



McGill

Department of
Epidemiology, Biostatistics
and Occupational Health

BIostatISTICS SEMINAR

Winter 2018



Tianxi Cai, ScD

Professor of Biostatistics
Dept. of Biostatistics
Harvard T.H. Chan – School of Public Health

Efficient Use of EHR for Biomedical Translational Research

Tuesday, 20 March 2018

3:30 pm – 4:30 pm – Purvis Hall – Room 24 - [ALL ARE WELCOME](#)

Abstract: While clinical trials remain a critical source for studying disease risk, progression and treatment response, they have limitations including the generalizability of the study findings to the real world and the limited ability to test broader hypotheses. In recent years, due to the increasing adoption of electronic health records (EHR) and the linkage of EHR with specimen bio-repositories, large integrated EHR datasets now exist as a new source for translational research. These datasets open new opportunities for deriving real-world, data-driven prediction models of disease risk and progression as well as unbiased investigation of shared genetic etiology of multiple phenotypes. Yet, they also bring methodological challenges. For example, obtaining validated phenotype information, such as presence of a disease condition and treatment response, is a major bottleneck in EHR research, as it requires laborious medical record review. A valuable type of EHR data is narrative free-text data. Extracting accurate yet concise information from the narrative data via natural language processing is also challenging. In this talk, I'll discuss various statistical and informatics methods that illustrate both opportunities and challenges. These methods will be illustrated using EHR data from Partner's Healthcare.

Bio: Tianxi Cai is a professor of Biostatistics at Harvard T.H. Chan school of public health and a professor of Biomedical Informatics at Harvard Medical School. She received her Doctoral degree from Harvard in 1999 and taught at the University of Washington for two years before returning to Harvard as a faculty. Tianxi's current research focuses mainly in the areas of risk prediction and personalized medicine with biomarkers and genomic studies; statistical and machine learning, analysis of EHR data. For more info please visit:

<https://www.hsph.harvard.edu/tianxi-cai/>