

"Understanding molecular data – from nucleotides to molecular-based surveillance and source attribution"

November 18-20, 2013

Faculty of Veterinary Medicine, Université de Montréal

Workshop Facilitators:

Dr. Petra Muellner, Epi-interactive, New Zealand

Dr. Andres Perez, Center for Animal Disease Modeling and Surveillance, UC Davis, US

Why this course?

The availability of molecular tools has increased dramatically and their wider availability presents a unique opportunity to increase our understanding of infectious disease dynamics at the population level. Epidemiological analysis of molecular data presents many interesting challenges, but can also generate a high-resolution understanding of the epidemiology of infectious diseases of high practical value.

At the end of this workshop, participants will have a broad understanding of molecular techniques and how they could help them answer specific research questions. Moreover, they will be able to base their analyses of molecular data on sound epidemiological concepts taking into account both molecular- and population-level information.

Who is this course for?

This course is for everyone with an interest in epidemiological and laboratory concepts underpinning the use of molecular epidemiology, and interested in learning how molecular tools can complement studies of infectious disease. Existing experience with molecular methods would be beneficial but is not essential.

Please note, this course will not provide detailed content on phylogeny or population genetics or a general introduction to epidemiology but is meant as a first introduction to the analysis and interpretation of molecular data for people with existing experience in epidemiology (i.e. those already familiar with statistical modelling, biases, and causal inferences).

Course details

The course will run from 9am – 5pm on all three days. We will teach using an interactive combination of presentations, exercises and group discussions.

Day 1

The first day of this workshop will focus on the basics. We will look at the underlying principles of molecular epidemiology and review the basic concepts of molecular biology, including an overview of different typing approaches. This will include topics of specific relevance to viruses such as the quasi-species model. We will present and discuss databases for molecular data and their value to epidemiological investigations.

Day 2

On the second day case examples and exercises on Foot and Mouth Disease Virus, Avian Influenza and vesicular Stomatitis Virus will be used to illustrate the spatial analysis of viral typing

data and how genetic changes in viruses can be used to inform disease control. We will also highlight the importance of adhering to epidemiological principles and present a step-wise approach to the analysis of molecular data.

Day 3

The last day will focus on molecular-based surveillance and approaches to source attribution using a *Campylobacter jejuni* case study. We will illustrate key components of molecular-based surveillance and show the differing requirements for outbreak investigations and surveillance/source attribution. The group will work through an example dataset and apply the different analytical techniques and critical appraisal skills acquired during the course.

What do I need to bring along?

Participants will need to bring their own laptop. We might ask you to install specific software but this will be confirmed closer to the date.

Venue

Room 2950, Main building
Faculty of Veterinary Medicine, Université de Montréal,
3200 rue Sicotte, St-Hyacinthe, QC, Canada,
J2S 2M2

Registration fees

Members of the GREZOSP: \$450 for professionals, \$250 for students

Others: CAD\$650 for professionals, CAD\$450 for students

The registration fee includes admission, course material, and refreshment breaks each day.

Registration numbers are limited and will be accepted on a first come, first served basis. Please register early to secure your place.

Accommodation

Holiday Inn Express Hotel & Suites Saint-Hyacinthe
1500 rue Johnson Est, Saint-Hyacinthe, QC J2S 7K7
Telephone: (450) 251-1111

A block of rooms at a special rate of \$100/night (single or double occupancy, breakfast included) will be reserved until October 17th 2013. Please mention the Université de Montréal Molecular-epi Workshop when booking.

Contact

Prof. Simon Dufour: simon.dufour@umontreal.ca

Dr. Petra Muellner: petra@epi-interactive.com

Registration Form – Molecular Epidemiology Workshop

“Understanding molecular data – from nucleotides to molecular-based surveillance and source attribution”

November 18-20, 2013

Faculty of Veterinary Medicine, Université de Montréal

PARTICIPANT NAME: _____

ORGANIZATION: _____

EMAIL: _____

REGISTRATION FEES (Please check one):

Members of the GREZOSP:

- \$250 (students)
 \$450 (professionals)

Others:

- \$450 (students)
 \$650 (professionals)

CHEQUES MUST BE MADE PAYABLE TO Université de Montréal

PLEASE SEND THIS FORM ALONG WITH YOUR PAYMENT TO:

ANNIK L'ESPÉRANCE
FACULTÉ DE MÉDECINE VÉTÉRINAIRE – UNIVERSITÉ DE MONTRÉAL
C.P.5000
ST-HYACINTHE, QC, CANADA
J2S 7C6

FOR QUESTIONS REGARDING REGISTRATION PLEASE CONTACT:

ANNIK.LESPERANCE@UMONTREAL.CA

Fax: (450) 778-8128

Phone: (450) 773-8521 ext: 8619

Thank you!