

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

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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 Talk(s) 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 Talk(s) 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 Talk(s) 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

Mark P. Mattson, National Institute on Aging, and Johns Hopkins University School of Medicine, USA
Ketones as a Metabolic Mediator during Intermittent Fasting

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 Talk(s) 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 Talk(s) 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 Talk(s) 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

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

Short Talk(s) 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,
Monash University, 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 Talk(s) Chosen from Abstracts

Stem Cells and Micro-Organisms (J6)

Jennifer E. Bruin, Carleton University, Canada
Stem Cell Differentiation and Environmental Toxins

Burcak Yesildag, InSphero AG, Switzerland
Bioengineering Approaches to Microorganisms 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 Talk(s) 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 Talk(s) 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 Talk(s) 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 Talk(s) 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)

Yurong Xin, Regeneron Pharmaceuticals, Inc., USA
Single Cell Approaches from in vivo to in vitro

Diego Balboa Alonso, University of Helsinki, Finland
*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