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
  Neuroimmunometabolism
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 Stressful 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 November 12, 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)**

*Morris J. Birnbaum*, Retired Pfizer, Inc., USA  
*Marina Mesquida*, F. Hoffmann-La Roche Ltd, Switzerland  
*Marc Y. Donath*, University Hospital Basel, Switzerland  
*Tom Thuren*, Novartis Pharmaceuticals, USA  
*Elena Carcarino*, INSERM, France

**Anti-Inflammatory Treatment of Diabetic Eye Complications**

**IL-1beta in Physiology and Treatment of Metabolic Diseases**

**Requirement to Implement Anti-Inflammatory Treatment of Cardiometabolic Diseases**

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

*Johanna A. Joyce*, University of Lausanne, Switzerland  
*Ruth Scherz-Shouval*, Weizmann Institute of Science, Israel  
*Sara Maria Fendt*, VIB-KU Leuven, Belgium  
*Mikala Egeblad*, Cold Spring Harbor Laboratory, USA  
*Matthew F. Krummel*, University of California, San Francisco, USA  
*Kevin B. Walsh*, Genentech, USA

**Metabolic Rewiring Boosting Metastasis Formation**

**Activating a Collaborative Innate-Adaptive Immune Response to Restrain Metastasis**

**Insulin and Cancer Asparagine Dependence**

**Imaging the Tumor Microenvironment in Five Dimensions**

**Targeting Cancer Asparagine Dependence**

**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  
*Lewis C. Cantley*, Dana Farber Cancer Institute, USA  
*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  
**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  
*Alan R. Saltiel*, University of California, San Diego, USA  
*Bruce Verchere*, University of British Columbia, Canada  
*Elise Dalmas*, INSERM, France  
*Feyza Engin*, University of Wisconsin-Madison, USA  
*Katia Monsorno*, University of Lausanne, Switzerland

**Islet Amyloid Polypeptide and Islet Inflammation**

**Innate Immunity in the Pancreatic Islet Niche**

**Targeting Beta Cell Unfolded Protein Response in Type 1 Diabetes**

**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

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

*Elise Dalmas*, INSERM, France  
*Bruce M. Spiegelman*, Dana-Farber Cancer Institute, USA

**WEDNESDAY, JANUARY 27**

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

*Elise Dalmas*, INSERM, France  
*Bruce M. Spiegelman*, Dana-Farber Cancer Institute, USA

* Session Chair † Invited but not yet accepted. Program current as of November 12, 2023. For the most up-to-date details, visit [https://www.keystonesymposia.org](https://www.keystonesymposia.org).
**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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**Rinke Stienstra**, Wageningen University and RadboudUMC, Netherlands
*Obesity and Diabetes: An Immunometabolic Perspective*

**Paul Cohen**, Rockefeller University, USA
*The Adipose Tissue Microenvironment in Health and Disease*

**Jun Wu**, University of Michigan, USA
*[NOT AVAILABLE ON DEMAND] Immune-Beige Adipocyte Communication*

**Inbar Shteingberg**, Tel Aviv University, Israel
*Short Talk: Distinctive Effects of Alamins S100A8 and S100A9 on Adaptive Thermogenesis*

**Katelyn D. Miller**, Wistar Institute, USA
*Short Talk: Inhibition of Acetate 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)**

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

**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
*Autoagy 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 viaULK1/2 Kinase Signaling*

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

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

**Shannon J. Turley**, Genentech, Inc., USA
*Evolving Stromal-Immune Axis in Cancer Immunology and Immunotherapy*

**Marcia C. Haigis**, Harvard Medical School, USA
*Dissecting the Tumor-Immune Metabolic Crosstalk in the Tumor Microenvironment*

**Valerie M. Weaver**, University of California, San Francisco, USA
*Interplay between Tissue Fibrosis, Metabolic Reprogramming and Inflammation in Tumor Evolution*

**Natalya N. Pavlova**, Memorial Sloan Kettering Cancer Center, USA
*Short Talk: Translation in Amino Acid-Poor Environments is Limited by tRNAGln Charging*

**Thomas Hanigan**, The Scripps Research Institute, USA
*Short Talk: Small Molecule Inhibition of OXA1L Selectively Kills ZFHX3 Mutant NSCLC from Imbalanced Cytidine Pool Expansion*

**Arin Aurora**, University of Texas Southwestern Medical Center, USA
*Short Talk: Metastasizing Melanoma Cells Exhibit Increased Dependence on the Pentose Phosphate Pathway to Manage Oxidative Stress*

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

*Gwendalyn J. Randolph*, Washington University, USA
*Session Chair*

**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*

**THURSDAY, JANUARY 28**

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

*Ana Domingos*, University of Oxford, UK
*Session Chair*

**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 ICG7Fc*

**Amy J. Wagars**, 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*

* Session Chair † Invited but not yet accepted    Program current as of November 12, 2023.
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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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