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 March 22, 2024.
For the most up-to-date details, visit https://www.keystonesymposia.org.
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, Dana Farber Cancer Institute, 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
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

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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.

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 Shteinberg, Tel Aviv University, Israel
Short Talk: Distinctive Effects of Alarmins 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. Vouwen, 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

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 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

* Session Chair † Invited but not yet accepted Program current as of March 22, 2024.
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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
*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)