**Matt Warkentin - Hands-on with R and OpenM++ for Microsimulation**

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* Topic: Microsimulation modeling platforms

OpenM++ is a powerful open-source platform for deploying microsimulation models at any scale. R is a powerful statistical language for data science, modelling, and data visualization. The harmony of R and OpenM++ provides a seamless interface to inspect, configure, and run microsimulation models and easily retrieve outputs/results for further processing, exploration, visualization, and reporting. In this workshop, we will teach you about the power of wrapping the OpenM++ API using the R language to provide a programmatic interface to microsimulation models with hands-on examples.

Both *active* and *passive* workshop participants are encouraged (only a limited number of places for active participants are available). Passive participants may follow along and interact with the presenters. Active participants will be provided direct access to a production-scale cloud-based OpenM++ instance with a preconfigured RStudio Server (no software installation required). Active participants should have a working knowledge of the R language and bring their own laptop for browser-based access to the remote instance. No knowledge of OpenM++ is required for this workshop.

In this hands-on session we plan to cover:

* A brief history and overview of OpenM++
* How to use R to wrap the OpenM++ API
* Some “tricks-of-the-trade” for using R to wrap APIs (*e.g.*, R6 OOP, active bindings)
* Introduction to the oncosimx R package
* Hands-on examples for configuring and running large and small microsimulation models using R/OpenM++
* Hands-on examples running large-scale population-based Canadian microsimulation disease models
* Data exploration and visualization using R and the tidyverse