



## CASR shares knowledge with road safety community

During 2011 CASR ran a knowledge transfer program on road safety.

The program, supported by the Department of Planning, Transport and Infrastructure and the Motor Accident Commission, is designed to pass on information on emerging issues and strategies being adopted in road safety. The target audience include policy makers and practitioners working in the areas of local government, road design, traffic management, enforcement, regulation, education and health. Five sessions were held during 2011 with a further six scheduled for 2012 including a regional session. Topics covered to date included:

- Road Safety - Past Present and Future
- Priority issues for safer urban roads
- Speed and Speed Management
- High Risk Road Users
- Priority issues for safer rural roads

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## Road safety Q&A with local government

In November Jeremy Woolley visited the Western Australian Local Government Association (WALGA) to provide a question and answer session on road safety and safe systems research.

Approximately 20 local government representatives from all areas of Western Australia attended the session as part of a planning week for the WALGA Infrastructure Unit and RoadWise Program. Discussions ranged from speed and traffic management to safe systems treatments that could be adopted in remote areas. It was concluded that research be published that informed practitioners on ways to retrofit safe systems treatments into the existing road network. This is a current research stream that CASR is pursuing.

## 2011 publications

**Anderson RWG, Hutchinson TP, Linke BJ, Ponte G (2011)** Analysis of crash data to estimate the benefits of emerging vehicle technology (CASR094)

Austroads, Lindsay VL, Ryan GA (2011) Medical Conditions as a Contributing Factor in Crash Causation (AP-R389-11), Austroads, Sydney.

**Baldock MRJ, Grigo JAL, Raftery SJ (2011)** Protective clothing and motorcyclists in South Australia (CASR088)

**Doecke SD, Anderson RWG, Woolley JE (2011)** Advisory Intelligent Speed Adaptation for government fleets (CASR099)

**Doecke SD, Grigo JAL (2011)** Annual performance indicators of enforced driver behaviours in South Australia, 2009 (CASR084)

**Doecke SD, Kloeden CN, McLean AJ (2011)** Casualty crash reductions from reducing various levels of speeding (CASR076)

**Doecke SD, Woolley JE (2011)** Cost benefit analysis of Intelligent Speed Adaptation (CASR093)

**Grigo JAL, Baldock MRJ (2011)** Sleepiness and road crashes: Challenges of definition and measurement (CASR082)

**Raftery SJ, Grigo JAL, Woolley JE (2011)** Heavy vehicle road safety: Research scan (CASR100)

**Raftery SJ, Wundersitz LN (2011)** No restraint? Understanding differences in seat belt use between fatal crashes and observational surveys (CASR090)

**Raftery SJ, Wundersitz LN (2011)** The efficacy of road safety education in schools: A review of current approaches (CASR077)

**Wundersitz LN, Baldock MRJ (2011)** The relative contribution of system failures and extreme behaviour in South Australian crashes (CASR092)

**Wundersitz LN (2011)** Best practice in OHSW mass media campaigns (CASR091)



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# At the scene

Newsletter of the Centre for Automotive Safety Research



Issue 11, January 2012

## Research highlights from 2011

### The role of medical conditions in crashes

This research sought to identify the extent to which a medical condition contributed to crash causation.

The study involved examining information about 1490 drivers, riders, pedestrians and cyclists who were hospitalised as a result of a crash. Results indicated that a medical condition contributed to 11-12% of crash events, with more than 18% of drivers found to have a medical condition that directly contributed to the crash. The most common conditions identified were loss of consciousness (25%), functional impairment relating to mental illness, including suicide attempts (22%) and seizure (17%).

Commissioned by Austroads, the Department of Transport, Planning and Infrastructure and the Motor Accident Commission (SA).

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### Restraint use in South Australia

This research aimed to detect why the prevalence of seat belt use varies between observational surveys and crash statistics.

Observational surveys of restraint use in South Australia have reported vehicle occupant wearing rates somewhere in the order of 97%, however, over 30% of vehicle occupants killed or seriously injured in crashes are reported as not wearing a seatbelt. The project included an international literature review and an analysis of a sample of fatal crashes in South Australia. The results indicated that those less likely to wear a seatbelt were younger, more likely to have tested positive to drugs and were more likely to have engaged in extreme behaviour than those who were restrained.

Commissioned by the Department for Transport, Planning and Infrastructure and the Motor Accident Commission (SA).

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## The benefits of emerging vehicle technologies

The purpose of this research was to estimate the potential benefits of safety technologies being developed for passenger vehicles, trucks and motorcycles. The focus was on systems that actively prevent crashes. The results showed that the largest potential for reducing the number of serious and fatal crashes in coming years is likely to come from forward collision detection and avoidance technologies. These technologies currently include emergency brake assist, 'city-safe' low speed obstacle detection with automatic braking, and adaptive cruise control with automatic braking.

Commissioned by Transport and Main Roads, Queensland, the Department of Infrastructure, Transport, Regional Development and Local Government, Transport Certification Australia and VicRoads.

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CASR supports the Decade of Action for Road Safety 2011-2020

# Message from CASR

Welcome to our first newsletter for 2012. Last year South Australia recorded its second lowest road toll on record and we would like to congratulate everyone involved in achieving this result. We look forward to contributing to an even safer year in 2012.

Early last year, in partnership with the Australasian New Car Assessment Program (ANCAP), we opened our new Vehicle Testing Laboratory. As well as carrying out important safety testing for ANCAP, the laboratory played host to a number of road safety events held by vehicle manufacturers and other customers. We were particularly proud in September when the Honourable Tom Kenyon, then Minister for Road Safety, launched the new South Australian Road Safety Strategy at our laboratory. The strategy, *Towards Zero Together*, set the direction for reducing road deaths and serious injuries by at least 30% by 2020. The launch was attended by Sir Eric Neal Chair of the Road Safety Advisory Council, Rod Hook Chief Executive of the Department of Planning, Transport and Infrastructure and other members of the road safety community.

Later in the year another function was held at the laboratory promoting the extension of the Stars on Cars vehicle safety campaign. The campaign involves car dealerships placing vehicle safety rating stickers on cars to provide potential buyers with information on the ANCAP safety rating of vehicles. Lauchlan MacIntosh of ANCAP and car industry representatives attended the launch.

CASR also achieved success at the 2011 Australasian Road Safety Research, Policing and Education Conference, held in Perth. For the fourth year in a row a CASR paper won the Peter Vulcan award for the best peer-reviewed paper. The winning paper was 'The Global Technical Regulation on pedestrian safety: Likely effects on vehicle design' by Daniel Searson and Robert Anderson. It was especially pleasing for Daniel who won the award just a few weeks after he submitted his PhD thesis.

This is the fourth successive year this award has been won by CASR personnel. Previous recipients were Matthew Baldock, Robert Anderson and Sam Doecke.

At CASR we are preparing for the challenges and opportunities that 2012 will bring, in particular we have an exciting program of research ahead of us with our major supporters DPTI and MAC. We will enjoy collaborating closely with other road safety researchers and the rest of the road safety community in finding new and better ways to reduce trauma on our roads.

*Images (from top to bottom): Daniel Searson receiving the Peter Vulcan Award from Peter Vulcan*

*Best paper award winners (left to right): Robert Anderson, Matthew Baldock, Sam Doecke and 2011 winner Daniel Searson*

*The Honourable Tom Kenyon, Minister for Road Safety (second from right) with Sir Eric Neal, Professor Mary Lydon, Director, CASR and Andrew van Den Berg, CASR Vehicle Impact Laboratory Manager*

*Lauchlan MacIntosh, Executive Director of ANCAP, addressing attendees  
A vehicle demonstration at the launch*



## The contribution of system failures and extreme behaviour in South Australian crashes

The objective of this research was to determine the proportion of crashes caused by extreme driver behaviour and that caused by 'system failures', including drivers making simple mistakes. The project involved examining data on 83 fatalities and 453 non-fatal crashes from Coroners reports and CASR In-depth Investigation to determine the cause of the crashes. The research determined that the majority did not involve extreme behaviour with 57% of fatal crashes and over 90% of injury crashes deemed the consequence of a system failure.

Commissioned by the Department for Transport, Planning and Infrastructure and the Motor Accident Commission (SA).

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## Advisory Intelligent Speed Adaptation for government vehicle fleets

The aim of this project was to determine the likely crash savings if state government fleets in Australia were fitted with advisory Intelligent Speed Adaptation (ISA). The project used data from a New South Wales trial of ISA and the Kloeden risk curve for travel speed. Results indicated that ISA would have the potential to reduce casualty crashes in government fleets by 20%. This equates to a reduction of 171 casualty crashes and a saving of \$31.6 million per year.

Commissioned by the Australasian Intelligent Speed Assist Initiative. Funded by the Transport Accident Commission (VIC).

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## In the spotlight Jeremy Woolley



Jeremy Woolley has been with CASR since 2004 as a Senior Research Fellow and has been involved with road safety research for over a decade. He has a traffic engineering background where he built up considerable expertise in Intelligent Transport Systems (ITS), assessing environmental impacts from road traffic and micro-simulation modelling. Although often focusing on infrastructure and speed management, Jeremy has been involved with a diverse range of road safety areas including policy evaluation, enforcement, younger and older drivers, heavy vehicles, campaign evaluation, countermeasure evaluation, road safety audit, education and mass media. Jeremy rates his involvement with in-depth crash investigation as one of his career highlights. 'The activity

serves as a reality check on the research that we are doing and forms the basis for many of our activities. It is enlightening to work in a multidisciplinary environment and rewarding when our efforts can be used to influence safe practices and policy.'

Jeremy performed some interesting roles in the past two years, juggling research with teaching, the public service and the Thinker in Residence program. In 2010 Jeremy was seconded to the Department of Transport, Energy and Infrastructure as the Manager, Safer People, within the Road Safety Directorate. 'The experience was extremely valuable in highlighting the workings of government and policy formulation processes. I now have a greater appreciation of what it takes to convert research knowledge into policy actions. It was a fantastic experience to be involved with the initial state road safety strategy development process and was heartening to see the acceptance of Safe Systems principles amongst key stakeholders.'

Over 2010/11 Jeremy also acted as the 'Catalyst' for Adelaide Thinker in Residence on road safety, Professor Fred Wegman. 'It was great to work with someone who was an outside observer and argued the case for the integration of safety into all aspects of the road transport system. It was good to see road safety being discussed beyond traditional circles.'

Jeremy is also actively involved with professional organisations and is current SA president of the Australian College of Road Safety and a past president of the SA Australian Institute of Traffic Planning and Management.



## Conference views from new researchers

'This year I attended, for the first time, the Australasian Road Safety Research, Policing and Education conference to present a paper providing direction for the future of road safety education in Australia. The conference provided an excellent forum in which to achieve this with delegates including researchers and practitioners at the front line of road safety education.'

For me, one of the most exciting aspects of the conference was the workshop on road safety education. While not all aspects of the workshop were relevant to me as a researcher it did provide an opportunity to network with professionals from across Australia and internationally with a shared interest in road safety education. I think one of my major achievements at the conference was to further articulate, during the workshop, some practical applications derived from my research, bridging that difficult gap between theory and practice. These suggestions were met with some interest and it was both encouraging and exciting to have (potentially) made a meaningful contribution to this important area of road safety'. Simon Raftery

'Recently I attended the National Injury Prevention and Safety Promotion conference in Brisbane. As an early-career researcher it was particularly interesting to learn about the large range of quality and innovative research that falls within road safety. The conference was a great opportunity to meet with external researchers and share thoughts on a number of topics in a professional yet relaxed environment. Watching the presentations and listening to senior researchers and practitioners describe how road safety fits into a broader scale 'injury prevention' perspective has challenged me to think outside the square. A definite highlight of the conference for me was the opportunity to present some of CASR's research, this was one of my personal career goals and thanks to CASR I was able to achieve it sooner rather than later'. Jennifer Grigo

'We are fortunate to have such a world class research centre in Adelaide and CASR provides me with the opportunity to combine many unique experiences including participation in world class research activities, collaboration with other researchers, nurturing upcoming research talent and providing knowledge transfer to students and professionals. There is a group of very talented and dedicated individuals at CASR and it is my privilege to work alongside them. Due to its independence and considerable reputation, we are all in a good position to make a difference and save lives.'

## International guidelines for the protection of pedestrians

Postgraduate student Daniel Searson is currently researching how the implementation of the Global Technical Regulation on Pedestrian Safety might affect vehicle designs, and what implications it might have for crashes across the full range of crash speeds encountered in the real world.

Results of the research suggested that such a regulation could force a redesign of the most potentially dangerous areas on a vehicle.

Currently there are no vehicle design regulations for pedestrian safety in Australia. The global regulation was previously under consideration to be adopted in Australia, but the adoption process was halted early in 2011 due to the potential effects on the bull bar industry.

Daniel says, 'Such a regulation would almost certainly have a positive effect on pedestrian safety, and previous research by CASR has shown a large potential for crash cost savings. One option could be to exclude bull bars from the requirements at first, because then at least we would have a basic standard for the majority of vehicles.'

Daniel presented the research at the 2011 Australasian Road Safety Research, Policing and Education Conference where he won the Peter Vulcan Award for Best Paper.

The award winning paper draws on results from Daniel's PhD work as well as earlier studies conducted for the Australian Department for Infrastructure and Transport and the South Australian Department of Planning, Transport and Infrastructure.

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