Preventing injuries,
Saving lives,
Building futures
The Monash Injury Research Institute is one of the world’s most comprehensive injury prevention research centres.

Underpinned by scientific and academic excellence, MIRI incorporates the highly respected Monash University Accident Research Centre (MUARC) and other key Monash researchers and groups.

This year marked the 25th year of injury research at Monash. Since our beginnings in 1987, we have held a prominent place on the grounds of the university’s largest campus, Clayton. Our influence, however, is not limited to Melbourne or even Australia. Our reach is global.

MIRI identifies emerging injury problems, monitors progress, determines and evaluates solutions and advises on safety strategies.

MIRI’s structure allows our experts to actively collaborate in solving pressing, practical problems. This collaboration also allows us to offer our external partners access to expertise across their field of interest.

Our main research focus covers:
- Transport safety
- Home, sport and leisure safety
- Workplace safety
- Patient safety
- Violence and suicide prevention
- Acute care
- Injury outcomes
- Disaster resilience

These research areas are uniquely designed to meet the range of challenges that comprise injury prevention and treatment.

We address the causes of both intentional injury (violence and suicide prevention research unit) and unintentional injury (transport safety, home, sport and leisure safety, workplace safety and transport safety). We address both the prevention of injury as well as the treatment and recovery from injury (injury outcomes, acute care). And, we address issues of scale (disaster resilience).

Our model is one of the world’s most effective demonstrations of the public health approach to a major health priority.

We look forward to an exciting future as we continue to build on the substantial research and leadership achievements of our first 25 years.

www.monash.edu/miri
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THE Monash University Injury Research Institute (MIRI) was established in 2011 as a whole-of-university, interdisciplinary initiative to address the prevention of injury in all settings. By building links between researchers from different disciplines, the institute integrates specialist knowledge from the university with experts in injury prevention and safety science.

In its second year, MIRI consolidated its collaborative structure, continued productive excellence in areas of Monash’s established strengths, and worked towards establishing greater capacity to address emerging challenges.

The University’s primary research goal into the next decade is to achieve significant benefits for the communities with which we engage and serve. This can be done through excellent and relevant research, especially in areas in which Monash is a research leader. Injury prevention is one such field where Monash’s strengths are recognised throughout the world.

MIRI encapsulates the research goals of Monash University: excellence, relevance and impact. The institute demonstrates excellence in leading the national research effort in injury prevention. Its work is relevant to the needs and concerns of governments, industry and the community and is the product of its strong engagement with many stakeholders. And MIRI’s outcomes are increasingly having major positive impacts in Australia and throughout the world. Lives are being saved as a result of the institute’s research and its translation into practice.

I acknowledge and congratulate the academic and professional staff at MIRI, and look forward to an exciting and productive year ahead.

Professor Pauline Nestor
Chair, MIRI Board
Pro Vice-Chancellor (Research)
Monash University

www.monash.edu/miri
Injury is the fourth leading cause of death in Australia. Only heart disease, cancer and lung diseases end more lives.

The Monash Injury Research Institute was established to champion a unified approach to all-cause injury. We are committed to tackling this major health problem by preventing injuries, saving lives and building futures for injured people.

We do this by establishing the high-level evidence needed by government, industry and the community to make optimal decisions and implement effective injury control programs.

Strongly supported by researchers from across Monash University, the depth and breadth of our scientific contribution means we are able to lift public discussions above opinion and prejudice, and instead provide robust rationales for public action.

Universities have long been places of excellence in research, research training and community leadership.

In 2012, with the unwavering support of the wider university, we continued to raise our standards in the pursuit of this excellence. We increased the focus on larger projects addressing bigger questions. We attracted the largest ever research income to the centre, and we increased the quality of our research outputs. As a result of this, we were able to make a more significant contribution both in the scientific domain and the extent to which our research makes a difference in our community.

Our increasing significance and success in the field of all-cause injury would not be possible without the expertise of our dedicated staff and our partners that value our research and advice.

For many years, injury has been seen in fragments and not as a single issue, nor has it had a single champion. MIRI is committed to taking on that role. Injury is also a growing global injury epidemic that must be addressed. MIRI is well placed to make a major international contribution to the cause.

I invite you to monitor our work through our website and our publications. I thank our staff and partners and Monash University for their commitment to our goals and look forward to working together in 2013.
IRI staff and students remain aware of the institute’s overriding goal: to prevent injury, save lives, and build futures. To that end, we strive to develop and provide solutions to health and safety problems around the world.

This year has been significant for the institute. We continued to build positive relationships with government and industry. We expanded our scope, attracted more research income than ever before, and we increased the quality of our research outputs.

Highlights of the year included:

- Establishing a scholarship in tribute to Emeritus Professor Triggs, who passed away in September
- Securing $7,138,299 in research funding from sources including federal, state and local governments, the Australian Research Council, the National Health and Medical Research Council, and industry
- Collaborating with VicRoads, TAC and RACV to produce the 20th annual Used Car Safety Ratings (UCSR) Guide. The guide helps motorists identify safety features to look for when purchasing a car
- Welcoming the Monash University Disaster Resilience Initiative to MIRI. Professor Frank Archer leads the initiative, which aims to harness university-wide expertise to contribute to this significant and evolving field of research
- Appointing international road safety expert Tony Bliss as MUARC Global Safety Advisor
- A cross-institute evaluation of WorkSafe Victoria’s Employer Performance Management Program. The project, led by A/Professor Lesley Day, focused on organisational drivers as a means of achieving sustainable improvement in health and safety, and injury management performance
- Working with the Royal Children’s Hospital to develop ways that families and emergency workers can help children deal with traumatic events
- A/Professor Lesley Day’s appointment as Director of the Victorian Injury Surveillance Unit following the retirement of Erin Cassell, and
- Significant media attention following the publication of the first Hazard of the year, which focused on injury in popular sports.
The former Deputy Director of the Monash University Accident Research Centre, Emeritus Professor Tom Triggs, died on 7 September 2012.

Professor Triggs made a remarkable contribution to the field of injury prevention and to Monash University throughout his career, which spanned almost four decades.

His contribution to the establishment of MUARC and the development of the Centre’s young driver, driver training, and driving simulator research programs have led to the introduction of safety initiatives that have dramatically reduced Australia’s road toll.

Professor Triggs joined Monash in 1973 in the School of Psychology. Throughout his career, his research has focused on the application of psychology and human factors methods to improve safety. After seeing a driving simulator in the US in 1989, Professor Triggs introduced the concept into Australia as a safe way of testing driving conditions and other factors in a low-risk context.

In 1995, soon after his retirement Professor Triggs received the title of Emeritus Professor and since then continued an active role in the Centre’s activities.

MIRI Director Professor Rod McClure paid tribute to a colleague whose work was internationally respected and whose commitment to Monash and MUARC will long stay with the Centre.

"Tom made a truly outstanding contribution to MUARC, Monash, and the discipline of Human Factors. He will be deeply missed," Professor McClure said. "He was a researcher, teacher and leader who influenced the lives of many."

Professor Triggs is survived by his wife Tele and his children, Sumi and Maya.

In recognition of Professor Triggs’ contribution to the field of driver safety, and as a personal tribute, the Trustees of the Monash University Accident Research Foundation established the Thomas Triggs Memorial Scholarship. The scholarship offers a stipend of $27,222 per annum for three years.
Research

The upward trajectory of academic research performance at MIRI has continued in 2012. Total research income, and competitive grant funding, per full time equivalent academic staff member has continued to increase (Figure 1). The contribution of competitive funding to total research income has increased from a low of 1% in 2008 to 25% in 2012. Our productivity in peer-reviewed academic outputs has been maintained (Figure 2).

Major new research projects which commenced in 2012 include a three-year Discovery Grant to develop a theoretical model of situation awareness for road transport – driver awareness of themselves and all that is happening around them is obviously an important, but surprisingly poorly investigated, factor for safe driving. The model will then be used to inform the development of roadway designs that heighten road user situation awareness.

During 2012, MIRI has been active in developing large proposals in collaboration with faculty-based colleagues. These include a bid for a Cooperative Research Centre for Alertness, Safety and Productivity, an ARC Linkage Grant application in the area of public safety with the Faculty of Arts and an NHMRC Project Grant application on depression and driving with the Faculty of Medicine. Our continued membership of the Program Advisory Group for the ISCRR Occupational Health and Safety Program has enabled us to contribute to the growth of a suite of projects at Monash University addressing priority research issues for WorkSafe Victoria.

Successful grant outcomes announced in 2012 will continue our momentum and build sophistication in our research program. Professor Mark Stevenson, MUARC Director, secured his second five-year NHMRC Senior Research Fellowship that will provide a platform for substantial future development. A new NHMRC Project Grant to commence in 2013 will focus on managing the risks associated with work-related driving, a very much neglected area. Several senior MUARC researchers are named investigators, along with collaborators from the University of New South Wales on an ARC Linkage Infrastructure, Equipment, and Facilities Grant to develop an integrated facility in 2013 for recording driver and road user behaviour, which will create many opportunities for future research projects.

The Victorian Injury Surveillance Unit has been re-funded for another triennium, allowing us to continue our important work in surveillance system development and dissemination of injury data to support research and prevention activities in Victoria.

Building research capacity remains an important focus at MIRI. A thriving seminar and visitor program brings intellectual interest and excitement to our staff and students. Our visitors this year included Professor Denise Kendrick from the University of Nottingham who undertook a short sabbatical at MIRI, and Professor Biao Gong, Dr Xu Huaying and Ms Zhang Aihong from the Traffic Management Research Institute in China undertook a three-month sabbatical at MIRI. We hosted a delegation of seven who represented Brunei’s Education Sector, Ministry, Police and Government and who was introduced to MUARC and MUARC.
stakeholders. Professor Rachid Salmi of the Institute of Public Health, University of Bordeaux met with the CAPRA unit for round table discussions. A New Zealand delegation representing Government and Police met with MUARC staff and MUARC stakeholders, and Mrs Ann Yuan from the Institute Road Freight Committee visited MUARC as part of the Global Road Safety Partnership.

Our internal best paper awards to Trang Vu (PhD student) and Jessica Edquist (early career researcher) provide important recognition at early points in research careers. A strong program of skills development workshops and publication incentives is supporting our PhD students and early career researchers in building research track records, with Dr Alex Donaldson being selected for the competitive University’s Researcher Accelerator Program.

Publications
MIRI recognises the importance of academic publishing across the spectrum of publication types. Publication in the peer-reviewed literature meets rigorous academic standards and means it is readily available to the field. Project reports and injury surveillance bulletins provide direct and, importantly, rapid feedback on our research and surveillance activities to injury prevention policy makers and practitioners. The timeliness of such publications is often crucial for impacting on policy development and resource allocation. Books and book chapters provide mechanisms for dissemination of substantial pieces of scholarly work, which may influence the field for some time in the future.


Committees
MIRI is grateful to the many people who volunteer their time to our research program as external members on project advisory committees, project steering committees and working groups. The members and observers are involved in areas including vehicle safety, independent living, and community engagement.

Please see www.monash.edu/for more details on committee membership.

Research Training
In 2012, MIRI welcomed seven new postgraduate students (PhDs) making a total of 26 postgraduate students enrolled at December 2012. MIRI also celebrated two PhD completions with Trang Vu and staff candidate Jim Langford being awarded their degrees during 2012. Two other theses were due to be submitted in early 2013.

Fourteen MIRI PhD candidates are full-time, nine are part-time, and three are based at the Sunway, Malaysia campus.

Three successful Australian Postgraduate Award candidates will join MIRI in 2013. Three candidates accepted departmental scholarships in 2012, and another is pending.

The study program
The MIRI PhD program strives to deliver a well-rounded multi-disciplinary experience, with opportunities for connections with stakeholders (through seminars, scholarships and industry-based projects), international experiences (data collection and study program) and broad career skills development (through seminars), ensuring that students complete their degree having achieved more than just a thesis.

Students are part of the academic community at MIRI and are actively engaged in centre-wide researcher meetings and writing workshops (organised by Associate Director, Research A/Prof Lesley Day), Journal Club (organised by PhD Candidate and Research Fellow Karen Stephan) and a multi-disciplinary HDR seminar series in Injury Prevention Research Issues. The HDR seminar sessions are interactive and involve a presentation and overview by a content area expert, selected student readings and discussion. Senior researchers facilitate sessions and topics cover the key disciplinary areas relevant to injury prevention research. Other skills and career development topics such as communication, knowledge translation, ethical research practice are also included.

Presentations and publications
MIRI encourages and supports students’ participation in conferences as an important way to develop communication skills, connect with experts in their field and gather feedback on their own work. During the year, MIRI hosted a Three Minute Thesis competition and the winning presenter, Hafez Alavi, went on to represent MIRI with an excellent presentation, describing in a nutshell (one slide and three minutes sharp!) his three years of research on pedestrian crash and injury risk at the Monash-wide finals in August. MIRI students – including Roszalina Ramli (Sunway campus), Miranda Cornelissen, Lisa Molnar, Rison Muhrison, Christina Ekegren and Peter Richardson – were also well represented at national and international conferences held in the US, Europe, New Zealand and Indonesia. Roszalina Ramli took out a prestigious student award for her paper on motorcycle helmets and injury risk at the Annual Meeting for the Association Advancement for Automotive Medicine (AAAM) in Seattle.

MIRI candidates also make a significant contribution to the body of scientific evidence on safety issues and injury prevention through scholarly writing. In 2012, students co-authored nine peer reviewed scientific publications based on their PhD research.

The new MIRI PhD
In line with the introduction of the new Monash PhD, MIRI will offer a new-style PhD program offering both coursework and skills training in addition to the research/thesis component, commencing in 2015.

The Coursework Working Party has a well-developed structure for the new program and detailed unit planning is underway and will incorporate core coursework including advanced studies in Safety Science from theoretical,
translational and methodological perspectives. The overall objective of the program is to enhance students’ ability to produce quality research and refine generic, transferable skills sought after by prospective employers from within academia and a range of professions in the injury prevention domain.

Monash University Accident Research Foundation
The Monash University Accident Research Foundation, established in 1996, supports, encourages and promotes work aimed at preventing accidents and reducing injuries on the road, in the home, in sport and recreation and at work.

The foundation makes scholarships available at MIRI for students in any of the principal research areas.

Donations to the foundation are tax deductible and will be used exclusively to support injury prevention research. They will also be acknowledged in the list of donors, published in the Foundation’s Annual Report.

There are various ways to give to the Foundation. Please contact the Director’s office for further information.

John Lane Memorial Scholarship
Dr John Lane, recognised as the father of aviation safety in Australia, and a leader in road safety, died in 1999. In recognition of Dr Lane’s contribution in the field of injury prevention, and as a personal tribute, the Trustees of the Foundation established the John Lane Memorial Scholarship.

Robin Hutchinson and Shannon Gray held this scholarship in 2012.

Peter Vulcan Scholarship
Professor Peter Vulcan retired in 1998, bringing to an end 11 years of outstanding service as the champion and Founding Director of the Accident Research Centre. This award recognises his unique and distinguished contribution both to injury prevention and the Centre. Ms Tiffany Too was awarded the scholarship for 2012, to commence in 2013.

Other MIRI scholarship-holders in 2012 were:
- Khic-Huoy Prang - Institute for Safety Compensation & Recovery Research (ISCRR)
- Maatje Scheepers - Institute for Safety Compensation & Recovery Research (ISCRR)
- Belinda Clark – NRMA-ACT Road Safety Trust – Postgraduate Research Scholarship

Holders of the Australian Postgraduate Awards Scholarships in 2012 were: Hafez Alavi; Suzanne Cross; Shannon Gray (joint with John Lane Scholarship); Tim Lathlean; Gemma Read; and Maggie Trotter.

C-MARC Curtin Monash Accident Research Centre
C-MARC was established as a partnership between Curtin University (Western Australia) and Monash University supported by the State of Western Australia. The Centre’s activities include:
- Investigation of, and research into, the causes of road crashes and resulting injuries in Western Australia
- Identification and evaluation of existing and potential measures in Australia and worldwide to prevent road crashes and resulting injury
- Development of data and research findings on road crashes and their causes
- Development of road safety strategies
- Making recommendations to the State and its agencies in connection to road safety
- Making public its findings and recommendations
- Ensuring that all possible means of, and methods for, improving road safety in Western Australia are considered.

A/Prof Lynn Meuleners is Director of C-MARC, and MUARC’s Dr Jennie Oxley is Deputy Director of C-MARC.
Summer vacation students

MIRI welcomed summer vacation students towards the end of 2012: Kenny Dao, Jaymes Bonacci, Russell Boag, Jeremy Yuen, Mano Ravi, Emma Pappalardo, Samara Wilson and Georgina Johnstone. Samara, Emma and Russell reflect on their time at MIRI:

Samara Wilson

I was fortunate to work with Dr Eva Alisic at MIRI over the summer. We looked at psychological first aid, particularly how it was used in relation to emergency departments with children.

I really enjoyed seeing what research looks like in the real world, visiting the hospital where Eva collects data, and seeing how she thinks through planning a study. I also appreciated the opportunity to attend training sessions at MIRI and learn about research skills and what other people in MIRI are investigating.

The highlight of the experience was seeing how fun research could be! Eva created a great environment, making sure I felt supported and well equipped to complete the work.

This experience taught me that it is important to think about how research can benefit your participants as well, and to appreciate everyone’s role in the research process.

Russell Boag

With the end of my undergraduate psychology degree fast approaching, and decisions about what to do for honours year looming, I decided that what I needed was some hands-on research experience. So I applied for the Summer Research program at MUARC, and have definitely not regretted it.

The experience has been a valuable and eye-opening crash course in applied science research. I’ve been involved in several projects, including a massive longitudinal study on older drivers, a study looking at children’s behavior in different restraint systems, and some interesting pilot projects testing new devices for gathering real-time psychophysiological data from drivers.

There really isn’t such a thing as a typical day here at MUARC. Some days were spent in the office, quietly working on a lit review or proofreading ethics applications, while others were spent climbing in, out, around, and under cars installing and troubleshooting the various recording devices used in MUARC’s on-road driving studies.

Although I’m a psychology student and more likely to be working in front of a screen than under a car, some of my most memorable experiences at MUARC have been watching the engineers and technicians getting their hands dirty as they work out how to bring a piece of technology from the lab and somehow make it work within the confines of a car.

But by far the most valuable experience from my time at MUARC was being involved in all aspects of the research process, from that first moment when someone thinks out loud “I wonder if we could do something like this…?” through to late-night brainstorming sessions, ethics applications, meetings with engineers and statisticians, field tests of various new gadgets, participant recruitment, data collection, analysis, and finally the all-important article write-up and submission to peer-review.

Thanks to Associate Professor Jude Charlton, Dr Sjaan Koppel and the entire Behavioral Safety Science team. I look forward to continuing to be involved with MUARC throughout the rest of my degree.

Emma Pappalardo

I began my summer scholarship at MIRI with the goal of learning more about the wide world of research; to be able to understand and experience the processes that take place behind the scenes of a research institution.

I had the privilege of working under the guidance of Sjaan Koppel and with Suzanne Cross, focussing on child occupant behaviour in vehicles whilst in child restraint systems.

Coming from a background as a medical student, my time is often spent reading research-based articles without a necessarily detailed insight into the workings behind them. After my time at MIRI, spent conducting literature searches and reviews, submitting ethics amendments, attending team meetings, assisting in the planning and beginnings of a research project based on the Children in Cars study, and trying to remember the very basics of statistical analysis, I’m pleased to say this is no longer the case.

I’m very grateful for the experience MIRI has provided, and after a busy summer of learning, I’m sure my new research skills will come in handy frequently in the future as I return to completing medical school.
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The term ‘sports injury’ covers the range of injuries that occur during sport and active recreation. ACRISP investigates injuries to elite athletes, community sport participants and people enjoying active leisure or play.

The team looks at the how, when and where of sports injuries, evaluates interventions and translates this knowledge into safety behaviours. ACRISP is one of only four research teams in the world to be recognised by the International Olympic Committee (IOC) as an IOC Research Centre for the Prevention of Injury and Promotion of Health in Athletes. The team’s task is to build knowledge on the causes and prevention of sports injuries that can end careers and cause long-term disability.

In the past 10 years, team leader Professor Finch has been awarded more than $10 million in collaborative research grants including competitive research funding from the NHMRC, ARC, the US National Institutes of Health, the IOC, the International Rugby Board, the Commonwealth Department of Health and Ageing and VicHealth.

Professor Finch is also ranked as one of the 10 most highly published injury researchers of all time, with almost all of this work having been conducted within sport injury prevention. Professor Finch was keynote speaker this year at events in Canada and Australia.

In 2012, the team continued to work closely with bodies such as the Australian Football League, Australian Rugby Union and National Rugby League to deliver programs that prevent injuries in athletes. ACRISP is currently working with the AFL and NRL to research the community’s understanding of sport-related concussion and how it can be prevented and treated on the sports ground. ACRISP researcher Adjunct Associate Professor Paul McCrory presented aspects of this research at an international forum in November.

Grants secured by ACRISP this year included:
- ARC Linkage Project Grant. 2012-2015. ($212,459 ARC cash component; $165,000 cash and $411,750 from partner organisations) for ‘Legal risk management of adverse health outcomes and injury in the fitness industry: developing evidence-Informed regulation that improves safety.’
- Sport and Recreation Victoria (2012-2013. ($89,079) for ‘Improving the awareness, understanding and management of concussion in community sport.’

PhD student Christina Ekegren received a NHMRC Public Health Postgraduate Scholarship ($34,026 per annum) and a Sports Medicine Australia 2012 Research Foundation Grant ($2000) for Factors influencing uptake and use of an online injury surveillance system within community Australian football clubs. Other ACRISP staff were awarded Best Poster, Best Injury Prevention Poster, and the ASICS Best Paper – Injury Prevention at conferences throughout the year.

Adjunct appointments: Dr Andrew McIntosh, Dr Hugh Seward, A/Prof Paul McCrory, A/Prof Evert Verhagen.
HILD Abuse Prevention Research Australia (CAPRA) is a strategic collaboration between the Australian Childhood Foundation and Monash University.

The team’s research aims to improve child protection and to dramatically reduce the rate of child abuse, neglect and murder. We work towards this by:

- Providing evidence-based advice to government and child health organisations
- Guiding the development of policies and practice, and
- Promoting the rights and voices of children through child-centred research.

CAPRA has well-established partnerships with the Australian Childhood Foundation, Victoria Police, Queensland Police, and community organisation WAYSS.

Team members have strong practice backgrounds in child protection, health and education settings. The team’s research has contributed to major law reform in child sexual abuse, child murder and mandatory reporting. Staff regularly contribute to public debate through opinion pieces and comment in the media.

In October, Professor Goddard was the first expert witness to be called to the Victorian Inquiry into the Handling of Child Abuse by Religious and Other Organisations. He told the inquiry that research had consistently and repeatedly demonstrated the devastating impact of child abuse and the terrible consequences that last into adulthood.

Professor Goddard was appointed to the advisory board of the Queensland Child Protection Commission of Inquiry. He also spoke at the Queensland Police Child Protection Conference in Brisbane. He produced a number of well-received opinion pieces in national newspapers.

CAPRA this year began analysing 600 UK child protection workers’ experiences of interactions with hostile and intimidating parents. This research is a collaboration with Community Care and Reconstruct in the UK, and arose from CAPRA’s previous research on violence experienced by Australian child protection workers. The team focused on the workers’ reports of supervision and organisational responses, in addition to associated impact of the violence on workers’ and their families.

CAPRA has received further funding from the Finkel Foundation for research into child abuse deaths. This is the only research study in the world granted access to police homicide squad files.

CAPRA has PhD students based in Sri Lanka, Indonesia, Malaysia as well as Australia.

“Child abuse, it is said, casts a very long shadow. Indeed there can be few shadows that are darker.”

Professor Chris Goddard to Victorian Inquiry into the Handling of Child Abuse by Religious and Other Organisations
Dr Eva Alisic is looking at how to help children recover from traumatic events.
The Injury Outcomes Research Unit (IORU) researchers explore the reasons for these variations to gain new insights into how best to care for patients in the Australian healthcare system.

Expertise in this group covers the disciplines of medicine, epidemiology, statistics, psychology, health promotion and population health. Collectively these researchers represent one of the largest population health injury outcomes research groups in Australia. IORU researchers have longstanding collaborative networks with similar groups throughout the world.

IORU researchers work closely with the Institute for Safety, Compensation and Recovery Research (ISCRR), WorkSafe Victoria and the Transport Accident Commission (TAC), as well as other stakeholders on a number of projects.

Dr Eva Alisic has this year been working on two large projects, with the Royal Children’s Hospital and the Murdoch Children’s Research Institute, looking at how to help children recover from traumatic events. Many children are exposed to potentially traumatic events such as car crashes, the sudden loss of a loved one, disaster, and violence. While most children recover well, between 15 and 20% of those exposed to severe stressors develop persistent posttraumatic stress symptoms. Dr Alisic blogs at http://trauma-recovery.net/

‘Psychological First Aid for Kids’ involves in-depth interviews with Emergency Department staff about their views on psychological aspects of their work. The study will lead to a large-scale international survey on psychosocial care for children in emergency departments.

The novel pilot ‘Ear for Recovery’ study is investigating how parents support and communicate with their children after a child has sustained a serious injury. The project follows children who are admitted to hospital after a serious injury. In addition to being interviewed, the children wear an iPod for two days after discharge from the hospital. The iPod records snippets of their daily life; it makes a ‘sound sample’, which improves understanding of real-life interactions.

As part of the Evaluation of the TAC 2015 Strategy, team members evaluated a TAC tool used to identify clients at risk of receiving benefits six months post injury. As a result of the evaluation, a revised tool was developed. This will improve the accuracy of identifying at-risk clients, and lead to the provision of more appropriate services for this client group.

The TAC 2015 Strategy is IORU’s largest project, and TAC’s single largest research project.

Professor Rod McClure and Dr Sharon Newman continued work on the ARC-Linkage project: ‘Determining the individual, community and societal impacts of compensable injury in Australia’. The three-year project, which commenced in 2011, aims to develop a standardised assessment of impacts of compensable injury and incorporate this into performance monitoring practices of partner organisations TAC, Comcare (the worker’s compensation insurer for the Australian Government) and WorkSafe Victoria.

Dr Janneke Berecki-Gisolf, a senior research fellow, is leading the ‘Outcomes of Compensated Injury in Victoria’ study. The aim of this ISCRR-funded project is to investigate the impact of chronic disease and pharmaceutical use on the recovery of people injured in road or workplace incidents. The project involves contacting 11,000 TAC and 28,000 WorkSafe clients to ask for consent to link their Medicare and the Pharmaceutical Benefits Scheme records to their injury compensation claims records. The linkage will span a period of 12 months before, through to 18 months following the injury onset. The data will reveal which pharmaceuticals and health services were used and give a general idea of level of health. This project will provide key information on how chronic disease impacts injury outcomes, and recommendations on how to help clients with pre-existing health conditions reach an optimal recovery.

Dr Berecki-Gisolf is also working with Professor McClure and Dr Alex Collie on projects based on the Compensation Research Database at ISCRR. This database of de-identified injury compensation claims is used to identify determinants of good outcomes, as well as less favourable outcomes. This includes injury outcomes such as return to work, work disability recurrence, health service use and long-term use of opioids.

Musculoskeletal disorders are common, costly and a national health research priority. Dr Dianne Sheppard is working with ISCRR lead researcher Professor Niki Ellis on a collaborative project investigating the value of self-management training in addition to usual rehabilitation for workers with chronic injuries.
‘DISASTER resilience’, a term first coined about a decade ago, is an evolving field of study and research around the globe. MIRI is now a key player in this field with the addition of Monash University Disaster Resilience Initiative (MUDRI) this year.

The initiative began in 2005 in the university's Department of Community Emergency Health and Paramedic Practice, Faculty of Medicine, Nursing and Health Sciences. The department offered short courses, Graduate Certificates and Diplomas, a Masters Program and a limited research profile. A university-wide focus emerged in 2008, and after collaborative activities in 2011, MUDRI joined MIRI this year.

The initiative, which harnesses university-wide expertise, aims to strengthen community-based disaster resilience through
- Masters and PhD studies in disaster resilience
- Quarterly forums on developments and issues in the field
- Providing evidence to shape new approaches to disaster preparedness and management in the context of Council of Australian Governments' National Strategy for Disaster Resilience
- Helping translate research into practical use by government, emergency services, industry and community groups.

Emeritus Professor Frank Archer, the former Head of the Department of Community Emergency Health and Paramedic Practice at Monash University, is MUDRI Interim Director. He recently completed his term as the Chair, Board of Directors of the World Association for Disaster and Emergency Medicine (WADEM) and continues to serve on the Scientific Program Committee for WADEM’s biennial World Congresses. The initiative is fortunate to have the support of Adjunct Professor Frederick Burkle Jr, a senior scholar, scientist, and visiting Professor at the Centre for International Emergency, Disaster & Refugee

What is a disaster?

Disasters are sudden calamitous events that disrupt a community and cause losses with which the community cannot cope without external help. Disasters can be biological (such as influenza epidemics), natural (such as droughts, cyclones or earthquakes) or man-made (such as a terrorist attacks or train derailments).
Studies at Johns Hopkins University and Senior Fellow at the Harvard Humanitarian Initiative at the Harvard School of Public Health. Professor Burkle has worked extensively in many complex emergencies and is widely published on disaster management.

Research Fellow Dr Caroline Spencer has a background in community and tertiary education. She supervised the Alfred-based Monash Disaster Health Forum and the Berwick-based Monash Emergency Management Forum. She is academic co-coordinator of MUDRI, teaches, publishes and enjoys a national and international network in this domain.

Dudley McArdle is an emergency management expert who has consulted to the World Health Organisation and the Australian Government and state governments. MUDRI is grateful for the continued support of external members of the MUDRI Advisory Board:

- Ms Naomi Brown, CEO, Australian Fire Authorities Council
- Ms Carmel Fynn, Director, Emergency Management, Departments of Health & Human Services
- Mr Craig Lapsley, Victorian Fire Services Commissioner
- Mr Tony Pearce, Director, Emergency Management and Security, Department of Transport

MUDRI this year ran quarterly forums that introduced its work to many participants. The forums, which enjoyed strong support from the Australian Government Attorney General’s Department, covered lessons from recent disasters, management of internally displaced people, strengthening community-based resilience, and risk reduction and resilience.

Nearly 300 participants attended one or more of the four research-driven forums. The breakdown of participants was:

- emergency service organisations (18%)
- tertiary institutions (17%)
- health-related (14%)
- private organisations (14%)
- local government (10%)
- humanitarian (9%)
- community members (9%)
- government (8%)
- NGOs (2%).

We look forward to a strong forum series in 2013.

MUDRI this year celebrated three successful National Disaster Resilience Research Grants awarded to MIRI or our research partners.

- Dr Natassia Goode and Dr Caroline Spencer will lead the MUDRI Group at MIRI in a project to increase our ‘Understanding of disaster resilience: conceptualisations of resilience across the disaster management system’. ($110,320)
- Ms Debra Parkinson and Ms Claire Zara, researchers at Women’s Health Goulburn North East, will lead a team, including MUDRI as a partner, to investigate ‘What about the men? Men’s experiences of health and wellbeing during and after Black Saturday and implications for risk management’. ($244,367)
- Mr Sonny Neale, emergency manager at Central Goldfields Shire, will lead a team, including MUDRI as a partner, to develop a ‘Community Disaster Mentorship Program’. ($162,960)

MUDRI currently has one PhD scholar, Ms Diana Wong, and expects further scholars to join this research program in 2013, at both Doctoral and Masters by Research levels.

During 2012, the structure and units of previous coursework Masters degree in this domain were reworked into a program that caters for both health and general emergency management students. The revised Monash graduate program in Disaster Preparedness and Management will have a research orientation. The University Academic Board approved the new program late this year. The first candidates will commence in early 2013.

The inaugural MUDRI Research Symposium, held at MIRI in November, attracted about 30 university researchers. The COAG National Strategy for Disaster Resilience provided the framework for the symposium. MUDRI Advisory Board member Mr Tony Pearce delivered the Professor ‘Skip’ Burkle Keynote Lecture on the topic, ‘The Changing Landscape of Emergency Management in Australia: Influences, Directions, Challenges and Opportunities’.
FALLS are a significant threat to the safety, health and independence of older people. Every year around one in three people aged over 65 living in their own home will have a fall, and this rate increases with age. Preventing falls helps promote healthy and independent ageing, and helps reduce medical and support service costs.

The Falls Prevention Research Unit (FPRU) assesses the effectiveness of falls interventions, examines the impact of proven interventions and works to maximise the translation of research to policy and practice. The team has training in public health, epidemiology, psychology, applied statistics, and nursing, and expertise in randomised controlled trials, program evaluation, survey research and modelling population level effects.

The team has a long history of providing policy and strategy advice to government on falls prevention programs. The FPRU has a strong record of obtaining nationally competitive research funding and health sector government contracts. As a MIRI unit, FPRU has access to the state injury surveillance health sector databases through the Victorian Injury Surveillance Unit.

This year was the third in the four-year project, Reducing falls among older people in Victoria: better evidence, better targeting, better outcomes. The project, which is funded by the NHMRC and the Victorian Department of Health, aims to improve falls prevention strategies in Victoria.

Team leader Associate Professor Lesley Day discussed the highlights of the project in her keynote address at the Australian Falls Prevention Conference in Adelaide in October.

It is anticipated that 2013 will be a productive publication year as the team completes significant research components that will lead to recommendations for future falls prevention strategies.

Congratulations to Trang Vu (pictured right), who this year was awarded the degree of PhD for Fall prevention in community living older people affected by co-morbidity: a targeted approach (supervisors Associate Professor Lesley Day and Professor Caroline Finch). Trang received the 2012 Vice-Chancellor’s Commendation for Doctoral Thesis Excellence for her thesis.

Team Leader
A/Prof Lesley Day
PhD, MPH

Voula Stathakis
BSc(Hons), MPH, Grad Dip(Epi/BioStats)
Research Fellow

Trang Vu
MPH, MHSc
PhD candidate/
Research Assistant

Margaret Trotter
BA(Hons)
Research Assistant

Vanessa Fleming-Baille
Administrative Officer
QUALITY injury surveillance data provides immense research potential and is crucial to the development of effective injury prevention and safety promotion.

The Victorian Injury Surveillance Unit (VISU) has been analysing, interpreting and disseminating Victorian data on injury deaths, hospital admissions and emergency department presentations across the state, nationally and internationally for more than 20 years.

The data is used in government injury prevention policies, to stimulate research and to develop and evaluate prevention strategies and measures including community education, legislative and regulatory changes and environmental, equipment and product design improvements.

VISU provides information to about 250 organisations and agencies each year, including government, health and injury prevention organisations, media, business and industry, education institutes, research groups and the community.

VISU is funded by the Victorian Department of Health to:

- Provide injury data and information
- Produce Hazard, which focuses on common and emerging injury causes, and E Bulletin, which looks at injury frequency, causes, rates and patterns
- Maintain VISU’s web page
- Provide data to stimulate and support injury prevention research and evaluation projects.

The team maintains three injury surveillance datasets that contain millions of cases. Staff interpret, report and disseminate this information for prevention and research purposes. The team’s work includes epidemiological research, call-back studies and evaluation studies.

The unit’s first Hazard for the year was a 36-page edition titled Adult injury hospitalisations in selected popular sports - the football codes, other team ball sports (basketball, netball and volleyball), team bat and stick sports and racquet sports. The report was sent to peak sports bodies and associations, Sports Medicine Australia (Victoria), Sport & Recreation Victoria, local councils, parliamentarians and other relevant organisations and individuals. The report attracted considerable media interest including radio interviews and articles in metropolitan and online newspapers.

The Department of Planning and Community Development engaged VISU to supply reports on sports injury in 12 selected Local Government Areas to underpin injury prevention initiatives at the local level.

During the year, VISU regularly provided statistics and comment to the media on injuries from causes including yoga, near drowning and immersion, baby dummies, dog bites, hair straighteners, mobility scooters, jumping castles and cheerleading. There were even media inquiries about injuries relating to sneezing or yawning.

The Australian Competition and Consumer Commission (ACCC) increasingly used VISU Emergency Department data to underpin safety reviews, particularly of children’s products such as high chairs, prams and cots. Trampoline injuries were also of particular interest this year to government agencies.

Erin Cassell retires

The long standing Director of VISU, Erin Cassell, retired in 2012. Erin joined Monash University in 1996 and was involved in some of MUARC’s first work in the sports injury area, and worked on research including community-based program evaluation, women’s injury, dog bites, and sport and recreational boating injuries.

During her time with VISU, the injury surveillance system and function grew to include sophisticated responses to requests including interpretive reports in addition to the data tables. Through her participation in committees and high-quality work, the profile of VISU increased both nationally and internationally. Importantly, lives have been saved and injuries prevented based on the work of VISU.

Associate Professor Lesley Day was appointed Director in July. Her research interests include the association between falls prevention and disability, translational research in the falls area, farm injury risk factors, and program evaluation.
During 2012, staff at the MUARC began to implement its five-year strategic research plan and much of the success of this can be seen by the continued breadth of our transport safety research program. Our program covered aspects of intelligent transport systems, used car safety, electronic stability control, younger drivers, drink driving and blood alcohol limits, driver distraction, road infrastructure research, railway level crossings, child safety restraints, heavy vehicle crash investigations and much more.

One of the continuing successes of MUARC is its ability to translate the research into policy and practice. It was encouraging this year to see that a MUARC recommendation to ‘Dwell on Red’ had been implemented in several Victoria regional cities and may soon be in use in NSW. This follows trials from 2002 in Ballarat and Melbourne. The recommendation was to modify traffic light signals to display red in all vehicle directions when there is no approaching traffic. This is to encourage slower and therefore safer approach speeds at intersections. The strategy has now been included within VicRoads guidelines.

Linked to our translation has been our ongoing dissemination of our research findings. We kept internal and external stakeholders up to date with MUARC research highlights throughout the year with four editions of The Big Impact newsletter. The publication is available at www.monash.edu/miri/muarc

We continued our competitive grant success from last year securing further National Health and Medical Research Council and Australia Research Council grants, along with many competitive contract research projects. In addition, our doctoral and post-doctoral research programs continued to grow and we have a number of large research initiatives in the planning stages. I would also like to congratulate our two PhD students who graduated this year.

We also continued to strengthen our expertise in in-depth crash investigation. We have a dynamic group of staff including scientists, engineers and nurses who are working to create an expanded research program in this exciting field.

This year marked the 20th anniversary of MUARC’s publication of the Used Car Safety Rating guide. From a humble brochure covering a handful of vehicles, the ratings have expanded to a comprehensive online presence covering the vast majority of vehicles over five years old.

We were fortunate to recruit an international road safety expert this year namely, Mr Tony Bliss; Tony was appointed as a Global Road Safety Adviser to the Centre. Tony brings considerable experience to the role after working as the Lead Road Safety Specialist at the World Bank in Washington DC, USA. Tony facilitated the very successful Road Safety Management and Leadership Program, which we ran (in collaboration with the Centre for Automotive Safety, University of Adelaide) this year. We plan to run the program again in 2013 given there is considerable interest in this niche program that promotes a comprehensive understanding of road safety management, the science that underpins it and associated leadership challenges.

I would like to thank the dedicated MUARC staff for their ongoing commitment to MUARC during the year and to transport safety research, more specifically.
THE Behavioural Safety Science team is a world leader in research on the safety of vulnerable road users. The team draws on disciplinary expertise in psychology, education, applied health and social sciences to address transportation and road safety issues. It is estimated that around 90 percent of crashes involve road user variables and the team’s research findings can make a major contribution to sound, evidence-based policy to reduce road trauma. Research priorities are centred on those at increased risk of serious injury crashes including seniors, youth and children who use the road system as pedestrians, cyclists, drivers and vehicle occupants.

The team employs the MUARC simulator facilities and instrumented vehicle fleet as well as in-car recording devices in much of its research. For many research questions, it is important to make real-world observations of drivers, passengers, cyclists and pedestrians. Examples include: instrumented vehicles to monitor eye movement, speed, braking and steering; in-vehicle cameras to study driver distraction and passenger behavior; fixed cameras to study cyclist, pedestrian and driver behavior at intersections; and bicycle helmet-mounted cameras to study cyclist-driver behaviour.

The team is rapidly expanding capabilities in this area and undertakes leading-edge research using naturalistic driving methods to evaluate seniors’ driving behaviour, cyclists’ red-light running, children’s out-of-position status in child restraints, and child-related driver distraction.

2012 was a productive year for the Behavioural Safety Science team. Ongoing research projects included:

- Ozcandrive cohort study of older drivers
- Return to driving following Traumatic Brain Injury

Researchers are investigating how children are positioned while travelling in child restraints, booster seats and seatbelts.
• Child safety in cars
• The EU DEVICE project
• Seniors driving longer, smarter, safer (NRMA ACT Road Safety Trust)
• Naturalistic Cycling Study (NRMA ACT Road Safety Trust)

In June, researchers began the third year of their research with the Ozcandrive project - a five-year cohort study of older drivers. Together with their international partner project, Candrive, the project is monitoring changes in health, functional abilities, driving patterns and performance of a cohort of 1230 older drivers in Australia, New Zealand and Canada. In-car recording devices help document the real-world driving patterns of drivers over the course of the study. This project aims to reduce vehicle-related injuries and deaths and improve the safe mobility of older Australian drivers. Key outcomes will be the development of an effective screening tool to assist healthcare professionals to identify at-risk drivers and a tool for objective monitoring of on-road driving which may be the basis of a suitable ‘local-area’ licence test.

The project is running seamlessly at the Melbourne and Wellington, NZ sites and at the seven Canadian sites. Ozcandrive achievements in 2012 included:

• Data collection for a full two years was completed, describing changes in health, functional impairment, driving exposure and driving patterns of the cohort of drivers 75+
• A novel computer-based Driver Observation Schedule (eDOS) to record objective driving data was developed and evaluated. eDOS will be conducted annually to monitor changes in individuals’ everyday driving performance in their own car and on familiar routes.
• Knowledge dissemination is an important component of the research. Investigators have published seven peer-reviewed journal papers, three peer-reviewed conference papers, 12 presentations at two international symposia devoted to Candrive/ Ozcandrive, one keynote, 21

presentations in Victoria to health professional and academic forums, five community presentations; and one PhD completed.

• Dr Charlton, Jim Langford, Dr Oxley and Dr Koppel attended conferences and international symposia to present and discuss early findings from the Ozcandrive project and they travelled to Ottawa to attend the annual Candrive/ Ozcandrive project meeting.
• Dr Charlton and Jim Langford were invited to present expert advice on licensing to the NSW Government’s Older Driver Taskforce, and in June, Dr Charlton addressed the Global Perspectives on Assessing Older Drivers symposium in Alberta, Canada.

Work continued on the Safer Roads to Recovery project, which examines the nature and causes of driving difficulties following traumatic brain injury. Findings from this study will contribute to the limited evidence-base available for rehabilitation clinicians assessing driver readiness. This year’s research involved on-road testing, a simulator driving task and the use of instrumented vehicles.

Through the award of a new ARC Linkage grant, the team is continuing its research on child safety in cars. This project uses innovative naturalistic driving methods to observe children as rear seat occupants during real world car trips. Specifically, this project will quantify the positions of children travelling in child restraints, booster seats and seatbelts, and will identify the injury effects of out-of-position status and its impact on driver distraction.

Building on a pilot study, funded initially through the AutoCRC in partnership with GM Holden, the current study involves a large-scale international collaboration through the Australian Research Council Linkage Scheme. The collaboration brings together researchers from MUARC, the Children’s Hospital of Philadelphia Research Institute, University of Michigan Transportation Research Institute and Chalmers University of Technology with industry partners ViRoads, TAC, RACV, Britax and Proquip. Outcomes will be used to optimise vehicle and CRS design and develop targeted safety education strategies to mitigate injury to children in car crashes. This year, the team has developed the covert camera system and instrumentation of the two study vehicles and prepared to recruit 50 Victorian families to be involved in the study.

Work also continued on the EU DEVICE project, which aims to bridge traditional industrial design programs with ergonomics, usability concepts and user experience. The team is exploring how engineering and design students can be trained to cater for the needs of the very young and the elderly. Researchers conducted interviews with course coordinators and industry design specialists and will soon hold workshops about the value of inclusive design in transport, built environment and other domains.

Congratulations to Jim Langford, who successfully completed his PhD this year. His thesis was “Licensing Authorities’ Options for Assessing and Managing Older Driver Safety”.

Hafez Alavi (supervisors: Dr Charlton and Dr Stuart Newsstead) prepared his thesis ‘Assessing pedestrian crash risk and injury severity in concentrated urban areas’ for submission in early 2013. Hafez joined the Transport Accident Commission as a road safety engineer in September 2012.

Lisa Molnar visited Monash in April and again in October in conjunction with the national road safety conference. As an external part-time PhD candidate based in Michigan, Lisa spent 2012 writing up her thesis on Self-regulatory practices by Older Adults. Her supervisors are Dr Charlton and Dr David Eby.

In May 2012, Suzanne Cross was awarded a scholarship to work with the ARC Linkage Children in cars project. Her research examines the nature, extent and injury consequences of children’s out-of-position status when travelling in cars.
Human Factors

Human Factors is concerned with the application of what we know about people, their abilities, characteristics, and limitations to the design of equipment they use, environments in which they function, and jobs they perform. The Human Factors team applies models of system safety to the analysis of transportation and other safety-related issues to provide robust research outputs and policy guidance for our stakeholders and clients.

Team members have backgrounds in experimental psychology, human factors, ergonomics, computer science, epidemiology, biomedical engineering, military and defence, and road safety policy. Sound, theoretically based models of system safety underpin the team’s research.

The team uses a variety of methods to support projects, including on-road testing, simulation, surveys, focus groups, structured interviews, stakeholder consultation, and human factors methods such as task and cognitive task analysis, and interface and usability assessment. While the MUARC suite of driving simulators (advanced, portable, and desktop varieties) continue to be the primary research platforms used by the team, the recent acquisition of on-road test vehicles has provided team members with the means to measure driver performance in naturalistic settings.

In 2012 the team continued to refine its road safety human factors program while also strengthening its research in other areas of transportation and system safety.

The team continues its strong ARC-funded research program. Into its second year of funding, the ARC grant led by Mike Lenné and Paul Salmon takes a novel approach to reducing trauma at rail level crossings (RLX). It is achieving this aim by using human factors methods in data...
collection and analysis to generate new RLX design concepts, and will evaluate these in Monash’s driving simulator.

World-first studies have been conducted using MUARC’s instrumented vehicles to better understand driver behaviour at RLXs. These studies measure driver behaviour through analysis of the vehicle data, situation awareness and eye-gaze behaviour, in both regional and metropolitan settings with inexperienced and experienced driver groups. The studies demonstrated that there are fundamental differences in the crossing environment and infrastructure at passively controlled (give way and stop sign) and actively controlled crossings that shape driver head check behaviour and situation awareness. The team is now using Cognitive Work Analysis to analyse the RLX system in-depth. This is an innovative method to conceptualise and analyse complex socio-technical systems. These analyses will highlight areas where the current operation of RLXs may not be meeting the overall purpose and functions of the RLX system. The analyses will certainly lead to new ways of designing and operating RLXs that will be tested using driving simulation late in 2014.

In other ARC-funded research led by Paul Salmon and Mike Lenné, the team conducted a novel landmark on-road study to examine the ways in which the design of the road system may contribute to conflicts between different road user groups. These datasets are still being analysed and will be presented at international conferences in 2013.

The team also delivered important safety research for a range of government and industry clients.

The team continued the Repeat Speeder’s Trial project, sponsored and coordinated by VicRoads. The trial tested and evaluated two interventions to assist recidivist speeders to reduce their speeding behaviour. The first intervention is the fitting of an advisory Intelligent Speed Adaptation system, which was fitted along with a data logger to about 50 participant vehicles for three months. The data logger remained in place for a further two months to assess if any effects of the system persist after its removal. A control group of approximately 50 participants also participated. These driver’s vehicles were equipped with the data logger only for five months. The second intervention involved approximately 250 drivers attending a behavioural intervention program. A control group of approximately 250 drivers was used to compare the effects of the behaviour change program on self-reported speeding. All participants involved in both interventions will complete pre- and post-intervention surveys designed to detect changes in self-reported speeding behaviour and attitudes as a result of the interventions. It is anticipated that findings will be released by VicRoads in 2013.

During 2012, the team worked with the Police Association of New South Wales to determine the optimal positioning of police equipment and technology within police vehicles. 25 police officers from NSW spent three days at MUARC operating the driving simulator while using different variants of the mobile data terminal. It is anticipated that the findings delivered in 2013 will influence police use of these in-vehicle systems.

The team continued to apply human factors and system safety models to improve workplace safety. The team secured a research contract with Australian Air Express to comprehensively examine the systemic factors influencing safety with manual handling operations. The team spent many weeks collecting data at sites across the country and plan to deliver the findings in 2013.

We continued our research with driving simulation and training through a new project with the Driver Education Centre of Australia (DECA). Through various methods of observation and task analysis we delivered recommendations outlining how simulation could be integrated within training programs for heavy vehicle drivers. The emphasis was on both skills for new drivers but also in developing driving styles in more experienced drivers that might be more cost-effective through reduced fuel and maintenance costs. In a related activity we also continued our very productive and collaborative research program with the Defence Science and Technology Organisation’s Land Operations Division. In 2012 our research focussed on reviewing best-practice training programs that supported eco-driving principles and result in reduced fuel and maintenance costs, and providing recommendations outlining how, in partnership with DSTO, we may be to evaluate the driving styles of defence personnel.

Team members presented research at a number of national and international conferences including the Australasian Road Safety Conference, the International Symposium on Aviation Psychology, the Defence Human Sciences Symposium, the First International Conference on Human Factors in Transportation in San Francisco, and the Fifth International Conference on Traffic and Transport Psychology in The Netherlands. A paper co-authored by Paul Salmon, Gemma Read, Neville Stanton and Mike Lenné won the Best Paper Award at the International Symposium on Aviation Psychology.

In summary, 2012 was an excellent year for the Human Factors team. We published over 25 peer review publications, delivered over 20 national and international conference presentations, and continued working in partnership with Australian government and industry to effect real-world impact through the conduct of high quality research.
The team has a strong reputation for analysis and evaluation of safety policy, strategy, regulation and programs, which has led to work with more than 30 leading public and private organisations across Australia, New Zealand, the UK, Africa, Asia, the USA and Europe.

A highlight of 2012 was the 20th anniversary of the publication of the Used Car Safety Ratings. The guide rated 197 vehicles, covering the most popular cars made between 1996 and 2011, in the Australian and New Zealand fleets. The unique feature of this ratings system is that all the information has been collected from real incidents, using police reports and injury compensation claims data collected and analysed over 20 years. This thorough methodology gives researchers far greater insight than a simulation can provide into how a car performs and how the occupants are affected under real crash conditions.

MUARC works with VicRoads, TAC and RACV to produce the guide. In launching the guide in July, the Victorian Minister for Roads, Mr Terry Mulder, noted that the road toll could be reduced to about 200 a year if everyone chose to drive a safer vehicle. In Victoria, the ratings contribute significantly to the vehicle safety information available at the TAC's howsafeisyourcar.com.au

The Vehicle Safety Research Group (VSRG) is a consortium of state and national road authorities and automobile clubs that fund the IAD Team Vehicle Safety Research Program. The group commissioned an analysis of a range of side airbags, given that side impact vehicle crashes account for 25 per cent of vehicle occupant casualties and 28 per cent of fatalities in Australia. IAD’s analysis found a dramatic 51 per cent reduction in injury to all body regions; a 61 per cent reduction in injury to the head, neck, face and thorax; and a 53 per cent reduction in injury to the head, neck and face.

The final 2012 meeting of the group was held in Adelaide in November, with a major outcome determining the future work program. A workshop with ANCAP was held to discuss the prospects of the two groups working more closely to promote safer vehicles in Australasia.

The team finalised the evaluation of Queensland’s new Graduated Licensing System, which was introduced in July 2007. The evaluation estimated the effects of the program on crashes and infringements as well as evaluating a number of specific components of the GLS. Dr Newstead was due to present the results to the Queensland Government early in 2013.

In October, the team released a report on “The potential crash and injury reduction benefits of safer vehicle choices for older drivers in Australia and New Zealand”. Findings showed there was scope to significantly reduce road trauma by improving older drivers’ vehicle choice. See MIRI report 315 for the recommendations, which include developing a strategy to encourage safer vehicle choices for older drivers, and vehicle-to-vehicle communication technology that would benefit older drivers.

The team collaborated with two Melbourne emergency departments (Alfred and Sandringham Hospitals) on the Monash Alfred Cyclist Crash Study. The study aimed to provide an in-depth analysis of the causes of bicycle crashes and injury outcomes.

Data was collected from 158 cyclists presenting to the two hospitals. The team collected information such as the environment and cyclist/driver behaviour, crash mechanism, and injury outcomes from hospital records. Among its many findings, the study showed the important role of bicycle light use in reducing crash injury severity, highlighting the safety issue of cyclist conspicuity. In addition, the study demonstrated a relationship between increased bicycle speed and the risk of head injury.

The study provided a useful insight into the crash characteristics and injury outcomes of these cyclists.

The accurate collection, detailed analysis and insightful interpretation of data are critical to the safety sciences. Researchers in the Injury Analysis and Data team have specialist training in the fields of numerical and behavioural sciences, and are skilled in the management, analysis and presentation of accident and injury data to produce real-world benefits.
This insight should both inform design and implementation of bicycle safety countermeasures and act as a springboard for future research. The IAD team is also working on

- A study of the role of vehicle design in pedestrian injury outcomes in real world crashes
- Analysis of motorcycle crash trends and risk factors in New Zealand to inform investment of the New Zealand motorcycle registration levy, and
- A study examining the effects of economic conditions on road safety outcomes in Western Australia.

The IAD team collected data from injured cyclists for a study into crash characteristics and injury outcomes.
Regulation and In-Depth Crash Investigations

The In-depth Crash Investigation team includes (from left) Dr Trevor Allen, Robin Jackel, Josie Boyle, Geoff Rayner, Ron Laemmie and Kim Woolley.

Team Leader
Dr Michael Fitzharris
PhD, BSc(Hons), BA
Senior Research Fellow

Dr Trevor Allen
PhD(Med), BSc(Hons)
Research Fellow

Sujanie Peiris
BBSc, GradDip(Psych), PostgradDip(Psych)
Research Assistant

Sara Liu
BBSc, GradDip(Psych), PostgradDip(Psych)
Research Assistant

Anna Devlin
BAppSc (Psych)(Hons)
Research Assistant

Vanessa Fleming-Baille
Administrative Officer
REGULATIONS play a critical role in road safety. Regulations are not just about design standards, speed laws, seat belts and mobile phone use. The New Car Assessment Program (NCAP), industry codes of practice, fleet purchasing and driver behaviour guidelines are also regulations, but ‘soft’ in the sense that penalties in the strict legal sense do not apply.

The new Regulation and In-depth Crash Investigations team is interested in all matters relating to regulation including how decisions are made, formulated and supported through evidence-based science.

The team creates and uses comprehensive crash data, as well as data from hospitals, police and compensation systems to identify current and future safety concerns. We are concerned with identifying persistent, seemingly intractable problems and identifying new safety countermeasures to overcome them.

Research projects include

- The Australian National Crash In-depth Study, which has nearly 1000 crashes fully investigated
- An examination of the likely benefits of a new side impact protection standard
- The economic cost of distraction crashes, and
- The effects of Electronic Stability Control and side impact airbags in Victoria.

The research team is also involved in two large motorcycle crash in-depth studies.

The ‘Managing Increasing Challenges In Motorcycle Safety’ (MICIMS) study began this year and is expected to last about 18 months.

The project, led by A/Prof Lesley Day, compares the experiences of riders injured in crashes at specific sites with riders who have travelled safely through the same site. Researchers are looking at travel speed, rider profile, the behaviour of other road users and the physical environment.

Researchers are interviewing injured riders, and control riders who are invited to participate by VicRoads. Riders are asked about travel speed, their riding experiences and habits, the behaviour of other road users, and any other factors that may have contributed to the crash. Experienced and active riders contributed to the questionnaire design to ensure relevance and improve study outcomes. The questionnaire was revised early in the year based on valuable feedback from the rider community.

Another study is being conducted in NSW and is led by Dr Julie Brown at NeuRA in collaboration with the Centre for Automotive Safety Research in South Australia.

Internationally, the team has research projects examining the effect of traffic laws on the number of road crashes in Botswana and a study of the incidence of road crashes – and rollover crashes in particular – in Namibia.

Past projects have examined the influence of Intelligent Speed Assist in heavy vehicles and the benefits of Electronic Stability Control in light commercial vehicles. The research team has capacity to perform crash reconstruction simulations and occupant injury modelling.

The team has partnerships with organisations including the Commonwealth Department of Infrastructure and Transport, Transport Accident Commission (Victoria), Transport for NSW, Motor Accidents Authority (NSW), VicRoads, Motor Vehicle Accident Fund (Namibia) and Austroads.
Safe System Strategies and Infrastructure

Dr David Logan shows the team’s Walk this Way app, which promotes pedestrian safety.
The complexity and importance of the science that underpins the design of our roads should not be taken for granted. From the busiest city intersection to the loneliest outback highway, road design has a profound impact on the safety of road users.

The SSSI researchers identify and understand road safety injury mechanisms and risk factors, and can design and evaluate countermeasure programs. Qualifications in the engineering, psychology and statistics fields allow our scientists to address safety problems from both the human behaviour and technical aspects. The team has specialist expertise in the areas of road infrastructure design, and in pedestrian and motorcyclist safety, and collaborate on in-depth crash investigations.

The team uses a variety of scientific methods, such as mathematical modelling, statistical analysis of road trauma problems and before/after evaluations of on-road treatments.

A key outcome this year was the development, with Alfred Health, of Walk this Way, an iOS application that rates the safety of a road crossing location. The unique tool aims to help people become more informed about pedestrian safety. Users are provided with an immediate star rating for a crossing location based on information they submit regarding speed limit, crossing facility, number of traffic directions, traffic volume and number of lanes. The tool uses Google maps to pinpoint a crossing location and enables users to share their ratings. The application can be used on iPhone, iPad or iPod Touch and is free via the App Store.

The team continued its work with Honda Australia, which involves an innovative on-road coaching program for newly licensed motorcyclists. Small groups of riders receive feedback and advice on their riding from an experienced rider coach. The George Institute will evaluate the program in 2013. The results will be used to help make decisions about the future of the program, its roll-out to other areas and adjustments that should be made to its content and delivery.

SSSI researchers played a key role in modelling information for the NSW Government’s 2012-2021 Road Safety Strategy this year. The team worked on strategy development and target setting. During 2012, the team also:

- Modelled the projected benefits of the planned $100 million annual investment in road infrastructure recently committed to by the Transport Accident Commission
- Made a submission to the Tasmanian Legislative Council Select Committee into rural speed limits
- Maintained its ongoing relationship with Rio Tinto Pilbara iron division regarding safety issues in fleet vehicles and providing the research evidence for them to implement a five star requirement for their light vehicle fleet
- Provided a report addressing intersection safety measures in the Edmonton city region in Alberta, Canada
- Worked with international consultants Booz & Co. to develop a 20-year road safety strategy for Saudi Arabia.

Dr Bruce Corben was invited to attend a TAC-funded tour for high level representatives of Victorian road safety stakeholder agencies to the world’s highest performing road safety countries in Europe.

Dr David Logan maintained an ongoing relationship with the AusDSRC industry cluster that aims to introduce advanced Intelligent Transport System technologies to Australia. Towards the end of 2012, this group was absorbed by ITS Australia. The team is working towards obtaining funding for a large-scale deployment of vehicles fitted with advanced crash avoidance features to establish the benefits of the technology in the Australian context.
### Statement of Income and Expenditure

*From 1 January 2012 to 31 December 2012*

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<tr>
<th>Notes</th>
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<td><strong>Balance as at 1st January 2012</strong></td>
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Notes:
1. Includes payments to consultants

The Centre's Statement of Income and Expenditure has been certified to be in accordance with the University's Accounting and Financial Reporting System by the Office of the Senior Vice-President and CFO. Where required as a condition of funding grants, accounts will be audited by independent external auditors. They have been subjected to Government audit as part of the University's annual accounts for the calendar year 2012.

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 2012 for expenditure that will be incurred in 2013.

**JOEL CHIBERT**  
Director, Research and Revenue Accounting Services  
Office of the Senior Vice-President and CFO