

**INTRODUCTORY TRAINING WORKSHOP  
of the LabEx 'PARAFRAP'  
Montpellier, October 21<sup>st</sup> - 31<sup>st</sup>, 2013  
Laboratory of Parasitology-Mycology, University and CHU of  
Montpellier / CNRS UMR 5090 / IRD 224**

*Organised by Pr. Patrick BASTIEN and Slavica STANOJCIC  
The workshop will be led by Sabrina MARION & Patrick BASTIEN  
Practical demonstrations organised by Yvon STERKERS, Laurence BERRY,  
Sabrina MARION & Maryse LEBRUN*

**With the kind support of SANOFI® for the "Drug development and world of  
enterprise" day**

**Speakers** (by alphabetical order) : Michael BARRETT (Glasgow), Michael BOSHART (Munich), Frédéric BRINGAUD (Bordeaux), Marie-France CESBRON (Grenoble), Elisabeth DAVIOUD-CHARVET (Strasbourg), Alain DESSEIN (Marseille), Mohamed-Ali HAKIMI (Grenoble), Gordon LANGSLEY (Paris), Michael LANZER (Heidelberg), Maryse LEBRUN (Montpellier), Françoise LEVENE (SANOFI®), Jose Juan LOPEZ RUBIO (Paris), Sabrina MARION (Lille), Laurent MEIJER (MAN-ROS THERAPEUTICS®), Etienne PAYS (Bruxelles), Sylviane PIED (Lille), Derrick ROBINSON (Bordeaux), Olivier SILVIE (Paris), Yvon STERKERS (Montpellier), Henri VIAL (Montpellier)

**Special thanks to Martine BONNEFOY (Univ. Montpellier), Nicole Devassine (IBL, Lille) and Joyce HOKAYEM (Univ. Lille) for their help in the organisation of this event**



**INTRODUCTORY WORKSHOP of the LabEx 'PARAFRAP'**  
**Montpellier, October 21<sup>st</sup> - 31<sup>st</sup>, 2013**

**Monday, October 21<sup>st</sup> – Parasite cell biology**

Morning session (*Hospital Lapeyronie, classroom Lap 5*)

09:00 – 09:30 Introduction to the ParaFrap workshop –Patrick BASTIEN

09:30 – 11:00 Actin and cellular trafficking: molecular and functional diversity –Sabrina MARION

11:00 – 12:10 **Movie: Apicomplexa and the apicoplast** (1h10)

12:10 – 14:00 Lunch time

Afternoon session (*Hospital Lapeyronie, classroom Lap 2*)

14:00 – 15:30 Invasion in Apicomplexa parasites –Maryse LEBRUN

15:30 – 17:30 Paper presentation by Fabien SINDIKUBWABO

Paper: [Mueller et al. – The \*Toxoplasma\* protein ARO mediates the apical positioning of rhoptry organelles, a prerequisite for host cell invasion.](#)

with interactive discussion with the PIs about the presented paper

**Tuesday, October 22<sup>nd</sup> – Host-Parasite Relationships**

Morning session (*Hospital Lapeyronie, classroom Lap 5*)

09:00 – 10:30 Antigenic variation in *Plasmodium falciparum*: from epigenetic regulation to the generation of diversity –Jose Juan LOPEZ RUBIO

10:45 – 12:15 *Toxoplasma gondii* secretes effector proteins to co-opt its host cell genome expression and to promote sustained parasitism –Mohamed-Ali HAKIMI

12:15 – 14:00 Lunch time

Afternoon session (*Hospital Lapeyronie, classroom Lap 5*)

14:00 – 15:30 Paper presentation by Anna ALBISETTI

Paper: [Regev-Rudzki et al. – Cell-cell communication between malaria-infected red blood cells via exosome-like vesicles.](#)

with interactive discussion with the PIs about the presented paper

15:45 – 17:15 Paper presentation by Valeria BELLINI

Paper: [Rosowski et al. – Strain-specific activation of the NF-kappaB pathway by GRA15, a novel \*Toxoplasma gondii\* dense granule protein.](#)

with interactive discussion with the PIs about the presented paper

17:30 – 19:30 **Demonstration – *Toxoplasma gondii*** (*University Montpellier 2, Batiment 24, MRI microscopy platform*)

**Wednesday, October 23<sup>rd</sup> – Parasite cell biology**

Morning session (*Hospital Lapeyronie, classroom Lap 5*)

09:00 – 10:30 How prostaglandin signalling activates PKA and contributes to virulence of *Theileria*-transformed macrophage –Gordon LANGSLEY

10:45 – 12:15 Host Immunity Subversion by Trypanosomes, and the Evolution of cAMP-PKA Signaling – Michael BOSCHART

12:15 – 14:00 Lunch time

Afternoon session (*Hospital Lapeyronie, classroom Lap 2*)

14:00 – 16:00 Paper presentation by DRAHEIM Marion.

Paper: [Collins CR et al. – Malaria parasite cGMP-dependent protein kinase regulates blood stage merozoite secretory organelle discharge and egress.](#)

with interactive discussion with the PIs about the presented paper

16:10 – 16:45 **Movies: Malaria (21 min)** (Dept. of Parasitology and Mycology)

17:00 – 19:30 **Demonstration – Plasmodium falciparum** (Dept. of Parasitology and Mycology)

### **Thursday, October 24<sup>th</sup> – Metabolism and Drug design**

Morning session (*Hospital Lapeyronie, classroom Lap 5*)

09:00 – 10:30 Metabolic adaptation of *Trypanosomes* to growth conditions –Frédéric BRINGAUD

10:45 – 12:15 Using metabolomics to unravel how drugs work against parasites –Michael BARRETT

12:15 – 14:00 Lunch time

Afternoon session (*Dept. of Parasitology and Mycology, meeting room*)

14:00 – 15:00 Subversive substrates of trypanothione reductase and lipoamide dehydrogenase from *Trypanosomes*: correlation between redox-cycling, NADPH consumption, and trypanocidal activity – Elisabeth DAVIOUD-CHARVET

15:00 – 16:30 Paper presentation by Gigliola ZANGHI

Paper: Roldán et al. – Lipoamide dehydrogenase is essential for both bloodstream and procyclic *Trypanosoma brucei*.

with interactive discussion with the PIs about the presented paper

16:45 – 18:00 Paper presentation by Liwen FENG

Paper: Vincent IM et al. – Untargeted metabolomics reveals a lack of synergy between nifurtimox and eflornithine against *Trypanosoma brucei*.

with interactive discussion with the PIs about the presented paper

### **Friday, October 25<sup>th</sup> – Drug development and the world of enterprise – organised by Henri VIAL with the kind support and housing by SANOFI®**

Morning session (*SANOFI, Montpellier*)

09:00 – 09:15 Welcome – Françoise LEVENE, Infectious Diseases TSU Project Director

09:15 – 09:30 Sanofi R&D Montpellier site overview – R. Pignol, Site Scientific Director

09:30 – 10:30 Overview of medicinal drugs preclinical and clinical development – Françoise LEVENE, Infectious Diseases TSU Project Director

10:45 – 12:30 Visit of laboratories at SANOFI, Montpellier

° Clinical investigation products building (45 min) – P. AMIEL-FOURTAS, Clinical Supplies

° Development of drug substance or drug product (45 min) – N. BARGMANN-LEYDER or P. RIVIÈRE, Analytical Development

12:30 – 13:30 Lunch time (*SANOFI*)

Afternoon session (*SANOFI, Montpellier*)

14:00 – 15:30 A real-life example of enterprise dedicated to targeting protein kinases for human health – Laurent MEIJER

15:30 – 17:30 Paper presentation by Shuai DING

Paper: Rottmann et al. – Spiroindolones, a potent compound class for the treatment of malaria.

with interactive discussion with the PIs about the presented paper

18:00 – 19:15 **Movie: Parasite genome databases and database mining (1h15)** (*Dept. of Parasitology and Mycology, meeting room*)

### **Monday, October 28<sup>th</sup> – Host-Parasite Relationships**

Morning session (*Hospital Lapeyronie, classroom Lap 5*)

09:00 – 10:30 Molecular dialogue between African trypanosomes and Man –Etienne PAYS

10:45 – 12:15 Protection from malaria by haemoglobinopathies: a new molecular understanding –Michael LANZER

12:15 – 14:00 Lunch time

Afternoon session (*Hospital Lapeyronie, classroom Lap 2*)

14:00 – 15:30 Paper presentation by Maude LEVEQUE

Paper: Cyrklaff M et al. – Hemoglobins S and C interfere with actin remodeling in *Plasmodium falciparum*-infected erythrocytes.

with interactive discussion with the PIs about the presented paper

15:45 – 17:30 Paper presentation by Amandine GUERIN

Paper: Uzureau P et al. – Mechanism of *Trypanosoma brucei gambiense* resistance to human serum.

with interactive discussion with the PIs about the presented paper

## Tuesday, October 29<sup>th</sup> – Immuno-genetics

Morning session (*Hospital Lapeyronie, classroom Lap 5*)

09:00 – 10:30 Genetic dissection and function of the Toxo1 locus that directs the outcome of toxoplasmosis – Marie-France CESBRON

10:45 – 12:15 Use of human genetics in the study of parasites and parasitic diseases – Alain DESSEIN

12:15 – 14:00 Lunch time

Afternoon session (*Hospital Lapeyronie, classroom Lap 5*)

14:00 – 16:15 Paper presentation by Claire LAMBERT

Paper: Berghout et al. – Irf8-regulated genomic responses drive pathological inflammation during cerebral malaria.

with interactive discussion with the PIs about the presented paper

16:30 – 17:30 Movie: Leishmaniasis (15 min) and Sleeping sickness (45 min) (*Dept. of Parasitology and Mycology, meeting room*)

## Wednesday, October 30<sup>th</sup> – Host-Parasite Relationships

Morning session (*Hospital Lapeyronie, classroom Lap 5*)

09:00 – 10:30 Host-parasite interactions during malaria liver infection –Olivier SILVIE

10:45 – 12:15 Immune responses to parasite infection –Sylviane PIED

12:15 – 14:00 Lunch time

Afternoon session (*Hospital Lapeyronie, classroom Lap 5*)

14:00 – 16:00 Paper presentation by Kannan VENUGOPAL

Paper: Tavares et al. – Role of host cell traversal by the malaria sporozoite during liver infection.

with interactive discussion with the PIs about the presented paper

16:30 – 19:00 Demonstration – *Trypanosomatidae* and more parasites of medical importance (*Dept. of Parasitology and Mycology*)

## Thursday, October 31<sup>st</sup> – Parasite cell biology & genetics

Morning session (*Dept. of Parasitology and Mycology, meeting room*)

09:00 – 10:30 Genome organisation and genetics of *Trypanosomatids* –Yvon STERKERS

10:45 – 12:15 The unusual cell cycle of *Trypanosomatids* –Derrick ROBINSON

12:15 – 14:00 Lunch time

Afternoon session (*Dept. of Parasitology and Mycology, meeting room*)

14:00 – 16:00 Paper presentation by Lauriane SOLLELIS

Paper: Kelly et al. – Molecular and cellular characterization of an AT-hook protein from *Leishmania*.

with interactive discussion with the PIs about the presented paper

16:00 – 16:30 Farewell speech & feedback

19:30 – ..... Farewell dinner