McGill

Department of Epidemiology, Biostatistics & Occupational Health

Biostatistics Seminars

Fall 2013

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The Curse of (Confounder) Dimension

Tuesday, November 12, 2013
3:30 pm – 4:30 pm
Purvis Hall, 1020 Pine Ave. West, Room 25

ALL ARE WELCOME

Abstract:

When estimating treatment or exposure effects from observational data, confounder selection and the choice of appropriate adjustment methods is a fundamental challenge. Furthermore, model misspecifications and violation of crucial model assumptions such as *positivity* may induce erroneous effect estimates even if all confounders are measured.

Research on possible methods enhancements commonly involves large-scaled empirical simulation studies comparing the performance of the competing approaches. However, particularly in high-dimensional data settings, as commonly present in pharmacoepidemiological studies, simulation of realistic data scenarios is not straightforward.

In my presentation I will provide a review of recently popular methods to address confounding and their underlying (and potentially misunderstood) assumptions. Related challenges in methodological research i.e. the extent of required theoretical justification and the set-up of appropriate simulation studies are discussed using a recent example in methods development: The improvement of covariate balance and effect estimation in propensity score matched samples by consideration of treatment prediction uncertainty.

Bio:

Dr. Schuster is currently a postdoctoral fellow at the department of Epidemiology, Biostatistics and Occupational Health. He is a member of the methods development team of the Canadian Network for Observational Drug Effects Studies (CNODES). His recent methodological research interests are in causal inference and high-dimensional data analysis methods, in particular propensity score approaches.