



Statistical Sciences  
UNIVERSITY OF TORONTO

## SEMINAR

March 30, 2017 at 3:30 pm

*\*Refreshments will be provided at 3:15pm\**

Sidney Smith Hall, Room 2108

Speaker: Thierry Duchesne, University Laval

Host: Radu Craiu

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### **Two-step estimation for mixed effects regression models: When old fashion repeats itself**

When mixed effects logistic regression models were first introduced several decades ago, the lack of computational power forced the analysts to use inference methods that did not recourse to numerical integration or other computationally demanding iterative algorithms. Early estimation schemes for those models were based on a so-called “two-step” approach that consisted in combining several independent ordinary regression models into a global estimation of the mixed effects model parameters. Because they lead to accurate estimation when the number of observations per cluster is large and because they offer great flexibility on the computational side (e.g., partitioned data infrastructure, parallel computing), this type of two-step approach has regained popularity over the last decade. In this talk I will review some recent developments in two-step estimation methods for mixed effects regression models and outline some potential directions for future work in the area. Illustrations on GPS collar data and data from a large survey of US high school students will be provided.

This is joint work with Radu Craiu (U. of Toronto) and Daniel Fortin and Sophie Baillargeon (U. Laval).