



## THE MIDWEST ISLET CLUB

*The Midwest Islet Club (MIC) will hold its 4<sup>th</sup> annual meeting at the Wisconsin Institutes for Discovery at University of Wisconsin-Madison - Wednesday, May 25<sup>th</sup> to Thursday May 26<sup>th</sup>, 2011.*

### ***MIC 2011 Meeting SCHEDULE -***

#### ***ORAL PRESENTATIONS***

##### ***Wednesday, May 25, 2011 -***

*12:00 - 2:00 pm Arrivals, Registration and Lunch.*

**2:00 - 2:15 PM** Welcome and Introduction: Alan Attie (Host)

##### **2:15 - 3:30 PM SESSION 1 - ENDOCRINE PANCREAS DEVELOPMENT AND STEM CELLS (Moderator: Jon Odorico)**

*2:15 - 2:30 pm* GOKHAN DALGIN - 'Zebrafish Mnx1 Controls Cell Fate Choice in the Developing Endocrine Pancreas'.

*2:30 - 2:45 pm* GOPIKA NAIR - 'Modeling Pancreas Development in Murine Embryonic Stem Cells by Ectopic Expression of PTF1a'.

*2:45 - 3:00 pm* MICHELLE GUNEY - 'Paracrine and Autocrine Effects of Connective Tissue Growth Factor (CTGF) During Islet Development'.

*3:00 - 3:15 pm* LISETTE MADDISON - 'Using Zebrafish to Uncover the Interplay of Tissues and Signaling Pathways in the Regulation of Beta-Cell Number'.

*3:15 - 3:30 pm* JUNGHYO JO - 'Formation of Pancreatic Islets Involves Coordinated Expansion of Small Islets and Fission of Large Interconnected Islet-Like Structures'.

**3:30 - 4:00 PM** Break

##### **4:00 - 5.15 PM SESSION 2 - β-CELL TRANSCRIPTION FACTORS, GROWTH & REGENERATION (Moderator: Rupangi C. Vasavada)**

*4:00 - 4:15 pm* DAWN BELT DAVIS - 'Tcf19 is a Novel Transcription Factor Necessary for Beta Cell Proliferation'.

4:15 – 4:30 pm YI CHUN CHEN – ‘Transcriptional regulation of Mig-6 by PPAR gamma in beta cells’.

4:30 – 4:45 pm AARTHI MAGANTI – ‘The Lysine Methyltransferase Set7/9 is a Pdx1-Interacting Cofactor that is Required for Normal Islet Function’.

4:45 – 5:00 pm OZHAN OCAL – ‘Rgs16 and Rgs8 - HTS Biomarkers for Pancreas Development, Cancer and Diabetes’.

5:00 – 5:15 pm ELIZABETH KLAR – ‘G $\alpha$ z Signaling Pathways in the Regulation of Pancreatic Beta-Cell Function and Mass’.

**5:15 – 6:00 PM Break**

**6:00 – 7:30 PM Dinner**

**7:30 – 9:30 PM POSTER SESSION**

***Thursday, May 26, 2011***

**8:00 – 8.45 AM Breakfast**

**9:00 - 10:15 AM SESSION 3 – NEW INSIGHTS INTO ISLET  $\beta$ -CELL SIGNALING  
(Moderator: Debbie Thurmond)**

9:00 – 9:15 am – SUSHANT BHATNAGAR – ‘Positional Cloning of a Type 2 Diabetes Quantitative Trait Locus; Tomosyn-2, a Negative Regulator of Insulin Secretion’.

9:15 – 9:30 am - CARLY KIBBE – ‘ FOXO1 Inhibits TXNIP Transcription in Pancreatic Beta Cells’.

9:30 – 9:45 am - AARON NAATZ – ‘IRE-1-dependent Activation of AMPK in Response to Nitric Oxide’.

9:45 – 10:00 am - MUFADDAL SONI – ‘Micro-RNA 132 and 212 targets carnitine acyl-carnitine translocase and enhances insulin secretion’.

10:00 - 10:15 am - WILFREDO ROSARIO – ‘Mapping the Specific Neuronal Connection Between the Central Nervous System and the Endocrine Pancreas’.

10:15 - 10:45 am Break

**10:45 – 12:00 PM SESSION 4 - ISLET  $\beta$ -CELL STRESS-1: AT THE ER.  
(Moderator: Patrick Fueger)**

10.45 - 11.00 am SOO-YOUNG PARK - Drosophila Model of Cell Stress Underlying Permanent Neonatal Diabetes due to Misfolded Proinsulin

11.00 – 11.15 am STEFANI EAMES – ‘Human Proinsulin Mutant C43G is Retained in the ER But Does Not Impair Wildtype Insulin Release in Zebrafish’.

11.15 – 11.30 am MING LIU – ‘Impaired Cleavage of Preproinsulin Signal Peptide Linked to Autosomal Dominant Diabetes’.

11.30 – 11.45 am AARON BALDWIN – ‘A Role for AMPK in FFA Induced UPR’.

11.45 – 12.00 pm YURIKA NISHIKI – ‘Regulation of deoxyhypusine synthase by p38 MAPK links cytokine signaling to the translation of iNOS in pancreatic islets’.

**12:00 – 1:30 PM Lunch**

**1:30 – 2:45 PM SESSION – 5 – ISLET  $\beta$ -CELL STRESS-2: ROS & INFLAMMATION**  
**(Moderator: John Corbett)**

1.30 – 1.45 pm GAUTAM RAJPAL – ‘ERp72, Not PDI, is Required for Proinsulin Folding in Pancreatic Beta Cells’.

1:45 – 2:00 pm ALYSSA ARATA – ‘Hydrogen Peroxide is a Nutrient-Activated Secondary Signal in Beta Cells’.

2:00 – 2.15 pm ANGELA HENSCHERL – ‘Reduced anti-oxidative defense capacity may contribute to type 1 diabetes susceptibility in the BioBreeding Rat’.

2:15 – 2:30 pm SHUANGLI GUO – ‘Oxidative Stress Reduces MafA and Nkx6.1 Transcription Factor Activity in both Beta Cell Lines and *db/db* Pancreatic Beta Cells’.

2:30 – 2:45 pm SARAH TERSEY – ‘Pancreas-specific Deletion of 12-Lipoxygenase Protects Against Islet Dysfunction in Mouse Models of Cytokine-Mediated Diabetes’.

2:45 - 3:30 pm Break

**3:30 – 4:45 PM SESSION – 6 - ISLET  $\beta$ -CELL THERAPIES & THERAPEUTICS**  
**(Moderator: Anath Shalev)**

3:30 – 3.45 pm TATSUYOSHI KONO – ‘Adipose-Derived Stem Cells Improve Beta Cell Function and Survival in a Mouse Model of Streptozotocin-Induced Diabetes’.

3:45 – 4:00 pm SHELLEY VALLE – ‘Administration of Low Molecular Weight Dextran Sulfate Prevents Type 1 Diabetes in non-obese diabetic (NOD) Mice’.

4:00 – 4:15 pm ZHIGUANG GUO – ‘Stimulating Beta Cell Replication and Improving Islet Graft Function by GPR 119 Agonists’.

4:15 – 4:30 pm KELLY KAIHARA – ‘*In Vivo* Activation of Cyclic AMP-dependent Protein Kinase A in Islet Beta-Cells Rescues Glucose Intolerance by Enhancement of Insulin Secretion with No Effect on Beta-Cell Mass’.

4:30 – 4:45 pm NAGESHA GUTHALU KONDEGOWDA – ‘Osteoprotegerin, a Novel Downstream Target of Lactogens, Directly Enhances Human Beta Cell Survival and Proliferation’.

4:45 - 5:15 pm Break

**5:15 – 6:30 PM SESSION – 7 – *THE 4<sup>th</sup> ANNUAL LACY MEDAL LECTURE***  
**(Moderator: CHRIS RHODES)**

FRANZ MATCHINSKY MD (University of Pennsylvania) –

*“Energetics of fuel sensing and insulin secretion: Variations on a theme”*

**6:30 - 7:00 pm Break and Social**

**7:00- 8:15 pm Dinner and Awards**

**8:15 -9.30 pm Entertainment**

***Friday, May 27, 2011***

9:00 am – 12:00 pm Depart.

## ***POSTER PRESENTATIONS – Wednesday May 25<sup>th</sup> & 26<sup>th</sup> 2011 –***

### **ENDOCRINE PANCREAS DEVELOPMENT AND STEM CELLS –**

DANA BAIU – ‘Allogeneic Responses to Human Pdx1+ Pancreatic Precursors’.

JAMES DUTTON – ‘Investigating the Ability of *Pdx1*, *Ngn3* and *MafA* to Directly Reprogram Somatic Cells to a Beta Cell Fate’.

YAN HANG – ‘The MafB and MafA Transcription Factors Act in Sequential Manner to Regulate Genes Critical to Beta Cell Maturation and Function’.

CHAD HUNTER – ‘The LIM Co-factor Ldb1 is Enriched in Pancreatic Islet Cells and Required for Proper Cell Development and Function’.

MARY KINKEL – ‘Canonical Wnt Signaling is Required to Pattern the Pancreatic Endoderm’.

FABIOLA MERRIAM – ‘Characterization of a Candidate Murine Foregut-Committed Stem Cell Line’.

XIAOFANG XU – ‘Activin, BMP and FGF Pathways Cooperate to Promote Endoderm and Pancreatic Lineage Cell Differentiation from Human Embryonic Stem Cells’.

### ***β*-CELL TRANSCRIPTION FACTORS, GROWTH & REGENERATION –**

DAVID SCOVILLE – ‘Identification of Novel Co-regulatory Partners of the MafA Transcription Factor’.

ANGELINA HERNANDEZ – ‘Trefoil Factor 3 is not Required to Establish Functional Beta Cell Mass *In Vivo*’.

MICHAEL LAWRENCE – ‘Calcineurin and NFAT Signaling in Pancreatic Islet Cell Inflammation, Differentiation, and Function’.

ANAÏS MOZAR – ‘Parathyroid Hormone-Related Protein (PTHrP) 1-36 Markedly Enhances Beta Cell Regeneration and Completely Restores Beta Cell Mass in a Mouse Model of Partial Pancreatectomy’.

ROBERT SORENSON – ‘Synergy between Fatty Acids and Prolactin in Beta Cell Growth: Adaptation of Islets to Pregnancy’.

NORA KAYTON – ‘Role of the Epidermal Growth Factor Receptor in Modulating Insulin Secretion & Beta Cell Proliferation’.

### ***β*-CELL SIGNALING –**

MATTHEW MERRINS – ‘Contributions of Glucokinase, PFK-1, and PFK-2/FBPase-2 to Slow Oscillations in Pancreatic Islets’.

LEONID FRIDLJAND – ‘Ion Channels, Action Potentials and Ca<sup>2+</sup> handling in Human Pancreatic Beta-cells. A Theoretical Approach’.

DAVID JACOBSON – ‘The Two-pore-domain Potassium Channels, TASK-1 and TASK-3, Regulate Pancreatic Beta-cell Membrane Potential in response to pH and anesthetics’.

MARIA REMEDI – ‘Enhanced Insulin Sensitivity Underlies Long-term Remission of Diabetes in Response to Early Sulfonylurea Therapy in a Mouse Model of K<sub>ATP</sub>-induced Neonatal Diabetes Mellitus’.

GEONYOUNG AHN – ‘Regulation of Beta Cell SERCA2 Expression in Type 2 Diabetes Mellitus’.

SINDHU RAJAN – ‘SUMO Modification Down-Regulates Incretin Responsiveness in Hyperglycemia’.

STEPHANIE YODER – ‘Cool-1/Beta-PIX Functions as a GEF Protein in the Cycling of Cdc42 to Regulate Insulin Secretion’

DA-QING YANG – ‘ATM as a novel therapeutic target for beta cell function and survival’

### **β-CELL STRESS, DEATH & DIABETES –**

GERMAN KILIMNIK – ‘Multifactorial Analysis of Morphological Changes in Pancreatic Islets From Patients With Type 2 Diabetes and Other Metabolic Disorders’.

BILLY ZHAO – ‘Preferential Immune Cell Infiltration and Beta-Cell Loss of Large Islets in Autoimmune Diabetes of NOD Mice’.

PETER CHLEBECK – ‘NAD(P)H Oxidase Expression in Human Pancreatic Islet Cell Populations’.

JORDAN WRIGHT – ‘Wild-type Proinsulin Rescues Secretion of Misfolded Mutant Proinsulin’.

SANJAY KANSRA – ‘Leflunomide Blocks Cytokine Mediated Pancreatic Beta Cell Death’.

ANDREW T. TEMPLIN – ‘Deoxyhypusine Synthase Haploinsufficiency Attenuates Acute Cytokine Signaling While Preserving Growth and Glucose Homeostasis’.

### **β-CELL & ISLET ENCAPSULATION & TRANSPLANTATION –**

DAVID JAROCH – ‘Encapsulation of Functional Insulin Producing Cells with a Mesoporous Silica Glass Shell’.

NATALIA MAREK – ‘Microencapsulation of the Pancreatic Islets with Biofunctional GLP-1/PEG Hydrogel’.

ADAM KRYSZTANIAK – ‘Attaching CD4+CD25+CD127- T Regulatory Cells to the Human Pancreatic Islets As A Novel Immunoprotective Approach.’.

JUAN DANOBEITIA - Donor Pre-treatment with IL-1 Receptor Antagonist as a Strategy to Attenuate Inflammation in the Pancreas and Islets of Brain Dead Non-Human Primates

### **ISLET METHODOLOGIES & RESOURCES –**

LEENA HAATAJA - ‘Novel Ins1-Derived Cell Line Stably Expressing Human Proinsulin with Superfolder GFP Fused to C-peptide’.

BRIAN FLANAGAN – ‘Availability of Human, Pig and Monkey Islets for Diabetes Research’.

ROBERT DANIELZADEH – ‘A Flow Cytometric Immunoassay for the Rapid and Quantitative Measurement of Insulin’.

NATALIE STULL – ‘Use of Purified Collagenase/Neutral Protease Combinations to Ensure

Consistency of Mouse Islet Yield and Morphology'.