



BRAIN INJURY

Creating Collaborations and Opportunities Workshop

13 August 2021 | 8:30am – 1pm

About our panel | Session One

Dr Gary Mitchell holds current appointments as a Staff Specialist at Royal Brisbane and Women's Hospital Emergency and Trauma Centre. Dr Mitchell is also a Senior Lecturer at the University of Queensland, and also holds a Clinical Appointment at the Jamieson Trauma Institute. Dr Mitchell also works with the Queensland Rugby Union & Australian Rugby Union as the Match-day/Team doctor.

After completing undergraduate medical training at Queens University Belfast and after working in the UK NHS as a Junior Doctor, Dr Mitchell moved to Brisbane and trained as a Specialist in Emergency Medicine. After completing my FACEM training he then spent a year in Canada at the University of Calgary completing a fellowship in Pre-hospital and Disaster medicine.

Having played rugby union for Ireland and Ulster at various age-grades and the University of Queensland when moving to Brisbane, Dr Mitchell stayed involved with the sport by working with numerous teams from grassroots to the international level.

Dr Mitchell has an interest in TBI, specifically in concussion assessment and management. Dr Mitchell is the chair the JTI TBI advisory committee and is involved in multiple local, national and international trials on TBI ranging from clinical biomarkers, innovative technology, imaging and interventions.

Prof. Karen Barlow is an academic paediatric neurologist, clinical researcher, and specialist in acquired brain injury in children and adolescence. I studied at the University of Edinburgh and British Columbia before taking up my first academic position at the University of Calgary in 2002. Here I developed and directed the Traumatic Brain Injury and Concussion Research Program at the Alberta Children's Hospital and where I cemented my interest in the biology and treatment of children with brain injuries. I have extensive clinical research experience, devising and overseeing clinical trials in children both nationally and internationally. I moved to the Child Health Research Centre at the University of Queensland, Australia in October 2017 and joined the Queensland Paediatric Rehabilitation Service and Queensland Cerebral Palsy Rehabilitation Centre to facilitate research into improving the health outcomes of children with acquired brain injury in Queensland and Australia.

My research focuses on the neurobiological signatures and treatment of subtle neurological dysfunction in mild traumatic brain injury and concussion, especially the behavioural and cognitive impairments that are found in post-concussion syndrome. I use multimodal neurological assessments to do this. My research explores combining neuroimaging and neurophysiological investigations, including perfusion studies using MRI (ASL-fMRI) and transcranial magnetic stimulation to help us understand the changes in the brain in children who are slow to recovery following a concussion. This is to help us develop and assess more effective and tailored treatments for children with concussion and traumatic brain injury. I explore novel therapies for children with persistent post-concussive symptoms in clinical trials including the use of neuraceuticals, pharmacotherapies, and non-invasive brain stimulation treatment.

A/Prof. Jaimi Greenslade is a Principal Research Fellow in the Emergency and Trauma Centre at RBWH and at the Queensland University of Technology. She is a health services researcher and biostatistician and is a recipient of a senior research fellowship from Advance Queensland. She has conducted research in Emergency Medicine for the past 13 years. Jaimi is the chair of the biostatistics section of the statistical society of Australia and is section editor for Emergency Medicine Australasia.

About our Speakers | Session One

Dr Gordon McGurk is the chairperson of the Royal Brisbane and Women's Hospital Human Research Ethics Committee (HREC), a chair of a UQ HREC 'A', and a member of the Townsville Hospital HREC.

He holds a PhD in Molecular Genetics from the University of Edinburgh, the degree of Juris Doctor through the University of Southern Queensland and has recently been admitted as a lawyer to the Supreme Court of Queensland. He is a Fellow of the Governance Institute of Australia and a Graduate of the Australian Institute of Company Directors.

As the Director of OmniAdvisory Consulting, Gordon consults in areas of health related to clinical trials (especially governance and strategy), research integrity, biosafety, human and animal ethics, and corporate governance. Much of this expertise was gained while working at the National Health and Medical Research Council on projects related to improving clinical trials in Australia.

A/Prof. Michael Sandy Shultz is a National Health and Medical Research Council (NHMRC) Career Development Fellow, Laboratory Head and Associate Professor in the Department of Neuroscience at Monash University. He has published over 100 articles related to brain injury and has been awarded over \$40 million in research funding. He completed his PhD in 2011 at the University of Western Ontario in Canada, and established a laboratory dedicated to studying brain injury at the University of Melbourne in 2013. In 2017, he moved to Monash University and formed the Monash Trauma Group. He has expertise in blood biomarkers, neuroimaging, behaviour, electrophysiological, cellular, and molecular techniques; and routinely applies these to study brain injury in both patients and animal models.

Dr Stuart McDonald is a Principal Investigator of the Monash Trauma Group, and Director of Fluid Biomarker Research in the Department of Neuroscience. Stuart's research has focused on improving understanding of how the injured brain interacts with peripheral body systems, and how novel blood tests may be used to improve clinical management of traumatic brain injuries. After completing his PhD in 2012, Stuart was appointed to a teaching and research position at La Trobe University. In January 2019, Dr McDonald was recruited to the newly formed Department of Neuroscience at Monash University, where he leads a translational research program investigating mild traumatic brain injuries.

Ms Anna-Lisa Lyrstedt is a Registered Nurse working at the Royal Brisbane and Women's Hospital Emergency and Trauma Centre. Prior to this she was in a rural hospital, where the lack of CT scanners available and the impact this had on various presentations was evident. This led her to develop an interest in other forms of diagnostics, and together with Dr Gary Mitchell, the team at CSIRO, and the rest of the research team, has been attempting to improve diagnosis and care of patients who present to emergency departments with various forms of head injuries. Anna has completed post graduate studies in Emergency and Trauma care and is hoping to complete further work on head injuries in the geographically challenging state of Queensland, improving time to definitive care for the rural population.

A/Prof. Andrew Gardner is a clinical neuropsychologist from the School of Medicine and Public Health, The University of Newcastle, and a Co-Director of the LHD Sports Concussion Clinic. He has worked clinically and conducted research in the field of sports concussion for over a decade. He is the concussion consultant for RugbyAU and is a member of the concussion working group for World Rugby.

His research program spans the full spectrum of concussion, from interventions to reduce the risk for sustaining

an injury - through the validation of safer tackle techniques;; to the identification of concussion - through video analysis and instrumented technology like mouthguards; to the investigation of later life brain health. He is the principal investigator of the Retired Athlete Brain Health Research Program, which is one of the largest research programs of retired athletes in the world.

About our panel | Session Two

Dr Fatima Nasrallah is the leader of the Functional Neuroimaging and Traumatic Brain Injury laboratory at the Queensland Brain Institute at the University of Queensland and is affiliated with the Jamieson Trauma Institute. She is also a Motor Accident Insurance Commission Fellow and through this organization leads a multimillion dollar project to improve biomarker development for prognosis after a traumatic brain injury (TBI). Her work in traumatic brain injury has been the first to uncover the long-lasting effects of trauma decades following an injury and its link with neurodegenerative diseases. She is now the lead investigator of the PREDICT-TBI trial, a national multi-center Australian trial that brings together more than 100 medical professionals and researchers to improve patient care following a TBI. She exploits state-of-the-art technology including neuroimaging, data analytics, programming, and artificial intelligence to provide objective outputs that allow diagnosis, prognosis, and longitudinal monitoring. She had significant international collaborations, especially with CENTER-TBI investigators allowing for data sharing and linkage.

Dr. Nasrallah has also made significant contributions to the field of mild TBI/concussion. She leads a big program tailored towards personalized care following a concussion in collaboration with a number of contact sports clubs across Queensland and in collaboration with industry. Her work has attracted significant media attention featured on ABS's radio, radio Adelaide, Northern Territory news, Winnews in Victoria, etc. She will leverage off her expertise in applying machine learning to big data and the networks and data already established through PREDICT-TBI to assist in the bioinformatics aspect of this work.

A/Prof. Michael O'Sullivan is a neurologist, clinician scientist, and currently Director of Research and Implementation at the Royal Brisbane and Women's Hospital, the 2nd largest tertiary hospital in Australia. In this role he is responsible for maintaining a strong infrastructure for research, enhancing and embedding research culture and capability, and accelerating the translation of clinical research into practice. Michael's personal research interest is in mechanisms of resilience and recovery of the brain after injury. He is a group leader at the UQ Centre for Clinical Research and his group utilise advanced structural and functional MRI to investigate cognition and the neurobiology of depression and apathy after injury. His research program includes investigations of systems that support cognition in the healthy brain, including the cognitive neuroscience of memory and cognitive control. Mike is passionate about the importance of collaboration and synergy, particularly between fundamental research and health care. His national and international roles include being Co-director of the Queensland Node of the National Imaging Facility, Chair of the Cognition Working Group of the Stroke Recovery and Rehabilitation Roundtable, and membership of the International Stroke Recovery and Rehabilitation Alliance. He is a principal investigator on the STAREE-Mind trial of prevention of cognitive decline with statins.

Prof O'Sullivan trained in the UK at the National Hospital for Neurology, Queen Square, London and completed a PhD in cognition and advanced imaging in cerebral small vessel disease in London. Prior to moving to Australia, Professor O'Sullivan was the strategic lead for stroke at King's Health Partners, an Academic Health Sciences Centre connecting the University and three major NHS Foundation Trusts in South London and a member of the EU-wide CoSTREAM consortium.

A/Prof. Michael Redmond received his medical degree at the University of Queensland. He completed his surgical education and training in Brisbane and at the Mayo Clinic, the Massachusetts General Hospital and the Toronto Children's Hospital in North America.

He has worked at various Brisbane hospitals over the years but has joined the Royal Brisbane Hospital after a

three-year sojourn in the Royal Darwin Hospital where he continues to have an interest. He practices general neurosurgery.

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Mr Tim Cudmore is a Lived-Experience Disability and Trauma Expert Consultant. Having lived with a TBI and SCI for over 23 years, Tim specialises in the translation and dissemination of living with long term disability and trauma. He brings a wealth of experience in consumer representation, research, and recovery mentoring. Tim is an active speaker, educator, and facilitator, as well as serving as a Starlight Ambassador and QDN Engage member.

Dr Rebecca Lane completed both her undergraduate studies (B Science (Hons I, University Medal), 2014) and PhD (2020) at the University of Queensland, Australia. She is currently a postdoctoral research fellow with the Centre for Personalised Nanomedicine, led by Professor Matt Trau, at the Australian Institute for Bioengineering and Nanotechnology (AIBN) within the University of Queensland. Her research is centred around the utility of extracellular vesicles (EVs), small membranous particles constitutively released from cells, as a minimally invasive means of diagnosing and monitoring disease. She is presently working within a multidisciplinary team to discover and validate methods for sensitive detection of brain-derived EV biomarkers in the blood.

Zhen Zhang was awarded a CSIRO PhD scholarship to develop novel technologies to detect neural extracellular vesicles (EVs) circulating in the blood. Zhen is currently in her third year of PhD within the Trau group at the Australian Institute of Bioengineering and Nanotechnology (AIBN) at the University of Queensland. Since joining the Trau group in 2018, Zhen has published two high impact articles on liquid biopsies, including in the journal *Small* (impact factor 13.28). Zhen is currently developing highly-sensitive platform technologies to detect neural EVs in the blood of patients. As an outcome, this research will provide opportunities for developing point of care devices for clinical applications in brain disorders.

Dr Richard Lobb is a CSIRO Synthetic Biology Fellow at the Centre for Personalised Nanomedicine, The University of Queensland (UQ). Dr Lobb obtained his PhD from UQ in 2018 investigating and developing novel prognostic and diagnostic extracellular vesicle (EV) signatures in cancer patients.

Since completing his PhD in 2018, Dr Lobb has received almost \$0.9M in research funding from national sources, including a CSIRO Synthetic Biology Fellowship for developing novel therapeutics using EVs. Currently, Dr Lobb is engineering cells to produce 'designer' EVs that will selectively target cells within the brain to effectively deliver therapies that are typically excluded due to the blood brain barrier. As a result, this research may provide novel therapeutic approaches in treating various brain disorders.

Dr Emmah Doig is an occupational therapist and researcher in the field of brain injury rehabilitation. Dr Doig has worked clinically in the field of brain injury rehabilitation in Australia and the United Kingdom across acute, inpatient rehabilitation and community-based rehabilitation in both public and private practice settings. Dr Doig completed her PhD in 2010, which compared the effectiveness of an outpatient brain injury rehabilitation program in home and hospital settings. She has conducted clinical research using quantitative and qualitative methodologies with primary research interests in occupation-based rehabilitation approaches, cognitive rehabilitation, client-centred goal setting, and knowledge translation. Dr Doig developed the Client-centredness of Goal Setting Scale (C-COGS), designed to facilitate and evaluate client-centred goal setting practice in brain injury rehabilitation. Dr Doig co-founded and co-manages BRAINSPAN (the Brain Impairment Clinician and Researcher Peer Network), a multidisciplinary network which brings together clinicians and researchers in the field of brain injury across Australia to share knowledge and skills and encourage the translation of research findings into clinical practice.

Dr Michelle McIntyre is a Post-doctoral Research Fellow at Synapse and an Adjunct Research Fellow at the Hopkins Centre, Griffith University. Dr McIntyre has been involved in research across a variety of areas including disability and rehabilitation, health care complexity, and Aboriginal and Torres Strait Islander mental health and disability. Dr McIntyre's PhD study examined the long-term experiences and adaptation processes of families following traumatic brain injury. Dr McIntyre is continuing to pursue research around resilience and wellbeing for individuals

and families following catastrophic injury, with a current focus on cognitive, and other disabilities in people who are homeless, and those engaged with the criminal justice system.

Dr Robyn Stokes joined Bionics Queensland as CEO in early 2020 after successfully leading her own business Stokes Strategy and Research for more than a decade. Robyn is widely recognised for her successful career as a university lecturer and consultant with visioning, marketing and strategy expertise. Her interest in biotechnology innovation came to the foreground in shaping strategies for Brisbane and Queensland to leverage Australia's G20 Leaders' Summit and related events in 2014.

Robyn subsequently co-chaired the Foundation Committee for Bionics Queensland with Dr Dimity Dornan AO (Founder and Chair of Bionics Qld) before being appointed as CEO in early 2020. She then invented and organised Australia's first-ever Bionics Challenge, widening the event in 2021 to include state and national competition categories with teams collaborating across borders. Alongside the Challenge, Robyn is coordinating a Bionics Innovation Opportunity Analysis, a Bionics Innovation Ecosystem Map and related plans for a Human Bionics LivingLab™ that sees no borders, engaging local and global stakeholders.