“The Victorian Government’s long standing partnership with MUARC has been a key contributor in positioning our State as a world leader in injury prevention, particularly in the areas of road safety, workplace safety and community safety.

Realising the synergy between an independent research effort and innovative policy making has made Victoria the envy of many jurisdictions, and I would like to commend the dedicated team of first class researchers at MUARC for their efforts in this regard.

The Victorian Government is proud to support MUARC and we look forward to continuing a long and productive relationship to ensure all Victorians are kept safe from injury.”

The Honourable John Brumby, Premier of Victoria
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Year in Review

Chair’s Foreword
Director’s Report
About MUARC
Chair’s Foreword

2007 marked an exciting new era for the Monash University Accident Research Centre (MUARC) as it celebrated 20 years of excellence and welcomed a new Director, Professor Rod McClure.

The Monash University Accident Research Foundation played a major role in the 20th anniversary celebrations, hosting a gala dinner and dance which was held at the spectacular RACV Club in Melbourne and proudly supported by RACV Ltd. The event was attended by the Governor of Victoria, Professor David de Kretser AC, together with representatives from the State Government and State Opposition, the Deputy Commissioner of Police, senior Monash representatives including the Chancellor and Vice-Chancellor and many of MUARC’s friends, partners and supporters. We were also very fortunate to have David Ward, Director General of the FIA Foundation for the Automobile and Society as our special guest speaker. The evening was a tremendous success.

Monash University’s vision is to improve the human condition by advancing knowledge and fostering creativity through research and education and a commitment to social justice, human rights and a sustainable environment. MUARC helps to advance this vision through its work to prevent injury and save lives across all injury settings from the home and recreational activities to transport and the workplace.

One of MUARC’s strengths is its ability to engage with industry, government and the community at large, in particular policy makers and program administrators. This engagement not only ensures the ongoing relevance of the Centre’s research program but also provides an effective path for results to be implemented through new policies and practices.

In 2007, some of the highlights from the Centre’s extensive, multi-disciplinary research program included projects on speed, intersection safety, motorcycle safety and traffic enforcement, as well as pedestrian safety, vehicle design, new technologies to improve crash avoidance and used car safety. Significant achievements were also made in the areas of licensing, older road users and younger road users. In other areas a number of major projects were undertaken in marine safety, building safety and the safety of children from nursery furniture to car seats and domestic safety. Internationally the Centre has been working on a range of injury prevention projects from seat belt wearing and drowning in China to farm safety in Canada. In addition, the Centre’s sophisticated injury surveillance program actively provided invaluable information to injury prevention researchers and practitioners and the work of MUARC’s many dedicated PhD students continued to form an integral part of the Centre.

I would also like to acknowledge Dr Lesley Day who took on the role of Acting Director of MUARC for the first six months of 2007 prior to the commencement of Professor McClure. Dr Day provided an invaluable service to MUARC and the University and I am very grateful for her commitment and ongoing contribution.

Furthermore, I congratulate MUARC for another successful year and I thank our many sponsors, partners and clients for their ongoing commitment to injury prevention.
Having spent many years working with injured people, working with professionals who work with injured people, and working with people working towards the prevention of injury – three things have become very clear to me. First is the importance of the problem of injury as a cause of death, disability and distress throughout our community. Second is the importance of people in any solution to the problem. Third is the importance of collaborative community effort in our search for solutions to ensure the best scientific evidence, which supports our best efforts to stop at nothing short of the best possible results.

MUARC's mission is to develop high quality research to challenge and support citizens, governments and industries to eliminate serious health losses due to injury. It is much to my satisfaction to have been given the opportunity to interact with an extended network of highly supportive colleagues from the community, government and industry in the pursuit of our goals and it is very much my pleasure to work with such a quality, professional team as we have here at MUARC.

This has been another big year for MUARC staff and each and every one of us has stepped forward to make our contribution. The strength of MUARC lies in the people who, through their efforts over the last 20 years, have established our reputation, and the MUARC people who currently work so hard to maintain the high standards we set ourselves.

This annual report represents an account of how we at MUARC spent our time during 2007. It is an account of the work we undertook, and of the ways we interacted with the community, and of the outcomes achieved. In no small way this report reflects how we see ourselves, and how others see us. I invite you to take a wander through the pages. It makes an interesting read.

On behalf of the people at MUARC I would like to thank the community and all those with whom we have worked during 2007. Personally, I would like to thank the people who are MUARC, for their professional and highly valued contribution during 2007 to the well-being of us all.

“The World Bank recognises the significant need for injury prevention strategies that can meet the many road, work and community safety challenges, particularly in the developing world. As a world leader in all aspects of injury prevention, MUARC is well-placed to meet these challenges and provide innovative and practical solutions to reduce the risk of injury and death across our global community.”

Tony Bliss, Lead Road Safety Specialist, Energy, Transport and Water Department, World Bank
The Monash University Accident Research Centre (MUARC) is one of the world’s leading injury prevention research centres. MUARC identifies emerging injury problems, determines and evaluates safety strategies and advises on policies to bring about reductions in injury related harm. A multi-disciplinary scientific approach forms the backbone of the Centre’s work. One of the defining features of research at MUARC is that it reaches across traditional discipline boundaries and across injury settings.

Expertise and diversity
With specialists from an extensive range of disciplines, MUARC is involved in each step of the injury prevention cycle from problem identification and analysis to program evaluation and community engagement. MUARC has strong partnerships with government, industry and community groups. It also provides expansive data collection and analysis, diverse technical expertise and independent evaluations and recommendations. As a result MUARC has been able to ensure policy development and law enforcement strategies that are evidence-based and work to effectively reduce the burden of injury.

An international centre
MUARC is an important member of the global injury prevention community. The Centre is designated as a World Health Organization (WHO) Collaborating Centre on Violence, Injuries and Disabilities – one of only 23 such centres in the world and the only one in the Western Pacific.

In addition, MUARC is involved in an extensive network of collaborative research activities across Europe, the Middle East, North America and Australasia. MUARC staff also participate in international conferences, workshops and think tanks, and sit on a number of international injury prevention committees and working groups.

In 2008, MUARC will seek to expand these networks further which will include the development of injury prevention research nodes at the Monash University campuses in Malaysia and South Africa.

International projects, collaborations and networks
Australia
Cambodia
Canada
China
Fiji
France
Germany
India
Israel
Italy
Japan
Laos
Malaysia
New Zealand
Philippines
South Africa
Sweden
Switzerland
The Netherlands
UK
United Arab Emirates
USA
Vanuatu
Vietnam
Research

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Group 4: 2007 research report
Group 5: 2007 research report
Group 6: 2007 research report
Group 7: 2007 research report
MUARC Honorary research staff and associates

Publications
Presentations
Introduction

In order to remain at the cutting edge of the injury prevention field, MUARC has been building on its extensive multi-disciplinary skill base to expand its research program in a number of key injury settings. Continued development will enhance the Centre’s research capacity, increase collaborations with external bodies, and ensure continued investment in the future of MUARC.

Programs and settings
The research program at MUARC falls into five key areas:

> Vulnerable populations, eg children and older people
> Surveillance, data systems and burden of injury
> Technology, product safety and design
> Simulation and modelling
> Program implementation and evaluation science

Research within each of the above program areas traverses the four primary injury settings in which MUARC researchers work:

> Transport, including road, rail, air and sea
> Work – across all industry sectors
> Home and leisure
> Acute care and rehabilitation

Cutting edge technology
One of the unique features of MUARC is the simulation laboratory, which is the only one of its kind in Australia. This extensive facility is pivotal in the research, development and implementation of road safety strategies and countermeasures in Australia and beyond.

The laboratory features a driving simulator that provides the opportunity to test the skills of various road users (e.g., car drivers, motorcyclists, cyclists, and pedestrians) within a safe environment. The simulation vehicles expose road users to a variety of driving scenarios or hazardous situations in a systematic way by utilising an experimental design that is repeatable and easily adaptable. The research application is widespread, for example, simulation experimentation can be undertaken to demonstrate the potential influences of a new road safety treatment, such as road markings or new signage, on driver behaviour. The simulator can be used to investigate the relative safety of each road alteration on each user group before the treatment is implemented across the road transport system.

In addition, MUARC has a number of on-road instrumented vehicles that enable researchers to undertake ‘real-life’ studies evaluating the potential road safety benefits of in-vehicle safety technologies on driver performance, driving safety and acceptability of new technologies used under typical driving conditions. For example, vehicles can be fitted with Intelligent Transport Systems (ITS), such as speed sensors, reverse collision warning signals and following vehicle distance sensors. These technologies can be investigated in test vehicles to see how they impact the driver and overall driving performance.

In 2007, the Centre purchased a new driving simulator, which will be operational early in 2008. The new state-of-the-art EF-X driving simulator will provide 3D visuals that create an exceptionally detailed driving simulation which can replicate the full range of driving conditions including night, rain, fog and bright sunlight. The EF-X will strengthen MUARC’s ability to collect large amounts of detailed, reliable data on the behaviour of Australian drivers and its arrival will represent an important new era in safety research.

Research groups
MUARC has around 100 research staff and postgraduate students who have expertise across a wide range of injury prevention discipline areas. It is this breadth and diversity of expertise that enables MUARC to effectively develop multi-disciplinary project teams that can meet the demands and challenges of injury prevention research in all settings where injury can occur.

“For more than 20 years MUARC has developed research-based solutions to address the global burden of injury that have made the Centre an acknowledged leader in the field. We are committed to the excellence of our research, the independence of our recommendations and the genuine engagement we have with the communities we serve. We look forward to opportunities in the future to make an equally important contribution to the safety of the global population.”

Professor Rod McClure, Director, MUARC
The principal focus of this research group is in developing approaches to road infrastructure design and system operation that meet the aspirations of Australasia’s Safe System. The holistic Safe System approach combines scientific knowledge in all fields of traffic safety from behaviour to road infrastructure, speed management and vehicle design in order to reduce the overall risk of serious injury. This expert team of scientists and engineers is working in many diverse areas and developing evidence-based road safety strategies across Australia that aim to prevent death or serious injury within the road transport system.

2007 Projects

Intersection safety
Intersections represent some of the most hazardous sites on our roads. Approximately 100,000 Australians have been seriously injured or killed in intersection crashes in the last decade and the data for Victoria suggest that around 50 per cent of all serious injury crashes occur at intersections. It is therefore necessary to understand the complexities involved with the many different intersection types and major collision patterns in order to identify common features and develop strategies that can reduce the risk of severe collision at high risk sites.

Projects include:
- An evaluation of “Dwell on Red” traffic signal phasing at intersections to improve safety for alcohol affected pedestrians
- Development and evaluation of a new traffic signal function to prevent heavy vehicle collisions at intersections
- Intersection design investigation – A fundamental review of intersection design to improve safety

Motorcycle safety
Worldwide, motorcyclists are among the most vulnerable road users within the road transport system. In 2006, motorcyclists comprised just over 3 per cent of registered vehicles on Australian roads, however motorcycle riders accounted for almost 15 per cent of all road users killed.

Projects include:
- Descriptive analysis of Victorian motorcyclist traffic volume data along popular routes
- Evaluation of an associative learning method to train car drivers to give way to motorcyclists at intersections
- Motorcyclist Enhanced Crash Investigation study
- On-road evaluation of perceptual countermeasures to improve motorcyclist safety

Pedestrian safety
Pedestrians represent a highly vulnerable road user group as they are unprotected in traffic and therefore at much greater risk of severe injury in the event of a crash. Pedestrians comprise a significant proportion of severe road trauma and are a major target for injury prevention strategies in Australia and beyond. One of the principal areas of research for this group is to promote pedestrian safety and develop sustainable, low-risk traffic environments.

Projects include:
- Development of an evaluation framework for “Walk Bendigo” – a new shared space approach to urban design, traffic management and road safety in the Bendigo CBD area
- Star Rating walking school bus routes

Roadside safety
The crash type accounting for the largest single proportion of death and serious injury is where a vehicle (usually a single vehicle) runs off the road and collides with a tree, pole, embankment or other piece of roadside “furniture” or over-turns on non-traversable terrain. Vehicles running off the road account for around 40 per cent of all road crash deaths – of the order of 140 Victorians per annum. It has long been recognised as one of the major problems facing road safety policy makers. As the road toll has reduced, the proportionate importance of this crash type has increased. Understanding the fundamental strategies for dealing with the run-off-road crash problem and implementing proven, effective measures is critical to reducing deaths and serious injuries resulting from this major crash type.

Projects include:
- Evaluation of flexible barriers on Victorian roads
- Use of frangible vegetation to address road safety: An exploratory literature search summary
Strategy review and evaluation

One of the fundamental principles of injury prevention is the evaluation and continued improvement of all injury prevention strategies in order to ensure their effectiveness and long-term success. The group was highly active in 2007 in contributing to the development of major new, long-term road safety strategies in several jurisdictions of Australia. Projects include:

- Development of a new Road Safety Strategy for Western Australia: 2008–2020
- Expert advice on the development of a business case for Victoria’s Safe Road Infrastructure Program 2007/08 to 2009/10
- Target-setting for Victoria’s 2008–2017 Road Safety Strategy
- World’s best practice in road safety

Speed

There is a compelling body of evidence in the national and international literature on road safety to show that higher speeds, not just speeding, increase the risk of a crash and the severity of injury that can be sustained to drivers and passengers, as well as other road users, including cyclists and pedestrians. Understanding the behaviour, impact and consequences of speed and speeding across different groups is fundamental to the development of appropriate and effective injury countermeasures. Projects include:

- Expert consensus on the likely effect of impairment on driver reaction time and the effect of impact speed on injury risk
- Heavy vehicle safety and the problem of speeding – A case for the use of speed control technology
- State of the art literature review to examine the impact of reduced speed limits on journey times in urban areas
- The impact on travel speeds in the Melbourne CBD after installation of repeater speed signs: a controlled before-after study

Research 11
A sample of key projects from this area


This project involved the development of a comprehensive road safety strategy based on Safe System or Vision Zero principles for Western Australia for the period 2008–2020. Other than in Sweden where the Vision Zero concept was created, such an ambitious approach has not been undertaken elsewhere in the world. MUARC was assigned to lead the development of the 12-year strategy which, if successfully implemented, can be expected to deliver large and lasting road safety benefits for Western Australia and, ultimately, stimulate similar success throughout Australia. The project included several key components:

- Identification of relevant information about the political, economic, social and technological environment as it relates to road safety;
- Assessment of the current position of road safety in Western Australia from which to move forward, including a review of the progress of Arriving Safely – Western Australia’s current Road Safety Strategy for 2003–2007;
- Provision of a set of realistic targets for the achievement of outcomes toward Vision Zero over the 2008–2020 timeframe and for shorter periods as part of a set of rolling action plans;
- Analysis of costs and benefits of different road safety measures within the ‘safe systems’ framework;
- Provision of a series of strategic directions and options for consideration by stakeholders and the community as part of the consultation and community engagement processes;
- Provision of a description of proven countermeasures framed around the ‘safe systems’ framework; and
- Provision of advice on the roll-out of initiatives over the 12-year period and the ramifications of not commencing initiatives or meeting targets as recommended.

Central to the overall approach to developing a new road safety strategy for Western Australia has been the modelling of strategy performance using evidence-based estimates of the effectiveness of individual road safety initiatives and alternative combinations of initiatives. The modelling approach operates at a macro level and so only includes those initiatives expected to have a sizeable impact on the reduction in severe trauma. This project was carried out during 2007 and the strategy itself is due for implementation early in 2008. The strategy will be reviewed annually to monitor trends in serious casualties, assess strategy performance, and provide advice and options for ensuring the achievement of targets.

**Research highlight: Intersection design investigation – A fundamental review of intersection design to improve safety**

Crash data suggest that intersections are associated with a higher level of crash risk than other elements in the road network. Generally, intersections show a concentration of many types of frequently occurring conflicts, create threatening angles of impact and bring together a diverse range of road-user types and competing demands. Many of Victoria’s long-standing ‘blackspot’ sites are intersections with a high standard of traffic signal hardware and operational software. This type of safety solution is often costly. Affording a higher priority to safe intersection design and operation at the outset would not only save lives and injuries, but would avoid the need to invest large amounts of public resources into accident blackspot programs or other countermeasure strategies to rectify initial design deficiencies. Clearly there is a case for an urgent, fundamental review of safety in intersection design and operation.

This project, which began in 2007, will bring together for the first time key national and international traffic safety scientists, with experts in traffic and transport engineering. The combined road safety and traffic management expertise of Victoria’s state road authority, VicRoads, the Transport Accident Commission (TAC), Victoria’s Department of Justice and Victoria Police, together with the capacity available at MUARC and the Monash Institute for Transport Studies, is facilitating this multi-faceted approach. In addition to local experts, leading researchers and practitioners in Sweden and The Netherlands, countries with superior road safety performance and innovative, contemporary road safety philosophies, will actively contribute to the project. The formation of these partnerships will afford high priority to road safety, is consistent with Australia’s ‘Safe System’ road safety philosophy, and, will ultimately lead to fundamental improvements in intersection design, operation and safety.
Group 2: 2007 research report

This large multi-faceted research team is working across the spectrum of transport safety from road user behaviour in vulnerable populations and international road safety strategies and practices to vehicle design and the in-depth investigation of crash data. The diverse expertise within this research group which includes psychologists, nurses, biomedical scientists, engineers, computer specialists and statisticians enables the holistic investigation of injury and the development of effective countermeasures.

2007 Projects

Australian Research Council (ARC) projects

The following major projects have been funded through the ARC National Competitive Grants Program which is a significant component of Australia’s investment in research and development and an important funding source for MUARC and the University as a whole. Projects include:

> Investigation of occupant protection in far-side crashes
> Investigation of vision impairment and fitness to drive

Crash avoidance projects

In developing injury prevention and crash risk countermeasures it is important to look at both road user behaviour in different user groups as well as the development of in-vehicle technologies that may be used to improve road awareness and reduce risky behaviours. Projects include:

> Development of a new on-road test vehicle (ORTeV)
> Benefit analysis of new in-vehicle safety technologies
> Naturalistic driving study of older drivers

Crash investigations

MUARC researchers are involved in some of the most significant crash investigation projects in Australia and beyond. By analysing crash scenarios it is possible to identify crash patterns, causes and injury outcomes and therefore develop strategies to reduce crash risk and injury consequences, particularly in target road user groups. Projects include:

> Australian National Crash In-depth Study (ANCIS)
> GM Holden Australian crash investigations
> Investigation of drugs in fatal crashes
> Predicting brain injury: model development and evaluation of real-life crashes
> VicRoads enhanced crash investigations (ECI) study – cars
> VicRoads enhanced crash investigations (ECI) study – motorcycles

Crashworthiness projects

‘Crashworthiness’ is the relative safety of a vehicle and the risk of death or serious injury to the driver and other occupants of that vehicle when it is involved in a crash. MUARC researchers in this area are working to identify and assess different vehicle safety features that can effectively minimise the risk of injury to the occupants of a vehicle when it is involved in a crash. Projects include:

> Computer modelling of vehicle occupants in crash settings
> Investigation of child restraints
> Investigation of vehicle roll-over and occupant protection

International programs

MUARC researchers are often asked to participate in collaborative and contract research projects across many different regions. Projects include:

> Crash investigations in the United Arab Emirates (UAE)
> OECD project on achieving ambitious road safety targets around the world
> Traffic Accident Causation in Europe (TRACE) involving participating in three Work Packages on human factors, safety technology and providing comparative Australian crash data.

Older road users

Older drivers (65+) represent one of the most vulnerable road user groups. The work of this research group is making a major contribution to the reduction of road crashes and injury severity by working to understand the functional abilities required for safe driving, how these are affected by various person-based and situational factors and the development and evaluation of appropriate management approaches and practices to improve safety of road users in this important target group. Projects include:

> NRMA older driver training package
> Older driver licensing project in Albany, WA
> RACV-AAA older driver training program
> VicRoads evaluation of older driver testing procedures
2007 Team members

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Research Assistant

Marilyn Johnson
MAppSocRes, BA(Hons)
Research Assistant

David Kenny
Crash Investigator [until August]

Chelvi Kopinathan
Administrative Assistant

Dr Sjaanie Koppel
PhD, BAppSc(Hons), BA
Research Fellow

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Research Assistant

Georgina Wells
BBus
PA to Chair of Road Safety

Michelle Whelan
BBSc(Hons), BMus
Research Fellow (A)

> VicRoads older drivers and crash risk to other road users
> VicRoads speed investigation among older drivers

Road safety reviews and strategies
MUARC researchers in this group are involved in a number of ongoing programs to review and improve road safety strategies and practices employed by various local and national government agencies, industry and community groups. Projects include:

Development of a national licensing model for testing older drivers
Development of a new approach to setting speed limits in Australia
Review of the AAA RoadWise safety strategy program
Road Safety Handbook: ongoing upgrade

Speed and crashes
Speeding is still considered to be one of the major causes of road crashes. MUARC researchers have been spearheading a major research effort aimed at addressing this important safety problem. Projects include:

> Austroads harm minimisation approach to speed limit setting in Australia
> VicRoads review of speed limits in Victoria
> Evaluation of the KISS speed reduction initiative in Tasmania

Vehicle design
The design of safe vehicles and improved occupant protection is particularly important in difficult industry settings where vehicles are often used in risky situations such as underground mining or in high speed emergency responses. Projects include:

BHP-Kestrel vehicle development project
Development and evaluation of in-vehicle safety features
Metropolitan Ambulance Service-Rural Ambulance Victoria new vehicle evaluation

Younger road users
Young people under the age of 25 represent another important group of vulnerable road users. Researchers are not only investigating young drivers and working to improve licensing, training and road user behaviour, they are also looking at improving the safety of other young road users including pedestrians and cyclists. Projects include:

> Development of Going Solo – a guide for parents of P-plate drivers
> NRMA child pedestrian safety project
> VicRoads young driver training program

(V-L) Dr Jennie Oxley, MUARC; Paul May, Acting SHE Manager, ExxonMobil Australia; Sergeant Peter Bellion, Collision Reconstruction Team, Leader, Major Collision Investigation Unit, Victoria Police; and Lisa Trood, Community Relations Manager, ExxonMobil Australia, at the launch of the Going Solo booklet.
Research highlight: Going Solo – a guide for parents of P-plate drivers

Going Solo is a 16-page booklet designed to inform parents of the risks that their newly licensed son or daughter will face, particularly in their first year on a P-plate licence. The overall aim is to raise awareness of young driver risks among parents and to encourage discussion between parents and their young drivers about risky behavior and the potential consequences. It has been estimated that P-plate drivers are 33 times more likely to have a crash than learner drivers and this over-representation of newly licensed drivers is evident in crash statistics worldwide. As a result, programs such as Going Solo are important in teaching safer driving practices and encouraging parental involvement, which has been shown to be highly influential in reducing risky behavior in young drivers. One of the features of the Going Solo booklet is an ‘agreement’ between a parent or guardian and a young P-plate driver. The agreement outlines the expectations of the parent with regards to their son or daughter’s driving, and also outlines the role that the parent will play in promoting the safety of their newly licensed son or daughter. The Going Solo project, which was supported by the ExxonMobil Australia group of companies and launched in 2007 in collaboration with the Victoria Police, has been favourably received by parents, P-plate drivers, schools and community groups.

Research highlight: Development of a new on-road test vehicle (ORTeV)

The MUARC ORTeV is a state-of-the-art mobile data acquisition platform currently under development as part of the Cooperative Research Centre for Advanced Automotive Technology (AutoCRC) safety theme. In conjunction with the School of Biophysical Sciences and Electrical Engineering at Swinburne University, a late model Holden Commodore supplied by GM Holden has been equipped to collect data for both controlled and naturalistic driving studies. The new ORTeV enables three main types of information to be continuously logged: vehicle-related data; driver-related physiological data; and eye tracking data. In addition, four exterior and three interior camera views are recorded. Vehicle data is acquired from the CAN bus vehicle network (two-way data communication system) and currently includes, but is not limited to: vehicle speed; GPS location; accelerator and brake position, as well as vehicle lateral and longitudinal velocity and acceleration; steering wheel angle; lane tracking; primary controls (windscreen wipers, turn indicators, headlights, etc); and secondary controls (sat-nav system, entertainment system, heating, ventilating, and air conditioning system, etc).

For controlled test programs, driver eye movements can be tracked and overlaid on a driver’s-eye camera view. Physiological data such as EEG, EOG and EMG (brain wave activity, eye movement, and muscle/nerve reactions respectively) and pulse oximetry (oxygen content of blood) correlate real-world stimuli with driver responses. ORTeV is equipped with seven cameras recording forward and peripheral views spanning 180° about straight ahead, as well as three interior cameras and a rearward-looking camera. A headway detection system is under development. Currently undergoing on-road validation, ORTeV will become an increasingly valuable tool for better understanding real-world driver behaviour in both controlled testing and naturalistic driving in areas such as Human-Machine Interface (HMI), driver distraction, naturalistic driving and many more.

Research highlight: Traffic Accident Causation in Europe (TRACE)

Since January 2006, MUARC has been involved in the TRACE program, a major European Commission project aimed at identifying crash patterns and the major causes of these crashes in Europe, as well as solutions to reduce the risk and injury consequences of crashes. The project provides data to governments and vehicle manufacturers that can be used to enhance road and vehicle safety generally throughout the region. MUARC’s role is to provide information on crash types and crash trends in Australia for comparison with European data and participate in identifying behavioural and technological solutions to priority crashes. In 2007 MUARC and the TRACE project team provided some clear guidelines on new initiatives to the UK government to reduce the risk and impact of crashes and looked at behavioural models to identify and understand risky behaviour and solutions to reach key target groups. MUARC also initiated the TRACE General Assembly meeting at the Monash Prato Centre near Florence in Italy. The TRACE project is due for completion in June 2008.

Research highlight: Older drivers and crash risk to other road users

Mass media tend to highlight crashes involving older drivers that result in death or injury to others, often following with a call to restrict older drivers’ licensing. Consequently, this research was undertaken by MUARC and funded by VicRoads with two primary objectives: to determine the extent to which older drivers (>80 years) pose a risk to other road users; and to assess whether different licensing policies are associated with different harm outcomes, especially to other road users. Extensive analysis of national fatality data was undertaken and comparisons made between Victoria and other States, as well as Victoria and Australia as a whole. Results indicated that regardless of which basis of measure was used (per population, per licence or per distance), older drivers did not pose an increased threat to other road users, indeed it was found that the older the driver, the less the threat to road users external to the driver’s vehicle. However, older drivers did consistently pose an increased threat to two categories of road users; themselves and their passengers. This finding has been confidently attributed to the same frailty factor that has been used to explain older drivers’ own high death rates once involved in a fatal crash. Thus the heightened threat posed by older drivers in regard to their passengers can be largely attributed to passengers’ intrinsic risk factors (their frailty) rather than to any driver-related factor.

In the area of licensing, findings suggested that age-based mandatory assessment programs do not have demonstrable safety benefits, thereby broadly confirming the outcomes from previous research. It was found that Victorian older drivers (no age-based mandatory assessment for re-licensing) were associated with a lower overall fatality rate when compared to NSW older drivers (mandatory medical and on-road assessment for re-licensing) and the difference was statistically significant.

Acknowledgement: The crash data used in this report have been taken from the National Fatalities Database, managed by the Australian Transport Safety Bureau. The provision of data is gratefully acknowledged, as is the generous assistance of Chris Brookes in undertaking the analyses and in providing expert advice on the subsequent interpretation.
One of the primary research responsibilities of this group is to manage the extensive Victorian Injury Surveillance Unit (VISU) and analyse associated injury datasets. VISU is a long standing major project of MUARC and a fundamental resource for injury prevention which includes production of the influential Hazard publication which provides up to date information on current and emerging injury issues and prevention strategies.

2007 Projects

Department of Human Services: Victorian Injury Surveillance Unit (VISU)

VISU holds Victorian injury surveillance data on three datasets (ABS Death Unit Record File, Victorian Admitted Episodes Dataset and the Victorian Emergency Minimum Dataset). Data are analysed and disseminated to a wide range of clients in order to: identify and describe injury issues and problems; monitor trends and outcomes; identify intervention points and potential countermeasures to injury; support planning and evaluation of preventive strategies and interventions; and generate research hypotheses.

Data and information dissemination through publications

Hazard

Two issues of the VISU publication, Hazard, were produced in 2007. The first, a bumper (48 page) issue on unintentional (‘accidental’) injuries to Victorian children aged 0–14 years highlighted that each year in Victoria 34 children are fatally injured and at least a further 68,000 present to a hospital for treatment of injuries, 13,000 of whom are admitted. The leading causes of injury – home injuries (falls, poisoning, burns and scalds, dog bite, hand and finger entrapment, glass-related cutting/piercing and drowning) and bicycling and motorcycling injury – were investigated in depth and preventive measures recommended. The second issue for the year focussed on snow and ice sports injuries.

Hard copies of Hazard are distributed to more than 1,300 subscribers. In total, there were 121,192 on-line requests for various Hazard editions in 2007 via the VISU website.

E-Bulletin

The first of an occasional E-Bulletin series, that will report the latest year of data on injury deaths and hospitalisations in Victoria, was published in 2007. It covered injury hospitalisations in Victoria (2005). VISU will update the bulletins each year, when new files of data are received from the ABS (Deaths) and the DHS (Hospitalisations).

VISU data and information request service

In 2007, VISU serviced 201 data and information requests via our phone and email request service from a range of sectors including government, media, research/education, industry, medical/health organisations, injury prevention and other non-government organisations and the general public. Data were used for a range of purposes including: media articles and government reports; as a springboard for research and policy development; in education and training resources; to underpin the development and evaluation of injury projects and programs; and to provide the evidence base for safety standards and regulations.

Marine Safety Victoria (MSV): Recreational Boating Safety Strategy

Since 2004 VISU has undertaken an on-going research program to support the MSV Recreational Boating Safety Strategy. The main aims are to: investigate the causes of marine incidents and boating-related injury in order to assist MSV to determine priorities and target groups for prevention; provide advice on evidence-based prevention measures; and undertake independent evaluations of the impact and outcomes of State-based safety promotion and injury prevention initiatives. The following research highlight on the pre- and post-evaluation of the 2005 regulations to compel the wearing of a personal flotation device by boaters in small recreational vessels is a good example of the research being conducted for MSV.

Group 3: 2007 research report

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Research highlight: Evaluation of the effectiveness of Personal Flotation Device (PFD) wearing regulations

Between 1992 and 2002, 40 Victorians drowned in 30 boating incidents involving small recreational vessels. An investigation of Coroners’ reports on these fatal incidents found that the non-use of a Personal Flotation Device (PFD) was the most significant factor contributing to these drowning deaths. Regulations requiring PFD wear for all persons on board small powered recreational vessels came into force in Victoria on December 1, 2005. Observations of PFD wear were conducted by trained observers at more than 30 selected boat ramps in popular boating locations in Jan–April 2005 (prior to the introduction of the regulations) and in Jan–April 2007 (13–16 months after their introduction). Boaters were observed setting out or coming into the boat ramps. Boaters on larger powered recreational vessels acted as a comparison group as they were not affected by the new regulations in the locations, weather and water conditions in which the study was conducted.

The overall PFD wear rate in small powered vessels (4.8m or less in length) increased from 22 per cent in 2005 to 63 per cent in 2007. The adult PFD wear rate increased from 15 per cent to 58 per cent and the child (0–18 years) rate from 52 per cent to 83 per cent. By contrast, there was little change in the overall PFD wear rate of boaters on larger powered recreational vessels (4.8m–12m in length) between 2005 (12 per cent wear rate) and 2007 (13 per cent wear rate). Compulsory PFD regulations resulted in a three-fold increase in the wearing of PFDs by the primary target group (boaters in small powered vessels). A number of recommendations were made in the report to further increase PFD wear.

MUARC research found that compulsory Personal Flotation Device (PFD) regulations resulted in a three-fold increase in the wearing of PFDs, which has helped reduce the number of people drowning in Victorian waterways.
The research program of this group has a strong emphasis on developing country settings, child injury and design solutions to important injury problems. Implementation research is a further central theme to this program of work. Much of the research program is closely associated with capacity building by including PhD students or Public Health Trainee Fellows directly in the research, by working with industry partners and by using the results immediately for teaching and training purposes.

2007 Projects

**International research projects**

Australia’s region, defined by the WHO regions of South East Asia and the Western Pacific, includes two of the world’s most populous countries, China and India. Together these regions account for more than half of all injury deaths (almost 2.7 million) annually. The major causes of injury death regionally are road traffic injuries, self-inflicted injury, falls, and drowning which is the leading cause of death in children (0–17 years) in Asia. As such China remains a focus for the research of this group and involved two major projects in 2007:

- China booster seat study. Center for Injury Research and Prevention, Philadelphia Children’s Hospital, Takata
- The effectiveness of seat belt legislation in China. World Bank: Global Road Safety Facility

**National and local research projects**

National projects focused particularly on design issues, with regard to both domestic building and product involvement in injury causation and the investigation of effective design solutions. Collaborations have included the Australian Building Codes Board, industry and regulators. Four of the projects in this category have secured Australian Research Council funding. Other areas of research include vulnerable populations and injury surveillance methodology, with additional funding agencies and partners including the Department of Health and Ageing, the Australian Competition and Consumer Commission and the Australian Defence Force. Projects include:

- Innovative community based nursery furniture intervention in Greater Geelong. Department of Health and Ageing
- The relationship between slips, trips and falls and the design and construction of buildings. Australian Building Codes Board
- Optimising the utility of injury surveillance systems for injury prevention in active populations. ARC Linkage Project Grant, Department of Defence
- Learning to be safe: Developing children’s perceptions of safety and risk. ARC Linkage Project Grant, WorkSafe
- Architectural glass related injury. ARC Linkage Project Grant, Victorian Building Commission, Pilkington Australia, Australian Building Codes Board
- National Marine Safety Committee Research Advisor (Joan Ozanne-Smith)
Research highlight: The effectiveness of seat belt legislation in China

With the rapid development of the economy in China in the past 20 years the number of motor vehicles, road traffic crashes, deaths and injuries has increased considerably. The number of new passenger cars increased by 400 per cent between 1998 and 2003 while recent estimates of road traffic deaths range from 100,000 to 250,000 per annum and, are currently, the seventh leading cause of death. The World Bank anticipates that without urgent intervention the road toll will increase a further 92 per cent by 2020. Seat belts reduce the risk of serious injury or fatality to vehicle occupants by about 50 percent and are a commonly accepted widespread intervention in the developed world.

This project aims to evaluate the comparative changes in seat belt wearing patterns in the contrasting Chinese cities of Nanjing (Jiangsu Province) and Zhoushan (Zhejiang Province) over 3 years in an environment of rapid motorisation and legislative change and compare these with the uptake of seat belts in Melbourne, Australia in the 1970’s in the presence of strong regulations and enforcement. The project incorporates funding for two years of a PhD project (see Virginia Routley in PhD reports). Beyond the PhD support, this project has assisted Zhejiang Province to develop a seat belt intervention plan, which will be implemented in 2008 with MUARC assistance. The project has also supported capacity building within China CDC, particularly in Jiangsu and Zhejiang Provinces as well as for the Australian researchers working in China. The study also promises methodological developments in observational studies. Importantly, Zhejiang Province intends to implement uptake of this project’s aims and methods beyond the study cities in China, with the latter serving as demonstration sites.

Interviews in progress on a Nanjing ferry for the China seat belt project.

Research highlight: The relationship between slips, trips and falls and the design and construction of buildings

MUARC was commissioned by the Australian Building Codes Board (ABC B) to undertake a national study of the incidence of slips, trips and falls and their relationship to the design and construction of buildings. The study objective was to review and analyse Australian fall injury and fatality data and the international scientific literature in order to ascertain whether the existing requirements of the Building Code of Australia provide an acceptable minimum standard of safety relating to the incidence of slips, trips and falls in buildings for the community. The major building structural and design components identified as being associated with fall injuries were flooring surfaces, stairs, windows, balconies, verandahs and, indirectly, guttering and roofs in residential settings. Many of the victims of fall injuries in buildings are from vulnerable populations, particularly the elderly, the sick and children. The total average annual frequency of deaths and hospitalisations respectively, for falls in buildings in Australia were 343 and 105,968 for the period July 2002 – June 2005. The estimated annual cost of these deaths was $250 million, and $1.28 billion for hospital admissions, excluding indirect costs.

The study concluded that slips, trips and falls in buildings constitute a large and costly public health problem, which is expected to grow in coming years due to the ageing of the Australian population and the increase in housing density, with associated trends to multi-storey dwellings. Although falls and associated injuries in buildings may be caused by a combination of factors including the design and construction of buildings, many potential solutions lie with the building industry and its regulators. Others with responsibility include the residential and community aged care sectors, the health sector, Standards makers and those responsible for death and injury data systems and research funding. Given the enormous cost of the problem, investment in effective preventive solutions is imperative.

This report was presented to an expert panel of representatives from ABCB, the Federal Government, the building, architectural and design industries, and aged care providers. Proposals for change, based on the study results, will be formally submitted to the ABCB in early 2008.
This diverse research group which includes epidemiologists, nurses, engineers, statisticians and psychologists is working on two very different but equally important areas of injury prevention – farm safety and injury prevention among older people. Both of these areas have unique challenges and require a holistic approach to the many injury prevention challenges that are faced by each high injury-risk group. They require risk management strategies that impact behaviour, environment, infrastructure and technology.

2007 Projects

Older populations

Injury among Australia’s ageing population is a growing problem that is already beginning to impact on society and the economy. Research in this area is a priority for the government and a major focus of research at MUARC. One of main priorities for the research program of this group is to promote safety and enhance mobility in order to maintain independence and quality of life for older people. Projects include:

- Exercise for independent living: a randomised controlled trial of exercise for maintaining independence and preventing falls among older people
- Modelling the impact, costs and benefits of falls prevention measures to support policy-makers and program planners
- Injury prevention and road safety for an ageing workforce

Farm injury prevention

Farms not only represent an important and diverse workplace, they also represent a unique home environment that has a number of distinct safety challenges particularly for young children. More than half of all farm-related child fatalities are in children under the age of four, with drowning in dams being the most common cause of death. MUARC’s work in the area of farm safety is internationally recognised as best practice in reducing both work-related and child-related farm injuries. Projects include:

- Farm injury risk among men: identifying factors associated with an increased risk of farm injury
- Agricultural machinery design and safe operation: in-depth investigations of farm machinery injury
- Saskatchewan farm injury cohort study: causes and consequences of farm injury in Saskatchewan, Canada

Ergonomic evaluation of the tractor control area was carried out for some injury events as part of the in-depth investigation into agricultural machinery injury.
A sample of key projects from this area

Research highlight: Agricultural machinery design and safe operation: in-depth investigations of farm machinery injury

Machinery is a leading cause of injury among those engaged in the agricultural industry – a high injury-risk occupational group. The aim of this study was to determine the relationship between farm machinery design and associated injury events. Male farmers and farm workers with a machinery injury were recruited via hospitals. An on-site engineering design evaluation was conducted. Randomly selected farmers, not recently injured and having used similar machinery, were recruited and comparable machinery information was collected. Contemporary human factors systems analyst was used to examine the events and associated machinery to identify potential injury-reducing design changes. A total of 108 machines were inspected, 37 of which had recently been associated with an injury.

When considering those injuries where the machines had not been modified or incorrectly configured, 20–45 per cent would not have occurred on an equivalent new machine. However, over half of the specific design issues relating to the injury event would be equivalent on a new machine. These issues included inadequate operator protection systems such as guarding and interlocks, and inadequate systems for maintenance activities. There is significant potential to reduce the risk that exists with current new and old agricultural machinery. To this end, a number of specific design interventions have been advocated. Innovative and industry-relevant solutions can be developed from the suggested practical solutions arising from this project.

Funding provided by the Rural Industries Research and Development Corporation and the National Health and Medical Research Council.

Research highlight: Saskatchewan farm injury cohort study: causes and consequences of farm injury in Saskatchewan, Canada

The Saskatchewan Farm Injury Cohort (SFIC) is a major new Canadian study that will evaluate potential causes of injury among farmers and their family members. The study is being led by Canadian based researchers Dr Jim Dosman (University of Saskatchewan) and Dr Will Pickett (Queens University). Dr Lesley Day at MUA RC is an investigator on this study. The cohort involves 2,390 farms and 5,492 farm people being followed over a two-year period. The SFIC is one of the first studies to apply population health theory to the modelling of risks for injury in a defined Canadian population. In doing so, the relative influence of several potential causes of farm injury, including physical, socioeconomic and cultural factors, will be estimated.

Study findings will inform the content and targeting of injury prevention initiatives specific to the farm occupational environment. The study has involved testing of a novel method for cohort follow-up using a computer telephony system (CTS). CTS is an automated system that combines the computer and the telephone to automate the processes of collection, storage, retrieval, processing and transmission of information. Telephone calls are made automatically, and health outcome data can be recorded using voice recognition, or by the respondent using the telephone keypad. CTS as a cohort follow-up tool among farmers was tested in a randomised controlled trial of three different communication technologies: regular mail, computer telephony, or a choice of regular mail, computer telephony, or email. Despite its novelty and potential for efficiency, CTS was not an optimal method for health outcome data collection from farm households. We found strong evidence that regular mail provided superior follow-up rates compared with CTS. The SFIC will follow-up the participating farm families until 2009. Funding provided by the Canadian Institutes of Health Research.

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The areas of intelligent transport systems, driver distraction, driver impairment, human error and human machine interfaces are very rapidly growing research areas and provide an increasingly important focus of injury prevention research at MUARC. In 2007 the human factors team conducted road and aviation safety research across these areas.

2007 Projects

Human factors research

The research projects within the human factors team typically use experimental psychology and ergonomic techniques which may involve data collection in the field or using the advanced driving simulator. Research in the group is undertaken across the following broad themes:

- Development and evaluation of training systems for car drivers and motorcyclists
- Driver impairment associated with alcohol and other drugs and drowsiness
- The role of human error and system functioning on transportations safety
- The design and evaluation of in-vehicle systems; and driver distraction

A sample of key projects from this area

Research highlight: Hazard perception and responding by experienced and inexperienced motorcyclists

The aim of this VicRoads funded project was to investigate the effect of prior riding and driving experience on hazard perception in motorcycle riders. The project consisted of a literature review, a focus group discussion, and four experiments. The literature review outlined methods for studying hazard perception in car drivers, and assessed whether those methods could be applied to studying motorcycle riders. Experiment 1 (and a focus group discussion) validated a set of critical hazards, which were to be used in subsequent simulator experiments. Using the MUARC motorcycle simulator, experiments 2 and 3 demonstrated that experienced riders were faster than inexperienced riders to detect and recognise hazards. Furthermore, the visual scanning patterns in the two groups were different. Experiment 4 was conducted in an interactive simulator, where riders could navigate simulated scenarios using a wide range of motorcycle controls. Experienced riders showed superior riding performances (in terms of fewer crashes, and more appropriate approach speeds) compared to inexperienced and novice riders. In all experiments, prior driving experience also appeared to enhance hazard perception skills. In future research, results from the current project can be used to develop a hazard perception testing or training program for motorcycle riders.
Information and communication technologies (ICT) are gaining widespread adoption throughout society, and as such, emergency services are quickly learning to harness the positive benefits of these technologies for driver safety and security, reduced response times, speed enforcement, and navigation assistance. However to continue to harness technologies in the future such as in-car video and automatic number plate recognition systems, it is important to plan ahead for these technologies and address possible integration, power requirements and occupant safety issues for optimised safety, comfort and performance. The purpose of the SAFE Vehicles project (co-funded by the Cooperative Research Centre for Advanced Automotive Technology and the National Safety Agency) was to gain an understanding of the emergency driver user-interface and ICT requirement issues, and develop a standard interface platform for addressing ergonomic design and safety, ICT and vehicle power requirements. MUARC’s contribution to the project concerned the driver’s interaction with the cockpit, specifically, creating an ergonomic design and optimised human machine interface. This work produced design recommendations that can be fed into the development of future vehicles, as well as outlining various constraints to potential acceptance and uptake with existing vehicle designs. This approach and the information gathered should assist in the development of successful and usable systems and interfaces that result in improved productivity, efficiency and safety, as well as increased user satisfaction.

Research highlight: Fatal crashes in Victoria involving alcohol and other drugs: Preliminary data on crash types and associated behavioural factors

The incidence of alcohol and illicit drug-related crashes continues to represent a significant road safety concern in Victoria. The advent of the random drug testing program to complement long-running breath test operations highlights the high degree of priority placed on addressing this issue. There is however limited information concerning the individual characteristics of those driving with alcohol and other drugs in their system. Using the National Coroners Information System (NCIS), the aim of this MUARC baseline funded project was to explore person-based characteristics of those killed. The Victorian Road Crash Information System was used to supplement and add value to these observations. From our sample of 2004 cases, 97 drivers, motorcyclists and pedestrians were identified as returning a positive toxicology finding for alcohol and/or another drug. Notably, 49 per cent of these tested positive to alcohol followed by ∆9-THC (chemical responsible for the psychoactive effects of cannabis) (20 per cent), and amphetamines (9 per cent). Polydrug use was relatively common. Those killed were predominantly young males (90 per cent alcohol; 80 per cent THC), with factors such as unemployment, prior offence history, substance abuse, psychiatric illness, and intentional self-harm highlighting the challenge faced by road safety enforcement agencies and those designing enforcement and educational campaigns. The use of NCIS also permitted the exploration of contributing crash factors, as noted by the Coroner, with excessive speed noted in 25 per cent of alcohol cases in contrast to 10 per cent of THC cases. Despite NCIS primarily serving as a tool to assist the Coronial process, the information contained therein, particularly when linked with crash databases, represents a powerful research tool.
This group represents a team of highly skilled numerical scientists who work on major road safety and public health research projects. The group, which comprises a range of experts from engineers to behavioural scientists, specialises in providing sophisticated statistical analysis and advice to research teams across MUARC and beyond.

2007 Projects

Safety data systems

High quality data systems are essential to facilitate the conduct of high quality research. Furthermore, timely access to such data is important to ensure research on emerging safety problems can be carried out as quickly as possible. A number of projects have been undertaken by MUARC in the road safety field to enhance the quality, coverage and availability of widely used research data sources. Projects include:

> Countermeasure monitor system: collects and processes key road crash, insurance claims, road safety program and socio-economic data for Victoria to support a wide range of road safety research and evaluation projects.

> Linking of Victorian road injury data sources: aims to link Victorian data sources covering police crash reports, injury compensation insurance claims, hospital admissions records and in-depth crash inspection data. The ultimate goal is to create a high resolution data set with respect to crash details and injury outcome to facilitate investigation of detailed and complex research questions on factors affecting crashes and their injury outcomes.

> Injury severity trends in TAC claims: aimed to examine the use of TAC claims information to measure trends in serious injury from road crashes in Victoria and compare these to trends in serious injury as recorded by police in reports of road crashes.

Traffic enforcement and program evaluation

Traffic enforcement and compliance programs can be highly controversial in the eyes of the motoring public. Consequently, evaluation of enforcement programs in areas such as speeding and drink-driving is vital to ensure programs meet their objectives in enhancing road safety and saving lives. MUARC has undertaken a range of evaluation research, much of which has provided the evidence behind many State, Federal and international road safety policies and law enforcement strategies. Projects include:

> Analysis of the crash patterns of disqualified drivers

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Vehicle Safety

Development of transport safety initiatives must encompass all aspects of the system from user behavior and infrastructure to vehicle safety and design. By improving vehicle safety through the implementation of new technologies and safety features, it is possible to reduce not only the risk of a crash but also the injury outcomes to both occupants and other road users involved. Independent and objective scientific assessment of historical trends in vehicle safety performance and the effectiveness of vehicle designs and safety features in reducing crash and injury risk are essential to ensure developments in vehicle safety are meeting maximum potential and to substantiate claims of improved vehicle safety by manufacturers. This aspect of MUARC’s program of vehicle safety research aims to provide this scientific assessment through a range of vehicle safety projects aimed at evaluating and monitoring the safety performance of vehicles across Australia, New Zealand and internationally. Projects include:

- Feasibility of measuring consumer responses to vehicle safety ratings programs including the Australian New Car Assessment Program (ANCAP) and Used Car Safety Ratings (UCSR) program
- Investigation of the crash and injury reduction and economic benefits of safer vehicle choices by vehicle fleet managers
- Profile of vehicle choice by young drivers, the implication for secondary safety outcomes and potential for optimisation
- Estimation of the injury saving benefits of a program of replacing older vehicles in the Victorian fleet

Used Car Safety Ratings (UCSR) research program including:

- Ongoing estimation of vehicle secondary safety performance in Australia and New Zealand in terms of vehicle crashworthiness and aggressivity by vehicle make and model; market group; and year of manufacture
- Estimation of vehicle primary safety performance by vehicle market group and make and model
- Evaluation of the effectiveness of new vehicle safety features including Electronic Stability Control (ESC) and side airbags systems
- Crash profiles of 4WD vehicles and their primary and secondary safety performance relative to other vehicle types
- Crash risks of motorcycles in relation to other vehicle types
- The interaction between relative vehicle secondary safety performance and driver age and gender
- Indices of the overall secondary safety performance of the vehicle fleet over time and its influence on overall road trauma trends
- Development of an index for the total secondary safety of light passenger vehicles by make and model

Research highlight: Review of the Victoria Police traffic enforcement strategy in Region 1

During 2007, MUARC undertook a review of the traffic enforcement program and strategy in Region 1 of the Victoria Police. The need for this project was linked to the Road Policing Intelligence strategy included in Victoria Police’s Road Policing Strategy 2006–08. The interim report from the project recommended the elements of a traffic intelligence system which meets the needs of Victoria Police and is compatible with Local Priority Policing. The recommended elements of the system are as follows:

1. Recognition of the chance variation in crash numbers for predicting road trauma.
2. Update of MUARC’s traffic enforcement effectiveness index.
3. System to measure drink-driving and predict alcohol-related road trauma.
4. System to measure speeding and predict speeding-related road trauma.
5. Use of speed/red-light camera data to predict road trauma from red-light running.
6. Use of Penalty Notice data and enforcement activity reports to measure other offence rates.

The recommendations were endorsed by a meeting of senior traffic police in Region 1 in June 2007. The project then focused on developing element 3. It is envisaged that existing random breath test (RBT) operations would be expanded to cover all road types and times. The blood alcohol concentration (BAC) readings from preliminary breath test devices would be linked to each RBT session to allow the BAC distribution of positive tests to be seen. The BAC levels would be weighted by the relative risks of casualty crash involvement to predict the alcohol-related crashes which would follow from drink-driving levels on the road. The large number of breath tests conducted per year would allow the crash predictions to be reliably analysed by location and time and to provide strategic targets for drink-driving countermeasures.

A sample of key projects from this area
Research highlight: Used Car Safety Ratings Research Program

The ‘Used Car Safety Ratings’ research program has been running for over 15 years and is one of Australasia’s foremost vehicle safety research programs, supported by a consortium of 13 State and Federal road authorities and motor vehicle organisations across Australia and New Zealand. Through the annual collection, enhancement and analysis of police records of crash and injury data and information on vehicle registrations and roadworthiness inspections, MUARC researchers can investigate many aspects of both primary and secondary vehicle safety performance at a level down to the specific make, model and variant of vehicle. The assembled crash dataset which underpins the research contains information on over 3 million vehicles involved in crashes reported to police across Australia and New Zealand. A principal output of the research program is the well known Used Car Safety Ratings which rate the secondary safety performance of the majority of vehicles on Australian and New Zealand roads. Vehicle secondary safety is assessed both in terms of crashworthiness (how a vehicle protects its own occupants from injury in a crash) and aggressivity (how the vehicle protects other road users with which it collides from injury). The 2007 update of the Used Car Safety Ratings covered nearly 280 unique models of vehicle manufactured from 1985 to 2005. Results highlighted some important areas of concern including the high aggressivity rating of large 4WD vehicles, that is, most 4WDs scored average or better results for occupant protection but are much more likely to harm other road users in a crash. Conversely light cars continue to have the worst performance in crashes for occupants with around two thirds of light cars in the worst crashworthiness category. Encouragingly, a number of small cars now provide top levels of crashworthiness performance. The ‘Ratings’ continue to attract considerable public attention through the media, the wide distribution of a brochure, and on the TAC ‘how safe is your car’ website which is based on the ratings and attracts around 200,000 visitors every year.

In a related, landmark study, this research team confirmed the effectiveness of Electronic Stability Control (ESC) systems in reducing crash risk in Australia and New Zealand. The study undertaken estimated that ESC reduced the risk of single vehicle crashes in Australasia by up to 50 per cent. ESC is a vehicle technology built to encourage crash avoidance by preventing loss of control. Since single vehicle crashes account for around 43 per cent of driver fatalities on Victorian roads and over 2,000 serious injuries each year, this study is an important step forward in demonstrating the effectiveness of ESC systems in reducing the rate of single vehicle crashes. ESC has been found to be particularly important for 4WD vehicles where single vehicle crash risk is high and injuries are often severe. ESC is currently being fitted to around 40 per cent of new vehicles sold in Victoria, which means there is significant room for improving the rate at which this potentially life-saving technology is introduced to the Australian and New Zealand vehicle fleets.

Research highlight: Overall impact of the speed-related initiatives package implemented in Victoria during 2001–2004

The broad aim of this study which was released in 2007 (MUARC Report #267) was to evaluate the overall effectiveness of the Victorian speed-related package of road safety initiatives. This project was an extension of the groundwork study “Generalised linear modelling of crashes and injury severity in the context of the speed-related initiatives in Victoria during 2000–2002” which was also released in 2007 (MUARC Report #268). From December 2000 until September 2002, three new speed enforcement initiatives were implemented in Victoria. These initiatives were introduced in stages and involved the following key components: more covert operations of mobile speed cameras, including flash-less operations; 50 per cent increase in speed camera operating hours; and lowering of cameras’ speed detection threshold. In addition, during the period 2001 to 2002, the 50 km/h General Urban Speed Limit (GUSL) was introduced, there was an increase in speed-related advertising including the “Wipe Off 5” campaign, media announcements were made related to the above enforcement initiatives and there was a speeding penalty restructure. The above elements combine to make up a package of speed-related initiatives and factors.

Evaluation of the Victorian speed-related package revealed clear reductions in the number of casualty crashes as a direct result of its implementation. This included a reduced risk of fatal outcome in the serious casualty crash subset. Since the key component initiatives were implemented in a staggered way, the overall results were partitioned by time in order to assess changes in the crash outcomes over time during the post-implementation period. Because of the staggered implementation, it could be argued that the final partitioned period of July 2004 to December 2004 best reflects the full effect of the speed-related package on crash outcomes. Overall during this time period it is estimated that the implementation of the speed-related package resulted in a saving of just over eight fatal crashes per month.
MUARC Honorary research staff and associates

MUARC is fortunate to have a core group of ‘elder statesmen’ who have been integral to the development and success of MUARC over the past 20 years. We wish to thank these pioneers for their dedication and for their invaluable ongoing contribution to MUARC and the field of injury prevention.

Professor Ian Johnston AM, PhD, BA(Hons), FTSE  
Professorial Research Fellow  
Former Director, MUARC (2001–2006)

Professor Johnston has more than 35 years experience in road safety and an outstanding record of achievement. He has held positions as the Director of Road Safety for the Victorian Government and Director of ARRB Transport Research, prior to his role as Director of MUARC, which he held from 2001 until he retired in 2006. Professor Johnston is a psychologist with a PhD in human factors. He is a Fellow of the Australian Academy of Technological Sciences and Engineering, an Associate Editor of the international journal Accident Analysis & Prevention, and recent Past-President (and Life Member) of the Road Engineering Association of Asia and Australasia. He was also a Trustee of the Global Traffic Safety Trust, a small group of safety professionals who donated their time to furthering safety in developing countries.

Professor Tore Larsson PhD, MA  
Honorary Professor  
Professor of Occupational Injury Prevention, Royal Institute of Technology, Sweden

Professor Larsson has an extensive background in injury prevention research developed in Sweden. His main interest areas are accident and injury analysis, criteria for prevention, occupational risk assessment, and the implementation of work site measures. Professor Larsson began working with MUARC in 1997 and in 2003 he assumed the role of Adjunct Professor with the Centre following his return to Sweden to take up an appointment with the Royal Institute of Technology in Stockholm.

Professor Claes Tingvall DrMedSci, MSc  
Director of Traffic Safety, Swedish Road Administration  
Former Director, MUARC (1998–2000)

Professor Tingvall is a statistician with a PhD in Medical Science and has been a Professor of Injury Epidemiology since 1991. He was Head of Folksam Insurance Research in Traffic Safety until 1994, then Director of Traffic Safety at the Swedish Road Administration until 1998. Professor Tingvall was Director of MUARC from 1998 until 2000, when he returned to the Swedish Road Administration. Professor Tingvall spends several weeks working at MUARC each year and he maintains his keen interest in the development of the Centre’s Visionary Research Model and a range of other projects.

Emeritus Professor Tom Triggs PhD, MEngSci, BE, BSc

Professor Triggs has a long and distinguished career. Previous positions have included Director of the Battelle Human Factors and Organizational Effectiveness Research Center in Seattle, USA and Manager of the Experimental Psychology Department at Bolt, Baranek and Newman in Boston, USA. He is a member of the editorial board of Safety Science, and a member of the US Transportation Research Sub-committee on driver training. He obtained his PhD in Psychology from the University of Michigan and his Master’s degree in Aeronautical Engineering from the University of Sydney. Professor Triggs is a Fellow of the Human Factors and Ergonomics Society, and a Fellow (and Past President) of the Ergonomics Society of Australia. He was awarded the Cumming Memorial Medal of the Ergonomics Society in 2000, and was co-recipient of the Alan Welford Award of the Society in 2002. He was Associate Editor of Human Factors for 21 years, and the Australian and New Zealand Associate Editor of Applied Ergonomics for 10 years.

Adjunct Professor Peter Vulcan AM, Hon MD, DAppSc, MSc, DipEd, BSc  
Founding Director, MUARC (1987–1998)

Professor Vulcan is one of the most distinguished road safety scholars in the country with a career spanning over 40 years. He was the Founding Director of MUARC until his retirement in 1998, prior to which he was Chairman of the Victorian Road Safety and Traffic Authority, Commonwealth Department of Transport. Professor Vulcan’s contribution to MUARC and the field of injury prevention were recognised in 2002 with the establishment of the Peter Vulcan Scholarship by the Monash University Accident Research Foundation and the award of Doctor of Engineering honoris causa by Monash University.

Dr Eric Wigglesworth AM, Hon MD, DAppSc, MSc, DipEd, BSc  
Honorary Senior Research Fellow

Dr Wigglesworth accepted an invitation to join the Centre as an Honorary Senior Research Fellow in 1998, following his retirement as the Founding Executive Director of the Sir Robert Menzies Memorial Foundation, a position he held for almost 20 years. During this time he also completed a series of investigations into road-rail fatalities at level crossings and has published several leading reports on this theme. He also has strong interest in the pattern of occupational injuries and has published widely on the advocacy of occupational health and safety trauma reduction.
Publications

Peer Review Journal Articles


Books and Book Chapters


Multimodal Safety Management and Human Factors – Crossing the borders of medical, aviation, road and rail industries, Chapter 21, pp.233–244, Hampshire, England: Ashgate Press


MUARC Report Series


Other Journal Articles


Peer Review Conference Papers


Research 29


Other Conference Publications


Proceedings 51st Annual Meeting of the Association for the Advancement of Automotive Medicine (AAAM), 15–17 October, Melbourne, [poster and abstract]


Other Published Reports


Sponsor/Consultant Reports (restricted access)

Archer, J. (2007), Dilemma zone detection system at the intersection of Hume Highway – Kingswood Drive, Monash University Accident Research Centre, Report prepared for VicRoads


Archer, J., Fotheringham, N., Symmons, M. & Corben, B. (2007), The impact of lowered speed limits in urban and metropolitan areas, Monash University Accident Research Centre, Report prepared for the Transport Accident Commission

Archer, J. & Mulvihill, C. (2007), Heavy vehicle safety and the problem of speeding, Monash University Accident Research Centre, Report prepared for Baseline Research Committee

Ashby, K. & Cassell, E. (2007), In-depth study of the personal, social and environmental factors contributing to serious fire burn injury with some alcohol involvement, Report prepared for the Metropolitan Fire Brigade


Brace, C., Young, K. & Regan, M. (2007), Analysis of the literature: The use of mobile phones while driving, Report to Swedish Road Administration

Cassell, E. & Ashby, K. (2007), NMSC: Personal Flotation Device (PFD) wear by boaters on powered recreational vessels in Queensland, New South Wales, South Australia and Western Australia (and Victoria), Benchmark Observation Study 2007 (boating season), Report prepared for National Marine Safety Council


Hosking, S., Bayly, M. & Regan, M. (2007), Three dimensional perceptual speed countermeasures: A review, Monash University Accident Research Centre, Client Report for Main Roads Western Australia


Newstead, S., Scully, J., Becker, L. & Delaney, A. (2007), Safer vehicle purchases: developing cost/benefit estimates for fleet managers and others – Part B: Injury levels in crashes, Monash University Accident Research Centre, Report to Austroads


Ozanne-Smith, J., Guy, J., Kelly, M. & Clapperton, A. (2007), The relationship between slips, trips and falls and the design and construction of buildings, Monash University Accident Research Centre, Report to Australian Building Codes Board

Routley, V., O’Hare, M., Bugeja, L. & Clapperton, A. (2007), Update rail-related suicides in Victoria – Analysis of databases and literature review, Report to Department of Infrastructure convened rail suicide working group


Scully, J. & Newstead, S. (2007), Safer vehicle purchases: developing cost/benefit estimates for fleet managers and others – Part C: Cost of injuries and property damage in crashes, Monash University Accident Research Centre, Report to Austroads

Scully, J. & Newstead, S. (2007), Safer vehicle purchases: developing cost/benefit estimates for fleet managers and others – Part D: Injury reductions with various fleet purchasing policies, Monash University Accident Research Centre, Report to Austroads


Whelan, M. (2007) ‘Road safety impact of establishing blood alcohol concentration levels at 0.05’, Update of Austroads Australasian Road Safety Handbook


Young, K., Edquist, J. & Regan, M. (2007), Driver distraction: effects on driving performance and safety, Monash University Accident Research Centre, Report to State Transit Authority of NSW

Presentations


Candappa, N. (2007) ‘Presentation on road safety’, Guest lecture to second year civil engineering students, RMIT University, Melbourne, 17 August


Charlton, J. (2007) ‘Older driver assessments’, Presentation to medical and healthcare practitioners, West Gippsland Hospital, Warragul, 6 October


Corben, B. (2007) ‘Development of road safety options for Western Australia’, Presentation to the Corporate Executive Group, Department of Main Roads, Perth, [invited], 16 October

Corben, B. (2007) ‘Development of road safety options for Western Australia’, Presentation to the Western Australian Branch of the Australian Institute of Transport, Planning and Management (AITPM), Perth, [invited], 16 October


Corben, B. (2007) ‘Development of road safety strategy options for Western Australia’, Presentation to the Victorian Road Safety Executive Group, [invited], 13 August

Corben, B. (2007) ‘Development of road safety strategy options for Western Australia’, Presentation to Western Australia Road Safety Council, Perth, [invited], 23 August


Fildes, B. (2007), GM Holden Road Safety Seminar, Melbourne, 2 April


Johnston, I. (2007) ‘Deriving the key research directions’, National Truck Safety and Efficiency Research Centre Workshop, ARRB, [invited address], Melbourne, 19 April


Lenné, M. (2007) ‘What can the road, rail, aviation and maritime sectors learn from each other in creating error tolerant solutions’, 3rd Human Factors in Transport Conference, Melbourne, [Closing panel session participant], 20–21 August

Mitsopoulos, E. (2007) ‘Understanding the mechanisms underlying the crashes of young novice drivers: Two research examples. Example 1 focused on the influences of passengers on young driver safety and Example 2 (and the subject of Eve’s PhD research) explored the role of of calibration skill in safe driving’, Children’s Hospital of Philadelphia, 17 July

Mulivihill, C. (2007) ‘Development of countermeasures to reduce motorcycle crashes: Some examples of research at Monash University Accident Research Centre’, La Trobe University, Bundoora, 13 September


Ozanne-Smith, J. (2007) ‘What have the gun laws achieved?’ The Melting Pot, an initiative of the Seymour & District University of the Third Age, Seymour, [invited speaker], 7 August


Routley, V. (2007) ‘Rail suicides in Victoria’, Rail Suicide Working Group meeting convened by the Victorian Department of Infrastructure, February

Stathakis, V. (2007) ‘Farm Injury Risk among Men study as an example of case-crossover research design’, Crossing Over in Epidemiology Workshop, Hobart, 23 September


Education

PhD program
Honours program
Academic seminar programs
2007 Lunchtime seminar series
2007 Graduate seminar series
MUARC is committed to research training which is vital in the advancement of knowledge and the development of new leaders in the field of injury prevention. The Centre has developed an extensive doctoral research program and high-quality Honours and fourth year research supervision. In addition, many of the Centre’s staff are key contributors to a range of short courses, workshops and training programs around the world in order to transfer knowledge and expertise to organisations and individuals who can implement safety improvements within their own communities.

PhD research program

MUARC provides its Doctor of Philosophy (PhD) students with an energising and collaborative environment working with many highly skilled researchers and injury prevention practitioners.

The Centre has developed a PhD program that provides advanced multi-disciplinary training in the research and prevention of accidents and injuries. The PhD program has two components:

1. **Thesis**: the major component consists of research work presented in the form of a thesis, in accordance with Monash University guidelines.

2. **Study program**: the minor component is a study program, which is designed to ensure incoming students develop the necessary skills to complete a PhD at MUARC and provides a broader understanding of the field of accident and injury prevention, which many students will not have obtained in their undergraduate studies, as well as exposure to a wide range of issues and an environment of inquiry that supports the development of critical analysis skills.

Postgraduate 2007 highlights

In May the Centre hosted the first Postgraduate Celebration Event to acknowledge the many student achievements of the previous academic year and to welcome the commencing students for 2007. Professor Max King presented the prestigious Mollie Holman Medal to Dr Wendy Watson in recognition of excellence for her PhD Thesis. Mrs Lucy Lane was present at the function to congratulate commencing student Robin Hutchinson, recipient of the John Lane Memorial Scholarship. Marilyn Johnson was awarded the inaugural Safe Family Research Scholarship (supported by the Amy Gillett Foundation) and commenced her studies in the area of cycling safety in 2007. Notable awards were also made to commencing students Johnathon Eshani (Monash Graduate Scholarship) and Trang Vu (Australian Postgraduate Award) and to continuing student Adam McKinnon (Secretary of Defence Scholarship, Australian Defence Department).

In September, MUARC played a key role in hosting the Association for the Advancement of Automotive Medicine (AAAM) 51st Annual Meeting in Melbourne. Clay Douglas was honoured with the Best Student Paper Award at the conference for his paper entitled “Factors influencing occupant-to-seat belt interaction in far-side crashes”.

In addition, throughout the year a number of PhD students including Fiona Clay, Johnathon Eshani, Jessica Killian, Eve Mitsopoulos-Rubens, Virginia Routley and Karen Stephan presented at a range of national and international conferences and institutes including:

- 4th International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design. Stevenson, Washington, USA
- Association for the Advancement of Automotive Medicine (AAAM) 51st Annual Scientific Conference. Melbourne, Australia
- Conference of the International Council on Alcohol, Drugs and Traffic Safety (ICADTS) and the International Association of Forensic Toxicologists (TIAFT). Seattle, USA.
- Institute of Work and Health, Toronto, Canada
- International Conference on Forensic Toxicology, Alcohol, Drugs and Traffic Safety. Seattle, USA
- Joint Scientific Meeting of the AEA and the IEA Western Pacific. Hobart, Australia
- Research Seminar, Children’s Hospital of Philadelphia, USA
- Work Disability Prevention Summer School. Sherbrooke University, Montreal, Canada
- Zhejiang Provincial Center for Disease Control. Hangzhou, Zhejiang Province, China
- Zhoushan Centers for Disease Control. Zhoushan, Zhejiang Province, China
2007 PhD completions

Congratulations to Ben Brooks and staff candidate Bruce Corben who were both awarded the degree of Doctor of Philosophy in 2007.

**Dr Ben Brooks**  
*Supervisors: Emeritus Professor Tom Triggs, Professor Ian Johnston and Professor Tore Larsson*

**Design of an architecture for an acute occupational injury risk decision support system**

The main research question of Ben's PhD was to consider ‘How do people make decisions about risks?’ This was studied in the context of several occupational environments, using two different methodologies. The outcome of the research included six peer reviewed publications and several significant contributions to the field including the validation of an ethnographic method for studying safety culture, the validation of text-mining as a method for analysing free-text injury records, the development of a descriptive model of how people make decisions about occupational safety risks and the design of an architecture for a decision support system for occupational risk decision-making.

**Dr Bruce Corben**  
*Staff candidate*

**Achieving safe traffic environments for pedestrians**

Walking offers many health, social, and economic benefits to individuals and society. However, pedestrians are highly vulnerable to severe injury in the event of a crash and comprise a sizeable proportion of severe road trauma. This thesis identifies principles fundamental to advancing pedestrian safety and creating lasting, low-risk traffic environments. It highlights major findings and insights from numerous studies, presents significant methodological applications and developments, and discusses impediments to successful implementation. In essence, the major contributions are: providing insights into the problem of pedestrian trauma; understanding and communicating the vital role of speed; developing innovative countermeasures and innovative use of existing countermeasures; evaluating the effectiveness of programs and countermeasures; developing new program-based approaches; understanding the critical influence of institutional mindset in translating research into practice; and facilitating a paradigm shift in thinking about pedestrian safety.

Three fundamental principles for advancing pedestrian safety have been formulated:

1. **Vehicle speed is the single most important determinant of pedestrian crash and injury risk.** In combination with road infrastructure improvements, lower urban speeds can substantially reduce risk where pedestrians and vehicles mix.
2. **Quantum advances in pedestrian safety are achievable in the short-term future by adopting a profound shift in thinking, driven by the Vision Zero concept and its ambitious goal of no serious injuries to pedestrians.**
3. **To realise the safety benefits possible now, governments, road authorities, stakeholders and communities must play vital new roles in countermeasure implementation, and in redefining design and operational philosophies of the road-transport system.**

Together, these three principles provide an enduring foundation for creating low-risk traffic environments for pedestrians.

2007 PhD candidates

The expanding high quality postgraduate student community makes an important contribution to the Centre’s research program as demonstrated by the diversity of interest areas and research projects outlined below. We wish to thank all of our students for their enthusiasm and dedication. We would also like to acknowledge the major contribution of our PhD supervisors both internal and external who provide expert guidance, death investigator key informant interviews; and retrospective case studies. This research has and will continue to inform strengthening of the preventative role of the Coroner through legislation reform of the Coroner’s Act (Vic) and development of an evidence based information system to support Coronial investigations at the State Coroner’s Office.

**Lyndal Bugeja**  
*Supervisors: Professor Joan Ozanne-Smith and Mr Graeme Johnstone (State Coroner’s Office, Victoria)*

**The role of Coroners’ recommendations in injury prevention and control in Victoria**

The principle aim of the research is to identify the factors important to the formulation of Coroners’ recommendations on public health and safety and the consideration and implementation of such recommendations in Victoria, Australia. All external cause injury deaths reported to the Victorian State Coroner’s Office (SCO) for the five year period July 2000 to July 2005 were identified using the National Coroners Information System (NCIS). Data on variables relating to the deceased person, fatal incident and Coroner’s system were collected. The research design for this study consists of: retrospective cohort study comparing recommendations cases to non-recommendations cases; in-depth qualitative analysis of recommendations cases; death investigator key informant interviews; and retrospective case studies. This research has and will continue to inform strengthening of the preventative role of the Coroner through legislation reform of the Coroner’s Act (Vic) and development of an evidence based information system to support Coronial investigations at the State Coroner’s Office.

**Fiona Clay [intermitted for 2007]**  
*Supervisors: Professor Joan Ozanne-Smith and Dr Wendy Watson*

**Clay Douglas**  
*Supervisors: Professor Brian Fildes, Dr Tom Gibson (Human Impact Engineering) and Dr Peter Hillard*

**Modelling far-side occupants in side impact crashes**

Regulations and interventions to protect far-side occupants in crashes do not currently exist, despite these occupants accounting for over 30 per cent of the seriously injured persons and harm in side impact crashes. Furthermore, no suitable crash dummies or mathematical models have been developed to investigate far-side occupant dynamics during such a crash. As a result, this study aims to develop and validate a computer model capable of mimicking human response in far-side impacts. The model will then be used to investigate the influence of seat belt properties, impact direction and potential countermeasures on occupant loading and injuries. Therefore, this model may aid in the improvement of safety features currently in vehicles. The PhD itself falls under the umbrella of a larger study aimed at improving protection to far-side vehicle occupants. It is an ARC Linkage study involving a collaboration of universities in Australia and the USA as well as industry partners GM Holden and Autoliv. (Australian Postgraduate Award (Industry))
Jessica Edquist  
Supervisors: Professor Ian Johnston, Dr Simon Hosking (Defence Science and Technology Organisation) and Dr Tim Horberry (University of Queensland)

The effects of visual clutter in driving performance  
This project examines the issues of perception and information processing surrounding visual clutter in the driving environment. The first phase of the research explored what objects and environments contribute to visual clutter. The second phase investigated the effects of visual clutter on driving performance for novice drivers, experienced drivers, and elderly drivers. The results provide guidance to road authorities as to why, how and where to regulate visual clutter on roadsides, including roadside advertising and multiple traffic signs. The project is part of an ARC Linkage Grant study entitled ‘A Human Factors Approach to the Design of Visual Information in the Highway Environment’. The industry partner is the Department of Main Roads, Queensland. The thesis will be submitted in 2008. (Australian Postgraduate Award (Industry))

Matthew Ericson  
Supervisors: Professor Ian Johnston and Professor David Chandler (Monash Asia Institute)

Better road safety outcomes: Improving the effectiveness of technology transfer in the Lao PDR and Cambodia  
The objective of this project is to identify and analyse policy limitations which hamper the effective implementation of road safety interventions in low-income countries with fast-growing motor vehicle fleets. Road safety interventions are often less effective when applied in such countries as the process of technology transfer is somehow inhibited by environmental and institutional differences. Consequently this project is exploring the policy factors affecting the outcome of road safety interventions and how the main barriers can be overcome using a number of case studies from Cambodia and the Lao People’s Democratic Republic including programs to increase helmet wearing and regulating the safety standards of locally-made vehicles. The project is being undertaken in partnership with participating organisations, including the Red Cross, Handicap International and the Coalition for Road Safety. (Monash University Accident Research Foundation Peter Vulcan Scholarship)

Richard Fernandez  
Supervisors: Professor Joan Ozanne-Smith, Associate Professor Raphael Grzebieta (Department of Civil Engineering), Associate Professor Nigel Wreford (Department of Anatomy and Cell Biology) and Dr Lesley Day

A novel approach to the prevention of fall induced hip fracture: the anatomical and functional basis to improve hip-fracture preventing devices  
Hip fractures are one of the most serious health problems facing the ageing population today. There is substantial evidence to suggest that the majority of hip fractures are a result of a fall directly onto the ‘greater trochanter’, or top part of the thigh bone. Furthermore, the risk of re-fracture following a second fall is very high. The development of the external hip protector has served as a promising avenue for hip-fracture prevention; however, its effectiveness is limited by low wearer compliance in the target population. This PhD project investigates the feasibility of a novel implanted hip fracture-preventing device and also to develop further specifications for a new generation of external hip protecting devices in an attempt to increase wearer compliance. The project includes an anatomical and surgical evaluation of potential implant sites, examination of hip musculature morphology using computed tomography and computer based imaging techniques, and biomechanical testing of muscle tissue.

Robin Hutchinson  
Supervisors: Professor Tom Triggs, Dr Simon Hosking (Defence Science and Technology Organisation) and Dr Gavan Lintern (General Dynamics)

Supporting lane change behavior with an ecological interface  
The high demands placed on drivers in the road environment can lead to errors in judgement and breakdowns in situation awareness. These deficits can lead to deleterious consequences. Lane changing is a particularly challenging driving manoeuvre because of the need to make simultaneous judgements concerning multiple vehicles located in polar directions. A variety of driver assist systems have been developed to aid the driver in monitoring the road and to alert the driver to potentially hazardous situations. While these systems have been demonstrated to generally have a positive impact on driving, they are still in their infancy and require further development. Ecological Interface Design (EID) is an approach to display development that may offer solutions to some of the limitations associated with current driver support systems. The aim of this project is to develop EID for the automotive domain and to use the principles of EID to develop a driver assist system to support lane change behaviour. This project aspires to enhance the design philosophy behind the development of driver assist systems and thereby positively impact road safety. (Monash University Accident Research Foundation John Lane Memorial Scholarship)

Marilyn Johnson  
Supervisors: Dr Jude Charlton and Dr Jennie Oxley

Cycling safety from the perspective of all road users  
Cycling is the fourth most popular form of physical activity in Australia and each year the number of people cycling is increasing. While the health and environmental benefits of cycling are clear, cyclists continue to be vulnerable road users and cyclist safety is a serious road safety concern. Currently there is no Australian data on how cyclists interact with other road users. The aim of this research project is to identify strategies to improve safety for cyclists who ride...
on the road. There are three stages to this project to investigate the
interaction between cyclists and other road users including a video
observation study of cycling commuters in Melbourne; a series of
focus groups; an online survey and interviews of key stakeholders;
and a simulator experiment. (Safe Family Research Scholarship,
Amy Gillett Foundation)

Jessica Killian
Supervisors: Professor Joan Ozanne-Smith and Adjunct Professor
Olaf Drummer (Department of Forensic Medicine)

The correlation between forensic toxicology and unnatural
death
Injuries accounted for 9 per cent of the world’s deaths in 2000
and 12 per cent of the world’s burden of disease. It is known that
drug-drug and/or drug-alcohol interactions cause an increased
risk of mortality. The use of such mind-altering drugs in places of
employment or by drivers of motor vehicles, for example, places
the individual and other members of the community at risk. However,
the full extent of the involvement of drugs across the whole range of
injury deaths is mostly unknown. Illegal drugs are more likely to be
the cause of unintentional death than intentional. In contrast, in
Australia, pharmaceuticals are more likely in self-harm, where
analogesics and psychoactive drugs appear to be most commonly
responsible for poisoning and/or suicide. This study aims to examine
the presence and contribution of alcohol and drugs in all external
cause deaths for the period 2000 to 2005 in Victoria. A secondary
aim is to use the research results to assist with improving the
National Coroners Information System (NCIS) as a tool for alcohol
and drug injury surveillance. This study will provide, for the first time
in Australia, a systematic examination of the epidemiology of licit
and illicit drugs in injury deaths due to all mechanisms.

Adam McKinnon
Supervisors: Professor Joan Ozanne-Smith and Dr Rodney Pope
(Charles Sturt University)

Optimising the utility of injury surveillance systems for injury
control in active populations
The main objective of this project is to optimise the utility of injury
surveillance systems for injury prevention in active populations.
Expected outcomes of the research include: a qualitative examination
of procedural and socio-cultural factors affecting injury surveillance
systems in the Australian Army and the Victorian civilian community;
the identification and evaluation of new methods of injury data
analysis (e.g. statistical process control charts, data mining
techniques) to facilitate injury prevention; and the evaluation
of user preferences toward current and innovative modes of information
dissemination adopted by an injury surveillance system. The results
of this research will be particularly important to the Australian
Defence Force and the Victorian civilian community as well as
broader application across injury surveillance systems worldwide.
(Australian Postgraduate Award (Industry), Department of Defence)

Eve Mitsopoulos-Rubens
Supervisors: Emeritus Professor Tom Triggs and Dr Mike Regan

Investigating the calibration skill of young novice drivers
relative to experienced drivers
It has been proposed that deficiencies in calibration ability contribute
to young novice drivers’ high crash involvement. However, little direct
and objective evidence exists of differences in calibration ability
between novice and experienced drivers. Calibration in driving can
be defined as the ability to match task demands to one’s own
capabilities as a driver. Calibration requires accurate knowledge
of the demands imposed by the traffic system, and of one’s own
capabilities to meet those demands. Moreover, calibration requires
comparison between capabilities and demands, to determine
whether there is an undesirable mismatch which necessitates
appropriate modification to one’s driving behaviour. The primary
aim of this PhD research program is to explore the fundamental
differences between young novice and experienced drivers’
calibration ability. To investigate this aim, a series of three
experiments were undertaken in the MUARC Driving Simulator.
The thesis is due for submission in 2008.

Damian Morgan
Supervisors: Professor Joan Ozanne-Smith and Emeritus Professor
Tom Triggs

Risk factors for unintentional drowning at surf beaches
This PhD study identifies and assesses factors that contribute to
the risk of drowning at surf beaches as well as providing estimates
of exposure to that risk. Methods used include analysis of coronal
data, observation of beach users, self report, and expert risk
assessment. Data gathered in this study is used firstly to develop
a predictive model of exposure to drowning risk, and secondly, to
quantify the risk posed to beach users according to swimming ability,
surf beach experience, and beach conditions.

Carlyn Muir
Supervisors: Dr Judith Charlton, Professor Brian Fildes and
Professor Joanne Wood (Department of Optometry, Queensland
University of Technology)

Vision and driving with hemianopia
Hemianopic visual field loss is blindness or reduction in one half of
the visual field caused by damage to the visual pathways in the
brain. There is limited evidence regarding the ability to drive safely
with hemianopia, however some studies have suggested that
hemianopic field loss may not impair driving ability enough to warrant
licence refusal. Research suggests that individuals with hemianopic
field loss appear to compensate for their deficit to varying degrees
by employing altered scan paths and excessive fixation in the blind
region. However, fixation does not necessarily imply attentional
processing, therefore identifying whether these altered scan paths
actually correspond to attentional processing in the blind region
would provide evidence as to whether this is an effective
compensatory strategy. Therefore, the primary aims of this PhD are
to investigate the extent to which individuals with hemianopic field
loss compensate on a visual attention task and to investigate the
relationship between performance on a visual attention task and
cognitive and vision tests commonly used in driving assessment.
Outcomes of this research will be useful for developing a suitable
screening assessment for visual fitness-to-drive in individuals with
hemianopic field loss.
Virginia Routley  
Supervisors: Professor Joan Ozanne-Smith and Associate Professor Li Dan (Centers for Disease Control, PR China)  

Development of seat belt wearing in two cities in China  
China’s rapidly developing economy and motorisation have been accompanied by official road safety statistics of almost half a million road traffic crashes and injuries and 100,000 fatalities (2005). The road traffic safety law, requiring seat belts to be worn where fitted came into effect in May 2004 and, since seat belts are a highly proven intervention, has considerable potential to reduce fatalities and injuries and thus impact on the global burden of injury. Estimates of seat belt wearing rates in China, particularly those undertaken by observational studies, have been scarce. This study has involved measuring the progress of seat belt wearing and changes in attitudes in Nanjing, Jiangsu Province and Zhoushan, Zhejiang Province. Surveys undertaken in April 2005, 2006 and 2007 have concluded and results of 120,000 observations of seat belt wearing, 2,200 interviews and 10 focus groups are in the process of being written up for both a PhD by publication and presentation at conferences. Victoria, Australia was the first state worldwide to mandate seat belt wearing and a comparison with the development of seat belt wearing between Victoria and these Chinese cities should give an indication of temporal and social differences in road safety development. More significantly, the study will inform wider seat belt uptake interventions in China. The World Bank Global Road Safety Facility has funded the second and third year of this project. (Australian Postgraduate Award)

Carolyn Staines  
Supervisors: Professor Joan Ozanne-Smith and Professor Graeme Davison (School of Historical Studies, Faculty of Arts)  

The Victorian experience of drowning and its prevention: historical eco-epidemiological study of drowning prevention in an economically developing community  
Victoria, along with other economically developed communities, has had considerable success in reducing drowning death rates. However, drowning continues to be a major cause of unintentional injury deaths in developing countries. This study aims to inform drowning prevention in developing countries by determining how Victoria reduced its drowning rate. The study investigates the causes of drowning deaths and their prevention in Victoria from around 1840 when coronial investigations into drowning deaths were first conducted through to the year 2000. The records of almost 1500 drowning cases have been used to determine what caused drowning deaths, whether and how the causes changed over time, and what factors resulted in the reduction of deaths. This research, supplemented by additional information from other historical sources and newspaper archives, is producing a rich picture of the drowning risk profile of Victoria’s early settlers and the evolution of this over the period of the State’s economic and social development. Results of this study have been presented at international and national conferences and the methodology of this study has attracted attention as it employs an unusual combination of the disciplines of epidemiology and history to provide an output that is rich in both quantitative and qualitative information. (Monash Research Graduate Scholarship)

Karen Stephan  
Supervisors: Dr Michael Lenné and Professor Ian Johnston  

The association between drivers’ use of prescription medications and risk of injurious traffic crash  
While the relationship between alcohol and crash risk is well recognised, the impact of prescription drugs on crash risk is less clear. Some medications impair a driver’s ability to perform the complex tasks required for driving, and could increase the risk of being involved in a collision. Epidemiological studies of the relationship between medication use and crash risk are rare, probably due to the difficulties associated with obtaining a large enough sample size to detect the relationship between rare outcomes (traffic crashes) and rare exposures (prescription medication use). This research will determine the association between prescription medication use and risk of traffic crash. The results will ultimately provide patients and practitioners with information about medications that are linked to increased crash risk, and will contribute to informed prescribing decisions for drivers. (NRMA-ACT Road Safety Trust Postgraduate Research Scholarship)

Trang Vu  
Supervisor: Professor Joan Ozanne-Smith  

Capacity building for global injury prevention  
Capacity building can be considered at three levels, the individual, institutional, and the systemic. This research project examines capacity building needs for global injury prevention and develops methods and tools for setting priorities to meet identified needs. The research will focus on challenges in low- and middle-income settings in particular. A global framework will be set up and data from Vietnam will be used in a case study. Also, two WHO global capacity building programs, TEACH-VIP and Mentor-VIP, will be evaluated. TEACH-VIP (Training, Educating and Advancing Collaboration in Health on Violence and Injury Prevention) is a modular training curriculum developed by injury prevention experts and aimed at a range of audiences. Mentor-VIP is a low cost model of mentoring designed to assist injury practitioners to further develop their skills.
2007 Co-supervised PhD candidates from other faculties and institutions

MUARC staff are often called upon to co-supervise PhD candidates who are enrolled in other Monash faculties and departments as well as other Australian and overseas institutions.

Monash University candidates

Kelly Bryden
Faculty of Medicine, Nursing and Health Sciences, Monash University
Supervisors: Dr Judith Charlton (MUARC), Dr Jennie Oxley (MUARC) and Dr Georgia Campkin (Psychology)

Wayfinding in older drivers and drivers with Alzheimer's disease

Certain older drivers and drivers with Alzheimer's disease (AD) report having difficulties finding their way while driving. There is emerging experimental research which suggests wayfinding ability declines with age and with the onset of AD. However, research is limited to very few studies and the nature and underlying causes of wayfinding errors are not fully understood. This study aims to investigate the characteristics of drivers in these groups who have difficulties with wayfinding and the strategies which are used to overcome wayfinding difficulties. Firstly, older drivers and drivers with AD and their passengers will be surveyed to investigate the characteristics of those who report difficulties with wayfinding. Participants will also be asked whether they use strategies such as passenger collaboration and in-vehicle navigation systems to assist them, and whether they believe these methods are effective. Secondly, the effectiveness of these strategies at aiding wayfinding will be assessed using a driving simulator. Safety variables and navigation performance will be measured while participants drive to an unfamiliar area without assistance; with passenger collaboration; and with in-vehicle navigation (before and after in-depth training). The cognitive abilities of participants will also be compared to their performance in each condition to determine whether specific areas of cognitive decline are related to wayfinding performance and the ability to use each strategy.

Suzie O’Neil
Faculty of Education, Monash University
Supervisors: Dr Janette Ryan (Education) and Professor Joan Ozanne-Smith (MUARC)

Developing safety risk intelligence in children: introducing injury prevention education programs at an early age so that children can learn to manage their own safety

This ARC funded project aims to develop a cognitive model for children to develop knowledge, skills and attitudes about risk management with the goal of injury prevention. The doctoral study is investigating the effects of new child safety programs in a sample of schools over a two-year period compared with control schools.

Karen Scally
Faculty of Medicine, Nursing and Health Sciences, Monash University
Supervisors: Associate Professor Nellie Georgiou-Karistianis (Psychology), Professor Tom Triggs (MUARC) and Dr Judith Charlton (MUARC)

Factors influencing driving performance in Parkinson's Disease

Parkinson's disease (PD) is a movement disorder that causes physical symptoms such as resting tremor and difficulty initiating and executing movement. Research has shown that driving ability is compromised by PD and in particular, cognitive changes in PD are linked to poor driving performance. No effective screening methods currently exist to assess and predict driving ability in PD. Previous research has shown that drivers with PD have significantly poorer driving performance than 'non-PD controls' and rely heavily on external cues (e.g. static warning signs) to regulate driving performance. This study aims to further investigate PD drivers' responses to selected 'ecologically valid' external cuing conditions during simulated driving performance. The driving scenario for this study will include a flashing 'prepare to stop' signal used at potentially hazardous intersections where there is a high speed zone or low visibility on approach to the traffic lights.

Moza Tahnoon Al Nahyan
Faculty of Business and Economics, Monash University
Supervisors: Professor Amrik Sohal (Business and Economics) and Professor Brian Fildes (MUARC)

Management of transport infrastructure projects in the United Arab Emirates (UAE)

The overall aim of this research program is to develop a framework and guidelines for the effective management of transportation infrastructure projects to ensure their success in the UAE. Three key objectives have been identified to achieve this aim: (1) identify major management issues impacting on transportation infrastructure projects in the UAE; (2) identify aspects of communication, coordination and stakeholder relations that contribute to transportation infrastructure project outcomes; and (3) develop a framework for decision-making to enhance project success.
Peta Hitchens
University of Tasmania
MUARC Co-supervisor: Dr Lesley Day

Epidemiology of falls to professional thoroughbred racing jockeys in Australia
The aims of this study are to investigate the epidemiology of jockey falls in Australia and to identify modifiable risk factors associated with jockey falls. It is estimated that between 25–40 per cent of all jockeys in Australia suffer a significant injury each year and that an average of two jockeys are killed annually, yet the evidence base from which to develop preventive strategies is minimal. This PhD has three main components: establish a national jockey falls database; analyse the database to describe the epidemiology of jockey falls and potential risk factors; and investigate the role of jockey physiology and performance characteristics in falls aetiology.

Michael Lucas
University of Western Australia
MUARC Co-supervisor: Dr Lesley Day

Injury among Australian veterinarians
This project is a component of the Health Risk of Australian Veterinarians (HRAV) study of a cohort of veterinarians who graduated from Australian universities from 1960–2000. The aim of the HRAV study is to determine whether this cohort is at increased risk of cancer, injury, zoonoses (diseases that are transferable from animals to humans) or adverse reproductive outcomes and to determine the risk factors for these conditions in veterinary practice. The aim of this PhD study is to identify the prevalence of, and risk factors for, injuries among Australian veterinarians and to develop a relevant prevention model for occupational settings.

Daryl Pedlar (Doctor of Health Science)
Deakin University
MUARC Co-supervisor: Dr Lesley Day

Acute farm injury in south-west Victoria
The aim of this project is to develop a framework for a preventive strategy for dairy farm injury in south-west Victoria, based on a profile of injury in this region and input from a regional consultative forum. The dairy farm injury profile will be developed from specialised emergency department and general practice injury data collections, in addition to an exposure survey of dairy farmers.

Melissa Russell
University of Melbourne
MUARC Co-supervisor: Dr Lesley Day

Falls risk, assessment and interventions for older fallers presenting to the emergency department and being discharged home
The aim of this study is to investigate the factors causing older people to fall and to test a strategy for prevention. The project has three main components: examination of the characteristics and future falls risk of older fallers presenting to emergency departments and discharged home; evaluation of the Falls Risk for Older People in the Community Assessment Tool; and a randomised controlled trial to reduce further falls and injuries for older fallers presenting to an emergency department.

In addition to the extensive PhD program, MUARC also encourages high achieving undergraduate students to undertake their Honours research project in injury prevention under the supervision of Centre staff. The Honours program promotes the development of research skills in an area of accident and injury analysis and prevention and is open to students from an extensive range of discipline areas. The Honours program fosters multi-disciplinary research and links across the University with students enrolling through their home faculty or unit while undertaking a supervised research project within MUARC.

2007 Honours candidates

Jessica Williams
Bachelor of Physiotherapy (Honours), Faculty of Medicine, Nursing and Health Sciences
Supervisors: Dr Lesley Day (MUARC) and Professor Jenny Keating (Department of Physiotherapy)

The association between physical performance measures and self-reported function among older people
This project is being conducted within the Exercise for Independent Living study – a randomised controlled trial of exercise for the maintenance of independence and prevention of falls among older people. One aim of this study is to improve the understanding of the development of physical disability among older people. This Honours project will contribute to the overall study by examining the relationship between actual physical performance measures of balance and leg strength and self-reported function in daily life. A systematic literature review was completed in 2007. During the next stage, balance, strength and self-reported function will be measured among 500 people over 70 years of age, who are being recruited for the trial. Examination of correlations between these measures will follow. Jessica will be completing the Honours component over the four years of the Bachelor of Physiotherapy.
Academic seminar programs

Students and staff are encouraged to attend the Centre’s special interest seminar programs which promote the development of new skills and engagement with a broad range of injury prevention experts. This includes the Centre’s journal club which provides the opportunity to discuss relevant papers with a view to expanding writing skills to ensure staff and students are developing the highest standard of journal papers. In addition, the monthly MUARC lunchtime seminar series covers a range of injury prevention topics presented by leading national and international experts. These seminars are an important component of the PhD Study Program. PhD candidates are also required to present interim graduate seminars at key points throughout their candidature to further develop their presentation skills and to gain critical advice and strategic input from the Centre’s many expert staff.

2007 Lunchtime seminar series
Convener: Dr Jennie Oxley

February

Associate Professor Robert Thomson
Chalmers University of Technology, Sweden
Accident analysis and reconstruction, vehicle crash simulation and testing and vehicle dynamics and other vehicle/safety issues

March

Lisa Molnar
University of Michigan Transportation Research Institute (UMTRI)
Presentation of the latest older driver research and development activities being undertaken by UMTRI

Professor Rod McClure
Professor of Epidemiology and Community Health, Griffith University, Director Designate of MUARC
Post modern epidemiology and the prevention of injury

April

Dr Ruggero Ceci
Swedish Road Administration
The Drowsiness Intervention Project (DROWSI) – a Swedish driver impairment prevention initiative

May

Dr Muhammad Fadhli Mohd Yusoff
Senior Assistant Director, Disease Control Division, Ministry of Health, Malaysia
An overview of injury in Malaysia and injury prevention initiatives in the Ministry of Health

June

Professor Simon Washington
Department of Civil and Environmental Engineering, Arizona State University
Omitted spatial variables in signalised intersection crash models: Theory and empirical evidence

Professor Narelle Haworth
Centre for Accident Research and Road Safety (CARRS-Q), Queensland University of Technology
The growth in popularity of motor scooters: What are the implications for injury prevention?

July

Dr Sandra Rosenbloom
Professor of Planning, Adjunct Professor of Civil Engineering, and Adjunct Professor of Natural Renewable Resources, University of Arizona
Are there really any transportation alternatives for older drivers who should stop driving? A comparative analysis of the safety implications of the lack of alternatives in the US and the UK

August

Dr Gary Sorock
Adjunct Associate Professor, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
Ten ways to enhance injury research studies

October

Dr Carl Soderstrom
Chief, Medical Advisory Board, Maryland Motor Vehicle Administration, Glen Burnie, MD
Safe mobility for life: Assessing medical fitness to drive among the elderly

James C Fell
Pacific Institute for Research and Evaluation (PIRE), Calverton, MD
What has worked to reduce impaired driving in the US? What does the future hold?

November

Professor Torbjörn Falkmer
Head of Department, School of Health Sciences, Jönköping University, Sweden
Why don’t we see what we are looking at although we stare? Visual perception and the impact of it on safe driving

December

Dr Eric Wigglesworth
Honorary Senior Research Fellow, MUARC
MUARC after Kerang: whither or wither?
2007 Graduate seminar series
Convener: Dr Jude Charlton

February
Matthew Ericson
Better road safety outcomes: Improving the effectiveness of technology transfer in the Lao PDR and Cambodia

March
Karen Stephan
The association between drivers’ use of prescription medication and risk of injury from road crash

September
Carlyn Muir
Vision and driving with Hemianopia
Lyndal Bugeja
The role of Coroners’ recommendations in injury prevention and control in Victoria
Clay Douglas
Development of an occupant computer model for a far-side vehicle crash
Matthew Ericson
Road safety policy in the Lao PDR and Cambodia: How successful are road safety interventions and can policy outcomes be improved?
Jessica Killian
The correlation between forensic toxicology and unnatural death
Adam McKinnon
Optimising the utility of injury surveillance systems for injury control in active populations

PhD Candidate Clay Douglas.
Engagement

MUARC in the news
WHO Collaborating Centre activities
Awards
Academic engagement
Visitors
Staff membership of boards and committees
External project committee members
MUARC in the news

For 20 years MUARC has played an important role in the media, providing an independent voice on injury prevention research and initiatives, policy decisions and promoting a safe and healthy community. The Centre has an extensive record of engagement with the external community which continued in 2007.

Media highlights from 2007

MUARC staff responded to hundreds of media requests and nearly 500 articles and other media mentions featuring MUARC researchers were published or broadcast in newspapers and magazines, as well as on radio and television news and current affairs programs both nationally and internationally.

The MUARC website, which was given a facelift in 2007 has become one of the most important sources of injury prevention information for Australian and international users. An average of 8,000 information requests were made per day and a whopping 326.74 gigabytes of information was downloaded in 2007 to over 250,000 unique users around the world. The large amount of material downloaded suggests that people are often downloading entire reports, which is a credit to the Centre’s research team.

January

Driver distraction caused by new technologies is one of the emerging road safety issues and it grabbed media attention at the start of the year with Dr Michael Regan and Dr Bruce Corben interviewed by Sydney’s 2UE, Melbourne’s 3AW and Canberra’s 2CC on the effects of satellite navigation systems, mobile phones and ipods.

Speed cameras continued to be an issue of media interest with Professor Max Cameron quoted in an in-depth Sydney Morning Herald article.

February

Dr Judith Charlton led public debate on the safety of various child restraints in cars with The Age and The Sun Herald giving major coverage to her views.

March

Australia was shocked when three people died in an horrific accident in Melbourne’s Burnley Tunnel. Sweden’s Dr Ruggero Ceci, a world expert in tunnel design and visiting fellow at MUARC, was called on by The Sunday Age to provide his views on ways to avoid a repeat of the disaster.

MUARC’s Professor Ian Johnston and Dr Bruce Corben did extensive media interviews after it was announced that MUARC had been awarded the tender to develop the next West Australian Road Safety Strategy by the WA Office of Road Safety.

April

The Easter road toll always makes headlines and 2007 was no exception with ABC 774 interviewing MUARC’s Chair of Road Safety, Professor Brian Fildes on measures to help reduce what he described as “totally unacceptable” figures.

May

Newspapers including the Herald Sun featured comments from Professor Brian Fildes after the release of the second report on the ongoing Australian National Crash In-Depth Study (ANCIS) which highlighted the improved crashworthiness of modern cars.

June

Car colour was the topic of the month with widespread national coverage for MUARC’s study into the impact of car colour on crashes. Dr Stuart Newstead’s pioneering study, which found that black was the least safe car colour, with a 12 per cent higher crash risk than white, also drew media interest from countries including Italy, Canada and Germany.

The reduction of deaths and injuries to cyclists gained media attention from newspapers including the Waverley Leader with the announcement that Marilyn Johnson was the first recipient of the Safe Family Research Scholarship, a collaboration between MUARC and the Amy Gillett Foundation.

June also saw the launch of Going Solo, a major MUARC initiative aimed at the parents of P-Plate drivers. Media interest was intense as Dr Jennie Oxley detailed specific measures parents could use to help young drivers. Her views also made a compelling opinion piece in Melbourne’s Herald Sun.

When tragedy struck with the Kerang rail disaster on June 5, Australia’s media turned to MUARC’s rail crash expert, Dr Eric Wigglesworth, for his considered analysis. Newspapers including The Australian, the Sydney Morning Herald, and The Age featured Dr Wigglesworth’s views on this tragic accident.

The Victorian Injury Surveillance Unit (VISU) was in the news with the Herald Sun reporting data showing that a third of preventable child deaths happen in the home. Falls were the major cause of accidental household injury, Erin Cassell called on parents to consider impact-absorbing floor surfaces and government to consider tougher building regulations.

July

Professor Joan Ozanne-Smith received coverage for her findings that children’s playgrounds were still danger zones. A MUARC study of arm fractures in Victorian schools found that children who fell more than 1.5 metres were much more likely to fracture their arm but many playgrounds had equipment with fall heights up to 2.2 metres. Professor Ozanne-Smith was also profiled by the Herald Sun Homefront section for her injury prevention work.

The annual Used Car Safety Ratings report always gains widespread coverage. All sections of the media reported findings that drivers or passengers are 26 times more likely to be killed or seriously injured in the worst rated car, the Daihatsu Hi-Jet (1982–90) than in the best one, the VW Passat (1998–2005).

MUARC raised dental injury awareness through media including the Progress Leader and Moonee Valley Leader with research showing that at least 2000 dental injuries were treated in Victorian hospital emergency departments between 2002 and 2004.
August
MUARC was centre stage with its public forum, Your Life in Whose Hands? Almost 200 people packed into the BMW Edge Theatre at Federation Square as ABC radio presenter Jon Faine led an expert panel, including former MUARC Director Ian Johnston and TAC Manager of Road Safety Samantha Cockfield, across a range of road safety issues including speeding, teen drivers, and motorcycle fatalities.

MUARC, through the Victorian Injury Surveillance Unit (VISU), raised public awareness about the rise in Do It Yourself (DIY) injuries with media including ABC's Health Matters passing on findings that in Victoria alone there are about 1000 hospital visits, 500 hospital admissions and around 15 deaths a year from DIY injuries.

Tougher trucking laws were on the media agenda with The Age reporting that MUARC figures showed trucks were involved in 127 deaths in the year to March 2006, the latest period for which figures were available.

September
MUARC was at the forefront of the emerging issue of motor scooter injuries with The Age detailing MUARC findings that in the four years to 2006, 321 riders of scooters, mopeds or motorised bicycles were admitted to hospital. The coverage has led to authorities rethinking the road rules for motor scooters with booming sales resulting in unprecedented numbers on Victorian roads.

Erin Cassell from the Victorian Injury Surveillance Unit (VISU) made headlines in the Herald Sun when she led the call for 30km speed limits around schools and where bike paths meet roads as more cyclists hit the streets. Ms Cassell's research showed that more than 6000 cyclists were treated in hospitals in 2006 with riders over the age of 30 making up a larger proportion of injuries.

MUARC's engagement with the local community was highlighted with the Cranbourne Leader's coverage of Professor Tom Triggs' involvement in the 'In One Piece Learner Driver Forum' where he presented his research on young driver safety.

October
Car colour and crash risk was in the news again when MUARC research revealed that the most popular car colour, silver, was one of the worst. Dr Stuart Newstead's findings made news bulletins across the country including 4BC Brisbane, 6PR Perth, and Triple M Adelaide.

MUARC's adjunct professor Claes Tingvall, visiting Australia for the AAAM conference, grabbed the media spotlight, including a major interview with Jon Faine on ABC 774 radio, with his view that alcohol detection devices should be fitted in all motor vehicles.

Dr Jeffery Archer's findings on the benefits of reduced speed zones made an impact on radio with news services on 2CC Canberra, 2SM and 2UE Sydney, 3AW Melbourne, 6PR Perth and Bay FM Geelong providing extensive coverage of his views.

In Perth, an Office of Road Safety paper, based on research by MUARC's Dr Bruce Corben, was released for public discussion. Media outlets including ABC 720 Perth, which interviewed Dr Corben, provided a vital avenue for comment on initiatives including changes to road infrastructure design and the reduction of 60km zones to 50km and the introduction of 30km zones in the CBD and shopping strips.

November
MUARC's landmark Australasian study into the effectiveness of electronic stability control (ESC) received major coverage on all the commercial television news services as well as newspapers including Perth's Sunday Times, Brisbane's Courier Mail, and Melbourne's Herald Sun.

The Centre's world impact also received coverage as it celebrated its 20th anniversary. Newspapers including the Waverley Leader quoting Professor Rod McClure on overseas projects including Professor Joan Czanne-Smith's work with the Chinese Ministry of Health.

December
Roadside barriers were in the spotlight when four young men died in a crash on Melbourne's West Gate Freeway. MUARC's crash barrier expert, Dr Bruce Corben, was quizzed on the effectiveness of barriers by media including Channel Nine News.

MUARC attracts considerable media attention and staff respond to hundreds of media requests each year. Dr Stuart Newstead (pictured) delivers an annual media launch of the used car safety ratings, and speaks on many other issues throughout the year.
MUARC WHO Collaborating Centre activities

MUARC is a designated WHO Collaborating Centre for Violence, Injuries and Disabilities. The designation is for the Western Pacific Region encompassing 27 countries, including China, Vietnam, Japan, Cambodia, Lao, Philippines, Pacific Island nations, New Zealand and Australia. The Collaborating Centre also works closely with WHO on global programs.

Role of the Collaborating Centre

MUARC's role as a Collaborating Centre is to: assist with the development and monitoring of regional capacity in injury prevention including data systems, research, and injury prevention policy and planning developments; to contribute to solving the major unintentional injury burden in the region (particularly road traffic injury, drowning, falls and poisoning) through research, training, leading-edge workshops and general information exchange; to contribute to suicide prevention in the region by conducting research on access to the means of suicide and assisting countries to develop and implement policies aimed at reducing access to methods such as poisoning and falls from heights; and to assist the WHO Regional Office for the Western Pacific to develop, implement and evaluate a regional injury prevention strategy.

MUARC Collaborating Centre activities in 2007

Activities grew substantially in 2007 and included capacity building, research, strategic planning and business planning for the Collaborating Centre's operations.

Capacity building

> MUARC has contributed substantially to the joint WHO/UNICEF World Report on Unintentional Child Injury Prevention to be published in 2008. The Collaborating Centre took part in the Western Pacific and South East Asian regional consultation on the draft world report, in Manila in June and in an editors’ meeting in Geneva in July. Joan Ozanne-Smith is one of eight editors of the World Report, and authors and reviewers include Carolyn Staines and Erin Cassell.

> Johnathon Ehsani, who has contributed to the developments of the Collaborating Centre's program completed his Dunlop AsiaLink Fellowship, based in Bangkok in early 2007. Johnathon was also awarded one of Australia’s most prestigious PhD scholarships (Sir John Monash Scholarship) to undertake his PhD in the United States, commencing in 2008.

> MUARC participated with WHO headquarters in 2007 in the development of a global mentoring scheme (MENTOR-VIP), as well as providing individual mentoring to in-country and trainee injury prevention professionals. Joan Ozanne-Smith was appointed to the WHO MENTOR-VIP Core Committee and participated in the selection of Mentor/Mentee pairs in the first pilot year, during a meeting at CDC Atlanta in July. MUARC was also invited to participate in the development of guidelines on the role of Ministry of Health injury prevention focal points. Such activities also benefit MUARC by providing opportunities at the forefront of international developments and in identifying strategic directions and collaborations.

> At the Regional level, the Collaborating Centre hosted a WHO Fellow, Dr Fadhli Yusoff who has responsibility for injury prevention for the Ministry of Health in Malaysia.

> Joan Ozanne-Smith co-facilitated a child injury prevention training workshop for Chinese Ministry of Health Maternal and Child Health doctors from 22 provinces in Chengde, in June at the request of WHO. Also in China, Virginia Routley and Joan Ozanne-Smith gave invited presentations on child injury and injury prevention policy to the Zhejiang Province Centers for Disease Control staff in April.

> A further WHO Fellowship program for four Chinese public health doctors from Shandong Province Centers for Disease Control was co-hosted by MUARC and Flinders Research Centre for Injury Studies in August. MUARC and Flinders also collaborated to prepare an invited WHO paper on global injury data developments, presented in Geneva in December by Joan.

Research

> Developing country related PhDs focused on regional country needs are continuing at MUARC with Virginia Routley’s study of seat belt wearing in China, Carolyn Staines’ study of drowning in developing communities and Matthew Ericson’s study of road safety public policy in South-East Asia. New candidate Trang Vu, who joined the Centre in 2007 will focus on capacity building for injury prevention, including Vietnam as a case study.

> Proposals submitted to (1) the World Bank Global Road Safety Facility to support the broader seat belt study and China Centers for Disease Control collaboration; and (2) the Centre for Child Injury Prevention, Children’s Hospital Philadelphia for a China based study of child booster seat (restraints) for motor vehicles were funded in 2007. These projects are continuing and the first China seat belt article has been published in Injury Prevention.

> As part of the World Bank funded project, a seat-belt intervention study, to be conducted in Zhoushan, Zhejiang Province, is in the planning stage. This project follows from the detailed baseline observational, and attitudinal studies completed to date by Virginia Routley.

> MUARC was invited, as a WHO Collaborating Centre, to be represented on the Scientific Committee for the 9th World Conference on Injury Prevention and Safety Promotion, to be held in Mexico in 2008. A meeting was held in the conference city, Menda, Mexico in March.

> Joan Ozanne-Smith was an invited speaker at the Multi-Sectoral Forum on Road Safety in China, hosted by the China Ministries of Health and Public Security and WHO, on the topic of data collection for road traffic injury in Beijing, in June.
Strategic planning

> Through its Collaborating Centre, MUARC was commissioned by the Western Pacific Regional Office to prepare an important Regional Framework for Action for Injury and Violence Prevention. The Collaborating Centre contributed technical advice to the second consultative workshop on the Framework for Pacific Island nations in Nadi, Fiji in April after which the final draft report was completed and submitted.

> A WHO consultancy was undertaken in Vanuatu by Joan Ozanne-Smith in December to advise on pilot road traffic injury (RTI) interventions. Joan is also contributing to, and editing a report on RTI interventions in a total of four Pacific Island nations.

> Two meetings in China were held to discuss the upcoming *Lancet* series on health in China, for which Joan Ozanne-Smith is an invited author on the injury in China paper. The Chinese Health Minister and two Vice-Ministers for Health attended the October meeting in Beijing. The series of papers will be published in 2008.

> The MUARC Collaborating Centre was invited to participate and present at a workshop of Melbourne-based WHO Collaborating Centres by the Nossal Institute for Global Health during the visit of WHO Assistant Director General, Dr David Heymann in September. The high profile workshop aimed to showcase the work of Collaborating Centres and to identify potential for collaboration between Centres.

> Within Monash University, Joan Ozanne-Smith is an invited member of the Monash China Task Force, to assist the University in setting its strategic directions for developments in China. Also within Monash, a business plan for the Collaborating Centre was developed in 2007. As well as setting strategic directions within the WHO terms of reference and MUARC and Monash University strategic directions, the business plan addresses core functions, such as preparation of research and development proposals, meetings and networking, promotional activities and profiling (including webpage development) and preparation of a core funding proposal for the Collaborating Centre.
Awards

For MUARC staff and students the opportunity to work in such an important area as injury prevention is in itself a reward. Through their excellence and dedication many of our staff and students have also been acknowledged for their work by the community at large. MUARC wishes to congratulate all of our staff and students for their exemplary work and in particular those who received external awards in 2007.

Australian Honours

Members of the Monash University community featured prominently in the 2007 Australia Day and Queen’s Birthday awards which included MUARC veterans Professor Ian Johnston and Professor Peter Vulcan. MUARC is delighted to congratulate Ian and Peter who have demonstrated unending commitment to MUARC, the field of injury prevention and made an enormous contribution to the well-being of the global community throughout their long and distinguished careers.

Professor Ian Johnston was recognised with a Member (AM) in the General Division of the Order of Australia for his service to the transport industry, particularly the promotion of road safety through the Monash University Accident Research Centre, maritime safety, and to a range of professional industry organisations.

Professor Peter Vulcan was awarded a Member (AM) in the General Division of the Order of Australia for service to the community as a contributor to accident and injury prevention in the field of road transport, and to people with intellectual disabilities.

Industry awards

Professor Brian Fildes received three highly-regarded industry awards during 2007:

> 2007 Award of Merit for significant contribution in the field of automotive safety and injury prevention, awarded by The Association for the Advancement of Automotive Medicine, Chicago, USA

> Ralph H Isbrandt Automotive Safety Engineering Award for best paper, awarded by the Society of Automotive Engineers, USA

> 10 years of active membership, awarded by the Society of Automotive Engineers, USA

Postgraduate awards

Johnathon Eshani was one of eight Sir John Monash Award winners for 2008 (announced in 2007) presented by the Governor-General of Australia Major General Michael Jeffrey AC CVO MC. The awards are considered Australia’s most prestigious postgraduate scholarships and recognise individuals for their leadership, academic excellence and contribution to the community. Johnathon’s association with MUARC began in 2004 when he worked with Joan Czennie-Smith as part of the Victorian Public Health Training Scheme and visited China with Virginia Routley to take part in the pilot seatbelt wearing survey. Johnathon then applied for a fellowship with The Alliance for Safe Children (TASC), with which MUARC signed a Memorandum of Understanding in 2006, and received a grant through the Dunlop Asialink Fellowship, based in Bangkok. Early in 2007 Johnathon joined MUARC as a PhD candidate through a Monash Graduate Research Scholarship, however following his Sir John Monash Award he has transferred his academic program and will spend the next three years at the University of Michigan pursuing studies in adolescent risk taking.
One of MUARC’s many special features is the continued engagement with injury prevention colleagues from around the world through academic engagement programs including seminars, workshops and conferences. In addition MUARC staff travel extensively to attend international meetings and working groups, and several of the Centre’s staff have been seconded for varying periods to international organisations. Over the years a number of national and international researchers have spent extended periods of time in the intellectual hub of MUARC working on collaborative research projects, utilising the Centre’s extensive facilities and mentoring young researchers.

Seminars and workshops hosted by MUARC

March

Issues in road safety evaluation

This three-day residential workshop was presented by renowned engineer and road safety expert Emeritus Professor Ezra Hauer from the Department of Civil Engineering at the University of Toronto. MUARC developed this exclusive workshop as a unique opportunity for participants to work in a small group setting with Professor Hauer who has gained an international reputation for his scientific rigor and practical understanding in the study of the relationships between roadway design and safety. Delegates from the ACT, NSW and Victoria represented a range of backgrounds but were generally engaged in the conduct or interpretation of countermeasure evaluations and statistical analyses of mass crash data and those involved commented on the particular benefits of the extensive program.

August

Crossing over in epidemiology: methodological challenges in case-crossover studies

Workshop partners: MUARC and NHMRC Injury Trauma Rehabilitation Capacity Building Partnership

This workshop convened by MUARC’s Dr Lesley Day, featured international epidemiologist Dr Gary Sorock. The program provided an overview of the methodological challenges for case-crossover studies followed by a series of case studies focusing on the specific methodological and analytical issues of each case. The workshop provided participants with a greater understanding of the distinct challenges involved in case-crossover studies and the tools to improve current and future studies.

October

Biomechanics of Crash Injury and Vehicle Crashworthiness

Course partners: MUARC and the Association for the Advancement of Automotive Medicine (AAAM)

MUARC has run its two-day ‘Biomechanics’ course six times over the past ten years using a variety of different formats tailored to the knowledge and skills of each participant group. In 2007 the course was run in conjunction with the AAAM prior to their 51st Annual Scientific Conference. Lecturing staff comprised a range of international experts from the USA, Canada and Europe, as well as Australia. Over 100 participants attended the program, with the largest contingent from various departments across Holden including Innovation, Engineering, Design, Sales and Marketing, Corporate Affairs and Safety (VSAS). In addition there was also a large group from the Department of Infrastructure, Transport, Regional Development and Local Government as well as participants from a range of other companies and organisations including Subaru, Hyundai, the Department of Defence, Autoliv, several health providers, other universities, and consultancy firms.

An independent voice

Through high quality research and independent recommendations, MUARC is working to challenge and support citizens, governments and industries to eliminate serious health losses due to injury. One of MUARC’s greatest strengths is its ability to engage with policy makers and program administrators in both industry and government to ensure relevant research that can be effectively translated into new policies and practices. Many of the senior researchers at MUARC are active at the national and international level and as such MUARC plays an important role providing an independent voice on injury prevention research and initiatives, policy decisions and promoting a safe and healthy global community. In 2007 MUARC researchers Professor Brian RIDLES, Dr Stuart Newstead and Dr David LOGAN were involved in a major submission put forward to the Vehicle Safety Inquiry being conducted in 2008 by the Parliament of Victoria Road Safety Committee.
Nicola Fotheringham BA, BSc
Senior Program Consultant (Motorcycle Safety), VicRoads

In 2007, motorcycle safety expert, Nicola Fotheringham was seconded to Victoria’s state road authority, VicRoads as a Senior Program Consultant. One of the main areas of Nicola’s work has been to plan, develop, implement, evaluate and report on behaviour change and on-road projects related to motorcycle licensing, training, safety and other crash reduction countermeasures. A particular focus has been the management of projects under the Motorcycle Safety Levy and implementing the Victorian Motorcycle Road Safety Strategy. In addition, Nicola has been providing significant input to the development of strategic directions and plans in relation to the Motorcycle Safety Program and coordinating different elements across the Program. Also in the area of policy advice, Nicola has provided advice and expertise across VicRoads and the Ministry including the preparation of priority correspondence and ministerial briefing notes. On an international scale, Nicola has been involved in monitoring, analysing and reporting on Victorian and world trends in motorcycle safety and providing information on motorcycle safety matters to members of the public. She has also been preparing progress reports for the Victorian Motorcycle Advisory Council and VicRoads management.

Dr Mike Regan PhD, BSc(Hons), MESA
Research Director, French National Institute for Transport and Safety Research

In April 2007, applied experimental psychologist, Dr Mike Regan took up a three-year secondment as Research Director of the French National Institute for Transport and Safety Research (INRETS). The majority of his secondment will involve working with the INRETS Laboratory for Ergonomics and Cognitive Sciences for Transport (LESCOT), in Lyon, and the INRETS Modelling, Simulation and Driving Simulators (MSIS) laboratory, in Paris. During his secondment Mike will undertake three main activities: facilitates the mutual involvement of INRETS and MUARC in European Commission-funded projects; identify, initiate and undertake collaborative research activities that serve the mutual national and international research interests and priorities of INRETS and MUARC; and provide a focal point in Europe for facilitating broader, enduring, institutional collaborations between INRETS, MUARC, Monash University and other European research institutes in transport and transport safety research (such as joint research projects, joint supervision of PhD students, student and staff exchanges etc).

2007 has been a productive year and together with MUARC Research Fellow Kristie Young, Mike completed, as senior editor and co-author, the first book on driver distraction Driver Distraction – Theory, Effects and Mitigation, Michael A Regan, John D Lee and Kristie L Young, which will be published by CRC Press in August 2008; he co-wrote three successful proposals for funding from the European Commission and was able to secure a substantial role for MUARC in all three. Mike also gave invited presentations in France and Germany; supported INRETS PhD student, Virginie Etienne in obtaining funding to undertake postdoctoral research at MUARC in 2008; and continued to engage in a range of other academic activities. During the year, Mike continued to co-supervise MUARC PhD candidate, Eve Mitsopoulos-Reisbens and hosted a number of visiting delegations from Australia.

Dr Ruggiero Ceci
Swedish Road Administration (SRA)

Dr Ruggiero Ceci who has been providing human factors input to a number of Swedish initiatives, spent approximately eight months with the MUARC human factors group which provided some excellent research opportunities. Ruggiero’s inputs to MUARC projects can be broadly divided into three different areas: Driver distraction and Human Machine Interface projects as part of the AutoCRC research program; issues concerning driver impairment such as alcohol, drugs and fatigue, and input into projects aimed at the development of appropriate technological countermeasures; and tunnel and infrastructure safety issues. Ruggiero brought considerable knowledge of European Union activities to our projects and was able to connect MUARC researchers with the appropriate researchers, committees and working groups in Europe. His secondment to MUARC realised clear benefits for both MUARC and the SRA and highlights the invaluable nature of such academic secondments. It was agreed that opportunities for continued collaborations in these areas would be vigorously pursued.

Dr Rebbecca Lilley PhD, MPH, BSc(Hons)
Post Doctoral Research Fellow

Dr Rebbecca Lilley joined MUARC in September 2007 for the first year of her ACC Post Doctoral Fellowship held at the Injury Prevention Research Unit (IPRU), University of Otago, New Zealand. Rebbecca is currently working with Dr Lesley Day on an examination of the relationship between fatigue-related factors and injury in farmers in the Saskatchewan Farm Injury Cohort. Rebbecca has recently undertaken a systematic review of the effectiveness of agricultural injury and disease interventions. This work is part of a larger program of farm research being undertaken by IPRU to identify risk factors specific to farm injury and disease in New Zealand and design interventions to improve agricultural health and safety. Rebbecca’s time at MUARC will be used to help identify aspects of Australian farm health and safety research relevant to New Zealand.

Victorian Public Health Training Scheme

Two new Fellows from the Victorian Public Health Training Scheme commenced four-month placements at MUARC in June. Mary Kelly contributed as a researcher and author to the Slips, trips and falls in buildings project, and Dr Simon Slota-Kan contributed to MUARCs’ strategic developments in injury prevention in developing countries, particularly through the WHO Collaborating Centre.
Visitors

Research colleagues, collaborators and university representatives

ARC Vision Project progress review panel
A number of visitors including Mr Bill Frith, representing the Road Safety Trust of New Zealand, Professor Joanne Wood from Queensland University of Technology, and Professors Jill Keeffe and Justin O’Day from the Centre for Eye Research Australia participated in the ARC Vision Project progress review meeting.

Dr Ola Boström
Senior Research Engineer, Autoliv AB Research, Värgårda, Sweden
Dr Boström attended the MUARC ARC far-side project meeting and lectured at the MUARC Biomechanics course held at Holden.

Dr Dina Burger
Deputy Pro-Vice Chancellor Research, Monash South Africa
Dr Burger visited MUARC to discuss the future development of an injury prevention research node at the University’s campus in Johannesburg, South Africa.

Dr Nguyen Duc Chinh
Senior surgeon, Viet Duc Hospital, Hanoi, Vietnam
Dr Nguyen Duc Chinh visited MUARC in August to discuss future collaboration, including the project being undertaken by MUARC PhD candidate Trang Vu.

Dr Alan Finkel
Chancellor, Monash University
Dr Finkel visited MUARC during 2007 as part of a program of visits around the University prior to officially commencing his new role as Chancellor.

Emily Kerr
Third year Health Promotion/Psychology placement student, Deakin University

Robert Klein
Regional Programme Director for Asia, Global Road Safety Partnership
Mr Klein visited MUARC to discuss collaboration on developing country research and development in road safety.

Dr Gavan Lintern
Chief Scientist, Advanced Information Engineering Services Group, General Dynamics
Dr Lintern was employed briefly by the Centre to provide expert support to the AutoCRC HMI projects in the use of Cognitive Work Analysis.

Lisa Molnar
University of Michigan Transportation Research Institute (UMTRI)
Ms Molnar met with a number of staff during her visit to MUARC and presented a lunchtime seminar.

Dr Stephen Rouhana
Staff Technical Specialist and Group Leader, Safety Research and Development, Ford USA
Dr Rouhana visited MUARC to attend the ARC far-side project meeting.

Sichuan University delegation
The delegation from the prestigious Sichuan University in China led by Professor Guang Xian Li, Vice-President of the University visited MUARC as part of a broader tour of Monash University.

Dr Gary S Sorock
Adjunct Associate Professor, John Hopkins Bloomberg School of Public Health, Baltimore
Dr Sorock visited the Centre to share his expertise in research design and met several researchers who are interested in the case-crossover methodology. He also presented a MUARC lunchtime seminar and a joint workshop on case-crossover methodology with MUARC and the NHMRC Injury Trauma Rehabilitation Capacity Building Partnership.

Sun Yat-Sen University delegation
This delegation from China led by Professor Da Ren Huang, President of the University met with Professor Brian Fildes, Professor Joan Oianne-Smith, Dr Jude Charlton, Dr Lesley Day and Nicole Paramanis to explore academic and research collaborations between the two universities.

Professor Claes Tingvall
Director of Traffic Safety, Swedish Road Administration (Former Director, MUARC)
Professor Tingvall spent time at MUARC for his annual visit to the Centre working with a number of staff on bilateral cross-institutional road safety projects.

Professor King Yang
Professor and Director, Bioengineering Center, Wayne State University, Detroit, USA
During his visit to MUARC Professor Yang lectured in the two-day MUARC Biomechanics course held at Holden and attended the AAAM annual conference.

Dr Fadhli Yusoff
Assistant Director of Injury and Violence Prevention, Malaysian Ministry of Health
Malaysian Fellow, Dr Yusoff was based at MUARC on a WHO Fellowship focused on violence, violence surveillance, and prevention and services for victims of violence. While at MUARC he also presented a lecture ‘Injury in Malaysia’ as part of the Centre’s lunchtime series.

Professor Claes Tingvall presenting at the 51st Annual Scientific AAAM Conference in Melbourne.
Industry, government and international visitors

Dr Mahendra Arnold
Dr Arnold who is a public health physician in the occupational and environmental health area within the government of Sri Lanka visited MUARC as part of a broader tour organised by the Monash University Department of Epidemiology and Preventive Medicine (Centre for Occupational and Environmental Health).

Asia-Pacific Economic Cooperation (APEC) Forum
MUARC hosted around 30 delegates from the APEC Forum with many of the ‘Member Economies’, namely Australia; Brunei Darussalam; Canada; Chile; People’s Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Republic of the Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; United States and Vietnam represented by delegates who chose to do the MUARC site visit. Demonstrations of the driving simulator, instrumented vehicles, modelling software and the wind tunnel in Mechanical Engineering were provided for the delegates.

Australian Technical Experts Network – Chinese delegation
Around 15 professors and delegates from China attended a presentation and discussion by Rod McClure, Nimmie Candappa and Virginia Routley where they were informed of the areas of work undertaken by MUARC, the training available for MUARC staff and specifics of some of the road safety issues facing Victoria and several research projects being undertaken by MUARC to address these.

Mr Zhang Boqiang
Deputy Inspector, Department of Scientific and Technological Education, Ministry of Communications, PRC.

Dr Dainius Dalmotas
President, D.J. Dalmotas Consulting Inc. (Retired) Director of Research, Transport Canada
Dr Dalmotas, an expert in crash reconstruction and crash test dummies attended the MUARC Biomechanics course held at Holden.

Delegation from Malaysia
MUARC hosted a delegation from Malaysia organised by the Victorian Institute of Forensic Medicine (VIFM) in November. The delegation was led by Dr Mohd Shah Mahmood, Director of the National Institute of Forensic Medicine, Hospital Kuala Lumpur. The purpose of the visit was to discuss future cooperation in postgraduate training for Malaysian doctors, to discuss potential injury data system developments in Malaysia and to learn more about the successful operations of the VIFM.

Delegation from Thailand
The Thai delegation included representatives from the Department of Land Transport and the Ministries of Finance and Public Health. Dr Bruce Corben, Professor Max Cameron and Dr David Logan gave presentations covering safe systems, evaluation of road safety programs, and the ECI system.

Delegation from the Russian Center for Strategic Research
Members of this delegation are responsible for carrying out research and development in the social and economic sphere for the government of the Russian Federation. They visited MUARC to discuss one of the Centre’s research projects investigating the international experience of improving road safety, the results of which will be used in the development of the Russian National Road Safety Program (Strategy) 2008–2020, which is currently under development.

Department of Human Services (DHS)
Several staff from DHS visited MUARC to discuss developments in injury prevention.

Dr Jamie Dow
Medical Advisor on Road Safety, for the Société de l’assurance automobile du Québec, Canada
Dr Dow visited Melbourne for the AAAM and Road Safety conferences and met with the older driver research team at MUARC to present an overview of his large-scale Canadian study of medical conditions and crash risk.

Dutch experts in tunnel safety and management
Mr ir. Gert Jan Meijer Msc, Safety Specialist of TNO, the Dutch Institute of Applied Science and Mr ir. Ben van den Horn Msc, Safety Specialist at Civil Engineering Department of the Ministry of Transport and Water Management visited Victoria for an exchange of knowledge on approaches to tunnel safety. The round table discussion included participants from MUARC, TAC, SEITA, VicRoads, TransUrban, Department of Infrastructure, ARRB and EastLink.

Rob Duvergé
Keuring Institute, Municipality of Frysien, Netherlands
Mr Duvergé visited the Centre to discuss the European concept of shared pedestrian space and, in particular, its application to the Centre’s Walk Bendigo Project currently underway.

His Excellency Mr Zhang Junsai
Ambassador for the People’s Republic of China to Australia
His Excellency and Madam Yin Guomei; accompanied by Mr Liang Shugen, Consul-General; Mr Tang Jian, Third Secretary; Mr Rene Reinhard, Deputy Director of Protocol, Department of Premier and Cabinet visited MUARC in December (picture below).

Demonstration of the MUARC simulator to His Excellency Mr Zhang Junsai and guests.
Bob Lange  
Executive Director for Vehicle Structure and Safety Integration, General Motors, Detroit, USA

Gary Lawson-Smith  
CEO, Aviation Safety Foundation Australasia (ASFA)

Chris Milton  
Commonwealth Department of Health and Ageing Manager  
Mr Milton who has responsibility for injury prevention visited MUARC to meet with Dr Lesley Day and Professor Joan Ozanne-Smith.

Dr Rob Nethercote  
CEO, Australian Institute of Motor Sport

Parliamentary Road Safety Committee  
Committee members visited MUARC for a general briefing on developments in the area of road safety.

Polish TV crew  
A Polish TV crew visited MUARC (pictured below) as part of a project to produce a series of around 10 episodes featuring road safety in Australia aired on Polish TV from July–September 2007. Road Safety is a very topical issue in Poland and the series was seen by Austrade who organised the visit as an important way to promote Australian road safety technologies and capabilities to the Polish market. The producers were particularly interested in Victoria’s ‘arrive alive’ campaign and were keen to feature this strategy to introduce Polish citizens and professionals to this philosophy, as well as other key Australian players involved in Road Safety such as the Victoria Police, VicRoads and Redflex.

Dr Carl A Soderstrom  
Chief, Medical Advisory Board, Maryland Motor Vehicle Administration, USA and Adjunct Professor of Surgery, University of Maryland School of Medicine, Baltimore, Maryland, USA

Dr Trent Victor  
Product Area Manager for Driver Environment, Volvo Technology  
HMI expert Dr Victor made a special visit to meet with MUARC researchers as part of a short Australian trip.

David Ward  
Director General, FIA Foundation for the Automobile and Society  
Mr Ward was the special guest speaker at the MUARC 20th Anniversary Gala Dinner. While in Australia he also launched the Centre’s landmark study on the effectiveness of Electronic Stability Control (ESC) systems and was interviewed on ABC radio by Jon Faine.

WHO Fellows from China  
Four WHO Fellows from the Chinese Shandong Province Centers for Disease Control comprised Deputy Director Dr Aiqiang Xu, Dr Jixiang Ma, Dr Xiaolei Guo and Dr Jiyu Zang undertook a week of training based at MUARC. Their program in Australia included time with MUARC staff including the Victorian Injury Surveillance Unit (VISU) and a number of site visits, including the Royal Children’s Hospital Resource Centre for Child Health and Safety and the National Coroners Information System. A further week of training was undertaken at Flinders University.

Claude Wicky  
Software Development Manager, Eca Faros  
Mr Wicky from French simulation company Eca Faros visited MUARC to provide training for staff on the operation and scenario building for the new simulator.
Staff membership of boards and committees

A–G

Accident Analysis & Prevention, Associate Editor (I. Johnston)
Association for the Advancement of Automotive Medicine, Chicago, Illinois, Scientific Program Committee, Member (B. Fildes, J. Charlton, M. Franklyn)
Association for the Advancement of Automotive Medicine, Membership and Credentials Committee (M. Fitzharris, J. Charlton)
Australian Aviation Psychology Association, Committee Member (M. Lennè)
Australian China Alumni Association, Director (J. Ozanne-Smith)
Australasian College of Road Safety (Vicotorian Chapter) Committee, (J. Charlton, M. Regan)
Australian e-Safety Working Group, Chair/Member (I. Johnston, M. Regan)
Australian Injury Prevention Network, Member Executive Committee (L. Day, L. Bugeja); Student Representative (J. Killian)
BrainLink (formerly Brain Foundation Victoria), Board of Directors (J. Charlton)
Centre of Research Excellence in Patient Safety Reference Group, Member (J. Ozanne-Smith, K. Stephan)
City of Melbourne Injury Prevention Advisory Committee, Member (E. Cassell)
Commonwealth Working Party on Truck Driver shortages, Member (I. Johnston)
Department of Infrastructure, Energy and Resources, Tasmanian Road Safety Council, Hobart, Tasmania, Member (B. Fildes)
Department of Infrastructure, Rail Suicide Working Party, Member (V. Routley)
Farmsafe Australia (L. Day, W. Baker – alternate)
Farmsafe Australia National Reference Group for the Safety of Older Farmers Program (L. Day)
Farmsafe Victoria, Victorian Farmers Federation, Member (L. Day, W. Baker)

H–L

Human Factors and Ergonomics Society of Australia, National Awards Committee (T. Triggs)
IET Intelligent Transport Systems Journal, Editorial Board (M. Regan)
Injury Prevention, Editorial Board (P. Vulcan, L. Day, J. Ozanne-Smith)
Injury Prevention Research Institutes of Australasia (I. Johnston (Member), J. Ozanne-Smith (Chair))
International Journal of Injury Control and Safety Promotion, Editorial Board (J. Ozanne-Smith, V. Routley)
International Organising Committee: 8th International Level Crossing Symposium and Managing Trespass Seminar. Sheffield, England, Member (E.C. Wigglesworth)
International Organisation for Standardization (ISO) Technical Committee 22, Sub-Committee 13 – Ergonomics Applicable to Road Vehicles (M. Regan)

International Scientific Committee: 9th World Conference on Injury Prevention, Mexico, 2008 (meetings Geneva October 2006, Mexico 2007), Member (J. Ozanne-Smith)
International Society for Child and Adolescent Injury Prevention, Member (J. Ozanne-Smith)
International Task Force on Vehicle Highway Automation, Member (M. Regan)
International Working Group on Speed Control, Member (M. Regan)
Journal of Agricultural Safety and Health, Associate Editor (L. Day)
Journal of the Australasian College of Road Safety, Editorial Board, Member (M. Regan)
Kidsafe Victoria Council, Member (E. Cassell)

M–S

Monash Ageing Research (MonRAS) Advisory Committee (J. Charlton, L. Day)
Monash China Task Force, Member (J. Ozanne-Smith)
Monash University medical students’ selection panel, Member (B. Fox)
Monash University Research Graduate School Committee, Student Representative (J. Killian)
Monash University’s Roads and Traffic Sub-committee (B. Corben)
National Conference on Injury Prevention and Control Scientific Program Committee (L. Day)
National Falls Prevention Conference Scientific Program Committee (L. Day)
National Farm Machinery Safety Reference Group (NFMSRG) convened by Farmsafe Australia, Member (L. Day, W. Baker)
National Panel on the Biomechanics of Impact Injury (NPBII), Institution of Engineers Australia (A. Linder)
Nursery Product Safety Reference Group, convened by Standards Australia and the Australian Competition and Consumer Commission, Member (J. Ozanne-Smith)
Older People Injury Prevention Reference Group convened by the Victorian Department of Human Services (L. Day)
Road Engineering Association of Asia and Australasia, Past President (and Life Member) (I. Johnston)
Road Safety Reference Group, Victoria, Member (I. Johnston)
Road Safety Research Steering Group, Transit New Zealand, Corresponding Member (M. Cameron)
SaferStart Child Injury Prevention Project Steering Committee, Victorian Department of Human Services (E. Cassell)
Standards Australia Committee CS-072 Safety in House Design (J. Ozanne-Smith)
Standards Australia Committee SF 21*: Human Factors (M. Regan)
Standards Australia Committee IT23*: Traffic Information and Control Systems (M. Regan)
T–Z

Transport Industry Safety Group, Member (I. Johnston)

Transportation Research Board of the U.S. National Academies Committee AHB60 on Highway-Rail Grade Crossings, Washington D.C., Member (E.C. Wigglesworth)

Trauma systems performance improvement and registries sub-committee, Trauma committee, Royal Australasian College of Surgeons, Member (R. McClure)

Victoria’s Speed Limits Advisory Group, convened by VicRoads (B. Corben)

Victorian Civil and Administrative Tribunal, Business Licensing, Tribunal Member (J. Ozanne-Smith)

Victorian Department of Human Services Emergency Department Information Systems Committee, Member (E. Cassell, K. Ashby)

Victorian Institute of Forensic Medicine Research Advisory Group, Member (R. McClure)

Victorian Motorcycle Advisory Council, Minister for Transport, Member (B. Corben)

Victorian Public Health Training Scheme, Member (J. Ozanne-Smith)

Victorian Neurotrauma Initiative Evaluation Committee, Member (R. McClure)

Victorian Road Trauma Committee of the Royal Australasian College of Surgeons, Member (I. Johnston)

Victorian Safe Communities Network, Member Executive (E. Cassell)

Victorian Trauma Committee, Royal Australasian College of Surgeons, Member (R. McClure)

Scientific Committee, VISION Congress (for Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving) (J. Charlton)

WHO Mentor-VIP, Member International Core Group (J. Ozanne-Smith)

WHO World Report on Unintentional Child Injury Prevention: Drowning Work Group, Member (C. Staines)
External project committee members

The following people serve as external members on Project Advisory Committees, Project Steering Committees and Project Working Groups. Their invaluable contribution and dedication to the research program at MUARC is gratefully acknowledged.

**Project: Analysis of Fatal Drug Crashes**

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<tr>
<th>Name</th>
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<tr>
<td>William Gibbons</td>
<td>Department of Justice</td>
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<td>Peter Keogh</td>
<td>Victoria Police</td>
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<td>Philip Swann</td>
<td>VicRoads</td>
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<td>Dimitra Tapsas</td>
<td>Royal Automobile Club of Victoria (RACV) Ltd</td>
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<td>Richard Thiele</td>
<td>Transport Accident Commission</td>
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**Project: Architectural Glass Related Injury: Implications for Improving Public Safety**

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<tr>
<td>Brian Ashie</td>
<td>Australian Building Codes Board</td>
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<td>Chris Barker</td>
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<td>Noel Caulfield</td>
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<td>Dennis Hogan</td>
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<td>Noel Stokes</td>
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**Project: Australian National Crash In-Depth Study (ANCIS)**

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<td>Bill Bridgens</td>
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<td>Michael Case/ Diana Paez-Ortiz</td>
<td>Royal Automobile Club of Victoria (RACV) Ltd</td>
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<tr>
<td>Paul Fay</td>
<td>Ford Europe</td>
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<td>Jack Haley/ Scott Nargar</td>
<td>National Roads and Motorists’ Association</td>
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<td>James Hurnall</td>
<td>Australian Automobile Association</td>
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<td>Robert Judd</td>
<td>Autoliv Australia</td>
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<td>Dan Leavy</td>
<td>Roads &amp; Traffic Authority (NSW)</td>
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<td>Pamela Leicester</td>
<td>Insurance Australia Group</td>
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<td>Ross McCarthur/ Chris Jones</td>
<td>VicRoads</td>
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<tr>
<td>Mark Morarty</td>
<td>Toyota Motor Corporation of Australia</td>
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<td>Craig Newland</td>
<td>Department of Transport and Regional Services</td>
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<td>Penny Nichols</td>
<td>Department of Infrastructure, Energy &amp; Resources (Tasmania)</td>
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<td>Jonathon Passmore</td>
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<td>Ashley Sanders</td>
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<tr>
<td>Keith Seyer</td>
<td>Federal Chamber of Automotive Industries</td>
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<td>Stu Smith</td>
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<tr>
<td>Dimitra Tapsas/ Gillian Browne</td>
<td>Motor Accidents Authority (NSW)</td>
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**Project: Baseline Program Committee**

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<td>Kevin Casey</td>
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<td>William Gibbons</td>
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<td>David Healy</td>
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<td>Michael Case</td>
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**Project: Baseline Driver Distraction**

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<td>Charmaine Simmons</td>
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<tr>
<td>Diana Vieira</td>
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**Project: Austroads Older Driver Model Assessment Program, Stage 3**

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<td>Robin Anderson</td>
<td>Department of Urban Services (ACT)</td>
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<td>Trevor Bailey</td>
<td>Department of Transport (South Australia)</td>
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<td>John Brown</td>
<td>National Roads and Motorists’ Association Limited</td>
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<td>Kim Buttfield</td>
<td>Great Southern Population Health, WA</td>
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<td>Barry Cole</td>
<td>University of Melbourne</td>
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<td>Chris Costa</td>
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<td>Peteris Darzins</td>
<td>National Ageing Research Institute</td>
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<td>Marylin Di Stefano</td>
<td>La Trobe University</td>
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<td>Geoff Findlay</td>
<td>DPI, WA</td>
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<td>Bill Frith</td>
<td>AustRoads/Ministry of Transport, NZ</td>
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<td>John Goldsworthy</td>
<td>Australian Transport Safety Bureau</td>
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<td>Charles Gorman</td>
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<td>Jenny Gowen</td>
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<td>Mark King</td>
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<td>Corinne Leadbeattler</td>
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<td>Robin Lovell</td>
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<td>Terry Martin</td>
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<td>Neil Morfitt</td>
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<td>Morris Odell</td>
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<td>Michael Scavone</td>
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<td>Margaret Spurr</td>
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**Project: Crime and Road Safety**

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</tr>
<tr>
<td>Kevin Casey</td>
<td>Victoria Police</td>
</tr>
<tr>
<td>William Gibbons</td>
<td>Department of Justice</td>
</tr>
<tr>
<td>Allison McIntyre</td>
<td>Transport Accident Commission</td>
</tr>
<tr>
<td>Greg Parr</td>
<td>Victoria Police</td>
</tr>
<tr>
<td>Pat Rogerson</td>
<td>VicRoads</td>
</tr>
<tr>
<td>Diana Vieira</td>
<td>Royal Automobile Club of Victoria (RACV) Ltd</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Project: Cerebro-Spinal Injury During Competitive Dive-in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ron Bonetti</td>
</tr>
<tr>
<td>John Kilpatrick</td>
</tr>
<tr>
<td>Brendan Lynch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project: Disqualified Drivers Advisory Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kevin Casey</td>
</tr>
<tr>
<td>Antonietta Cavallo</td>
</tr>
<tr>
<td>Samantha Cockfield</td>
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<tr>
<td>William Gibbons</td>
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<tr>
<td>John Gibson</td>
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<tr>
<td>Anne Harris</td>
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<tr>
<td>Pat Rogerson</td>
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<thead>
<tr>
<th>Project: ‘Dwell on Red’ Traffic Signal Phasing at Intersections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah Coleman</td>
</tr>
<tr>
<td>David Healy</td>
</tr>
<tr>
<td>Linda Ivett</td>
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<tr>
<td>Shane Patton</td>
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<thead>
<tr>
<th>Project: Exercise for Independent Living</th>
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<tbody>
<tr>
<td>Flavia Cicuttini</td>
</tr>
<tr>
<td>Leon Flicker</td>
</tr>
<tr>
<td>Keith Hill</td>
</tr>
<tr>
<td>Damien Jolley</td>
</tr>
<tr>
<td>Leonie Segal</td>
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<thead>
<tr>
<th>Project: Farm Injury Risk Among Men (FIRM)</th>
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</thead>
<tbody>
<tr>
<td>Jim Dosman</td>
</tr>
<tr>
<td>Louise Hagel</td>
</tr>
<tr>
<td>John Langley</td>
</tr>
<tr>
<td>Malcolm Sim</td>
</tr>
<tr>
<td>Don Voaklander</td>
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<tr>
<td>Rory Wolfe</td>
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<thead>
<tr>
<th>Project: Flexible Barrier System</th>
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</thead>
<tbody>
<tr>
<td>William Gibbons</td>
</tr>
<tr>
<td>Ken Hall</td>
</tr>
<tr>
<td>David Healy</td>
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<tr>
<td>Peter Keogh</td>
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<tr>
<td>Daniel Przychodzki</td>
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<thead>
<tr>
<th>Project: Heavy Vehicle Safety and the Problem of Speeding – A Case for the Use of Speed Control Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Case</td>
</tr>
<tr>
<td>David Healy</td>
</tr>
<tr>
<td>Chris Jones</td>
</tr>
<tr>
<td>Jeffrey Millar</td>
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<thead>
<tr>
<th>Project: Highway Design for Older Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robin Anderson</td>
</tr>
<tr>
<td>Trevor Bailey</td>
</tr>
<tr>
<td>Antonietta Cavallo/ Tricia Williams</td>
</tr>
<tr>
<td>Jack Cook</td>
</tr>
<tr>
<td>Bill Frith</td>
</tr>
<tr>
<td>Anne Harris</td>
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<tr>
<td>Mike King</td>
</tr>
<tr>
<td>Jim Langford</td>
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<tr>
<td>Richard Lathlean</td>
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<tr>
<td>Rosemary Rouse</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Project: Human Error in Road Transport (Phase 4 – Pilot Field Trial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pat Rogerson</td>
</tr>
<tr>
<td>William Gibbons</td>
</tr>
<tr>
<td>Jessica Truong</td>
</tr>
<tr>
<td>Anne Harris</td>
</tr>
<tr>
<td>Jeff Millar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project: In-depth Investigations of Farm Machinery Injury Working Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trever Crowe</td>
</tr>
<tr>
<td>John Curtis</td>
</tr>
<tr>
<td>James Houlahan (formerly) Australian Centre for Agricultural Health and Safety</td>
</tr>
<tr>
<td>Graeme Prince</td>
</tr>
<tr>
<td>Eric Sharkey</td>
</tr>
</tbody>
</table>

Beverley Steer  Department of Health and Ageing
Sarah Proudfoot  Australian Competition and Consumer Commission
Megan Urlich  City of Greater Geelong, SafeStart Project
Tim Wain  Infant and Nursery Product Association of Australia

Project: Linking Victorian Injury Data Systems Advisory Committee

William Gibbons  Department of Justice
Vaughn Moore  Department of Human Services
Pat Rogerson  VicRoads
Richard Thiele  Transport Accident Commission

Project: Maximising the Effectiveness of Chain of Responsibility Provisions

Michael Case  Royal Automobile Club of Victoria (RACV) Ltd
Peter Frauenfelder  VicRoads
William Gibbons  Department of Justice
David Healy  Transport Accident Commission
Peter Keogh  Victoria Police
Ross McArthur  VicRoads
Dimitra Tapsas  Royal Automobile Club of Victoria (RACV) Ltd

Project: Perceptual Countermeasures

John Goldsworthy  Australian Transport Safety Bureau
Mike Tziotis  ARRB Transport Research Ltd

Project: Safety Attitudes and Behaviours in Work-related Driving

William Gibbons  Department of Justice
John Ingham  Victoria Police
Russell Scott  VicRoads
Ruth Stuckey  Transport Accident Commission
Dimitra Tapsas  Royal Automobile Club of Victoria (RACV) Ltd

Project: Speed Theme Advisory Committee

Kevin Casey  Victoria Police
Antonietta Cavallo  VicRoads
Sarah Coleman  Department of Justice
William Gibbons  Department of Justice
David Healy  Transport Accident Commission
John Ingham  Victoria Police
Peter Keogh  Victoria Police
Shane Patton  Victoria Police
Pat Rogerson  VicRoads
Richard Watkins  Victoria Police

Project: Transport Accident Commission SafeCar Project

Kevin Connelly  Transport Accident Commission
David Healy  Transport Accident Commission
Bruce Hearn  VicRoads
Ross McCarthur  VicRoads
Ken Ogden/ Michael Case  Royal Automobile Club of Victoria (RACV) Ltd

Project: Used Car Safety Ratings

Members
Michael Case  Royal Automobile Club of Victoria (RACV) Ltd (Chair)
Samantha Cockfield  Transport Accident Commission
Ross McArthur  VicRoads
Henry Schleimer  Queensland Transport
Steve Spalding  Royal Automobile Club of Queensland (RACQ) Ltd
Jon Gibson  Office of Road Safety Western Australia
Michael Upton  Royal Auto Club of Western Australia Ltd
John Goldsworthy  Australian Transport Safety Bureau
Jack Haley  NRMA Motoring and Services
Dan Leavy  Roads and Traffic Authority, New South Wales
Mark Borlace  Automobile Association South Australia
Stella Stocks  AA New Zealand
Anne Logan  Land Transport New Zealand

Observers
Barbara Bibby  Land Transport New Zealand
John White  Land Transport New Zealand
Iain Cameron  Office of Road Safety Western Australia
Roger Farley  Office of Road Safety Western Australia
Julian del Beato  Royal Automobile Club of Victoria (RACV) Ltd
Diana Paez Ortiz  Royal Automobile Club of Victoria (RACV) Ltd
James Humall  Australian Automobile Association
Doug Ling  Royal Automobile Club of Tasmania (RACT) Ltd

Project: Visionary Research Model Study

Antonietta Cavallo/ Tricia Williams  VicRoads
William Gibbons  Department of Justice
David Healy  Transport Accident Commission
Ken Ogden/ Michael Case  Royal Automobile Club of Victoria (RACV) Ltd
Peter Keogh  Victoria Police

Project: Young Driver Program – Learner Driver Experience

Antonietta Cavallo  VicRoads
Anne Harris  Royal Automobile Club of Victoria (RACV) Ltd
William Gibbons  Department of Justice
Peter Keogh  Victoria Police
Paul Tierney  Transport Accident Commission
MUARC is supported by a dedicated team of managers, administrative staff and technical specialists who form the backbone of the Centre's operations. Under the leadership of the Centre Director, this diverse team is responsible for providing the best possible operational environment and administrative tools from human resources and finance to project administration, IT services, media and marketing, all of which are vital to support the activities of the research staff and students and ensure the continued success of the Centre.
## MUARC financial statement

**STATEMENT OF INCOME AND EXPENDITURE FOR THE PERIOD**  
1 January 2007 to 31 December 2007

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance as at 1 January 2007</strong></td>
<td>3,421,098</td>
</tr>
<tr>
<td><strong>INCOME:</strong></td>
<td>8,917,938</td>
</tr>
<tr>
<td>Department of Education, Science and Training</td>
<td>1,135,348</td>
</tr>
<tr>
<td>Research:</td>
<td>5,078,114</td>
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<tr>
<td>Australian Research Council</td>
<td>380,513</td>
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<tr>
<td>National Health and Medical Research</td>
<td>691,864</td>
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<tr>
<td>Commercial Research</td>
<td>2,177,450</td>
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<tr>
<td>Commonwealth Research Grants</td>
<td>51,216</td>
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<tr>
<td>Victorian Government Grants</td>
<td>1,210,852</td>
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<tr>
<td>Other Research Grants</td>
<td>2,177,450</td>
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<tr>
<td>Co-operative Research Centres</td>
<td>566,219</td>
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<tr>
<td>Commercial</td>
<td>653,250</td>
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<tr>
<td>Internal Grants (Monash Research Support)</td>
<td>691,121</td>
</tr>
<tr>
<td>Other (Including Sale of Assets, Student Fees, Transfers)</td>
<td>110,105</td>
</tr>
<tr>
<td>Monash University Internal Transfer ¹</td>
<td>1,250,000</td>
</tr>
<tr>
<td><strong>EXPENDITURE:</strong></td>
<td>9,476,369</td>
</tr>
<tr>
<td>Salaries and Related Expenditure</td>
<td>5,935,194</td>
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<tr>
<td>Financial and Administration ²</td>
<td>484,897</td>
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<tr>
<td>Student Related</td>
<td>131,691</td>
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<tr>
<td>Infrastructure Related</td>
<td>327,710</td>
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<tr>
<td>Central Support Services – Overhead Costs ¹</td>
<td>1,421,647</td>
</tr>
<tr>
<td>Capital Expenditure</td>
<td>151,438</td>
</tr>
<tr>
<td>Other Operating Expenditure</td>
<td>1,023,792</td>
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<tr>
<td><strong>Balance as 31 December 2007</strong></td>
<td>2,862,667</td>
</tr>
</tbody>
</table>

1. Accommodation and other services which were previously supplied as in-kind support have been replaced as overhead costs. The university has also provided a transfer of funds to substantially offset these charges.
2. Includes payments to consultants.

The Centre’s accounts have been certified correct by the University Corporate Finance division. Where required as a condition of funding grants, accounts will be audited by the University’s Internal Audit. They will be subject to Government audit as part of the University’s annual accounts for the calendar year 2007.

Footnote: It should be noted that the Centre operates on a calendar financial year and its revenue and expenditure are, for the most part, project related and several projects cross fixed reporting periods and financial years. The apparent “surplus” mostly reflects grant and contract income received in 2007 for expenditure that will be incurred in 2008.

CERTIFIED CORRECT

Norman Butters  
Disbursements Manager  
Corporate Finance Division  
Monash University