



ANRS SYMPOSIUM “NEW TECHNOLOGIES TO ADVANCE HIV RESEARCH”

Institut Pasteur, Paris
4-5 OCTOBRE 2016

PROGRAM

Tuesday, October 4th

8h30 **WELCOME COFFEE**
9h30 Introduction
Jean-François Delfraissy, Director of the ANRS

Session 1: Visualization of Nuclear Organization and Deep Learning

Chairs: Olivier Schwartz, Institut Pasteur, Paris - **Christine Neuveut**, Institut Pasteur, Paris

9h45-10h15 **3D genome dynamics and gene expression control**
Peter Fraser, Nuclear Dynamics Programme, The Babraham Institute, Cambridge, United-Kingdom

10h15-10h35 **Resting CD4 T cell nuclear organization regulates HIV integration and expression**
Moncef Benkirane, Institut de Génétique Humaine, CNRS-UPR 1142, Montpellier, France

10h35-10h55 **Super-resolution imaging approaches for nuclear organization and beyond**
Christophe Zimmer, Institut Pasteur, Paris, France

10h55-11h20 **COFFEE BREAK**

Session 2: Systems Immunology

Chairs: Angela Ciuffi, Institute of Microbiology Lausanne University (CHUV-UNIL), Lausanne, Switzerland - **Rodolphe Thiébaud**, Inserm/Inria SISTM, VRI, Bordeaux, France

11h20-11h50 **Leveraging high throughput sequencing to assess the role of the vaginal microbiome and genital inflammation in HIV risk**
Douglas Kwon, Ragon Institute of MGH, MIT and Harvard, Cambridge, USA

11h50-12h10 **How gene expression profiling and systems biology is changing the way we define and study dendritic cell subset**
Marc Dalod, Cimi, Université de Marseille, France

12h10-12h30 **Defining the boundaries of a healthy immune response for a better understanding of disease**
Darragh Duffy, Institut Pasteur, Paris, France,

12h30-13h00 **SPECIAL LECTURE**
Detection of residual HIV DNA sequences in patients without evidence of infection
Didier Raoult, Faculté de Médecine, URMITE, Université de Marseille, France

13h00-14h30 **LUNCH**

Session 3: Technological Development and Scientific Advances

Chairs: Michaela Müller-Truttwin, Institut Pasteur, Paris - **Jean-Daniel Lelièvre**, Centre Inserm IMRB, Hôpital Henri Mondor, Créteil

14h30-14h50 **The intestinal epithelial tuft cells: from a forgotten cell type to a critical regulator of mucosal immune responses**
Philippe Jay, Institut de Génomique Fonctionnelle, CNRS UMR 5203, Inserm U1191, Université de Montpellier, France

14h50-15h10 **Exploring the links between cell metabolism and HIV-1 infection**
Asier Saez Cirion, Institut Pasteur, Paris, France



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15h10-15h30 **The center for innovation and technological research**
Jean-Christophe Olivo-Marin, Institut Pasteur, Paris, France

15h30-15h40 **In vivo imaging of infection and immunity**
Catherine Chapon, Infrastructure IDMIT (CEA-Inserm-ANRS- Institut Pasteur-Université Paris Sud-Bertin Pharma), France

SHORT TALKS

15h40-15h50 **Ultrasensitive HIV-1 p24 ELISA allows detection of single infected cells and reveals differences in induction of the viral reservoir by latency reversal agents**
Caroline Pereira Bittencourt Passaes, Institut Pasteur, Paris, France

15h50-16h00 **Argonaute proteins regulate HIV-1 multiply spliced RNA and viral production in a Dicer independent manner**
Sarah Gallois-Montbrun, Inserm U106, CNRS UMR8104, Université Paris Descartes, Institut Cochin, Paris, France

16h00-16h30 **COFFEE BREAK**

Session 4: Novel Techniques of Imaging: Cells, Virus, and Genes

Chairs: Monsef Benkirane, Institut de Génétique Humaine, CNRS-UPR 1142, Montpellier - **Clarisse Berlioz-Torrent**, Institut Cochin, Université Paris-Descartes, Paris

16h30-17h00 **Imaging of HIV maturation and early replication**
Hans-Georg Kräusslich, University Hospital, Heidelberg, Germany

17h00-17h20 **The 10th gene of HIV**
Olivier Gascuel, Unité Bioinformatique Evolutive (C3BI), USR 3756 CNRS, Institut Pasteur, Paris, Institut de Biologie Computationnelle, LIRMM-UMR-CNRS, Université de Montpellier, France

17h20-17h40 **Imaging infection in three dimensions - Correlative light electron microscopy of intercellular pathogens**
Jost Enninga, Institut Pasteur, Paris, France

SHORT TALKS

17h40-17h50 **Hunting down HIV-1 Gag proteins at the plasma membrane of human T lymphocytes using sptPALM/TIRF microscopy**
Delphine Muriaux, CPBS, CNRS, Montpellier, France

17h50-18h00 **Tracking CCR5 dynamics by live cell imaging**
Fanny Momboisse, Institut Pasteur, Paris, France

18h00-18h10 **HIV-1 cell-to-cell transmission to macrophages inserted in immunocompetent reconstructed urethral mucosa assessed by multidimensional imaging**
Fernando Real, Inserm U1016, CNRS UMR 8104, Université Paris Descartes, Institut Cochin, Paris, France

Session Posters and Reception



Wednesday October 5th

Session 5: Lessons from Cohorts and Novel Experimental Models

Chairs: Francis Barin, Université François Rabelais, CHU Bretonneau, Tours - Lisa Chakrabarti, Institut Pasteur, Paris

- 9h00-9h15 **ANRS HIV cohorts: strength and weakness**
Olivier Lambotte, Université Paris Sud, CHU Kremlin Bicêtre, France
- 9h15-9h30 **Cohorts and biobanks in chronic liver disease: new biological approaches and analyses**
Pierre Nahon, Hôpital Jean Verdier, Bondy, UMR 1162, Université Paris 13, Paris, France
- 9h30-9h40 **DISCUSSION**
- 9h40-10h00 **Challenges in translation from pre-clinical research to clinical practice**
Roger Le Grand, Infrastructure IDMIT (CEA-Inserm-ANRS- Institut Pasteur-Université Paris Sud-Bertin Pharma), France
- SHORT TALKS**
- 10h00-10h10 **Human Immune System (HIS) mice for modeling HIV infection**
Guillemette Masse-Ranson, Institut Pasteur, Paris, France
- 10h10-10h20 **NK cells: new players in B follicles during SIV infection**
Nicolas Huot, Institut Pasteur, CEA, France
- 10h20-10h30 **Biological properties of envelope glycoproteins derived from transmitted HIV-1 variants issued from transmission clusters**
Maxime Beretta, Université François Rabelais, Inserm U966, Tours, France
- 10h30-11h00 **COFFEE BREAK**

Session 6: System Biology: Bioinformatics, Biostatistics, Analysis

Chairs: Marc Dalod, Institut Pasteur, Paris - Jérémie Guedj, UMR 738, Institut Claude Bernard, Université Paris-Descartes, Paris

- 11h00-11h30 **PEACHi 2.0: Dynamics of proteo-transcriptomic response to HIV-1 infection**
Angela Ciuffi, Institute of Microbiology Lausanne University (CHUV-UNIL), Lausanne, Switzerland
- 11h30-11h50 **On the integrative analysis of big data in systems vaccinology**
Rodolphe Thiébaud, Inserm/Inria SISTM, VRI, Bordeaux, France
- 11h50-12h10 **The global challenge of analysis and visualization of multidimensional datasets**
Antonio Cosma, Commissariat à l'Énergie Atomique (CEA), Université Paris Sud 11, Inserm U1184, France
- SHORT TALKS**
- 12h10-12h20 **Deep resistance analysis of HIV transmission chains shows no impact on PrEP**
Stéphane Hué, London School of Economics, United-Kingdom
- 12h20-12h30 **DISCUSSION**



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SPECIAL LECTURE

Next generation sequencing to understand viral oncogenesis

Jessica Zucman-Rossi, Hôpital Européen Georges Pompidou, Inserm U674/1162, Paris Descartes, Paris, France

13h00-14h30

LUNCH

Session 7: Microfluidics and Single Cell Approaches

Chairs: Arnaud Moris, Hôpital de la Pitié-Salpêtrière, Université Pierre et Marie Curie, Paris - TBA

14h30-15h00

High-throughput single-cell analysis using droplet-based microfluidics: mapping humoral immune responses and other applications

Andrew Griffith, ESPCI, Paris Tech, France

15h00-15h20

Investigating HIV-specific CD4+ T cell responses through TCR clonotypic analysis and single-cell microfluidics

Lisa Chakrabarti, Institut Pasteur, Paris, France

SHORT TALKS

15h20-15h30

Simple method to monitor vaccine-induced Memory Follicular, Regulatory and effector T cell responses in peripheral blood

Nabila Seddiki, Inserm U955, Université Paris Est, Faculté de Médecine, VRI, Créteil, France

15h30-15h40

Mass cytometry and multiparametric single cell analysis of Non-Human-Primate (NHP) B cells for improved evaluation of vaccines candidates and HIV/SIV infection physiopathology

André Pozo-Rodriguez, Université Paris Sud, CEA, Inserm UMR 1184, IDMIT, VRI, France

15h40-15h50

Difference between mRNA-SEQ analyses reveal peripheral blood mononuclear cell immune response behind the extreme phenotype of HIV-1 control and non- progression

Francisco Diez Fuertes, AIDS Immunopathogenesis Unit, Instituto de Salud Carlos III, Madrid, Spain

15h50-16h00

DISCUSSION

16h00-16h30

SPECIAL LECTURE

Single cell analysis and advances in HIV reservoirs characterisation

Brigitte Autran, Hôpital de la Pitié-Salpêtrière, UPMC, Paris, France

16h30-17h00

Conclusion : TBC

17h00

COFFEE and ADJOURNEMENT

Scientific and Organizing Committee:

Francis Barin, Moncef Benkirane, Lisa Chakrabarti, Marc Dalod, Jean-François Delfraissy, Olivier Schwartz, Amalio Telenti, Rodolphe Thiébaud

ANRS: Livia Pedroza-Martins, Audrey Dumas, Marie-Christine Simon, Geneviève Bétouret