

Medicine, Nursing and Health Sciences

HEADlines

Newsletter of Monash-Epworth Rehabilitation Research Centre

December 2015

The aim of the Monash-Epworth Rehabilitation Research Centre (MERRC) is to conduct ethical, innovative and internationally competitive research investigating outcomes and the effectiveness of intervention programs for individuals with brain injury or other injury sustained as a result of trauma, with the ultimate aim of maximising their functional, psychological and social outcomes. The Centre provides opportunities for students in the School of Psychological Sciences at Monash University and Epworth staff to conduct clinical research projects and translates research findings to facilitate evidence-based practice.

In this month's newsletter, we congratulate several exceptional researchers with the Centre



MERRC members who received awards. Gershon Spitz, Alicia Dymowski, Yvette Alway and James Gooden with Jennie Ponsford and Tamara Ownsworth and Ann Watts.

Our centre Director, Professor Jennie Ponsford, chaired the 5th INS/ASSBI Pacific Rim Conference in July 2015. This was the fifth INS/ASSBI collaboration and was held in Sydney, Australia. The conference incorporated the International Neuropsychological Society (INS)'s mid-year meeting and the Australasian Society for the Study of Brain Impairment (ASSBI)'s 38th Annual Brain Impairment Conference. This was the largest of the conferences borne of the longstanding and fruitful partnership between these

multidisciplinary organisations. The theme of the conference "Implementing Knowledge to Improve Outcomes" covered experimental studies to clinical issues, across the developmental spectrum, with emphasis on making a difference to the lives of individuals with brain injury and it proved a major success, attracting 675 delegates. 17 staff and students from MERRC presented at this conference, with 4 staff/students receiving awards.



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Brain imaging and impaired memory in traumatic brain injury (TBI)

DR GERSHON SPITZ PhD coordinates a theme of research that uses magnetic resonance imaging (MRI) to examine changes to cognition and behaviour following traumatic brain injury (TBI). Dr Spitz was awarded a research grant from the Brain Foundation in 2014 in the category of Neurotrauma, as CI-A to identify the brain regions and networks implicated in impaired memory in patients with TBI. Dr Spitz was awarded the Phillip M Rennick award for best postgraduate research and the Nelson Butters award for best postdoctoral research by the International Neuropsychological Society at the 5th INS/ASSBI Pacific Rim Conference in Sydney in July 2015. He has also previously been awarded a grant from the Brain Foundation, funded by the Peter Winder Hill Estate and the Bruce Wall Trust.

Dr Spitz has been with MERRC since completing his honours in 2009, followed by his PhD in 2013. He currently works full time as a Research Fellow, working also on the Longitudinal Head Injury Outcomes study, coordinating data analysis production of research outputs in collaboration with the Transport Accident Commission (TAC) and the Institute for Safety, Compensation and Recovery Research (ISCRR). He co-supervises various honours and doctoral projects, and provides mentoring to students in regards to statistical analysis



Gershon Spitz with some MERRC staff celebrating his NHMRC fellowship success.



Gershon Spitz receiving his Brain Foundation grant

and research design. He currently has 21 peer-reviewed publications in leading rehabilitation and neurotrauma journals regarding traumatic brain injury and cognitive performance, functional outcome, costs of care, lesion detection, and post-traumatic amnesia, among others.

Dr Spitz was recently awarded an NHMRC early-career researcher fellowship to examine novel approaches to remediate impaired cognition following acquired brain injury. He will undertake his NHMRC fellowship at the Oxford Centre for Functional MRI of the Brain (FMRIB), University of Oxford.

Psychiatric disorders following TBI

MS YVETTE ALWAY BPsych (Hons), DPsych (Clinical Psychology) candidate (thesis submitted November 2015), currently working on the psychiatric study funded by ISCRR, which forms the focus of her doctoral thesis, to be submitted in November, 2015. This includes a series of studies, which aim to identify the nature of psychiatric problems following TBI and how individual and family factors might influence risk for psychiatric problems following injury. To date Yvette's research has demonstrated that anxiety and depression are commonly experienced during the first few years post-injury, with individuals with a history of these problems prior to injury being more likely to have continuing problems post-injury. Another notable finding has been that individuals may develop post-traumatic stress symptoms following TBI, regardless of whether or not they can recall the accident resulting in the injury. Yvette has presented

her research at the 37th Annual Brain Impairment conference in Fremantle in 2014, where she was awarded the Luria Award for the best oral presentation by a doctoral student. More recently she was awarded the Student Liaison Committee Research Award for best research submission by a student at the 5th INS/ASSBI Pacific Rim Conference, Sydney, 1-4 July, 2015.

Yvette has been a Research Assistant and student at MERRC since 2010. During this time Yvette has completed her honours research and coordinated our NHMRC-funded project investigating motivational interviewing with cognitive-behaviour therapy for anxiety and



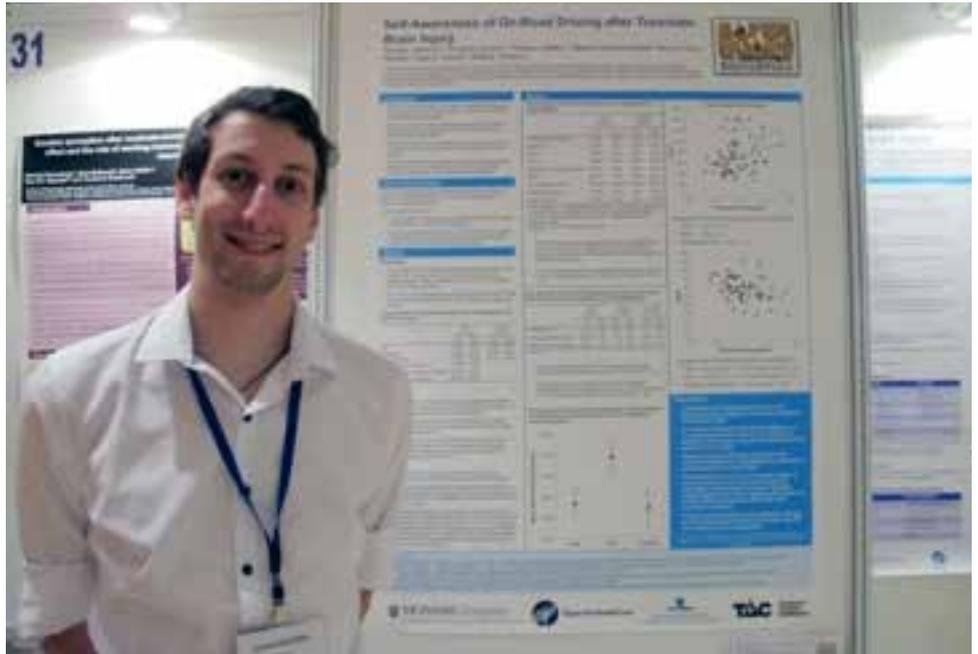
Yvette Alway receiving her Award in Sydney

depression post-TBI. The results of this randomized controlled trial are currently in the submission process, which show promising results regarding cognitive behaviour therapy for the treatment of anxiety and depression after a TBI.

Readiness for driving following traumatic brain injury (TBI)

For the 22,000 mainly young Australians who sustain TBI annually, successful return to driving is a priority rehabilitation goal and a leading predictor of future employment and quality of life. Thus, there are major personal, social and economic incentives to facilitate return to driving.

DR JAMES GOODEN BBNSc (Hons), DPsych (Clinical Neuropsychology), works on a study investigating assessing readiness for driving following TBI. In collaboration with the Monash University Accident Research Centre, University of Ottawa (Ontario) and Lakehead University (Ontario), this study aimed to investigate the driving abilities and behaviours that are impaired following TBI and the role of self-awareness and self-regulation of driving within this context. As part of this study, Dr Gooden developed and validated a new measure of self-awareness of driving ability for use by clinicians in return to driving assessments. Using this measure he found that individuals with TBI who failed on-road assessment significantly overestimated their on-road driving abilities relative to those who passed and a healthy comparison group. Furthermore, he established that individuals with TBI who made a successful return to driving reported an intention to self-regulate their everyday driving behaviour and later reported having followed through with these intentions three months after their assessment. The next phase of this



James Gooden at the INS Mid-Year Meeting, Jerusalem, 2014.

study is to implement the findings into licensing policy and practice to assist those with TBI to safely return to driving. In his role as a research assistant he is also working with Dr Rene Stolwyk and a team of collaborators on a study that aims to investigate how simulator technology might improve driver rehabilitation outcomes following brain injury.

Dr Gooden has recently completed his Doctorate in Clinical Neuropsychology (July, 2015) and has received several awards for his work including best poster

presentation at the 11th Conference of the Neuropsychological Rehabilitation Special Interest Group of the World Federation for Neurorehabilitation, Limassol, Cyprus, 2014, and best platform paper presentation at the CCN Victoria Postgraduate Research Symposium, Melbourne, 2014 and at the 20th APS CCN Conference, Adelaide, 2014. He was also recently awarded the Student Liaison Committee Research Award for best research submission by a student at the 5th INS/ASSBI Pacific Rim Conference, Sydney, 1-4 July, 2015.

Alleviating attentional disturbances following TBI

DR ALICIA DYMOWSKI BBNSc(Hons), DPsych (Clinical Neuropsychology), investigated attentional deficits following TBI and identified slowed information processing speed as a core factor contributing to attentional problems after TBI. In an attempt to rehabilitate these difficulties, a randomised controlled trial (RCT) of methylphenidate and a single-case series examining the effects of individualised strategy training beyond the effects of computerised training were



Alicia Dymowski (left) submitting her Doctoral thesis in August 2015, with Natalie Grima.

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Alleviating attentional disturbances following TBI *continued from page 3...*

conducted, with funding from the Epworth Research Institute (ERI). Recruitment into the RCT of methylphenidate, which continued over four years, proved highly problematic. Results of the study recently submitted for publication revealed that methylphenidate resulted in greater improvement than placebo on significant other ratings of everyday attentional behaviour. However there was no difference between groups on attentional task performance, which may have reflected a lack of power in the study. Results of the single case intervention studies revealed improvements in speed of processing on outcome measures

after computer training and follow-up phases, but with most improvement after individualised strategy training. Yet, there was limited generalisation on an ecologically valid test of attention or self-ratings of everyday attentional behaviour. Significant other ratings of everyday attentional behaviour were mixed after computer training but demonstrated improvement after individualised strategy training. Variability in attentional deficits and everyday attentional requirements between clients with TBI necessitated individualised goals and approaches to rehabilitation. Thus, this study supported an individualised approach

to rehabilitation of attention to improve real world outcomes after brain injury.

As a Research Assistant at MERRC, Alicia has also worked across several of our current studies, including the US collaborative work on outcomes post-TBI (conducting cognitive assessments), as well as assisting with a study examining early recover after TBI as well as grant-writing. She received an honourable mention for best student poster at the 20th APS CCN conference, Adelaide, 2014, and was recently awarded the Luria Prize for the best oral presentation by a doctoral student at the 5th INS/ASSBI Pacific Rim Conference. Sydney, 1-4 July, 2015.

Understanding and addressing behaviours of concern following TBI

Behaviours of concern following TBI – including aggression, agitation, sexual inappropriateness and lack of initiation – present significant challenges for the person with TBI, the people who care for and support them, service organisations and wider society. These behaviours often result in social isolation, relationship breakdown and dislocation from accommodation, and create a significant burden for the person living with TBI, families or other carers.

In 2013, honours student Sammi Tam conducted a qualitative study under the supervision of Adam McKay, Jennie Ponsford and Sue Sloan, documenting the experiences of caregivers living with people with severe TBI and behaviour disturbances over many years. This qualitative study has been published in *Brain Injury*.

Following this study, further analysis of BoC was conducted within a different population of TBI individuals living in the community many years post injury (average of 11 years). This study was partly conducted in response to growing concern within the TAC that a group of clients with behaviours of concern is excessively reliant on attendant care support and that this reliance is increasing over time in some cases. Quantitative analysis showed that of the 90 participants in the study, 84.5 percent reported current BoC. Sixty percent of this group were not receiving support,



Tim Feeney hosted by MERRC in Melbourne October 2015.

and expressed a desire for such support. With respect to attendant care costs, it was found that for people with severe brain injuries and high levels of behaviour there were high attendant care costs. However, for those with a less severe brain injury and with high levels of behaviour the attendant care costs are quite low.

The broad objective of the first phase of this project has been to identify the factors underpinning chronic behaviours of concern in TAC clients, through quantitative and qualitative studies, as a basis for development and evaluation of a program to alleviate these behaviours, enhance client independence and participation and reduce costs. Professor Jennie Ponsford

from Monash University, Professor Malcolm Hopwood from the University of Melbourne and Professor Justin Kenardy from the University of Queensland have all been involved in conceptualising this study. This three-year study implementing and evaluating the efficacy of a Positive Behaviour Support intervention has recently been funded by ISCRR and commenced in July 2015. This approach is based on a positive and collaborative approach to behaviour management in individuals with brain injury described by Prof Mark Ylvisaker and Dr Tim Feeney. Dr Tim Feeney will consult on the project and provide direct supervision to the clinicians implementing the intervention. He recently visited the Centre for 10 days in October.



For current/past participants who are involved in our research studies, contact details can be updated via our website <http://www.med.monash.edu.au/psych/research/centres/merrc/participants.html>



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