



JUNE 13-24, 2016

MCGILL SUMMER INSTITUTE IN **INFECTIOUS DISEASES AND GLOBAL HEALTH**



McGill

McGill Summer Institute in
Infectious Diseases and
Global Health

McGill University and McGill University Health Centre have exceptionally strong research groups and centres working on TB, HIV, and neglected tropical diseases. These Centres work together each summer to hold several short courses on infectious disease. McGill Summer Institute courses feature internationally known faculty, a focus on highly applicable new knowledge, and an opportunity to network with fellow global health professionals from around the world.

2015 Course Directors (left to right): Dr. Madhukar Pai, Dr. Cedric Yansouni, Dr. Nitika Pant Pai, Dr. Dick Menzies



2016 COURSES

Week 1: June 13-17, 2016

- TB Research Methods
- Global Health Diagnostics

Week 2: June 20-24, 2016

- Advanced TB Diagnostic Research
- Molecular and Genetic Epidemiology
- Tropical and Parasitic Diseases



ABOUT THE INSTITUTE DIRECTOR

Dr. Madhukar Pai, MD, PhD

Dr. Pai is a Canada Research Chair in Translational Epidemiology & Global Health in the Department of Epidemiology, Biostatistics and Occupational Health at McGill University, the Director of McGill University's Global Health Programs and the Associate Director of the McGill International TB Centre. His research program is focused on using translational epidemiology and implementation science to enhance tuberculosis care and control, so that products, knowledge and policies can translate into saved lives. He has coordinated multiple courses and workshops on epidemiology, modeling, systematic reviews and meta-analysis around the world, including week-long courses on advanced tuberculosis diagnostics research in Montreal for the past five years.

SUMMER INSTITUTE PARTICIPANTS

In 2015...

- 180 participants from 28 countries travelled to Montreal to attend the Summer Institute
- Almost 50% of participants were from outside academia including industry, technical agencies and government programs
- 89% of participants indicated they would recommend the Summer Institute to their team members

INCLUDES...

- Excellent lectures and panel discussions
- Numerous chances to network and collaborate
- Opportunities to meet policy makers from disease-endemic countries
- Internationally renowned faculty
- Diverse participant groups

2016 COURSE DIRECTORS



Marcel Behr, MD, MSc

Director, McGill International TB Centre
Professor of Medicine, McGill University
Microbiologist-in-Chief, McGill University Health Centre



Michael Libman, MD

Director, J.D. MacLean Centre for Tropical Medicine
Department of Microbiology & Division of Infectious Diseases, McGill University Health Centre



Dick Menzies, MD, MSc

Director, Respiratory Epidemiology and
Clinical Research Unit
Associate Director, McGill International TB Centre



Madhukar Pai, MD, PhD

Professor of Epidemiology, McGill University
Director, McGill Global Health Programs
Associate Director, McGill International TB Centre



Nitika Pant Pai, MD, MPH, PhD

Associate Professor, Division of Clinical Epidemiology &
Infectious Diseases, McGill University



Erwin Schurr, PhD

Leader, Infectious Diseases and Immunity in Global
Health, McGill University Health Centre



Cédric Yansouni, MD, FRCPC, DTM&H

Associate Director, J.D. MacLean Centre for Tropical
Diseases at McGill University
Department of Microbiology & Division of Infectious
Diseases, McGill University Health Centre

2016 COURSES To Register: <http://mcgill-idgh.ca/>



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TB RESEARCH METHODS COURSE

“Very well conceptualized, excellent faculty and overall a great chance to interact with people from a myriad disciplines and countries. Great course...”

– 2015 TB RESEARCH METHODS COURSE PARTICIPANT

An intensive course on methods of operational research, molecular epidemiology, randomized controlled trials, systematic reviews and meta-analyses, qualitative/community based research, decision analyses and modeling. Format will include lectures and small groups to develop and present study protocols. Previous course materials are available at: www.mcgill.ca/tb/courses/tb-research-methods-2015

COURSE DIRECTOR

Dick Menzies, MD, MSc

Director, Respiratory Epidemiology and Clinical Research Unit
Associate Director, McGill International TB Centre
www.mcgill.ca/tb

COURSE FACULTY

Gonzalo Alvarez, MD, MPH - University of Ottawa

Marcel Behr, MD, MSc - McGill University

Andrea Benedetti, PhD - McGill University

Bill Burman, MD - Denver Public Health

Ted Cohen, MD - Yale University

Amrita Dattary, DPH - University of Toronto

Maziar Divangahi, PhD - McGill University

Greg Fox, MD, PhD - University of Sydney

Anthony Harries, MD - the Union, Paris

James Johnston, MD, MPH - University of British Columbia

Faiz Ahmad Khan, MD, MPH - McGill University

Robyn Lee, PhD(c) - McGill University

Dick Menzies, MD, MSc - McGill University

Olivia Oxlade, PhD - McGill University

Madhukar Pai, MD, PhD - McGill University

Srinath Satyanarayana, MD, PhD(c) - McGill University

Erwin Schurr, PhD - McGill University

Kevin Schwartzman, MD, MPH - McGill University

John White, PhD - McGill University

COURSE CONTENT

This course will introduce broad tuberculosis research topics – research as part of the World Health Organization's new Global Plan to End TB, priorities in drug resistant and HIV-related tuberculosis, as well barriers and progress in indigenous TB in Canada.

Every morning session will focus on a different methodology – operational research, molecular epidemiology, systematic reviews,



randomized trials and economic analysis and disease modelling. In the afternoons, there will be two “late-breakers”, short presentations of exciting new findings from course faculty, followed by basics in biostatistical methods, then small group sessions to develop study protocols in operational research, molecular epidemiology, systematic reviews, qualitative / community based research, randomized trials or cost-effectiveness analysis. These protocols will be presented to the entire group on the final afternoon.

TARGET AUDIENCE

- Trainees starting their TB research careers
- MSc, MPH and PhD students working on TB research projects
- Postdoctoral fellows, clinical fellows and residents working on TB projects
- Junior faculty with a strong interest in TB research
- Research staff, nurses and coordinators managing TB research projects
- Persons involved in TB control programmes with interest in research and evaluation methods

ENROLMENT

Maximum of 50 participants.

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GLOBAL HEALTH DIAGNOSTICS COURSE

“Great range of format. Very interesting mix of faculty and participants – i.e. academic, researchers, industry, funders, NGOs. This allowed viewing issues related to diagnostics from different angles. The environment allowed for open and frank discussions to take place, which provided valuable insights.”

– 2015 GLOBAL HEALTH DIAGNOSTICS PARTICIPANT

This course will convene key stakeholder groups on global health diagnostics, focus on TB, HIV, and malaria, HIV co-infections, sexually transmitted infections (STIs), and selected neglected tropical diseases (NTDs), and cover issues such as value chain for diagnostics development, current pipeline of diagnostics, unmet needs, market size and dynamics, policies on diagnostics, barriers for scale-up, regulation, supply chain, and quality assurance. Participants will include product manufacturers, donors, product development partnerships, policy makers, academics, clinicians, community advocates, public health implementers and leaders from ministries of health in priority countries.

COURSE DIRECTORS

Cédric Yansouni, MD, FRCPC, DTM&H

Assistant Professor, Division of Infectious Diseases, Department of Medical Microbiology, McGill University

Associate Director, J.D. MacLean Centre for Tropical Diseases

Nitika Pant Pai, MD, MPH, PhD

Associate Professor, Division of Clinical Epidemiology & Infectious Diseases, McGill University

Madhukar Pai, MD, PhD

Professor of Epidemiology, McGill University

Director, McGill Global Health Programs

Associate Director, McGill International TB Centre

COURSE FACULTY

David Bell, MD, PhD - Intellectual Ventures

Geeta Bhat, MD - Fio Coporation

Duncan Blair, PhD - Alere Inc.

Emmanuel Bottieau, MD, PhD - Institute of Tropical Medicine

Tiffany Clarke, MS - Hologic

Elliot Cowan, PhD - Partners in Diagnostics

Tala de los Santos, MBA, MS - PATH

Renuka Gadde, MBA - BD (Becton Dickinson)

Rick Galli, B.Sc, MLT - bioLytical Laboratories

David Goldfarb, PhD - University of British Columbia

Theresa Gyorkos, PhD - McGill University

Ilesh Jani, MD, PhD - Instituto Nacional de Saude

Cassandra Kelly-Cirino, PhD - DNA Genotek

Michael Libman, MD - McGill University

Robert Luo, MD - Roche Molecular Systems, Inc.

Francesco Marinucci, PhD - Sysmex

Greg Matlashewski, PhD - McGill University

Mark Miller, MD, FRCPC - bioMerieux

Momar Ndao, PhD - McGill University

Thomas Nutman, MD - National Institutes of Health

Rosanna Peeling, PhD - London School of Hygiene & Tropical Medicine

David Persing, MD, PhD - Cepheid

Trevor Peter, PhD - Clinton Health Access Initiative

William Rodriguez, MD - FIND

Andy Stewart - DNA Genotek

Neeraj Vats, PhD - MedMira Inc.

Gene Walther, MBA - Diagnostics and Biotechnology

Prashant Yadav, PhD, MBA - University of Michigan

Stephanie Yanow, PhD - University of Alberta

CONTEXT

Infectious diseases continue to pose a major threat to the health of most developing nations. The emergence and spread of infections like XDR-TB, Ebola, dengue, chikungunya, and avian influenza have highlighted the importance of effective global response to epidemic threats. Diagnosis is a critical step in effective disease care and control, but many people in developing countries do not have access to adequate initial diagnosis. While there are many good diagnostic products for diseases of global health importance (e.g. TB, HIV, malaria, hepatitis, STIs), few products have reached scale in resource-limited countries. Public health impact of new tools will be realized only when new technologies are actively scaled-up in disease endemic countries. This course will convene key stakeholder groups on global health diagnostics, focusing on the three major infections – TB, HIV, and malaria – as well as HIV co-infections, sexually transmitted infections (STIs), and selected neglected tropical diseases (NTDs).

OBJECTIVES

- To convene key stakeholder groups on global health diagnostics, and to create a platform for information exchange, knowledge transfer, and to serve as a focal point for new initiatives in global health diagnostics. Stakeholders include product manufacturers, donors, product development partnerships, policy makers, academics, clinicians, community advocates, public health implementers and leaders from ministries of health in priority countries.
- To dissect the value chain for global health diagnostics development, current pipeline of diagnostics, market size and dynamics, policies on diagnostics, and barriers for scale-up for selected infectious diseases of global health importance.
- To debate and propose solutions for accelerating market entry for innovative diagnostics, to sustain and support manufacturers' engagement in development of new diagnostics that address unmet global health needs.
- To debate and identify novel approaches to scale-up, including innovative business models that leverage market-based incentives for new diagnosis.

ENROLMENT

Maximum of 100 participants.

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ADVANCED TB DIAGNOSTICS RESEARCH COURSE

“This course was very useful in prioritizing the research and advocacy needed in order to get to the next step in product development.”

– ADVANCE TB DIAGNOSTICS PARTICIPANT FROM 2015

This advanced course will cover advanced topics in TB diagnostics research and implementation, including incremental value of new tests, impact of new tests on clinical decision-making and therapeutic choices, cost-effectiveness in routine programmatic settings, and impact on patient-important outcomes. The course will introduce multivariable approaches to diagnostic research, and cover alternative designs which evaluate patient outcomes, including the diagnostic RCT, and implementation research. The course will also cover meta-analysis, mathematical modeling, and cost-effectiveness studies. Panel discussions will cover topics such as value chain for TB diagnostics development, market analyses, market dynamics, target product profiles, and barriers to scale-up of new diagnostics. Participants will include product manufacturers, donors, product development partnerships, policy makers, academics, clinicians, community advocates, public health implementers and National TB Program managers. Previous course materials are available at: <http://mcgill-idgh.ca/previous-course-materials/>

COURSE DIRECTOR

Madhukar Pai, MD, PhD

Professor of Epidemiology, McGill University
Director, McGill Global Health Programs
Associate Director, McGill International TB Centre

COURSE FACULTY

Niaz Banaei, MD - Stanford University

David Boyle, PhD - PATH

Adithya Cattamanchi, MD - UCSF

Claudia Denkinger, MD, PhD - FIND

David Dowdy, MD, PhD - Johns Hopkins University

Nora Engel, PhD - Maastricht University

Jim Gallarda, PhD, MBA - Bill & Melinda Gates Foundation

Janet Ginnard, B.S.E., MPhil - UNITAID

Cassandra Kelly-Cirino, PhD - DNA Genotek

Sandra Kik, MSc, PhD - KNCV

Amy Piatek, MS - USAID

Marco Schito, PhD - The Critical Path Institute

Samuel Schumacher, MSc - FIND

Karen Steingart, MD - Cochrane ID Group

Andy Stewart - DNA Genotek

Marc Tebruegge, MD, MSc, PhD - University of Southampton

CONTEXT

High quality diagnostic studies are critical to evaluate new tools, and to develop evidence-based policies on TB diagnostics. There is evidence that TB diagnostic trials are poorly conducted and poorly reported. Lack of methodologic rigour in TB trials is a cause for concern as it may prove to be a major hurdle for effective application of diagnostics in TB care and control. Furthermore, there is evidence that a majority of TB diagnostic studies are focused on test accuracy. There are limited data on outcomes such as accuracy of diagnostic algorithms (rather than single tests) and their relative contributions to the health care system, incremental value of new tests, impact of new tests on clinical decision-making and therapeutic choices, cost-effectiveness in routine programmatic settings, and impact on patient-important outcomes. This poses problems because research on test accuracy, while necessary, is not sufficient for policy and guideline development. Test accuracy data are surrogates for patient-important outcomes and cannot provide high quality evidence for policy making. Therefore, accuracy studies

must be considered along with impact of the test on patient-important outcomes, and other factors such as quality of the evidence, the uncertainty about values and preferences associated with the tests and presumed impact on patient-important outcomes, and cost and feasibility. Translation of policy into impact requires collecting evidence for scale-up, country-level data on cost-effectiveness and feasibility, implementation research, and local decisions on scale-up, delivery and impact assessment.

OBJECTIVES

By the end of the course, participants will understand:

- the value chain for TB diagnostics development, current pipeline of diagnostics, market dynamics, WHO policies on new diagnostics, and challenges for scale-up
- principles and practice of diagnostic research focused on accuracy of tests
- principles and practice of multivariable approaches to diagnostic research, and adjustment for imperfect reference standards
- principles of meta-analyses of diagnostic accuracy studies and GRADE approach to diagnostic policies
- principles of alternative designs to evaluate impact of new tests on clinical decision-making, therapeutic choices, and patient-important outcomes
- principles of implementation research, collecting evidence for scale-up, cost-effectiveness analyses and modeling studies in TB diagnostics

ENROLMENT

Maximum of 100 participants. Only participants with prior TB diagnostic research experience or advanced training will be eligible.

2016 COURSES To Register: <http://mcgill-idgh.ca/>



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MOLECULAR AND GENETIC EPIDEMIOLOGY COURSE

The Summer Institute is pleased to offer this exciting new course for 2016.

An intensive course on methods of molecular and genetic epidemiology. The topics covered will include population genetics of pathogens and their hosts, host-pathogen co-evolution and epigenetics of host and pathogen. Examples will be focused on tuberculosis to provide an introduction to the analyses of next generation sequencing (DNA and RNA), epigenetic modification, genotype-phenotype association and evolutionary selection. Format will include lectures, panel discussions and small groups to practice the use of commonly employed computer programs.

COURSE DIRECTORS

Marcel Behr, MD, MSc

Director, McGill International TB Centre
Professor of Medicine, McGill University
Microbiologist-in-Chief, McGill University Health Centre
www.mcgill.ca/tb

Erwin Schurr, PhD

Leader, Infectious Diseases and Immunity in Global Health,
McGill University Health Centre
www.idigh.ca

COURSE FACULTY

Alexandre Alcaïs, MD, PhD - INSERM U1163, Paris

Luis Barreiro, PhD - St. Justine Hospital, Montreal

Marcel Behr, MD, MSc - McGill University

Aurélie Cobat - INSERM U1163, Paris

Vinicius Fava, PhD - McGill University

Sébastien Gagneux, PhD - Swiss TPH, Basel

Robyn Lee, PhD (c) - McGill University

Jeremy Manry, PhD - McGill University

Stefan Niemann, PhD - Research Center Borstel

Lluis Quintana-Murci, PhD - Pasteur Institute, Paris

Jesse Shapiro, PhD - Université de Montréal

Erwin Schurr, PhD - McGill University

CONTEXT

This course will introduce basic principles of molecular and genetic epidemiology of infectious diseases by using examples from the field of tuberculosis research. Special emphasis will be given to host-pathogen co-evolution and on its implication for disease control. Morning sessions will focus on the theoretical foundation of different approaches and methodologies of population genetics, molecular epidemiology and genetic epidemiology. Afternoon sessions will involve introductory sessions on the use of commonly employed computer programs followed by guided tutorials of practical examples. Problems encountered in the practical examples will be discussed in a concluding session at the end of each day. Participants are encouraged to bring their laptops and will be provided with analysis software and data for the practical examples. Practical examples will focus on tuberculosis and provide an introduction to the analysis of next generation sequencing (NGS) data from host and pathogen, population genetics analysis of NGS data, and linkage and association studies of the host for both common and rare variants. Epigenetic approaches will also be introduced and analysed with practical examples.



TARGET AUDIENCE

- Trainees starting their research careers in infectious diseases
- MSc, MPH and PhD students working on infectious diseases research projects
- Postdoctoral fellows, clinical fellows and residents working on infectious diseases research projects
- Junior faculty with an interest in infectious diseases research and host pathogen interactions

ENROLMENT

Maximum of 40 participants.

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TROPICAL AND PARASITIC DISEASES – A REVIEW OF CLINICAL AND LABORATORY APPROACHES TO TROPICAL DISEASES

Established course with exceptional track record—
now part of the Summer Institute.

The J. D. MacLean Centre for Tropical Disease at McGill University has provided training to generations of doctors and nurses providing clinical care to travelers, immigrants, and indigenous populations around the world for over 30 years. This course focuses on linking laboratory diagnostics and research to the clinical treatment of patients.

COURSE DIRECTORS

Michael Libman, MD

Director, J.D. MacLean Centre for Tropical Medicine
Department of Microbiology & Division of Infectious Diseases,
McGill University Health Centre

Cédric Yansouni, MD, FRCPC, DTM&H

Associate Director, J.D. MacLean Centre for Tropical Diseases at
McGill University
Department of Microbiology & Division of Infectious Diseases,
McGill University Health Centre

COURSE CONTENT

Tropical Medicine Clinical Review – 3 days

These presentations cover the latest health issues and treatments for travelers and indigenous populations. Presentations include the latest research and diagnostics in tropical and parasitic diseases and preventative medicine for travelers.

Laboratory Course: Malaria and Parasitic Zoonoses – one day

Laboratory workshop overview of blood borne and intestinal parasites and hands on teaching of microscopy for medical laboratory technologists, microbiologists, clinicians, nurses, and other industry personnel.

Clinical Ultrasound: Practical Training for the Clinician – one day

Hands-on instruction in the use of diagnostic ultrasonography, with emphasis on tropical and parasitic diseases.

You may register for one, two, or all of these course components; however the laboratory and ultrasound sections are limited to 40 participants.

COURSE FACULTIES

McGill Centre for Tropical Diseases Faculty

Kendall Billick, MD, DTM&H

Christina Greenaway, MD, FRCPC

Theresa W. Gyorkos, PhD

Selim Rashed, MD, MSc, CPSQ

Makeda Semret, MD CM, FRCPC

Brian J. Ward, MDCM

Guest Course Faculty

Andrea Boggild, MD - University Health Network, Toronto

Christina Coyle, MD - Albert Einstein College of Medicine

Jay S. Keystone, MD - University of Toronto

Steve Schofield, PhD - Department of National Defense, Canada

Laboratory Faculty

Azza El Bakry, MD, DPH/ MP - McGill University

Lyne Cédilotte, TM, RT - Montreal General Hospital



TARGET AUDIENCE

- Ideal for medical health care professionals interested in tropical diseases and travel health – doctors, residents, nurses, pharmacists and medical laboratory technologists.

ENROLMENT

The Tropical Medicine Clinical Review Course has a maximum of 150 participants. Both the laboratory and ultrasound days are limited to 40 people each.

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MONTREAL

A UNIQUE CITY

Vibrant nightlife and eclectic cuisine. Cobblestone streets and a horse-drawn calèche. Here in Montreal, the old city blends seamlessly into a modern metropolis of glass and steel, where trendy boutiques sit side-by-side with quaint bistros and brasseries.

Surrounded by the mighty St. Lawrence River and more than 400 islands, Montreal buzzes with energy and excitement all year long. Festivals abound, celebrating the power of laughter, fireworks, diversity, fast cars and cool jazz, a wintertime fusion of performing arts, fireworks and fine wine and dining.

The world's second-largest French speaking city, Montreal is renowned for its numerous universities, medical and scientific research centers, as well as for its cultural and

artistic life, excellent restaurants and hotel network. While French is the official language of the Province of Québec, English is also widely spoken.

You can enjoy the artisan studios of the Old Port, or the shops, theatres, and major department stores of the underground city. Montreal's artistic scene includes one of the world's leading orchestras, an internationally-renowned ballet company, English and French theatres, comedy clubs, and dozens of museums and galleries.

Enjoy the city's mixture of European and North American charm that both surprises and enchants participants of the Summer Institute year after year.

Outings and social events (any fees not included) will be arranged by course coordinators.

REGISTRATION FOR ALL COURSES OPENS NOVEMBER, 2015

FEES

- **\$250** students/trainees from McGill University and the MUHC
- **\$750** other students/trainees
- **\$750** applicants from low and middle income countries
- **\$2,000** industry applicants
- **\$1,250** all other applicants

NOTES

- Participants may apply for a maximum of two courses which do not interfere with each other.
- Payment information will be provided upon confirmation and acceptance of your application. Please do not make any travel arrangements until your application has been accepted.
- Travel support is available for participants from low and middle income countries. Requests for support will be evaluated by the course directors.
- Cancellation and refund policy can be found on the course website.
- Fees are subject to change. Please consult the website for the most up-to-date fee schedule.



Join us on McGill's beautiful downtown Montreal campus

2016 SUMMER INSTITUTE IN INFECTIOUS DISEASES AND GLOBAL HEALTH PARTNERS

HOSTED BY:



GLOBAL HEALTH PROGRAMS
PROGRAMMES DE SANTÉ MONDIALE

PARTNERS:



J.D. MacLean Centre for Tropical Diseases at McGill
Centre J.D. Maclean pour les Maladies Tropicales à McGill



Research Infectious Diseases and Immunity in Global Health Program
Improving Global Health through Research



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McGill Summer Institute in Infectious Diseases and Global Health



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Phone: 514-398-5345

Summer Institute Director
Madhukar Pai, MD, PhD
Course Director
McGill Global Health Programs
globalhealth@mcgill.ca

Participants in the 2015
TB Research Methods
Course. Five courses will be
offered in 2016 -Join us!



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