

RECOVER is a joint initiative of the Motor Accident Insurance Commission and The University of Queensland



RECOVER Injury Research Centre and the Centre of Research Excellence in Recovery Following Road Traffic Injuries (CRE) wish to invite you to an exciting workshop

## Single-case methodology in health research A two day hands-on, skills development workshop

9am to 5pm

Monday 26<sup>th</sup> and Tuesday 27<sup>th</sup> November 2018

*Presented by*

Professor Robyn Tate and Dr Michael Perdices (The University of Sydney)

*With*

Dr Suzanne McDonald (Newcastle University, U.K.) and

Associate Professor James McGree (QUT)

At Room 623 & 624 Building 84A, Therapies Building,

The University of Queensland, St Lucia

See <https://recover.centre.uq.edu.au/event/session/751> for details and workshop

program RSVP essential by 31 October 2018

For further information contact Dr Jane Nikles

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## Program Day 1

Time	Topic	Presenter
9:00am to 10:30am	<u>An overview of single-case methodology.</u> This introductory session covers three topics. First, the varieties of single-case designs are described, using examples from the health literature. Current standards of design and evidence are then presented. The final section demystifies issues of validity, highlighting how threats to internal and external validity relate to single-case methodology.	Robyn Tate
10:30am	Morning tea	
11:00 am to 12:30pm	<p><u>Using Single-Case Methods to Change Health Behaviours: What is the State of the Art?</u></p> <p>This session will highlight that evidence about health behaviour/behaviour change has typically been derived from between-group studies and outline reasons to use n-of-1 methods to study or change health behaviours.</p> <p>Suzanne will present findings from a systematic review about n-of-1 methods applied to health behaviour outcomes (including a breakdown of the studies according to different designs – observational, AB, ABA, ABAB, n-of-1 RCT, multiple baseline, changing criterion etc.). For info see - <a href="http://www.tandfonline.com/doi/abs/10.1080/17437199.2017.1316">http://www.tandfonline.com/doi/abs/10.1080/17437199.2017.1316</a>. She will discuss design/measurement issues specific to n-of-1 studies with health behaviour outcomes and present some example studies.</p>	Suzanne McDonald
12:30pm to 1:30pm	Lunch break	
1:30pm to 3:00pm	<u>Evaluating single-case data.</u> Two complementary approaches for analysing SCED data will be described: traditional visual analysis and statistical analysis. The advantages and pitfalls of visual analysis will be discussed and systematic procedures for its implementation will be presented. An overview of common statistical methods will also be presented. In the workshop on Day 2, systematic visual analysis and statistical analysis will be illustrated using real data.	Michael Perdices
3:00pm to 4:30pm	<p><u>Bayesian Statistics: concepts and application to Single-Case Methods.</u></p> <p>This will be a layman’s explanation of Bayesian statistics suitable for those with no detailed knowledge or experience of Bayesian concepts. An overview of the strengths of Bayesian statistics when applied to analysing Single Case Designs will be given, followed by examples of how this is done. The main focus will be on discussing general concepts rather than providing a detailed “how to” tutorial.</p>	James McGree

## Program Day 2

Time	Topic	Presenter
9:00am to 10:30am	<p><u>Getting the most out of your single-case trials and maximising their scientific rigour</u>: This workshop will train participants in the acquisition of knowledge and practical skills in three areas:</p> <ol style="list-style-type: none"> <li>1) How to select designs that are suitable for the research question and the intended intervention</li> <li>2) Applying systematic visual analysis (Gast &amp; Spriggs, 2014; Lane &amp; Gast, 2014) and statistical techniques (Split-Middle trend Line, Cohen's d and Tau-U) using worked examples to illustrate procedure</li> <li>3) Evaluating methodological robustness (internal and external validity) of single-case designs using the RoBiNT Scale</li> </ol>	Robyn Tate and Michael Perdices
10:30am	Morning tea	
10:03 am to 1:00pm	<p><u>Getting the most out of your single-case trials and maximising their scientific rigour continued.</u></p>	Robyn Tate and Michael Perdices
12:30pm to 1:30pm	Lunch break	
1:30pm to 2:30pm	<p><u>10-step procedure for implementing a single-case study.</u> This session integrates information presented in previous sessions to show the steps that need to be covered to implement a high-quality single-case study, both at the design and conduct stages. An example from the author's work is used to illustrate the 10-step procedure.</p>	Robyn Tate
3:00pm to 4:00pm	Expressions of interest from participants and do small group SCED planning on specific topics with Robyn, Jane, Suzanne, Michael (and James?) each facilitating one group.	All presenters and participants
4:00pm to 5:00pm	Discussion and close	Robyn Tate

## Biographies



**Dr Robyn Tate** and **Dr Michael Perdices**. **Dr Robyn Tate** is a research professor at the John Walsh Centre for Rehabilitation Research, Kolling Institute of Medical Research, located in the Sydney Medical School at the University of Sydney. Her background is in clinical and neuropsychology, and she has extensive clinical experience in the rehabilitation of traumatic brain injury.

**Dr Michael Perdices** is a neuropsychologist with more than 30 years clinical and research experience. For the last 20 years he has been a Senior Clinical

Neuropsychologist at Royal North Shore Hospital, Sydney. Over the past 15 years **Tate** and **Perdices** have worked as research collaborators on single-case methodology and they have published widely in the area. Together with their research teams, they have directed work in developing scales to assess the methodological quality of single-case research (the SCED Scale and the RoBiNT Scale), and led an international team in producing the SCRIBE 2016, a CONSORT-style reporting guideline for single-case experimental designs in the behavioural sciences. More recently, they have written a book on single-case methodology (*Single-case Experimental Designs for Clinical Research and Neurorehabilitation Settings*) which will be published this year.



**Dr Suzanne McDonald** is a research methodologist and health psychologist at the Institute of Health & Society at Newcastle University, UK. Suzanne's research focuses on the development and application of n-of-1 (single-case) methods in behavioural medicine and health psychology. Suzanne's work to date has focused on using n-of-1 methods to study and change health behaviours (e.g. physical activity, medication adherence, dietary intake) and chronic symptoms (e.g. fatigue and pain). Suzanne is the lead of the UK Network for N-of-1 Methods and the European Health Psychology Society N-of-1 Special Interest Group.



**Associate Professor James McGree** is Discipline Leader for Statistics and Operations Research in the School of Mathematical Sciences at QUT. He has expertise in the field of Bayesian statistics with interests in computational algorithms, design of experiments/clinical trials, big data, data analysis and modelling complex phenomena. Much of his research is focussed on methodological developments in statistics (particularly in Bayesian experimental design) and applied areas of statistics including medical research. He is statistician for a number of N-of-1 trials and has written a chapter on using Bayesian statistics for N-of-1 trials in *The Essential guide to N-of-1 trials in Health*.