Ton (project coordinator), Carlos Funes, Kirk Bendall, and Cam Ngo. The system prototype is expected to be in operation in early 2000.

Development of a Service Quality Indicator for Urban Bus Services (ITS Sydney)

As part of a review of the proposed amendments to the NSW 1990 Passenger Transport Act that will require a greater focus on performance assessment, ITS undertook a major survey of 32 bus operators in Sydney seeking data on their financial position as well as data from a sample of passengers. A Stated choice experiment was developed based on attributes of importance to users of bus services, and used to obtain a customer-based indicator of service satisfaction. This indicator was used in a cost model to identify the incremental cost to an operator of improving service levels in accordance with compliance with a performance assessment regime based on benchmarking best practice.

Transport Web Site for Monash University (ITS Monash)

Monash University has introduced a policy of using a portion of the campus parking fees to fund alternative transport projects. Funding has been obtained through the Parking committee for this project. It aims to raise awareness of the availability of alternative travel modes through the provision of information. Specifically, the project aims to develop a web site to provide transport information for regular and irregular visitors to Monash University.

A Review Of Internet Based Discussion Groups For Transport (ITS Monash)

The rapid growth in information technologies and software makes it difficult to keep up to date with the most effective options in communication technology. This project reviewed currently accessible internet based communication tools suitable for transport education and transport professionals. The results of the study will be used to facilitate tutorials in the new Distance Education Postgraduate Program at ITS Monash.

Changes In Parking Availability And Regulation In Melbourne (ITS Monash)

Over the last decade, Melbourne City Concil has achieved success in making the City of Melbourne a more attractive place to work live and visit. Part of this success is attributable to changes in short term and long term parking controls. This project reviews the changes in parking policy over this time, analysing the reasons why success has been achieved.

Behavioural Responses To Prepare To Stop Signs (ITS Monash)

Prepare to stop signs are signs that warn motorists of imminent, though not usually visible, red light signals. The problem is that, because they are used so infrequently, many motorists are unsure of their meaning and how they should respond. This project involves the observation of motorists' responses on a straight, high speed section of road in Victoria. The results aim to assist traffic engineers in Victoria in developing guidelines for prepare to stop signs.

Relationship Between Dwelling Type And Vehicle Ownership In Elwood, Melbourne (ITS Monash)

Inner city population in Melbourne is growing, together with medium and high density residential dwellings. This is particularly evident in the suburb of Elwood, south east of Melbourne. This small case study investigates the residents' perspectives of parking issues in the Elwood area.

Design Speeds for Rural Highway Interchanges (ITS Monash)

In the design of high speed rural interchanges, traffic engineers apply design speeds of 80 km/hr for the minor road. The design speed employed can have a significant impact on the cost of road works. Using a number of constructed interchanges, traffic engineers were keen to get a feel for whether the motorists were travelling at close to or less than the design speed, thus providing evidence as to the appropriateness of the design speed.

The Movement of Temperature Controlled Goods in Logistics Chain (ITS Monash)

With greater demand for customer specificity, logistics managers are challenged to ensure that products are on time and in good condition on arrival at their destination. This is most certainly a challenge for cold chain goods - those that must remain at or below a certain temperature to ensure the integrity of the goods. This project compared logistics managers' expectations of goods handling with actual goods handling and found that there were significant differences in practice.

Review of Freight Transport Chain Case Studies (ITS Monash)

Samantha Taylor assisted ARRB Transport Research in this AUSTROADS project which aims to improve knowledge and understanding of the whole freight industry and the customers it services through:

- A review of recent freight transport case studies including a number involving intermodal operations, and
- The identification of broader trends and conclusions on freight operations that can be inferred from case studies.

Using published and previously unpublished literature, the study examined:

- the freight service requirements of particular industries or markets,
- total transport operations,
- problems experienced in the supply chain or during freight transport, and
- some potential or achieved benefits gained by addressing these problems.

Continuing from 1998

Survey of Current and Potential Users of the M2 Hills Motorway (ITS Sydney)

ITS was commissioned by Tollaust Pty. Ltd. and The Hills Motorway Ltd. to undertake a field study to identify the profile of current and potential users of the M2 Hills Motorway in 1998. The third and final part of the study was undertaken in 1999 which involved conducting a CATI (computer aided telephone interview) of a sample of car and heavy vehicle users in Sydney. The CATI survey aimed to gain an understanding of the current level of awareness and usage of the M2 Hills Motorway as well as the potential level of usage of the M2 of car and heavy vehicle users in Sydney.

Design and Implementation of a Vehicle Replacement System (ITS Sydney)

To enable bus and coach operators to optimise on their fleet replacement, we developed a software capability to plan the replacement of vehicles subject to cost minimisation and constraints on budget available, maximum average fleet age, compliance with accessible

transport (DDA) codes. Operators can use the software to undertake vehicle replacement over as many years as required, with options to select the amount of money to spend each year.

ITS International Bus and Coach Performance Benchmarking Program (ITS Sydney)

This is an on-going program launched by the Institute of Transport Studies in November 1995. There were 5 subscriptions received for the year 1998/99.

School bus routing (ITS Sydney)

This is an on-going project, and is related to a school bus routing project which was examined for Blue Ribbon Coaches in 1997. To identify school bus routing a spatial modelling, database and network optimisation capability built in existing TRANSCAD GIS is used to implement a decision support system for a real world school bus routing program. For any given pattern of student residential location and any proposed bus routes and associated bus stops, the system can calculate two important outputs:

i) Demand Level – 2 categories of demand can be calculated: the total and school specific. With the total demand level, a total number of students waiting at a particular bus stop are calculated regardless what schools students enrolled in. With the school-specific demand, the system can identify school-specific students waiting at a particular bus stop.

ii) Bus Routes – by using vehicle routing module available from GIS, the bus routes can then be calculated for a set of depots (represented by schools) and a set of pickup and delivery points (represented by bus stops with associated demand level).

Freight modal choice in Indonesia using disaggregate choice modelling (ITS Monash)

This is an on going project, and is related to the growth in Indonesia resulting in a large growth in freight demand. The project is undertaken by Olle Norojono, Samantha Taylor and Bill Young, and examines modal choice factors for freight movement on the Indonesian island of Java. Stated choice surveys have been undertaken to provide the data necessary for model development.

Measurement of driver behaviour and vehicle kinematics using an instrumented vehicle (ITS Monash)

This research is on going and is undertaken by Peter Daly it aims to examine on road vehicle kinematics and driver characteristics which may contribute to the development of a measure of traffic flow quality, improved road design, road and environment safety. In 1999 the instrumented vehicle was used to explore the implications for driver route choice behaviour of the CityLink tollroad. In addition, improved computer interfaces for downloading and analysing data from the instrumented vehicle were developed.

Modelling demand and parking management (ITS Monash)

This research is on going and is undertaken by Peter Daly and Bill Young and models urban travel on a city-wide scale using activity modelling approaches.

Implementation of Safe Routes to School in Australia (ITS Monash)

This project was undertaken by Geoff Rose for the Federal Office of Road Safety. It examined experience in each Australian State and Territory with the implementation of a road safety initiative focused on travel to and from school.

Other activities and projects

Handbooks in Transport (ITS Sydney)

David Hensher is appointed as volume and series editor for a series of Handbooks in Transport with Ken Button (George Mason University) by Elsevier Science Ltd. Three handbooks will be published under the Pergamon imprint over the next 3 years. The first of these handbooks is on Transport Modelling, the second is on Logistics and Supply-Chain and the third is on Traffic Control.

IATBR 2000 Conference (ITS Sydney)

David Hensher is the chair of the 9th International Association of Travel Behaviour Research Conference (IATBR 2000) which will be held in the Gold Coast in July 2000. Ann Brewer, Geoff Rose, Tu Ton, and Jenny King will also be involved in the planning and organisation of the Conference.

Bus and Coach Association of NSW Bulletin (ITS Sydney)

David Hensher will be contributing, quarterly, a one page titled 'Transport Research and Education' in the Bus and Coach Association of NSW Bulletin.

7. EDUCATION

ITS Sydney

The Education program at ITS Sydney includes:

- PhD program;
- Masters by Research Program
- Graduate transport & logistics management program;
- Certificate programs; and
- Executive short courses.

ITS offers a fully articulated set of programs in transport and logistics management education, as shown below. Note that articulation between programs is not automatic. An MPhil (Transport & Logistics Management) is also available as a research degree.

PhD program

Students in the PhD program at ITS (at the end of 1999) include:

Full-time

Chackrit Duangphastra (1997): Developing strategies for the ASEAN aviation sector post the 1998 economic downturn

Baojin Wang (1998): Development of risk taking modeling framework for road safety

Seu Cheng (1992): Interactive agency choices in domestic freight movements

Graduate transport management program

The transport management program includes the Master of Transport Management or Logistics Management (8 courses), the Graduate Diploma in Transport Management or Logistics Management (5 courses) and the Graduate Certificate of Transport Management or Logistics Management (3 courses).

Four web-based courses for the graduate program were introduced in January.

The graduate degrees in Logistics Management was introduced for the first time in Semester 2. This comprises the Master of Logistics Management, the Graduate Diploma of Logistics management and the Graduate Certificate of Logistics Management. A launch of the Logistics Management Program was held on 5 July with Professor Alan MacKinnon, Professor of Logistics, Heriot-Watt University, Edinburgh, U.K. as the Keynote Speaker.

There are currently over 80 students in the graduate program. 26 students graduated in 1999.

24 new Masters students and 18 new Graduate Diploma and 10 Graduate Certificate students enrolled in 1999. An orientation evening to welcome all graduate students to the Transport Management Program was held on 8 March.

Courses

ITS taught the following transport and logistics management courses in 1999:

Semester 1

- Transport Policy Workshop
- People, Work and Organisation
- Transport Economics and Management
- Transport Planning and Survey Methods
- Logistics Management
- Managing a Bus and Coach Business

Semester 2

- Strategic Planning for Transport and Logistics
- Tourism and Aviation Management
- Infrastructure Planning, Financing and Tendering
- Maritime Markets
- International Logistics
- Geographical Information Systems for Planning and Marketing
- Logistics Systems
- Supply Chain Management

Student awards

Levi Cardenas received the Institute of Transport Studies prize for excellence in full-time study in the MTM program. Daniel Hill and Kipa Maleva received the Chartered Institute of Transport Ken Hillyar award for best Year 1 student in the MTM program and Terry Lee-Williams received the Chartered Institute of Transport Sir Hudson Fysh award for best Year 2 student in the MTM program. Wade Hammond received the Australian Institute of Traffic Planning and Management prize for best student in the Graduate Diploma program.

The Industry Logistics Prize was awarded to Nathan Burkland.

The awards were presented at the Institute of Transport Studies annual presentation dinner on 26 November 1999 attended by students, alumni students, staff and supporters of the Institute.

Photo 1: Main Table at the 1999 ITS Annual Dinner
Standing (left to right) - Doug Dean, Professor David Hensher, Jock Murray, Jim Bosnjak OAM, Don Telford and Keith Campbell
Seated (left to right) - Cathy Dean, Johanna Hensher, Gloria Bosnjak and Fiona Telford

Photo 2: Levi Cardenas receiving the Institute of Transport Studies prize for excellence in full-time study in the MTM program from Jock Murray, Director-General, NSW Department of Transport.

Photo 3: Daniel Hill (left) receiving the Chartered Institute of Transport Ken Hillyar award for best Year 1 student in the MTM program from Tim Xenos, Chairman, Chartered Institute of Transport (NSW Section). Daniel shares this award with Kipa Maleva who was not able to attend the annual dinner.

Photo 4: Terry Lee-Williams (left) receiving the Chartered Institute of Transport Sir Hudson Fysh award for best Year 2 student in the MTM program from Tim Xenos, Chairman, Chartered Institute of Transport (NSW Section).

Photo 5: Wade Hammond (left) receiving the Australian Institute of Traffic Planning and Management prize for best student in the Graduate Diploma program from Robert Picone, President of the NSW Section of the Australian Institute of Traffic Planning and Management.

The Rail Access Corporation of NSW Scholarship

Abir Derbas who was awarded the *Women in Transport Management Scholarship* funded by Rail Access Corporation commenced the Master of Transport Management program in March 1999. This is a full scholarship for a woman to undertake the Master of Transport Management program. It covers all tuition fees and paid work during University holidays with the Rail Access Corporation. The scholarship was designed and developed by Ann Brewer with Rail Access Corporation in 1997 and 1998.

Certificate programs

Certificate of Transport Management (Bus/Coach)

The CTM was established in conjunction with the Bus and Coach Association (NSW) to provide managerial training for the bus and coach industry. It is the only program to meet the accreditation requirements under the NSW 1990 Passenger Transport Act.

In 1999 ITS conducted only one CTM course with an intake of 53 students.

Certificate of Coach Management

The Certificate of Coach Management (CCM) is specifically designed for coach operators accredited for long distance and tourist vehicle services (including overnight charter work).

In 1999, over 160 students completed the 4 day program. Due to demand, there were 3 CCM intakes in 1999.

Certificates of Logistics Management, Freight Management and Supply Chain Management

This management program first introduced in 1997 meets the needs of professionals involved in logistics, maritime, supply chain management, retail and freight transportation management. The program structure was revised in 1998 with the introduction of two new courses Certificate of Maritime Logistics and Certificate of Retailing Logistics.

An executive program in International Supply Chain Management was conducted over 5 days in July with an intake of 30 students. An executive program in Supply Chain Dynamics was conducted over 3 days in October with an intake of 24 students. A one day workshop on Lean Logistics was conducted in November 1999 for 10 students.

Student awards

In November, the CTM, CCM and CLM Certificate Presentation Dinner was held in conjunction with the Institute of Transport Studies end-of-year dinner.

The Bus & Coach Industrial Associations'- BCA Prize for the best student in the Certificate of Transport Management program, worth $250 in 1999, was awarded to Ian MacDonald and Kim Schmold.

1999 BHERT Award

ITS was awarded the 1999 Business Higher Education Round Table Award for outstanding achievement in collaboration in Education and Training for its quality partnership in training, education and research with the NSW Bus and Coach Association at BHERT's annual dinner and award evening at the Intercontinental on 18 November, 1999. The award was presented by Senator Nick Minchin, Federal Minister of Industry, Science and Technology. Prof. Gavin

Brown (Vice Chancellor), Prof. Ken Eltis (Deputy Vice Chancellor), Prof. David Siddle (Pro-Vice Chancellor of Research) and Prof. Don Napper of The University of Sydney were also in attendance.

Photo 6: BHERT Award

Short Courses and Workshops

Survey Methods and Data Collection

On 10 March, Peter Stopher ran a 1 day workshop on Survey Methods and Data Collection at ITS Sydney. It was attended by 17 participants.

Discrete Choice Modelling in Practice: Getting to know Limdep

On 3-5 July, Bill Greene and David Hensher ran a three day workshop on Discrete Choice Modelling in Practice: Getting to know Limdep. This course introduced the full range of choice methods (including multinomial logit, nested logit, HEV, mixed logit, multinomial probit and random parameter logit), and involved case studies and extensive laboratory hands-on activity. It was attended by 34 participants.

Winning Competitive Tenders

Rodney Swan ran a two day workshop on Winning Competitive Tenders on 14 September and 5 October. The workshop delivered an in-depth understanding and involvement of tendering and tender management process. It also outlined a step by step procurement process currently used by governments to gain private sector provision of such services. It was attended by 11 participants.

Maritime Markets

Over 5 blocks – 6 October, 13 October, 27 October, 3 November and 10 November, Trevor Heaver ran a course on Maritime Markets. The course was targeted to those with limited exposure to the industry and/or wishing to broaden their knowledge of the changing economic, commercial and policy conditions in the maritime industry. The course content included bulk and liner shipping, various services involved in ports and intermodal services, and the relationships of shipping enterprises with exporters, importers and logistic service providers. It was attended by 2 participants.

International Logistics

Over three blocks, 11-12 October, 30 October and 6 November, a course on International Logistics was conducted by Trevor Heaver. The course focused on an introduction to logistics in

international trades, specifically shipping and air freight. It also dealt with logistics from inland origin to final destination covering broad issues of system design and international transport. It was attended by 30 participants.

Transport Infrastructure

On 14 October, a one-day workshop on Transport Infrastructure was conducted by Roger Vickerman. The workshop focused on the role of transport infrastructure in economic development in the specific context of the European Union. It was attended by 15 participants.

Wider Economic Impacts of Transport Projects

On 15 October, Roger Vickerman ran a half-day workshop on the Wider Economic Impacts of Transport Projects. The workshop focused on a robust approach to transport appraisal to meet the needs of local industry, commerce, government and environmental interests. It was attended by 20 participants.

Supply Chain Dynamics

On 20-22 October, Doug Seeley conducted a three day workshop on Supply Chain Dynamics. This workshop delivered world class, state-of-the-art simulation technology, emphasising its power, flexibility and role in business decision making. It was attended by 24 participants.

Understanding Travel Behaviour

Dr Sean Doherty ran a half day workshop on An Activity Scheduling Process Approach to Understanding Travel Behaviour on 27 October. The workshop focused on the development and application of a new survey technique, CHASE (Computerized Household Activity Scheduling Elicitor), to meet the need to understand and forecast individual travel behaviour over longer periods of time and space, and how recent survey results are being used to develop a new approach to understanding and modelling travel behaviour. It was attended by 20 participants.

Applying Lean Thinking to your Supply Chain: A European Approach

Professor Peter Hines ran a one-day seminar Applying Lean Thinking to your Supply Chain: A European Approach on 17 November . The topics covered in the seminar included Lean Thinking: The Evolution, The central points of Lean Thinking, Introduction to Value Stream Mapping, Applying Value Stream Mapping into the Supply Chain and Value Stream Mapping Exercises. It was attended by 10 participants.

Distance Education

CTM (Bus and Coach) and CCM (Coach) Western Australia

In 1998 ITS introduced a distance education format for CTM and CCM in Western Australia with the full support of the Department of Transport (Western Australia) and Bus and Coach Association (Western Australia). Three workshops were conducted in Perth in 1999 with the participation of 40 students per workshop.

ITS Monash

The education program at ITS Monash includes:

- PhD program;
- Master of Engineering Science by research;
- Master of Engineering Science by coursework and minor thesis;
- Graduate Diploma in Transport and Traffic; and
- Short courses and workshops.

PhD program

John Cox graduated in 1999 with his theses entitled "Maximising the contribution of the Australian road transport system to national outcomes".

Students engaged in PhD research at ITS Monash (at the end of 1999) included:

Darryn Paterson: Predicting the duration and effects of freeway incidents

Tan Yan Weng (external): A study of parking movements in multi-storey parking systems

Master of Engineering Science by research

In 1999, three students commenced the Master of Engineering Science by Research:

Merle Chan: The effectiveness of road safety audit

Ed Chandra (external): Employment location choice in land use transport interaction

Saf Kabbara: Freeway travel time prediction using artificial neural networks

Jim Youngman is continuing his research on "A model for improving the delivery of field service support with applications to emergency services".

Postgraduate Degrees by coursework

In 1999, one student commenced the Masters by coursework program and one student commenced the Graduate Diploma in Transport and Traffic Engineering, while one student graduated in the Graduate Diploma program. There are currently 16 students enrolled in the Masters by coursework program and 2 students in the Graduate Diploma in Transport and Traffic Engineering program.

Three students also completed their minor thesis to graduate with their Master of Engineering Science (Coursework and Minor Thesis):

Aidan McGann: Monitoring safety in the movement of hazardous goods by road – An international review and NSW case study.

Jemina Macaulay: Prediction and measurement of the capacity of roundabouts

Craig McGeogh: Updating future year origin-destination matrices when using matrix estimation methods.

Courses

Subjects taught by ITS Monash staff included:

Semester 1

- Road Safety
- Transport Technology Assessment
- Project Management for Engineers

Semester 2

- Transport Policy
- Transport Network Models

Student awards

The following prizes were awarded to students:

- CMPS and F prize in Highway Engineering to Trent Milner, James Scully and John Susa
- Richardson prize in Transport to Colin Morgan
- VicRoads postgraduate award to Aidan McGann
- Turnbull and Fenner prize to Paul Murphy

Short Courses and Workshops

Traffic Engineering and Management Workshop

The Traffic Engineering and Management Workshop was held at the University of Sydney on 6-7 July. This is the second time the workshop has been held in Sydney, the first was in 1996. Thirty-five individuals from consulting, local and state government attended the workshop, which comprises formal sessions and hands-on workshop sessions. The formal sessions are on the fundamentals of traffic engineering while the hands-on workshops allow delegates to solve real traffic engineering problems. This year's workshop included significant contributions from Arup Transportation, Masson Wilson, Jamieson Foley and of course a major contribution from the Roads and Traffic Authority, NSW.

Accident Investigation & Prevention

In conjunction with industry experts including VicRoads, RACV, MUARC and local governments, a two day workshop on Accident Investigation and Prevention was held at Monash University on 22-23 November. The workshop was structured around a mix of technical sessions and case studies. It was attended by 50 participants.

Distance Education

Transport Management Course in Bus and Coach Operations

The Transport Management Course in Bus and Coach Operations was launched in March 1999 and now has more than 400 students enrolled. The program is offered by distance education with an introductory 'face-to-face' session at the beginning of each semester.

There are two streams of the course available to operators. One stream is for small operators with five or fewer buses operating school services and charter to those schools (within school hours) only. The regular course is for all operators who engage in charter, tour, or route services, or who have more than five vehicles. The subjects offered in the course are:

- Introduction to bus and coach operations; small operators
- Introduction to bus and coach operations; legislation, safety and maintenance
- Financial management
- Human Resource Management, and
- Marketing, planning and operations for bus and coach operations
- Marketing, planning and operations for bus operations
- Marketing, planning and operations for coach operations

Due to demand for entry into the Transport Management Course in Bus and Coach Operations, the first subject (Introduction to bus and coach operations) is being offered in intensive study mode at 5 locations throughout Victoria, namely, Melbourne, Horsham, Sale, Bendigo and Wangaratta. The intensive study mode provides an opportunity for students to complete a subject in a shorter period of time while the course content remains the same.

At the annual Bus Maintenance Conference, the Victorian Minister for Transport, The Hon. Robin Cooper presented completion certificates to the first graduates of the course, Mr John Usher and Mr Doug Thomas (See Photo 7). ITS also had a stand at the conference to provide delegates with information on the course (See Photo 8).

Photo 7: Minister for Transport, Hon Robin Cooper (second from right) and Program Director Samantha Taylor with Mr John Usher (right) and Mr Doug Thomas.

Photo 8: Samantha Taylor, Brenda OKeefe, Yvonne Correlje (left to right) at the ITS booth at the Bus Maintenance Conference, 28-29 June 1999.

Education Program in Parking Management

Bill Young continued development on the distance education program in parking management for the Parking Association of Australia. The program involves four subjects covering Introduction to parking, Parking management, Parking design & policy, and Parking technology & information collection.

Distance Education Postgraduate Program in Transport, Monash University

In 1999, final approval was obtained through Monash University for a new distance education postgraduate program in transport to be offered beginning in the 2000 academic year. The new program comprises three degrees. The Certificate in Transport and Traffic requires the completion of four postgraduate subjects, the Postgraduate Diploma requires eight subjects while the Master of Transport and Traffic requires 12 subjects. Articulation paths are available and an entry option will be available to students who have not completed a Bachelors Degree.

8. PUBLICATIONS

Staff disseminate research and policy work through a wide range of publications from books, journal articles, conference proceedings, working papers and project reports.

Books and book chapters

David Hensher and Ann Brewer's book *Transport; An Economics and Management Perspective* completed in 1998 was accepted for publication by Oxford University Press, Oxford.

David Hensher, Jordan Louviere and Joffre Swait's book *Stated Choice Methods and Analysis with Applications in Marketing, Transportation and Environmental Valuation,* completed in 1998 was accepted for publication by Cambridge University Press.

Tu Ton's book *GIS Applications* was completed in 1999.

Tony Richardson is writing a new book on *Travel Survey Methods*. This is a revision and re-write of his previous book on travel survey methods which will pay more attention to issues such as the treatment of non-response and missing data, the estimation of parameter variance using replication techniques, survey design issues associated with Stated Preference surveys, the design and conduct of long-distance travel surveys, the design and conduct of intercept surveys, the use of GIS in the conduct and analysis of surveys, and the use of new technologies such as GPS and the Internet.

Other books and book chapters include:

- Hensher, D.A. and Golob, T. (in Press) Telecommunications-Travel Interactions, in Mahmassani, H. (ed.) *Traveller Behaviour Research*, Pergamon Press, Elsevier Science, Oxford.
- Hensher, D.A. (in Press) Understanding travel behaviour, (invited occasional address, The University of Oxford, Hertford College, July 1998), in Preston, J. (ed) Whither Transport Studies, Avebury Press, UK.
- Louviere, J.J., Hensher, D.A. and Swait, J. (1999) Conjoint Methods in the Broader Context of Random Utility Theory Preference Elicitation Methods, in Herrmann, A., Huber, F. and Gustafsson, A. (eds.) *Conjoint Analysis*, Prentice Hall, Europe.

Journal articles

- Brewer, A.M. (1999) Environmental responsiveness in the bus and coach supply chain: The case of greenhouse gas emission production through improved energy and waste practices, *Journal of Public Transportation*, 2 (3), 55-77.
- Hensher, D.A. (1999) HEV Choice Models as a Search Engine for Specification of Nested Logit Tree Structure, *Marketing Letters*, 10(4), 333-343.
- Hensher, D.A. (1999) Road Pricing and Charging: A Commentary, *Traffic Engineering Journal*, 5(1), 34-38.
- Hensher, D.A. (1999) Bus-based Transitway or Light Rail? Continuing the Saga on Choice versus Blind Commitment, *Roads and Transport Research*, 8(3), September, 3-21.
- Hensher, D.A. and Golob, T.F. (1999) Searching for policy priorities in the formulation of a freight transport strategy: An analysis of freight industry attitudes towards policy initiatives, *Transportation Research E*.
- Hensher, D.A. and King, J. (1999) Parking Demand and Responsiveness to Availability, Pricing and Location in the Sydney Central Business District, *Transportation Research A*.

- King, J. and Hensher, D.A. (1999) How are urban bus fleets performing in reducing greenhouse gas emissions? The Australian experience, *Road and Transport Research*, 8(1), March, 3-11.
- Louviere, J.J., Meyer, R.J., Hensher, D.A., Carson, R., Hanemann, M. and Bunch, D. (1999) Combining sources of preference data, *Marketing Letters*, 10(3), August, 205-218.
- Taplin, J.H.E., Hensher, D.A. and Smith, B. (1999) Imposing symmetry on a complete matrix of commuter travel elasticities, *Transportation Research, 33B*, 215-232.
- Waters. W.G. and Hensher, D.A. (1999) Evolution and Revolution: the changing focus of regulation of the World's railways, *Japan Railway and Transport Review*, 22, 2-12, December.

Journal articles (forthcoming/in press/editorial consideration)

- Brewer, A.M. and Hensher, D.A. (in press) Distributed work and travel behaviour: The dynamics of interactive agency choices between employers and employees, *Transportation.*
- Brewer, A.M. (in press) Road rage: who, what, where and when?, *Transport Reviews.*
- Brewer, A.M. (in press) Time, place and distance: Gender differences in work and travel behaviour, *Gender, Work and Organisation.*
- Brewer, A.M. and Hensher, D.A. (editorial consideration) Identifying the Overarching Role of a Logistics Strategy in an Organisation's Strategic Focus.
- Daniels, R. and Hensher, D.A. (in press 2000) Valuation of environmental impacts of transportation projects: the challenge of self-interest proximity, Special issue of *Journal of Transport Economics and Policy, Small,K. (Editor)*.
- Hensher, D.A. (forthcoming) User Needs and Impact on Public Transport: Workshop 3 Report, *Transport Reviews*.
- Hensher, D.A. (forthcoming) Transport Economics: A Personal View, *Millenium Special Issue of Journal of Advanced Transportation*.
- Hensher, D.A. (in press 2000) A stakeholder assessment of data and modelling agencies in the urban passenger transport sector, *Journal of Transportation and Statistics.*
- Hensher, D.A. (forthcoming) The sensitivity of the valuation of travel time savings to the specification of the unobserved effects, *Special issue of Transportation Research E*.
- Hensher, D.A. (editorial consideration) Measurement of the Valuation of Travel Time Savings, *Special Issue of Journal of Transport Economics and Policy* (in memory of Michael Beesley).
- Hensher, D.A. and Button, K. (in press 2000) Transport Modelling: An Overview in Hensher, D.A. and Button, K. (Series and Volume eds), Handbook in Transport Modelling, Pergamon Press. Oxford.
- Hensher, D.A. and Duangphastra, C. (in press 2000) Interorganizational Support and Strategies for the ASEAN Aviation Sector: An Application of Canonical Correlation Analysis, *Journal of Aviation Management*.
- Hensher, D.A. and Greene, W.H. (under review) Specification and estimation of Nested Logit Model Models.
- Hensher, D.A., Louviere, J. and Hansen, D. (editorial consideration) The Use of Mixtures of Market and Experimental Choice Data in Establishing Guidelines for Evaluating Competitive Bids.
- Hensher, D.A. and Prioni, P. (editorial consideration) The Missing Link in Contract Performance Assessment: The Integration of a Service Quality Index into a Competitive Tendering Regime.
- Hensher, D.A., Reyes, A.J. (editorial consideration) Trip Chaining as a Barrier to the Propensity to Use Urban Public Transport.
- Louviere, J., Hansen, D. and Hensher, D.A. (editorial consideration) Forecasting organisational decisions: Obtaining better estimates of management decisions by combining market and experimental decision data (presented at the annual INFORMS Marketing Science Conference, INSEAD, Fontainebleau, France, 13 July 1998).

- Ogden, K., Russell, E.W., Taylor, S.Y. and Cox, J.B. (forthcoming) Refocusing Transport Reform *Business Council of Australia.*
- Prioni, P. and Hensher, D.A. (editorial consideration) Measuring service quality and evaluating its influence on the cost of service provision, *Journal of Public Transport.*
- Rose, G. (forthcoming) Simulated consulting a win-win experience in transport engineering education, *European Journal of Engineering Education*.
- Stopher, P.R. and Hensher, D.A. (forthcoming) Are more profiles better than less? Searching for parsimony and relevance in stated choice experiments, *Transportation Research Record*.
- Taylor, S.Y. and Ogden, K. (forthcoming) How productive are commercial vehicles?, *Journal of Transport Logistics.*
- Ton, T. and Hensher, D.A. (in Press) A predictive assessment of neural networks and discrete choice methods, *Transportation Research E*.

Journal articles (in progress)

- Funes, C., Ton, T. and Hensher, D.A. (in progress) A Vehicle Replacement Program with variable constraints for businesses and the total industry.
- Hensher, D.A. (in progress) Vehicle Type Choice.
- Hensher, D.A. (in progress) Towards an Integrated Strategic Urban Passenger Transport Modelling System.
- Hensher, D.A. (in progress) The Valuation of Travel Time Savings for Urban Car Drivers in New Zealand: Evaluating Alternative Model Specifications.
- Hensher, D.A. and Louviere, J.J. (in progress) Revisiting the Valuation of Travel Time Savings, allowing for Congestion and Uncertainty.
- Hensher, D.A., Louviere, J.J. and Wallis, I.P. (1999) The Valuation of Travel Time Savings for Car Drivers in New Zealand (For WCTR 2001, Seoul).
- Louviere, J.J., Hensher, D.A. and Stopher, P.R. (in progress) An Empirical Analysis of the Effect of Numbers of Choice Sets in Designed Choice Experiments.

Conference proceedings

- Brewer, A.M. and Hooper, P. (1999) Strategic alliances among international airlines and their implications for organisation change, *Proceedings of 8th WCTR, Antwerp, July 1998,* Pergamon Press, Oxford.
- Hensher, D.A. and Chow, G. (1999) Interacting agents and discrete choices in logistics outsourcing: a conceptual framework, *World Transport Research, Vol 3: Transport Modelling/Assessment (edited by Meersman, H., Van de Voorde, E. and Winkelman, W.),* Pergamon Press, Oxford, 365-376.
- Hensher, D.A. and Louviere, J.J. (1999) A comparison of elasticities derived from multinomial logit, nested logit and heteroscedastic extreme value SP-RP discrete choice models, *World Transport Research, Vol 3: Transport Modelling/Assessment, (edited by Meersman, H., Van de Voorde, E. and Winkelman, W.),* Pergamon Press, Oxford, 1-14.
- Lemas, B. and Young, W. (1998) (under review) A Knowledge based Integration of Conceptual and Detailed Design of Road Pavements, *Proceedings of the 19th ARRB Conference*, Sydney, December (CDRom).
- Louviere, J.J. and Hensher, D.A. (1999) Selecting major transport projects: the use of choice experiments, *Annual INFORMS Marketing Science Conference*, INSEAD, Fontainebleau, France, 13 July 1998.
- Louviere, J.J. and Hensher, D.A. (editorial consideration) Combining Preference Data, Resource Paper, *9th International Association of Travel Behaviour Research Conference*, Gold Coast, Queensland, 2-7 July, 2000.
- Paterson, D. and Rose, G. (1999) Dynamic travel time estimation on instrumented freeways, *CD-Rom Proceedings of the World Congress on Intelligent Transport Systems, Toronto*, Canada, 8-12 November.

- Paterson, D., Rose, G. and Bean, S. (1999) Improving Dynamic Travel Time Estimates for Melbourne's Drive Time System, *CD-Rom Proceedings of the Fourth International Conference of Intelligent Transport Systems, Australia*, Adelaide, 18 – 21 May.
- Richardson, A.J. (1999) A Survey Method for Cycle Networks – a Swiss Example, *Papers of The Australasian Transport Research Forum 23, Perth, September*, 443-457.
- Richardson, A.J. (1999) The Absolute Need for Creativity in Transport Planning, *Papers of The Australasian Transport Research Forum 23, Perth, September*, 959-976.
- Taylor, S.Y. and Button, K.J. (1999) Modelling Urban Freight: What Works, What Doesn't Work?, *City Logistics I, Proceedings of the First International Conference on City Logistics, Cairns, 12 – 14 July*, Taniguchi and Thompson (eds), 203-217.
- Taylor, S.Y. and Ogden, K.W. (1999) The reality of survey results: an urban goods movement case study, *World Conference on Transportation Research Society*, Paris.
- Ton, T. and Wang, B. (1999) Suitability of fuel efficiency as a criterion in passenger vehicle classification: An investigation of the classification capability of decision tree approach, *Papers of The Australasian Transport Research Forum 23, Perth, September*, 219-236.

ITS Working Papers

All Working Papers may be purchased from ITS.

ITS-WP-99-1 *Understanding Travel Behaviour: Some Appealing Research Directions* (David A Hensher)

Abstract This paper presents one researchers perception of selective emphases in the body of travel behaviour research which have had and/or may in the future have a non-marginal impact on the way that research activity is undertaken. Some of the contributions are well established and have moved from state of the art to state of practice; other efforts are relatively new and maturing in their role as paradigms of thought. The contributions can broadly be grouped into four classes of research: decision paradigms, in particular the interpretation of the choice process within a broad activity framework, and the recognition that agents making decisions do not always operate in a perfectly competitive market; releasing the analytical formalism of the choice/decision process from the restrictive IIA paradigm of the great majority of applied travel choice modelling - moving to nested structures, free variance and correlation among alternatives, random taste weights, accommodating unobserved heterogeneity and mixed 'logits'; combining sources of preference and choice data, including joint analysis of market and experimental choice data, interfaces between attitudinal and behavioural data, and generalising valuation to valuation functions; and advances in the study of the dynamics of traveller behaviour, especially the timing of change and its importance in establishing hurdle dates for forecasting traffic and revenue for infrastructure projects.

ITS-WP-99-2 *How are Urban Bus Fleets Performing in Reducing Greenhouse Gas Emissions? The Australian Experience* (Jenny King and David A Hensher)

Abstract The transport sector is a major contributor to greenhouse gas emissions. Although the bus operator is a small player in the emissions stakes, the entire life cycle emissions from the manufacture of buses and diesel fuel is a significant contributor to CO_2.The consequences of the move from manual to automatic buses is that we are seeing a noticeable increase in emissions, even though automatic transmissions are themselves becoming increasingly more environmentally friendly. This paper reviews the evidence in Australia based on a 1998 survey of over 1400 buses. The challenge is to find ways of reducing

CO_2 emissions of automatic buses as they replace manual buses in similar operational contexts without increasing the amount of emissions.

ITS-WP-99-3 *Valuation of Environmental Impacts of Transportation Projects: The Challenge of Self-Interest Proximity* (Rhonda Daniels and David A Hensher)

Abstract Notable progress has been made in valuing non-monetary benefits of transportation projects such as travel time savings, but we are struggling to identify monetary values at the individual project level for many environmental attributes such as changes in open space, noise, air quality, greenhouse gas emissions and amenity. The difficulty may be aligned to the idea of attribute proximity to the self-interest paradigm. The empirical findings presented here, based on stated choice experiments, suggest that environmental attributes that are *distant* in self-interest proximity such as open space are unlikely to be appropriately valued when mixed in a trade-off with attributes *close* in self-interest proximity such as travel time or reductions in local traffic *unless* noticeable gains in self-interest attributes accompany desirable levels of attributes defining environmental impacts. This finding has important implications for the design of empirical studies using stated choice methods for valuation.

ITS-WP-99-4 *Specification and Estimation of Nested Logit Models* (David A Hensher and William H Greene)

Abstract The nested logit model is currently the preferred extension to the simple multinomial logit discrete choice model. The appeal of the nested logit model is its ability to accommodate differential degrees of interdependence (i.e. similarity) between subsets of alternatives in a choice set. The received literature displays a frequent lack of attention to the very precise form that a nested logit model must take to ensure that the resulting model is invariant to normalisation of scale and is consistent with utility maximisation. Some recent papers by Koppelman and Wen (1998a, 1998b) and Hunt (1998) have addressed some aspects of this issue, but some important points remain somewhat ambiguous.

When utility function parameters have different implicit scales, imposing equality restrictions on common attributes associated with different alternatives (i.e. making them generic) can distort these differences in scale. Model scale parameters are then 'forced' to take up the real differences that should be handled via the utility function parameters. With many variations in model specification appearing in the literature, comparisons become difficult., if not impossible, without clear statements of the precise form of the nested logit model. There are a number of approaches to achieving this, with some or all of them available as options in commercially available software packages. This note seeks to clarify the issue, and to establish the points of similarity and dissimilarity of the different formulations that appear in the literature.

ITS-WP-99-5 *Regaining the Fundamentals* (Alastair Stone)

Abstract Transport policy and planning has relatively few but important fundamentals. Research has focused on marginal issues and not fundamentals. The paper reviews physical fundamentals, moves through economic and financial, then institutional arrangements, policy-making fundamentals, and finally takes a look into the future. Along the way conclusions are drawn that physical constraints narrow choice greatly; that the problem with growth as an objective is mainly in its definition as GDP; that pricing is under-utilised; and that the

use of transport as a tax base will become unacceptable. A review of decision-making fundamentals points to a need to change institutional arrangements to better reflect the trade-off between technological scale, creditworthiness and responsiveness to demand, and to counter balance the current power of supply institutions. Finally a new organisational model is proposed that meets the criteria of the framework of the fundamentals discussed in the paper. The model is called a Community Infrastructure Corporation, and works by placing control of supply primarily in the hands of those demanding service.

ITS-WP-99-6 *Conjoint Preference Elicitation Methods in the Broader Context of Random Utility Theory Preference Elicitation Methods* (David A. Hensher, Jordan J. Louviere and Joffre Swait)

Abstract This paper expands the domain of conjoint analysis techniques by placing them within the more general framework of random utility theory based stated preference methods.

ITS-WP-99-7 *Modelling Road Safety Trends and Predicting Road Fatalities in Australia* (Baojin Wang, David A. Hensher and Tu T. Ton)

Abstract Using data on road fatalities, registered motor vehicles and population from 1925 to 1997, two time series models for road safety have been developed to predict road fatalities in Australia for 2001 and beyond. We investigate the empirical validity of Smeed's Law as an explanation of road accident trends in Australia. The relationships among traffic hazard, personal hazard and population are found inadequate. To improve on the explanatory power of Smeed's empirical model, we explore the role of additional factors such as compulsory wearing of seat belts, road improvements and vehicle safety enhancements.

ITS-WP-99-8 *Parking Demand and Responsiveness to Supply, Pricing and Location in the Sydney Central Business District* (David A. Hensher and Jenny King)

Abstract This paper investigates the role of parking pricing and supply by time of day in whether to drive and park in the central business district (CBD). A stated preference survey of car drivers and public transport users was undertaken at a number of parking locations, public transit interchanges, and shopping centres in Sydney CBD during 1998. In the context of a current trip to the CBD, respondents were asked to consider six alternatives, including three parking locations in the CBD, park outside of the CBD with public transport connection to the CBD, switch to public transport, or forego that trip to the CBD. The three parking locations were defined by hours of operation, a tariff schedule, and access time to the final destination from the parking station. Data from the survey were then used to estimate a nested logit model of mode and parking choices, which was then used to simulate the impacts of supply-pricing scenarios on CBD parking share. The change in CBD parking share attributable to supply by time of day is less than 3 percent, compared to 97 percent attributable to parking prices.

ITS-WP-99-9 *Evolution and Revolution: the Changing Focus of Regulation of the World's Railways* (William G. Waters II and David A. Hensher)

Abstract This paper provides an overview and perspective on the regulatory changes sweeping through the world's railways. The review concentrates on railways in the relatively wealthy countries, primarily because they are the vanguard, where a century or more of management practice and government controls are undergoing change. The paper begins with comments on the nature of rail

technology and markets, the implications for government and public policy direction, and forces of change which have pushed railways internally and externally into new organizational and regulatory structures, most of which are still evolving. The latter part of the paper comments more specifically on changes taking place in several countries.

ITS-WP-99-10 *Suitability of Fuel Efficiency as a Criterion in Passenger Vehicle Classification: An Investigation of the Classification Capability of Decision Tree Approach* (Tu T. Ton and Baojin Wang)

Abstract Studies of the demand for automobiles where an emphasis is on the class of vehicle typically use a number of physical and performance attributes to group vehicles, treating them as if they are homogeneous in respect of a particular application. A most common application is the prediction of energy consumed and its conversion into greenhouse gas emissions. Since fuel efficiency, a major component of the calculation of CO2 emissions, has not been used as a classification criterion, it is unclear as to how suitable the existing vehicle classes are in studying the environmental impact of policies designed to impact on the demand for automobiles by class.

In addressing this issue, this paper employs classification and regression trees (CART) to identify the suitability of the existing vehicle classification procedure for energy-based applications. CART is a statistical procedure which uses a multi-sequential search algorithm to optimise the classification of a phenomenon and presents the results in the form of a decision tree – a significant departure from more traditional statistical procedures. The use of combination of exhaustive searches and computer intensive testing techniques in CART offers an attractive feature that can be used to relate fuel efficiency and other attributes in the definition of aggregated vehicles. Key findings on the similarities and/or differences between output from CART based classification model and current classification for a case study of New South Wales vehicle registration will be reported.

ITS-WP-99-11 *Measuring Service Quality and Evaluating its Influence on the Cost of Service Provision* (Paola Prioni and David A. Hensher)

Abstract The measurement of service quality and its incorporation in a model of a firm's cost efficiency and effectiveness remains a challenging empirical problem. From the perspective of an organisation, the emphasis should be on the role of service quality as an input which has a cost; from the users perspective, some attributes of service quality (which influence patronage and hence a firm's output) may have a user cost which is not passed on to the firm. In this paper, we develop an alternative way of incorporating service quality that makes this distinction. A combined revealed preference and stated preference model of service quality choice is developed which provides the set of indicators required to represent the user-based measures of service quality. These are embedded in a jointly estimated system of cost and demand equations. The service quality index (SQI) also provides, for the first time, an operationally appealing measure of service effectiveness to assist regulators in administering and monitoring a performance assessment regime.

ITS-WP-99-12 *Are More Profiles Better than Less? Searching for Parsimony and Relevance in Stated Choice Experiments* (Peter Stopher and David A. Hensher)

Abstract Transportation planners increasingly include a stated choice (SC) experiment as part of the armory of empirical sources of information on how individuals respond to current and potential travel contexts. The accumulated experience

with SC data has been heavily conditioned on analyst prejudices about the acceptable complexity of the data collection instrument, especially the number of profiles (or treatments) given to each sampled individual (and the number of attributes and alternatives to be processed). It is not uncommon for transport demand modellers to impose very stringent limitations on the complexity of an SC experiment. A review of the literature suggests that very little is really known about the basis for rejecting complex designs or accepting simple designs. Although it is appreciated that more complex designs provide the analyst with increasing degrees of freedom in the estimation of models, facilitating non-linearity in main effects and independent two-way interactions, it is by no means clear what the overall behavioural gains are to increasing the number of treatments. In this paper, we develop a complex design as the basis for a stated choice study, producing a fractional factorial of 32 rows. However we then truncate the fraction by administering 4, 8, 16, 24 and 32 profiles to a sample of individuals in Australia and New Zealand faced with the decision to fly (or not to fly) between Australia and New Zealand by either Qantas or Ansett under alternative fare regimes. Statistical comparisons of elasticities (an appropriate behavioural basis for comparisons) suggest that the empirical gains within the context of a linear specification of the utility expression associated with each alternative in a discrete choice model may be quite marginal.

ITS-WP-99-13 *Getting Planes off the Ground: Key Concepts and Issues in Airport Capacity Planning and Management* (K. Raguraman)

Abstract With the development of wide-bodied jumbo aircraft, the commercial air transport industry was heralded into a new age. Significant economies of scale were achieved and with the decline in operating costs, fares also came down causing the demand for air travel to mushroom. The airlines have been able to respond well to this growing market, expanding their networks and offering higher frequencies to major airports with the use of large aircraft. On the other hand, the major airports, despite efforts to increase capacity, have experienced difficulty keeping up with this growth and many have succumbed to serious problems of congestion and delays. Airports are made up of many operational areas which are interlocked with one another, and the effective planning and management of capacity can begin only after an understanding of this interacting system. The paper seeks to provide a comprehensive and integrated treatment of this important issue using a systems approach. Notions of airport capacity are first examined conceptually and this is followed by a critical analysis of the sources of delay and their abatement measures. Efforts in the past have been directed largely at expanding capacity but this is now becoming increasingly difficult due to growing concern with the adverse impacts on the environment and quality of life of communities in the airport vicinity, especially in the cities of developed countries. With the lack of community support, it is likely that airports will resort to more demand-based measures but this will negatively affect the potentially vibrant growth of the industry.

ITS-WP-99-14 *The Missing Link in Contract Performance Assessment: The Integration of a Service Quality Index into a Competitive Tendering Regime* (David A. Hensher and Paola Prioni)

Abstract Over the last two decades the bus industry in many countries has been involved in a process of economic deregulation, competitive regulation and privatisation. Among the different policy practices designed to increase competition, competitive tendering represents a widespread policy intervention. Although there is extensive acceptance of competitive tendering, the focus has been on cost efficiency and cost effectiveness designed to identify the mix of inputs used

to produce a given level of output at the lowest cost, where output is produced services (eg vehicle kilometres) on the efficiency measure and consumed services (eg passenger kilometres) on the effectiveness measure.

Regulators have been singularly unsuccessful in developing a robust specification of service quality levels, and have come into criticism that the focus of economic reform has concentrated too much on saving money at the expense of preservation and enhancement of service levels. The definition of service level has tended to ignore the quality of service, limiting the specification of a predetermined level of service to simple physical measures such as vehicle kilometres and passengers carried. In this paper we develop a method of filling in the missing link in the specification of contract performance – service effectiveness – which measures the effectiveness of a service in satisfying passengers.

ITS-WP-99-15 *A Survey Method for Cycle Network – A Swiss Example* (A. J. Richardson)

Abstract The development of on-road and off-road cycle networks within Australian cities has seen cycling become more of a mainstream mode of transport for a variety of trip purposes. To support this new position, surveys of cycle travel patterns need to be conducted using state-of-the-art professional survey techniques. This paper will describe one such survey conducted on the Swiss Veloland Cycle Network, which used an intercept survey of cyclists at various sites on the network. Three survey techniques were employed; a full count of cyclists at each site, a short trackside interview with a random sample of passing cyclists at each site, and a more comprehensive self-completion questionnaire which sampled cyclists were given to complete and return by post after their trip had finished.

The paper will outline the basic methodological requirements of all intercept surveys. It will then describe the techniques used in the conduct of the Veloland survey, in the development of weighting techniques, including non-response weights, in the simplified GIS representation of the survey results, and in the estimation of system-wide usage of the network from the data obtained at the survey sites.

While the Veloland survey was for a national network of cycling routes, it will be proposed that the same survey techniques can be applied to metropolitan cycle networks in Australian cities.

ITS-WP-99-16 *Modelling Urban Freight: What Works, What Doesn't Work?* (Samantha Y Taylor and Kenneth J Button)

Abstract There are now numerous models that seek to explain urban freight patterns. Many of these models are for short-term policy but others are used for long-term planning. This paper looks at the alternative approaches that are being used for planning based modelling. Some places, such as Portland Oregon, use a relatively pragmatic approach, other cities have adopted more academic approaches. The former have particular advantages in terms of data requirements. Much depends upon the nature of the overall policies being reviewed and these differ considerably between cities. In Europe for example, there is a tendency to focus on 'public' distribution centres at the outskirts of cities.

ITS-WP-99-17 *Improving Dynamic Travel Time Estimates for Melbourne's Drive Time System* (Darryn Paterson, Geoff Rose and Steve Bean)

Abstract Vic Roads Drive Time is an operational ITS system that dynamically calculates travel times on Melbourne freeways and conveys them to motorists in real time on roadside Changeable Message Signs. While the system has gained acceptance from users, it has a tendency to predict low and high travel times in the lead up to and decline from peak periods respectively. This paper presents a new algorithm for predicting freeway travel times based on work commissioned by Vic Roads. The new algorithm has the ability to be used in any traffic situation between any two points. It also has the ability to account for the relative speeds and densities of vehicles within the traffic stream. Calibration and field testing of the enhanced algorithm has indicated that substantial improvements in travel time prediction can be achieved when compared to the existing system.

ITS-WP-99-18 *"Simulated Consulting": A Win-Win Experience in Transport Engineering Education* (Geoff Rose)

Abstract Students undertaking a final year elective subject in Transportation Planning at Monash University in Melbourne, Australia, were given the opportunity to work on a practical project for which there was an interested outside 'client'. From the student's perspective, this was essentially a 'simulated' consulting project which focussed on transport planning issues faced by the City of Port Phillip, an inner metropolitan municipality in Melbourne. The overall experience, from everybody's perspective, proved to be so positive that the model for the project will be used in the course in future years. This paper has been written to inform other engineering educators of how the project was implemented and to highlight some of the educational issues which this type of experience raised. Of particular interest to educators are issues associated with the functioning of some of the student groups in the project and the opportunities provided by projects of this nature to establish strong industry links.

Project reports

Determination of Passenger Potential Associated with a Regional Airline Hub at Canberra International Airport, Report for the ACT Government. (Hensher and King).

M2 Hills Motorway: User Report – Part II, Report for The Hills Motorway Ltd. (King and Hensher).

M2 Hills Motorway: User Report – Part III, Report for The Hills Motorway Ltd. (King and Hensher).

Parking Demand and Responsiveness to Availability, Pricing and Location in the Sydney Central Business District, Report for Secure Parking Ltd. (Hensher and King).

Shiftlength and Rostering: Recommendations for a large temporary workforce for the Olympic Games, Report for Cumberland Health and Research Centre (Brewer).

ITS International Bus and Coach Performance Benchmarking Program 1997/98: Summary of Results, Report for members of the ITS International Bus and Coach Performance Benchmarking Program 1997/98 (King and Hensher).

Survey of The University of Sydney's Key Stakeholders' Views on Environmental Issues, Report for The Environment Advisory Committee, The University of Sydney (Hensher and King).

Review of Freight Transport Chain Case Studies, Report for AUSTROADS National Strategic Research Program (NSRP) (Taylor).

A Review of Policies and Practices Regarding the Transport of Dangerous Goods Through Tunnels, Report for Transurban, Melbourne (Taylor).

9. INDUSTRY PARTICIPATION

Conferences chaired

- Chair, Conference session on Public Transport and the Environment, Australian Bus and Coach Conference, Hobart, 14-17 March (Hensher)
- Session Chair, Conference session on Changing Corporate Culture, Leading Women Conference, Seymour Centre, The University of Sydney, 11 March (Brewer)
- Session Chair, Forum on Traffic Needs and Urban Design in the Southbank Precinct, Transport Branch of Institution of Engineers (Australia), Melbourne, 12 May (Taylor)
- Conducted Workshop, Gaining an Effective Stakehold in Tomorrow's Organisation, GlaxoWellcome, September (Brewer)
- Executive Chair, Workshop on User Needs, 7th International Conference on Competition and Ownership of Land Passenger Transport, Cape Town, 20-23 September (Hensher)

Unpublished conference and seminar presentations

- China's maritime education and training towards the 21st Century, Symposium on The Next Two Years – Development of Maritime Training in our Region, Canberra, 11 December, 1998 (Shao)
- Keynote paper, A bus-based transitway or light rail? Continuing the saga on choice versus blind commitment, Special presentation to politicians and government administrators hosted by Bus and Coach Association, New Zealand, Logan Quality Inn, Auckland, 11 March (Hensher)
- Invited paper, The changing of guard, Australian Bus and Coach Association Conference, Hobart, 14 - 17 March (Brewer)
- Understanding strategic business planning, Coca Cola Amatil Conference on Corporate Strategy, Sydney, 21 June (Brewer)
- Invited presentation, Transport and Telecommuting, Transport Panel, The Institution of Engineers, Australia, Sydney, June (Brewer)
- Progress of the Transport Management Course in Bus and Coach Operations, Bus Maintenance Conference, Melbourne, 28 - 29 June (Taylor)
- Invited address, Transport and logistics education, CIT (Chartered Institute of Transport), 14 July (Hensher)
- Invited presentation, Service quality indicators, Bus and Coach Association of NSW Committee, BCA(NSW), 23 July (Prioni and Hensher)
- Invited presentation, Vehicle Replacement System, Bus and Coach Association of NSW Committee, BCA(NSW), 23 July (Funes)
- Invited presentation, Service quality indicators, Westbus Management Committee, Hilton Sydney Airport, 24 July (Hensher)
- Invited presentation, Service quality indicators, Special Forum of all Bus Operators, BCA(NSW), 27 July (Hensher)
- Invited presentation, Service quality indicators, John A Gilbert, Novotel Brighton Beach, Sydney, 30 July (Hensher)
- Commentary on 'Future Options', Road Pricing and Taxation Seminar, Adelaide, September (Taylor)

- Freight Movements in Australia: Results through a pragmatic approach, University of California, Irvine, USA, October (Taylor)
- Freight Transport in the Context of the Supply Chain, International Transport and Logistics; Master of Public Policy, George Mason University, Virginia, USA, November (Taylor)
- Revealing the safety of the road environment from driver responses: Development of an indicator of perceived safety, 21st Conference of Australian Institutes of Transport Research, The University of Queensland, Brisbane, 8-10 December (Wang)
- Object-oriented agent based model of traffic flow, 21st Conference of Australian Institutes of Transport Research, The University of Queensland, Brisbane, 8-10 December (Ton)

Conference and seminar attendance

- Symposium on The Next Two Years – Development of Maritime Training in our Region, Canberra, 11 December 1998 (Shao)
- Australian Bus and Coach Association Conference, Hobart, 14 – 17 March (Brewer and Hensher)
- Fourth International Conference of Intelligent Transport Systems, Australia, Adelaide, 18 – 21 May (Paterson, Rose and Young)
- Workshop on Motorcycling Issues, The Victorian Motorcycle Advisory Council (VMAC), VicRoads, Kew, 8 June (Daly)
- Coca Cola Amatil Conference on Corporate Strategy, Sydney, 21 June (Brewer)
- Bus Maintenance Conference, Melbourne, 28 – 29 June (Correlje, O'Keefe and Taylor)
- First International Conference on City Logistics, 12 – 14 July (Taylor)
- 23rd Australasian Transport Research Forum, Perth, 29 September – 1 October (Richardson and Ton)
- 7th International Conference on Competition and Ownership of Land Passenger Transport, Cape Town, 20 – 23 September (Hensher)
- 21st CAITR, The University of Queensland, Brisbane, 8 – 10 December (Tu, Wang)

Guest Lectures

Samantha Taylor was a guest lecturer in the Transport and Logistics Certificate Course ran by Monash University's Department of Information Systems (3 hours).

Media

- David Hensher was interviewed by Radio NZ, TV3 NZ and Suburban Newspapers Auckland on 11 March on his address to politicians and transport administrators on the challenges facing public transport.
- David Hensher provided advice to ABC's Lateline Program on 29 March on their program with the theme – Future of the Car.
- Tu Ton met with the Prime Minister of Vietnam in Sydney on 29 March.
- Peter Stopher was interviewed by Channel 9 WIN-TV in Townsville on his public talk on Travel Demand Modelling which was newscasted on May 12.
- David Hensher appeared on Lateline on 8 April on the theme – Future of the Car.
- Chackrit Duangphastra met with the Crown Prince Maha Vajiralongkorn of Thailand on 21 April.
- David Hensher was interviewed by 2BL and 2GB on the Treasury's proposal to increase public transport fares by 25% on 10 June.

- David Hensher was involved in a 40 minute discussion on the Future of Transport on Radio National on 21 June.
- David Hensher was interviewed by ABC Radio National Earthbeat program discussing the future of transport in our cities on 5 July
- David Hensher was interviewed by 2BL on the Sally Loane program on the Safety of the rail system on 6 August.
- David Hensher, Baojin Wang and Tu Ton's work on Road Tolls was a lead article on page 4 of Sydney Morning Herald and Newcastle Herald on 11 August.
- David Hensher was interviewed by ABC Drive time on the plummeting road toll on 12 August.
- David Hensher was interviewed by Robyn Moore of Sydney Times on traffic congestion in Sydney on 16 September.
- David Hensher was interviewed by Daniel Dasey of Sun Herald on the success of the M2 on 16 September.
- Chackrit Duangphastra met with the Prime Minister of Thailand on 9 October.
- Chackrit Duangphastra met with the Minister of University Affairs of Thailand on 19 December.

Other

- Ann Brewer was a facilitator at the Faculty's Strategic Thinking Workshop, 4-5 May.

10. INDUSTRY LINKAGES

Other activities by ITS which contribute to industry and community linkages include positions in conference organisations, international committees and editorial positions, as well as overseas visits and public lecture series.

Positions

ITS staff hold a number of positions in local and international research organisations in the transport industry.

Conference organisation

- Member, Organising Committee, 9th International Association of Travel Behaviour Research (IATBR), Year 2000 Conference (Brewer, Daly)
- Chair, 9th International Association of Travel Behaviour Research (IATBR), Year 2000 Conference (Hensher)
- Member, International Technical Committee, Civil & Environmental Conference, New Frontiers and Challenges, Thailand (1998-1999) (Hensher, Young)
- Organising Secretary, 9th International Association of Travel Behaviour Research (IATBR), Year 2000 Conference (King)
- Member, Scientific Committee of the 9th International Association for Travel Behaviour Conference, Year 2000 Conference (Rose, Ton)

International positions

- Reviewer, University of British Columbia, Hampton Research Scholarship Committee (Brewer)
- Member, US Transportation Research Board Committee on Telecommunications and Travel Behaviour (Brewer)
- Member, World Conference on Transport Research Society (Hensher, and Taylor)
- Founding member, US Transportation Research Board Committee on Traveller Behaviour and Values (Hensher)
- Member, US Transportation Research Board Committee on Travel Forecasting (Hensher)
- Immediate Past President, International Association for Travel Behaviour Research (Hensher)
- International Vice-Chairman, World Conference on Transport Research Scientific Committee (Hensher)
- Member, National Research Council Transportation Research Board Urban Goods Movement Committee (Taylor)
- Secretary, Special Interest Group on Urban Goods Movement, World Conference on Transportation Research (Taylor)
- Member, US Transportation Research Board Committee on Citizen Participation in Transportation Planning (Underwood)
- Member, Air Transport Research Group (Hensher)
- Member, International Advisory Committee, Portland Metropolitan Area Commodity Flow Study (Taylor)
- Fellow, Chartered Institute of Transport, United Kingdom (Young)
- Fellow, Institute of Transportation Engineers, U.S.A. (Young)

Australian positions

- Member, The University of Sydney Selection Committee, Pro-Vice Chancellor CHASS (Brewer)
- Member, The University of Sydney Faculty Postgraduate Courses Working Party (Brewer)
- Member, The University of Sydney Steering Group for Academic Entrepreneuring (Brewer)
- Member, The University of Sydney Budget Advisory Committee (Central Committee) (Brewer)
- Core Member, The University of Sydney Selection Committee in Science, History, Education and Mathematics (Brewer)
- Member, Logistics Management Association (Brewer)
- Chair, ITS Logistics Management Group (Brewer)
- Secretary, ITS Alumni Association (Coulson)
- Member, Institute of Transportation Engineers (ITE) Australia and New Zealand Section (Daly and Taylor)
- Convenor, Monash Student Chapter, Institute of Transportation Engineers (ITE) (Daly)
- Member, Chartered Institute of Transport (Bendall, Brewer, King and Young)
- Member, The University of Sydney Faculty Restructuring Working Party (Hensher)
- Member, The University of Sydney Environment Advisory Committee (Hensher)
- Member, Peer Review Committee for Strategic Transport Plan for NSW (Hensher)
- Member, Department of Urban Services, ACT Territory Plan Review for Strategic Transport Plan for Integrated Land Use and Transport Planning (Hensher)
- Member, Transport Data Centre, Technical Advisory Committee, NSW Department of Transport (Hensher)
- Member, Transport Research Centre (RMIT University) Advisory Committee (Hensher)
- Member, The University of Sydney Department of Marketing Advisory Committee (Hensher)
- Member, The University of Sydney Faculty of Economics, Faculty Management Advisory Committee (Hensher)
- Member, The University of Sydney Faculty of Economics, Board of Postgraduate Studies (Hensher)
- Member, The University of Sydney Faculty of Economics, Research Committee (Hensher)
- Member, Australian Capital Territory Transport Reform Advisory Group (Hensher)
- Member, The University of Sydney Committee to Review and Select Key Centre Applicants for Federal Assessment, February-March (Hensher)
- Member, Advisory Committee of the Australian Retailing Committee (Hensher)
- Corresponding Member, National Committee on Transportation Engineering, Institution of Engineers, Australia (Rose)
- Member, Association of Professional Engineers, Scientists and Managers Australia (Taylor)
- Member and Past Chair, Transport Branch Committee of Institution of Engineers Australia (Victorian Division) (Taylor)
- Member, National Committee on Transportation Engineering, Institution of Engineers, Australia (Taylor)
- Member, Reference Group, Freight Planning Methodology, Department of Infrastructure, Melbourne (Taylor)
- Member, Faculty of Engineering Board, Steering Committee (Young)
- President, Australian Committee, Institute of Transportation Engineers (Young)
- Member, Advisory Committee, Transport Research Centre, Royal Melbourne Institute of Technology (Young)
- Member, Parking Association of Australia (Young)
- Member, Monash University Department of Civil Engineering Management Committee (Young)
- Chair, Monash University Advisory Committee on People with Disabilities (Young)
- Member, Monash University Discipline Committee (Young)
- Member, Monash University Education Committee (Young)

- Chair, Monash University Faculty of Engineering, Academic Progress Exclusion Committee (Young)
- Fellows of the Chartered Institute of Transport (Hensher, Young)

Editorial positions

David is Associate Editor of *Asia Pacific Journal of Transport*, Area Editor of *Transport Reviews*; and is on the editorial boards of *Transport Policy*; *Transportation*; *Transportation Research*; *International Journal of Transport Economics*; *Logistics and Transportation Review, Transportation Research Part E* (from 1997); *Journal of Transport Economics and Policy; Transportation Planning and Technology*; *Journal of Retail and Consumer Services, and Journal of Transport and Statistics.* David has been appointed volume and series Editor for Elsevier/Pergamon Handbooks in Transport.

Bill Young is an Associate Editor of *Transportation.*

Geoff Rose is Editor-in-charge of *Transport Engineering in Australia*.

Reviews of papers

Staff reviewed papers for a wide range of transport journals and conferences.

Ann Brewer refereed papers for *Transportation Research F, Transportation Research A & B, Australian Economic Review and Journal of Transportation.*

David Hensher refereed papers for *Transportation Research, Journal of Transport Economics and Policy, Transport Reviews, Journal of Transportation and Statistics* and special issues of transport journals for the *International Association for Travel Behaviour Research.*

Tony Richardson refereed papers for *Handbook 1: Transport Modelling.*

Geoff Rose refereed papers for *Handbook 1: Transport Modelling and Road* and *Transport Research*.

Tu Ton refereed papers for *Transportation Research and Transport Reviews*.

Samantha Taylor refereed papers for *Handbook 1: Transport Modelling,* and *Transportation Research D.*

Seminar Series and Policy Workshops

ITS Research Seminar Series (ITS Sydney)

A weekly Research Seminar Series from 16 February to 18 May were organised by ITS Sydney. The series featured the following presentations:

- Global Logistics Hubs: The Case of Singapore, 16 February, K. (Ragu) Raguraman
- Empirics and Modeling in Logistics and Supply Chain Management, 23 February, Jay Sankaran
- Household Activities, Lifecycle & Role Allocations, 9 March, Peter Stopher
- Road to Sustainability: Singapore's world class transport system plan, 23 March, K. (Ragu) Raguraman
- Modeling Multipurpose Shopping Trips, 30 March, Harmen Oppewal
- Nested Logit Model Estimation: Clarifying the Rules for Model Specification, 6 April, David Hensher
- Developing Strategies for the ASEAN Aviation Sector Post the 1998 Economic Downturn, 20 April, Chackrit Duangphastra
- Inferring Perceived Safety Index from Driver Responses, an Approach to Revealing Safety on Roads: A Conceptual Framework, 18 May, Baojin Wang
- Using a Decision Tree Approach in Handling Mission Values: A Case for Classifying Incomplete Vehicle Records in NSW Motor Vehicle Registration Database, 22 June, Tu Ton

Transport Policy Public Lecture Series (ITS Monash)

The Transport Policy lecture series was offered again in the first semester thanks to sponsorship provided by the Department of Infrastructure and the RACV. The series titled "Transport at the Crossroads: Key Issues at the Start of the Millenium" featured the following presentations:

- Who Pays and How? Transport Implication of Tax Reform, 3 May, Professor Ken Ogden (RACV), Mike Fitzpatrick (Hastings Funds Management)
- Transport Investment and Economic Development: Imperatives and Constraints, 10 May, Dr John Paterson (Department of Infrastructure), Professor Ian Lowe (Griffith University)
- Safety, Productivity and Mobility: Finding the Balance, 17 May, Professor Claes Tingvall (Accident Research Centre, Monash University), Jim Stevenson (National Road Transport Commission)
- Technological Revolution: Smart Solutions at Work Internationally, 24 May, John Collins (ITS America), Gerry Conover (Ford Motor Company), Russell Shields (Navigation Technologies), Dr Max Lay (Sinclair Knight Merz)
- Handing Over the Baton: The Private Sector Comes to the Party, 31 May, Kim Edwards (Transurban CityLink), Jim McMeckan (Transport Reform Unit, Victorian Treasury)

Maintaining industry and international contacts

Overseas & Interstate Visits

Baojin Wang visited the CHELBI Engineering Consultants, Inc., a leading transport consultant company in China; jointly founded by Louis Berger International Inc. of the United States and the Ministry of Communications of China, on 7 October. He met the General Manager, the Deputy General Manager and Key Engineers. He introduced to them the postgraduate degrees that ITS offers and transport research that ITS is conducting.

David Hensher visited Cape Town, South Africa in September.

Ann Brewer travelled to Perth in November to deliver the Western Australia Certificate of Transport Management.

Tu Ton visited Blue Ribbon Coaches at Maitland, in March.

Samantha Taylor spent three months in the USA from October to December. During this time she visited the University of California (Irvine, Berkeley and Davis), Federal Highway Administration in Washington DC, Cambridge Systematics in Oakland and George Mason University in Virginia. She presented a seminar on goods movement at ITS Irvine and a lecture on freight and logistics to students in the Master of Public Policy degree at George Mason University. Samantha also worked with a variety of academics at George Mason University, reviewing the relationship between telecommunications, transportation and travel behaviour. A working paper on this topic will be published shortly.

Visitors

Professor Ruiqing Shao, a professor in maritime economics, and head of the Department of Finance and Accounting at Shanghai Maritime University is visiting ITS Sydney for a year from September 1998. Professor Shao is also vice chairman of the Accounting Association of Communications of China. He has given lectures and has been involved in research work in maritime finance and accounting for sixteen years. He has published eight books and more than sixty papers in Chinese in the maritime financing and accounting areas. During his visit Professor Shao was undertaking a research which focuses on the investing and financing environment in international shipping. He attended and presented a paper entitled "China's Maritime Education and Training Towards the 21st Century" at the Symposium "The Next Two Years – Development of Maritime Training in our Region" held by the Commonwealth Department of Transport and Regional Services on 11 December, 1998. He also contributed to ITS' Working Paper Series with a Working Paper on Multi-level fuzzy synthetic evaluating research on the international shipping investment environment.

Dr. K. Raguranam, a senior lecturer at the Department of Geography and principal researcher at the Centre for Transportation Research, National University of Singapore visited ITS Sydney for six months from November 1998. During his visit Ragu undertook three research projects. One was on the corporate history of Singapore Airline, looking at how it has transformed itself from a small fledging airline to one of the world's most profitable carrier with a special interest in understanding how it balances social and economic objectives in an highly volatile and tightly regulated business environment. The second project was on sustainable urban transport system which will involve trying to understand the multiple dimensions of this concept and undertaking a comparative analysis of policies and measures in various cities directed at achieving sustainability. The third project was on global logistics and transportation. Ragu gave a seminar on "Global Logistics Hubs: The Case of Singapore" and "Road to Sustainability: Singapore's World Class Transport System Plan" as part of ITS' Research Seminar Series, worked on some papers in the areas of logistics management, air transport policy and tourism management and was involved in the Transport Policy Workshop during his visit at ITS.

Professor Kenneth Button, The Institute of Public Policy, George Mason University, Virginia visited ITS Monash in January. He was in Australia to present a paper to the Institution of Engineers on 'Transport Infrastructure and Economic Development' and to meet with David Hensher at ITS Sydney to plan the Elsevier Handbooks in Transport.

Peter R. Stopher, Louisiana Land & Exploration Co. Distinguished Professor, Professor of Civil and Environmental Engineering and Coordinator for Transportation Engineering at Louisiana

State University, visited ITS Sydney from February to May, as the 1999 ITS Visiting Professor. During his visit, Peter was running the graduate subject in Transport Planning and Survey Methods. He also conducted a number of workshops, presentations and talks during his stay at ITS – a seminar on Activity Analysis to ITS staff on March 9, a one-day workshop on Survey Methods and Data Collection on March 10 in Sydney and on April 9 in Perth, a half-day seminar on Transport Data Needs and Methods to the NSW Department of Transport on March 25, a one-day workshop on Survey Methods for the WA Department of Transport in Perth, a two-hour talk on transport planning research to the Victoria Department of Infrastructure, a public lecutre in Townsville on Travel Demand Modelling and a presentation to the ITS Advisory Board on Travel Demand Modelling. He was also working on research related to Stated Preference Methods with David Hensher.

Jay Sankaran, Senior Lecturer in Operations Management at the Faculty of Business and Economics, the University of Auckland visited ITS Sydney from February to April while on sabbatical leave from the University of Auckland. During his visit, Jay ran an intensive 4 week course on Logistics Management. He also gave a seminar as part of ITS Research Seminar Series on Empirics and Modelling in Logistics and Supply Chain Management.

Associate Professor Chakkrit Kanok-kantapong, Department of Civil Engineering, Prince of Songkla University, Thailand visited ITS Monash for 7 weeks from 28 March to 14 May. The visit was funded as part of the Thailand-Australia Science and Engineering Assistance Project (TASEAP). His visit focused on the Application of Modern Traffic Management Systems and Transport Planning Techniques to Thailand.

Dr Paola Prioni, visited ITS Sydney from May 1998 to August 1999. After obtaining her PhD in Economics at the University of Zurich in February 1998, she joined ITS under a Post-Doctoral scholarship to work in the area of public transport costs and service quality. During her stay, she developed a revised cost model for the local bus industry in NSW with David Hensher; which involved the measurement of bus service quality and its incorporation in a model of a firm's productive efficiency. She also co-authored a paper based on this research at the 6th International Conference on Competition and Ownership in Land Passenger Transport held in Cape Town in September.

Charlene Rohr, Project Manager, Hague Consulting Group, Cambridge, visited ITS Sydney on 22 March to discuss developments in the estimation of stage 1 of the new Sydney Travel Model.

AnneMarie Rodenhius, a civil engineering and management student from the University of Twente, Enschede, The Netherlands, visited ITS Sydney to work as a Visiting Research Assistant from 30 August to 11 January. During her stay at ITS, AnneMarie worked with Tu Ton, Carlos Funes and Kirk Bendall on the Transport and Environment Strategy Impact Simulator (TRESIS). She worked on the World-Wide-Web-Documentation on Tresis, creating strategies and documenting which variables, models, assumptions, etc. will be used when this strategy is implemented in Tresis. She also wrote a report on the results of her stay at ITS.

Professor Roger Vickerman, Jean Monnet Professor of European Economics, Director of the Centre for European, Regional and Transport Economics and Head of the Department of Economics at the University of Kent at Canterbury, visited ITS Sydney for 6 weeks from early October 1999. During his visit Roger convened two workshops, 'Appraising the Wider Economic Impacts of Transport Projects' and 'Transport Infrastructure and Economic Development in the European Union' to practitioners in government and private sector and also to the graduate students at ITS. He also presented a research seminar on Evaluation methodologies for transport projects in the United Kingdom: dealing with multi-modal questions. The latter forms the topic of an ITS Working Paper which Roger also worked on while on his visit. He also gathered information for potential Australian case studies including metropolitan railway developments in Sydney and various proposals for high speed rail and new freight lines.

Dr Sean Doherty, University of Toronto, visited ITS Sydney for 1 week from 22 October 1999. During his visit, Sean presented a half day workshop on "An activity scheduling process approach to understanding travel behaviour".

Zsuzsa Nemeth, visited ITS as an international intern for 5 month from the beginning of October 1999 till February 2000. She is studying business administration at the Eberhard – Karls University in Tuebingen. In 1998 she completed the intermediate exam at the Technical University of Freiberg. During her stay at ITS she redesigned and restructured the ITS-homepage and started to develop a prototype for relating models and variables for the TRESIS-project.

Other Activities

ITS Alumni Association

The ITS Alumni Association was formed in 1998 with the intent of creating a forum where past and present students could meet, discuss and remain updated on many issues that relate directly to transport. The president of the Association is Matt Hunter and the secretary is Michelle Coulson.

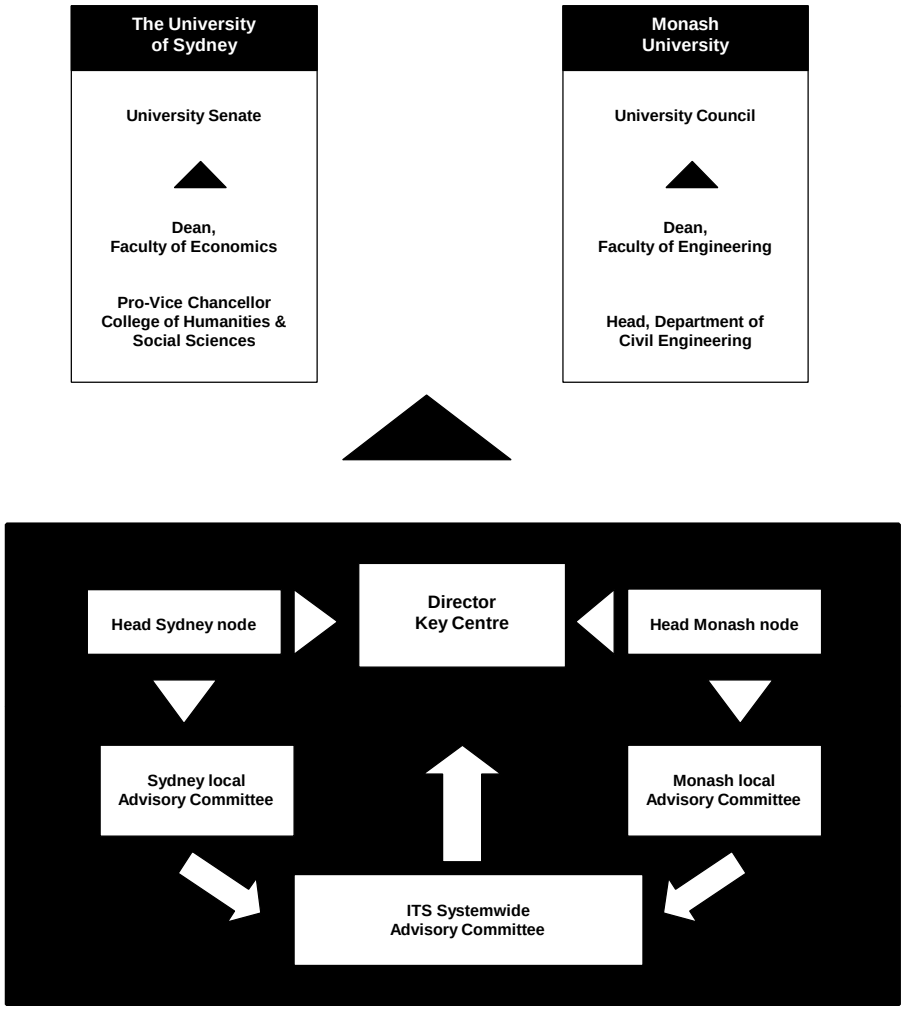
An Alumni cocktail party was held on 26 March with Peter Stopher as the Keynote Speaker.

11. MANAGEMENT STRUCTURE

The management structure of the Key Centre is shown in the diagram below.

The role of the Advisory Committee is to provide advice on any matters referred to it by the Key Centre Executive, as well as to initiate matters for consideration that are of interest to the Key Centre, such as the teaching and research program and opportunities for participation of industry and government. Recommendations for changing the structure of the Advisory Committee, that were approved in 1998, were implemented in 1999. These are:

- That ITS establish a new Advisory Committee in which a maximum of 20 members be invited, selected to be representative of the modal areas and their geographical location. This committee would provide advice on the general directions of ITS and the development of policy.
- That the Advisory Committee meet once per annum, rotating between Sydney and Monash.
- That ITS Sydney and ITS Monash separately establish a small Advisory Committee to handle node-specific matters, comprising the Head of each node and up to 5 members from the Joint Advisory Committee. This committee would provide advice on the functional activities of each node.



In addition, ITS Sydney established an ITS Logistics Management Group Advisory Committee. The inaugural meeting of the ITS Logistics Advisory Committee was held on 6th September 1999. A second meeting was held on 23rd November 1999 and was hosted at the offices of Toll Logistics by Don Telford. The obligations of committee members are to provide feedback on the direction of ITS Logistics and Supply Chain Management programs and to participate generally in the committee meetings. ITS benefits greatly from the input of members who assist in the development of the Institute and help us to ensure that our programs meet the demands of industry. It is anticipated that the meetings of this newly formed committee will be held on no more than two occasions each year.

ITS Systemwide Advisory Committee members

Mr David Berry
Deputy Secretary, Strategic Planning and Economic Services

Mr Jim Bosnjak
President, Bus and Coach Association (NSW) / Westbus

Mr Bob Cain
Manager, Tourism Futures

Mr Doug Dean
Managing Director, Collex Waste Management Pty Ltd

Mr Paul Forward
Director, Road Network Information, Roads and Traffic Authority

Mr Greg Harper
Director, Bureau of Transport Communications & Economics

Dr Ian Johnston
Executive Director, ARRB Transport Research Ltd

Professor Jordan Louviere
Professor of Marketing, Department of Marketing, The University of Sydney

Mr Kevin Norris
Executive Director, Bus Association Victoria

Professor Ken Ogden
Group Manager, Public Policy, RACV

Ms Judi Stack
Chief Executive Officer, Rail Access Corporation

Mr Jim Stevenson
Chief Executive, National Road Transport Committee

Dr Alastair Stone
Managing Director, Pacific Infrastructure Corporation

Professor John Taplin
Department of Information Management and Marketing, University of Western Australia

Mr Don Telford
Director of Operations, Toll Logistics

Mr Jock Murray
Director General, NSW Department of Transport

Mr Llew Russell
Chief Executive Officer, Liner Shipping Services Pty Ltd

Mr Geoff Kloot
General Manager – Traffic & Road Use Management, VicRoads

Mr Joe Perone
Strategic Transport Planner, City of Melbourne

Mr John Reid
Director, Australasian Traffic Surveys

Mr Ray Kinnear
Director – Public Transport Planning, Department of Infrastructure

ITS (SYDNEY) ADVISORY COMMITTEE

Mr Doug Dean
Managing Director, Collex Waste Management Pty Ltd

Mr Jock Murray
Director General, NSW Department of Transport

Mr John King
Advisor on Policy & Strategy, Aviation & Tourism Management P/L

Dr Ian Lin
The Quo Vadis Consulting Group Pty Ltd

ITS MONASH ADVISORY COMMITTEE

Mr David Berry
Deputy Secretary, Strategic Planning and Economic Services

Mr Geoff Kloot
General Manager, Traffic & Road Use Management, VicRoads

Mr John Usher
Managing Director, Invicta Bus Lines

Ms Charmaine Dunstan
Associate, Turnball Fenner

Mr Brian Fitts
Manager – Transport, Sinclair Knight Merz

Mr John Reid
Director, Australasian Traffic Surveys

ITS LOGISTICS ADVISORY COMMITTEE

Prof. David Hensher
Director, Institute of Transport Studies

Prof. Ann Brewer
Director, ITS Logistics Management Group and Director, Industry Programs, Institute of Transport Studies

Prof. Tony Richardson

Professor of Transport Planning, Institute of Transport Studies

Ms Sarah Bate
Logistics Consultant, Morgan & Banks

Mr Keith Campbell
Vice-President, Logistics Association Australia

Ms Michelle Coulson
Co-ordinator, Industry Programs, Institute of Transport Studies

Mr Doug Dean
Managing Director, Collex Waste Management

Mr Jack Hanrahan
Consultant

Mr Chris Louden
Training Manager, McPhee Transport

Mr Bruce Munro
General Manager, Hills Transport

Mr Richard Spanos
Operations Manager, Payless Shoes

Ms Kim Stewart
Strategic Business Manager, Emery Worldwide

Mr Don Telford
Divisional Director, Logistics, Toll Logistics

(L-R) ITS Logistics Advisory Committee Members, Professor Tony Richardson, Bruce Munro, Doug Dean, Kim Stewart, Keith Campbell, Jack Hanrahan, Don Telford, Professor Ann Brewer, Michelle Coulson, Professor David Hensher and Sarah Bate.

12. FINANCIAL STATEMENTS

DEETYA, which provides funds for the Key Centres Program, requires a financial statement of income and expenditure using specified categories, as set out below.

Income

	1999		2000	
	Sydney	**Monash**	**Sydney**	**Monash**
ARC Centre grants	$253,000	$80,128	$193,843	$80,128
Other ARC programs	-	-	-	-
Other C'wealth Govt grants	$550,330	-	$394,807	-
State Govt grants	-	$10,000	-	-
Local Govt grants	-	-	-	-
Industry/Private funds	-	-	$50,000	-
Contracts/Consulting	$251,824	$20,000	$219,950	$50,000
Graduate Programs	-	-	$400,000	-
Education Programs	$348,846	$403,826	$514,345	$450,000
Host institution support	$50,000	$37,750	$50,000	$37,750
Other income sources/interest	$129,364	$788,361	$93,700	$600,000
Carried forward from previous	$925,969	$199,600	$1,000,752	$723,211
Total income	**$2,509,333**	**$1,539,665**	**$2,917,397**	**$1,941,089**

Expenditure

	1999		2000	
	Sydney	**Monash**	**Sydney**	**Monash**
Salaries	$983,076	$609,910	$995,843	$1,190,700
Equipment	$63,981	$29,770	$52,614	$50,000
Accommodation	$26,670	$2,965	$10,000	$4,000
Travel	$40,331	$19,197	$22,900	$25,000
Consumables	$13,564	$79,519	$12,000	$100,000
Other expenditure	$380,959	$75,093	$457,163	$117,000
Total expenditure	**$1,508,581**	**$816,454**	**$1,550,520**	**$1,486,700**
Carried forward	$1,000,752	$723,211	$1,366,877	$454,389

13. 1999 IN REVIEW

New program for Transport Studies

Sydney's first Masters of Logistics Management Program was launched in July by the Institute of Transport Studies.

The program, which includes a Master, Graduate Diploma and Graduate Certificate of Logistics Management, has been introduced as a direct response to the demands of the transport industry.

Logistics management is the process of strategically creating and managing value right from the stage of raw materials or inputs through to the delivery of the final product or service to the market place, program director Professor Ann Brewer said. All of these factors must be managed in order to gain competitive advantage, and logistics management can include management of people, competencies, and marketing channels.

Professor Brewer said that the new Logistics Management courses, like their counterparts in the Institute's Transport Management Programs, remain unrivalled in Sydney and Australia due to their link with the transport industry.

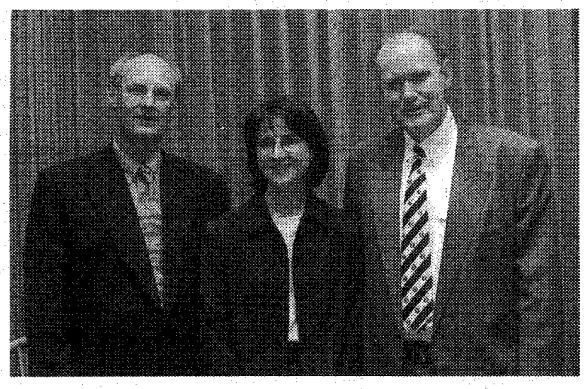
An Industry Advisory Committee has been established to provide feedback on the direction of Logistics and Supply Chain Management programs.

"This is a historical moment," Professor Brewer said at the launch. "It's a significant development in management studies. The program has been based on good market research, we have done our homework."

"Transport managers must understand not only the logistics relationships within their own organisations but must also be fully aware of the supply chain elements that are critical to transportation and therefore a key part of transport management."

The program was officially launched by Professor Alan McKinnon, of Heriot-Watt University in Edinburgh, one of the most respected academics in the field.

"It's nice to see the University of Sydney participating in expansion of graduate education in this area," Professor McKinnon said, adding that it was an area of expansion around the world. "Graduates can command high salaries and better career prospects.



From left: Professor Alan McKinnon, Professor Ann Brewer and Director of the Institute of Transport Studies, Professor David Hensher, at the launch of the Logistics Management Program.
PHOTO BY TRACEY SCHRAMM

"Logistics is today where marketing was 20 years ago," he said. "It hasn't put down theoretical roots. There's a lack of statistical data here, but this means there's plenty of scope for research."

The Institute of Transport Studies has also entered into a collaborative partnership with Deakin Australia to provide the program to government and corporate clients.

Management development programs are also available each semester and programs can be customised to meet the specific needs of organisations conducted in-house or at the University.

For further information regarding the program, please contact Professor Ann Brewer, at the ITS Logistics Management Group on 9351 0082, or annb@its.usyd.edu.au.

The University of Sydney News, 19 August 1999 – 5

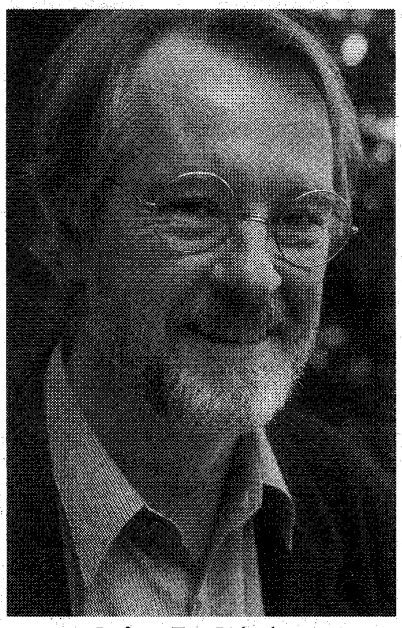
New Professor for Transport Studies

An international expert in the design, conduct and analysis of large-scale travel surveys has joined the Institute of Transport Studies at the University.

Dr Tony Richardson has been appointed Professor of Transport Planning, a newly-created position.

"One of the reasons I've come here is because my expertise is in the design and conduct of large-scale travel surveys, and that combines well with the Institute's expertise in the construction of models using that data," Professor Richardson said. "I see it as being mutually advantageous."

Professor Richardson was previously Director of the Urban Transport Institute Pty Ltd in Melbourne, a private research consultancy, and Director of the Transport Research Centre at RMIT University. He has Bachelor's and Master's degrees in Engineering from the University of NSW and a PhD from Monash University.



Professor Tony Richardson.
PHOTO BY TRACEY SCHRAMM

Director of the ITS, Professor David Hensher, said the Institute was delighted to have succeeded in attracting Professor Richardson to the University of Sydney.

"Tony has been described internationally as one of the major contributors to the literature in survey methodology and data collection," Professor Hensher said. "Although his primary applications have been in transportation, the innovative ways in which he has developed survey procedures have enormous appeal to all areas of data collection.

"With Tony Richardson now on board, ITS reinforces its reputation as one of the top research institutes in transportation in the world."

Professor Richardson's research interests cover transport planning and management, and travel behaviour. He has researched and published widely in the area of transport planning.

He is principal author of the most widely recognised text on travel survey methods. In addition to his transport research activities, and he is also an accredited trainer/facilitator in Lateral Thinking and the Six Thinking Hats methods developed by Edward de Bono.

■ **SARA CROWE**

Environmental survey gives University the OK

BY MARIAN THEOBALD

The University of Sydney has successfully addressed many areas of environmental concern, including pedestrian safety, handling and disposal of hazardous materials, and conservation of heritage buildings.

But it has not been so successful in telling the community about this work and about its environmental policies, according to a survey of staff, students and visitors.

The survey, which was carried out in early June, was commissioned by the University's Environment Advisory Committee and carried out by Professor David Hensher and Jenny King from the Institute of Transport Studies. A total of 5000 staff and students were surveyed from twelve faculties, including the main campus, Mallett Street and the Law School, as well as 1000 visitors.

Seventy-three per cent of the respondents were students, 22 per cent were staff, and two per cent were visitors.

Survey respondents were asked to rank a list of environmental issues in order of the importance they placed on them. They were then asked to order the list according to how successfully they believed the University had addressed the issue.

Respondents said the 10 most important environmental issues were:

- Handling and disposal of hazardous materials;
- Environmentally friendly disposal of waste;
- Pedestrian safety within and near campus;
- Pedestrian routes through the campus;
- Quality of public transport to and from campus;
- Improved ventilation;
- Attractiveness of the visual environment;
- Adopting ecologically conscious construction policy in new constructions;
- Recycling of computer paper; and
- Reducing packaging of food and drinks.

They identified the 10 most successfully addressed environmental issues as:

- Pedestrian routes through campus;
- Handling and disposal of hazardous materials;
- Planned program of conservation of heritage buildings;
- Environmentally friendly disposal of waste;
- Reducing emissions from fixed sources;
- Quality of public transport to and from campus;
- Pedestrian safety within and near campus;
- Use of environmentally safe pesticides and fertilisers;
- Provision of air conditioning in other public areas; and
- Adopting ecologically conscious construction policy in new constructions.

The least successfully addressed issues included promoting greater awareness both within and outside the University of its environmental policy and its efforts to be environmentally responsible; availability of parking in and around campus; promoting more cost effective ways of delivering environmental benefits; obtaining electricity from clean sources and reducing packaging of food and drinks.

Twenty-three per cent of respondents also believed the University should provide an integrated set of courses on the environment, environmental management and environmental responsibility.

Chair of the Environment Advisory Committee, Professor Ken Eltis, expressed his appreciation to those who filled in the survey.

"The information it contains has already proved valuable in helping the Committee to develop a better sense of community perceptions and concerns," he said. "The Facilities Management Office has also taken into account the findings in planning and prioritising its work."

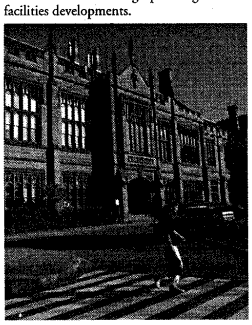
Director of the Facilities Management Office, Mr Alan Tracey, said the survey provides useful information on how successful the FMO has been in managing environmental matters and will help in guiding the Office's future efforts.

"It appears, from both the survey results and the work already done or in progress, that the University has made significant achievements on environmental issues," Mr Tracey said.

"It is also evident that much of this achievement is not widely known and needs further promotion. While a small number of new strategies have been identified, there is now an opportunity for the wider University community to become involved in and contribute to the program. This will create higher levels of awareness and ownership of environmental issues."

Mr Tracey said new strategies the FMO would be considering included:

- improved campus directional signage;
- upgrading of pedestrian link between Camperdown and Darlington Campuses;
- introduction of a food waste recycling program;
- paper use reduction programs;
- introduction of a recycling program for printer and photocopier toner cartridges;
- development of a formal integrated transportation and parking strategy;
- development of an ecologically conscious construction policy; and
- the inclusion of environmental considerations as factors in strategic planning of future facilities developments.

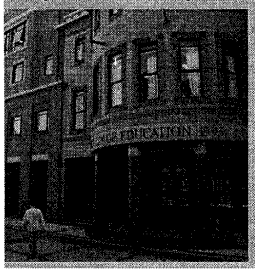


The University's Environment Advisory Committee, which commissioned the Environmental Survey, was established by the Vice-Chancellor to provide advice on practical approaches to enhancing environmental practices and education at the University.

Chaired by the Deputy Vice-Chancellor (Planning and Resources), Professor Ken Eltis, its members come from across the University including from Agriculture, Architecture, Engineering, Law, Science, the Institute of Transport Studies, SUPRA and includes the Director of Facilities Planning and Management.

The Committee has prepared a draft Environmental Policy which sets out the University's overall approach to environmental management, from which sectoral goals and implementation strategies will be derived.

The draft policy begins: "The University of Sydney is committed to environmental best practice, and to the continual improvement of its environmental performance, recognising its obligations both locally and globally, to the present and succeeding generations. The University aims to lead in defining best environmental practice, and will set its own demanding standards where none exist."



The draft policy commits the University to principles of ecological sustainability; raising environmental awareness; monitoring and maximising the effectiveness of its use of natural resources; and fostering research and teaching to promote environmental awareness and education.

"The University is committed to transparency in, and public access to, the formulation and implementation of its environmental policies and objectives," the policy says.

The Committee proposes that this draft policy will be implemented through:

- intellectual leadership;
- the avoidance of waste, through recycling and waste reduction programs;
- regular monitoring and review of its acquisition of materials and energy and its disposal of waste;
- sound stewardship of the buildings and landscape; and
- reduction of the environmental impacts associated with transport to, from and within the University.

The policy will be discussed at an Environment Seminar, to be arranged early in 2000. Members of the University will be invited to attend the seminar, which will consider and provide feedback on the draft policy and on the Environment Survey, and debate current and possible future University environmental systems and strategies.

A six-monthly report will be produced on implementation of the policy. The first report will be published in September 2000, six month after the Environment Seminar which will mark the launch of the policy.

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