COURSE DESCRIPTION

This course will review different aspects of the human arboviruses infections. In the mornings we will have lectures on clinical, epidemiologic and laboratory diagnostic tests of these infections.
In the afternoons practical sessions will cover serologic and molecular methods of diagnostics, as well viral culture and interpretation of the results observed according to the different melhods.
The course will be delivered by a group of experts on arboviruses from Brazil and United States of America, through a dynamic mix of presentations, practical sessions and case scenarios .

COURSE COORDINATORS: Maria Cássia Mendes Correa, Maria Cristina D.S. Fink, Florence Pradel, Gláucia Baccala, José Eduardo Levi

FACULTY MEMBERS: Maurício Nogueira FAMERP/SP; Ester Sabino IMT-USP/SP; Clarisse Machado IMT-USP/SP; José Eduardo Levi IMT-USP/SP; Fernanda Malta IMT/SP; Maria Cassia Mendes Correa

LAB. PRACTICE TEAM:
José Eduardo Levi, Tania Regina Tozetto Mendoza; Lucy Santos Vilas Boas; Alvina Clara Félix; Nathalia Santiago; Anderson Vicente de Paula; Ana Carolina Mamana; Noely Evangelista Ferreira

TARGET AUDIENCE

-10 laboratory staff, doctors, nurses or any graduates in life science with relevant curriculum or professional experience in Latin America, who might be involved in the identification, diagnosis or treatment of patients with arbovirus infections.
A maximum of 50 participants for theorical course and 10 participants for practical training, will be selected after application review.

Period : March 25-29th 2019

LOCATION The course will be held at **Tropical Medicine Institute, Sao Paulo University.**

ACCOMODATION-Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo

TIME/ HEURE: 08:00 - 18:30

ENROLLMENT IS LIMITED TO 10.

Expected knowledge prior to the course:

- Routine molecular techniques theoretical and practical background
- Serology theoretical background

Pre-course background reading will be provided

PROGRAM DESCRIPTION

Clinical-Epidemiological Program

LEARNING OBJECTIVES

- To be aware of the impact of arboviruses in terms of global public health
-To understand the role of mosquitoes and non-primates in the spread of arboviruses worldwide
- To understand the origin and spread of Zika virus;
- To discuss the Zika neurologic syndrome and the importance of diagnostic for pregnant woman;
- To learn the spectrum of clinical manifestations associated with the different arboviruses;

Molecular Biology - Program

LEARNING OBJECTIVES

- To understand the complexity of the Arboviruses genetic diversity (Flaviruses and Alphaviruses);
- To be aware of the adequate sampling and the optimal samples required for molecular test at different phases of disease;
- To be aware of molecular techniques available for diagnostic of the main arboviral infections;
- To get insights on molecular based experimental design (primer design; conventional and real time PCR);
- Overview on sequencing and phylogenetic methods used in epidemiological studies
- To provide a basic introduction to the field of phylogenetics, with an emphasis on flavivirus phylogeny;
-Overview on the best genes to answer the key questions on phylogenetics: What genes/regions should I use to build a phylogeny?
-To learn how to read and interpret a flavivirus simple tree;
-To describe the applications of phylogenetics;

Molecular Biology - Practical programme

1. Real time PCR to detect 4 arboviruses: dengue, zika, chkv and yellow fever
2. Real time Data analysis (items 2 and 3 – 3 h class)

Serology - Program

LEARNING OBJECTIVES

- To understand the principles and limitations of the different serological assays available for arboviral diagnosis;
- To learn about cross-reactivity in serology testing;
- To learn about the performance observed on the different assays;

Serology - Practical Program

- Serological methods to be covered:

EIA with distinct antigenic compositions and formats; Immunofluorescence (IF);
Interpretation of serological results
Plaque Reduction Neutralization Test (PRNT)