Announcing Keystone Symposia’s 2015 conference on:

Mitochondria, Metabolism and Heart Failure

joint with the meeting on: Diabetes and Metabolic Dysfunction

January 27 – February 1, 2015
Santa Fe Community Convention Center
Santa Fe, New Mexico, USA

Scientific Organizers:
Richard N. Kitsis, Gerald W. Dorn II and Rong Tian

Understanding mitochondrial pathophysiology and identifying ways to ameliorate mitochondrial dysfunction are critical to therapy for cardiovascular disease. The objectives of this meeting are: 1) To mechanistically connect the fundamental biology of metabolism and mitochondrial function with the pathogenesis of heart failure, a major cause of morbidity and mortality in the world; and 2) To increase basic understanding of metabolism and mitochondrial function using observations in cardiac muscle, a traditional platform for these studies. The meeting will examine metabolism, mitochondrial function and heart failure in an integrated context and in the depth required to critically examine existing paradigms.

Session Topics:
• Regulation of Metabolism (Joint)
• Regulation of Mitochondrial Function
• Mitochondrial Quality Control (Joint)
• Metabolism Under Stress in Heart Disease and Diabetes
• Cardiac Autophagy
• Cell Death at the Mitochondria
• Mitochondria, Metabolism and Aging (Joint)
• Toxins and Protectors of the Myocardium
plus two workshops with short talks chosen from abstracts

Discounted Abstract/Scholarship Deadline: Oct 1, 2014
Abstract Deadline: Oct 28, 2014
Discounted Registration Deadline: Nov 25, 2014

To see the full program and for additional details, visit [www.keystonesymposia.org/15J5](http://www.keystonesymposia.org/15J5).
**TUESDAY, JANUARY 27**

**Arrival and Registration**

**WEDNESDAY, JANUARY 28**

**Welcome and Keynote Address (Joint)**

*Jeffrey E. Pessin*, Albert Einstein College of Medicine, USA

*Richard N. Kitsis*, Albert Einstein College of Medicine, USA

*Helen H. Hobbs*, University of Texas Southwestern Medical Center, USA

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*Richard N. Kitsis*, Albert Einstein College of Medicine, USA

*Helen H. Hobbs*, University of Texas Southwestern Medical Center, USA

Journal of Lipid Research Lectureship Introduced by JLR Associate Editor, Ira Goldberg. Orchestrating Fatty Acid Flux to Adipose Tissue during Feast and Famine

**Regulation of Metabolism (Joint)**

*Rong Tian*, University of Washington, USA

**Christopher B. Newgard**, Duke University Medical Center, USA

Role of the Gut Microbiota in the Pathogenesis and Treatment of Cardiometabolic Diseases

**E. Dale Abel**, University of Iowa, Carver College of Medicine, USA

Insulin Signaling in the Heart

**Eric N. Olson**, University of Texas Southwestern Medical Center, USA

Muscular “Mediators” of Metabolism

**Lawrence Kazak**, McGill University, Canada

Regulation of Heat Production by Various Shades of Fat: A Novel Thermogenic Pathway in Beige Fat

**Poster Session 1**

**THURSDAY, JANUARY 29**

**Mitochondrial Quality Control (Joint)**

*Heidi M. McBride*, McGill University, Canada

**Richard J. Youle**, NINDS, National Institutes of Health, USA

Damage Control: How PINK1 and Parkin Survey Mitochondrial Fidelity and Respond with Selective Autophagy

**Jennifer A. Lippincott-Schwartz**, Howard Hughes Medical Institute - Janelia Farm, USA

Roles of Lipid Droplet Lipolysis, Autophagy and Mitochondrial Fusion Dynamics in Fatty Acid Trafficking within Cells

**Orian S. Shirihai**, University of California, Los Angeles, USA

Mitochondrial Dynamics and Quality Control, a Conflict of Interest

**Gerald W. Dorn, II**, Washington University School of Medicine, USA

Mitochondrial Dynamics, Mitochondrial Quality Control and Heart Disease

**Luca Scorrano**, University of Padova, Italy

Keeping Mitochondria Cristae in Shape to Control Organ Damage and Metabolism

**Peipei Ping**, University of California, Los Angeles, USA

Data Science Approaches for Mitochondrial Discoveries

**Metabolism Under Stress in Heart Disease and Diabetes (J5)**

*Sihem Boudina*, University of Utah School of Medicine, USA

**Rong Tian**, University of Washington, USA

Metabolic Remodeling of the Heart

**E. Douglas Lewandowski**, University of Illinois at Chicago College of Medicine, USA

Remodeled Metabolism In and Around the Failing Heart

**Daniel P. Kelly**, University of Pennsylvania, USA

Deciphering the Metabolic Basis of Heart Failure

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

Short Talk: Ischemic Accumulation of Succinate Controls Reperfusion Injury through Mitochondrial ROS

**Benjamin A. Olenchock**, Brigham and Women’s Hospital, USA

Short Talk: Inhibition of the Prolyl Hydroxylase Egln1 Is Sufficient for Local and Remote Cardiac Ischemic Protection: Role of Tryptophan Metabolism

**Mechanisms of Dysregulated Glucogenogenesis (J6)**

*Alan R. Saltiel*, University of California, San Diego, USA

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

Nutrient-Induced Mitochondrial Stress and Metabolic Inflexibility in Skeletal Muscle

**Morris J. Birnbaum**, University of Pennsylvania and Pfizer, Inc

Non-Autonomous Regulation of Hepatic Glucose Output by Insulin

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* Session Chair † Invited but not yet accepted     Program current as of May 26, 2019. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit [www.keystonesymposia.org/1S5J5](http://www.keystonesymposia.org/1S5J5) and [www.keystonesymposia.org/1S5J6](http://www.keystonesymposia.org/1S5J6).
Emerging Synergy between Metabolism and the Gut Microbiome

Domenico Accili, Columbia University, USA
FOXO Signaling and Hepatic Glucose Production

Marc R. Montminy, The Salk Institute for Biological Studies, USA
Regulation of Hepatic Glucogenogenesis by the CREB Pathway

Carl S. Thummel, University of Utah School of Medicine, USA
Short Talk: The Molecular Basis of MODY1 and its Regulation by HNF4

Alexander S. Banks, Harvard Medical School, USA
Short Talk: Therapeutic Resolution of Insulin Resistance via MEK/ERK Inhibition and Reversal of PPARgamma Serine 273 Phosphorylation

Diabetes and Metabolic Dysfunction (J6)

Gökhan S. Hotamisligil, Harvard School of Public Health, USA
Endoplasmic Reticulum and Mitochondria Integration in Response to Metabolic Stress

Gerard Karsenty, Columbia University Medical Center, USA
A Crosstalk between Glucose Uptake and Runx2 Determines the Onset of Osteoblast Differentiation and the Extent of Bone Formation

Workshop: Big Data to Knowledge (BD2K) (Joint)

*Jeffrey E. Pessin, Albert Einstein College of Medicine, USA
Ronald N. Margolis, NIDDK, National Institutes of Health, USA
Biomedical Big Data: Data Discovery and the Digital Enterprise

Abdelilah Arredouani, Qatar Foundation, Qatar
Non-Targeted Metabolomic Profiling Score Improves the Early Prediction of Type 2 Diabetes in the Prospective D.E.S.I.R. Study

Ida Donkin, Copenhagen University, Denmark
Spermatozoa from Lean and Obese Humans Carry Distinct Epigenetic Signatures

Olga Gupta, University of Texas Southwestern Medical Center, USA
Transcriptome Profiling of Omental Adipose Mesothelial Cells Reveals Differentially Expressed Transcripts Related to Inflammation

Ondrej Kuda, Academy of Sciences of the Czech Republic, Czech Republic
Metabolipidomical Profiling of Adipose Tissue during Fatty Acid Re-Esterification

Xiaofeng Xin, Massachusetts Institute of Technology, USA
Systems Biology of Obesity-Induced Hepatic Insulin Resistance

Adam R. Wende, University of Alabama at Birmingham, USA
DNA Methylation and Corresponding Gene Expression Changes in the Diabetic Heart

Dietrich Rein, Metanomics Health, Germany
Validation of a Metabolomics-Based Biomarker for Heart Failure with Reduced Ejection Fraction

Mitochondria and Endoplasmic Reticulum-Mediated Cell Death (J5)

*Qiangrong Liang, New York Institute of Technology, College of Osteopathic Medicine, USA

Paolo Bernardi, University of Padova Medical School, Italy
The Mitochondrial Permeability Transition Pore

Jeffery D. Molkentin, Cincinnati Children's Hospital Medical Center, USA
New Model of Mitochondrial Permeability Transition Pore (MTPP) Formation and Regulated Necrosis in the Heart

Kinya Otsu, UK
Mitochondria, Cell Death and Inflammation

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Wendy M. McKimpson, Columbia University, USA
The Apoptosis Inhibitor ARC Alleviates the ER Stress Response to Promote Beta-Cell Survival in Diabetes

Maik Hüttemann, Wayne State University, USA
Short Talk: Regulation of Mitochondrial Respiration and Apoptosis by Cytochrome c Phosphorylation

Mechanisms of Dysregulated Lipogenesis (J6)
*C. Ronald Kahn*, Joslin Diabetes Center and Harvard Medical School, USA
Barbara B. Kahn, Beth Israel Deaconess Medical Center, Harvard Medical School, USA
Discovery of a Novel Class of Naturally-Occurring Lipids with Anti-Diabetic and Anti-Inflammatory Effects

Michael P. Czech, University of Massachusetts Medical School, USA
Adipose Lipogenesis in Control of Glucose Tolerance

Catherine Postic, INSERM, Institut Cochin, France
ChREBP and Liver Steatosis

Alan R. Saltiel, University of California, San Diego, USA
Energy Expenditure Mediated by the Non-Canonical IKB Kinases

Praveen Sethupathy, Cornell University, USA
Short Talk: MicroRNA-Mediated Control of Metabolic Homeostasis

Poster Session 3

SATURDAY, JANUARY 31

Mitochondria, Metabolism and Aging (Joint)
*Deborah M. Muoio*, Duke University Medical Center, USA
David A. Sinclair, Harvard Medical School, USA
Coupling Nuclear and Mitochondrial Transcription

Douglas C. Wallace, Children's Hospital of Philadelphia, USA
Mitochondrial Mutations and Human Disease

Johan Auwerx, École Polytechnique Fédérale de Lausanne, Switzerland
Mitochondrial Function, Metabolism and Aging

Heidi M. McBride, McGill University, Canada
Redox Control of Mitochondrial Plasticity, Uncovering New Mechanisms that Link Function to Form

Peter S. Rabinovitch, University of Washington, USA
Short Talk: Short-Term Treatment with Mitochondrial Protective Peptide SS-31 Reverses Cardiac Aging in Mice

Workshop: Inflammation in Diabetes, Obesity and Insulin Resistance (J6)
*Jeffrey E. Pessin*, Albert Einstein College of Medicine, USA
Hyokjoon Kwon, Albert Einstein College of Medicine, USA
High Fat Diet-Induced Interleukin-13 Modulates Inflammation and Insulin Resistance

Yun Sok Lee, University of California, San Diego, USA
Saturated Fatty Acids Induce Uncoupled Mitochondrial Respiration and Trigger HIF-1alpha Causing Inflammation and Insulin Resistance in Obesity

Rubén García-Martín, Dresden University of Technology, Germany
Adipocyte Hypoxia-Inducible Factor 2 Protects from Whitening of the Brown Adipose Tissue and Metabolic Dysregulation in the Course of Diet-Induced Obesity

Sagar P. Bapat, University of California, San Francisco, USA
Fat Regulatory T Cells Drive Age-Associated Insulin Resistance

Prameladevi Chinnasamy, Einstein College of Medicine, Montefiore Medical Center, USA
Allograft Inflammatory Factor-1 in Obesity and Type II Diabetes

Caroline Tao, Amgen, USA
Dichotomous Role of Adipocyte Toll-Like Receptor 4 on Insulin Sensitivity

Sojin Lee, University of Pittsburgh School of Medicine, USA
FoxO1 Dictates M1 vs. M2 Polarization and Integrates Inflammation to Insulin Resistance in Diabetes

Hye Eun Lee, Catholic University of Korea, South Korea
Suppression of NLRP3 Inflammasome Activation by Caffeic Acid Phenethyl Ester and its Significance in Modulation of Metabolic Diseases

Toxins and Protectors of the Myocardium (J5)
*Maha Abdellatif*, University of Medicine & Dentistry of New Jersey, USA

Ira J. Goldberg, New York University, USA
Lipid Uptake, the Route to Lipid Droplet Formation and Cardiomyocyte Toxicity

Kenneth Walsh, University of Virginia School of Medicine, USA
Molecular Links between Metabolic and Cardiovascular Diseases

Lorrie A. Kirshenbaum, University of Manitoba, Canada
Bnip3 Mediated Loss of Mitochondrial UCP3-Cytochrome c Oxidase Complexes Underlies Respiratory Defects and Cardiac Failure in Anthracycline Cardiotoxicity

Circadian Rhythms in Metabolic Networks (J6)
*Michael P. Czech*, University of Massachusetts Medical School, USA
Mitchell A. Lazar, Perelman School of Medicine, University of Pennsylvania, USA
Integrating Metabolism Around the Clock

Joseph T. Bass, Northwestern University, USA
Circadian Control of Metabolic Signaling

Ueli Schibler, University of Geneva, Switzerland
Systemic Regulation of Circadian Gene Expression
Jorge L. Ruas, Karolinska Institutet, Sweden

Short Talk: A Molecular Mechanism for Skeletal Muscle - Brain Crosstalk that Protects from Stress-Induced Depression

SUNDAY, FEBRUARY 1

Departure