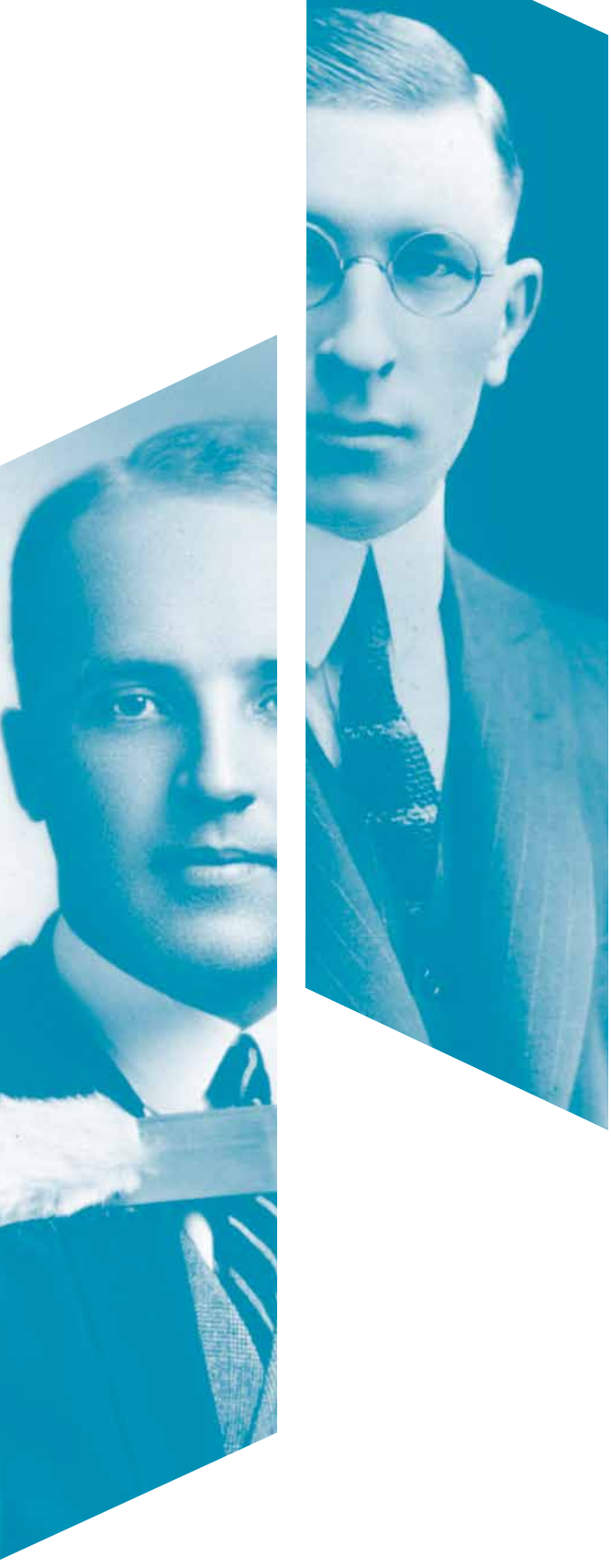
BBDC

BANTING & BEST DIABETES CENTRE

ANNUAL REPORT

07/2018 — 06/2019



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Who we are

THE BBDC WAS ESTABLISHED IN 1978 AS AN EXTRA-DEPARTMENTAL UNIT OF THE FACULTY OF MEDICINE, UNIVERSITY OF TORONTO WITH THE PRIMARY OBJECTIVE OF ADVANCING DIABETES RESEARCH, EDUCATION, AND PATIENT CARE.

We offer several grants, studentships, fellowships, and other support for qualified individuals involved in diabetes research at the University of Toronto and its affiliated hospitals and research institutes across the city including SickKids, Mount Sinai Hospital, University Health Network, Sunnybrook Health Sciences Centre, St. Michael's Hospital, Women's College Hospital, Centre for Addiction and Mental Health and many other community affiliated sites.

We host scientific conferences to facilitate the exchange of scientific information and ideas, and to assist in the development of collaborative diabetes research activities both locally and internationally. We foster and develop continuing health education and quality improvement initiatives for all members of the diabetes health care team with the aim of providing a tangible impact at the patient level.

Our members are a network of over 200 faculty and health care providers involved in diabetes research, education and care from various departments at the University of Toronto and its affiliated hospitals and research institutes.

Our Vision

As a centre of excellence for innovation in diabetes research, education, and clinical care, we will tangibly impact diabetes prevention and outcomes in Canada and globally.

Our Mission

We bring together researchers and health professionals across multiple University of Toronto affiliated disciplines to:

- Lead discoveries in patient-oriented research, large-scale clinical trials and basic science across affiliated hospitals and research institutes
- Develop novel treatment paths to cure diabetes or prevent its complications
- Identify innovative ways to manage diabetes and improve the lives of those living with the condition

Director's Report

GARY F. LEWIS MD, FRCPC

Director, Banting & Best Diabetes Centre

Professor, Departments of Medicine and Physiology

Sun Life Financial Chair in Diabetes

Drucker Family Chair in Diabetes Research

Two years prior to the planned celebrations in 2021 of the 100th anniversary of Toronto's gift to the world, the discovery of insulin, I feel pride but also a great sense of urgency in solving the diabetes epidemic.

Time is not on our side and we need a concerted effort and strategy for the next century. The discovery of insulin as a therapeutic tool in 1921/22 dramatically changed the outlook for those affected by type 1 diabetes, changing the face of the disease. The discovery itself, coupled with tremendous efforts to scale up production and distribution of insulin to those most urgently in need, rapidly changed what was at that time a universally fatal condition into a chronic condition that to this day continues to present enormous challenges for those affected and their families and is still associated with life threatening complications.

More recently, a second diabetes scourge alarmingly began to increase in prevalence into what has now become a worldwide epidemic that threatens to overwhelm and bankrupt health care systems. Most new cases and total numbers affected will occur in developing countries and continents such as India, China and Africa, but developed countries like Canada will continue to be affected well into the future by this tremendous burden of disease, with its associated human and financial costs.

The BBDC is ideally positioned to make a major impact in addressing the diabetes epi-

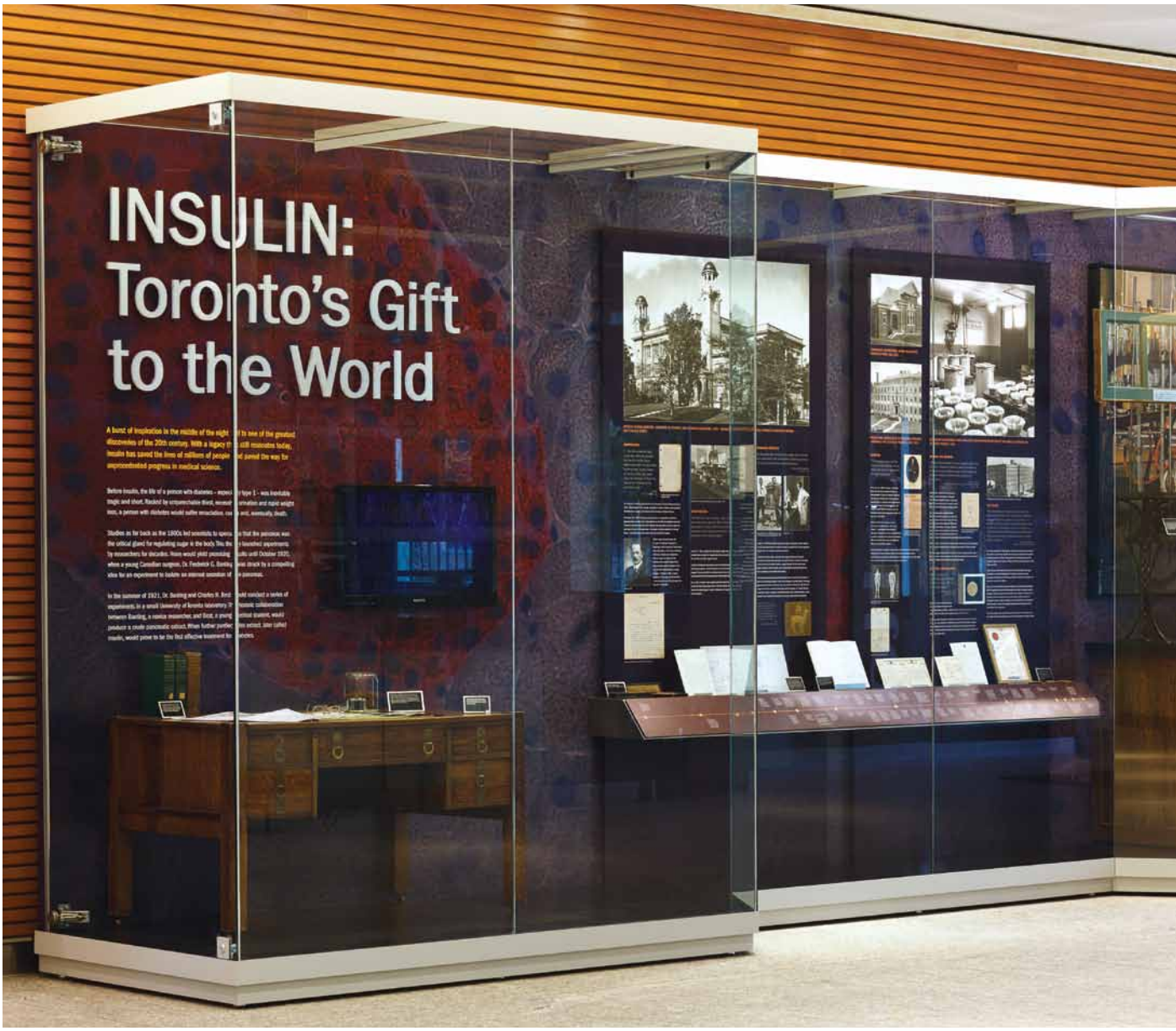
> **Time is not on our side** and we need a concerted effort and strategy for the next century. The **BBDC** is ideally positioned to make a major impact in addressing the diabetes epidemic but we need to do more."

demic but we need to do more. One major focus of the BBDC, through our studentship, post-doctoral fellowship and new investigator funding programs is to train and support the next generation of diabetes researchers. This will continue to be the major focus of the BBDC and is arguably the BBDC's most impactful contribution as an organization. A second focus of our activities is to support cutting edge innovation and discovery diabetes research with our pilot and feasibility and innovation grants. The focus of the BBDC will continue to be on innovation and discovery. A third, equally impactful research area is that of precision population health, health systems change and evaluation, all of which essentially depend on access to big data and advanced analytics of those data. This third area of research has not traditionally been the focus of most BBDC scientists, although the Toronto diabetes research community boasts international expertise and strength in this area. These latter research activities are currently supported by the U of T based, CIHR funded, National SPOR Network in diabetes and its related complications, Diabetes Action Canada, which also benefits many BBDC scientists. As PI of the SPOR Network grant, I am committed to drawing the BBDC and SPOR networks closer, into a continuum of bench to population diabetes research, providing opportunities for funding and collaboration for all BBDC members and others.

As we draw closer to the 100th anniversary celebrations of the discovery of insulin and as we position our research programs for the next century of discovery and impact, we will see more focus on the continuum of research programs from basic discovery to population research rather than a siloed focus on the various organizations that enable this research, in order to maximize our ability to impact the lives of those living with diabetes.

Once again, the BBDC can be proud of many accomplishments this past year. Some achievements I would particularly like to highlight include:

- The 5th BBDC-Joslin Diabetes Center-University of Copenhagen Conference was held in Copenhagen on October 26-27, 2019 and focused on Prevention of Beta Cell Dysfunction in Type 1 and Type 2 Diabetes: Role of Inter-organ Communication. The conference was preceded by the Danish Diabetes Academy Training Day, a one-day interactive learning and networking session for trainees from the three universities. We look forward to the next conference to be held in Boston on October 24-26, 2019.
- In January 2019, the Peter Munk Cardiac Centre and the BBDC co-hosted the inaugural Joint Cardiovascular-Diabetes Symposium in Toronto, a two-day educational event for health care providers. The event was very well received and a second symposium will be held January 17-18, 2020.
- The BBDC's Knowledge Translation and Optimizing Care Models Program and Diabetes Pharmacists Network led by Dr. Lori MacCallum recently launched the second edition of the *BBDC Guidebook on Diabetes Management*. The latest edition incorporates recommendations from Canadian clinical practice guidelines in glycemic management, cardiovascular protection and lifestyle modification combined with expert opinion and practical



advice. Also included is information on over 100 medications, along with clinical pearls and practical tips.

The program also launched a practice tool to support the safe and effective use of SGLT2 inhibitors. Over 4000 health care providers have downloaded the tool to date.

Dr. MacCallum is leading research into the barriers and facilitators of routine monitoring and follow-up by community pharmacists for people with diabetes and presented the initial findings at the Pharmacy Experience 2019 Conference. These results are being used to inform the next phase of the research where strategies are being tested in community pharmacies using quality improvement techniques.

› The BBDC's Quality Education and Safety (QUEST) program led by Dr. Phillip Segal

created four new authoritative and unbiased educational videos for the QUEST website diabetesquest.ca. Two videos on *Gestational Diabetes: Best Management Practices*, and *Gestational Diabetes: Mount Sinai Hospital Protocol* help all members of the healthcare team understand how to diagnose and treat GDM. Two videos on *Preventing and Managing Hypoglycemia* and *Hypoglycemia and Safe Driving* are of value to all members of the healthcare team who routinely teach their patients about this challenging obstacle to managing their blood sugars.

Dr. Rene Wong and other members of the QUEST committee piloted a new longitudinal diabetes education program *Advanced Diabetes Management: Addressing Medical and Social Complexity*. This advanced level, 5-session course in diabetes was specifically designed to help participants support people with diabetes living with medical complexity (e.g. medical comorbidities and complications) and/or sociodemographic complexity (e.g. income and immigration related barriers).

A three-part article focusing on how to design, implement and sustain a quality improvement project in diabetes was published in June 2019 in the Canadian Journal of Diabetes. Members of the QUEST committee are now focused on creating a quality improvement e-learning curriculum based on the three articles.

> “As we draw closer to the celebrations of the **100th anniversary** discovery of insulin … we will see more focus on the continuum of research programs from basic discovery to population research … in order to maximize our ability to impact the lives of those living with diabetes.”

These accomplishments would not have been possible without the dedicated and highly competent work of the BBDC’s members and staff. I would particularly like to acknowledge Rose LaBarbera (Business Manager), Sanam Tajadod (Administrative Assistant and Event Coordinator), Lori MacCallum (Program Director, Knowledge Translation and Optimizing Care Models) and the many BBDC members and trainees who volunteer their time on the various BBDC committees. Thank you especially to Drs. Tony Lam (Chair, Training and Research Excellence Committee) and Phillip Segal (Chair, Quality Education and Safety Committee – QUEST) for their leadership and dedication to BBDC programs.

Last, I would like to note the recent passing of Dr. Mladen Vranic who contributed so much to our current knowledge of the pathophysiology of diabetes and had a personal impact on the careers of many Toronto-trained scientists and international collaborators. We will continue to build on his work and influence as we anticipate the new academic year and further advances in diabetes research, education and clinical care.

Committees

JULY 2018 — JUNE 2019

Executive Committee

The governance structure of the BBDC consists of a Director and Executive Committee who ensure that the goals of the Centre are appropriately implemented. The Executive Committee provides leadership and representation for the University of Toronto diabetes research, education and care communities.

director & chair

Dr. Gary Lewis, Department of Medicine, Division of Endocrinology & Metabolism, and Department of Physiology*

Dr. Khosrow Adeli, Department of Biochemistry, and Department of Laboratory Medicine & Pathobiology*

Dr. Richard Gilbert, Department of Medicine, Division of Endocrinology & Metabolism*

Dr. Richard Hegele, Vice Dean, Research and Innovation, Faculty of Medicine*

Dr. Tony Lam, Department of Medicine and Department of Physiology*

Dr. Lorraine Lipscombe, Department of Medicine, and Department of Health Policy, Management and Evaluation*

Dr. Bruce Perkins, Department of Medicine, Division of Endocrinology & Metabolism*

Dr. Phillip Segal, Department of Medicine, Division of Endocrinology & Metabolism*

Dr. Minna Woo, Department of Medicine, Division of Endocrinology & Metabolism

Clinical Applied Research Education (CARE) Committee

This committee is made up of the leadership of the Applied Research Programs. Their purpose is to coordinate activities in these programs and promote collaboration between the Applied Research Programs.

chair

Dr. Gary Lewis, Department of Medicine, Division of Endocrinology & Metabolism, and Department of Physiology*

Dr. Lorraine Lipscombe, Leader, Vulnerable Populations/Population Health Program

Dr. Lori MacCallum, Program Director, Knowledge Translation and Optimizing Care Models; Leslie Dan Faculty of Pharmacy*

Dr. Phillip Segal, Chair, Quality Education and Safety Committee

Training and Research Excellence Committee

This committee implements the scientific review of BBDC funding programs, develops the Annual Scientific Day program, and selects speakers for the BBDC Seminar Series.

chair

Dr. Tony Lam, Associate Director of Research, BBDC; Departments of Medicine and Physiology*

Dr. Kim Connelly, Department of Medicine, Division of Cardiology*

Dr. Satya Dash, Department of Medicine, Division of Endocrinology & Metabolism

Dr. Margaret Hahn, Department of Psychiatry*

Dr. Caroline Kramer, Department of Medicine*

Dr. Cynthia Luk, Department of Medicine*

Dr. Ian Rogers, Department of Obstetrics and Gynecology*

Dr. Robert Screaton, Department of Biochemistry*

Dr. Hoon-Ki Sung, Department of Laboratory Medicine and Pathobiology*

Dr. Darren Yuen, Department of Laboratory Medicine and Pathobiology*

*University of Toronto

Quality Education And Safety (QUEST) Committee

This committee fosters and develops continuing health education and quality improvement initiatives for all members of the diabetes team with the aim of improving the lives of people living with diabetes.

chair | **Dr. Phillip Segal**, Department of Medicine, Division of Endocrinology & Metabolism*

Leigh Caplan, Certified Diabetes Nurse Educator, Sunnybrook Health Sciences Centre

Suela Cela, Social Worker, Outpatient Diabetes/ Renal Transplant, Urology and Ophthalmology, St. Michael's Hospital

Dr. Julie Anne Gilmour, Department of Medicine, Division of Endocrinology & Metabolism*

Dr. Ilana Halperin, Staff Physician, Sunnybrook Health Sciences Centre; Assistant Professor*

Dr. Lori MacCallum, BBDC Program Director, Knowledge Translation and Optimizing Care Models; Leslie Dan Faculty of Pharmacy*

Dr. Geetha Mukerji, Physician, Women's College Hospital & Mount Sinai Hospital*

Violetta Nikolova, Clinical Nurse Specialist, Mount Sinai Hospital

Dr. Monica Parry, Assistant Professor, Leadership Team; Director, Nurse Practitioner Programs, Lawrence S. Bloomberg Faculty of Nursing*

Lori Sutton, Outreach Facilitator – Diabetes and Chronic Disease Management, Toronto Central LHIN Diabetes Program, South Riverdale Community Health Centre

Dana Whitham, Case Manager, Diabetes, St. Michael's Hospital

Dr. Rene Wong, Department of Medicine, Division of Endocrinology & Metabolism*

Trainee Advancement And Development Committee

As a subcommittee of the Training and Research Excellence Committee, this committee implements the scientific review of the Summer Studentships, Annual Trainee Awards, and Trainee Travel Awards funding programs. Members are post-doctoral fellows with diverse expertise and disciplines who are either BBDC or externally funded.

chair | **Dr. Tony Lam**,
Associate Director of Research, BBDC; Departments of Medicine and Physiology*

Dr. Sri Batchu
(Supervisors: Drs. Kim Connelly and Andrew Advani)

Dr. Jacqueline Beaudry
(Supervisor: Dr. Daniel Drucker)

Dr. Queenie Hu
(Supervisor: Dr. Robert Screaton)

Dr. Adriana Migliorini
(Supervisor: Dr. Cristina Nostro)

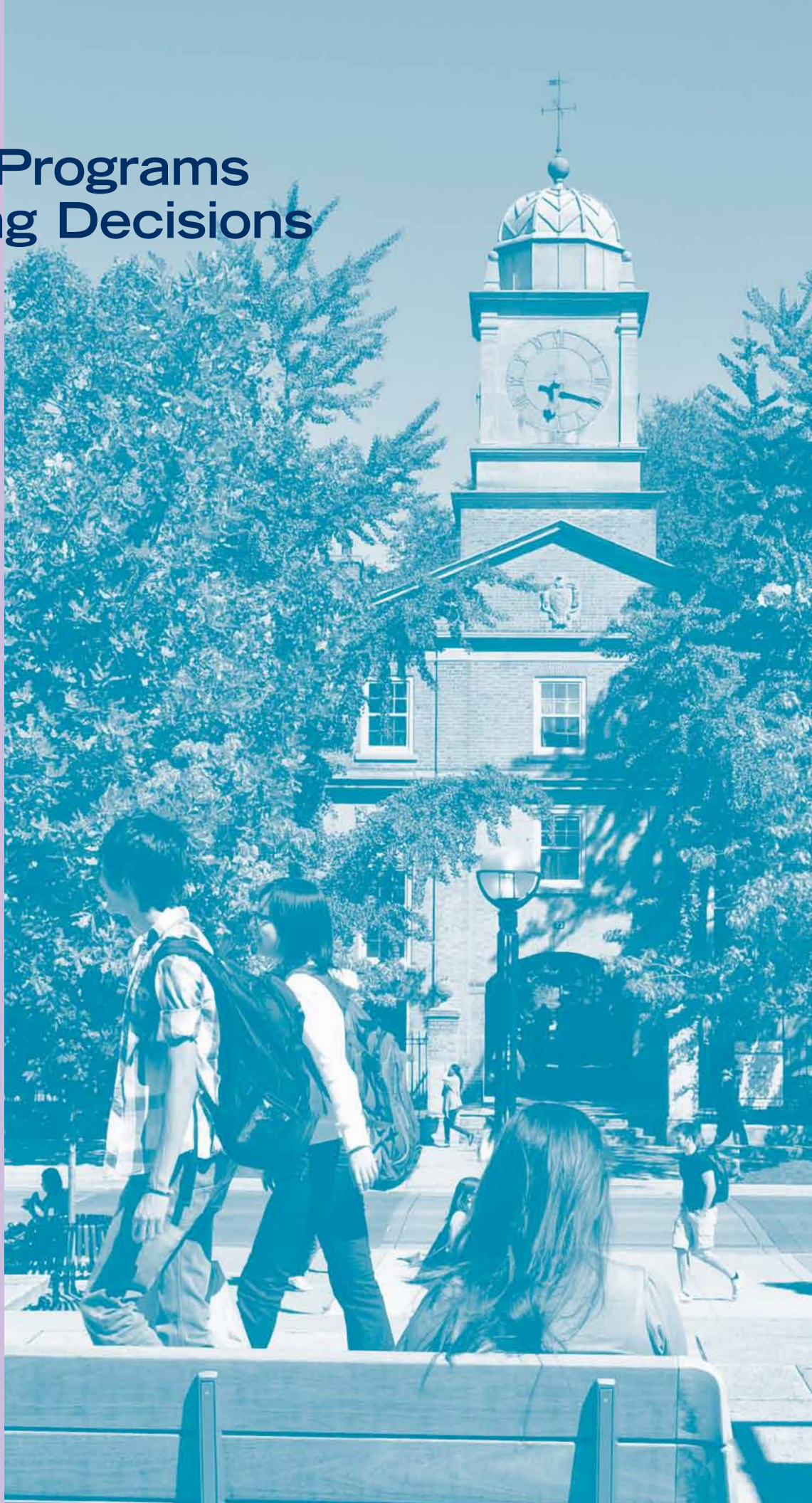
Dr. Yoo Jin Park
(Supervisor: Dr. Minna Woo)

Dr. Willem Peppler
(Supervisor: Dr. Tony Lam)

Dr. Priska Stahel
(Supervisor: Dr. Gary Lewis)

Dr. Samaneh Yazdani
(Supervisor: Dr. Amira Klip)

Funding Programs & Funding Decisions



This section of our annual report provides a brief overview of the significant funding that we provide for the diabetes research, education and care communities at the University of Toronto and its affiliated institutions. Complete details and specific eligibility requirements for each program are outlined on our website bbdc.org.

FUNDING PROGRAMS FOR TRAINEES

5th BBDC-JOSLIN-UCPH Abstract Competition

The following ten trainees were selected to participate in the Danish Diabetes Academy Training Day held in Copenhagen on October 25, 2018 in advance of the 5th BBDC-Joslin Diabetes Center-University of Copenhagen Conference which was held October 26-27, 2018. The objective of the Training Day is to facilitate development of networks and future research collaborations among the selected young researchers across the three involved institutions. The trainees also presented posters at the conference.

TRAINEE	SUPERVISOR(S)	TITLE OF RESEARCH
Cindy Bui	Dr. Jonathan Rocheleau	Imaging Apollo-NADP+ to track NADPH dynamics in pancreatic ß cells
William Cameron	Dr. Jonathan Rocheleau	Tracking NADPH/NADP+ Redox across multiple organelles exposes the mitochondria as a source of Glucolipotoxicity-Induced NADPH Dysfunction and Ros generation in pancreatic Beta-cells
Dakota Gustafson	Dr. Jason Fish	Novel Biomarkers of Small Vessel Disease in End-Stage Renal Disease
Queenie Hu	Dr. Robert Screaton	Novel G Protein-Coupled Receptors Promote Human Pancreatic Beta Cell Proliferation
Sean Kinney	Dr. Michael Sefton	Vascularizing Hydrogel for Subcutaneous Islet Transplantation
Mi Lai	Dr. Michael Wheeler	Novel metabolites predict future T2D associated with GDM
Marsel Lino	Dr. Michelle P. Bendeck	Discoidin Domain Receptor 1 is a novel regulator of obesity and insulin resistance in vivo
Ashley Untereiner	Dr. Michael Wheeler	GABA promotes beta-cell proliferation but does not overcome impaired glucose homeostasis associated with diet-induced obesity
Alexander Vlahos	Dr. Michael Sefton	Subcutaneous transplantation of reconstituted pseudo-islets to restore normoglycemia in diabetic SCID/bg mice
T. M. Zaved Waise	Dr. Tony Lam	Inhibition of upper small intestinal mTOR lowers plasma glucose levels by inhibiting hepatic glucose production

Annual Trainee Awards

The Annual Trainee Awards program is intended to showcase the best innovative and novel diabetes research being conducted by trainees at the University of Toronto and to provide an incentive for BBDC trainees to share their very best work with their colleagues and the BBDC membership. The top ten abstracts are selected for poster presentations at the BBDC's Annual Scientific Day where they are judged by internationally renowned diabetes researchers. This year's judges were Dr. Rexford Ahima, Editor of the Journal of Clinical Investigation, and Dr. Margaret Hahn, Department of Psychiatry, University of Toronto. The winners receive gift cards for the University of Toronto Bookstore. The 2018/2019 prize winners are:

PRIZE	RECIPIENT	SUPERVISOR(S)	TITLE OF RESEARCH
1st Prize	Romario Regeenes	Dr. Jonathan Rocheleau	Investigating biphasic glucose-stimulated insulin secretion through the design and application of islet-on-a-chip devices
2nd Prize	Yi Tao Chan	Dr. Daniel Winer	The role of insulin receptor signaling in ß cell Function
3rd Prize	Sydney Rivers	Dr. Adria Giacca	Liver-Specific p38 MAPK Stimulates Hepatic Fat Accumulation and Reduces Insulin Sensitivity In Vivo
Honourable Mention	Queenie Hu	Dr. Robert Screaton	Identifying G protein-coupled receptors that promote human pancreatic beta cell proliferation and survival
Honourable Mention	Ju Hee Lee	Dr. Hoon-Ki Sung and Dr. Warren Lee	Intermittent Fasting Improves Age-associated Metabolic Abnormalities by Rejuvenation of White Adipose Tissue
Honourable Mention	Amin Ghavami Nejad	Dr. Xiao Yu (Shirley) Wu and Dr. Adria Giacca	Glucose-responsive Glucagon Delivery via Microneedle Patch for Prevention of Hypoglycemia

Charles Hollenberg Summer Studentship Program

This program is designed to introduce undergraduate and medical students to the field of diabetes research by providing an opportunity to perform a full-time summer research studentship in the laboratory of a BBDC member. Students and their supervisors participate in a weekly seminar series which include presentations by the summer students describing how their projects fit into the overall goals of their labs. All students present the results of their work at the end of the summer in a workshop format at a half-day mini-conference. The awards are valued at $5,880 each (half is provided by the BBDC). The BBDC would like to thank Dr. Jacqueline Beaudry for coordinating the 2019 Summer Studentship Program. The 2019 summer studentship recipients are:

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Michael Chan	Dr. Ana Konvalinka	The Impact of Cell Sex and Sex Hormones on Kidney Glucose Metabolism. Implications for Diabetic Kidney Disease
Teddy-Ziheng Guo	Dr. Tianru Jin	Metabolic function of the Wnt signaling pathway-beta-catenine/TCF mediates hepatic metabolic function of the female hormone Estrogen
Alexander He	Dr. Cynthia Luk	Identifying the role of adipocyte Yes-associated protein 1 in glucose homeostasis

Charles Hollenberg Summer Studentship Program (CONT'D)

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Yan Ming (Anson) Lau	Dr. Derek Van Der Kooy	Enriching for Lineage Restricted Pancreatic Multipotent Progenitors during early Pancreatic Development for use in Beta cell Transplantation Therapy
Ming Li	Dr. Jill Hamilton	Examining resiliency and metabolic risk among children with obesity
Yu Zhe Li	Dr. Minna Woo	Investigating the metabolic role of PTEN in parasympathetic PHOX2B neurons
Calvin Lieu	Dr. Denise Belsham	TNFα induces hypothalamic inflammation and insulin resistance in AgRP/NPY expressing neurons: Reversal with anti-inflammatory agents
Jenna-Rose Melanson	Dr. Carolyn L. Cummins	Assessing the safety profile of a selective PPAR modulator for the treatment of type 2 diabetes
Lauren Pickel	Dr. Hoon-Ki Sung	Intermittent Fasting Improves Age-Associated Metabolic Abnormalities by Rejuvenation of White Adipose Tissue
Abeeshan Selvabaskaran	Dr. Maria Cristina Nostro	Morphological and 3 dimensional analysis of hESC derived islets-like clusters
Youchen Song	Dr. Michael Wheeler	Effects of EPA and DHA on insulin secretion and pancreatic beta cell function
Maegan Sweeney	Dr. Patricia Brubaker	Role of the intestinal microbiome in the regulation of glucagon-like peptide-1 secretion
Veronica Tran	Dr. Margaret Hahn and Dr. Satya Dash	Effect of antipsychotics on central insulin action in relation to glucose metabolism and cognition in healthy volunteers.
Xing Lin Wu	Dr. Richard E. Gilbert	Attenuating the hypoxia of diabetic kidney disease with dapaglifozin

2019 Charles Hollenberg Summer Studentship recipients with program coordinator, Dr. Jacqueline Beaudry (back row, left)

Graduate Studentships

BBDC-Novo Nordisk Studentships

A collaboration with Novo Nordisk Canada Inc. was established in 1996 to provide long-term endowment in support of graduate students who are pursuing a career in diabetes research. As part of the Ontario Student Opportunity Trust Fund program, the support obtained from Novo Nordisk was matched by equal contributions from the University of Toronto and the Government of Ontario for a total endowment of 4.2 million dollars. Studentships are valued at up to $21,000 each. The 2018/2019 award recipients are:

RECIPIENT	SUPERVISOR(S)	TITLE OF RESEARCH
Dana Al Rijjal	Dr. Michael Wheeler	The Effect of Putative Novel Bioactive Components in Fish Oil Supplements on Pancreatic Beta Cell Function
Andrew Biancolin	Dr. Patricia Brubaker	The Role of Secretagogin in Circadian GLP-1 Secretion
Parastoo Boroumand	Dr. Amira Klip	How obesity instructs immune cell pro-inflammatory activation: implications for metabolic disease
Matthew Clemenzi	Dr. Denise Belsham	Inflammatory Factors Affecting Hypothalamic Food Intake Regulatory Pathways
Mitchell Hadden	Dr. Andrew Advani	Long non-coding RNA in diabetic kidney disease
Dandan Li	Dr. Vladimir Vuksan	The Role of Dietary Nitrate on Blood Pressure and Cardiovascular Disease Risk Factors: A Randomized, Controlled Trial in Individuals with Elevated Blood Pressure
Emma McIlwraith	Dr. Denise Belsham	The role of the novel neuropeptide phoenixin and its receptor in energy homeostasis
Erika Opingari	Dr. Subodh Verma	Effects of Empagliflozin on Renal Biomarkers in Type II Diabetes: EMPA-HEART Trial
Krystal Ortaleza	Dr. Michael Sefton	Immunoisolation of Pancreatic Islets by Microencapsulation for Subcutaneous Transplantation into Diabetic Mice
Fitore Raka	Dr. Khosrow Adeli	Elucidating the role of GLP-1 sensitivity in diet-induced insulin resistance and dyslipidemia
Sydney Rivers	Dr. Adria Giaca	Hepatic Signalling of Glucose and Lipid Metabolism in vivo
Justin Trac	Dr. Subodh Verma and Dr. David Hess	Impact of bariatric surgery on circulating inflammatory and pro-vascular progenitor cell populations
Madyson Weippert	Dr. Mary L'Abbe	Modelling the impact of lowering sugar contents in Canadian prepackaged foods and beverages
Shahen Yashpal	Dr. Anthony Hanley	Metabolomic Profiling of the DASH Diet: Novel insights for the Nutritional Epidemiology of Type 2 Diabetes Mellitus

BBDC-University Health Network Graduate Awards

These awards were made possible by the partnership between the BBDC and the University Health Network. To be eligible for this award, the student's supervisor must hold a full-time UHN appointment as an active staff physician, or if he/she holds an associate staff position or staff scientist position, the supervisor's principal laboratory or clinical research space must be physically located at the UHN. Studentships are valued at up to $21,000 each. The 2018/2019 award recipients are:

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Yi Tao Chan	Dr. Daniel Winer	Investigating the role of insulin receptor signaling in B cell function and metabolism
Daniella Febbraro	Dr. Minna Woo	Examining the role of a novel autophagy gene UV radiation resistance protein (UVRAG) in skeletal muscle
Saad Khan	Dr. Daniel Winer	The Role of B Cells in Non-Alcoholic Fatty Liver Disease and Insulin Resistance
Yousef Manialawy	Dr. Michael Wheeler	A discovery-based approach to characterize novel proteins involved in the regulation of insulin secretion
Emily Catherine McGaugh	Dr. Cristina Nostro	Modeling pancreatic development using hESC and patient specific iPSC
Romario Regeenes	Dr. Jonathan Rocheleau	Design of a Multiparameter Islet-on-a-chip Device to Measure the Functional Variability of Individual Pancreatic Islets

Tamarack Graduate Award in Diabetes Research

This graduate scholarship was made possible by a generous private endowment which was matched by equal funding from the University of Toronto and the Government of Ontario under the Ontario Student Opportunity Trust Fund program. The award is valued at up to $21,000. The 2018/2019 award recipients are:

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Jhenielle Campbell	Dr. Patricia Brubaker	Regulation of glucagon-like peptide-1 exocytosis from the intestinal L cell by Munc18-1
Simon Hoffman	Dr. Khosrow Adeli	Nervous regulation of intestinal lipoprotein production in diabetic dyslipidemia: an in-vivo examination of the modulatory potential of GLP-1

Yow Kam-Yuen Graduate Scholarship in Diabetes Research

This graduate scholarship was made possible by a generous private endowment which was matched by equal funding from the University of Toronto and the Government of Ontario under the Ontario Student Opportunity Trust Fund program. The value of the award varies and is normally between $13,000 and $15,000. The 2018/2019 award recipient is:

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Justin Hou Ming Yung	Dr. Adria Giacca	Lipotoxicity and Beta Cell Insulin Resistance: Role of c-Jun N-terminal kinase

Post-doctoral Fellowships

The support of research fellows has been a major priority of the BBDC since the Centre's inception. Each year, the BBDC endeavours to provide as many fellowships as possible to enable individuals holding an MD or PhD to carry out full-time diabetes research at the University of Toronto or one of its affiliated institutions. The objective of these awards is to attract and foster young investigators to initiate and/or continue research training in the field of diabetes. Awards are $40,000 or $50,000 depending on the degree held. The 2018/2019 recipients are:

Sellers Post-doctoral Fellowship

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Amin Ghavami Nejad	Dr. Xiao Yu (Shirley) Wu and Dr. Adria Giacca	Glucose-responsive Glucagon Delivery via Microneedle Patch for Prevention of Hypoglycemia

BBDC Post-doctoral Fellowships

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Willem Peppler	Dr. Tony Lam	The impact of gut microbiota on the gut-brain axis
Song-Yang Zhang	Dr. Tony Lam	Insulin action and resistance in the brain

BBDC-affiliated researchers are internationally renowned for playing a seminal role in the development and testing of new classes of diabetes therapies.

BBDC Fellowships in Diabetes Care
(Funded by Eli Lilly/Boehringer Ingelheim Diabetes Alliance)

The BBDC Fellowships in Diabetes Care have been made possible by a generous contribution from Eli Lilly/ Boehringer Ingelheim Diabetes Alliance.

RECIPIENT	SUPERVISOR(S)	TITLE OF RESEARCH
Lisa Chu	Dr. Jill Hamilton	Investigating Microbiome Interactions in Children Related to Obesity and Exercise (iMICROBE)
Mohammad Izadifar	Dr. Andras Nagy	Three-dimensional bioprinting of a novel tissue engineered construct for the treatment of diabetes type I

Trainee Travel Awards

Attendance at scientific meetings provide all researchers, trainees and established researchers alike, with an opportunity to hear about cutting edge research in their field, often well before those results are published in scientific journals. Scientific meetings provide an opportunity for trainees to present their research findings to an international audience of their peers and promote networking and the establishment of research collaborations. Travel awards are available to trainees presenting a first-author abstract directly related to diabetes research which has been accepted for poster or oral presentation at a scientific meeting. Trainees receive travel reimbursement of up to $1,000 CAD to attend the meeting. The 2018/2019 award recipients are:

BBDC Trainee Travel Awards

RECIPIENT	SUPERVISOR(S)	TITLE OF RESEARCH
Dana Al Rijjal	Dr. Michael Wheeler	Fish Oil Derived Omega-3 Prescription Drug Protects against High Fat Diet Impaired Pancreatic Beta Cell Function
Battsetseg Batchuluun	Dr. Tony Lam	Dorsal Vagal Complex is A site for Brain Lipid Sensing to Regulate Lipid Homoestasis
Andrew Biancolin	Dr. Patricia Brubaker	The Role of Secretagogin in Circadian GLP-1 Secretion
Parastoo Boroumand	Dr. Amira Klip and Dr. Stephen Girardin	Influence of obesity and bone marrow adiposity on monocyte development: implications for metabolic disease
Jhenielle Campbell	Dr. Patricia Brubaker	The regulation of circadian glucagon-like peptide-1 secretion from the intestinal epithelial L-cell by Munc18-1
Kenya Costa-Dookhan	Dr. Margaret Hahn	Investigating the association between plasma clozapine to N-demethylclozapine ratio in patients with obesity and ultra-treatment refactory schizophrenia
Scott Frendo-Cumbo	Dr. Amira Klip and Dr. John Brumell	Atg16L1 Knockout Induces Insulin Resistance Through Proteasomal IRS1 Degradation, Mediated by the Induction of ER Stress
Amin Ghavami Nejad	Dr. Xiao Yu (Shirley) Wu and Dr. Adria Giacca	Glucose-responsive Glucagon Delivery via Microneedle Patch for Prevention of Hypoglycemia

BBDC Trainee Travel Awards (CONT'D)

RECIPIENT	SUPERVISOR(S)	TITLE OF RESEARCH
Victoria Higgins	Dr. Khosrow Adeli	Postprandial dyslipidemia in obese and insulin resistant adolescents: Evidence for impaired response of intestinal glucagon-like peptides and abnormal bile acid profile
Baweleta Isho	Dr. Philippe Poussier	Role of maternal mucosal immunity on progeny susceptibility to type 1 diabetes
Krystal Jacques-Smith	Dr. Derek Van Der Kooy	Insulin Negative Pancreatic Progenitors Are Derived From The Human And Mouse Pancreatic Endoderm Stage Of Development
Saifur Khan	Dr. Michael B. Wheeler	The Discovery of novel predictive biomarkers and early-stage pathpphysiology for the transition from gestational diabetes to type 2 diabetes
Chantel Kowalchuk	Dr. Margaret Hahn and Dr. Gary Remington	Antipsychotic-Induced Perturbations of Whole-Body Insulin Sensitivity May Occur via Inactivation of Hypothalamic K-ATP Channels
Evan Lewis	Dr. Bruce Perkins	The Reference Distribution Of Annual Change In Corneal Nerve Fibre Length In Diabetes
Jia Xu Li	Dr. Carolyn Cummins	Glucocorticoid-Induced Adipose Tissue Remodeling is Attenuated by LXRß Antagonism
Leif Erik Lovblom	Dr. Bruce Perkins	Analysis of prevalence, magnitude and timing of the dawn phenomenon in type 1 diabetes : descriptive analysis of two insulin pump trials
Brian Lu	Dr. Shirley (Xiao Yu) Wu	Closed-Loop Composite Microneedle Patch for the Prevention of Hypoglycemia
Yuliya Lytvyn	Dr. David Cherney	Renal Hemodynamic and RAAS Profiles in Patients with Type 2 Diabetes (T2D) and Heart Failure (HF)
Emily McGaugh	Dr. Cristina Nostro	Using hESC to model pancreatic patterning and specification
Paraish Misra	Dr. Cristina Nostro	Determining The Ability Of HLA-Deficient Human Pluripotent Stem Cells To Generate Insulin-Producing Cells
Frankie Poon	Dr. Cristina Nostro	Deciphering the signaling pathways driving ß-cells from human pluripotent stem cells
Stephanie Read	Dr. Lorraine Lipscombe	Distribution of risk factors for type 2 diabetes in women with gestational diabetes by ethnicity
Sydney Rivers	Dr. Adria Giacca	Liver-Specific p38 MAPK Stimulates Hepatic Fat Accumulation and Reduces Insulin Sensitivity In Vivo
Delnaz Roshandel	Dr. Andrew Paterson	DNA methylation age in type 1 diabetes

RECIPIENT	SUPERVISOR(S)	TITLE OF RESEARCH
Cigdem Sahin	Dr. Carolyn Cummins	A novel PPAR pan-active agonist suppresses weight gain and stimulates lipolysis in diet-induced obese (DIO) mice
Zhila Semnani-Azad	Dr. Anthony Hanley	Longitudinal Associations between Metabolic Status, Insulin Clearance, and Insulin Sensitivity: the Prospective Metabolism and Islet Cell Evaluation (PROMISE) Cohort
Sapna Shah	Dr. Catherine Yu	The Impact of Guideline Integration into Electronic Medical Records on Outcomes for Patients with Diabetes
Victoria Tokarz	Dr. Amira Klip	Palmitate inhibits muscle cell insulin -stimulated GLUT4 translocation and Rac1-dependent actin remodelling independently of Akt (selected for Oral presentation)
Shawn Veitch	Dr. Jason Fish	Extracellular vesicles as biomarkers and effectors of diabetic cardiomyopathy
T. M. Zaved Waise	Dr. Tony Lam	Inhibition of Upper Small Intestinal mTOR Lowers Plasma Glucose Levels by Inhibiting Hepatic Glucose Production

Sir Frederick Banting Legacy Foundation Travel Awards

RECIPIENT	SUPERVISOR	TITLE OF RESEARCH
Alanna Weisman	Dr. Gillian L. Booth	Identifying Type 1 Diabetes in Electronic Medical Records Data in Ontario: A Validation Study
Shahen Yashpal	Dr. Anthony Hanley	Metabolomic Profiling of the Dietary Approaches to stop Hypertension (DASH) Diet: Novel Insights for the Nutritional Epidemiology of type 2 Diabetes Mellitus (T2DM)

BBDC members

lead critical discoveries in basic science, patient-oriented research and large-scale clinical trials across a network of academic hospitals, research institutes and community-affiliated hospitals and sites.

FUNDING PROGRAMS FOR FACULTY & HEALTH PROFESSIONALS

Archie Sopman Diabetes Research and Education Awards 2018

This program is intended to promote continuing diabetes education for health professionals at the University Health Network who do not normally have access to funds to travel to diabetes conferences or bring seminar speakers to Toronto. Award recipients who attend conferences are encouraged to share their learnings from the conference with their colleagues. Funding for this program is provided by the Toronto General and Western Hospital Foundation Archie Sopman endowment fund. The endowment is held at the University Health Network (UHN) and award payments are made directly to the recipients by the UHN. The 2018 funding recipients are:

RECIPIENT	OCCUPATION AND UHN SITE	AMOUNT (FOR TRAVEL TO MEETING)
Farnouche Alimoradiyan	Registered Nurse, Toronto General Hospital	Up to $250
Karen Blekaitis	Registered Dietitian, Toronto General Hospital	Up to $1,000
Tina Cheung	Clinical Nurse Specialist, Toronto General Hospital	Up to $1,000
Margaret De Melo	Practice Leader, Toronto Western Hospital	Up to $1,000
Kitty Mak	Nurse Clinician, Toronto General Hospital	Up to $1,000
Ann Murphy	Dietitian, Toronto General Hospital	Up to $1,000
Teresa Sobhy	Nurse Practitioner, Toronto General Hospital	Up to $1,000
Elaine Wylie	Clinical Nurse Specialist, Toronto General Hospital	Up to $250

BBDC/HSRLCE Pilot And Feasibility Grant In Cardiovascular And Diabetes Research

This joint funding program was established by the BBDC, the Heart & Stroke/Richard Lewar Centre of Excellence in Cardiovascular Research (HSRLCE) and the Vice-Dean of Research and Innovation, Faculty of Medicine to support research initiatives focusing on diabetes and heart disease. The goal is to establish the University of Toronto as an international leader in the study of diabetes and heart disease, to foster research across disciplines and research institutes, and to encourage collaboration between members of the BBDC and the HSRLCE. This funding program is administered by the Heart & Stroke/Richard Lewar Centre of Excellence. The 2018 funding recipient is:

PRINCIPAL APPLICANT	TITLE OF RESEARCH	AMOUNT
Dr. Jason Fish Dr. Sara Nunes de Vasconcelos	Elucidating the Pleiotropic Cardioprotective Mechanisms of Empagliflozin on Heart Failure in Type 2 Diabetes Mellitus	$97,420

BBDC – Novo Nordisk Chair in Incretin Biology

In 2010, the BBDC-Novo Nordisk Chair in Incretin Biology was established at the Banting & Best Diabetes Centre, University of Toronto. The research Chair was made possible through a $3 million gift from Novo Nordisk in appreciation of the innovative diabetes research undertaken by the Centre. Both Novo Nordisk and the University of Toronto, Faculty of Medicine have a long-standing tradition of diabetes research originally dating back to the discovery of insulin, and most recently focused on the science of incretin biology which holds the potential to have the kind of transformative impact that insulin had in improving the lives of people with diabetes. This Chair will position the University of Toronto as a leader in this area of research. Dr. Daniel J. Drucker is the Chair holder and has been reappointed for a second 5-year term until 2020. Dr. Drucker is a clinician-scientist world-renowned for his ability to translate scientific breakthroughs into clinical treatments for patients.

Diabetes Educator of the Year Award 2018

Each year one award is presented to recognize a diabetes educator who has demonstrated outstanding efforts and achievements in his/her role as a diabetes educator. This award is meant to recognize achievements above and beyond the individual's clinical job description, and exceptional individuals who contribute to initiatives across teams within their organization and more broadly to the diabetes community. Candidates are not required to be members of the BBDC. The 2018 award recipient is:

RECIPIENT	OCCUPATION AND INSTITUION	AMOUNT
Juliet Opoku	Registered Nurse and Diabetes Educator, Unison Health and Community Services, Toronto	$1,000

Diabetes Educator of the Year 2018 award recipient Juliet Opoku (left) and Dr. Phillip Segal.

Pilot And Feasibility Grants

New ideas and directions for research involve risk-taking by scientists and funding agencies. Most established funding agencies require considerable evidence of feasibility before they consider funding an application for a new project. Furthermore, researchers who are new to the diabetes field who may wish to adapt their non-diabetes research techniques to a diabetes-related topic of interest are disadvantaged in most funding competitions. The BBDC, therefore, prioritizes pilot and feasibility funding to attract researchers without a pre-existing track record of diabetes research or established diabetes researchers who wish to pilot an innovative research idea or project. The 2018/2019 grant recipients are:

Sun Life Financial Pilot and Feasibility Grants

These grants are made possible by a generous contribution from Sun Life Financial.

RECIPIENT	TITLE OF RESEARCH	AMOUNT
Dr. Kim Connelly Dr. Charles Cunningham Dr. Julie Lovshin Dr. Idan Roifman	Hyperpolarized 13C imaging of the diabetic kidney	$40,000
Dr. Jonathan Rocheleau Catherine O'Brien	Gut organoid-on-a-chip: a platform to examine the impact of gut microbiome on diabetes	$40,000
Dr. Michael Wheeler	Uncover novel microRNAs as regulators of beta cell function during diabetes pathogenesis	$40,000

BBDC Pilot and Feasibility Grants

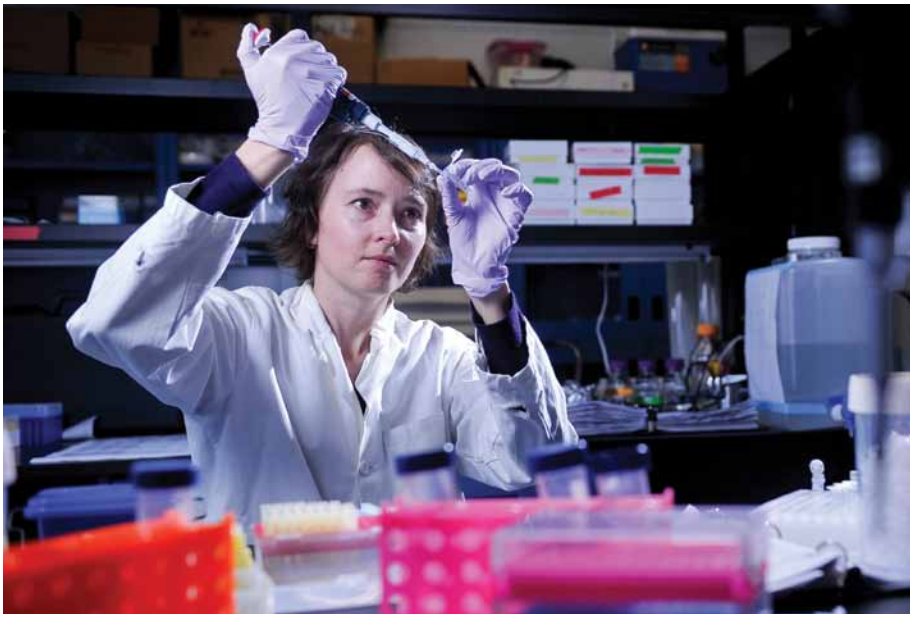
RECIPIENT	TITLE OF RESEARCH	AMOUNT
Dr. Tianru Jin	Novel role of glucagon-like-peptide-1 receptor: Mediating function of gamma-Aminobutyric acid (GABA)	$40,000
Dr. Maria Cristina Nostro	Determining the potential of human stem cell-derived beta-like cells as a therapy for diabetic nephropathy	$40,000

Reuben & Helene Dennis Scholar In Diabetes Research (Biennial Program)
This award was established to support new clinician-scientists and basic scientists in the early stages of their careers. Faculty are eligible for this funding within five years of their first faculty appointment. Awards are held over a 2-year period. This is a biennial funding program. The 2018-2020 award recipient is:

RECIPIENT	TITLE OF RESEARCH	AMOUNT
Dr. Hoon-Ki Sung	Dynamic Regulation of Adipose Immunometabolism in Feeding-Fasting Cycle	$20,000 over two years

Sun Life Financial New Investigator Award
This award is made possible by a generous contribution from Sun Life Financial. The award was established to support new clinician-scientists and basic scientists in the early stages of their careers, which is a particularly challenging and vulnerable time as the researcher transitions from trainee to independent investigator. Faculty are eligible for this funding within five years of their first faculty appointment. Awards are held over a 2-year period. The 2018-2020 award recipient is:

RECIPIENT	TITLE OF RESEARCH	AMOUNT
Dr. Maria Cristina Nostro	Developing pancreatic cells for type 1 diabetes treatment	$80,000 over two years

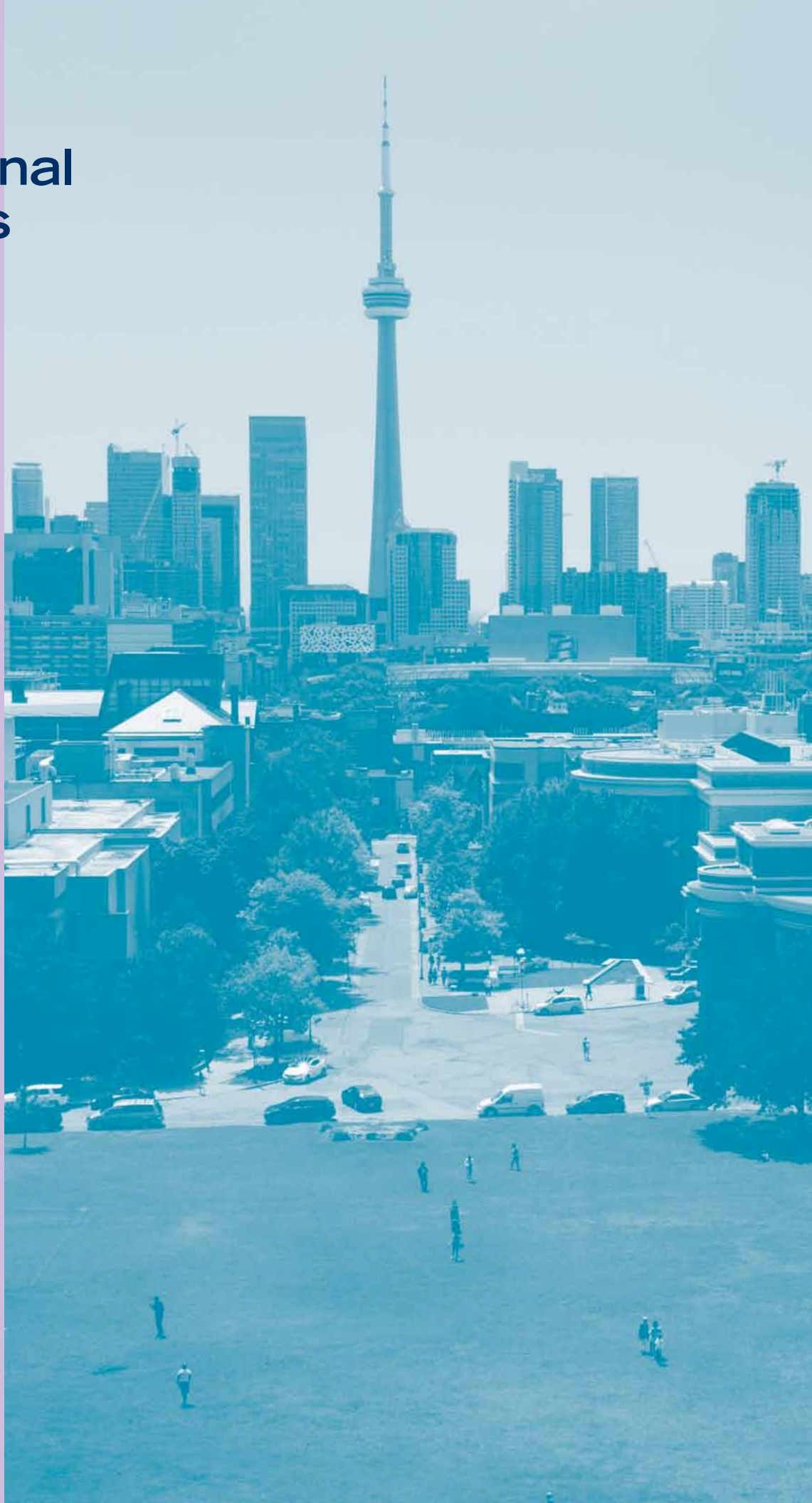


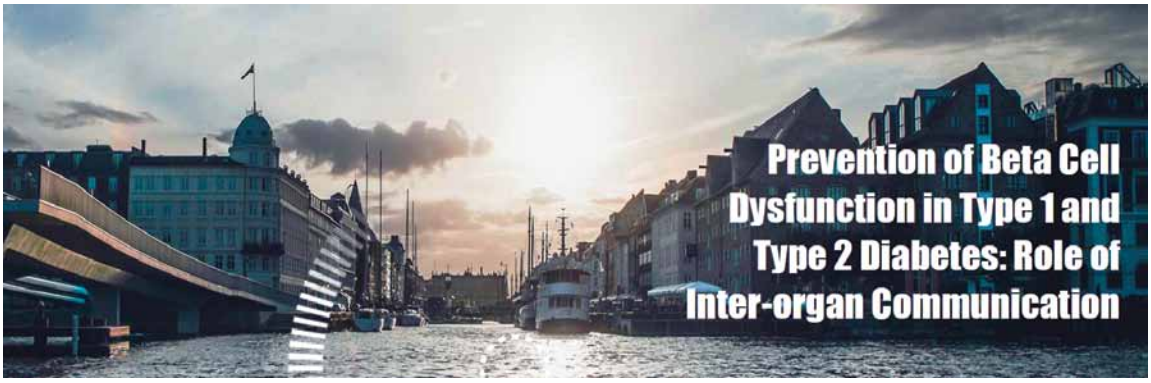
We need to accelerate

diabetes research

by equipping our top researchers with resources and protected time, recruiting additional researchers and investing in the next generation — just as was done for Drs. Banting and Best.

Educational Activities





5th BBDC-Joslin Diabetes Center-UCPH Conference

On October 26-27, 2018, the University of Copenhagen co-hosted the 5th collaborative conference in Copenhagen together with the BBDC and Joslin Diabetes Center. The two-day event was preceded by a one-day interactive learning and networking session for trainees from the three universities on October 25. The three institutions have long been at the heart of global diabetes research. This annual conference seeks to build on that long tradition to bring together not only prominent researchers but also young researchers from across the globe, and to foster greater cross-institutional research in the field of diabetes.

FRIDAY, OCTOBER 26, 2018

8:00 A.M.	Registration and breakfast
8:45	Welcome: **Drs. Gary Lewis, George King, Jens Nielsen, Allan Flyvbjerg**

Session 1: Beta Cell Protection in T1D Chair: Jørn Nerup		Session 2: Beta Cell Protection in T1D Chair: Louise T. Dalgaard		Session 3: Beta cell plasticity in T1D and T2D Chair: Claes Wollheim	
9:00	Type 1 diabetes as a disease of the beta cell **Bart Roep**	11:00	Primary prevention of type 1 diabetes **Mikael Knip**	2:00	Glucotoxicity is really important in T1D and T2D **Susan Bonner-Weir**
9:30	Interferon-α signaling shapes immune beta cell interactions in early T1D **Decio Eizirik**	11:30	Characterization of beta-cell function in the Joslin Medalists **Daniel Gordin**	2:30	The role of cytokines in beta cell dedifferentiation **Nils Billestrup**
10:00	A role for non-coding RNAs in ß cells in T1D development? **Flemming Pociot**	12:00 P.M.	Prevention of ER stress in beta cells **Peng Yi**	3:00	Heterogeneity of beta cells: function and age **Cristina Aguayo-Mazzucato**
10:30	Coffee Break	12:30	Lunch	3:30	The role of lipotoxicity in beta cell failure **Adria Giacca**
				4:00	Poster Session and refreshments
				7:00	Conference dinner

5th BBDC-Joslin Diabetes Center-UCPH Conference (CONT'D)

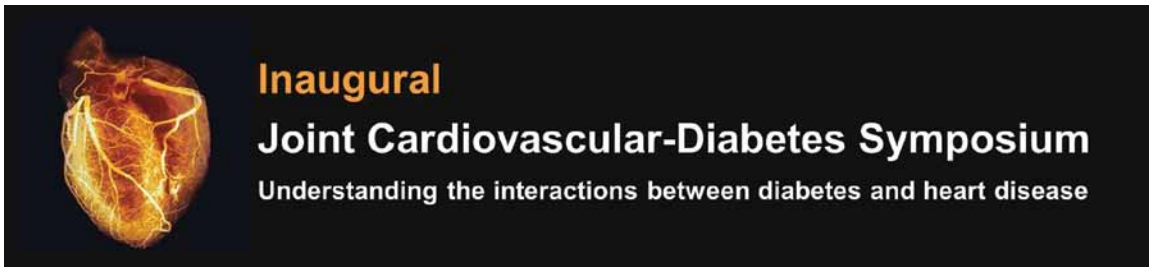
SATURDAYY, OCTOBER 27, 2018

8:00 A.M. Registration and breakfast

Session 4: Inter-organ Regulation of Islet Cell Function Chair: Gary Lewis		Session 5: Molecular Mechanisms of Beta Cell Function Chair: George King		Session 6: Beta Cell Protection and Recovery Chair: Henning Beck-Nielsen	
9:00	Similarities and differences of nutrient sensing mechanisms in the gut, brain and beta cells **Tony Lam**	11:00	Molecular regulation of insulin exocytosis **Herbert Gaisano**	2:00	The role of beta cell recovery in achieving reversal of human type 2 diabetes **Roy Taylor**
9:30	Disruption of the liver-alpha cell axis as a cause of type 2 diabetes **Jens Juul Holst**	11:30	Pharmacological regulation of glucagon secretion **Caroline Kramer**	2:30	Harnessing beta cell proliferation to prevent progression of T1D **Rohit Kulkarni**
10:00	Beta-cell dysfunction in T2D: role of inter-organ communication **Chris Rhodes**	12:00 P.M.	Molecular pathways in the communication between the innate immune system and the beta cell **Thomas Mandrup-Poulsen**	3:00	The role of T1D-associated genes as regulators of beta cell sensitivity to inflammatory damage **Joachim Størling**
10:30	Coffee Break	12:30	Lunch	3:30	Pharmacological interventions for beta cell preservation **Ravi Retnakaran**
				4:00	Coffee Break
				4:30	Panel Discussion
				5:30	Concluding remarks, next meeting, refreshments


A-CELL


NETWORK BINGO
DOA Training Day



FRIDAY, JANUARY 18, 2019

7:30 A.M. Registration and breakfast

8:45 Welcome and introduction

	Session 1: Cardiometabolic Crossroads Chair: Gary Lewis		Session 2: Cardiac/Diabetes Rehab Chair: Valerie Skeffington		Session 3: Diabetology for the Cardiologist Chair: Phillip Segal
8:40	Blood Pressure control – a moving target **Peter Lin**	10:35	Approaches to getting and staying motivated to exercise - what's new and effective? **Renee Konidis**	1:10	Top 5 endocrine and cardiovascular papers this year **Jeremy Gilbert**
9:05	Lipids and Cardiovascular Outcomes **Dominic Ng**	11:00	Weight loss or healthy eating: which is more important? **Maria Ricupero**	1:35	SGLT2 vs GLP1-based therapies – cardiovascular benefits **Julie Lovshin**
9:30	Heart Failure and Diabetes **Michael Farkouh**	11:25	Cardiac screening of asymptomatic patients with diabetes: is it worthwhile? **Ashlay Huitema**	2:00	Remission from diabetes: is it possible? **Ravi Retnakaran**
9:55	Panel Discussion and Q&A	11:50	Panel Discussion, Sharing Resources and Q&A **Valerie Skeffington**	2:25	Panel Discussion and Q&A
10:15	Break	12:10 P.M.	Lunch	2:45	Day 1 Session Summary **Peter Lin**
				3:00	Break

Interactive Breakout Cases – Session 1 (choose one)

3:15
Phillip Segal: Oral agents for diabetes: practical prescribing
Shivani Goyal: Beyond Apps: digital health for chronic disease management
Kathryn Howe: Vascular surgery: from ulcer treatment to preventing amputation
Andrew Ha: The role of anti-thrombotic therapy in atherosclerotic disease

Interactive Breakout Cases – Session 2 (choose one)

3:45 *Repeat of session 1 breakout cases*

4:15 Adjournment

PMCC-BBDC Inaugural Joint Cardiovascular-Diabetes Symposium
Understanding The Interactions Between Diabetes And Heart Disease

On January 18-19, 2019, the Banting & Best Diabetes Centre and Peter Munk Cardiac Centre co-hosted this inaugural educational event for health care providers. The aim of the symposium is to explore the interactions between diabetes and heart disease, through discussion of the latest thinking and best practices for office-based patient assessment with an emphasis on an integrative patient-focused approach.

7:30 A.M.	Breakfast				
8:30	Welcome and introduction				
	Session 4: Adult Congenital Heart Disease Chair: Erwin Oechslin		**Session 5: Management of Cardiac Valve Disease** Chair: Maral Ouzounian and Mark Osten		**Session 6: Aortic Disease** Chair: Thomas Forbes
8:40	Adult Congenital Heart Disease: a rapidly growing population in numbers and complexity **Edward Hickey**	10:35	Update on trans-catheter aortic valve replacement **Mark Osten**	1:10	Medical Management of Patients with Aortic Disease **John Byrne**
9:05	Heart failure in ACHD: what makes it different? **Rafa Alonso**	11:00	Latest techniques to treat mitral valve disease **Mitesh Badiwala**	1:35	What are Aortic Dissections, Penetrating Ulcers, Intramural Hematomas? **Jennifer Chung**
9:30	My ACHD patient wants to become pregnant – should I be worried? **Lorna Swan**	11:25	Who still requires surgical valve replacement/repair? **Maral Ouzounian**	2:00	Where and How should Aortic Aneurysms be Treated? **Thomas Forbes**
9:55	Panel Discussion and Q&A	11:50	Panel Discussion, Sharing Resources and Q&A	2:25	Panel Discussion and Q&A
10:15	Break	12:10 P.M.	Lunch	2:45	Day 2 Session Summary **Peter Lin**
				3:00	Break
Interactive Breakout Cases – Session 1 (choose one)					
3:15	**Peter Lin:** Diabetes and kidney disease **Andrew Ha:** Personalized choice of anticoagulation in atrial fibrillation **Michael Ward:** To stent or not to stent for angina (COURAGE/ORBITA) **Gary Lewis:** Escalating lipid therapies				
Interactive Breakout Cases – Session 2 (choose one)					
3:45	*Repeat of session 2 breakout cases*				
4:15	Adjournment				

Annual Scientific Day

This annual event provides an opportunity for BBDC members to exchange scientific information and ideas and assists in the development of collaborative diabetes-related research activities. It also provides a valuable opportunity for BBDC trainees to network and present their research. BBDC post-doctoral fellowship recipients, graduate studentship recipients and select Annual Trainee Awards abstract submitters present posters of their work. This year **Dr. Rexford Ahima**, Editor of the Journal of Clinical Investigation, and **Dr. Margaret Hahn**, Department of Psychiatry, University of Toronto co-judged ten of the trainee posters for the Annual Trainee Awards competition. The event focuses on the latest diabetes research topics with both clinical and laboratory applications. This year's Charles Hollenberg Memorial Lecture was delivered by **Dr. Michael Schwartz**, Professor of Medicine and Co-Director, University of Washington Diabetes Institute. Registration is free for all BBDC members, their trainees and U of T endocrine residents.

30TH ANNUAL SCIENTIFIC DAY / FRIDAY, MAY 10, 2019

8:00 A.M.	Continental breakfast and poster set-up
Session 1	Chair: Amin Ghavami Nejad
8:40	Welcome and Introduction: **Tony Lam**
8:45	**Andrew Advani:** Re-shaping the epigenetic landscape in diabetic kidney disease
9:15	**Satya Dash:** Insights from genetic studies in human obesity
9:45	**Lisa Chu (Supervisor: Jill Hamilton):** The pediatric gut microbiome and obesity
10:00	Refreshments, Poster Presentations, and BBDC Annual Trainee Awards Competition poster judging by **Rexford Ahima** and **Margaret Hahn**. Moderator: Tony Lam
Session 2	Chair: Song-Yang Zhang
11:15	**Patricia Brubaker:** Circadian regulation of glucagon-like peptide-1 secretion
11:45	**Jonathan Rocheleau:** Peering into beta-cell metabolism and function one islet at a time
12:15 P.M.	**Gary Lewis:** BBDC Director's Report
12:30	Lunch
Charles Hollenberg Memorial Lectureship	Chair: Tony Lam
1:30 – 2:30	**Michael Schwartz:** Role of the Brain in Diabetes Pathogenesis and Treatment
2:30 – 2:40	BBDC Annual Trainee Awards Presentation 2018/19: **Rexford Ahima** and **Margaret Hahn**
2:40	Evaluation and Adjournment

BBDC Seminar Series (at City-wide Endocrine Rounds)

Each year the BBDC invites internationally renowned diabetes researchers to present their work and to interact with BBDC faculty at our Seminar Series. To ensure a broad audience, seminars have been incorporated into the University of Toronto City-wide Endocrine Rounds which are held every Friday morning at the Mount Sinai Hospital.

OCTOBER 19, 2018

Andrew Gewirtz, PhD
Distinguished University Professor, Georgia State University

Gut Microbiota, Chronic Inflammation, and Metabolic Syndrome

DECEMBER 14, 2018

Gregory Steinberg, PhD
Professor, McMaster University Canada Research and J. Bruce Duncan Chair in Metabolic Diseases

Cellular Energy Sensing and Metabolism

FEBRUARY 8, 2019

Jason Dyck, PhD
Professor, University of Alberta Canada Research Chair in Molecular Medicine

Empagliflozin and Heart Failure

APRIL 12, 2019

Francis Lynn, PhD
Associate Professor, The University of British Columbia, BC Children's Hospital Research Institute

Recent advances in generating stem cell derived insulin producing cells: a pathway to maturation

Trainee Seminars

In an effort to provide an enhanced training environment for trainees, the BBDC regularly hosts two seminar series: the **Trainee Lab Seminar Series** and the **Clinical Research in Progress Rounds**. These seminar series provide post-doctoral fellows, graduate students, residents and junior faculty with an opportunity to present their diabetes research proposals and unpublished basic science research or clinical and population-based research to their peers in a moderated academic setting. The Trainee Lab Seminars are held monthly from 12-1 pm at the University of Toronto Medical Sciences Building, Physiology Seminar room. The Clinical Research in Progress Rounds are held from 12-1 pm at Women's College Hospital. Attendance is open to all BBDC members, their trainees and U of T endocrine residents.

Diabetes Pharmacists Network

The Diabetes Pharmacists Network was created by the BBDC as a way to bring together pharmacists from across Canada who are interested in the care of patients with diabetes. At the BBDC, we are committed to finding ways to improve the lives of people with diabetes and those at risk of diabetes. We recognize the value of pharmacists in improving outcomes for patients and want to empower and support pharmacists who exemplify best practices through networking, education, and knowledge translation initiatives. Our goal is to bring together pharmacists to share ideas and best practices through events, publications, networking and interactive learning. Membership is free and open to all licensed pharmacists in Canada with an interest in diabetes. Pharmacy students currently enrolled in a pharmacy program in Canada are also welcome to join. Visit diabetespharmacistsnetwork.ca for more information.

Guidebook on Diabetes Management

At the Banting & Best Diabetes Centre, one of the ways we honour our commitment to improving the lives of people with diabetes is to provide health care teams with resources that are evidence-based, patient-centred, and user-friendly, to help guide them as they work together with people with diabetes to achieve treatment goals. Our second edition Guidebook on Diabetes Management incorporates recommendations from the latest clinical practice guidelines in glycemic management, blood pressure, lipids, antiplatelet agents, nutrition, exercise and smoking cessation, and combines them with expert opinion and practical advice. The guidebook is divided into three main sections: Glycemic Management, Cardiovascular Protection and Lifestyle. Also included is information on over 100 medications, clinical pearls and practical tips. The guidebook is available at diabetespharmacistsnetwork.ca.

QUEST Website

The BBDC's Quality Education & Safety (QUEST) program provides an educational website where diabetes health care providers can obtain the best diabetes clinical practice resources and learn about local diabetes initiatives. For clinicians and those living with diabetes including patients and their caregivers, QUEST offers valuable tools and information about diabetes as well as opportunities to get involved with diabetes care and research in your community. Providers will find valuable tools and information about the disease and options to get involved with diabetes care and research in their communities. Visit the site at diabetesquest.ca.

Core Laboratory

The BBDC Core Laboratory operates as a specialty laboratory within Mount Sinai Services to provide high quality laboratory assays and services at discounted rates to BBDC members. The lab also provides services to the wider scientific community including external academic and/or industry initiated research. A list of some of the current assays and services provided by the Core Lab is available on the BBDC's website at bbdc.org or by contacting the Core Lab directly:

Laboratory Director
Dr. George Charames, PhD, FACMG
Phone: (416) 586-4800 Ext. 7733
Fax: (416) 586-8882
george.charames@sinaihealthsystem.ca

Address
Banting & Best Diabetes Centre Core Laboratory
Operated by Mount Sinai Services
600 University Avenue, 6th Floor, Room 6-414
Toronto, Ontario, M5G 1X5

Acknowledgements

WE WOULD LIKE TO EXPRESS OUR GRATITUDE AND APPRECIATION TO THE FOLLOWING

- The members of our Training and Research Excellence Committee, Quality Education and Safety (QUEST) Committee, and Trainee Advancement and Development Committee who volunteer their time to review applications for the Centre's funding programs and to organize educational initiatives on behalf of the BBDC.
- The members of our Executive Committee and Clinical Applied Research Education (CARE) Committee.
- Those who participated in the 5th BBDC-Joslin Diabetes Center-University of Copenhagen Conference in Copenhagen in October 2018.
- Everyone who participated in our inaugural Joint Cardiovascular-Diabetes Symposium co-hosed by the BBDC and Peter Munk Cardiac Centre in January 2019.
- Everyone who participated in our 30th Annual Scientific Day.
- Our 2019 Charles Hollenberg Summer Studentship Program Coordinator, Dr. Jacqueline Beaudry.
- Faculty of Medicine Advancement and the Toronto General and Western Hospital Foundation who fundraise on behalf of the BBDC.

Our Supporters

The Banting & Best Diabetes Centre gratefully acknowledges endowed financial support from the following contributors:

C. H. Best Memorial Fund
The Estate of Reuben & Helene Dennis
The Estate of Marion Hamilton
The Estate of Miriam Neveren
The Estate of Dr. & Mrs. Edward A. Sellers
The Estate of Mary E. Sharp
The Estate of Archie Sopman
(Toronto General & Western Hospital Foundation)
The Estate of Arthur Spoerri
Novo Nordisk
Mr. Stephen Yow Mok Shing

The Centre is also grateful to the following for contributions made in 2018/19:

Abbott
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Sir Frederick Banting Legacy Foundation
Toronto General & Western Hospital Foundation
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Individuals who have donated to the Banting & Best Diabetes Centre this past year.

The BBDC gratefully acknowledges the support of our major contributors:

Sun Life Financial

UHN Toronto General Toronto Western Princess Margaret Toronto Rehab Michener Institute

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