

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Diabetes: Glucose Control and Beyond (J5)

Scientific Organizers: Alan D. Attie and Deborah M. Muoio

Supported by the Directors' Fund

Islet Biology: From Gene to Cell to Micro-Organ (J6)

Scientific Organizers: Patrick MacDonald, Wen-hong Li, Anna Gloyn and Anette-Gabriele Ziegler

January 27-31, 2020 • Santa Fe Community Convention Center • Santa Fe, New Mexico, USA

Supported by the Directors' Fund

Abstract & Scholarship Deadline: October 2, 2019 / Abstract Deadline: October 30, 2019 / Discounted Registration Deadline: December 3, 2019

MONDAY, JANUARY 27

Arrival and Registration

TUESDAY, JANUARY 28

Welcome and Keynote Address (Joint)

Morris J. Birnbaum, Pfizer Inc., USA
Insulin Signaling; Past, Present, and Future

All About Insulin: Signaling, Secretion, and Action (Joint)

Michael P. Czech, University of Massachusetts Medical School, USA
Molecular Mechanisms of Insulin Resistance

Maureen Gannon, Vanderbilt University, USA
Promoting beta Cell Survival and Preserving Functional beta Cell Mass by Targeting PGE2 Receptors

Morris F. White, Boston Children's Hospital, Harvard Medical School, USA
The Systemic Integration of Hepatic Insulin Resistance

Short Talks Chosen from Abstracts

Novel Approaches for Monitoring Carbon Traffic Control (J5)

Jennifer A. Lippincott-Schwartz, Howard Hughes Medical Institute - Janelia Farm, USA
Imaging Interacting Organelles to Understand Metabolic Homeostasis

Joshua D. Rabinowitz, Princeton University, USA
Isotope Tracing for Deciphering the Metabolic Network

David H. Wasserman, Vanderbilt University School of Medicine, USA
Insulin Transport across Vascular Barriers

Short Talks Chosen from Abstracts

Islet Plasticity (J6)

George K. Gittes, Children's Hospital of Pittsburgh of UPMC, USA
Beta Cell Neogenesis and Protection

Julie B. Sneddon, University California, San Francisco, USA
Elucidating Endocrine Cell Fate Selection and Islet Plasticity

Seung K. Kim, Stanford University, USA
Alternative Systems to Study Pancreatic Islet Development and Function

Short Talks Chosen from Abstracts

Poster Session 1

WEDNESDAY, JANUARY 29

Ketones and Ketogenesis; Super-Fuel or Nuclear Signal? (J5)

Richard Veech, NIAAA, National Institutes of Health, USA
The Effects of Ketone Body Metabolism on the Great Controlling Nucleotide Couples and their Application to Common Diseases

Peter A. Crawford, University of Minnesota, USA
Ketones, Metabolomics and NAFLD

Daniel P. Kelly, University of Pennsylvania, USA
Ketones and Heart Failure

Eric M. Verdin, Buck Institute For Research On Aging, USA
Ketones as a Nuclear Signal

Short Talks Chosen from Abstracts

Visualizing Islet Function in vitro, in situ, and in vivo (J6)

Sebastian Barg, Uppsala University, Sweden
Assembly of the Insulin Granule Secretory Machinery in Type-2 Diabetes

Joana Almaca, University of Miami, USA
Control of Islet Hormone Secretion by Vascular Pericytes

Robin A. Kimmel, University Innsbruck, Austria
Imaging Islet Development in the Zebrafish

Stephan Speier, Helmholtz Zentrum München, Germany
Functional Islet Imaging in vivo and in situ

Short Talks Chosen from Abstracts

Supercomplexities of Mitochondrial Dynamics and Bioenergetics (J5)

Jared Rutter, University of Utah, USA
Novel Proteins Involved in Super-Complex Formation

Orian S. Shirihai, University of California, Los Angeles, USA
Mitochondrial Heterogeneity in the Adipocyte

Deborah M. Muoio, Duke University Medical Center, USA
Mitochondria at the Crossroads of Metabolic Flexibility and Bioenergetics

Short Talks Chosen from Abstracts

Molecular and Functional Analysis of Islet Cell Heterogeneity (J6)

Wen-hong Li, University of Texas Southwestern Medical Center, USA
Functional Heterogeneity of Islet beta Cells

Richard KP Benninger, University of Colorado, USA
Imaging Islet Heterogeneity and Connectivity

Anna Martinez Casals, Science for Life Laboratories, Sweden
Single Cell Protein Variability in Pancreas

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Short Talks Chosen from Abstracts

Poster Session 2

THURSDAY, JANUARY 30

Molecules Mediating Tissue Crosstalk (J5)

Joseph A. Baur, University of Pennsylvania, USA

Biology and Therapeutic Potential of NAD Intermediates

Mark A. Febbraio, Monash Institute of Pharmaceutical Sciences, Australia

Extracellular Vesicles Mediating Cross-Talk during Exercise

Judith A. Simcox, University of Wisconsin, Madison, USA

Role of Acylcarnitines as Peripheral Metabolic Signals

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

Lipokines as Nutrient Sensors and Signals

Short Talks Chosen from Abstracts

Stem Cells and Micro-Organs (J6)

Jennifer E. Bruin, Carleton University, Canada

Stem Cell Differentiation and Environmental Toxins

Burcak Yesildag, InSphero AG, Switzerland

Bioengineering Approaches to Microorgans and Systems

Anne Grapin-Botton, University of Copenhagen, Denmark

Three Dimensional Models of Pancreas Organogenesis to Understand Diabetes

Mark D. Ungrin, University of Calgary, Canada

Generation and Characterization of Human Pseudoislets

Short Talks Chosen from Abstracts

Gut Control of Metabolism (J5)

Speaker to be Announced

Mark A. Herman, Duke University Medical Center, USA

Mechanisms of Fructose-Induced Metabolic Dysregulation

Eric Yen, University of Wisconsin-Madison, USA

Intestinal Lipid Processing and Pancreatic Islet Functions: A Gut Reaction?

Short Talks Chosen from Abstracts

Inflammation, Killing, and Islet Dysfunction (J6)

Anette-Gabriele Ziegler, Helmholtz Zentrum München, Germany

Islet Autoimmunity

Irina Maria Stefana, University of Oxford, UK

Linking T1D Genetics with beta-Cell Health and Function

Rebecca Hull, University of Washington, USA

Islet Inflammation in CFRD

Short Talks Chosen from Abstracts

Poster Session 3

FRIDAY, JANUARY 31

Keynote Address (Joint)

Maïke Sander, University of California, San Diego, USA

The Proteome and Epigenome in Islet Cell Development and Maturation

Genetics/Genomics of T2D (Joint)

Anna Louise Gloyn, University of Oxford, UK

Unravelling Mechanisms for Diabetes from GWAS: From Bench to Bedside

Karen L. Mohlke, University of North Carolina at Chapel Hill School of Medicine, USA

Adipose Tissue Genomics and Type 2 Diabetes

Alan D. Attie, University of Wisconsin-Madison, USA

Genetics of Insulin Secretion

Short Talks Chosen from Abstracts

From Systems Biology to Metabolic Physiology (J5)

Kristina Schoonjans, École Polytechnique Fédérale de Lausanne – EPFL, Switzerland

Systems Approaches to Mapping the Metabolic Network

Dave Pagliarini, Morgridge Institute for Research at University of Wisconsin-Madison, USA

Regulation of Mitochondrial Metabolism by Reversible Phosphorylation

David E. James, University of Sydney, Australia

Mechanistic Analysis of Insulin Resistance

Short Talk Chosen from Abstracts

Novel Approaches to Single Cell Biology (J6)

Fabian Theis†, Helmholtz Zentrum München, Germany

Talk Title to be Announced

Diego Balboa, Centre for Genomic Regulation, Spain

Development and Utility of Single Cell Approaches for Disease Modelling

Patrick MacDonald, University of Alberta, Canada

Connecting Single Islet-Cell Function and Transcriptomics

Short Talk Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J5)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J6)

SATURDAY, FEBRUARY 1

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Departure