

OPPORTUNITIES FOR RESEARCH SUPPORTED BY THE SPECIAL STATUTORY FUNDING
PROGRAM FOR TYPE 1 DIABETES RESEARCH: A WORKSHOP OF THE DMICC

May 30-31, 2019

NIH Campus, Building 60/Cloisters, Bethesda, MD 20892

May 30

8:00-8:20 am **Overview of the *Special Statutory Funding Program for Type 1 Diabetes Research***

Dr. Philip Smith, Acting Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

8:20-8:35 am **Patient Perspective**

Ms. Lorraine Stiehl, JDRF; NIDDK Council Member

TOPIC 1: ARTIFICIAL PANCREAS

Primary Discussants: Dr. John Buse, Dr. Pratik Choudhary, Dr. Michael German, Dr. Vicki Helgeson, Dr. Michael Rickels, Dr. Bruce Verchere

8:35-8:45 am **Current Efforts in Artificial Pancreas**

Dr. Philip Smith, Acting Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

8:45-9:00 am **Proposal 1-1: Development and Integration of Novel Components for Open- and Closed-loop Hormone Delivery for Type 1 Diabetes Therapy**

Dr. Guillermo Arreaza-Rubín, Director, Clinical Immunology and Diabetes Technology Program, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

Primary discussants: Dr. John Buse, Dr. Pratik Choudhary

9:00-9:15 am **Proposal 1-2: Support for Small Business Innovation Research to Develop New Technologies for Open- and Closed-loop Systems to Improve Type 1 Diabetes Monitoring and Treatment**

Dr. Guillermo Arreaza-Rubín, Director, Clinical Immunology and Diabetes Technology Program, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

Primary discussants: Dr. Michael German, Dr. Bruce Verchere

9:15-9:30 am **Proposal 1-3: Clinical, Behavioral, and Physiological Studies of Open- and Closed-loop Systems**

Dr. Guillermo Arreaza-Rubín, Director, Clinical Immunology and Diabetes Technology Program, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

Primary discussants: Dr. Pratik Choudhary, Dr. Vicki Helgeson

9:30-9:45 am **Proposal 1-4: Consortium and Data Coordinating Center for Advanced Clinical Trials to Test Artificial Pancreas Device Systems for Type 1 Diabetes**

Dr. Guillermo Arreaza-Rubín, Director, Clinical Immunology and Diabetes Technology Program, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

Primary discussants: Dr. Pratik Choudhary, Dr. Michael Rickels

9:45-10:00 am **TOPIC 1 PANEL DISCUSSION (led by primary discussants)**

10:00-10:15 am **BREAK**

10:15-10:25 am **Welcome and Introduction**
Dr. Griffin P. Rodgers, Director, NIDDK

TOPIC 2: CLINICAL MANAGEMENT

Primary Discussants: Dr. John Buse, Dr. Pratik Choudhary, Dr. Vicki Helgeson, Dr. Michael Rickels, Dr. Elizabeth Seaquist

10:25-10:35 am **Current Efforts in Clinical Management**
Dr. Philip Smith, Acting Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

10:35-10:50 am **Proposal 2-1: Impact of the Use of Glucose Monitoring and Control Technologies on Health Outcomes and Quality of Life in Older Adults with Type 1 Diabetes**
Dr. Guillermo Arreaza-Rubín, Director, Clinical Immunology and Diabetes Technology Program, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Pratik Choudhary, Dr. Vicki Helgeson

10:50-11:05 am **Proposal 2-2: Technology Adoption and Health Disparities in New-onset Type 1 Diabetes**
Dr. Barbara Linder, Senior Advisor, Childhood Diabetes Research, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. John Buse, Dr. Vicki Helgeson

11:05-11:20 am **Proposal 2-3: Decreasing Diabetes Distress in Individuals with Type 1 Diabetes**
Dr. Barbara Linder, Senior Advisor, Childhood Diabetes Research, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Vicki Helgeson, Dr. Michael Rickels

11:20-11:35 am **Proposal 2-4: Hypoglycemia Unawareness and Hypoglycemic-associated Autonomic Failure in Patients with Type 1 Diabetes: Obstacles to Prevention**
Dr. Henry Burch, Program Director, Health Lifestyle and Policy Effects on Type 2 Diabetes, and Thyroid Portfolios, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. John Buse, Dr. Elizabeth Seaquist

11:35-11:50 am **TOPIC 2 PANEL DISCUSSION (led by primary discussants)**

TOPIC 3: PANCREATIC PATHOBIOLOGY

Primary Discussants: Dr. John Buse, Dr. Mark Huising, Dr. Michael Rickels, Dr. Maria Grazia Roncarolo, Dr. Bruce Verchere

- 11:50 am-12:00 pm** **Current Efforts in Pancreatic Pathobiology**
Dr. Philip Smith, Acting Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
- 12:00-12:15 pm** **Proposal 3-1: Type 1 Diabetes and Exocrine Dysfunction**
Dr. Dana Andersen, Scientific Program Manager, Division of Digestive Diseases and Nutrition, NIDDK
Primary discussants: Dr. Michael Rickels, Dr. Bruce Verchere
- 12:15-12:30 pm** **Proposal 3-2: Type 1 Diabetes and Acute Pancreatitis**
Dr. Dana Andersen, Scientific Program Manager, Division of Digestive Diseases and Nutrition, NIDDK
Primary discussants: Dr. John Buse, Dr. Michael Rickels, Dr. Maria Grazia Roncarolo
- 12:30-1:00 pm** **LUNCH**
- 1:00-1:20 pm** **Proposal 3-3: Continuation of the Integrated Islet Distribution Program**
Dr. Kristin Abraham, Senior Advisor, Model Systems and Resources, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Mark Huising, Dr. Bruce Verchere
- 1:20-1:40 pm** **Proposal 3-4: Immunobiology of Xenotransplantation Cooperative Research Program**
Dr. Nasrin Nabavi, Program Officer, Division of Allergy, Immunology, and Transplantation, NIAID
Primary discussants: Dr. Michael Rickels, Dr. Bruce Verchere
- 1:40-1:55 pm** **TOPIC 3 PANEL DISCUSSION (led by primary discussants)**
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TOPIC 4: BETA CELLS: ASSESSMENT AND THERAPIES

Primary Discussants: Dr. Michael German, Dr. Mark Huising, Dr. Alexander Marson, Dr. Rama Natarajan, Dr. Maria Grazia Roncarolo, Dr. Bruce Verchere

- 1:55-2:05 pm** **Current Efforts in Beta Cells: Assessment and Therapies**
Dr. Philip Smith, Acting Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
- 2:05-2:20 pm** **Proposal 4-1: Characterization of Islet-derived Extracellular Vesicles for Improved Detection, Monitoring, Classification, and Treatment of Type 1 Diabetes**
Dr. Olivier Blondel, Program Director, Endocrine Systems Biology, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Mark Huising, Dr. Bruce Verchere
- 2:20-2:35 pm** **Proposal 4-2: Engineering Immune Cells for the Monitoring and Therapeutic Targeting of the Pancreatic Environment in Type 1 Diabetes**
Dr. Olivier Blondel, Program Director, Endocrine Systems Biology, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

Primary discussants: Dr. Alexander Marson, Dr. Maria Grazia Roncarolo

- 2:35-2:50 pm** **Proposal 4-3:** Development and Testing of New Technologies and Bioengineering Solutions for the Advancement of Cell Replacement Therapies for Type 1 Diabetes
Dr. Guillermo Arreaza-Rubín, Director, Clinical Immunology and Diabetes Technology Program, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Michael German, Dr. Bruce Verchere
- 2:50-3:10 pm** **Proposal 4-4:** Triggers and Biomarkers of Early Type 1 Diabetes (Human Islet Research Network Consortium on Beta Cell Death and Survival)
Dr. Olivier Blondel, Program Director, Endocrine Systems Biology, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Michael German, Dr. Mark Huising
- 3:10-3:25 pm** **BREAK**
- 3:25-3:40 pm** **Proposal 4-5:** HIRN Early Stage Investigator Pilot Award
Dr. Kristin Abraham, Senior Advisor, Model Systems and Resources, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Mark Huising, Dr. Rama Natarajan
- 3:40-4:00 pm** **TOPIC 4 PANEL DISCUSSION (led by primary discussants)**
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TOPIC 5: DIABETES COMPLICATIONS

Primary Discussants: Dr. Vickie Driver, Dr. Thomas Gardner, Dr. Michael German, Dr. Vicki Helgeson, Dr. Junhyong Kim, Dr. Rama Natarajan, Dr. Elizabeth Seaquist, Dr. Ann Marie Schmidt, Dr. Katherine Tuttle

- 4:00-4:10 pm** **Current Efforts in Diabetes Complications**
Dr. Philip Smith, Acting Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
- 4:10-4:40 pm** **Proposal 5-1:** Preventing Early Renal Loss in Diabetes
Dr. Afshin Parsa, Program Director, Clinical Kidney Genomics and CKD, Division of Kidney, Urology, and Hematology, NIDDK
Primary discussants: Dr. Thomas Gardner, Dr. Rama Natarajan, Dr. Ann Marie Schmidt
- 4:40-5:00 pm** **Proposal 5-2:** Continuation of the Diabetic Retinopathy Clinical Research Network
Dr. Emily Chew, Deputy Director, Division of Epidemiology & Clinical Applications, NEI
Primary discussants: Dr. Thomas Gardner, Dr. Katherine Tuttle
- 5:00-5:15 pm** **Proposal 5-3:** Establishing a Cohort to Clarify Risk and Protective Factors for Neurocognitive Complications of Pediatric Type 1 Diabetes
Dr. Luke Stoeckel, Program Director, Cognitive and Clinical Neuroscience of Obesity and Diabetes, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Vicki Helgeson, Dr. Elizabeth Seaquist, Dr. Katherine Tuttle

5:15-5:45 pm

DAY ONE CLOSING DISCUSSION (led by Dr. Smith)

May 31

TOPIC 5: DIABETES COMPLICATIONS

Primary Discussants: Dr. Vickie Driver, Dr. Thomas Gardner, Dr. Michael German, Dr. Vicki Helgeson, Dr. Junhyong Kim, Dr. Elizabeth Seaquist, Dr. Ann Marie Schmidt, Dr. Katherine Tuttle

8:00-8:15 am **Proposal 5-4:** Biomarkers for Diabetic Foot Ulcers through the Diabetic Foot Consortium
Dr. Teresa Jones, Program Director, Diabetic Complications, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Vickie Driver, Dr. Ann Marie Schmidt

8:15-8:30 am **Proposal 5-5:** Building a Cellular and Molecular Atlas of the Diabetic Foot Ulcer Niche
Dr. Aaron Pawlyk, Senior Advisor, Diabetes and Endocrine Disease Translational Research, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Vickie Driver, Dr. Michael German, Dr. Junhyong Kim

8:30-8:50 am **TOPIC 5 PANEL DISCUSSION (led by primary discussants)**

TOPIC 6: AUTOIMMUNE ETIOLOGY, CLINICAL TRIALS, AND EPIDEMIOLOGY

Primary Discussants: Dr. John Buse, Dr. Betty Diamond, Dr. Junhyong Kim, Dr. Alexander Marson, Dr. James Meigs, Dr. Rama Natarajan, Dr. John Rioux, Dr. Maria Grazia Roncarolo, Dr. Jane Salmon, Dr. Elizabeth Selvin

8:50-9:00 am **Current Efforts in Autoimmune Etiology, Clinical Trials, and Epidemiology**
Dr. Philip Smith, Acting Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK

9:00-9:15 am **Proposal 6-1:** Mechanisms Underlying the Contribution of Type 1 Diabetes Disease-associated Variants
Dr. Beena Akolkar, Senior Advisor, Immunopathogenesis and Genetics of Diabetes, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Rama Natarajan, Dr. John Rioux

9:15-9:30 am **Proposal 6-2:** The Autoantigens and Neoantigens Role in the Etiology and Pathophysiology of Type 1 Diabetes
Dr. Salvatore Sechi, Senior Advisor, Proteomics and Systems Biology, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. John Rioux, Dr. Jane Salmon

9:30-10:00 am **Proposal 6-3:** Type 1 Diabetes TrialNet
Dr. Lisa Spain, Program Director, Immunobiology of Type 1 Diabetes and Autoimmune Endocrine Diseases, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. Betty Diamond, Dr. Maria Grazia Roncarolo, Dr. Jane Salmon

10:00-10:30 am **Proposal 6-4:** Immune Tolerance Network
Dr. James McNamara, Chief, Autoimmunity and Mucosal Immunology Branch,
Division of Allergy, Immunology, & Transplantation, NIAID
Primary discussants: Dr. John Buse, Dr. Maria Grazia Roncarolo

10:30-10:45 am **BREAK**

10:45-11:00 am **Proposal 6-5:** Collaborative Research Using Subjects from Type 1 Diabetes
Clinical Studies
Dr. Lisa Spain, Program Director, Immunobiology of Type 1 Diabetes and
Autoimmune Endocrine Diseases, Division of Diabetes, Endocrinology, &
Metabolic Diseases, NIDDK
Primary discussants: Dr. John Rioux, Dr. Jane Salmon

11:00-11:15 am **Proposal 6-6:** Exploring Vaccination to Prevent Type 1 Diabetes
Dr. Lisa Spain, Program Director, Immunobiology of Type 1 Diabetes and
Autoimmune Endocrine Diseases, Division of Diabetes, Endocrinology, &
Metabolic Diseases, NIDDK
Primary discussants: Dr. Betty Diamond, Dr. Maria Grazia Roncarolo

11:15-11:45 am **Proposal 6-7:** The Environmental Determinants of Diabetes in the Young

- **Proposal 6-7a:** Continued Follow-up of TEDDY Subjects and Initiation of
a Second Case-control Cohort Study
- **Proposal 6-7b:** Follow-up of TEDDY Participants with Persistent Islet
Autoimmunity Beyond Age 15 Years

Dr. Beena Akolkar, Senior Advisor, Immunopathogenesis and Genetics of
Diabetes, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
**Primary discussants: Dr. Betty Diamond, Dr. Junhyong Kim, Dr. James
Meigs**

11:45-12:15 pm **LUNCH**

12:15-12:35 pm **Proposal 6-8:** SEARCH for Diabetes in Youth
Dr. Barbara Linder, Senior Advisor, Childhood Diabetes Research, Division of
Diabetes, Endocrinology, & Metabolic Diseases, NIDDK
Primary discussants: Dr. James Meigs, Dr. Elizabeth Selvin

12:35-12:50 pm **Proposal 6-9:** Enhanced Surveillance of Diabetes among Children, Adolescents
and Young Adults through Measurement of Diabetes Autoantibodies and Genetic
Risk Score: Supplement to CDC Surveillance Efforts
Dr. Sharon Saydah, CDR USPHS, Senior Scientist, Division of Diabetes
Translation, Centers for Disease Control and Prevention
Primary discussants: Dr. James Meigs, Dr. Elizabeth Selvin

12:50-1:10 pm **Proposal 6-10:** Incidence of Type 1 Diabetes Among Young Adults: Diabetes in
Young Adults Study
Dr. Sharon Saydah, CDR USPHS, Senior Scientist, Division of Diabetes
Translation, Centers for Disease Control and Prevention
Primary discussants: Dr. James Meigs, Dr. Elizabeth Selvin

1:10-1:25 pm **Proposal 6-11:** Support for Small Business Innovation Research to Develop
New Methods and Technologies for Assessment of Risk and for Early Diagnosis
and Prognosis of Type 1 Diabetes
Dr. Guillermo Arreaza-Rubín, Director, Clinical Immunology and Diabetes
Technology Program, Division of Diabetes, Endocrinology, & Metabolic
Diseases, NIDDK

Primary discussants: Dr. Alexander Marson, Dr. Jane Salmon

1:25-2:00 pm

TOPIC 6 PANEL DISCUSSION (led by primary discussants)

2:00-3:00 pm

CLOSING DISCUSSION (led by Dr. Smith)