



**Epidemiology,  
Biostatistics and  
Occupational Health  
Student  
Society**

# **16th Annual Research Day**

**March 13, 2020  
Webinar**



**McGill**  
UNIVERSITY

# AGENDA

9:00 – 9:10	Welcome remarks
9:10 – 10:25	Oral presentations: Block A
10:25 – 10:40	Morning break
10:40 – 11:35	3-Minute Practicum
11:35 – 12:15	Student keynote: Dr. Mabel Carabali
12:15 – 2:00	Poster session (closed session: judges only)
2:00 – 3:15	Oral presentations: Block B
3:15 – 3:30	Afternoon break
3:30 – 4:30	Special keynote: Dr. Matthew Fox
4:30 – 4:45	Distribution of awards and closing remarks

# MESSAGE FROM THE CHAIR



The 16th annual student research day will be the last one on my watch as Chair of the Department of Epidemiology, Biostatistics and Occupational Health. It has been an immense pleasure to participate in these events that showcase our students' research and that provide a unique opportunity for faculty members and students to interact and learn about their respective interests. I am always impressed by the quality and originality of the research undertaken by our MSc and PhD students and by its relevance for clinical, public health, or policy. This reflects the departmental value of aiming for the highest scholarly standards and is a testament to the excellence and rigor of our faculty supervisors and the incredible quality of our student body. EBOH students are among the most productive and methodologically sophisticated graduate students at McGill and indeed in Canada and their skills will ensure that they lead in research, practice and service, they make important contributions to knowledge generation and use to improve the health of populations in Canada and beyond. I wish all participants a great Research Day, I congratulate EBOSSS for putting together another great event and thank everyone involved in its organization.

**Dr. Gilles Paradis**  
**Strathcona Chair in Epidemiology**  
**Department of Epidemiology, Biostatistics, and Occupational Health**

# YEAR-IN-REVIEW

Dear colleagues,

Welcome to the 16th Annual EBOH Student Research Day!

This past year has been incredibly exciting for our Epidemiology, Biostatistics and Occupational Health Student Society (EBOSS). Our council members have put in an enormous amount of effort in creating a wonderful student experience for our department.



For academic events, this year we started our Career Seminar series, where each month, a group of professionals came to speak to students about careers once they finished their degrees. This has been a fantastic opportunity for students to learn what they can do with the skills they have developed and how they can be applied to different fields. Our buddy system has seen continued success in pairing incoming students with mentors in their program to help them navigate their respective programs. We also hosted our 3 Minute Thesis competition, and congratulations to Renzo Calderon for winning this year. We have also run several workshops, including a SAS workshop, info sessions for fellowship applications, comprehensive exams, thesis protocol defense, and thesis submission.

But we also know how to have fun! This year's Holiday Party, organized by our Social Reps Hannah Sachs and Michele Zaman, had an amazing turnout, and both students and faculty alike enjoyed themselves. We have continued to run our 5 à 7 and will be going curling later in March. Afia Amoako and Taylor Rush have developed our Student Spotlight series, which will help showcase students in our department for others to know who they are. Lastly, our Spring Banquet and Teaching Awards ceremony will occur on April 1st at Thomson House, a celebration for the EBOH department's achievements throughout the academic year.

Research Day has always been one of EBOSS' most anticipated events; it provides a great opportunity to connect with students and faculty in the EBOH community. We are excited to showcase the research done by students in our department, particularly within our growing Public Health program. This year we are continuing our 3-Minute-Practicum competition and are excited to see our student posters showcasing the work they have been completing. This year we are excited to have Dr. Matthew Fox as our keynote, and Dr. Mabel Carabali as our student keynote. We would like to thank our administrative staff, faculty donors, organizing committee, and all our volunteers whose collective efforts led to the success of this event! This event would not have been possible without you. Thank you to Leah Flatman, Tammy Bui, and the Research Day committee for your hard work in making this day a success.

As this year concludes, the Department of EBOH will join the School of Global and Population Health! In this exciting period, EBOSS will continue to grow, and we look forward to the future of our department and student body. We hope you enjoy yourself at Research Day and celebrate the work of our students.

Thanks,  
**Joanne Kim**  
President

**Marcus Wong**  
Vice-President

**Stephen Kutcher**  
Vice-President Finance

# KEYNOTE SPEAKERS

## **Matthew Fox, DSc, MPH** Boston University

Matthew Fox, DSc, MPH, is a Professor in the Departments of Epidemiology and Global Health at Boston University. Dr. Fox joined Boston University in 2001. His research interests include treatment outcomes in HIV-treatment programs, infectious disease epidemiology (with specific interests in HIV and pneumonia), and epidemiologic methods. Dr. Fox works on ways to improve retention in HIV-care programs in



South Africa from the time of testing HIV-positive through long-term treatment. As part of this work, he is involved in analyses to assess the impact of changes in South Africa's National Treatment Guidelines for HIV. Dr. Fox also does research on quantitative bias analysis and co-authored a book on these methods, *Applying Quantitative Bias Analysis to Epidemiologic Data*. He is also the host of a public health journal club podcast called *Free Associations* designed to help people stay current in the public health literature and think critically about the quality of research studies. He currently teaches a third-level epidemiologic methods class, *Advanced Epidemiology* as well as two other doctoral level epidemiologic methods courses. Dr. Fox is a graduate of the Boston University School of Public Health with a master's degree in epidemiology and biostatistics and a doctorate in epidemiology.

## **Mabel Carabali, MD, MSc, PhD** Candidate McGill University

Mabel Carabali is a Colombian physician, currently a PhD candidate at McGill University in the Department of Epidemiology, Biostatistics and Occupational Health with the academic supervision of Dr. Jay S. Kaufman. She has over 12 years of international biomedical research experience on infectious diseases, specifically vector-borne diseases. Her current research focuses on the



quantification of the contribution of social determinants and social inequalities in the burden of dengue, zika, and chikungunya in Latin America. She addresses the burden of arboviral diseases in Brazil and Colombia, using Bayesian spatiotemporal analysis with individual and aggregated data using hierarchical mixed models. She applies methods that allow jointly the estimation and decomposition of health inequality indexes, accounting for measurement error and underreporting in surveillance data.

# KEYNOTE PRESENTATIONS

## **On being an epidemiologist in the era of social media: Tools for lifelong learning**

Dr. Matthew Fox

Epidemiology is a lifelong learning pursuit and yet most of us get our training in master's or doctoral programs and go out into the world and get our continuing education by engaging with the field. This works well in many cases, but in the era of social media, there are so many opportunities to engage with researchers working on similar issues and to stay on top of current issues within the field. Podcasts, twitter and other social media platforms engage the epidemiology community and provide opportunities for continued learning that did not exist in previous generations. This talk focuses on opportunities for researchers in the era of social media and provides advice on making the most of these platforms to further a career in epidemiologic research.

## **From a vague "perhaps" to a solid "maybe": Over ten years understanding the role of social determinants (SDH) on arboviral diseases in Latin America**

Dr. Mabel Carabali

Dengue, chikungunya and zika are arboviruses and a major public health issue in Latin America. In absence of vaccines or specific treatment, a better understanding of the conditions that favour diseases' presence is essential for their control. However, the analysis of non-biological determinants of health is limited in part due to data availability and quality. Using some firsthand experiences as a physician in the primary health care system of Colombia, experiences as a field epidemiologist at international level organizations, and sharing the personal, academic and methodological challenges faced as a "mature" graduate student in North America, I would share my journey to arrive to some understanding about the role of SHD on arboviruses in Latin America. Mixed with a dose of humour, the journey *from the vague "perhaps" to the solid "maybe"* includes chapters about the methodological challenges that epidemiologists face every day: confounding, selection bias, and measurement error, both at the personal and academic level.

# ORAL PRESENTATIONS

## Block A

- Emily MacLean Bayesian latent class analysis versus composite reference standards for estimating tuberculosis meningitis diagnostic test accuracy
- Devin Abrahami Anticoagulants and the incidence of cancer among individuals with non-valvular atrial fibrillation
- Asma Ahmed Effects of Maternal Exposure to Acute Stress on Birth Outcomes: A Natural Experiment Study
- Richeek Pradhan The Use of Long-Acting Insulin Analogs and the Risk of Colorectal Cancer Among Patients with Type 2 Diabetes: A Population-Based Cohort Study.
- Charlotte Laniece Delauney Temporal trends in hepatitis C virus (HCV) treatment, injection practices, and access to harm reduction among HIV-HCV co-infected people who inject drugs (PWID) in Montréal from 2003-2018

## 3-Minute Practicum

- Marcus Wong RX Community: Social Prescribing
- Gabriel Ramirez Development and implementation of a Heat Alert and Response System in rural British Columbia
- Samiha Rahman Health care personnel attitudes about refugee claimants and access to care
- Marshall Lloyd Land Use Regression Models for Ambient Black Carbon in Montreal and Toronto
- Kelsey Adams Effectiveness of Hand Hygiene Compliance in the Prevention of Hospital-Acquired Infections: A Systematic Review
- Soumyadipta Roy Evaluating the economic burden of Leptospirosis in the Latin American region - A Methodological Note
- Faheel Naeem Multiplexed Technologies for Sexually Transmitted Infections: A Systematic Review of Global Evidence on Feasibility, Seropositivity and Impact Outcomes
- Alanna Miller Exploring Service Delivery Models for Nova Scotia Health Authority's Community Mental Health and Addictions Program
- Sabeena Khan Investigating Knowledge and Perceptions of Male and Female Users of Health Products: Cosmetics, Natural Health Products and Non-Prescription Drugs
- Moyandi Udugama Monitoring and Evaluation of Reproductive, Maternal, Neonatal, Child, Adolescent and Youth Health (RMNCAYH) programs in Sri Lanka.

## Block B

- Renzo Calderon Are we doing enough to combat violence against women? Examining the policy effectiveness of "Women's Emergency Centres" in Peru
- Joanne Kim Prenatal exposure to insecticides and infant weight trajectories in a South African birth cohort
- Gayatri Marathe Development of supervised machine learning algorithms to predict the presence of clinically significant depressive symptoms in the HIV-Hepatitis C virus co-infected population in Canada
- Brice Batomen Addressing competing risks when assessing the impact of health services interventions on hospital length of stay: The example of trauma center accreditation
- Dee Cao Trends in Prescription of Antidepressants and Coprescription with Other Psychotropic Medications in Children and Adolescents in UK Primary Care, 2000-2018

# POSTER PRESENTATIONS

Abraham Abood	Where are we, in Canada, in Integrating or Connecting Essential Health and Social Services to Primary Health Care?
Zharmaine Ante	Anorexia nervosa and pregnancy: Do women have worse birth outcomes?
Anirudh Bakshi	COPD Exacerbations and Antiplatelet Therapy: A role for Aspirin
Rajshree Balaji	Directionality of HPV infection transmission within heterosexual couples: a Systematic review and Meta-analysis
Parash Mani Bhandari	Bias in cutoff identification and diagnostic accuracy estimates due to data-driven cutoff selection: simulation study using individual participant data from 49 studies on the diagnostic accuracy of the Edinburgh Postnatal Depression Scale (EPDS)
Vanessa Brunetti	SGLT-2 Inhibitors and the Risk of Community-Acquired Pneumonia Among Patients with Type 2 Diabetes
Michaela Bunakova	'Marry a doctor, live healthier'-A quantitative study of family health influence in Europe under different macro policy contexts
Demy Dam	National Surveillance to Assess the Burden of Tuberculosis in Canada in 2018
Maria El Bizri	Mobile health technologies to support colonoscopy preparation improve bowel preparation quality scores: A systematic review of randomized controlled trials
Lena Faust	Characterising fine particulate air pollution exposure among tuberculosis patients in Udupi, India.
Jesse Islam	Variable selection using penalized logistic regression in survival analysis
Cassandra Laurie	Carrageenan as a preventive agent against human papillomavirus infection: a narrative review
Aaron MacCosham	Transmission Reduction and Prevention with HPV Vaccination (TRAP-HPV) Study: Baseline Characteristics and Future Perspectives
Tanya Murphy	The effect of poor behavioral self-regulation on adiposity in Quebec children aged 6 to 10 years
Zelalem Negeri	Accuracy of the PHQ-9 for Screening to Detect Major Depression: Systematic Review and Meta-analysis of Individual Participant Data
Dipika Neupane	Selective Cutoff Reporting in Studies of the Accuracy of the PHQ-9 and EPDS Depression Screening Tools: Comparison of Results based on Published Cutoffs versus All Cutoffs using Individual Participant Data Meta-Analysis
Paulami Sen	Global health journals need to address equity, diversity and inclusion
Samantha Shapiro	Association between circumcision and human papillomavirus infections in males and their female sexual partners: findings from the HITCH cohort study
Talia Sternbach	Indoor Temperature Profile of Peri-Urban Beijing Homes: Year 1 of the Beijing Household Energy Transitions Study
Melanie Suissa	Sodium-glucose co-transporter 2 inhibitors and the risk of early breast cancer
Pauley Tedoff	Women's Empowerment and Nutrition in the Presence of Food Insecurity: A Four-Country Cross-Sectional Study of Women and Children in Sub-Saharan Africa
Romina Tejada	Cost-effectiveness of HPV vaccination in girls living in Latin American countries: a systematic review
Tzu-Wei (Joy) Tseng	Cognitive function among older adults in China exposed to household air pollution
Karena Volesky	HPV and cervical cancer prognosis: a narrative review
Ornella Wafo Noubissie	Evaluating the Establishment-based Risk Assessment Model for Salmonella spp. at Canadian Hatcheries (ERA – H) using Sensitivity Analyses
Chinchin Wang	Application of the acute:chronic workload ratio in children
Haoyu Wu	Potential Clinical Implications of a Polygenic Risk Score for LDL Cholesterol
Yin Wu	Major depression classification based on different diagnostic interviews: A synthesis of individual participant data meta-analyses



# RECOGNITION

## Oral presentation judges

Dr. Olga Basso  
Dr. Antonio Ciampi  
Dr. Catherine Hankins  
Dr. Alissa Koski  
Dr. Gilles Paradis  
Dr. Brett Thombs  
Dr. Christina Wolfson

## Abstract reviewers

Dr. Robert Allard  
Dr. Marc Beltempo  
Dr. Sahir Bhatnagar  
Dr. Susan Khan  
Dr. Alissa Koski  
Dr. Joanna Merckx  
Dr. Erica Moodie  
Dr. Michel Rossignol  
Dr. Maida Sewitch  
Dr. Seungmi Yang

## Poster presentation judges

Dr. Nicole Basta  
Dr. Antonios Douros  
Dr. Tianze Jiao  
Dr. Mathieu Maheu-Giroux  
Dr. Shirin Golchi  
Dr. Ruth Sapir-Pichhadze  
Dr. Henok Tadesse Ayele  
Dr. Christina Wolfson  
Dr. Ya-Hui Yu



**Epidemiology,  
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Epidemiology, Biostatistics and Occupational Health Student Society  
Post-Graduate Students' Society  
Department of Epidemiology, Biostatistics and Occupational Health

## Faculty donors

Dr. Sahir Bhatnagar, Dr. Joseph Cox, Dr. Shirin Golchi, Dr. Jay Kaufman, Dr. Michel Rossignol, Dr. Christina Wolfson

## Research Day committee

Tammy Bui, Leah Flatman, Devin Abrahami, Apoorva Anand, Samantha Shapiro, Kaya Van Roost

## EBOH administrative staff

André Yves Gagnon, Dolores Coletto, Katherine Hayden, Nathalie Théorêt, Eileen Lavery