



Practical and Theoretical Course on Arbovirus Diagnostics

March 25-29, 2019

Virology Laboratory/ LIM-52 –Tropical Medicine Institute, Sao Paulo University

PROGRAM AT-A-GLANCE

	March 25, Monday		March 26, Tuesday		March 27, Wednesday		March 28 Thursday		March 29, Friday
Morning		8:30 9:45	PCR and Real-Time PCR. <i>José Eduardo Levi/IMT-USP</i> <i>Viral RNA extraction</i>	8:00 8:45	Role of mosquitos on arboviruses spread and control	8:00 9:00	Transmission of arboviruses Arboviruses and Sexual Transmission	9:00 10:30	Critical Analysis Of Arbovirus Diagnostic Tests <i>José Eduardo Levi/IMT-USP</i> <i>Viral RNA extraction</i>
8:00-8:10	Opening Welcome <i>Esther Sabino - IMT</i>	9:45 10:30	Phylogeny of Alpha and Flaviviruses: implications for diagnostic assays. <i>Camila Malta Romano/IMT-USP</i>	8:45 9:30	Role of non-human primates in the epidemiology of arboviruses. <i>Maurício Nogueira/FAMERP-SP</i>	9:00 9:35	Viral Epidemics and Hepatitis -Zika, Yellow Fever, Dengue and Chikungunya <i>Cássia Mendes Correa /IMT-USP</i>	10:30 13:00	Evaluation of the training course and Concluding comments <i>Florence Pradel – Dudi Levi</i>
8:10 8:30	– <i>Florence Pradel -Fondation Mériex</i>						Yellow Fever in Brazil- Lessons Learned From Severe Cases		<i>Cassia Mendes Correa</i>
8:30 8:40	Course aims and structure – <i>Cassia Mendes Correa -Virology Laboratory</i>					9:35 10:00			
8:40-9:10	Arboviruses as a Global Health Threat –	10:30-11:00	Coffee Break	9:30 10:00	Coffee Break	10:00 10:30	Discussion		
9:10-10:10	Natural History of Zika Infection.	11:00 11:30	Sequencing technologies and viral discovery.	10:00 10:45	Treatment and Vaccines for arboviruses.	10:30 11:00	Coffee Break		

			<i>Ester Sabino/</i>						
10:10-10:40	Coffee Break								
10:40-11:40	Principles of serological assays	11:30-12:00	Discussion	10:45-11:30	NS1 EIA	11:00-11:35	Arboviruses and Immunossupression		
11:40-12:00	Discussion						<i>Clarisse Machado/</i> <i>IMT-USP</i>		
Lunch				11:30-12:00	Discussion	11:35-12:00	Discussion		
13:30-18:00	Serology: Zika EIA / IFA Yellow Fever	13:30-18:00	PRNT/Viral Culture		NS1 EIA		Real-Time PCR		

COURSE DESCRIPTION

This course will review different aspects of the human arboviruses infections. In the mornings classes (theoretical part of the course) we will have lectures on clinical, epidemiologic and laboratory diagnostic tests of these infections.

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 methods.

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.

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 theoretical course and 10 participants for practical training, will be selected after application review.

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; Camila Romano IMT-SP/SP; José Eduardo Levi IMT-USP/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

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: 08:00 - 18:00

ENROLLMENT IS LIMITED TO 50.

ATTENDANCE GRANTS: Fondation Mérieux will provide 10 attendance grants for selected participants for the practical training. The grant for the practical training will cover the registration fee, travel expenses, accommodation, course materials and meals for the full period of the course. Attendance grants will be provided to all selected 10 candidates. The grant for the morning course will cover only registration fee and course materials. **REGISTRATION PROCEDURE** The application must contain the 3 following documents:

- A cover letter presenting the activity carried out or to be developed requiring knowledge on flavivirus diagnosis
- A letter or the supervisor from the home institution
- A detailed CURRICULUM VITAE
- Please apply before 3 February 2019.

The documents have to be sent by email before February 3, 2019, to: workshop.arbovirus2019.imt@usp.br

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Course aims and structure

Expected knowledge prior to the course:

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

1-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;

2-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;

Practical Program

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)

3-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;

4-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)



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