



McGill

McGill Summer Institute in
Infectious Diseases and
Global Health

MCGILL UNIVERSITY • MONTREAL • JUNE 10-14, 2019

TB RESEARCH METHODS

| DAY 1 | DAY 2 | DAY 3 | DAY 4 | DAY 5 |
|----------------------------|-------------------|--|--------------------------------|--|
| Mon • June 10 | Tues • June 11 | Wed • June 12 | Thurs • June 13 | Fri • June 14 |
| 8:30AM – 5:00PM | 9:00AM – 5:00PM | 9:00AM – 5:00PM | 9:00AM – 5:00PM | 9:00AM – 4:30PM |
| Introductions and overview | Randomized trials | Operational Research and research among indigenous populations | Modeling and economic analysis | Molecular epidemiology, systematic reviews |

HOSTS



McGill



GLOBAL HEALTH PROGRAMS

Centre international de TB McGill



McGill International TB Centre

A PAHO/WHO Collaborating Centre for Tuberculosis Research



MacLean Centre for Tropical Diseases
McGill University



McGill

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Interdisciplinary Initiative in Infection and Immunity

Institut de recherche
Centre universitaire de santé McGill



Research Institute
McGill University Health Centre

Infectious Diseases and Immunity in Global Health Program
Programme en maladies infectieuses et immunité en santé mondiale

Course Location: Centre Mont Royal, 2200 rue Mansfield, 3rd Floor

*Faculty and speaker information is available in the *Ukova* event app*

OVERVIEW OF SMALL GROUPS

| | | | |
|---------|----------------------|---|---|
| GROUP 1 | Randomized trials | Bill Burman | Interpreting RCT results – The group will develop a tool to facilitate structured review of RCTs and their applicability to programs. This group will focus on the application of specific clinical trial results into TB program activities. This will include a careful comparison of the study population to the program population, review of the feasibility of the study intervention to the program, how to prioritize evidence-based interventions when several have been tested in RCTs, estimating relative magnitude of the effect of different interventions on program outcomes, distinguishing statistical significance from programmatic significance. |
| GROUP 2 | Systematic reviews | Faiz Ahmad Khan & James Johnston | A choice is offered: <ol style="list-style-type: none"> 1. Practical aspects. Searches, file management, data entry, quality assessment, and meta-analysis. This group will have hands-on experience with searches – matching search strategies to the PICO, performing searches in different data bases. Saving searches and using different software to manage title selection. Data entry and meta-analysis using R. 2. Protocol development. If interest - a sub-group will work on developing a systematic review protocol – from PICO to Prospero registration. |
| GROUP 3 | Economic analysis | Alice Zwerling, Jonathon Campbell & Kevin Schwartzman | This group will learn how to design an economic analysis, using a research question selected by the group. The focus of the small group will be performing the costing (sources, accuracy), but not explicitly modelling exercises. The group will discuss specific types of costs to consider, practical approaches to data gathering, key considerations such as economic perspective and target audience. |
| GROUP 4 | Operational Research | Dick Menzies & Gonzalo Alvarez | This group will split into sub-groups for the week. Groups will develop protocols for operational research. Questions will be proposed by participants and shaped into feasible operational research projects by all members of each sub-group, with the help of the facilitators, who will each work with all groups – providing different perspectives and experiences. Groups with focus on community-based, and/or indigenous populations participatory research may be formed – if there is sufficient interest. |
| GROUP 5 | Data analysis 101 | Andrea Benedetti | Together, the small group will analyze a real-life data set to answer a research question. The group will begin to learn to use the free R software package, and its user-friendly interface RStudio. Sample size estimation, statistical analysis plans, data cleaning, descriptive statistics, and inferential statistics will be discussed and implemented. The group will present their findings to the class on Friday. No prior experience with R, or statistical analysis is needed. |

DAY 1 AGENDA

MONDAY, JUNE 10

Time

8:30AM

Registration

9:00-9:10AM

Welcome

Madhukar Pai

9:10-9:30AM

Introductions, course objectives and overview

Dick Menzies

9:30-10:00AM

Ending TB—goals and gaps. What are the “big” questions in diagnosis of TB?

Dick Menzies

10:00-10:30AM

How will research end TB? What are the “big” questions in TB treatment research?

Bill Burman

10:30-11:00AM

Coffee Break

11:00-11:30AM

What are the “big” questions in latent TB research?

Tim Sterling

11:30-12:00PM

Qualitative methods – how qualitative research can fill the gaps of quantitative research—understanding the “why”.

Amrita Daftary (Zoom)

12:00-12:15PM

Discussion

12:15-1:15PM

Lunch

1:15-1:30PM

Late Breaker 1:

Maz Divangahi

1:30-2:00PM

Quantitative research: Overview of study designs

Dick Menzies

2:10-2:30PM

Small groups: Organization – who, where, what?

Dick Menzies

2:30-5:00PM

(Includes Coffee Break)

Small groups:

Overview of each topic by group leaders

Forming sub-groups and selecting objectives

5:00 – 7:00 PM

5 à 7 Social Hour (This is an informal get together of TBRM – as the main reception is on Wednesday. Cash bar - sorry)

Thomson House, 3650 McTavish St,

All TBRM participants and faculty with a genuine interest in TB Research!

DAY 2 AGENDA

TUESDAY, JUNE 11

Time

9:00-9:30AM

DPSICO-TB: Developing study objectives from a problem to precise questions

Dick Menzies

9:30-10:00AM

Trial design and selecting study populations—minimizing bias, maximizing generalizability

Bill Burman

10:00-10:30AM

Clustered trial designs: DOTS vs DOCS

Dick Menzies

10:30-10:45AM

Coffee Break

10:45-11:15AM

End-points, planned and unplanned secondary analyses, interim analyses, stopping rules

Tim Sterling

11:15-12:00PM

Applying RCT results to practice – clinical and public health

Bill Burman

12:00-12:45PM

All about sample sizes—what, how, how many

Andrea Benedetti

12:45-1:45PM

Lunch

1:45-2:15PM

Beat the clock!

Two teams will compete to develop study objectives in 5 minutes or less. Questions selected from participants' suggestions

Team 1: Tim Sterling, Bill Burman

Team 2: Volunteers (participants)

2:15-2:30PM

Late Breaker 2:

Marcel Behr

2:30-5:00PM

(Includes Coffee Break)

Small groups:

Work on projects

DAY 3 AGENDA

WEDNESDAY, JUNE 12

Time

9:00-9:45AM

Operational research—what, why, and how

Tony Harries (by Zoom)

9:45-10:15AM

Determinants of health: Geography, history, and culture—the example of Inuit health

Elaine Kilabuk

10:15-10:45AM

TAIMA TB- the project, the successes, the challenges, and the lessons

Gonzalo Alvarez

10:45-11:00AM

Coffee Break

11:00-11:30AM

The Western Canada experience in Indigenous health research—what, who and how

Richard Long

11:30-12:10PM

Indigenous health research—in Canada and globally—lessons for the vulnerable and hard-to-reach populations

Malcolm King

12:10-12:30PM

Reverse panel discussion—examples of reaching vulnerable populations

Course participants

12:30-12:40PM

Group photo

12:40-1:30PM

Lunch

1:30-2:15PM

Data Analysis 101

Andrea Benedetti

2:15-2:30PM

Late Breaker 3:

Gonzalo Alvarez

2:15-5:00PM
(Includes *Coffee Break*)

Small groups:

Work on projects

5:30-7:00PM

Summer Institute Reception

Venue: SLK Rd | 2042A, Rue Peel, Montreal, QC H3A 2R4

Food and non-alcoholic drinks free. Alcoholic drinks for purchase.

DAY 4 AGENDA

THURSDAY, JUNE 13

| Time | |
|--|--|
| 9:00-9:30AM | Introduction to modeling—what it can do, what it can't Alice Zwerling |
| 9:30-10:15AM | Decision analysis—methods and applications Olivia Oxlade |
| 10:15-10:30AM | <i>Coffee Break</i> |
| 10:30-11:15AM | Economic analysis—cost effectiveness, cost minimization, cost-outcome descriptions—what's the difference? Kevin Schwartzman |
| 11:15-11:45AM | Key studies in economic analysis—questions, design and methods. Getting the most bang for your buck! Alice Zwerling |
| 11:45-12:00PM | Discussion and questions |
| 12:00-1:00PM | <i>Lunch</i> |
| 1:00-1:30PM | Debate: "Systematic reviews are over-valued" Pro: Gonzalo Alvarez ("Seriously—there are way too many reviews, about too many topics, done by too many, with too little rigor") Con: James Johnston ("Systematic reviews are the best evidence, and we need more—reviews and reviewers") |
| 1:30-1:45PM | Late Breaker 4: Richard Long |
| 1:45-2:00PM | Late Breaker 5: James Johnston |
| 2:30-5:00PM (Includes Coffee Break) | Small groups: Finalizing protocols Preparing presentations |

DAY 5 AGENDA

FRIDAY, JUNE 14

Time

9:00-9:45AM

Molecular methods for typing and branding the tubercle bacillus

Marcel Behr

9:45-10:30AM

Molecular Typing for patient, outbreak and population-level studies of TB epidemiology

Marcel Behr

10:30-11:00AM

Coffee Break

11:00-11:45AM

Systematic reviews, and meta-analyses

James Johnston

11:45-12:30PM

Individual patient data meta-analyses (IPD)

Faiz Khan

12:30-1:30PM

Lunch

1:30-4:00PM

(Includes Coffee Break)

Small groups:

Presentation of study protocols by small groups

Comments on study protocols

Moderated by: Dick Menzies & Faiz Khan

4:00-4:30PM

Course evaluations and closure

Dick Menzies