



2019 BIENNIAL NATIONAL CONFERENCE
EPIDEMIOLOGY AND BIOSTATISTICS AT THE
NEXUS OF COMPLEX HEALTH CHALLENGES

CONFÉRENCE NATIONALE BIENNALE 2019
L'ÉPIDÉMIOLOGIE ET LES BIOSTATISTIQUES AU CŒUR
DES DÉFIS COMPLEXES EN MATIÈRE DE SANTÉ



MAY 13TH TO MAY 15TH • CARLETON UNIVERSITY • OTTAWA, ONTARIO
13 MAI AU 15 MAI • UNIVERSITÉ CARLETON • OTTAWA, ONTARIO

CSEB WISHES TO THANK THE CONFERENCE SPONSORS FOR THEIR GENEROUS SUPPORT!

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McGill

Department of
Epidemiology, Biostatistics
And Occupational Health



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Division of Cancer Epidemiology



(est. 1988, Cancer Research Society)



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Canadian Institute
for Health Information

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Canadian Longitudinal Study on Aging
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**Promotion de la santé et
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chroniques au Canada**

Recherche, politiques et pratiques

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MONDAY, MAY 13, 2019

9:00AM – 12:00PM Pre-Conference Workshop Series

(1) Causal Inference for Complex Observational Data using Stata

Presented by:

- ❖ Chuck Huber, Associate Director of Statistical Outreach, StataCorp

Observational data often have issues which present challenges for the data analyst. The treatment status or exposure of interest is often not assigned randomly. Data are sometimes missing not at random (MNAR) which can lead to sample selection bias. And many statistical models for these data must account for unobserved confounding. This talk will demonstrate how to use standard maximum likelihood estimation to fit extended regression models (ERMs) that deal with all of these common issues alone or simultaneously.

(2) GIS Workshop

Presented by:

- ❖ Paul Peters, Associate Professor, Health Sciences, Carleton University
- ❖ Daniel Rainham, Director, Environmental Science, Dalhousie University
- ❖ Dan Crouse, Research Associate, Department of Sociology and New Brunswick Institute for Research, Data, and Training, University of New Brunswick

GIS (geographic information systems) is a framework for gathering, managing, visualising, and analyzing many kinds of data. It allows users to analyze spatial locations and to organize layers of information into visualizations using maps. GIS allows researchers to reveal deeper insights into data, such as patterns, relationships, and situations, which can help users make smarter decisions.

(3) Introduction to Quantitative Bias Analysis Workshop

Presented by:

- ❖ Hailey Banack, Post-Doctoral Fellow, Department of Epidemiology and Environmental Health, University at Buffalo

This workshop will focus on methods for conducting quantitative bias analysis in epidemiologic research, touching on both deterministic and probabilistic bias analysis for confounding, selection bias, and misclassification. The aim of the workshop is to provide participants with the tools to use quantitative bias analysis in their own work.

(4) Introduction to SAS using health data

Presented by:

- ❖ Bill Montelpare, SAS Canada

This introductory level workshop will demonstrate the efficiencies of SAS Studio when working with health related data. The workshop will present examples using SAS for basic reporting - as in proc freq and proc tabulate; applications using sas graphing techniques with both large scale data sets and some fundamental health problems. The workshop will also include methods by which to make sense of ICD-9 codes and billing codes; as well as basic statistical applications based on simulated data from random number generators.

(5) Introduction to Machine Learning using SAS

Presented by:

- ❖ Hugh Cairns, SAS Canada

Today's researchers in the health sciences domain and beyond face a vast amount of research being produced making it difficult to keep current on new advances in their field. A new approach using text mining and natural language processing to automate the literature review process allows researchers to categorize documents pertinent to their interests. This session explores how text mining can be used to categorize the field of data analytics using latent semantic analysis techniques to analyze journal abstracts. The workshop will demonstrate the process of incorporating text analytics to the research process.

(6) Introduction to propensity methods

Presented by:

- ❖ Laura Rosella, Associate Professor, Dalla Lana School of Public Health, University of Toronto

The focus of this workshop is to provide concise introduction to propensity methods and inverse probability of treatment weights as applied to a range of health studies. This workshop will focus on both design and analytic considerations and include demonstrations and practical applications of the methods using software packages. The workshop is targeted at individuals who may be new to propensity methods but have an understanding of regression methods and basic principles of confounding.



MONDAY, MAY 13, 2019

12:50PM – 1:00PM Conference Opening and Welcome Remarks

Presented by:

- ❖ Charles MacDonald, Dean of Science, Carleton University
- ❖ Gilles Paradis, Scientific Chair, 2019 CSEB Conference
- ❖ Laura Rosella, President, CSEB
- ❖ Paul Villeneuve, Local Organizing Chair, 2019 CSEB Conference

1:00PM – 2:30 PM Socioeconomic Inequalities and Health, from Causal Inference to Policies

The objectives of this session are to Characterize trends in and the dynamic nature of socioeconomic inequalities for mortality and morbidity in Europe and North America; to understand the differences between absolute and relative risk differences in socioeconomic inequalities of health; to understand the methodological challenges in studying socioeconomic inequalities in health; and to understand the population level determinants of health inequalities

Presented by:

- ❖ JOHAN MACKENBACH, Professor and Chair of the Department of Public Health, University Medical Center Rotterdam, Erasmus University (Netherlands) and honorary professor at the London School of Hygiene and Tropical Medicine;
- ❖ SAM HARPER, Associate Professor Department of Epidemiology, Biostatistics and Occupational Health McGill University and member of the McGill University Centre on Population Dynamics

2:30 PM – 3:00PM Health Break

3:00PM – 4:30PM [Concurrent Sessions: Stream A](#)

4:30PM – 6:00PM Poster Viewing and Networking Reception



TUESDAY, MAY 14, 2019

7:30AM – 8:30AM Breakfast

8:30AM – 10:00AM **Harnessing the power of data to inform health and social policy: from Europe to Canada**

The objectives of this session are to describe and compare European and Canadian approaches to the use of large administrative databases to address key questions in support of health and social policies; contrast European and Canadian challenges in access to and exploitation of databases to answer important health system questions; describe successes in the use of population data for policy making, health care organization and evaluation; and illustrate novel methods to the production of reliable and valid research results that are useful to decision-makers.

Presented by:

- ❖ REINHARD BUSSE, Professor and Head of the Department of Health Care Management at the Berlin University of Technology (Germany) and Co-Director of the European Observatory on Health Systems and Policies;
- ❖ KIM MCGRAIL, Professor, UBC School of Population and Public Health and Scientific Director, Population Data BC, Data Director, BC Academic Health Sciences Network

10:00AM – 10:30AM Health Break

10:30AM – 12:00PM **Sub-Plenary Sessions**

Informing public health and social policies impacting maternal-child health: contributions of epidemiologic research

The use of cannabis and opioids has increased in pregnancy although population-based data on perinatal outcomes following in utero exposure remain limited. The objective of this presentation is to describe the methodology and results of studies conducted using Ontario's birth registry and population health databases to determine associations between prenatal substance exposure, perinatal and child health outcomes.

Presented by:

- ❖ DANIEL CORSI, Adjunct Professor, School of Epidemiology and Public Health, University of Ottawa; Investigator, Children's Hospital of Eastern Ontario Research Institute and Ottawa Hospital Research Institute
- ❖ XIBIAO YE, Director of Epidemiology, British Columbia Ministry of Health
- ❖ ROMINA FAKHR, Clinical Research Assistant, Ottawa Hospital Research Institute
- ❖ SHELBY YAMAMOTO, Assistant Professor, University of Alberta
- ❖ JANICE HU, Student, Simon Fraser University

Longitudinal Information from Electronic Health Databases: Flexible Study Design and Statistical Analyses for Studies of Individual and Family Health

Linkage of electronic health databases over time facilitates the construction of longitudinal health histories for individuals and their families. These data provide new opportunities to conduct population-based studies about the role of family as a determinant of health. This session will examine the following topics: (a) design of longitudinal retrospective cohort studies, including how to choose the frequency and spacing of measurement occasions, (b) measurement of disease-specific model covariates over time and the impact of measurement error in longitudinal designs, and (c) validity of combining information from multiple data sources across diagnostic classification systems. The topics will be illustrated using a combination of theory, simulation, and applied examples.

Presented by:

- ❖ LISA LIX, Professor, Department of Community Health Sciences, University of Manitoba

Research for informing public health policy: evaluations of recent substance use interventions in Canada

The objective of this panel is to introduce: public health interventions that target tobacco, cannabis, and opioid use in Canada; evidence from recent empirical evaluations; and opportunities and challenges to evaluating contemporary substance use policies and programs, for the purposes of informing evidence-based public health policy. The panel is chaired by Arijit Nandi, Associate Professor at McGill University.

Presented by:

- ❖ DIMITRA PANAGIOTOGLOU, Assistant Professor; Department of Epidemiology, Biostatistics, and Occupational Health; McGill University
- ❖ TARA GOMES, Scientist; Li Ka Shing Knowledge Institute; St. Michael's Hospital
- ❖ ROBERT SCHWARTZ, Professor; Ontario Tobacco Research Unit; Dalla Lana School of Public Health; University of Toronto

12:00PM – 1:15PM Lunch

1:15PM – 2:45PM [Concurrent Sessions: Stream B](#)

2:45PM – 3:15PM Health Break

3:15PM – 4:45PM [Concurrent Sessions: Stream C](#)



TUESDAY, MAY 14, 2019

4:45PM – 6:00PM Poster Viewing and Networking Reception

7:00PM – 9:00PM Museum of Nature Social Event

**Coordinated by the CSEB Local Organizing Committee*

**Additional fee required to attend*

WEDNESDAY, MAY 15, 2019

7:30AM – 8:30AM Breakfast

8:30AM – 10:00AM Sub-Plenary Sessions

Cancer Burden in Canada: Opportunities for Prevention

This session will provide an overview of the Canadian Population Attributable Risk of Cancer Study (ComPARE), which is a pan-Canadian study that estimated the current and future burden of cancer attributable to modifiable lifestyle, environmental and infectious agent risk factors. The session will include a brief overview of the methods used in the study as well as results for risk factor group. To close, details of the comprehensive integrated knowledge translation strategy will be presented by the Canadian Cancer Society.

Presented by:

- ❖ DARREN BRENNER, Assistant Professor, Departments of Oncology and Community Health Sciences, Cumming School of Medicine, University of Calgary; Research Scientist, Department of Cancer Epidemiology and Prevention Research, Alberta Health Services
- ❖ WILL KING, Associate Professor, Department of Public Health Sciences, Queen's University, Kingston, ON
- ❖ KARENA VOLESKY, Doctoral Candidate, Department of Epidemiology and Biostatistics, McGill University, Montreal, PQ
- ❖ LEAH SMITH, Senior Manager, Surveillance, Canadian Cancer Society, St John's, NL

Integrated Health Data at Statistics Canada – New Opportunities for Research

Statistics Canada has a long standing history of providing population health data information through survey and administrative data. Over the past several years, the Agency has been creating new integrated data sources to support new areas of health research. This panel session will highlight several new linked health data sources including the Canadian Census Health and Environment Cohorts (CanCHECs) - population-based linked cohorts that enable researcher to quantify trends in health inequalities and to identify factors that may be contributing to these trends.

Presented by:

- ❖ CLAUDIA SANMARTIN, Chief and Senior Researcher, Health Services Research, Statistics Canada
- ❖ TRACEY BUSHNIK, Senior Research Analyst, Statistics Canada
- ❖ JENNIFER ALI, Population Health Projects Lead, Statistics Canada
- ❖ LAUREN WALLAR, Post-Doctoral Fellow, University of Toronto
- ❖ ANNE HARRIS, Assistant Professor, Ryerson University

A data science tool kit has emerged to support Open Science for health service and policy research

The objectives of this session are to discuss data science approaches to research that has the potential to improve research transparency, reproducibility, quality, efficiency and implementation; to gain knowledge of the specific components of the toolkit; to share what parts of the toolkit are used in different Canadian health service research/policy settings and jurisdictions; to discuss the opportunities and barriers to implement the toolkit.

Presented by:

- ❖ DOUGLAS MANUEL, Senior Scientist, Clinical Epidemiology Program, Ottawa Hospital Research Institute; Professor, School of Epidemiology and Public Health, University of Ottawa; Core Senior Scientist, Institute for Clinical Evaluation Sciences
- ❖ STACEY FISHER, PhD Candidate, University of Ottawa, Ottawa Hospital Research Institute, ICES

10:00AM – 10:30 AM Health Break

10:30AM – 12:15PM Hackathon Data Challenge & Awards Presentation

2019 Awards Presentations:
Geoffrey R. Howe Outstanding Contribution Award
Lifetime Achievement Award
Distinguished Service Award
Early Career Award

12:15PM – 12:30PM Closing Remarks