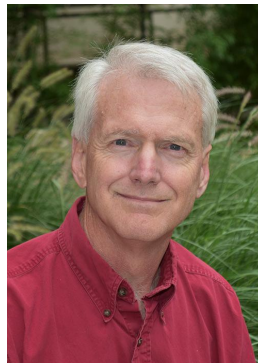


# Seminar

## Current research in Stepped Wedge designs

Professor James (Jim) Hughes  
University of Washington



In this talk I will discuss three current research projects in stepped wedge designs (SWD). In the first we develop a power calculation formula for SWD with either normal or non-normal outcomes in the context of generalized linear mixed models by adopting the Laplace approximation detailed in Breslow and Clayton (1993) to obtain the covariance matrix of the estimated parameters. In the second we study the effects of misspecification of variance components in the SWD. We derive expressions for the asymptotic and finite-sample convergence of variance component estimates under variance component misspecification and explore how misspecification affects the estimated variance of the treatment effect. If there is time I will also provide some thoughts on incorporating lagged or time-on-treatment-varying treatment effects in SWD.

**Dr. Hughes** is interested in the application of statistical methods to problems in AIDS and other sexually transmitted diseases. He is particularly interested in cluster randomized trial designs and statistical methods for dealing with misclassified data. He is heavily involved in graduate and undergraduate teaching and graduate student advising, and he has won teaching awards. He recently published "On the design and analysis of stepped wedge trials" in Contemporary Clinical Trials.

**Thursday 3rd December**  
**9-10am AEDT**  
**(2-3pm PST)**

Please note this event will be held via Zoom videoconferencing:

<https://monash.zoom.us/join>

**Meeting ID:** 889 2097 9731

**Password:** 055131

