Keystone Symposia is pleased to present

Immune Activation in HIV Infection: Basic Mechanisms and Clinical Implications

Scientific Organizers:
Irini Sereti, Michaela Müller-Trutwin, Damian F.J. Purcell and Mauro Schechter

April 3–8, 2013 | Beaver Run Resort | Breckenridge, Colorado, USA

One major hallmark of HIV infection is chronic immune activation that promotes viral replication and drives CD4+ T cell depletion. The mechanisms leading to immune activation are not well understood, and strategies to dampen it are urgently needed. Immune activation in HIV infection can stem from foreign antigen stimulation, including HIV, microbial products and co-infections as well as compensatory homeostatic mechanisms. Continuous immune stimulation most likely creates a permissive environment for further viral replication, while temporarily allowing successful replenishment of the T-cell pool. Type I interferon, microbial translocation, activated (but ineffective) effector T cells, dysfunctional regulatory T cells and inadequate T helper 17 cells have all been suggested to play important roles in the cycle of activation, functional exhaustion and T-cell death that leads to immunodeficiency. In treated HIV infection, chronic immune activation persists and is implicated in non-infectious clinical complications of HIV that account for most of the morbidity and mortality in patients treated with anti-retroviral therapy. The meeting will share new insights of mechanisms of immune activation and its deleterious effects on HIV infection from transmission to chronic treated infection, and how this knowledge could potentially translate to treatment interventions. The meeting will integrate basic science (even beyond HIV), immunology, virology and clinical science into each session with the hope that participants will interact and be inspired for collaborative translational projects.

Plenary Session Topics:
> Molecular and Cellular Biology of Immune Activation
> HIV Transmission and Acute Infection
> Viral Reservoirs and Immune Dysfunction
> Mucosal Immunity and HIV
> Immune Activation and Co-Infections
> Viral and Host Genes and Genomics
> Viral and Cellular Aspects of Immune Activation and Aging Under Antiretroviral Therapy
> Future Directions in Immune Interventions

Global Health Travel Award Deadline: November 6, 2012
Abstract & Scholarship Deadline: December 3, 2012
Late-Breaking Abstract Deadline: January 3, 2013
Early Registration Deadline: January 29, 2013

Note: Scholarships are available to students and postdoctoral fellows and require a brief application and submission of an abstract. Short talk speakers will also be selected from abstracts. Global Health Travel Awards are for investigators from developing countries. Early registration saves US$150 on later fee. Information shown is subject to possible change.
**KEYSTONE SYMPOSIA**

**on Molecular and Cellular Biology**

**Immunology in HIV Infection: Basic Mechanisms**

**April 3-8, 2013 • Beaver Run Resort • Breckenridge, Colorado, USA**

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**Sponsored by**: Sangamo BioSciences, Inc. Part of the Keystone Symposia Global Health Series, supported by the Bill & Melinda Gates Foundation


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**WEDNESDAY, APRIL 3**

**Arrival and Registration**

**Welcome and Keynote Session**

*Michaela Müller-Trutwin*, Institut Pasteur, France

*Irini Sereti*, NIAID, National Institutes of Health, USA

**Welcome Remarks**

**Mary Carrington**, NIAID, National Institutes of Health, USA

* Effects of HLA-Class 1 Diversity on HIV control and the Art of Multitasking

**Michael M. Lederman**, Case Western Reserve University, USA

* Residual Immune Dysregulation Syndrome (RIDS) in Treated HIV Infection

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**THURSDAY, APRIL 4**

**Molecular and Cellular Biology of Immune Activation**

*Guido Silvestri*, Emory University School of Medicine, USA

*Marcus Altfeld*, Heinrich-Pette-Institute, Germany

**Charles R. Mackay**, Monash University, Australia

* Diet and Metabolite Sensing GPCRs Regulate Gut Homeostasis and Immune Responses

**Susan Moir**, NIAID, National Institutes of Health, USA

* Immunopathogenesis of B Cells in HIV Infection

**George Kassiotis**, Francis Crick Institute, UK

* Potential Mechanisms of Immune Activation in Immunodeficient Mice

**Frank Kirchhoff**, University of Ulm, Germany

* Possible Role of Viral Properties in HIV-Infected Immune Activation

**Gilad Doitsch**, J. David Gladstone Institutes, USA

* Short Talk: HIV Triggers Pyroptosis, an Intense Inflammatory Form of Programmed Cell Death, Promoting CD4 T Cell Depletion in Lymphoid Tissues

**Clovis Steve Palmer**, Burnet Institute, Australia

* Short Talk: Glucose Metabolism Is an Integral Process in CD4+ T Cell Activation and Inflammation in HIV-Infected Subjects

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**Workshop 1: Therapeutic Targets of IA**

*Peter W. Hunt*, University of California, San Francisco, USA

*Sharon R. Lewin*, University of Melbourne, Australia

*Marcus Altfeld*, Heinrich-Pette-Institute, Germany

*In vivo Treatment with a TLR7/9 Antagonist Reduces HIV-1-Associated Immune Activation in a Humanized Mouse Model of HIV-1 Infection*

**Mingjian Fei**, Genentech, USA

* The NAD+-Dependent Deacetylase SIRT1 as a New Regulator of T Cell Senescence in HIV Infection

**Joseph Hiatt**, NIAID, National Institutes of Health, USA

* Dynamic Interactions between CD4 and alpha4beta7 on Primary CD4+ T Cells Indicates a Novel Coupling of these Two Costimulatory Receptors

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**HIV Transmission and Acute Infection**

*Michaela Müller-Trutwin*, Institut Pasteur, France

*Anthony L. Cunningham*, Westmead Institute for Medical Research, Australia

**Thomas J. Hope**, Northwestern University, USA

* Identification and Characterization of the Initial Targets of Infection in Rhesus Macaque Sex Transmission Models

**Gabriella Scarlatti**, Global HIV Vaccine Enterprise, USA

* Early Events of HIV Transmission at the Intestinal Mucosa and Role of Dendritic Cells

**Soni Ramachandra Sankapal**, University of Pittsburgh, USA

* Short Talk: Unraveling Mechanism of HIV-1 Transmission across Mucosal Epithelia

**Sibylle Bernard-Stoecklin**, CEA, France

* Short Talk: Semen Leukocytes as “Trojan Horses:” Infected CD4+ T Cells and Macrophages Are Present in Semen at Every Stage of SIVmac251 Infection of Cynomolgus macaques

**Daniel Claiborne**, Ragon Institute of MGH, MIT, and Harvard, USA

* Short Talk: Viral Replicative Capacity Contributes Significantly to CD4 Decline Independent of Host Factors

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**FRIDAY, APRIL 5**

**Viral Reservoirs and Immune Dysfunction**

*Eric Hunter*, Emory University, USA

*Greg J. Towers*, University College London, UK

**Michael H. Malim**, King’s College London, UK

* Mechanism of Action of the Innate Antiviral Factor APOBEC3G

**Monsef Benkirane**, Institut de Genetique Humaine, France

* Regulation of Cellular Factors Involved in HIV Virus Gene Expression

**Damian F.J. Purcell**, University of Melbourne, Australia

* Mechanisms for Tat Expression in Virus Latency that Support T-Cell Activation

**Una O’Doherty**, University of Pennsylvania Medical Center, USA

* HIV Infected Resting CD4+ T Cells can Express HIV Proteins and be Subjected to CTL Clearance

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* Session Chair † Invited but not yet accepted

Program current as of October 1, 2019. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit [www.keystonesymposia.org/13D2](http://www.keystonesymposia.org/13D2).
John C. Tilton, Case Western Reserve University, USA
Short Talk: CD4+ Memory Stem Cells (Tscm) Are Productively and Latently Infected by CCR5- and CXCR4-Tropic HIV
Anne Hosmalin, Institut Cochin, Inserm U1016, Université Paris Descartes, France
Short Talk: Pro-Inflammatory M-DC8+ ("slan-DC") Monocyte Accumulation in HIV-1-Infected Patients

Mucosal Immunity and HIV
*Elena Martinelli, Population Council, USA
*Thomas J. Hope, Northwestern University, USA
Frederic D. Bushman, University of Pennsylvania, USA
The Human Microbiome in Health and Immunodeficient States
Jacob D. Estes, Oregon Health and Science University, USA
GI Damage and Immune Activation in SIV
Maria Rescigno, European Institute of Oncology, Italy
Short Talk: dendritic Cells in Microbe Interactions in the Gut
Mirko Paiardini, Emory University, YNPRC, USA
Homeostasis of CD4+ T Cell Subsets in HIV/SIV Infection

Poster Session 2
SATURDAY, APRIL 6

Immune Activation and Co-Infections
*Giuseppe Tambussi, San Raffaele Scientific Institute, Italy
*Michael M. Lederman, Case Western Reserve University, USA
Michael L. Dustin, University of Oxford, UK
Polarized Release and Retroviral Subversion of TCR-Enriched Microvesicles at the T Cell Immunological Synapse
Michaela Müller-Trutwin, Institut Pasteur, France
Innate Immune Responses in the Acute Phase of Non-Pathogenic SIVagm Infection
Mirko Paiardini, Emory University, YNPRC, USA
Homeostasis of CD4+ T Cell Subsets in HIV/SIV Infection

Workshop 2: Innate and Mucosal Immunity and their Interplay in HIV/SIV Pathogenesis
*Nicholas Funderburg, Ohio State University, USA
*Jeffrey D. Lifson, Leidos Biomedical Research, Inc., USA
Elizabeth A. Ihms, Johns Hopkins University, USA
Characterization of Plasma Microparticles during the Host Response to Retroviral Infection

Anthony L. Cunningham, Westmead Institute for Medical Research, Australia
The Microvesicle Component of HIV-1 Inocula Modulates Dendritic Cell (DC) Infection, Maturation, Adhesion to T Cells and Viral Transfer
Amy E. Baxter, University of Pennsylvania, USA
HIV-1 Transmission between Macrophages and T Cells: Consequences for Viral Pathogenesis
Lucie Barbu, Research Centre of the University of Montreal Hospital Centre, CRCHUM, Canada
Analysis of Myelomonocytic Populations during HIV Infection
Bruno Vaslin, CEA, France
Plasmacytoid DC Dynamics Tune IFNalpha Production during Acute SIV Infection in Cynomolgus macaques
Edwin Leansalu, Karolinska Institutet, Sweden
Activation, Exhaustion and Persistent Decline of the Anti-Microbial MR1-Restricted MAIT Cell Population in Chronic HIV-1 Infection
Richard M. Dunham, GlaxoSmithKline, USA
Immunologic Nonresponders to HAART Have Elevated Systemic Inflammation and Perturbed Intestinal Myeloid Populations
Irina Grishina, University of California, Davis, USA
SIV Induced Modulation of the Enteric Serotonergic Response Contributes to Chronic Immune Activation

Genetic and Immunological Regulation
*Mary Carrington, NCI, National Institutes of Health, USA
*Cristian Apetrei, University of Pittsburgh, USA
Philip Tarr, University of Basel, Switzerland
Genetic Associations of Non-Infectious Complications of HIV
Lars Pache, Sanford-Burnham Medical Research Institute, USA
Short Talk: Identification of Host Cell Mechanisms Restricting HIV-1 Replication
Rui Pedro Galão, King’s College London, UK
Short Talk: Mechanistic Insights into Proinflammatory Signaling Induced by Tetherin-Mediated Restriction of Retroviral Release
Alan J. Korman, Bristol-Myers Squibb, USA
Restoration of T Cell Function by Inhibition of Multiple Negative T Cell Regulators
Mathieu Angin, Institut Pasteur, France
Short Talk: Impairment of Regulatory T Cell Function Following HIV-1 Infection

Poster Session 3
SUNDAY, APRIL 7

Immune Activation in Chronic Infection
*Steven G. Deeks, University of California, San Francisco, USA
*Mauro Schechter, Universidade Federal do Rio de Janeiro, Brazil
Nabila Seddiki, Vaccine Research Institute and Université Paris-Est Créteil, France
Role of Regulatory T Cells in HIV Pathogenesis: What’s New?
Irini Sereti, NIAID, National Institutes of Health, USA
Biomarkers in HIV Infection

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Ivona Pandrea, University of Pittsburgh, USA
Therapeutic Interventions to Modulate Microbial Translocation, Immune Activation and Cardiovascular Comorbidities. Lessons from Non-Human Primate Models

Joel N. Blankson, Johns Hopkins School of Medicine, USA
Viral Reservoirs and Immune Activation Elite Suppressors

Sulgi Angela Lee, University of California, San Francisco, USA
Short Talk: Phenotypic CD8+ T Cell Defects May Persist in Elite Controllers Despite Viral Control

Karen M. Duus, Albany Medical College, USA
Short Talk: CIITA-Mediated Increased HIV Replication Efficiency Occurs via Two Distinct Cellular Mechanisms

Future Directions in Therapeutic Interventions
*Irini Sereti, NIAID, National Institutes of Health, USA
*Damian F.J. Purcell, University of Melbourne, Australia

Sharon R. Lewin, University of Melbourne, Australia
Clinical Trials for HIV Eradication: The Role of Immune Activation and Immunotherapies

Mauro Schechter, Universidade Federal do Rio de Janeiro, Brazil
Preventive Efforts, New Directions beyond Vaccines

Steven G. Deeks, University of California, San Francisco, USA
HIV Infection, Inflammation and Aging

MONDAY, APRIL 8
Departure