



**12TH ANNUAL
MIDWEST ISLET CLUB
PROGRAM SCHEDULE**
SUBJECT TO CHANGE



Sunday and Monday, May 19 – 20, 2019
University of Michigan Museum of Art
525 South State Street
Ann Arbor, MI 48109



SUNDAY MAY 19TH, AFTERNOON

11:30a.m. LUNCH AND REGISTRATION OPENS

1:20p.m. INTRODUCTION – Scott Soleimanpour, M.D., Chair, 2019 MIC Planning Committee

1:30p.m. WELCOME – Martin Myers, Jr., M.D., Ph.D., Director, M-Diabetes, Director, University of Michigan Diabetes Research Center (MDRC)

Session I. Understanding and Overcoming the Immunopathology of Type 1 Diabetes

Chair – Brigid Gregg, M.D.

1:40p.m. Lymphocyte metabolism in the islet microenvironment. Jamie Felton, Indiana University

1:55p.m. Live pancreas tissue slices as a platform for investigating the pathogenesis of T1D. Mollie Huber, University of Florida

2:10p.m. Immune cell uptake and induction of inflammatory gene response by islet exosomes containing stress/damage specific molecular signatures. Srividya Vasu, Baylor, Scott & White Research Institute

2:25p.m. The inhibition of 12-lipoxygenase prevents the migration of macrophages in diabetes. Abhishek Kulkarni, Indiana University

2:40p.m. Subcutaneous transplantation of encapsulated allogeneic and xenogeneic islets using a novel injectable type I oligomeric collagen. Clarissa Stephens, Purdue University

2:55p.m. COFFEE BREAK



Session II. Type 1 Diabetes Pathogenesis and Prevention – key roles for beta cells

Chair – Mehboob Hussain, M.D.

3:30p.m. *Beta cell IRE1 α deficiency triggers islet plasticity and protects mice against type 1 diabetes in NOD mice.* Feyza Engin, University of Wisconsin

3:45p.m. *The role of nitric oxide in islet defense against viral infection.* Joshua Stafford, Medical College of Wisconsin

4:00p.m. *Reduced β cell Sarco/Endoplasmic Reticulum Ca²⁺ ATPase Results in Increased Diabetes Incidence in the NOD Mouse.* Robert Bone, Indiana University

4:15p.m. *Dynamic regulation of cellular lipid levels in pancreatic islets during initiation of β cell autoimmunity in LEW.1WR1 rats.* Nguyen Truong, Michigan State University

4:30p.m. *β -cell Autophagy is Reduced in Type 1 Diabetes.* Charanya Muralidharan, Indiana University

4:45p.m. **BREAK**

DAY 1 PLENARY, presented by the University of Michigan Brehm Diabetes Center

5:00p.m. *ER-based defects in insulin biosynthesis.* Peter Arvan, M.D., Ph.D., Chief, Division of Metabolism, Endocrinology & Diabetes, University of Michigan

5:30p.m. **FREE TIME AND COCKTAILS**

6:00p.m. **DINNER**



GENERAL POSTER SESSION

7:30-10:00p.m. POSTER SESSION AND MIXER

MODERATED POSTER SESSION I: Islet function and metabolism

Chair – Amelia Linnemann, Ph.D.

8:00p.m. Prolactin Receptor Signaling Regulates a Pregnancy-Specific Transcriptional Program in Mouse Islets. Ronadip Banerjee, University of Alabama at Birmingham

The endoplasmic reticulum (ER) translocon-associated protein alpha (TRAPa) is required for preproinsulin translocation and insulin biogenesis. Xin Li, University of Michigan

The Cationic Amino Acid Transporter, SLC7A2, is Required for Amino Acid-Stimulated Alpha Cell Proliferation and Islet Hormone Secretion. Danielle Dean, Vanderbilt University

Dietary polyunsaturated fatty acids improve β -cell function and islet inflammation by G α dependent and independent mechanisms. Darby Peter, University of Wisconsin

Mouse islets having a targeted deletion of beta cell phosphofructokinase-M (PFKM) exhibit faster electrical and glycolytic oscillations. Vishal S.Parekh, University of Michigan

MODERATED POSTER SESSION II: Islet stress and failure

Chair – Emilyn Alejandro, Ph.D.

9:00p.m. Insulin Receptor expressing T-cells migrate to islets and affect beta cell functionality in a novel transgenic mouse. Hannah Hafner, University of Michigan



MiR-21 Contributes to Beta Cell Dysfunction Via Inhibition of mRNAs Regulating Beta Cell Identity. Sara Ibrahim, Indiana University

12/15-Lipoxygenase in Islets and Macrophages Independently Promotes Autoimmune Diabetes in Non-obese Diabetic (NOD) Mice. Annie Pineros, Indiana University

Human tau expression exacerbates metabolic defects in human IAPP transgenic mice. Nadeeja Wijesekara, University of Toronto

Loss of Hunk enhances insulin secretion and provides protection from Western-style diet induced islet dysfunction. Shane Simonett, University of Wisconsin

MONDAY MAY 20TH, MORNING

8:00a.m. CONTINENTAL BREAKFAST

Session III. Making New Beta Cells

Chair – Corentin Cras-Méneur, Ph.D.

9:00a.m. *Tead1 reciprocally regulates adult β -cell proliferation and function.* Jeongkyung Lee, University of Pittsburgh

9:15a.m. *Placental growth factor in mouse beta cells plays an essential role in gestational beta cell growth.* Yinan Jiang, Children's Hospital of Pittsburgh

9:30a.m. *Roundabout receptors regulate endocrine cell type sorting and three-dimensional architecture in the islet of Langerhans, and their absence affects intra-islet synchronized insulin secretion.* Melissa T. Adams, University of Wisconsin



9:45a.m. Temporal Regulatory Role of OGT in Pancreatic and Islet Cell Development. Alicia Wong, University of Minnesota

10:00a.m. Pancreatic beta-cell function and proliferation are regulated by beta-arrestin-1. Luiz Barella, National Institutes of Health

10:15a.m. COFFEE BREAK

Session IV. Fueling and Stymieing Insulin Secretion

Chair – Darleen Sandoval, Ph.D.

10:45a.m. A New Player in Intra-islet Communication: The Hyperglycemic Effects of Neuronostatin through Increased Glucagon Production and Reduced Insulin Release. Stephen Grote, Saint Louis University

11:00a.m. Amino acids enhance β cell function by direct action and α cell paracrine signaling. Sophie Lewandowski, University of Wisconsin

11:15a.m. ZnT8 specific deficiency in beta-cells aggravates glucose intolerance in hIAPP transgenic mice. Jie Xu, University of Toronto

11:30a.m. Complement 1q like-3 Secreted Protein Inhibits Insulin Secretion by an Adhesion G-Protein Coupled Receptor, BAI3 in Pancreatic β -Cells. Rajesh Gupta, University of Alabama at Birmingham

11:45a.m. Two populations of insulin granules with distinct fusion properties and synaptotagmin isoforms are maintained by transporters *abcg1* and *abca1*. Arun Anantharam, University of Michigan

12:00p.m. LUNCH



MONDAY MAY 20TH, AFTERNOON

Session V. *Fight or Flight: beta cell metabolism and stress responses*

Chair – Les Satin, Ph.D.

1:30p.m. ***The role of TALK-1 in modulating glucose homeostasis and mitochondrial function.*** Sarah Graff, Vanderbilt University

1:45p.m. ***Lipid droplet protein PLIN2 deficiency in pancreatic beta cells impairs insulin secretion via mitochondrial dysfunction.*** Akansha Mishra, University of Iowa

2:00p.m. ***Reducing Pancreatic Islet Activity Restores Pulsatile Insulin Secretion and Preserves Cellular Function.*** Nicholas Whitticar, Ohio University

2:15p.m. ***Cholecystikinin-A-Receptor Protects Mouse Pancreatic β -cells Against Pro-inflammatory Cytokines.*** HungTae Kim, University of Wisconsin

2:30p.m. ***Beta-cell stress and impaired autophagy in insulin-secretory deficient diabetes are reversed by intermittent fasting.*** Zeenat Shyr, Washington University in St. Louis

2:45p.m. ***AFTERNOON BREAK***

Session VI. *Transcriptional and Post-transcriptional Regulators of Beta Cell Health and Identity*

Chair – Steve Parker, Ph.D.

3:15p.m. ***The S64F MAFA mutation has strikingly different effects on glucose homeostasis in male and female mice, as observed in human patients.*** Emily Walker, Vanderbilt University



- 3:30p.m.** ***Identification of RNA Binding Proteins PCBP1 and PCBP2 as Post-Transcriptional Regulators of β Cell Identity and Function.*** Matthew Haemmerle, University of Pennsylvania
- 3:45p.m.** ***Mitochondrial quality control is required for maintenance of β -cell mass and identity during metabolic and chronologic stress.*** Gemma Pearson, University of Michigan
- 4:00p.m.** ***Electrogenic Na^+ - nHCO_3^- cotransporter NBCe1 is a novel regulator of pancreatic β -cell function in diabetes.*** Matthew Brown, Mayo Clinic
- 4:15p.m.** ***Single-nuclei ATAC-seq in human pancreatic islets reveals cell-type specific type 2 diabetes regulatory signatures.*** Vivek Rai, University of Michigan
- 4:30p.m.** ***BREAK***
- 5:00p.m.** ***POSTER AND SHORT TALK AWARD PRESENTATIONS***

PAUL LACY MEDAL PRESENTATION AND LECTURE

- 5:15p.m.** ***2019 LACY MEDAL LECTURE: The new biology of beta cell failure.***
Domenico Accili, M.D.
Russell Berrie Foundation Professor of Diabetes
Chief, Division of Endocrinology,
Director, Columbia University Diabetes Research Center
Columbia University College of Physicians and Surgeons
- 6:30p.m.** ***COCKTAILS***
- 7:00p.m.** ***BANQUET DINNER***
- 8:00-11:00p.m.** ***ENTERTAINMENT***