INSTITUT CARNOT Pasteur MI

*Department of*

**Parasites and Insect Vectors**

Institut Pasteur

**23 & 24 November 2015**

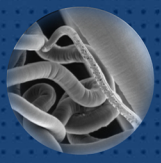
# Parasitology in the 21st century

**Institut Pasteur, Paris**

*Keynote speakers:*

Carolina V. **Barillas-Mury**

Piet **Borst**

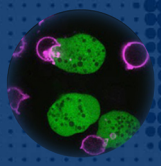


*Speakers:*

Cyrille **Botté**

Markus **Engstler**

Richard **Grencis**

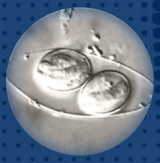


Michael **Grigg**

Mohamed-Ali **Hakimi**

Cynthia **He**

Matthew **Higgins**



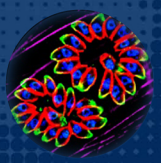
David **Horn**

Patricia **Johnson**

Shaden **Kamhawi**

Hugo **Lujan**

Julius **Lukeš**



Geoff **McFadden**

Annette **MacLeod**

Bill **Petri**

Frédéric **Simard**

Isabelle **Tardieux**

Till **Voss**

Charles **Wondji**

# PROGRAMME

## Monday 23 November

8:30 **Introduction** by Ken Vernick, Director of the Department PIV

**Practical information** by Philippe Bastin, symposium organiser

### SESSION 1 Fighting resistance in parasites and in insects

Chair: Odile Puijalon

8:45 **Geoff McFadden**
Resistance to the common malaria drug atovaquone cannot be transmitted

9:25 **Frédéric Simard**
Novel Opportunities for Vector Control in a Changing World

10:05 **Charles Wondji**
Signatures of selective sweeps in metabolic resistance to insecticides

10:45 *Coffee break*

### SESSION 2 Parasites in the intestine: a spectrum of behaviours

Chair: Philippe Bastin

11:10 **Bill Petri**
Environmental and genetic factors regulating invasion and killing by *Entamoeba histolytica*

11:50 **Richard Grencis**
Whipworm infection: Modulation of the intestinal microbiome, within and without

12:30 **Julius Lukeš**
Are human intestinal eukaryotes true parasites or rather commensals?

13:15 *Lunch*

### SESSION 3 Doors for escape: Antigenic variation

Chair: Chetan Chitnis

14:40 **Till Voss**
The epigenetics of antigenic variation and sexual commitment in the malaria parasite *Plasmodium falciparum*

15:20 **David Horn**
Antigenic variation in trypanosomes: VSG control by recombination and allelic exclusion

15:50 **Hugo Lujan**
Development of an oral vaccine platform based on protective and adjuvant properties of surface proteins of the intestinal parasite *Giardia lamblia*

16:30 *Coffee break*

### KEYNOTE LECTURE

Chair: Artur Scherf

17:00 **Piet Borst**
Base J, its biosynthesis and function

# Tuesday 24 November

8:30 **Introduction** by Christian Bréchot, General Director of the Institut Pasteur

## SESSION 4 Parasites tuning their hosts

Chair: Rogerio Amino

8:40 **Ali Hakimi**
Beyond the vacuole border: *Toxoplasma* effectors co-opt the host (epi)genetic program

9:20 **Shaden Kamhawi**
Unraveling the virulence of *Leishmania* transmission by vector sand flies

10:00 **Patricia Johnson**
Molecular mimicry: a *Trichomonas vaginalis* homologue of a host cytokine activates human pro-inflammatory and anti-apoptotic pathways

10:40 *Coffee break*

## SESSION 5 Unique molecular and cellular features of parasites

Chair: Gerald Spaeth

11:00 **Matthew Higgins**
Structural insights into the interactions at the heart of severe malaria

11:40 **Cyrille Botté**
Membrane biogenesis and role of the apicoplast in Apicomplexa parasites

12:20 **Cynthia He**
Cryo-Electron Tomography of genetically engineered mini *Trypanosoma brucei*

13:00 *Lunch*

## SESSION 6 Parasite genetics and evolution

Chair: Luis Quintana-Murci

14:00 **Annette McLeod**
An asexual revolution: population genomics reveals the origin of human infective trypanosomes

14:40 **Michael Grigg**
Genetic Exchange, Surface Antigens and Inflammasome Sensors Activated by Protozoan Parasites

## SESSION 7 The how and whys of parasite motility

Chair: Philippe Bastin

15:20 **Isabelle Tardieux**
*Toxoplasma* high-speed motor(s) and the force(s) operating at the host cell door: a key dynamic step on the way to its indoor niche

15:50 **Markus Engstler**
Always on the move – towards a mechanobiology of trypanosome motility

16:30 *Coffee break*

## KEYNOTE CLOSING LECTURE & CLOSING REMARKS

Chair: Ken Vernick

17:00 **Carolina Barillas-Mury**
*Plasmodium* Evasion of Mosquito Immunity and Malaria Globalization: The Lock and Key Theory

18:00 **Closing remarks** by Ken Vernick, Director of the Department of Parasites and Insect Vectors