New Deputy Director

In December, Jeremy Woolley took up the role of Deputy Director at CASR. Jeremy has worked at CASR since 2003 and has an academic background in civil engineering along with vast experience in research across all areas of road safety. Jeremy has a particular interest in infrastructure and has extensively researched in the areas of traffic management, road design and infrastructure, speed limits, road safety audit and risk management and evaluation. He has also been involved in studies examining the outcomes of speed limit changes, fatigue management plans, drug driving legislation and enforcement, and alcohol interlock schemes.

Robert Anderson has undertaken this role for over 10 years but has now stepped down from the position. Everyone at the Centre would like to thank Robert for his commitment to CASR and the many contributions he has made during his time as Deputy Director. Fortunately, as he is still working at the Centre, we will continue to benefit from his experience and input.

Feature

CASR transfers crash investigation knowledge to overseas audience

In November 2013, Matthew Baldock and Tori Lindsay visited the Malaysian Institute for Road Safety Research (MIROS) to deliver a two-day course on human factors in crash causation. The chief aim of the course was to provide guidance to MIROS staff who were planning to undertake a study of human factors involved in road crashes, using a methodology based on interviews with road users hospitalised following a crash. The Malaysian Institute invited CASR to provide the training because of the Centre’s extensive experience in accident investigation.

The course had two components. Firstly, to provide a description of the human factors most likely to be involved in road crashes, including the interaction between human road users, their vehicles and the road system. Secondly, the course provided a description of the ideal methodology to use to interview people who have been involved in crashes to identify relevant human factors, including information on ethical considerations. This course information has allowed MIROS to begin developing their own methodology for a Malaysian study on human factors in crash causation.

Around 30 delegates, consisting mostly of employees of MIROS, but also including members of government agencies, and students of the University of Nottingham, Malaysia campus, attended the course. The participants responded well to the workshop, asking many questions and engaging well with set activities. After the course, a request was made for CASR staff to provide feedback and suggestions on a draft series of questions to be used in interviews in the MIROS study. This has occurred and ongoing cooperation for the MIROS study is expected.

For more information please contact
Matthew Baldock
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Matthew and Tori with Nuur Sakinah Azman (left) and Nuura Addina Mohammad (right), who played lead roles in organising the course at MIROS
This year marks the 50th anniversary of the first in-depth crash investigation report produced by the University of Adelaide. This was the start of our long history of crash investigation undertaken by CASR and its predecessor, the Road Accident Research Unit. These in-depth investigations have been the basis of considerable significant research including our ground breaking work on the impact of small changes in travel speed on crash risk.

In 2014 we will be extending our in-depth crash investigation program to increase the representation of night time crashes in our sample. We will continue to focus our data analysis on the identification of potential countermeasures, as well as gaining a complete understanding of the mechanisms leading to the crashes and consequent injuries. We have also been invited to join iGLAD, an international consortium aimed at harmonising and pooling in-depth crash data from different countries. The resulting database will allow researchers access to data from many more cases and also to perform international comparisons. We expect the data will be most useful in assessing the impact on new vehicle technologies which are being introduced into different countries at different rates.

In addition to the in-depth investigation we have a full program of South Australian and Australian research and we are looking forward to a busy but rewarding 2014.

Message from the Director

Andrew van den Berg

Andrew began working at CASR in 2004 as a Mechanical Engineering graduate. In the early years Andrew split his time between working at the Vehicle Testing Laboratory and investigating crashes. In 2006 Andrew was appointed to his current role as the Laboratory Manager.

In 2011 Andrew moved the laboratory from its home for more than 10 years in Keswick to Kent Town, within walking distance from the CASR main office. This new, purpose built facility has allowed CASR to better promote the importance of pedestrian protection and expand its capabilities.

Over the past 10 years, Andrew has seen many improvements in vehicle design for the vulnerable road user. He explains, “it is encouraging and fulfilling when a vehicle manufacturer returns to our Lab having implemented safety improvements that we suggested on the previous model.”

Andrew is currently working to develop the Lab capabilities to test the effectiveness of Autonomous Emergency Braking (AEB) systems, both for safety ratings and research purposes. “It is clear that AEB systems can provide a road safety benefit, but some systems are better than others”, Andrew explains. “It is important to understand when an AEB system will be of benefit and the extent of that benefit.”

Staff profile

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In-depth crash investigation and iGLAD

CASR has recently become a data provider and member of the Initiative for the Global Harmonisation of Accident Data (iGLAD).

iGLAD is an initiative of the European Automobile Manufacturers Association (ACEA) which is aimed at promoting the harmonisation of in-depth crash investigation data collected by different groups around the world. Harmonised in-depth crash data can then be pooled to allow for detailed statistical analyses of factors contributing to crash involvement, and to injury type and severity.

The SAFER Vehicle and Traffic Safety Centre at Chalmers University in Sweden is currently the research group in charge of administration of iGLAD. Other research groups contributing data come from Germany, Spain, Czech Republic, France, India, USA, Austria and Italy. It is hoped that iGLAD will expand in the coming years to include China, South Africa and Malaysia. CASR’s long history of at-scene in-depth crash investigation makes it an ideal partner in iGLAD. In the coming years, in addition to contributing data to iGLAD, CASR will be focusing its crash investigation activities on crashes resulting in serious injury on South Australian roads, with the specific aim of identifying the countermeasures most likely to reduce the risk of different crash types.

For more information please contact
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Video smarts gives us the edge on cyclist safety

In 2013 The Australian Centre for Visual Technologies (ACVT) developed software for the Motor Accident Commission to count cyclists and rate cyclist conspicuity.

Recently, The Centre for Automotive Safety Research (CASR) and ACVT conducted a pilot study to validate the ability of the ACVT developed software to count cyclists and measure their travelling speed.

High Definition cameras were used to film cyclists in a controlled setting. Cyclist speeds were measured with a laser speed gun and on-board GPS recorders. The pilot study found that the cyclist count and speed measurements determined by the video detection software correlated well with the true count and with each speed measurement method.

Real world site investigations were conducted by filming cyclists travelling over bicycle counters installed by the Department of Planning, Transport and Infrastructure (DPTI). This enabled a comparison between the counts provided by the video detection software and the count provided by the DPTI bicycle counters. The results indicated good correlation and demonstrated the feasibility of using readily obtainable video footage to obtain objective bicycle data.

CASR can envisage many uses for this technology. In the simplest case, this software can provide a means for counting cyclists that does not require complicated installations or supporting infrastructure. Cyclist activity can be monitored using regular video footage from a variety of sources. Future applications include monitoring cycling lane utilisation, trajectory, conspicuity and conflicts between cyclists and other road users.

Research is currently underway to develop capabilities for identifying near crash incidents, including cyclist-vehicle, cyclist-cyclist and cyclist-pedestrian interactions.

For more information please contact Giulio Ponte
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Staff profile

Sam Doecke

Sam always wanted to be working with vehicles in some capacity. ‘When I started my undergraduate degree in mechanical engineering I was aiming to become a design engineer in the automotive sector, however in my final year I had a subject run by CASR on automotive safety which sparked my interest. Working at CASR is great because it means I get to work with vehicles and help make our society a safer place’.

Sam began at CASR working in the in-depth crash investigation team, particularly focusing on crash reconstruction and simulation, experience he considers invaluable, ‘Not only does it produce data that can not be obtained in any other way but it provides a constant reminder of why we work in road safety’ Sam comments. ‘It also greatly assists in correctly interpreting other data sources, that may not be as detailed or reliable on their own’.

Many of the ideas for Sam’s early research at CASR on roadside safety came from observations made conducting crash investigations, ‘We noticed that, on the rare occasion that a roadside was clear of fixed objects for at least the first 10 metres, vehicles were still travelling well beyond this distance and being seriously injured in collisions with fixed objects’. One of the papers that was published from this research ‘Effective use of clear zones and barriers in a safe system’s context’ won the Best Paper Award at the Australasian Road Safety Research, Policing and Education Conference.

Sam has also been involved in research focused on active vehicle safety technologies including Intelligent Speed Assist (ISA), Autonomous Emergency Braking (AEB) and, most recently, connected vehicles. ‘These new technologies that can either alert the driver to a mistake or actively intervene are not only interesting from a technical perspective but have great potential to reduce crashes and the associated injuries’ Sam explains. ‘As they say, prevention is better than cure. It is becoming apparent, though, that not all versions of these technologies are born equal. For example, large performance differences have been noted in early tests of AEB systems. It will be very important going forward to not only promote the technologies themselves but also the best versions of the technologies.’


Wundersitz, L. N. (2013). Phone use while driving: Results from an observational survey. Traffic Injury Prevention; iFirst(1).