In early 2018, I accepted the position of Interim Senior Vice-Provost and Vice-Provost (Research) following the retirement of Professor Pauline Nestor. As well as being responsible for enhancing the research performance of the broader University, the year also brought me closer to the impressive work produced by MUARC.

I saw an important example of this research in August when I had the pleasure of speaking at the Enhanced Crash Investigation Study (ECIS) Symposium at Melbourne Museum. The project, funded by the Transport Accident Commission, involved 400 serious injury crashes across Victoria to determine their cause and severity. The magnitude of such a project cannot be overestimated. Essentially, MUARC researchers were tasked with producing evidence and subsequent countermeasures that can save lives on our roads.

What was clear to me, is that these researchers have a genuine desire to make a difference. As you read the following sections of this 2018 MUARC Annual Report, you will notice a common theme. The research undertaken by the Centre is motivated by the same, worthy goal of preventing serious injury. The Behavioural Safety Science team, for instance, has completed its role in the “Safer cycling in the urban road environment” project. The research posits a road environment in which there is a much safer coexistence of motor vehicles and bicycles. Given Monash’s commitment to sustainable transport, I commend the team for its pioneering research in this area.

The Advanced Safe Truck Concept project has also made impressive inroads into evaluating new technologies for monitoring heavy vehicle driver behaviour. The Regulation and In-Depth Crash Investigation researchers, and Human Factors team are playing a pivotal role in this $6.5 million Cooperative Research Centre Project funded by the Australian Government. With collaborative research a central part of our university’s mission, it is most pleasing to see MUARC and its technology development partners working alongside the freight industry to make its employees – and all road users – safer.

The importance of partnerships at MUARC is highlighted in the ongoing program of research on Used Car Safety Ratings. Led by the Injury Analysis and Data team and a large consortium of stakeholders across Australia, the research delivers important information to consumers about the crash protection offered by different cars. The Monash University Disaster Resilience Initiative also enjoy a strong relationship with Women’s Health Goulburn North East and Women’s Health in the North. In 2018, this relationship produced the “Diversity in Disaster” conference and has since inspired several research papers on the role of gender in emergency management.

Another recurring theme in this report is MUARC’s research impact on the pressing public health issues of today as well as those that pose significant challenges for the future. During a time of national interest in the aged care sector, the Victorian Injury Surveillance Unit published comprehensive statistics on unintentional injury-related hospital admissions among aged care residents in Victoria. During a time where reduced speed limits have been suggested as a countermeasure to address increased pedestrian fatalities, the Traffic Engineering and Vehicle Safety team is working with the City of Yarra to trial 30km/h speed zones in local streets. During a time where technology continues to provide both operational efficiencies and challenges for transport safety, MUARC is collaborating with industry to determine how in-vehicle monitoring technology can save truck driver’s lives, and in partnership with Monash faculties, MUARC is developing a virtual autonomous driving simulator.

It is this consistent production of timely, real-world and impactful research that has made MUARC such a critical asset to policy makers in injury prevention for more than three decades. Long may that continue.
ABOUT MUARC

The Monash University Accident Research Centre (MUARC) is one of the world’s most comprehensive injury prevention research institutions.

We are grounded in scientific and academic excellence, while producing research with real-life implications that translate readily into policy and practice – whether it is understanding contributing factors to older pedestrian falls, studying community preparedness and recovery in the event of a disaster or comparing year-by-year trends in crashworthiness of the private motor vehicle fleet.

MUARC is the home to many vital Monash researchers and groups. Because of the breadth of our research, we have a strong national profile and an international reputation that is growing in prominence.

The Centre identifies emerging injury problems, monitors progress, determines and evaluates solutions and advises government and industry on safety strategies. We encourage our experts to actively collaborate in solving pressing, practical problems that impact on the quality of life in their fields of interest. Our research is interdisciplinary and applies a systems framework to address injury prevention needs across three main settings:

• Home and community safety
• Workplace safety
• Transport safety

We have already made Australia – and Australians – safer. Now we are harnessing MUARC’s global perspective and experience to help meet the challenges of public health around the world through international collaborative projects, graduate student mentoring and leadership training across Europe, North America, the Middle East, South Africa and Asia.

We also make significant contributions to capacity building and injury prevention initiatives in the Western Pacific Region through our role as a World Health Organization Collaborating Centre for Violence and Injury Prevention. With our colleagues across Monash, we support and promote the principles of the United Nations’ Sustainable Development Goals and are proud to contribute to the global network which strives to bring practical solutions for achieving safe, sustainable and resilient communities.
OUR MISSION

Our vision is for an injury-free society

“Our mission is to prevent injury from all causes.”

Our goal is simple but profound: to create safe and resilient solutions to local and global challenges. We do this by:

Striving for excellence in our research and academic programs.

Creating and supporting the next generation of injury prevention leaders and advocates.

Engaging with governments, industry and community so they can make effective and accountable decisions to eliminate injury.

Leading and advocating for robust evidence-based injury prevention policy and interventions that can be adapted across communities.

Demonstrating a safe, supportive and inclusive workplace.

Providing the best possible physical resources to support the MUARC research program.
DIRECTOR’S MESSAGE

It is my pleasure to commend you to this overview of another highly successful year for MUARC. During a time of diminishing funding for University research, the Centre has been able to maintain its international reputation for high impact research. I acknowledge the commitment of all Centre staff in contributing to the significant achievements of 2018.

In addition to the impressive research output that fills this report, 2018 was a significant year for MUARC in respect to the milestones that will shape our future.

With MUARC’s three-year Strategic Plan (2018-2020) formulated, the Centre is motivated by its vision for an injury-free society with the objective of solving the challenges it faces on a local and global scale.

A noteworthy achievement was the establishment of the inaugural MUARC Advisory Council. The purpose of the Council is to facilitate new networks to achieve broader reach and larger impact of MUARC’s activities. The Council comprises prominent Australians with diverse experience from outside the academy. Chairperson is Ms Anna Burke AO (Former Member for Federation, 1998-2012), Speaker of the House of Representatives and President of the National Capital Authority, MP (VicRoads 2016-2017). Ms Sally Jibb CSO and Founder of The Infrastructure Collaborative, Judge Frances Millane (County Court of Victoria and Vice President of the Victorian Civil and Administrative Tribunal and former Court of Appeal), Judge Caroline Devlin OAM, OBE (County Court of Victoria), and Professor Rebekah Brown as Senior Vice Provost and Vice Provost (Research) during 2018 and welcomes the appointment of Professor Ian Smith as Interim Senior Vice Provost and Vice Provost (Research) for 2019.

The Centre delivered two Road Safety Management Programs, hosting 20 senior leaders from Australia and around the world. A separate purpose-designed program was delivered for the State Government of Western Australia’s Road Safety Commissioner. The five-day executive-level leaders from transport agencies and corporations from across the State and will contribute to preparations for the State’s new road safety strategy.

MUARC continues to support a vibrant graduate research program with around 40 PhD and MPhil students. Heartily congratulations to Dr Rison Muhrison and Master of Philosophy graduate, Dudley McGregor in 2019 and will support 17 new PhD scholarships. Partners include the Transport Accident Commission, Amy Gillett Foundation, Safer Care Victoria, Transport Safety Victoria, Bus Industry Victoria, RMS (Roads, Maritime, and Transport), VicRoads, NERA Economic Consulting, Department of Transport and Main Roads (Queensland). With MUARC’s new three-year Strategic Plan (2018-2020) formulated, the Centre is motivated by its vision for an injury-free society with the objective of solving the challenges it faces on a local and global scale.

A noteworthy achievement was the establishment of the inaugural MUARC Advisory Council. The purpose of the Council is to facilitate new networks to achieve broader reach and larger impact of MUARC’s activities. The Council comprises prominent Australians with diverse experience from outside the academy. Chairperson is Ms Anna Burke AO (Former Member for Federation, 1998-2012), Speaker of the House of Representatives and President of the National Capital Authority, MP (VicRoads 2016-2017). Ms Sally Jibb CSO and Founder of The Infrastructure Collaborative, Judge Frances Millane (County Court of Victoria and Vice President of the Victorian Civil and Administrative Tribunal and former Court of Appeal), Judge Caroline Devlin OAM, OBE (County Court of Victoria), and Professor Rebekah Brown as Senior Vice Provost and Vice Provost (Research) during 2018 and welcomes the appointment of Professor Ian Smith as Interim Senior Vice Provost and Vice Provost (Research) for 2019.

The year also saw the commencement of the Advanced Safe Truck Concept project in collaboration with Seeing Machines, Rio Tinto Transport and Volvo Trucks. Launching program was delivered for the State Parliament House in March, the Australian Government Cooperative Research Centre (Project aims to reduce heavy vehicle crashes using innovative technology that alerts drivers to fatigue and distraction. The project launch was well-received with around 200 senior researchers in attendance.) and saw a significant year for MUARC in respect to the milestones that will shape our future.

MUARC participated in the 2018 Inquiry into the National Road Safety Strategy, hearings worldwide to collate input from senior researchers on relevant issues and evidence. The report was delivered to the federal government in November, 2018. It is one of the most comprehensive and wide-ranging studies to date and has been hailed as a significant step forward in Australia’s efforts to reduce road deaths and injuries. We are proud to have contributed to this important piece of work through our expertise in injury prevention and our commitment to improving road safety.

The year also saw the commencement of the Advanced Safe Truck Concept project in collaboration with Seeing Machines, Rio Tinto Transport and Volvo Trucks. Launching program was delivered for the State Parliament House in March, the Australian Government Cooperative Research Centre (Project aims to reduce heavy vehicle crashes using innovative technology that alerts drivers to fatigue and distraction. The project launch was well-received with around 200 senior researchers in attendance.) and saw a significant year for MUARC in respect to the milestones that will shape our future.

The Centre hosted several international visitors and delegations during the year. These included Centre alumni from both National and International partners and visitors from the Indonesian National Traffic Police (Korlantas), the Global Road Safety Partnership, and the Road Safety and Regulation, Department of Transport and Main Roads (Queensland). With MUARC’s new three-year Strategic Plan (2018-2020) formulated, the Centre is motivated by its vision for an injury-free society with the objective of solving the challenges it faces on a local and global scale.

A noteworthy achievement was the establishment of the inaugural MUARC Advisory Council. The purpose of the Council is to facilitate new networks to achieve broader reach and larger impact of MUARC’s activities. The Council comprises prominent Australians with diverse experience from outside the academy. Chairperson is Ms Anna Burke AO (Former Member for Federation, 1998-2012), Speaker of the House of Representatives and President of the National Capital Authority, MP (VicRoads 2016-2017). Ms Sally Jibb CSO and Founder of The Infrastructure Collaborative, Judge Frances Millane (County Court of Victoria and Vice President of the Victorian Civil and Administrative Tribunal and former Court of Appeal), Judge Caroline Devlin OAM, OBE (County Court of Victoria), and Professor Rebekah Brown as Senior Vice Provost and Vice Provost (Research) during 2018 and welcomes the appointment of Professor Ian Smith as Interim Senior Vice Provost and Vice Provost (Research) for 2019.

In May, the Centre secured re-designation status as a World Health Organisation (WHO) Collaborating Centre for Injury and Violence Prevention (IP-GRIP) is a joint venture with the Monash Faculties of Arts, Engineering, Medicine, Nursing and Health Services, and Art Design and Architecture. The program will commence in 2020.

A feature of the program is to connect graduate researchers with academic leaders and industry partners as part of their PhD candidature. The MUARC-led GRIP in Injury Prevention which will form part of the University’s prestigious Graduate Industry Partnerships (GRIP) program. GRIPs are intended to develop the next generation of prominent Australians with diverse experience from outside the academy. Chairperson is Ms Anna Burke AO (Former Member for Federation, 1998-2012), Speaker of the House of Representatives and President of the National Capital Authority, MP (VicRoads 2016-2017). Ms Sally Jibb CSO and Founder of The Infrastructure Collaborative, Judge Frances Millane (County Court of Victoria and Vice President of the Victorian Civil and Administrative Tribunal and former Court of Appeal), Judge Caroline Devlin OAM, OBE (County Court of Victoria), and Professor Rebekah Brown as Senior Vice Provost and Vice Provost (Research) during 2018 and welcomes the appointment of Professor Ian Smith as Interim Senior Vice Provost and Vice Provost (Research) for 2019.

The Centre was successful in a bid to develop a new program. In a report published by the Centre in 2018, titled “Building a Stronger Road Safety Future,” the Centre called for investment in research and education to address the issue of fatigue and distraction. The report was well-received and the Centre has since received a grant to develop a new program in this area.

MUARC continues to support a vibrant graduate research program with around 40 PhD and MPhil students. Heartily congratulations to Dr Rison Muhrison and Master of Philosophy graduate, Dudley McGregor in 2019 and will support 17 new PhD scholarships. Partners include the Transport Accident Commission, Amy Gillett Foundation, Safer Care Victoria, Transport Safety Victoria, Bus Industry Victoria, RMS (Roads, Maritime, and Transport), VicRoads, NERA Economic Consulting, Department of Transport and Main Roads (Queensland).
BEHAVIOURAL SAFETY SCIENCE

The Behavioural Safety Science team uses broad multidisciplinary expertise and a ‘Safe System’ framework to study human behaviour and solutions for safety in all modes of transport, as well as in the workplace, homes and communities. The team is recognised as the leading research group in Australia on the safety of older and impaired drivers, pedestrians, cyclists and child passengers.

We measure the success and impact of our research by its translation into improved policy and practice that make communities safer places to live.

Our research connects with partners in government, industry and universities and research institutes in Australia and around the world.

Ozcandrive III

The Ozcandrive project celebrated its 8th year, marking the milestone with a special event and presentation of research highlights for participants in November 2018. Funded by the TAC with support from Eastern Health, VicRoads, the Victorian Department of Justice and Victoria Police, the project will formally conclude in mid-2019.

The study is making a significant contribution to older driver safety, tracking driving patterns with data-recording devices in drivers’ own vehicles, and monitoring their health and functional abilities. Co-led with our Canadian partners, the study involves over 1,300 participants.

Project members delivered findings at conferences throughout the year. Professor Judith Charlton and Dr Sjaan Koppel presented at the Gerontological Society of America’s Annual Scientific Meeting in Boston, Massachusetts. Dr Daniel Griffiths joined the team in 2018 and presented his first paper from the study at the 7th International Symposium on Naturalistic Driving Research in Blacksburg, Virginia.

PHD student Renée St. Louis spoke at the Australasian Road Safety Conference in Sydney and was awarded Best Paper by the Australian College of Mental Health Professionals in recognition of her research on psychological resilience in older adults. A key outcome of the project will be the development of a risk stratification tool that can be used to identify older drivers who may be at risk and who require further assessment to determine fitness to drive. The team has plans to continue this work with its stakeholders and Canadian partners to test the effectiveness of the tool for clinicians.

With the data collection phase drawing to a close, a team said farewell to two long-serving staff members. Louise Beasley and Lorraine Atkinson were pivotal parts of the project and départed at the end of the driver assessment stage. We acknowledge their commitment to the project and their exceptional professionalism and genuine care for participants. We wish them well in the future.

On our bikes with innovative research

The Melbourne-based component of the ‘Safer cycling in the urban road environment’ study was completed in 2018. Several journal papers on key findings are being prepared. The first-of-its-kind study was funded through the ARC Linkage Grant Scheme and conducted across sites in Melbourne and Perth in partnership with Curtin University, Portland State University (USA), the Amy Gillett Foundation and Cycling Promotion Foundation. The research investigated urban road solutions to reduce the risk of injuries to cyclists.

The final stage of the project featured a simulation evaluation using MUARC’s simulation and driving simulators. The evaluation tested driver and cyclist performance at intersections, with the main objective to identify improved road designs.

The project team also hosted the Monash Cycling Safety Workshop in June. Cycling experts from Australia and abroad gathered in Melbourne with project partners to share findings, with conclude recommendations based on outcomes of the extensive program of research.

MUARC’s contribution to the project was led by Associate Professor Jennie Ockey, Dr Steve O’Hern and Brendan Lawrence.
The Child Safety in Cars project

Our work in child passenger safety continued in 2018, with PhD candidate Suzanne Cross nearing completion of her project on ‘The role of behaviour in child occupant safety’. Suzanne has been researching the everyday behaviours of child occupants when travelling in their child restraint systems (CRS). Three hundred and eighty parents (of 1,186 children) completed an online survey, to identify the types and frequency of distracting activities that influence the child’s attention in a motor vehicle, online. Core results showed that: drivers were distracted 45% of the time and engaged in a secondary activity at the 6th International Conference on Driver Distraction and Road Safety – Queensland G365. The project will involve ‘how’ machine learning can be used to automate the coding of engagement in potentially distracting activities with the study results being published in online journals in 2019.

The ANDS findings were also considered from the perspective of older drivers in a paper published in the November edition of the Journal of the Australian College of Road Safety. Dr Young, Professor Charlton and Dr Griffiths were authors of the paper. Older drivers spent 37% of their driving time engaged in secondary tasks, but were driven in their ability to detect the type and timing of these activities. Future research stemming from ANDS will include Dr Young’s project, ‘Driveway Rhythms and Driveway Rhythms’ from the Centre for Accident Research and Road Safety – Queensland G365. The team will investigate how machine learning can be used to automate the coding of engagement in potentially distracting activities. The paper will state the aim of the supervised machine learning algorithm to detect driver distraction at the 6th International Conference on Driver Distraction and Road Safety – Queensland G365. The team will state the aim of the supervised machine learning algorithm to detect driver distraction.

In a piece of synergy with the RMIT’s ‘Discipline project, Dr Griffiths will be combining the driver behaviour of older drivers with the younger cohort from ANDS.

Identifying the potential benefits of mindfulness

Dr Koppel has been ongoing research collaboration between MUARC (including Dr Amanda Stephens and Dr Young) and Monash’s mindfulness-based training programs experts Associate Professor Craig Haigaud and Dr Richard Chambers. Mindfulness training has been shown to be associated with positive outcomes for psychological functioning and cognitive performance; however, the ability of mindfulness training and meditation to reduce driving behaviour has been undermined. This collaboration has already demonstrated that mindfulness is associated with lower rates of self-reported aberrant driving behaviour (Koppel, et al., 2018). Increased engagement in potentially distracting activities (Young, et al., 2017) and increased crash involvement (Young, et al., 2019) have been observed, and the team has shown that mindfulness training can reduce the frequency of these activities through a systematic review of literature on key issues relating to the linking of mindfulness training with aberrant/potentially distracting behaviours. Mindfulness training has been shown to be associated with positive outcomes for psychological functioning and cognitive performance; however, the ability of mindfulness training and meditation to reduce driving behaviour has been undermined. The outcome of the project will potentially save many hundreds of hours of mental coaching effort.

A hands-on for the better people in Cambodia

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A large number of Cambodians in not wearing seat belts, or wearing them incorrectly (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

Starr Group recognition

During the year, we were delighted to congratulate two team members on their promotions. Dr Koppel was promoted to Associate Professor (Level D), Steve’s promotion was awarded through the Faculty of Medicine Nursing and Health Sciences promotions Committee and judged by the same rigorous criteria for excellence and impact for research publications and research grants. Dr Amanda Stephens was promoted to Associate Professor (including Dr Amanda Stephens and Dr Young) and Monash’s mindfulness-based training programs experts Associate Professor Craig Haigaud and Dr Richard Chambers. Mindfulness training has been shown to be associated with positive outcomes for psychological functioning and cognitive performance; however, the ability of mindfulness training and meditation to reduce driving behaviour has been undermined. This collaboration has already demonstrated that mindfulness is associated with lower rates of self-reported aberrant driving behaviour (Koppel, et al., 2018). Increased engagement in potentially distracting activities (Young, et al., 2017) and increased crash involvement (Young, et al., 2019) have been observed, and the team has shown that mindfulness training can reduce the frequency of these activities through a systematic review of literature on key issues relating to the linking of mindfulness training with aberrant/potentially distracting behaviours. Mindfulness training has been shown to be associated with positive outcomes for psychological functioning and cognitive performance; however, the ability of mindfulness training and meditation to reduce driving behaviour has been undermined. The outcome of the project will potentially save many hundreds of hours of mental coaching effort.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A helping hand for the footwear sector in Cambodia

A large number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.

A high number of fatalities on Cambodia’s roads involve people commuting to and from work. The garment and footwear sector contributes a high number of these fatalities (NSSF, 2016), which is why the Asia Injury Prevention (AIP) Foundation is delivering a road safety pilot program to more than 8,000 workers, drivers and management in the garment industry. AIP’s Cambodia Road Safety program is being implemented by Dr Mohammed Aburumman, along with Dr Sharon Newnam and PhD candidate Jennie Oxley, with Dr Steve O’Hern providing support.
The Human Factors team is made up of members with a diverse array of knowledge and from various disciplines, among them psychology, design, computer science and engineering. As a unit, we are interested in how people interact with complex work systems; our overarching aim is to prevent accidents, mainly through the use of human-centred methods. We focus on safe design and user-centred evaluation of systems, equipment, tasks and environments.

In 2018, the team continued to concentrate on areas such as road transport, mining, medical and the workplace.

Mining book hits the shelf
Professor Tim Horberry published a new book on mining that he wrote alongside colleagues from the University of Queensland and the National Institute for Occupational Safety and Health in the United States. Human-centred design for mining equipment and new technology feature extensive case studies and an educational guide to assist the mineral industry and anyone learning about the field. The book was published by CRC Press USA/Taylor and Francis UK and is available online.

As part of the team’s interest in the minerals industry, Dr David Logan also undertook consultancy work for a major mining house about rail driving trains.

Human-centred design for mining equipment and new technology features extensive case studies and an educational guide to assist the mineral industry and anyone learning about the field. The book was published by CRC Press USA/Taylor and Francis UK and is available online.

As part of the team’s interest in the minerals industry, Dr David Logan also undertook consultancy work for a major mining house about rail driving trains.

Raising safety standards for emergency workers
Emergency workers such as police officers, firefighters and ambulance paramedics put themselves at risk to save the lives of others. It is crucial, therefore, that sufficient training programs are provided for incident and emergency responders who work in high-speed road environments. Seed funding was granted in 2018 to a research paper that will support the development of a program for these responders. The project, led by Dr Sharon Newnam, entails the development of a non-accredited training program for emergency service workers in high-speed road environments. The program, which is co-funded by Victoria Police, will provide an overview of workplace road safety and will be available through the Victoria Police Safety Centre.

As part of the broader project, MUARC intends to collaborate with Eastlink, Holmesglen TAFE and the emergency service sector in Victoria.

Dr Newnam also continued to lead the delivery of workplace road safety programs throughout the year. The team has created a workplace road safety development package that aims to create a culture where road safety is integrated within existing safety practices and embedded within the safety values of workers at all levels of the organisation.

Planning towards zero
Dr David Logan led the important task of modelling how to achieve the target of zero fatalities and serious injury caused by road trauma. This work occurred through the Modelling of Towards Zero Action Plan 2018-2020 and Modelling of NSW Road Safety Action Plan 2018-2021 projects.
Simulators stimulating interest

The Human Factors team is responsible for MUARC’s driving simulators, and they once again took a leading role in the work of the unit during the year. The car, portable car, cycle, and automation simulators were used steadily throughout 2018. They attracted interest from the many local and international visitors who toured Monash facilities, and the portable simulator was a popular attraction at the Agfest festival in Tasmania. In close collaboration with Associate Professor Michael Fitzharris, the team began in earnest a major project looking at developing the next generation of fatigue and distraction technology. The Advanced Safe Truck Concept is being conducted using Cooperative Research Centre Projects funding and is bringing together MUARC, Seeing Machines and Ron Finemore Transport. Throughout 2018, the major activity undertaken as part of this project was testing alert and sleep-deprived drivers in our car simulator. Nearly 80 drivers were tested during the year. The lead researcher is Christine Mulvihill, directed by Professor Horberry and Associate Professor Fitzharris.

The newest addition to our suite is the truck simulator. We successfully built the simulator and soon started testing 20 truck drivers for the Advanced Safe Truck Concept.

Keeping our eyes on distraction

Dr Kristie Young continued her Australian Research Council Discovery Early Career Researcher Award fellowship on driver distraction and self-regulation of attention. In the same broad field, Dr Young, Christine Mulvihill and Professor Horberry also undertook projects with both Metro Trains and VicRoads looking at driver/operator distraction issues and how they can be managed.

Professor Horberry, Dr Young and Rachel Osborne continued a MUARC Baseline project looking at pedestrian distraction caused by smartphone use, with a particular focus on risky behaviours from using smartphones while crossing roads. This work will be completed shortly.

Global network

The Human Factors team continued to enjoy many national and international collaborative relationships and opportunities in 2018. These include:

- Joint projects with colleagues in Europe and North America (such as Dr Newnam’s heavy vehicles work with University of Michigan Transportation Research Institute in the USA).
- Many international conferences, including Professor Tim Horberry at the ITS World Congress in Copenhagen.
- Leading National conferences such as Dr David Logan attending the Australian Omnibus Vehicles Initiative (AOMVI) annual meeting in Adelaide.
- Several team members presented at the Australasian Road Safety Conference in Sydney.

We were also active with other colleagues across Monash University. For example, we received a Monash Infrastructure grant with colleagues from Civil Engineering, IT and MADA at Monash, and Coventry University in England.

Staff recognition

Dr Sharon Newnam was promoted to Associate Professor (Level D). Sharon was assessed through the Faculty of Business and Economics for her strong research record and high quality outputs. Her Associate Professorship will be effective from 1st January 2019.

Dr Newnam also received the accolade of a Research Field Leader in a September 2018 edition of The Australian’s Research acknowledgements. Sharon was recognised as an expert in the area of ‘Quality and Reliability’.

Congratulations to our PhD students

Our PhD students once again produced some excellent research and are regularly publishing their work in critical areas such as:

- Medical safety (Raphaela Schnittker)
- Mining industry leadership (Sarah-Louise Donovan)
- Workplace risk/OHS (Mohammed Aburumman)
- Work Design (Sara Pazell, at the University of Queensland, co-supervised by Professor Horberry)
- Vehicle automation (Nebojsa Tomasevic)

A safer approach to patient handling

Dr Sharon Newnam is working with WorkSafe Victoria to develop, pilot and implement a systems-based approach to identify factors influencing the success of risk control measures to take in preventing workplace injuries in hospital settings. This project, the Patient Handling Injury Review of Systems (PHIRS) project, is in response to demands from hospital staff to have a ‘checklist’ based approach to report a worker injury in order to design reasonable strategies of appropriate levels in the system to improve safer systems. The objectives of this project are to develop: 1) a practical tool that OHS practitioners can use to investigate the risk factors and the factors that affect their success, 2) a model of the factors influencing the success of the risk control strategies implemented and 3) a communication strategy to encourage systems designed to be safer.
ADVANCED SAFE TRUCK CONCEPT

Funded under the Cooperative Research Centre Projects (CRC-P) funding scheme, the Advanced Safe Truck Concept (ASTC) project brings together technology, research and operational expertise to develop an innovative driver state sensing concept for use in commercial vehicles.

Why is ASTC needed?
According to the Bureau of Infrastructure, Transport and Regional Economics (BITRE), 1,922 Australians died as a result of involvement in heavy vehicle crashes between 2005 and 2014. These fatalities represented 17.5% of deaths on Regional Economics (BITRE), 2462 Australians died as a result of involvement in heavy vehicle crashes between 2005 and 2014. These fatalities represented 17.5% of deaths on Australian roads.

Traffic Safety Administration (NHTSA) estimates that there were an average of 83,000 crashes each year between 2005 and 2014. These fatalities represented 17.5% of deaths on Australian roads.

Fatigue has also been shown to be a significant factor to crashes related to drowsy driving, with 37,000 injury crashes and 886 fatalities occurring per year. The Australian Transport Safety Bureau (ATSB) states that drowsy driving is often a contributory factor to road crashes, accounting for 20-30% of all fatal crashes. Driver drowsiness remains a significant contributing factor to road crashes, with 20-30% of all fatalities involving drowsy driving. It is estimated that 17.5% of all deaths on Australian roads are road fatalities resulting from drowsy driving.

Our project team is led by Associate Professor Michael Fitzharris, who is working alongside his partners Professor Mike Lenné (Seeing Machines), Dr Jeremy Koo (Seeing Machines), Mr Darren Wood (Ron Finemore Transport), and Mr Mitch Peden (Seeing Machines). Our team also includes Professor Judith Charlton, Associate Professor Michael Fitzharris, who are working alongside key partners Professor Mike Lenné (Seeing Machines), Dr Jeremy Koo (Seeing Machines), Mr Darren Wood (Ron Finemore Transport), and Mr Mitch Peden (Seeing Machines).

Project launch
Professor Judith Charlton, Associate Professor Michael Fitzharris, Professor Tim Lenné and Associate Professor Michael Fitzharris were in Canberra on Tuesday, 27 March 2018 for the launch of the ASTC. The Hon Paul Fletcher MP, Minister for Urban Infrastructure and Cities, delivered the keynote address outside Old Parliament House. The Minister was shown inside a Volvo Truck fitted with Extensive data are being collected using car and truck driving simulators. Combined, these will represent one of the largest and most comprehensive datasets available. A MUARC truck simulator was used. The entire full-scale truck cab was supplied by Volvo Trucks Austalia. As our car simulator and the scenarios tested are comparable, we have been able to replicate the HMI investigations into driver distraction, drowsiness and workload. In practice, this relates to how drivers ought to receive information on their level of drowsiness and workload as well as their level of distraction. Based on these findings of the HMI investigation, ten trucks have been equipped with the Seeing Machines’ Guardian technology platform that actively monitors driver state in real-time and the first worldwide to our knowledge to use driver monitoring technology. The second phase is Australia’s first naturalistic truck study, investigating driver fatigue and distraction: A simulator study’. Christine Mulvihill presented ‘The efficacy of measures for integrated driver monitoring technology’. Several ASTC team members presented on the project during 2018.

Second phase
The second phase is Australia’s first naturalistic truck study, investigating driver fatigue and distraction: A simulator study’. Christine Mulvihill presented ‘The efficacy of measures for integrated driver monitoring technology’. Several ASTC team members presented on the project during 2018.

Third phase
The third phase involves a mixed-method approach to develop new Human-Machine-Interface concepts for driver distraction, drowsiness and workload. In practice, this relates to how drivers ought to receive information on their level of drowsiness and distraction. This component of the project builds on Seeing Machines’ Guardian technology platform that actively monitors driver state in real-time and the first worldwide to our knowledge to use driver monitoring technology. The second phase is Australia’s first naturalistic truck study, investigating driver fatigue and distraction: A simulator study’. Christine Mulvihill presented ‘The efficacy of measures for integrated driver monitoring technology’.

First phase
The first phase involved a mixed-method approach to develop new Human-Machine-Interface concepts for driver distraction, drowsiness and workload. In practice, this relates to how drivers ought to receive information on their level of drowsiness and distraction. This component of the project builds on Seeing Machines’ Guardian technology platform that actively monitors driver state in real-time and the first worldwide to our knowledge to use driver monitoring technology. The second phase is Australia’s first naturalistic truck study, investigating driver fatigue and distraction: A simulator study’. Christine Mulvihill presented ‘The efficacy of measures for integrated driver monitoring technology’.

Why is ASTC needed?
According to the Bureau of Infrastructure, Transport and Regional Economics (BITRE), 1,922 Australians died as a result of involvement in heavy vehicle crashes between 2005 and 2014. These fatalities represented 17.5% of deaths on Regional Economics (BITRE), 2462 Australians died as a result of involvement in heavy vehicle crashes between 2005 and 2014. These fatalities represented 17.5% of deaths on Australian roads.

Fatigue has also been shown to be a significant factor to crashes related to drowsy driving, with 37,000 injury crashes and 886 fatalities occurring per year. The Australian Transport Safety Bureau (ATSB) states that drowsy driving is often a contributory factor to road crashes, accounting for 20-30% of all fatal crashes. Driver drowsiness remains a significant contributing factor to road crashes, with 20-30% of all fatalities involving drowsy driving. It is estimated that 17.5% of all deaths on Australian roads are road fatalities resulting from drowsy driving.

Our project team is led by Associate Professor Michael Fitzharris, who is working alongside his partners Professor Mike Lenné (Seeing Machines), Dr Jeremy Koo (Seeing Machines), Mr Darren Wood (Ron Finemore Transport), and Mr Mitch Peden (Seeing Machines). Our team also includes Professor Judith Charlton, Associate Professor Michael Fitzharris, who are working alongside key partners Professor Mike Lenné (Seeing Machines), Dr Jeremy Koo (Seeing Machines), Mr Darren Wood (Ron Finemore Transport), and Mr Mitch Peden (Seeing Machines).
The Regulation and In-Depth Crash Investigation (RICI) team is interested in matters relating to road and vehicle safety regulations; we consider how decisions are made, formulated and supported through evidence-based science. Our unit, led by Associate Professor Michael Fitzharris, creates comprehensive in-depth crash data, in addition to utilising data from hospitals, police and compensation systems to identify safety concerns.

Envisaging a safer future for blind and low-vision pedestrians

Electric vehicles will bring significant environmental benefits, including reduced emissions and reduced particulates as well as noise levels. This very quietness poses a significant risk to pedestrians who are blind or have low-vision.

In 2018, we began and delivered a report in conjunction with Vision Australia about the dangers posed by electric vehicles to these pedestrians. The study engaged with the blind and low-vision community through focus group discussions and an online survey of nearly 250 participants.

Led by Dr Sara Liu and Associate Professors Michael Fitzharris and Jennie Clee, the research found that 35% of those surveyed had experienced either a collision or near-collision with an electric or hybrid vehicle.

The Report made a series of recommendations that, if implemented, would see Australia follow other countries in mandating the fitment and activation of an Acoustic Vehicle Alerting System (AVAS) in all electric and hybrid vehicles. The technology produces a sound that alerts pedestrians and cyclists to the otherwise near-silent vehicles. The Report also made a number of other recommendations, covering vehicle technology, road infrastructure design and driver education. It is anticipated that further development of this work and the uptake of recommendations will commence in 2019.

Analysis of crashes on Transurban Roads

In 2018, we delivered to Transurban the results of our evaluation of the road safety performance of Transurban-owned and operated roads in NSW, Victoria and Queensland. The research found that, adjusting for traffic volume, there were significantly fewer injury crashes on Transurban assets than ‘like’, or comparable, roads.

At the same time, the research highlighted a number of opportunities for Transurban’s consideration to improve performance. The analysis builds on previous work and is designed to assist Transurban in meeting its stated objective of eliminating fatal and serious injury crashes from its network.
Drug driving

The team continued its work on impaired driving, with a major program of research examining drug driving. The program, titled, Drug driving: improving our understanding of risk and motivation for driving while affected by drugs, is a multi-year program that aims to countermeasure that, when implemented, would reduce drug driving on Victorian roads. The project is funded under the MUARC Baseline program and involves the collaboration of the Burnet Institute through Professor Paul Dietze.

Our work in this area took a major step in 2018, with an online survey on drug driving attitudes attracting 1630 respondents. The survey provided road safety agencies and policy makers with a better understanding of the levels of drug and alcohol and the types of drug use and prescription medications they use. A key aspect to documenting what the Victorian community believes to be the most effective ways to influence drug use and related driving.

The findings will be finalised for baseline partners in 2019, with critical insights to the motivations for driving after consuming drugs.

Motorcycle research

We continued our long-standing and successful collaboration with Dr Joe Binns of Macquarie University, Australia to examine the effectiveness of protective motorcycle clothing. This work focused on assessment protocols for motorcycle clothing standards, and following our earlier work, saw the publishing of a paper in Injury Prevention: The International Journal of Injury Control and Safety Promotion on the effectiveness of motorcycle clothing standards, and following our earlier work, saw the publishing of a paper in Traffic Injury Prevention: The International Journal of Injury Control and Safety Promotion.

The findings will be finalised for baseline partners in 2019, with critical insights to the motivations for driving after consuming drugs.

Enhanced Crash Investigation Study

The $8m TAC-MUARC Enhanced Crash Investigation Study (ECIS) is to provide the Transport Accident Commission (TAC) with new insights on how serious injury crashes occur, as well as the factors that influence the severity of injury sustained. A goal of ECIS is to identify evidence-based road safety countermeasures that would achieve the TAC’s long-term objective of eliminating serious injury crashes in Victoria.

On Wednesday 29 August, the TAC hosted a symposium at the Melbourne Museum Theatre where over 100 invited guests heard the first findings of the study.

Hosted by ABC Presenter Virginia Trioli, the event began with an overview of the project by TAC Board Director, Ms Anne Harris, and had the opportunity to tour the exhibition. Hosted by ABC Presenter Virginia Trioli, the event began with an introduction from TAC CEO Mr Joe Calafiore and a presentation by Mr McInernay (iRAP). The event, TAC International was launched by Victorian Minister for Roads and Road Safety, Lachlan McKenna. The paper, co-authored by Dr Soames Job, then demonstrated the need to address serious injuries on a global scale, highlighting the safety and economic imperatives of government investment. Other presentations were given by Mr Joseph Quang (Global NCAP) and Mr Bob Milburn (FRFPA).

We are indebted to those individuals and their families that have participated in the study in this hope that we can achieve our Towards Zero ambition. We acknowledge their contribution and we will continue our work to provide guidance on how Victoria can achieve its Towards Zero ambition.

The project examined 100 serious injury crashes that occurred across Victoria. The goal was to determine the factors associated with these crashes and identify opportunities to prevent these crashes and injuries in the future.

The findings showed the economic cost of crashes to the TAC and the community. The study clearly demonstrated the high costs associated with these crashes: cost of motorcycle crashes in Victoria from 2000-2011 was $11 billion. It was demonstrated that technology could play a role in reducing 57% of crashes. While this reduction is significant, there are 43% of crashes where solutions are still required. This work will be published in Traffic Injury Prevention in 2019.

We continued our long-standing and successful collaboration with Dr Joe Binns of Macquarie University, Australia to examine the effectiveness of protective motorcycle clothing. This work focused on assessment protocols for motorcycle clothing standards, and following our earlier work, saw the publishing of a paper in Traffic Injury Prevention: The International Journal of Injury Control and Safety Promotion on the effectiveness of motorcycle clothing standards, and following our earlier work, saw the publishing of a paper in Injury Prevention: The International Journal of Injury Control and Safety Promotion.

The findings will be finalised for baseline partners in 2019, with critical insights to the motivations for driving after consuming drugs.

Motorcycle research

We continued our long-standing and successful collaboration with Dr Joe Binns of Macquarie University, Australia to examine the effectiveness of protective motorcycle clothing. This work focused on assessment protocols for motorcycle clothing standards, and following our earlier work, saw the publishing of a paper in Traffic Injury Prevention: The International Journal of Injury Control and Safety Promotion on the effectiveness of motorcycle clothing standards, and following our earlier work, saw the publishing of a paper in Injury Prevention: The International Journal of Injury Control and Safety Promotion.

The findings will be finalised for baseline partners in 2019, with critical insights to the motivations for driving after consuming drugs.

Enhanced Crash Investigation Study

The $8m TAC-MUARC Enhanced Crash Investigation Study (ECIS) is to provide the Transport Accident Commission (TAC) with new insights on how serious injury crashes occur, as well as the factors that influence the severity of injury sustained. A goal of ECIS is to identify evidence-based road safety countermeasures that would achieve the TAC’s long-term objective of eliminating serious injury crashes in Victoria.

On Wednesday 29 August, the TAC hosted a symposium at the Melbourne Museum Theatre where over 100 invited guests heard the first findings of the study.

Hosted by ABC Presenter Virginia Trioli, the event began with an overview of the project by TAC Board Director, Ms Anne Harris, and had the opportunity to tour the exhibition. Hosted by ABC Presenter Virginia Trioli, the event began with an introduction from TAC CEO Mr Joe Calafiore and a presentation by Mr McInernay (iRAP). The event, TAC International was launched by Victorian Minister for Roads and Road Safety, Lachlan McKenna. The paper, co-authored by Dr Soames Job, then demonstrated the need to address serious injuries on a global scale, highlighting the safety and economic imperatives of government investment. Other presentations were given by Mr Joseph Quang (Global NCAP) and Mr Bob Milburn (FRFPA).

We are indebted to those individuals and their families that have participated in the study in this hope that we can achieve our Towards Zero ambition. We acknowledge their contribution and we will continue our work to provide guidance on how Victoria can achieve its Towards Zero ambition.

The project examined 100 serious injury crashes that occurred across Victoria. The goal was to determine the factors associated with these crashes and identify opportunities to prevent these crashes and injuries in the future.

The findings showed the economic cost of crashes to the TAC and the community. The study clearly demonstrated the high costs associated with these crashes: cost of motorcycle crashes in Victoria from 2000-2011 was $11 billion. It was demonstrated that technology could play a role in reducing 57% of crashes. While this reduction is significant, there are 43% of crashes where solutions are still required. This work will be published in Traffic Injury Prevention in 2019.
INJURY ANALYSIS AND DATA

Led by Associate Professor Stuart Newstead, the Injury Analysis and Data (IAD) team’s expertise lies in highly analytical data-driven safety research. The unit’s researchers are specialists in numerical and behavioural sciences, and public health, possessing the ability to manage, analyse and present accident and injury data to produce real-world benefits.

Collecting, analysing and interpreting data with accuracy, rigor and insight is essential to the safety sciences, and this expertise brings about collaborations with leading public and private organisations across Australia and the world.

Quantifying and improving the safety of vehicles

Impacting the contribution of motorcycle design and specification to both

Number decoding system established by MUARC to identify

the crash reduction effects of AEB for light vehicles in Australia,

A research project providing statistics on the potential benefits

potentially enhanced.

Approved Motorcycle Scheme to improving road safety outcomes

it was then possible to assess the relevance of the Learner

crash risk and injury outcomes in crashes. From this analysis

capitalised on a newly established motorcycle Vehicle Identification

Autonomous Emergency Braking (AEB). A second project

increased uptake in new crash avoidance technologies such as

expected future gains through improvements in injury mitigation

safety goals in Australia over the past 15 years. It also forecast

safety improvements have made to reaching strategic road

the UCSRs, the team completed a number of additional research

from the research will inform the development of a Regulatory

of Infrastructure, Regional Development and Cities. Outcomes

was commissioned by the Australian Commonwealth Department

safety benefits of this technology in reducing reversing crashes.

' safer picks' based on recent IAD research quantifying the road

to include assessment of reversing camera fitment to identify

This year, the ratings were able to cover more vehicle makes and

models and more details about the key vehicle features in the

easy read format providing the benefits of this technology to

public and private organisations across Australia and the world.

Collecting, analysing and interpreting data with accuracy, rigour and insight is essential to the safety sciences and this expertise brings about collaborations with leading public and private organisations across Australia and the world.

Improved the safety of high-risk and vulnerable road users

We consider the road trauma problem in statistical terms, which involves both the risk-based and the exposure-based interpretations. This method is useful in a number of situations where the available data is not sufficient to provide meaningful results. The IAD team has developed a comprehensive system to address this problem, using a combination of statistical methods and qualitative analysis to identify the key factors contributing to road trauma. This method has been successfully applied to a range of road safety issues, including alcohol and drug impairment, the role of speed and the role of driver distraction.

The IAD team has also developed a number of tools to assist with the analysis of road trauma data, including software for the analysis of road traffic accidents, and a comprehensive database of road traffic accidents. These tools have been used to produce a range of reports and publications on road trauma, and have been used by governments and other organisations to inform their policies and programs. The IAD team has also provided expert advice to a number of organisations, including the Australian Transport Safety Bureau, the Victorian Transport Safety Board, and the New South Wales Transport and Planning Commission.

The IAD team has also been involved in a number of research projects, including a study of the impact of the introduction of a new road safety law, and a study of the impact of a new road safety education program. These projects have produced a number of publications, including a number of papers in the peer-reviewed literature, and a number of reports for government agencies.

The IAD team has also been involved in a number of training programs, including a program for traffic educators, and a program for traffic police. These programs have been well received, and have been attended by a number of traffic police and traffic educators from across Australia and beyond.

The IAD team has also been involved in a number of partnerships, including a partnership with the University of New South Wales, and a partnership with the University of Sydney. These partnerships have allowed the IAD team to access a range of resources and expertise, and have been instrumental in the development of a number of projects.
Improving the effectiveness and efficiency of road traffic policing

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Gating emergency services

Crash and injury outcomes for older road users

A project completed in 2018 showed the impact of pre-existing health conditions on how people recover from a transport accident. The project found that older road users were more likely to experience longer recovery times and higher levels of disability. The project also highlighted the need for targeted support interventions to assist older road users in their recovery.

Injury outcomes research

With an overarching aim of helping injured people receive better healthcare, the Injury Outcomes Research Group conducts research into how they react to, cope with and improve their condition. The group comprises researchers who possess expertise in medicine, epidemiology, statistics, psychology, health promotion and population health.

Researchers from across MUARC work in close collaboration with the Institute for Safety, Compensation and Recovery Research (ISCRR), WorkSafe Victoria, the Transport Accident Commission (TAC), as well as injury-focused stakeholders across the world.

Identifying the effect of pre-accident medical conditions on rehabilitation

A project completed in 2018 showed the impact of pre-existing health conditions on how people recover from a transport accident. The project found that older road users were more likely to experience longer recovery times and higher levels of disability. The project also highlighted the need for targeted support interventions to assist older road users in their recovery.


drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.

Traffic drug driving is becoming an increasing problem on Victorian roads and presents a unique challenge in terms of detection and enforcement. As a result, Victoria Police has implemented a number of strategies to combat drug driving, including roadside drug testing and the use of mobile speed cameras. The IAD team has been involved in evaluating the effectiveness of these strategies and providing recommendations for future improvements.
MONASH UNIVERSITY DISASTER RESILIENCE INITIATIVE

The impact of climate change demands all communities become more resilient to its outcomes. The Monash University Disaster Resilience Initiative (MUDRI) team responds to this challenge and supports communities in strengthening their resilience. MUDRI’s multidisciplinary expertise combines academic, industry and practice experience across public health, anthropology, emergency management, social science and disaster risk reduction to work collaboratively across the community sector. The team comprises Emeritus Professor Frank Archer, Dr Caroline Spencer, Dudley McArdle, Di Saadia Majed, Dr Debra Parkinson, Dr Deanne Bird, Dr Ben Beccari, Suzanne Cross and Samantha Bailey. Launched in 2012, MUDRI dates back to 2005 where it had its origins in the Faculty of Medicine, Nursing and Health Sciences.

Building our Flagship Compendium

Launched in 2015, the Monash University Disaster Resilience Building Case Studies, a first in Australia, continues to grow strongly in 2018 with a 50 per cent increase in new case studies accepted for inclusion, bringing the total to 31. The case studies provide examples of resilience building activities and are free for anyone wanting to help community members build expertise, reduce program duplication and save valuable resources, particularly in the setting of disasters. With sufficient case studies to analyse, the Compendium provides data to identify critical success factors to help others support their communities in strengthening their resilience in case of disasters, sudden events or unexpected emergencies.

Community leaves legacy

The team’s year was highlighted by its relationship with the Gender and Disaster PhD. The partnership profoundly delivered the Diversity in Disaster conference, held at the Melbourne Cricket Ground in April. Over 340 participants heard from researchers, policymakers, community representatives and emergency management practitioners in presentations, workshops and discussions. The conference focused on a range of diversity topics including LGBTI inclusive emergency management, and gendered expectations and consequences in disaster. MUDRI was represented on the steering committee and a number of the MUDRI team and associate presented papers at the Conference.

The event will have a lasting impact through its Conference Monograph. These legacy documents encompass the works of key researchers and community representatives who presented at the conference as single time event. The MUDRI team is proud to share the conference proceedings, the Diversity in Disaster Monograph, for professionals engaged in disasters and humanitarian crises, which won the Melbourne DesignCentre Award in 2019.

Graduate education

In 2018, the MUDRI Higher degree by research program comprised seven students in the Masters by Research and eleven in the PhD program. All MUDRI students remain on track with candidate milestones achievements. Students from both cohorts undertook the all MUDRI one day Colloquium and engaged with national leaders in the field. MUDRI celebrated its first Masters success and graduation. Dudley McArdle presented the MUDRI Team’s Silver Award for excellence in Disaster Risk Management – Towards Professionalisation.

MUDRI welcomed 27 coursework students from the Master of International Development Practice and Master of Nursing Cohorts attended the annual MUDRI one-day Colloquium for professionals engaged in disasters and humanitarian crises, which won the Melbourne DesignCentre Award in 2019.

Welcome new adjuncts

In 2018, MUDRI welcomed Dr Ben Beccari and Dr Deanne Bird who joined the team as Adjunct Research Fellows. Dr Beccari is a senior advisor in monitoring and evaluation at the State Emergency Service NSW, while Dr Bird is a human geographer with a focus on improving and evaluating the use of open data in disaster management.

Understanding the big picture: Women’s Health

Goulburn North East and Women’s Health in the North

Disaster resilience is about more than just the disaster. When unexpected events render communities, communities visibility, years and decades to recover from first event. For the MUDRI team in 2018, the Gender and Disaster PhD was led by the research component, while Dr Caroline Spencer led the literature review. The project, funded by National Disaster Resilience Grant Scheme, will be launched in early 2019.

Community evaluations

• An evaluation of workshops based on responsible burning-off practices for DFTORAN.
• A Capacity Statement evaluating the Centre of Resilience for the Emerald Community House.

Research publications

• 10 publications.
• 2 reports to funders.
• Our contributions to a second Australian Institute of Disaster Research Monograph called Diversity in Disaster Monograph, a project led by Dr Debro Parkinson.

Graduate success

In 2018, the MUDRI higher degree by research program comprised seven students in the Masters by Research and eleven in the PhD program. All MUDRI students remain on track with candidate milestones achievements. Students from both cohorts undertook the all MUDRI one day Colloquium and engaged with national leaders in the field. MUDRI celebrated its first Masters success and graduation. Dudley McArdle presented the MUDRI Team’s Silver Award for excellence in Disaster Risk Management – Towards Professionalisation.

MUDRI welcomed 27 coursework students from the Master of International Development Practice and Master of Nursing Cohorts attended the annual MUDRI one-day Colloquium for professionals engaged in disasters and humanitarian crises, which won the Melbourne DesignCentre Award in 2019.

Welcome new adjuncts

In 2018, MUDRI welcomed Dr Ben Beccari and Dr Deanne Bird who joined the team as Adjunct Research Fellows. Dr Beccari is a senior advisor in monitoring and evaluation at the State Emergency Service NSW, while Dr Bird is a human geographer with a focus on improving and evaluating the use of open data in disaster management.

Understanding the big picture: Women’s Health

Goulburn North East and Women’s Health in the North

Disaster resilience is about more than just the disaster. When unexpected events render communities, communities visibility, years and decades to recover from first event. For the MUDRI team in 2018, the Gender and Disaster PhD was led by the research component, while Dr Caroline Spencer led the literature review. The project, funded by National Disaster Resilience Grant Scheme, will be launched in early 2019.

Community evaluations

• An evaluation of workshops based on responsible burning-off practices for DFTORAN.
• A Capacity Statement evaluating the Centre of Resilience for the Emerald Community House.

Research publications

• 10 publications.
• 2 reports to funders.
• Our contributions to a second Australian Institute of Disaster Research Monograph called Diversity in Disaster Monograph, a project led by Dr Debro Parkinson.

Graduate success

In 2018, the MUDRI higher degree by research program comprised seven students in the Masters by Research and eleven in the PhD program. All MUDRI students remain on track with candidate milestones achievements. Students from both cohorts undertook the all MUDRI one day Colloquium and engaged with national leaders in the field. MUDRI celebrated its first Masters success and graduation. Dudley McArdle presented the MUDRI Team’s Silver Award for excellence in Disaster Risk Management – Towards Professionalisation.

MUDRI welcomed 27 coursework students from the Master of International Development Practice and Master of Nursing Cohorts attended the annual MUDRI one-day Colloquium for professionals engaged in disasters and humanitarian crises, which won the Melbourne DesignCentre Award in 2019.

Welcome new adjuncts

In 2018, MUDRI welcomed Dr Ben Beccari and Dr Deanne Bird who joined the team as Adjunct Research Fellows. Dr Beccari is a senior advisor in monitoring and evaluation at the State Emergency Service NSW, while Dr Bird is a human geographer with a focus on improving and evaluating the use of open data in disaster management.

Understanding the big picture: Women’s Health

Goulburn North East and Women’s Health in the North

Disaster resilience is about more than just the disaster. When unexpected events render communities, communities visibility, years and decades to recover from first event. For the MUDRI team in 2018, the Gender and Disaster PhD was led by the research component, while Dr Caroline Spencer led the literature review. The project, funded by National Disaster Resilience Grant Scheme, will be launched in early 2019.

Community evaluations

• An evaluation of workshops based on responsible burning-off practices for DFTORAN.
• A Capacity Statement evaluating the Centre of Resilience for the Emerald Community House.

Research publications

• 10 publications.
• 2 reports to funders.
• Our contributions to a second Australian Institute of Disaster Research Monograph called Diversity in Disaster Monograph, a project led by Dr Debro Parkinson.

Graduate success

In 2018, the MUDRI higher degree by research program comprised seven students in the Masters by Research and eleven in the PhD program. All MUDRI students remain on track with candidate milestones achievements. Students from both cohorts undertook the all MUDRI one day Colloquium and engaged with national leaders in the field. MUDRI celebrated its first Masters success and graduation. Dudley McArdle presented the MUDRI Team’s Silver Award for excellence in Disaster Risk Management – Towards Professionalisation.

MUDRI welcomed 27 coursework students from the Master of International Development Practice and Master of Nursing Cohorts attended the annual MUDRI one-day Colloquium for professionals engaged in disasters and humanitarian crises, which won the Melbourne DesignCentre Award in 2019.

Welcome new adjuncts

In 2018, MUDRI welcomed Dr Ben Beccari and Dr Deanne Bird who joined the team as Adjunct Research Fellows. Dr Beccari is a senior advisor in monitoring and evaluation at the State Emergency Service NSW, while Dr Bird is a human geographer with a focus on improving and evaluating the use of open data in disaster management.

Understanding the big picture: Women’s Health

Goulburn North East and Women’s Health in the North

Disaster resilience is about more than just the disaster. When unexpected events render communities, communities visibility, years and decades to recover from first event. For the MUDRI team in 2018, the Gender and Disaster PhD was led by the research component, while Dr Caroline Spencer led the literature review. The project, funded by National Disaster Resilience Grant Scheme, will be launched in early 2019.

Community evaluations

• An evaluation of workshops based on responsible burning-off practices for DFTORAN.
• A Capacity Statement evaluating the Centre of Resilience for the Emerald Community House.

Research publications

• 10 publications.
• 2 reports to funders.
• Our contributions to a second Australian Institute of Disaster Research Monograph called Diversity in Disaster Monograph, a project led by Dr Debro Parkinson.

Graduate success

In 2018, the MUDRI higher degree by research program comprised seven students in the Masters by Research and eleven in the PhD program. All MUDRI students remain on track with candidate milestones achievements. Students from both cohorts undertook the all MUDRI one day Colloquium and engaged with national leaders in the field. MUDRI celebrated its first Masters success and graduation. Dudley McArdle presented the MUDRI Team’s Silver Award for excellence in Disaster Risk Management – Towards Professionalisation.

MUDRI welcomed 27 coursework students from the Master of International Development Practice and Master of Nursing Cohorts attended the annual MUDRI one-day Colloquium for professionals engaged in disasters and humanitarian crises, which won the Melbourne DesignCentre Award in 2019.

Welcome new adjuncts

In 2018, MUDRI welcomed Dr Ben Beccari and Dr Deanne Bird who joined the team as Adjunct Research Fellows. Dr Beccari is a senior advisor in monitoring and evaluation at the State Emergency Service NSW, while Dr Bird is a human geographer with a focus on improving and evaluating the use of open data in disaster management.

Understanding the big picture: Women’s Health

Goulburn North East and Women’s Health in the North

Disaster resilience is about more than just the disaster. When unexpected events render communities, communities visibility, years and decades to recover from first event. For the MUDRI team in 2018, the Gender and Disaster PhD was led by the research component, while Dr Caroline Spencer led the literature review. The project, funded by National Disaster Resilience Grant Scheme, will be launched in early 2019.

Community evaluations

• An evaluation of workshops based on responsible burning-off practices for DFTORAN.
• A Capacity Statement evaluating the Centre of Resilience for the Emerald Community House.

Research publications

• 10 publications.
• 2 reports to funders.
• Our contributions to a second Australian Institute of Disaster Research Monograph called Diversity in Disaster Monograph, a project led by Dr Debro Parkinson.
Major lectures

Mr Joe Cuthbertson, Chair of the WADEM Oceania Chapter, delivered the 13th Annual Professor Frederick ‘Skip’ Burkle Keynote Lecture. Titled ‘A WADEM Oceania Chapter: Celebrating 10 years’, the keynote lecture was a particular highlight of MUDRI’s year as it celebrated the 10th anniversary of the Chapter, which began its life at Monash in 2008. Of significance, this year marked the first of WADEM’s Chapters to reach this milestone.

Jerril Rechter, CEO of VicHealth presented the keynote oration at the 2018 Emergency Services Foundation National Conference in Melbourne. This was the Fourth Annual Claire Zara Memorial Oration.

Global reach

The international exposure of MUDRI continued to grow. MUDRI staff made four presentations at the Asian Pacific Conference for Disaster and Emergency Medicine in Kobe, Japan, one of which was a well-received special lecture.

Emeritus Professor Frank Archer continued as a member of the World Association for Disaster and Emergency Medicine’s (WADEM) Prehospital and Disaster Medicine Editorial Board and as a Board Member of the Asian Pacific Conference for Disaster and Emergency Medicine. Dr Caroline Spencer continued her role on the WADEM Regional Oceania Chapter Council and took on the role of the WADEM EMS Section and maintained her position as Chair of the Oceania Chapter Council and on the WADEM Board.

MUDRI continuing its collaboration with the University of Greenwich, London. The team continued to research to explore the different ways that the community understands emergency warnings during emergency events.

Professional outreach

MUDRI again contributed to MIUR in 2018 and we would like to thank the staff who championed the group’s successes. MUDRI’s strength lies in its people and network. It is stronger for having their support as it continues its mission to build the resilience of many communities in the face of unexpected emergency events.

Professional outreach

The professional outreach of MUDRI included:

• Completion of its Review of the National Community. Recovery Manual managed by the Australian Institute of Disaster Resilience.

• Membership of the Gender and Disaster Pod, in partnership with Women’s Health Goulburn North East and Women’s Health in the North.

• Collaboration with Evidence Aid to champion further the evidence-based approach in humanitarian action and increase awareness in Oceania.

• Membership of the National Emergency Management Education Alliance, hosted by the Australian Government Attorney General’s Department.

MUDRI @ MUARC

MUDRI again contributed to MIUR in 2018 and we would like to thank the staff who championed the group’s successes. MUDRI’s strength lies in its people and network. It is stronger for having their support as it continues its mission to build the resilience of many communities in the face of unexpected emergency events.

Back by popular demand

The popular MUDRI Annual Community Forum returned for its sixth event to address community needs and help drive resilience strengthening activities. The theme for this year’s one-day Forum, Community-based Resilience: the community speaks, attracted 85 participants representing: community members; community leaders; community-based organisations; community development practitioners; community based government; business and private agencies; and university academics and students. This community-based resilience network enables participants to benefit from connecting with like-minded people.

Global reach

The international exposure of MUDRI continued to grow. MUDRI staff made four presentations at the Asian Pacific Conference for Disaster and Emergency Medicine in Kobe, Japan, one of which was a well-received special lecture.

Emeritus Professor Frank Archer continued as a member of the World Association for Disaster and Emergency Management’s (WADEM) Prehospital and Disaster Medicine Editorial Board and as a Board Member of the Asian Pacific Conference for Disaster and Emergency Medicine. Dr Caroline Spencer continued her role on the WADEM Regional Oceania Chapter Council and took on the role of the WADEM EMS Section and maintained her position as Chair of the Oceania Chapter Council and on the WADEM Board.

MUDRI continued its collaboration with the University of Greenwich, London. The team continued to research to explore the different ways that the community understands emergency warnings during emergency events.

Professional outreach

The professional outreach of MUDRI included:

• Completion of its Review of the National Community. Recovery Manual managed by the Australian Institute of Disaster Resilience.

• Membership of the Gender and Disaster Pod, in partnership with Women’s Health Goulburn North East and Women’s Health in the North.

• Collaboration with Evidence Aid to champion further the evidence-based approach in humanitarian action and increase awareness in Oceania.

• Membership of the National Emergency Management Education Alliance, hosted by the Australian Government Attorney General’s Department.

MUDRI @ MUARC

MUDRI again contributed to MIUR in 2018 and we would like to thank the staff who championed the group’s successes. MUDRI’s strength lies in its people and network. It is stronger for having their support as it continues its mission to build the resilience of many communities in the face of unexpected emergency events.
PHD AND MPHIL CANDIDATES

The Graduate Research Program continued to provide a growing and vibrant research environment for MUARC’s PhD, Masters, Honours and Vacation students. Our graduate research students undertake transformative and interdisciplinary research that is at the forefront of finding sustainable, social, economic, environmental and technical solutions to eliminating injury.

Their research topics align with MUARC’s priority to provide the scientific evidence that underpins the prevention and management of injury. They undertake research in transport, workplace, home and community settings.

Our graduate student cohort remained strong throughout 2018. At the commencement of 2018 we had a total of 40 students (27 PhD and 13 MPhil). The year finished with 33 students (24 PhD and 9 MPhil). The student highlights are as follows:

- We welcomed one new student in 2018: Phuong Hua was awarded a RTP scholarship, along with a Monash Graduate Excellence Scholarship.
- Four students completed and graduated in 2018: Steve O’Hern, Maatje Scheepers, Rison Muhrison and Dudley McArdle.
- One student submitted their thesis in 2018: Diana Wong.
- Successful milestones completed in 2018: Confirmation of Candidature (1), Mid Candidature Review (9), Pre Submission Seminar (2).
- Our PhD and MPhil students contributed to 14 published journal articles during 2018.
- The MUARC Vacation student program was also successful in 2018 attracting 11 students: Summer 2017/18 – 7; Winter 2018 – 3.
- During 2018 a number of our alumni started successful careers in government, industry and academia, and are making significant and distinctive contributions to injury prevention.

A significant achievement for the Graduate Research team in 2018 was a successful application to establish a Graduate Research Industry Program (GRIP). GRIPs are designed to bring together graduate researchers and academic leaders from various fields with external partners to explore an issue of global significance. MUARC, in collaboration with various Monash Faculties (MADA, Medicine, Engineering and Arts) established the Injury Prevention GRIP (IP-GRIP). The goal of the IP-GRIP is simple but profound: to provide excellent research that will underpin an injury-free transport system, workplace and community. There is no similar Injury Prevention GRIP initiative in any other university.

Ten industry partners, including TAC, VicRoads, Department of Justice and Regulation, Department of Human Services, Transport Safety Victoria, WorkSafe, Rail Association of Victoria, Queensland Transport & Main Roads, and Safer Care Victoria are co-funding scholarships (with co-funding from the University to support a cohort of 17 students addressing 17 topics within the broad theme of injury prevention). This program will provide our students great opportunities to become thought leaders for industry through a unique industry-driven interdisciplinary training program, internship opportunities, and scholarships.

We will be welcoming our new group of PhD students to MUARC and Faculties early 2019.
<table>
<thead>
<tr>
<th>Name</th>
<th>Project Title</th>
<th>Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raphael Celia</td>
<td>Safety and Driver Fatigue in Public Transport</td>
<td>Stuart Marshall, Tim Horberry, Kristie Young</td>
</tr>
<tr>
<td>Jessica Truong</td>
<td>Safe systems and safety culture — How to move Towards Zero</td>
<td>Ian Johnston, Stuart Newstead</td>
</tr>
<tr>
<td>Nebojsa Tomasevic</td>
<td>Investigation of transfer control from automated vehicles to the driver</td>
<td>Tim Horberry, Brian Fildes, David Logan</td>
</tr>
<tr>
<td>Renée St.Louis</td>
<td>Impact of changes in health and functional impairments on driving patterns of older adults</td>
<td>Jude Charlton, Sjaan Koppel</td>
</tr>
<tr>
<td>Jianrong Qiu</td>
<td>Exploring the road safety impacts of bus safety inspections</td>
<td>Steve O’Hern</td>
</tr>
<tr>
<td>Steve O'Hern</td>
<td>Evaluation of evidence-based infrastructure for safer cycling</td>
<td>Hayley McDonald</td>
</tr>
<tr>
<td>Hayley McDonald</td>
<td>The contribution of drugs and alcohol in serious injury crashes</td>
<td>Janneke Berecki-Gisolf, Stuart Newstead, Karen Stephan</td>
</tr>
<tr>
<td>Hayley McDonald</td>
<td>The contribution of drugs and alcohol in serious injury crashes</td>
<td>Janneke Berecki-Gisolf, Stuart Newstead, Karen Stephan</td>
</tr>
<tr>
<td>Joseph Jones</td>
<td>Developing a special tool to help individuals and communities in assessing and managing emergency risk</td>
<td>Michael Fitzharris, Mike Lenné, Amanda Stephens</td>
</tr>
<tr>
<td>Michael Fitzharris</td>
<td>Developing a special tool to help individuals and communities in assessing and managing emergency risk</td>
<td>Michael Fitzharris, Mike Lenné, Amanda Stephens</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Suresh Pokharel</td>
<td>Multiple stresses and urban vulnerability: Why and how building resilience should be a focus</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burkle</td>
</tr>
<tr>
<td>Matthew Pepper</td>
<td>Disaster resilience and emergency response</td>
<td>Frank Archer, F(Skip) Burke</td>
</tr>
</tbody>
</table>
MUARC hosted road safety professionals from across the world in May and November as part of its acclaimed Road Safety Management Leadership Program.

"I think it’s just an exceptional program. Not only is the expert content invaluable, but the opportunity to mix with our peers who are all facing similar challenges and obstacles has added even more value. This is probably the best way you could spend your time if you’re interested in road safety. You’ll get the best outcomes and you get to share your time with other really passionate people.”

KERRIE TREGENZA: SENIOR MANAGER - COMMUNITY ROAD SAFETY, DEPARTMENT OF TRANSPORT AND MAIN ROADS, QUEENSLAND

"I’ve found it really, really helpful. It’s diverse, interactive and covers so many different road safety and leadership topics. I think from a leadership perspective, the Program has been so valuable and helped me plan how I’m going to tackle some of my challenges when I get back."

NOELANI REARDON, ROADS AND MARITIME SERVICES, NSW

"It is amazing and informative. A very comprehensive programme. It covers the entire road safety management system value chain from end to end. What intrigued me is the safe systems approach as supported by the vision zero with an intention of achieving a target of zero on traffic-related deaths. The success though lies on ensuring that all elements of the systems approach are implemented in a synchronised manner by different implementing entities in our jurisdiction.”

HELEN KGAMANYANE, ROAD TRAFFIC INFRINGEMENT AGENCY, SOUTH AFRICA
Traffic Engineering and Vehicle Safety

Traffic Engineering and Vehicle Safety (TEVS) Consortium is made up primarily of research engineers with industry and academic experience in civil and mechanical engineering, as well as safe behaviour. The team comprises Professor Brian Fildes, Dr David Logan, and a number of PhD engineers, namely Nimmi Candappa, Brendan Lawrence, Mohammad Nabil Ibrahim, Iman Ahmad, Nebosja Tomasevic, Mohammed Aburumman and Jianrong (Jocelyn) Qiu.

Supervisors are also key observers within the group, and include Professor Tim Horberry, Associate Professor Jennie Oxley, Dr Sharon Newnam and Dr Sjaan Koppel.

The group’s work focuses on the development and evaluation of safe road infrastructure, vehicle design and maintenance, transport modal choice, workplace safety, autonomous vehicles and child restraint.

Trialling reduced speeds

Our team is working with the City of Yarra to trial 30km/h speed limits in parts of Fitzroy and Collingwood. The council became the first in Australia to enforce the reduced speed after a 2017 MUARC report cited evidence that the chances of pedestrians being killed when hit by a motor vehicle were halved when the speed limit was reduced from 40km/h to 30km/h.

MUARC was awarded the project in August 2018 and the trial will last 12 months. The team is in the implementation stage for collecting data, which is being led by Brendan Lawrence with support from Professor Brian Fildes and Associate Professor Jennie Oxley.

Reducing risk on our roads

The Safe System Road Infrastructure Program (SSRIP) is a TAC and VicRoads initiative that delivers safety upgrades to the state’s high-risk roads. Our team continues to help inform the program, with Associate Professor Oxley and the Australian Road Research Board (ARRB) working on the Pedestrian Infrastructure Program.

This involvement sees the evaluation of pedestrian safety in 12 separate locations, with Geelong, Shepparton and Flemington featuring in 2018. Countermeasures include pedestrian crossing facilities, road narrowing, pavement alignment, speed limit changes with a general area treatment.

A new SSRIP project was also awarded for the design of Raised Safety Platform treatments. ARRB is facilitating this work with MUARC completing the evaluation.

Supporting the TAC

Our close association with the TAC was evident in Dr David Logan’s involvement in multiple ventures with the organisation. David produced technical advice for the TAC’s new ‘Road to Zero: Road Safety Experience’ space at the Melbourne Museum. The 550-metre education complex was opened in August 2018 and aims to build road safety knowledge and awareness among younger road users.

David was also a key player in the TAC’s television advertising campaign on wire rope barriers, serving as a technical advisor to the project. TAC ran the campaign to convey the safety benefits of the barriers to the public and released a behind-the-scenes video where David explained the technical operation of the road treatment with its outcomes made visible on the site map of the new campaign.

Tracking future development for AARC

In 2018, we were approached to evaluate the future development of the Australian Automotive Research Centre’s (AARC) test facilities in Anglesea. The 1000-hectare site is currently used for military training and testing trucks owned by Bosch and Linfox. With an eye to developing the track and becoming a research provider, AARC has enlisted the counsel of General Motors, Car Advice, Bosch and MUARC. Funding has been provided by the Victorian government to commence the project, with Professor Fildes set to conduct a research presentation to the group.

Students sharing their work

As well as all of our PhD candidates progressing their projects, two of our students presented their research during 2018. Our PhD candidate, Nimmi Candappa presented her work on the evaluation of a driving simulator for research on human factors of vehicle automation.

Jocelyn Qiu attended the Australasian Road Safety Conference in Sydney and discussed her research into the roadworthiness of Victorian buses. Nebosja Tomasevic presented his work on the evaluation of a driving simulator for research on human factors of vehicle automation.
High-quality injury surveillance data is crucial to preventing injuries and promoting safety. The Victorian Injury Surveillance Unit (VISU) analyses, interprets and disseminates data on injury deaths, hospital admissions and emergency department presentations in the state of Victoria.

Established in 1988, VISU's initial focus was confined to child injury prevention. The service expanded from 1990 to address injury issues across all age groups and utilised surveillance data at three levels of injury severity (death, hospital admissions and ED presentation). VISU has earned the reputation of providing an efficient and highly regarded injury surveillance service that stimulates research and underpins injury prevention policies and programs.

Injury Atlas nears completion

PHD student Manjula Singh made strong progress on his Victorian Injury Atlas in 2018, with the online tool set for a 2019 launch. The Atlas uses VISU’s databases to create an interactive map of Victoria showing injury-related statistics across the state. The team will be able to update the search results to focus on any injury category over time. The Atlas complements VISU’s popular data request service. Congratulations to Dr Singh for also successfully completing his PhD, graduating in December 2018.

17th VISU e-bulletin – Unintentional hospital-treated injury in Victoria 2016/17

In June, the team published its 17th e-bulletin. The issue provided an overview of unintentional hospital-treated injury in Victoria in 2016/17 utilising two injury surveillance datasets that respectively record hospital admission and ED presentations for injury. The results showed there were 122,742 injury cases admitted to Victorian hospital admissions and ED presentations for injury. The results showed that falls were the leading cause of injury, accounting for 47% of admissions and 42% of ED presentations, while the home was the most common setting for injury among hospital admissions (40%) and ED presentations (40%).


VISU's second e-bulletin for the year looked at Victorian injury deaths from 2014-2016. Data were extracted from the VISU Field Cause of Death (FCD) dataset supplied by the Australian Coordinating Registry (ACR). There were 7214 Injury Death records recorded for Victoria over the three-year period 2014-2016, an average annual rate of 8.8 deaths per 100,000 Victorians.

The findings also showed:
• The all-ages intentional annual injury death rate was 31 (per 100,000) Victorians; rates were highest in older adults (58.0 per 100,000 older adults and 23 per 100,000 children).
• The all-ages unintentional annual injury death rate was 1.5 (per 100,000) Victorians (comprising a 1.0/100,000 suicide rate and a 0.5/100,000 homicide rate). Intentional death rates were highest in adults (1.6 per 100,000 adults aged 25–64 years) and lowest in children (0.7 per 100,000 children). Both suicide and homicide rates followed this age pattern.

Issues in injury and injury prevention

Hazard has been VISU’s flagship publication for 30 years. The bi-annual publication highlights emerging injury issues and releases awareness of identified injury types to stimulate preventive action.

Injury-prone sports revealed

In April 2018, PhD candidate Tara Fernando led a Medical Journal of Australia special feature on sports that put people at risk of hospitalisation or injury among active Victorians. The study analysed 1.3 million presentations to EDs in Victoria for sports and active recreation injuries from 2012/13 to 2014/15. The paper reported that the sports most commonly associated with ED presentations among Victorians aged five years or older were Australian football, motor sports, and cycling/BMX. However, the highest injury rates per participant among people aged 15 years or more were for motor sports, rugby, and skateboarding/inline hockey/sports.

Hazard 84, published in October, focused on the extent of unintentional injury-related hospital admissions among older adult residents in Victoria. The team worked closely with Professor Joseph Ibrahim from Monash University’s Department of Forensic Medicine as a key collaborator. The publication reported that:
• There was a total of 14,968 unintentional injury-related hospital admissions among older adult residents across the ten-year period 2007/08 to 2016/17 in Victoria.
• During the most recent 5-year period from 2014/15 to 2016/17, fractures accounted for 43.0% of the 4,491 injury admissions among residents of Aged Care facilities.
• The majority of injuries among residents of Aged Care facilities occurred in the home (65.4%) and the workplace (19.9%).
• An estimated cost of $24.5 million AUD in hospital costs was spent on Residential Aged Care injury-related admissions over the period 2014-15 to 2016-17 (two years).

Hazard 84 – Unintentional Injury among older residents of Aged Care facilities in Victoria

The Victorian Injury Surveillance Unit | MUARC Annual Report 2018 39
This project is a collaboration between VISU, the Coroners Court Victorian Suicide Register Data Linkage Study of the PHNs or health services. VISU's role has been to provide a series of reports to support people that present to the ED for intentional self-harm.

The second initiative is the Assertive Outreach trials, also called the 'HOPE' initiative. Twelve health services have been funded to design and implement flexible and person-centred care for the early identification and intervention of people at risk of suicide. These trials are being implemented across 12 Victorian locations.

The framework includes two flagship initiatives. The Victorian Suicide Prevention Framework and the need to support the framework with evidence. The Victorian Suicide Prevention Framework has been developed to provide a coordinated approach to suicide prevention across all levels of government and the health sector.

The Victorian Suicide Register was established in 2004 and has been used to develop and implement evidence-based policies and programs to reduce suicide in Victoria. The register contains information on all suicide deaths and attempted suicides in Victoria.

The Victorian Suicide Register is a key component of the Victorian Suicide Prevention Framework and is used to identify risk factors for suicide, as evidenced from emergency department records.

The Victorian Suicide Register has been used to identify risk factors for suicide, as evidenced from emergency department records. The Victoria Department of Health and Human Services (DHHS) has used the Victorian Suicide Register to the Victorian Admitted Episodes Dataset (VAED), Victorian Emergency Minimum Dataset (VEMD), and the Victorian Admitted Episodes Dataset (VAED) to support evidence-based decision making in Victoria, Australia.

The team continued its role as a member of the DHHS Victorian Stakeholder Group on Suicide Information and Data. This stakeholder group was born from the 2016 Victorian Suicide Prevention Framework and the need to support the framework with evidence.

Statement of Income and Expenditure for the Year Ended 31 December 2018

<table>
<thead>
<tr>
<th>INCOME</th>
<th>SMB’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Income</td>
<td>10,730</td>
</tr>
<tr>
<td>Research</td>
<td>5,170</td>
</tr>
<tr>
<td>Australian Research Council</td>
<td>226</td>
</tr>
<tr>
<td>National Health and Medical Research Council</td>
<td>9</td>
</tr>
<tr>
<td>Commonwealth Government – Others</td>
<td>637</td>
</tr>
<tr>
<td>State and Local Government</td>
<td>3,805</td>
</tr>
<tr>
<td>Cooperative Research Centre</td>
<td>308</td>
</tr>
<tr>
<td>Industry Australia</td>
<td>303</td>
</tr>
<tr>
<td>Industry International</td>
<td>254</td>
</tr>
<tr>
<td>Commonwealth Government Research Support Program</td>
<td>1,190</td>
</tr>
<tr>
<td>Other Operating Expenditure</td>
<td>1,401</td>
</tr>
<tr>
<td>Total Research</td>
<td>10,206</td>
</tr>
<tr>
<td>Other income</td>
<td>454</td>
</tr>
<tr>
<td>Commercial</td>
<td>663</td>
</tr>
<tr>
<td>Other income</td>
<td>1</td>
</tr>
<tr>
<td>Non-current contribution</td>
<td>2,729</td>
</tr>
<tr>
<td>Total Income</td>
<td>10,730</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPENDITURE</th>
<th>SMB’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and Related Expenditure</td>
<td>5,803</td>
</tr>
<tr>
<td>Financial and Administrative</td>
<td>2</td>
</tr>
<tr>
<td>Student Related</td>
<td>78</td>
</tr>
<tr>
<td>Infrastructure Related</td>
<td>110</td>
</tr>
<tr>
<td>Control Support Services – Overhead Costs</td>
<td>2,643</td>
</tr>
<tr>
<td>Other Operating Expenditure</td>
<td>1,401</td>
</tr>
<tr>
<td>Total Expenditure</td>
<td>9,024</td>
</tr>
</tbody>
</table>

CLOSING BALANCE AT 31 DECEMBER 2018

5,391

Notes:
1. The University has provided a transfer of funds to cover the Central Support Services – Overhead Costs.
2. Includes payments to consultants
3. Includes payments to contractors

The Institute’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 Chief Financial Officer and Senior Vice-President. Where required as a condition of funding grants, accounts will be audited by independent external auditors. The Institute’s accounts have been subjected to Government audit as part of the University’s annual accounts for the calendar year 2018.