MONDAY, JANUARY 25

Welcoming Remarks and Keynote Address (8am Denver/Mountain Time Start) (EK16)
* Diane Mathis, Harvard Medical School, USA
  Session Chair
* Marc Y. Donath, University Hospital Basel, Switzerland
  Session Chair
Bruce M. Spiegelman, Dana-Farber Cancer Institute, USA
Adipose Inflammation: Many Players and Many Regulatory Functions

Welcoming Remarks and Keynote Address (8am Denver/Mountain Time Start) (EK14)
* Erik A. Sahai, Francis Crick Institute, UK
  Session Chair
* Alec Kimmelman, New York University Langone Medical Center, USA
  Session Chair
* Johanna A. Joyce, University of Lausanne, Switzerland
  Session Chair
Matthew G. Vander Heiden, Massachusetts Institute of Technology, USA
Impact of Nutrient Availability on Cancer Metabolic Dependencies

Immunometabolism: The Metabolic View (8:40am Denver/Mountain Time Start) (EK16)
* Janelle S. Ayres, The Salk Institute for Biological Studies, USA
  Session Chair
* Diane Mathis, Harvard Medical School, USA
  Control of Metabolism by Immune Cells
Vishwa Deep Dixit, Yale University, USA
Immunometabolic Regulation of Aging
Ana Domingos, University of Oxford, UK
Molecular Metabolism
Emily Vohralik, UNSW Sydney, Australia
Short Talk: Regulation of Adipose Tissue Beiging by Krüppel-Like Factor 3 (KLF3) and Eosinophils

Metabolic Effects on the Immune System (8:40am Denver/Mountain Time Start) (EK14)
* Erik A. Sahai, Francis Crick Institute, UK
  Session Chair
* M. Celeste Simon, University of Pennsylvania, USA
  Metabolic Symbioses in Stressed Tumor Microenvironments
Costas A. Lyssiotis, University of Michigan, USA
Metabolic Networks in the Tumor Microenvironment
Siva Karthik Varanasi, The Salk Institute for Biological Studies, USA
Short Talk: Tumor Metabolism Shapes Antigen Presentation and Adaptive Immune Responses

Hilary A. Coller, University of California, Los Angeles, USA
Short Talk: Cancer-Associated Stroma Requires Autophagy to Promote Tumor Growth by Maintaining Melanoma-Associated Fibroblasts and Suppressing Th1-Type Immune Responses

Eline C. Brombacher, LUMC, Netherlands
Short Talk: Activation of Nutrient-Sensor AMPK in Tumor-Associated Dendritic Cells Promotes Tolerogenic Responses and Compromises the Anti-Tumor Immunity

The CNS Microenvironment (10:45am Denver/Mountain Time Start) (EK14)
* Alec Kimmelman, New York University Langone Medical Center, USA
  Session Chair
Frank Winkler, University Hospital Heidelberg, Germany
Brain Tumor Cells Interconnect to a Functional and Resistant Network
Johanna A. Joyce, University of Lausanne, Switzerland
Charting the Immune Landscape across Diverse Brain Cancers
* Michael E. Pacold, New York University Medical Center, USA
  Brain Metastasis Adaptation to the Metabolic Niche of the Central Nervous System
Gino Ferraro, Harvard Medical School, Massachusetts General Hospital, USA
Short Talk: Fatty Acid Synthesis is Required for Breast Cancer Brain Metastasis

Immunometabolism: The Immunologist View (10:20am Denver/Mountain Time Start) (EK16)
* Vishwa Deep Dixit, Yale University, USA
  Session Chair
Christoph Hess, University Hospital Basel/University of Cambridge, Switzerland
From Patient to Molecular Understanding of Immunometabolism
Luke A. J. O'Neill, Trinity Biomedical Sciences Institute, Ireland
Krebs Cycle Repurposed for Cytokines
Janelle S. Ayres, The Salk Institute for Biological Studies, USA
Metabolic Adaptations in Host-Microbe Interactions
* Ruth A. Franklin, Harvard University, USA
  Stress Responses and Disease Tolerance
Katrin Andreasson, Stanford University, USA
Short Talk: Metabolic Reprogramming of Myeloid Cells Reverses Cognitive Decline in Aging

Meet the Editors (Joint) (2pm Denver/Mountain Time Start)
Ubaldo E. Martinez Outschoorn, Thomas Jefferson University/Frontiers, USA
Stephanie Ailsa Houston, Journal of Experimental Medicine, USA
Lise Roth, European Molecular Biology Organization, Germany

* Session Chair † Invited but not yet accepted  Program current as of August 18, 2023.
For the most up-to-date details, visit https://www.keystonesymposia.org.
Catarina Sacristán, Cell Press, USA

**TUESDAY, JANUARY 26**

**Clinical Translation: Unmet Needs (8am Denver/Mountain Time Start) (EK16)**

Session Chair

*Morris J. Birnbaum*, Retired Pfizer, Inc., USA  
Session Chair

*Marina Mesquida*, F. Hoffmann-La Roche Ltd, Switzerland  
Anti-Inflammatory Treatment of Diabetic Eye Complications

*Marc Y. Donath*, University Hospital Basel, Switzerland  
IL-1beta in Physiology and Treatment of Metabolic Diseases

Tom Thuren, Novartis Pharmaceuticals, USA  
Requirement to Implement Anti-Inflammatory Treatment of Cardiometabolic Diseases

*Elena Carcarino*, INSERM, France  
Short Talk: Epigenomic Regulation of IL-1B Enhancers in Type 2 Diabetes

**Metastatic Colonisation (8am Denver/Mountain Time Start) (EK14)**

*Johanna A. Joyce*, University of Lausanne, Switzerland  
Session Chair

*Ruth Scherz-Shouval*, Weizmann Institute of Science, Israel  
Session Chair

Sarah-Maria Fendt, VIB-KU Leuven, Belgium  
Metabolic Rewiring Boosting Metastasis Formation

Mikala Egeblad, Cold Spring Harbor Laboratory, USA  
Activating a Collaborative Innate-Adaptive Immune Response to Restrain Metastasis

Matthew F. Krummel, University of California, San Francisco, USA  
Imaging the Tumor Microenvironment in Five Dimensions

Heather Christofk, University of California, Los Angeles, USA  
Targeting Cancer Asparagine Dependence

Kevin B. Walsh, Genentech, USA  
Short Talk: VEGF Blockade Augments CD8+ T Cell Activity by Amplifying Tumor Hypoxia

**The Pancreatic Tumor Microenvironment (10:25am Denver/Mountain Time Start) (EK14)**

*Johanna A. Joyce*, University of Lausanne, Switzerland  
Session Chair

Lewis C. Cantley, Weill Cornell Medicine, USA  
Insulin and Cancer

*Mara H. Sherman*, Memorial Sloan Kettering Cancer Center, USA  
Mechanisms and Consequences of Pancreatic Cancer Stromal Evolution

Andrea M. Amitrano, University of Rochester School of Medicine & Dentistry, USA  
Short Talk: Regulation of CD8+ T Cell Metabolism and Migration with Optogenetics

Patricia Altea Manzano, VIB-KU Leuven Center for Cancer Biology, Belgium  
[NOT AVAILABLE ON DEMAND] Short Talk: Environmental Fatty Acids Support Changes in Histone Acetylation that Promote Breast Cancer Metastasis

Felix Hartmann, Stanford University, USA  
Short Talk: Single-Cell Metabolic Regulome Profiling of Human Immune Cells in the Tumor Microenvironment

Tanya Schild, Weill Cornell Medicine, USA  
Short Talk: NADK Regulation by Oncogenic KRAS Signaling is Essential for PDAC

**Insulin Production and Action (10:00am Denver/Mountain Time Start) (EK16)**

*Marc Y. Donath*, University Hospital Basel, Switzerland  
Session Chair

**Adipose Tissues (8am Denver/Mountain Time Start) (EK16)**

*Elise Dalmas*, INSERM, France  
Short Talk: Epigenomic Regulation of IL-1B Enhancers in Type 2 Diabetes

**Insulin Production and Action (10:00am Denver/Mountain Time Start) (EK16)**

*Marc Y. Donath*, University Hospital Basel, Switzerland  
Session Chair

Alan R. Saltiel, University of California, San Diego, USA  
Inflammatory Links Between Obesity and Energy Metabolism

Bruce Verchere, University of British Columbia, Canada  
Islet Amyloid Polypeptide and Islet Inflammation

*Elise Dalmas*, INSERM, France  
Innate Immunity in the Pancreatic Islet Niche

Feyza Engin, University of Wisconsin-Madison, USA  
Short Talk: Targeting Beta Cell Unfolded Protein Response in Type 1 Diabetes

Katia Monsorno, University of Lausanne, Switzerland  
Short Talk: Lactate Metabolism in the Control of Microglial Function

**Poster Session 1 (12pm Denver/Mountain Time Start)**

**Career Roundtable (Joint) (1pm Denver/Mountain Time Start) (EK16)**

Donita C. Brady, University of Pennsylvania, USA

Matthew G. Vander Heiden, Massachusetts Institute of Technology, USA

Tom Thuren, Novartis Pharmaceuticals, USA

**WEDNESDAY, JANUARY 27**

**Adipose Tissues (8am Denver/Mountain Time Start) (EK16)**

*Elise Dalmas*, INSERM, France  
Session Chair

*Bruce M. Spiegelman*, Dana-Farber Cancer Institute, USA  
Session Chair

* Session Chair † Invited but not yet accepted  
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**KEYSTONE SYMPOSIA**

**on Molecular and Cellular Biology**

**Integrating Metabolism and Immunity (EK16)**

Scientific Organizers: Marc Y. Donath, Tom Thuren, Bruce M. Spiegelman and Diane Mathis

Sponsored by AbbVie Inc., Astellas Pharma Inc., Cell Research, Merck & Co., Inc. and Novo Nordisk A/S

**Tumor Metabolism and the Microenvironment (EK14)**

Scientific Organizers: Erik A. Sahai, Alec Kimmelman and Johanna A. Joyce

January 25-28, 2021 • Virtual at your computer

Sponsored by AstraZeneca, Cell Research and Gilead Sciences, Inc.

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**Therapeutic Targeting of Metabolism and the TME (10:10am Denver/Mountain Time Start) (EK14)**

**Session Chair**

*Erik A. Sahai, Francis Crick Institute, UK*

- **Jun Wu, University of Michigan, USA**
  - *NOT AVAILABLE ON DEMAND* Immune-Beige Adipocyte Communication
- **Inbar Shtenberg**, Tel Aviv University, Israel
  - Short Talk: Distinctive Effects of Alarmins S100A8 and S100A9 on Adaptive Thermogenesis
- **Katelyn M. Miller, Wistar Institute, USA**
  - Short Talk: Inhibition of Acatate Metabolism Enhances Host Anti-Tumor Immunity
- **Pegah Poursharifi**, University of Montreal-CRCHUM, Canada
  - Short Talk: Suppression of ABHD6 Promotes Healthy Expansion of Adipose Tissue in Obesity

**Identifying the Metabolic Dependencies of Cancer Cells (8am Denver/Mountain Time Start) (EK14)**

**Session Chair**

*Erik A. Sahai, Francis Crick Institute, UK*

- **Karen H. Vousden**, Francis Crick Institute, UK
  - [NOT AVAILABLE ON DEMAND] Metabolic Control of Invasion and Metastasis
- **Eileen P. White**, Rutgers Cancer Institute of New Jersey, USA
  - Autophagy and Systemic Metabolism
- **Navdeep S. Chandel**, Northwestern University, USA
  - Mitochondrial Regulation of Cancer
- **Donita C. Brady**, University of Pennsylvania, USA
  - New Sides for an Old Coin: Copper as an Intracellular Mediator of Autophagy via ULK1/2 Kinase Signaling

**Liver (10:10am Denver/Mountain Time Start) (EK16)**

**Session Chair**

*Gwendalyn J. Randolph, Washington University, USA*

- **Alan R. Saltiel, University of California, San Diego, USA**
  - Session Chair
- **Michael Karin**, University of California, San Diego, USA
  - Mitochondrial DNA Metabolism and IL-1 Mediated Inflammation
- **Evanna Mills**, Dana-Farber Cancer Institute, USA
  - Thermogenic Fat as a Modifier of the Immune Response
- **Morris J. Birnbaum**, Retired Pfizer, Inc., USA
  - Therapeutic Approaches for the Treatment of Non-Alcoholic Fatty Liver Disease
- **Han Wang**, Ohio State University, Comprehensive Cancer Center, USA
  - Short Talk: Neutrophil Extracellular Traps Promote the Differentiation of Tregs through Metabolic Reprogramming to Impair Cancer Immunosurveillance in NASH Liver
- **Sabine Daemen**, Washington University in St. Louis, USA
  - Short Talk: Recruited Monocyte-Derived Macrophages Regulate Hepatic Crown-Like Structure Formation and Liver Fibrosis in NASH
- **Jin Young Huh**, Seoul National University, South Korea
  - Short Talk: Tank-Binding Kinase 1 Regulates the Localization of acyl-CoA synthetase ACSL1 to Control Hepatic Fatty Acid Oxidation

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**ThursdaY, January 28**

**Muscle/Cardiovascular (8am Denver/Mountain Time Start) (EK16)**

**Session Chair**

*Ana Domingos*, University of Oxford, UK

- **Helga Ellingsgaard**, Centre for Physical Activity Research, Copenhagen, Denmark
  - IL-6, a Physiological Regulator of Adipose Tissue Mass in Humans
- **Mark A. Febbraio**, Monash Institute of Pharmaceutical Sciences, Australia
  - Treatment of Type 2 Diabetes and Age-Related Sarcopenia with the Designer Cytokine IC7Fc
- **Amy J. Wagers**, Harvard University, USA
  - Stem Cell Metabolism and Muscle Regeneration
- **Shuang Zhang**, Harvard Medical School/Massachusetts General Hospital, USA
  - Short Talk: Bone Marrow Adipocytes Fuel Fatty Acid Metabolism Directed Myelopoiesis after Myocardial Infarction
**KEYSTONE SYMPOSIA**
*Integrating Metabolism and Immunity (EK16)*
Scientific Organizers: Marc Y. Donath, Tom Thuren, Bruce M. Spiegelman and Diane Mathis
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**Dina Chokr**, INSERM, Centre de Recherche des Cordeliers, France
*Short Talk: Impact of Histone Lysine Demethylase 6B on Adipose Tissue Macrophage Plasticity*

**Intercellular Signaling Networks in the TME (8am Denver/Mountain Time Start) (EK14)**

*Karin E. de Visser*, Netherlands Cancer Institute, Netherlands
*How the Genetic Makeup of Breast Cancer Shapes the Immune Landscape*

*Erik A. Sahai*, Francis Crick Institute, UK
*Towards a Holistic Understanding of Tumor Architecture*

**Ruth Scherz-Shouval**, Weizmann Institute of Science, Israel
*Transcriptional Heterogeneity of Cancer-Associated Fibroblasts in the Tumor Microenvironment*

**Hannah Bell**, University of Michigan, USA
*Short Talk: Microbiota Metabolic Exchange Is Critical for Colorectal Cancer Redox Homeostasis and Growth*

**Christina Schmidt**, University of Cambridge, UK
*Short Talk: TRACER, a 3D-Model to Study the Influence of the Microenvironment on the Metabolic Profile of Fumarate Hydratase-Deficient Cells*

**Metabolic Compartmentalisation (10:15am Denver/Mountain Time Start) (EK14)**

*Ralph J. DeBerardinis*, University of Texas Southwestern Medical Center, USA
*Compartmentalized Metabolism in Physiological States of Growth*

**Erika L. Pearce**, Johns Hopkins University, USA
*Metabolic Regulation of the Immune Metabolism*

*Alec Kimmelman*, New York University Langone Medical Center, USA
*Metabolic Crosstalk in PDAC*

**Fabricio Loayza-Puch**, German Cancer Research Center, Germany
*Short Talk: Dual Ribosome Profiling Uncovers Metabolic Limitations in Distinct Cellular Populations of the Tumor Microenvironment*

**Marina Fukano**, Rosalind & Morris Goodman Cancer Research Centre, McGill University, Canada
*[NOT AVAILABLE ON DEMAND] Short Talk: Investigating Intra-Tumour Metabolic Heterogeneity in Triple-Negative Breast Cancer*

**Closing Remarks (11:50am Denver/Mountain Time Start) (EK16)**
**Networking Lounge (12pm Denver/Mountain Time Start) (EK16)**

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*Michael Karin*, University of California, San Diego, USA
*Session Chair*

**Eicke Latz**, University of Bonn, Germany
*Pharmacological Modulation of Cellular Metabolism Controls Macrophage Metabolism*

**Gwendalyn J. Randolph**, Washington University, USA
*Immunity and Lipoprotein Trafficking*

**Matthias Nahrendorf**, Massachusetts General Hospital, USA
*Post-MI Emergency Hematopoiesis and Metabolism*

**Jan Van den Bossche**, Amsterdam UMC VUmc, Netherlands
*Short Talk: Macrophage ATP Citrate Lyase Deficiency Stabilizes Atherosclerotic Plaques*

**Enyuan Cao**, Monash University, Australia
*Short Talk: Mesenteric Lymphatic Dysfunction Promotes Insulin Resistance and Represents a Potential Novel Treatment Target in Obesity*

**Closing Remarks (11:50am Denver/Mountain Time Start) (EK16)**
**Networking Lounge (12pm Denver/Mountain Time Start) (EK16)**

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