



# Arboviruses: A Global Public Health Threat

## Les Pensières Center for Global Health

### Veyrier-du-Lac - France

#### 20-22 June 2018



#### Steering Committee:

- Duane Gubler
- Mauricio Lacerda Nogueira
- Jacques Louis
- Christopher Nelson
- Valentina Picot
- Usa Thisyakorn
- In-Kyu Yoon
- Cindy Grasso, Event Coordinator



#### Background

In retrospect, announcements of a dengue pandemic in the 1990's were a sentinel call to action in the fight against a range of emerging and re-emerging arboviruses.

With the recent outbreak of neurological disorders and neonatal malformations associated with zika virus in Latin America, the yellow fever outbreaks in Angola and Brazil, West Nile Virus in North America, the not-too-distant emergence from sub-Saharan Africa and global spread of chikungunya virus with a relatively recent arrival in the Americas, and the on-going and deepening dengue pandemic in the tropics and especially Asia, arboviruses and specifically flaviviruses are in the news and at the top of social, political and public health agendas.

These events establish an urgency and raise awareness of the need for integrated control and prevention strategies.

These strategies focus on vector control, environmental management, personal protection, social mobilization and political will, case ascertainment and management, surveillance including laboratory confirmation, and vaccination.

It is widely recognized that no single strategy alone can fully address the problem. Timely access to clinical services and appropriate care can reduce mortality dramatically. Vaccines are widely available to protect against Japanese encephalitis and yellow fever. The first dengue vaccine was licensed in 2015 and several more candidates are under development. Zika vaccine candidates are in early stages of development and progressing with full support. While diagnostics are available for surveillance and research, recent events have highlighted the need for differential diagnostics, and the need for point-of-care rapid diagnostic tests. Following the application of rigorous evaluations, there is increasing awareness of the efficiency of various prevention strategies against disease. Progress is being made.

Urbanisation, poverty and international trade and travel are widely recognized as contributors to these emerging and re-emerging arboviruses and the diseases they cause. The impact of climate change is also widely touted, although the relationship is complex.

The aim of this meeting is to raise awareness and advance the discussion on these topics.

## Scientific programme

### Wednesday, June 20<sup>th</sup>, 2018

17:00-18:00	Registration
18:00-18:20	Welcome address <i>Fondation Mérieux</i>
18:20-19:00	Key-note address: Present and future arboviral threats: an overview <i>Duane Gubler</i>
19:00	Welcome dinner



### Thursday, June 21<sup>st</sup>, 2018

#### Session 1 Epidemiology, Diagnostic and Surveillance Chair: Usa Thisyakorn



08:30-08:50	Surveillance for arboviral diseases <i>Duane Gubler</i>
08:50-09:05	Discussion
09:05-09:25	Yellow fever: the current Brazilian outbreak and response <i>João Bosco Siqueira Jr</i>
09:25-09:40	Discussion
09:40-10:00	The interplay between different flaviviruses: overview and results from Brazil <i>Mauricio Lacerda Nogueira</i>

10:00-10:15  
10:15-10:45

Discussion  
Coffee Break

## Session 2

**Disease update: emphasis on the example of Zika**

**Chair: Mauricio Lacerda Nogueira**

10:45-11:05 Zika virus transmission as an endemic disease in Thailand

*Rome Buathong*

11:05-11:20

Discussion



11:20-11:40

Evolution of emergence and expansion of Zika virus; difference from Dengue and Chikungunya

*Nikos Vasilakis*

11:40-11:55

Discussion

11:55-12:15

The complex relationship between the emerging flaviviruses: Dengue and Zika

*Michael Gaunt*

12:15-12:30

Discussion

12:30-14:00

Group Picture and Lunch

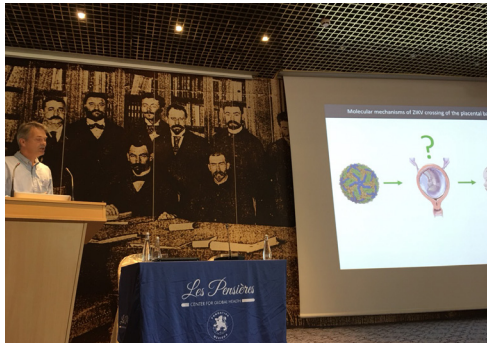
14:00-14:20

Brazilian contributions to the knowledge of Zika virus infection

*Patricia Brasil*

14:20-14:35

Discussion



14:35-14:55

Stress-induced unfolded protein response contributes to Zika virus-associated microcephaly

*Marc Lecuit*

14:55-15:10

Discussion

15:10-15:30

Progress and hurdles to a safe and effective Zika vaccine

*Anna Durbin*

15:30-15:45

Discussion

15:45-16:15

Coffee break

16:15-16:35

The origins and catalyst for formation of CEPI; CEPI's priorities

*George Thiry*

16:35-16:50

Discussion

16:50-17:10

EU-Research Programmes on Zika

*Annelies Wilder-Smith*

17:10-17:25

Discussion

19:00

Dinner



**Session 3**  
**Vectors biology and control**

**Chair: Nikos Vasilakis**

8:30-9:00 Overview of *Aedes aegypti* biology and interactions with dengue and Zika viruses

*Louis Lambrechts*

9:00-9:15 Discussion

9:15-9:35 Wolbachia: how to optimise and sustain its promise of control of *Aedes* and *Aedes*-borne viruses

*Scott Ritchie*

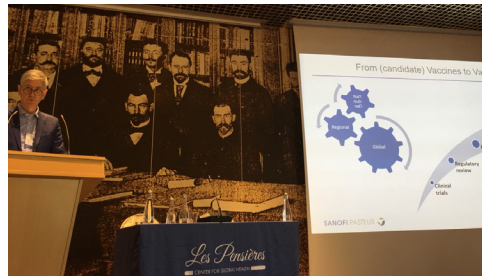
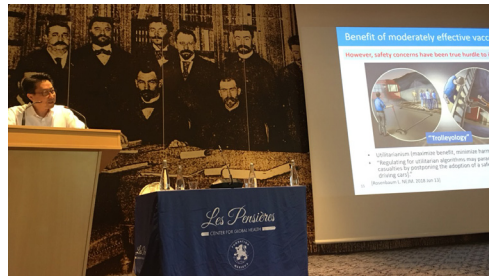
9:35-9:50 Discussion

9:50-10:20 Coffee break



**Session 4**  
**Dengue Vaccines**

**Chair: Duane Gubler**



10:20-10:40 Dengue vaccines: status and future

*In-Kyu Yoon*

10:40-10:55 Discussion

10:55-11:15 CYD-TDV - Dengvaxia® - clinical update

*Christopher Nelson*

11:15-11:30 Discussion

11:30-11:50 The first licensed tetravalent dengue vaccine: deliberations on its use

*Annelies Wilder-Smith*

11:50-12:05 Discussion

12:15-14:00 Lunch



14:00-14:20 Dengue diagnostics update:

- Differential diagnostics for surveillance and research,
- point-of-care rapid diagnostic tests to support clinical services and screening

*Elizabeth Hunsperger*

14:20-14:35 Discussion

14:35-14:45 Rapid and ultrasensitive detection of pathogens for early and late post-exposure countermeasures

*Francisco Veas*

14:45-14:50 Discussion

14:50-15:00 Concluding comments Steering Committee

15:00 End of the meeting