Mononuclear phagocytes (MNP) are immune cells that are uniquely equipped to sense and respond to environmental cues by promoting tissue homeostasis or initiating tissue repair and immunity. MNP also contribute significantly to tissue pathologies, and their manipulation holds considerable therapeutic potential. MNP display major functional specializations. Most macrophages are established before birth and perform tissue-specific functions in organ development and homeostasis. Short-lived classical dendritic cells (DC) are specialized in triggering adaptive T cell immunity. Monocytes complement macrophages and DC as highly plastic cells, in particular during inflammation. While MNP subsets have been identified, individual contributions to health and disease are not well-defined. Breathtaking technological advance in genomic profiling of populations and single cells is revealing the breadth of MNP functions and identifying molecular checkpoints for targeted therapeutic intervention. These molecular efforts are paralleled by astounding progress in imaging capabilities, enabling the study of the cells in their physiological context. This meeting therefore aims to: 1) Cover recent progress in the field, revealing novel and differential contributions of MNP in physiological processes, and identify critical knowledge gaps; 2) Stimulate scientific exchange, in particular between clinicians and researchers, to better translate findings from animal models into human settings and brainstorm regarding novel therapeutic intervention; and 3) Develop novel conceptual frameworks for future studies of MNP in health and disease.

Session Topics:

• Mononuclear Phagocyte Development
• Workshop 1: Monocytes, DC and Macrophages
• Mononuclear Phagocyte Maintenance
• Mononuclear Phagocytes at the Tissue Site
• Mononuclear Phagocytes in Gut Homeostasis and Inflammation
• Mononuclear Phagocyte Interactions with the Central and Peripheral Nervous System
• Mononuclear Phagocytes, Inflammation and Therapy
• Workshop 2: Checkpoint Blockade and Vaccination Therapies
• Mononuclear Phagocytes and Cancer Progression
• Mononuclear Phagocytes and Cancer Treatment

Scholarship Application & Discounted Abstract Deadline: January 9, 2017
Abstract Deadline: January 31, 2017
Discounted Registration Deadline: February 28, 2017
SUNDAY, APRIL 30
Arrival and Registration

MONDAY, MAY 1
Welcome and Keynote Address
*Steffen Jung*, Weizmann Institute of Science, Israel
*Miriam Merad*, Mount Sinai School of Medicine, USA

**Mononuclear Phagocyte Development**
*Steffen Jung*, Weizmann Institute of Science, Israel
**Florent Ginhoux**, Singapore Immunology Network, Singapore
**EMBO Young Investigator Lecture: Ontogeny of Mononuclear Phagocytes**

*Frederic Geissmann*, Memorial Sloan Kettering Cancer Center, USA

Ido Amit, Weizmann Institute, Israel
**The Power of ONE: Immunology in the Age of Single Cell Genomics**

Deborah R. Winter, Northwestern University, USA
**Short Talk: The Transcriptional Program of Synovial Macrophages in Rheumatoid Arthritis**

**Workshop 1: Monocytes, DC and Macrophages**
*Chen Varol*, Sourasky Medical Center and Tel-Aviv University, Israel
**Helen S. Goodridge**, Cedars-Sinai Medical Center, USA
**Independent Monocyte Production by Granulocyte-Monocyte Progenitors (GMPs) and Monocyte-Dendritic Cell Progenitors (MDPs)**

**Pierre Guermonprez**, Kings College London, UK
**The Heterogeneity of Ly6Chi Monocytes Controls their Differentiation into iNOS+ Macrophage-Derived Dendritic Cells**

**Alexander Mildner**, Max-Delbrueck Center Berlin, Germany
**Genomic Characterization of Murine Monocytes Reveals C/EBP-Beta Dependence of Ly6C-Cells**

**Stefan Uderhardt**, National Institutes of Health, USA
**Tissue-Resident Macrophages Cloak Tissue Microenvironments to Control Neutrophil-Driven Inflammatory Damage**

**Brian T. Edelson**, Washington University School of Medicine, USA
**Regulation of Mononuclear Phagocyte IL-10 Production by Bhlhe40 Is Required to Resist Pulmonary MtB Infection**

**Roxane Tussiwand**, University of Basel, Switzerland
**The Expression of IRF8 Defines Plasmacytoid Dendritic Cell Commitment**

**Mononuclear Phagocyte Maintenance**
*Deborah R. Winter*, Northwestern University, USA
**Christopher K. Glass**, University of California, San Diego, USA
**Exploiting Natural Genetic Variation to Understand Macrophage Identity and Function**

**Michael H. Sieweke**, Technische Universitaet Dresden, Germany
**Transcriptional Control of Macrophage Proliferation**

**Posters 2**

**TUESDAY, MAY 2**

**Mononuclear Phagocytes at the Tissue Site**
*Florent Ginhoux*, Singapore Immunology Network, Singapore
**Martin Guiliams**, Ghent University - VIB, Belgium
**Development and Functional Specialization of Liver-Resident Kupffer Cells**

**Gwendalyn J. Randolph**, Washington University, USA
**Macrophages in the Serosal Cavity**

**Brian D. Brown**, Mount Sinai School of Medicine, USA
**T Cell and DC Interactions in Tissues**

**Wolfgang Kastenmüller**, University of Bonn, Germany
**Intranal T Cell - DC Interactions during Viral Infection**

**Sheau Yng Lim**, National University of Singapore, Singapore
**Short Talk: The Origin and Maintenance of LYVE-1-Expressing Macrophages**

**Mononuclear Phagocytes in Gut Homeostasis and Inflammation**
*Miriam Merad*, Mount Sinai School of Medicine, USA

**Carla V. Rothlin**, Yale University, USA
**TAM Receptor Signaling in Resolution of Inflammation**

**Yasmine Belkaid**, NIAID, National Institutes of Health, USA
**Homostatic Immunity and the Microbiota**

**Michael F. Goldberg**, University of Minnesota, USA
**Pathogenesis of a Persistent Phagosomal Infection**

**Ivaylo I. Ivanov**, Columbia University, USA
**Short Talk: Innate Immune Cells in Regulation of Commensal Th17 Responses**

**Milena Bogunovic**, Pennsylvania State University College of Medicine, USA
**Short Talk: Macrophages as Regulators of Intestinal Neuroplasticity**

**Poster Session 2**

**WEDNESDAY, MAY 3**

**Mononuclear Phagocyte Interactions with the Central and Peripheral Nervous System**
**Marco Colonna**, Washington University School of Medicine, USA
**Micoglia-Driven Pathology, Trem2**

**Daniel Mucida**, Rockefeller University, USA
**Tissue Adaptation of Intestinal Macrophages**

**Burkhard Becher**, University of Zurich, Switzerland
**The T Cell-Myeloid Connection in Chronic Inflammation**

**Steffen Jung**, Weizmann Institute of Science, Israel
**Macrophages, DC and ER Stress**

**Sarah A. Dick**, University Health Network, Canada
**Short Talk: Embryonic Macrophages Are Maintained in the Aged Heart and Are Required for Repair**

**Scientific Organizers**: Steffen Jung and Miriam Merad

Sponsored by Boehringer Ingelheim Pharmaceuticals, Inc.
Shoutang Wang, Institut Gustave Roussy, France
Short Talk: Lyl-1 Controls Primitive Macrophages and Microglia Development

Post Session 3

Workshop 2: Regulation of DC and Macrophage Function in Health and Disease
*Brian T. Edelson*, Washington University School of Medicine, USA
Braf-V600e in Blood and Brain and Response to Braf Inhibition Suggest Hematopoietic Origin of Neurodegeneration in Lch

*Caroline Hutter*, St. Anna Kinderspital, Austria
Notch Signaling Induces a Langerhans Cell Histiocytosis Gene Expression Signature in Human Monocytes

*Margaret E. Warren*, Columbia University, USA
Notch Signaling Confers Optimal Phenotype and Function on in vitro-Generated Classical Dendritic Cells

*Brian Nixon*, Memorial Sloan Kettering Cancer Center, USA
The Role of the Notch Pathway in Tumor-Associated Macrophage Differentiation

Ashley Steed, Washington University in St. Louis, USA
The Role of Type I Interferon during Influenza A Infection

Lucie Van Emmenis, University College London, UK
Characterization of Macrophages in Peripheral Nerve Regeneration

Richard E. Zigmond, Case Western Reserve University, USA
The Role of Mononuclear Phagocytes in Peripheral Nerve Degeneration and Regeneration: A New Perspective

Mononuclear Phagocytes, Inflammation and Therapy

*Gwendalyn J. Randolph*, Washington University, USA
Monitoring T Cell-APC Interactions in vivo

Gabriel D. Victoria, Rockefeller University, USA
Monocyte Heterogeneity: Implications for Cancer

*Michele De Palma*, École Polytechnique Fédérale de Lausanne, Switzerland
Macrophage Reprogramming for Anti-Cancer Therapy

Irit Sagi, Weizmann Institute of Science, Israel
Short Talk: Macrophages Are Context- Dependent Builders or Destroyers of Collagenous Matrix

THURSDAY, MAY 4

Molecular Control of Mononuclear Phagocytes

*Brian D. Brown*, Mount Sinai School of Medicine, USA
Jorge Henao-Mejia, University of Pennsylvania and Children's Hospital of Philadelphia, USA
Long Non-Coding RNAs and the Homeostasis Mononuclear Phagocytes

*Nir Hacohen*, Massachusetts General Hospital, USA
Human DC and Monocytes Revisited

*Boris Reizis*, New York University Langone Medical Center, USA
Transcriptional Control of Dendritic Cell Functionality

Philippe J. Benaroch, Institut Curie, INSERM, France
Phagocytes and HIV

Adriana M. Mujal, University of California, San Francisco, USA
Short Talk: Characterizing the Role of CD11b+ Dendritic Cell Subsets in Priming Anti-Tumor CD4 T Cell Responses

Mononuclear Phagocytes and Cancer Treatment

*Nina Bhardwaj*, Icahn School of Medicine at Mount Sinai, USA
Cancer-Induced Innate Immune Modulation

*Laurence Zitvogel*, Institut Gustave Roussy, France
Gut Microbiota Connects Mucosal and Tumoral Immune Responses

*Miriam Merad*, Mount Sinai School of Medicine, USA
Harnessing the Tumor Myeloid Micro-Environment to Enhance Cancer Treatment

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

FRIDAY, MAY 5

Departure