



Organ Crosstalk in Obesity and NAFLD

January 21–25, 2018 | Keystone Resort | Keystone, Colorado | USA

Scientific Organizers:

Gary J. Schwartz, Albert Einstein College of Medicine, USA

Bei B. Zhang, Pfizer Inc., USA

Christoph Buettner, Mount Sinai School of Medicine, USA

Joint with the meeting on *Bioenergetics and Metabolic Disease*

Neural and humoral communication among peripheral organs and the brain is critical in coordinating whole body energy homeostasis in health and disease. Nutrient and hormone sensing take place in multiple organs with the central nervous system as a site of integration of these diverse signals, governing this coordination. Within this multi-organ framework, the liver occupies a central role in determining systemic glucose and lipid metabolism in obesity and clinically relevant metabolic pathophysiology, particularly non-alcoholic fatty liver disease (NAFLD) and fibrosis. Identification and characterization of the modes and consequences of organ cross-talk is essential to fill existing gaps in knowledge and to promote the development of therapeutic strategies to treat obesity and metabolic disease. This conference brings together experts in the novel, multidisciplinary evaluation of organ cross-talk, using innovative combinations of molecular, genetic, physiological, pharmacological and systems neuroscience approaches to: 1) Provide a unique and timely perspective, and 2) Inspire interactions directed toward basic, clinical and translational research in integrative metabolism. Finally, the joint staging of this conference in conjunction with the conference on "Bioenergetics and Metabolic Disease" will strategically leverage presentations targeting the biology of metabolism and nutrient availability in obesity with those focused on the biology of energy utilization. Taken together, this novel combination will provide a coherent, powerful and comprehensive understanding of and appreciation for the complex.

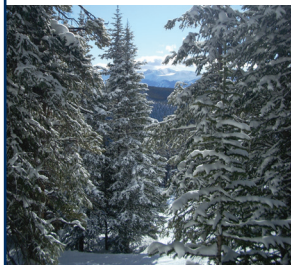
Session Topics:

- Central Modulation of Metabolism (Joint)
- Workshop 1: Emerging Therapeutic Targets for Metabolic Disease (Joint)
- Sweet Spots in the Brain: Central Glucose Sensing and Peripheral Glucose Homeostasis
- Adipose Plasticity and Metabolism (Joint)
- Hepatic Metabolism in Obesity
- Hepatic Dysfunction in NASH and NAFLD
- The Many Scars of Obesity: Systemic Fibrosis and Hypothalamic Gliosis
- Feel Your Gut: The Gut-Brain-Food Connection
- Workshop 2: Hot Topics in Obesity and Metabolism (Joint)
- Fat on the Brain: Adipose-Brain Crosstalk

Scholarship Application & Discounted Abstract Deadline: September 28, 2017

Abstract Deadline: October 26, 2017

Discounted Registration Deadline: November 29, 2017



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Meeting Hashtag: #KSorgan
www.keystonesymposia.org/18J3

KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Accelerating Life Science Discovery

www.keystonesymposia.org/meetings | 1.800.253.0685 | 1.970.262.1230

a 501(c)(3) nonprofit educational organization

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Organ Crosstalk in Obesity and NAFLD (J3)

Scientific Organizers: Gary J. Schwartz, Bei B. Zhang and Christoph Buettner

Sponsored by Novo Nordisk A/S

Bioenergetics and Metabolic Disease (J4)

Scientific Organizers: Patrick Seale, Kendra K. Bence and P. Darrell Neuffer

January 21-25, 2018 • Keystone Resort • Keystone, Colorado, USA

Sponsored by MedImmune, Moderna Therapeutics and Novo Nordisk A/S

Abstract & Scholarship Deadline: September 28, 2017 / Abstract Deadline: October 26, 2017 / Discounted Registration Deadline: November 29, 2017

SUNDAY, JANUARY 21

Arrival and Registration

MONDAY, JANUARY 22

Welcome and Keynote Address (Joint)

***Gary J. Schwartz**, Albert Einstein College of Medicine, USA

***Patrick Seale**, University of Pennsylvania, USA

Jens C. Brüning, Max Planck Institute for Metabolism Research, Germany

Control of Integrative Physiology by the Melanocortin Circuitry

Central Modulation of Metabolism (Joint)

***Gary J. Schwartz**, Albert Einstein College of Medicine, USA

***Gregory James Morton**, University of Washington, USA

Matthew R. Hayes, University of Pennsylvania, USA
Metabolic Neuropeptides as Modulators of Energy Balance, Motivation and Reward

Xiaoyong Yang, Yale University School of Medicine, USA
Short Talk: O-GlcNAc Signaling in Central Nutrient Sensing and Brain-Fat-Liver Communication

Christoph Buettner, Mount Sinai School of Medicine, USA
Brain Control of Adipose Tissue Functionality as a Determinant of Hypothalamic and Liver Function

Daniel L. Marks, Oregon Health & Science University, USA
Central Mechanisms in Cancer Cachexia

Bernard B. Allan, NGM Biopharmaceuticals, USA
Short Talk: GDF15 Induces Cancer Anorexia and Cachexia through GFRAL-dependent Activation of Neuronal Circuitry

Workshop 1: Emerging Therapeutic Targets for Metabolic Disease (Joint)

***Cecile Vernochet**, Pfizer, USA

***Shamina M. Rangwala**, Janssen, Johnson & Johnson, USA

Philipa Levesque-Damphousse, Institut de Recherches Cliniques de Montréal, Canada
SerpinA3N, an Early Biomarker of Non-Alcoholic Fatty Liver Disease

Majid Mufaqam Syed-Abdul, University of Missouri, USA
Progressive Reductions in Hepatic DNL with Increasing Doses of TVB-2640, a First-in-Class Pharmacologic Inhibitor of FASN

Senad Divanovic, Cincinnati Children's Hospital Medical Center, USA
Metabolic Reprogramming of Th17 Cells Regulates Inflammatory Vigor and NAFLD Pathogenesis

Joe S. Grimsby, MedImmune, USA
GLP-1R/GCGR Dual Agonist Reduced Obesity by Increasing Energy Expenditure due to its Effects in Brown Adipose Tissue and Browning of White Fat

Hyeonwoo Kim, Dana-Farber Cancer Institute, USA
Identification of the Irisin Receptor and its Role in Exercise

Brian N. Finck, Washington University School of Medicine, USA
Identification of Mitochondrial Pyruvate Carrier Modulators to Treat Diabetes and NAFLD

Monica Dentice, Università degli Studi di Napoli Federico II, Italy
Muscle-Specific Action of Deiodinases Induces Metabolic Switches in Muscle thereby Influencing Systemic Energy Metabolism

Sweet Spots in the Brain: Central Glucose Sensing and Peripheral Glucose Homeostasis (J3)

***Christoph Buettner**, Mount Sinai School of Medicine, USA

***Zachary Knight**, University of California, San Francisco, USA

Sarah Stanley, Icahn School of Medicine at Mount Sinai, USA
New Tools to Study the Role of Glucose-Sensing Neurons

Gregory James Morton, University of Washington, USA
CNS Mechanisms Governing Diabetic Hyperglycemia

Greg S. B. Suh, New York University School of Medicine, USA
Feeding and Nutrient Sensing in Flies and Mice

Eleni Rebelos, Turku University, Finland
Short Talk: Brain-Liver-Pancreas Axis Revised with FDG-PET Imaging

Brown and Beige Fat Thermogenesis (J4)

***Jan Nedergaard**, Stockholm University, Sweden

***Kristy L. Townsend**, University of Maine, USA

Patrick Seale, University of Pennsylvania, USA
Molecular Regulation of Brown and Beige Adipogenesis

Sheila Collins, Vanderbilt University Medical Center, USA
Receptor Systems and Signaling Mechanisms in White and Brown Adipocytes

Evan D. Rosen, Beth Israel Deaconess Medical Center, Harvard University, USA

Epigenomic Characterization of Beige Adipocyte Plasticity

Zach Gerhart-Hines, University of Copenhagen, Denmark
Short Talk: Cardiolipin Synthesis Governs Systemic Energy Homeostasis through Thermogenic Fat Mitochondria

Poster Session 1

TUESDAY, JANUARY 23

Keynote Address (Joint)

***Patrick Seale**, University of Pennsylvania, USA

Bruce M. Spiegelman, Harvard Medical School, USA
Pathways that Control Cellular and Organismal Energy Metabolism

Adipose Plasticity and Metabolism (Joint)

***Barbara Cannon**, Stockholm University, Sweden

***Li Qiang**, Columbia University Medical Center, USA

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Organ Crosstalk in Obesity and NAFLD (J3)

Scientific Organizers: Gary J. Schwartz, Bei B. Zhang and Christoph Buettner

Sponsored by Novo Nordisk A/S

Bioenergetics and Metabolic Disease (J4)

Scientific Organizers: Patrick Seale, Kendra K. Bence and P. Darrell Neuffer

January 21-25, 2018 • Keystone Resort • Keystone, Colorado, USA

Sponsored by MedImmune, Moderna Therapeutics and Novo Nordisk A/S

Abstract & Scholarship Deadline: September 28, 2017 / Abstract Deadline: October 26, 2017 / Discounted Registration Deadline: November 29, 2017

Susan K. Fried, Icahn School of Medicine at Mount Sinai, USA
Sex- and Depot- Dependent Mechanisms Shaping Fat Distribution and Metabolic Health

Philipp E. Scherer, University of Texas Southwestern Medical Center, USA

Adipose Fibrosis in Metabolic Regulation

Su Myung Jung, University of Massachusetts Medical School, USA
Short Talk: A Non-Canonical mTORC2 Signaling Pathway that Regulates Thermogenesis

Barbara B. Kahn, Beth Israel Deaconess Medical Center, Harvard Medical School, USA

Control of Systemic Metabolism by de novo Lipogenesis in Adipose

Paul Cohen, Rockefeller University, USA

Short Talk: Three-Dimensional Adipose Tissue Imaging Reveals Regional Variation in Beige Fat Biogenesis and PRDM16-Dependent Sympathetic Neurite Density

Hepatic Metabolism in Obesity (J3)

***Bei B. Zhang**, Pfizer Inc., USA

***Rebecca A. Haeusler**, Columbia University, USA

Rosalind A. Coleman, University of North Carolina at Chapel Hill, USA

Compartmentalization of Hepatic Lipid Metabolism

Morris J. Birnbaum, Pfizer Inc., USA

Regulation of Hepatic Lipid Accumulation

Baoliang Song, Wuhan University, China

New Explorations on the Ancient Cholesterol Molecule

Chaofeng Yang, University of Texas Southwestern Medical Center, USA

Short Talk: Plin5 Is a Key Regulator of Lipid and Glucose Metabolism in the Liver

Mitochondria: Form and Function (J4)

***P. Darrell Neuffer**, East Carolina University, USA

***Zhidan Wu**, Pfizer, USA

Jodi Nunnari, University of California, Davis, USA
Mitochondrial Behavior

Mary-Ellen Harper, University of Ottawa, Canada

Acute Control of the Uncoupling Proteins: Redox, ROS Feedback Loops and Post-Translational Modifications

Erin Leah Seifert, Thomas Jefferson University, USA

Short Talk: Loss of Mitochondrial Phosphate Carrier in Skeletal Muscle: Dissociation of Muscle Dysfunction from Lower ADP Phosphorylating Potential

Daniel P. Kelly, University of Pennsylvania, USA

Transcriptional Control of Mitochondrial Fuel Metabolism

Poster Session 2

WEDNESDAY, JANUARY 24

Hepatic Dysfunction in NASH and NAFLD (J3)

***Rosalind A. Coleman**, University of North Carolina at Chapel Hill, USA

***Utpal B. Pajvani**, Columbia University Medical Center, USA

Gyongyi Szabo, University of Massachusetts Medical School, USA
Inflammasome Activation Pathways in NAFLD and NASH

Samuel Klein, Washington University School of Medicine, USA

Biochemical, Metabolic and Clinical Implications in Obesity and NASH

Gerald I. Shulman, HHMI/Yale University School of Medicine, USA

Targeting Mitochondria to Treat NAFLD, NASH and Type 2 Diabetes

Elizabeth J. Parks, University of Missouri, USA

Drug Development in NAFLD: From Lipogenesis to Fibrosis

Anna Laitakari, University of Oulu, Finland

Short Talk: Hypoxia-Inducible Factor Prolyl 4-Hydroxylase-2 Inhibition Protects against Fatty Liver Disease and Metabolic Dysfunction in Mice

Energy Expenditure and Body Weight Regulation in Humans (J4)

***Alexander S. Banks**, Harvard Medical School, USA

***Anna Krook**, Karolinska Institutet, Sweden

Herman Pontzer, Hunter College, USA

Evolutionary Origins of Obesity

Michael Rosenbaum, Columbia University Medical College, USA

Regulation of Energy Balance following Weight Reduction

Wouter D. van Marken Lichtenbelt, Maastricht University, Netherlands

Cold Exposure and Metabolic Health: Role Brown Adipose Tissue and Skeletal Muscle

Denis P. Blondin, University of Sherbrooke, Canada

Short Talk: White Adipose Tissue Lipolysis Not Just a Fuel Supply: Re-Visiting the Significant Thermogenic Contribution of the Triglyceride-Fatty Acid Cycle in Humans Exposed to the Cold or Stimulated with a β 3-Adrenergic Receptor Agonist (Mirabegron)

Steven R. Smith, Florida Hospital, USA

Metabolic Flexibility and Energy Utilization

The Many Scars of Obesity: Systemic Fibrosis and Hypothalamic Gliosis (J3)

***Kendra K. Bence**, Pfizer Inc., USA

***Suneil K. Koliwad**, University of California, San Francisco, USA

Bart Staels, Institut Pasteur de Lille, Université Lille, France
Pathophysiology and Mechanisms of Nonalcoholic Fatty Liver Disease

Joshua Thaler, University of Washington, USA

Hypothalamic Gliosis

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Organ Crosstalk in Obesity and NAFLD (J3)

Scientific Organizers: Gary J. Schwartz, Bei B. Zhang and Christoph Buettner

Sponsored by Novo Nordisk A/S

Bioenergetics and Metabolic Disease (J4)

Scientific Organizers: Patrick Seale, Kendra K. Bence and P. Darrell Neufer

January 21-25, 2018 • Keystone Resort • Keystone, Colorado, USA

Sponsored by MedImmune, Moderna Therapeutics and Novo Nordisk A/S

Abstract & Scholarship Deadline: September 28, 2017 / Abstract Deadline: October 26, 2017 / Discounted Registration Deadline: November 29, 2017

Ana Domingos, IRS-Fundação Calouste Gulbenkian, University of Oxford, Portugal

Sympathetic Neuroimmunity for Obesity

Utpal B. Pajvani, Columbia University Medical Center, USA

Short Talk: Notch Mediates Hepatocyte-HSC Crosstalk to Induce Fibrosis in NASH

Cellular Regulators of Bioenergetics (J4)

***Deborah M. Muoio**, Duke University Medical Center, USA

***Jorge L. Ruas**, Karolinska Institutet, Sweden

P. Darrell Neufer, East Carolina University, USA

Redox Circuit Flux and Energy Expenditure

Muthu Periasamy, Sanford Burnham Prebys Medical Discovery Institute at Lake Nona, USA

Skeletal Muscle-Based Thermogenic Mechanisms

Edward T. Chouchani, Dana-Farber Cancer Institute, USA

Short Talk: A Novel Molecular Pathway Controls Acute Activation of Adipose Tissue Thermogenesis

Daniel Garcia, The Salk Institute for Biological Studies, USA

AMPK Control of Cellular Energetics

Poster Session 3

THURSDAY, JANUARY 25

Feel Your Gut: The Gut-Brain-Food Connection (J3)

***Elizabeth J. Parks**, University of Missouri, USA

***Thomas Alexander Lutz**, University of Zürich, Switzerland

Zachary Knight, University of California, San Francisco, USA

Nutritional Regulation of Hunger Circuits

Kendra K. Bence, Pfizer Inc., USA

Targeting Fructose Metabolism for the Treatment of NAFLD/NASH

Daniel J. Drucker, Lunenfeld-Tanenbaum Research Institute, Canada

Gut Peptides Drive Metabolic Organs: Direct vs. Indirect Mechanisms

Mark D. Erion, Janssen Pharmaceutical, USA

Approaches Targeting Metabolic Control and Weight Management – From Mice to Man

Nicholas Vincent DiPatrizio, University of California, Riverside,

School of Medicine, USA

Short Talk: Endocannabinoids Inhibit Gut-Brain Satiety Signaling in Obesity

Skeletal Muscle: Use and Disuse (J4)

***Bruce M. Spiegelman**, Harvard Medical School, USA

***Erin Leah Seifert**, Thomas Jefferson University, USA

Juleen R. Zierath, Karolinska Institutet, Sweden

Epigenetic Control and the Circadian Clock: Turning Back Time on Diabetes Pathogenesis

David E. James, University of Sydney, Australia

Probing the Exercise Regulated Phosphoproteome in Skeletal Muscle

Deborah M. Muoio, Duke University Medical Center, USA

Adaptive Responses to Exercise Controlling Metabolism

Kelsey H. Fisher-Wellman, Duke Molecular Physiology Institute, USA

Short Talk: Organic Cations as a Class Lower the Efficiency of

Mitochondria Energy Transduction and Protect against

Nutrient-Induced Metabolic Disease

David J. Glass, Novartis Institutes for Biomedical Research, USA

Molecular Mechanisms Regulating Muscle Mass and Mitochondria

Poster Session 4

Workshop 2: Hot Topics in Obesity and Metabolism (Joint)

***Jacqueline M. Stephens**, Louisiana State University, USA

***Alessandro Pocai**, Janssen, Pharmaceutical Companies of Johnson & Johnson, USA

Anna Worthmann, University Medical Center Hamburg-Eppendorf, Germany

Increased Hepatic Bile Acid Production Shapes the Gut Microbiome after Cold Induced Brown Adipose Tissue Activation

Raul C. Camacho, Janssen, USA

Amino Acids as Glucagon Receptor Specific Biomarkers for Glucagon Receptor/Glucagon-Like Peptide 1 Receptor Dual Agonists

Katrin J. Svensson, Stanford University, USA

Isthmin Is a Secreted Protein that Prevents Hepatic Steatosis and Regulates Glucose Homeostasis

Anthony Scime, York University, Canada

A Novel Energy Sensing Mechanism that Synchronizes Progenitor Cell Metabolism

Chelsea Hepler, University of Texas Southwestern Medical Center, USA

Directing Visceral White Adipocyte Precursors to a Thermogenic Adipocyte Fate

Alexander Bartelt, Ludwig-Maximilians-University, Germany

Brown Fat Thermogenic Adaptation Requires Nfe2l1-Induced Proteasomal Activity

Michael D. Neinst, University of Pennsylvania, USA

Whole-Body Metabolic Fate of Branched Chain Amino Acids in Health and Insulin Resistance

Fat on the Brain: Adipose-Brain Crosstalk (J3)

***Philipp E. Scherer**, University of Texas Southwestern Medical Center, USA

Gary J. Schwartz, Albert Einstein College of Medicine, USA

Metabolic Sensing in Adipose Tissue Nerves

Pierre Léopold, University of Nice, France

Humoral Communication between Fat and Brain in Drosophila

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Organ Crosstalk in Obesity and NAFLD (J3)

Scientific Organizers: Gary J. Schwartz, Bei B. Zhang and Christoph Buettner

Sponsored by Novo Nordisk A/S

Bioenergetics and Metabolic Disease (J4)

Scientific Organizers: Patrick Seale, Kendra K. Bence and P. Darrell Neufer

January 21-25, 2018 • Keystone Resort • Keystone, Colorado, USA

Sponsored by MedImmune, Moderna Therapeutics and Novo Nordisk A/S

Abstract & Scholarship Deadline: September 28, 2017 / Abstract Deadline: October 26, 2017 / Discounted Registration Deadline: November 29, 2017

Suneil K. Koliwad, University of California, San Francisco, USA
Hypothalamic Microglia as Fat Sensors: Physiology vs. Pathology

Novel Effectors of Energy Metabolism (J4)

***Sheila Collins**, Vanderbilt University Medical Center, USA

***Claudio Villanueva**, University of Utah School of Medicine, USA

Shingo Kajimura, University of California, San Francisco, USA

BAT-Secreted Adipokines Regulate Energy Expenditure

Jiandie Lin, University of Michigan Medical School, USA

Endocrine Checkpoint for NASH Progression

Ajay Chawla, University of California, San Francisco, USA

Host Immunity and Energetics

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)
(J3)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)
(J4)

FRIDAY, JANUARY 26

Departure