**CANSSI Saskatchewan**

**Health Science Collaborating Centre**

**Winter 2022 Webinar Series**

**Thursday, March 10**

**4:30 – 5:30 pm Central time**

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University of Waterloo

Beyond Estimation: Next Steps for Precision Medicine

**ABSTRACT**

Precision medicine describes the practice of tailoring treatment decisions to patient-level characteristics such as symptom severity, age, or prior medication. This may be formalized through dynamic treatment regimes (DTRs): sequences of treatment decision rules that take patient information as input and output treatment recommendations. Numerous methods have been proposed for the estimation of optimal DTRs: those that optimize some pre-specified health outcome. However, many real-world challenges, from the data, to analysis, and into practice, have remained largely unstudied. In this talk, we will discuss specific obstacles to DTR estimation and implementation in practice. First, we outline the ubiquitous challenge of measurement error, where observed values differ from the 'true' values we wish to observe. Next, we discuss the assumption of no interference: that the treatment of one individual does not affect the outcome of another. This assumption is often violated, such as in the study of infectious diseases where treating one patient may not only lower their risk of infection, but by extension the risk of infection for those they come into contact with. Finally, we discuss how patient-level preferences (such as the trade-off between treatment efficacy and risk of side effects) can, and should, influence our recommendations.

***Registration link:***

<https://usask-ca.zoom.us/meeting/register/tJApd-6hqj8tEteGmhX3IloHjYh62KlhaK74>

*Everyone is welcome!*