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
Ruslan Medzhito, HHMI/Yale University School of Medicine, USA
Mononuclear Phagocytes in Homeostasis and Inflammation

Mononuclear Phagocyte Development

* Steffen Jung, Weizmann Institute of Science, Israel
Florent Ghinhoux, 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 Gueronprez, Kings College London, UK
The Heterogeneity of Ly6Chi Monocytes Controls their Differentiation into iNOS+ Macrophages: Monocyte-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 Microlesions 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 Mt 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

Bart N. Lambrecht, VIB, Ghent University, Belgium
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

Poster Session 1

TUESDAY, MAY 2

Mononuclear Phagocytes at the Tissue Site

* Florent Ghinhoux, 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
Intranodal 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
Short Talk: Colonization of Different Phagocyte Subsets Underlies the 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
Microglia-Driven Pathology, Trem2

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

Burkhard Becher, University of Zurich, Switzerland
The T Cell-Macrophage Interaction in Chronic Inflammation

Steffen Jung, Weizmann Institute of Science, Israel
Tissue Macrophages in Control of Innervation

* Session Chair † Invited but not yet accepted     Program current as of May 17, 2019. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit www.keystonesymposia.org/17D3.
**Shoutang Wang**, Institut Gustave Roussy, France  
*Short Talk: Ly1-1 Controls Primitive Macrophages and Microglia Development*

**Poster Session 3**

**Workshop 2: Regulation of DC and Macrophage Function in Health and Disease**

*Brian T. Edelson*, Washington University School of Medicine, USA  
*Carl Allen*, Baylor College 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*

**Briana 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  
*Gabriel D. Victora*, Rockefeller University, USA  
*Monitoring T Cell-APC Interactions in vivo*

**Catherine Hedrick**, La Jolla Institute for Immunology, 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. Benaroche**, 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**