



McGill

Department of
Epidemiology, Biostatistics
and Occupational Health

Biostatistics Seminars

Fall 2020



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Dirichlet-Multinomial Regression Models with Bayesian Variable Selection for Microbiome Data

Wednesday, November 18, 2020
3:30 pm – 4:30 pm – [Zoom Link](#)

Abstract:

I will describe Bayesian models developed for understanding how the microbiome varies within a population of interest. I will focus on integrative analyses, where the goal is to combine microbiome data with other available information (e.g. dietary patterns) to identify significant associations between taxa and a set of predictors. For this, I will describe a general class of hierarchical Dirichlet-Multinomial (DM) regression models which use spike-and-slab priors for the selection of the significant associations. I will also describe data augmentation techniques to efficiently embed DM regression models into joint modeling frameworks, in order to investigate how the microbiome may mediate the relation between dietary factors and phenotypic responses, such as body mass index. I will discuss advantages and limitations of the proposed methods with respect to current standard approaches used in the microbiome community, and will present results on the analysis of real datasets.

Bio:

<http://marina.blogs.rice.edu/>