

Michael Li

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Research interest

I am a theoretical/computational/mathematical/statistical disease modeler/analyst. I focus on human-related diseases (HIV, influenza) and some wildlife diseases (canine rabies), especially in forecasting epidemic outbreaks, retrospective analysis of the evolution of infectious diseases and intervention strategies and policies change for disease control. I work at the interface between statistics, disease ecology and mathematical epidemiology; developing new methods that appropriately account for uncertainties and link statistical summaries and estimates with meaningful ecological and epidemiological parameters; and analyzing the effect of policy change of disease control.

Education

Ph.D., Biology, McMaster University, 2015-2019. Thesis: *Methods For Modeling The Spread of Infectious Disease*. Supervisor: Dr. Ben Bolker, Dr. Jonathan Dushoff

M.Sc., Statistics, McMaster University, 2013-2015. Thesis: *Incorporating Temporal Heterogeneity in Hidden Markov Models For Animal Movement*. Supervisor: Dr. Ben Bolker

HB.Sc., Statistics and Mathematics, University of Toronto: 2009-2013

Work experience

Teaching Assistant

McMaster University

- Bio 3SS3 “Population Ecology” (winter 2016, 2017, 2018, 2019)
- Bio 3FF3 “Evolution” (fall 2018)
- Bio 1M03 “Ecology and Evolution” (fall 2015, 2016, 2017)
- Stat 3J3Y “Probability and Statistics for Engineering” (fall 2013, 2014, winter 2014)
- Stat 2MB3 “Statistical Methods and Applications” (winter 2014)
- Math 1F03 “Introduction to Calculus and Analytic Geometry” (fall 2014)

Professional service

Researcher

Research Data Centre (RDC) at McMaster

MS. reviewer

For Journal of Agricultural, Biological, and Environmental Statistics, Journal of Animal Ecology, and Movement Ecology.

Publications

Li M, Bolker BM, Dushoff J, Ma J, Earn DJ. Patterns of seasonal and pandemic influenza-associated health care and mortality in Ontario, Canada. BMC public health. 2019 Dec 1;19(1):1237.

Shi, Chyun, Michael Li, and Jonathan Dushoff. "Traditional Male Circumcision is Associated with Sexual Risk Behaviors in Sub-Saharan Countries Prioritized for Male Circumcision." AIDS and behavior (2019): 1-9.

Li, M., Dushoff, J., & Bolker, B. M. (2018). Fitting mechanistic epidemic models to data: a comparison of simple Markov chain Monte Carlo approaches. Statistical methods in medical research, 27(7), 1956-1967.

Shi, C. F., Li, M., & Dushoff, J. (2017). Evidence that promotion of male circumcision did not lead to sexual risk compensation in prioritized Sub-Saharan countries. PloS one, 12(4), e0175928.

Champredon, D., Li, M., Bolker, B. M., & Dushoff, J. (2017). Two approaches to forecast Ebola synthetic epidemics. Epidemics.

Li, M., & Bolker, B. M. (2017). Incorporating periodic variability in hidden Markov models for animal movement. Movement ecology, 5(1), 1.