Seminar

Innovative Trial Designs in Mobile Health

A/Prof Bibhas Chakraborty
Duke-NUS Medical School, Singapore

In this talk, we will consider two innovative trial designs relevant to the modern field of mobile health (mHealth), namely, the sequential multiple-assignment randomized trial (SMART), and the more recently developed micro-randomized trial (MRT). Both designs involve sequential, within-individual randomizations, but are different in their estimation goals. While SMARTs aim to capture long-term effects of sequences of interventions (either traditional or mHealth interventions), MRTs are geared towards estimating the proximal (causal) effects of "push"-type mHealth interventions, e.g., motivational text-messages to promote physical activity or other healthy behaviours.

Specifically, in the first part of the talk, we will consider non-inferiority testing in a SMART, which is appealing from a cost-effectiveness perspective. In the second part of the talk, we will consider design, primary analysis and sample size considerations in an MRT with multi-level intervention factors, with or without adaptive randomization. Simulation results will be shown to validate the proposed design and sample size calculation approach. Real mHealth studies for promoting weight loss and physical activities will be discussed.

A/Prof Bibhas Chakraborty is an Associate Professor and Ex-Director of the Centre for Quantitative Medicine at the Duke-NUS Medical School, an Associate Professor of Statistics and Applied Probability at the National University of Singapore, as well as an Adjunct Associate Professor of Biostatistics and Bioinformatics at Duke University. Previously (2009-13), he worked as an Assistant Professor of Biostatistics at Columbia University, after completing his Ph.D. in Statistics from the University of Michigan in 2009. He is the recipient of the Calderone Research Prize for Junior Faculty from Columbia University's Mailman School of Public Health in 2011, and also the Young Researcher Award from the International Indian Statistical Association (IISA) in 2017. His core areas of research include dynamic treatment regimens, adaptive clinical trial designs and mobile/digital health, along with a variety of applications in clinical and behavioural sciences. He wrote the first textbook on dynamic treatment regimens.

Thursday 24th September
4-5pm AEST

Please note this event will be held via Zoom videoconferencing:
https://monash.zoom.us/join
Meeting ID: 939 1344 6050
Password: 540673

MONASH University
murdoch children's research institute
THE UNIVERSITY OF MELBOURNE