Monday, January 25

Welcoming Remarks and Keynote Address (8am Denver/Mountain Time Start)

*Erik A. Sahai, Francis Crick Institute, UK
*Alec Kimmelman, New York University Langone Medical Center, USA
*Johanna A. Joyce, University of Lausanne, Switzerland

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

Impact of Nutrient Availability on Cancer Metabolic Dependencies

Metabolic Effects on the Immune System (8:40am Denver/Mountain Time Start)

*Erik A. Sahai, Francis Crick Institute, UK
*M. Celeste Simon, University of Pennsylvania, USA

Bruce M. Spiegelman, Harvard Medical School, USA

Adipose Inflammation: Many Players and Many Regulatory Functions

Metabolism and the Immune System (8:40am Denver/Mountain Time Start)

Diane Mathis, Harvard Medical School, USA

Marc Y. Donath, University Hospital Basel, Switzerland

Control of Metabolism by Immune Cells

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

Immunometabolism: The Metabolic View (8:40am Denver/Mountain Time Start)

Janelle S. Ayres, The Salk Institute for Biological Studies, 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

Catarina Sacrístán, Cell Press, USA

Tuesday, January 26

Metastatic Colonisation (8am Denver/Mountain Time Start)

*Johanna A. Joyce, University of Lausanne, Switzerland
*Ruth Scherz-Shouval, Weizmann Institute of Science, Israel

Sarah-Maria Fendt, VIB 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

Frank Winkler, University Hospital Heidelberg, Germany

Brain Tumor Cells Interconnect to a Functional and Resilient 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 Immunometabolist View (10:20am Denver/Mountain Time Start)

*Vishwa Deep Dixit, Yale University, USA

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

* Session Chair † Invited but not yet accepted Program current as of January 26, 2021, Meal formats are based on meeting venue. For the most up-to-date details, visit https://www.keystonesymposia.org.
Clinical Translation: Unmet Needs (8am Denver/Mountain Time Start)
*Morris J. Birnbaum*, Pfizer Inc., USA
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

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

*Johanna A. Joyce*, University of Lausanne, Switzerland
*Lewis C. Cantley*, Weill Cornell Medicine, USA
*Insulin and Cancer*
*Mara H. Sherman*, Oregon Health & Science University, 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

Inflammatory Links Between Obesity and Energy Metabolism

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

Adipose Tissues (8am Denver/Mountain Time Start)

*Elise Dalmas*, INSERM, France
*Bruce M. Spiegelman*, Harvard Medical School, USA

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 ABDH6 Promotes Healthy Expansion of Adipose Tissue in Obesity*

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

*Erik A. Sahai*, Francis Crick Institute, UK
*Donita C. Brady*, University of Pennsylvania, USA
Matthew G. Vander Heiden, Massachusetts Institute of Technology, USA
Tom Thuren, Novartis Pharmaceuticals, USA

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

*Elise Dalmas, Francis Crick Institute, UK*

Scientific Organizers: Erik A. Sahai, Alec Kimmelman and Johanna A. Joyce
Supported by the Directors’ Fund

Scholarship Deadline: October 8, 2020 / Abstract Deadline: October 22, 2020 / Discounted Registration Deadline: November 24, 2020

For the most up-to-date details, visit [https://www.keystonesymposia.org](https://www.keystonesymposia.org)
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 tRNA\(^{Gln}\) 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

Posters Session 1 (1pm Denver/Mountain Time Start)

Poster Session 2 (2pm Denver/Mountain Time Start)

Liver (10:10am Denver/Mountain Time Start)
*Gwendalyn J. Randolph, Washington University, USA
Alan R. Saltiel, University of California, San Diego, USA
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, 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

Muscle/Cardiovascular (8am Denver/Mountain Time Start)
*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
*M. A. Fabbri, 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

Dina Chokr, INSERM, Centre de Recherche des Cordeliers, France
Short Talk: Impact of Histone Lysine Demethylase 6B on Adipose Tissue Macrophage Plasticity

Metabolic Compartmentalisation (10:15am Denver/Mountain Time Start)
*Ralph J. DeBerardinis, University of Texas Southwestern Medical Center, USA
Compartmentalized Metabolism in Physiological States of Growth

Erika L. Pearce, Max Planck Institute of Immunobiology and Epigenetics, Germany
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
Short Talk: Investigating Intra-Tumour Metabolic Heterogeneity in Triple-Negative Breast Cancer

Closing Remarks (12pm Denver/Mountain Time Start)

Networking Lounge (12:10pm Denver/Mountain Time Start)

Cardiovascular (10:05am Denver/Mountain Time Start)
KEYSTONE SYMPOSIA on Molecular and Cellular Biology

MEETING CHANGE TO VIRTUAL: Tumor Metabolism and the Microenvironment (A4)
January 24-28, 2021 • Beaver Run Resort • Breckenridge, CO, USA
Scientific Organizers: Erik A. Sahai, Alec Kimmelman and Johanna A. Joyce
Supported by the Directors’ Fund

Scholarship Deadline: October 8, 2020 / Abstract Deadline: October 22, 2020 / Discounted Registration Deadline: November 24, 2020

*Paul Cohen, Rockefeller University, USA
*Michael Karin, University of California, San Diego, USA
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)
Networking Lounge (12pm Denver/Mountain Time Start)

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