



University of Toronto, Faculty of Medicine
**BANTING AND BEST
DIABETES CENTRE**

ANNUAL REPORT
JULY 1, 2004 – JUNE 30, 2005

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MISSION

To support and advance diabetes research, education, and patient care at the University of Toronto and its affiliated hospitals.

MESSAGE FROM THE DIRECTOR, DANIEL J. DRUCKER, M.D.

The Banting and Best Diabetes Centre (BBDC) has concluded another successful year due to the generous support of its members who devoted considerable time and energy to ensure our programs were designed and executed with the highest standards. Despite tremendous competition in the area of continuing medical education, the Diabetes Care and Education Committee (DCEC) held a very well-attended Diabetes Update conference in April at the Convention Centre with over 650 attendees from across the province. The timely theme of “Combination Therapies for the Treatment of Type 2 Diabetes” provided an opportunity for an outstanding faculty to interact with conference attendees in a meaningful constructive manner through lectures and workshops. Congratulations to Dr. Jacqueline James and the DCEC for an outstanding event. The DCEC has also launched an updated interactive version of “The Approach to the Management of Diabetes Mellitus”. I would encourage everyone to take the time to peruse this user-friendly valuable educational resource available on the BBDC’s web site at www.bbdc.org.

The Research Committee under the direction of Dr. Patricia Brubaker has had an extremely busy and productive year reviewing a record number of applications for BBDC funding. The BBDC Executive Committee is constantly examining our priorities for allocation of BBDC financial support in different priority areas. Following consultation with our membership, we have decided to increase the proportion of funding directed at trainees, primarily postdoctoral fellowships, in current and future years. The summer student program, under the tireless stewardship of Dr. David Irwin, continues to attract a talented cohort of undergraduate students who often receive their first exposure to basic or clinical aspects of diabetes research. As in previous years, the vast majority of BBDC funding is directed at individuals generally at the earliest stages of their careers in diabetes research.

What challenges do we face for 2005/06? The increasing number of applications for research funding places a considerable demand on the members of our Research Committee. We need to ensure that we avoid placing a disproportionate burden of work on a small number of selfless individuals. Therefore, we need to reiterate the importance for all of our members to devote a few hours a year to review BBDC funding applications when asked. Similarly, the BBDC continues to strive for increased membership involvement and we urge our members to help us maintain an accurate database of their diabetes research activities and clinical trial listings on an annual basis. Membership not only signifies eligibility to apply for our funding programs but also involves the important contributions stated above to be made by all of our members.

How well are we doing in advancing diabetes research in the community? The BBDC intends to seek answers to these questions by initiating reviews of our funding programs and their respective outcomes. What new directions should we be exploring and are their new priority areas that deserve our attention? As always we welcome your comments and suggestions about these and other matters.

BACKGROUND

The Banting and Best Diabetes Centre was established in 1978 as an extra-departmental unit of the Faculty of Medicine at the University of Toronto. Dr. Edward A. Sellers, a personal friend of the co-discoverer of insulin, Dr. Charles Best, was the first director of the Diabetes Centre (1978-1981). He was succeeded by Dr. Charles H.

Hollenberg who was appointed director from 1981-1993, followed by Dr. Bernard Zinman who served as director from 1993-2000. Presently, the director of the Centre is Dr. Daniel J. Drucker who was appointed in July of 2000.

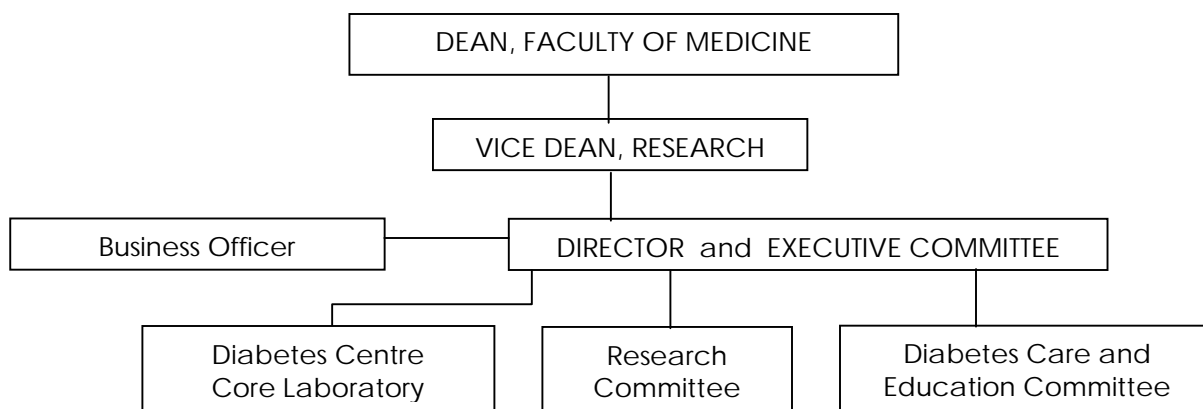
The programs of the BBDC are supported almost entirely from the income on its endowments. The BBDC has also received generous donations from industry which have funded various research programs, scientists, students, and fellows. The Centre offers several studentships, fellowships, and other support for qualified individuals involved in diabetes research at the University of Toronto.

MEMBERSHIP

The BBDC membership is derived from various departments at the University of Toronto and its affiliated teaching hospitals. Since the BBDC is an extra-departmental unit of the Faculty of Medicine, members cannot hold a faculty appointment with the Centre, and graduate students must be registered with a graduate department to obtain their degree. To be eligible for membership one must be involved in diabetes-related research and hold a full-time faculty appointment with the University of Toronto. Membership allows University of Toronto investigators to become eligible to apply for the Centre's awards. As of June 30, 2005 there are 87 members registered with the BBDC, almost all of whom are profiled on the BBDC's website. The Centre also has an expanded e-mail distribution list of approximately 265 contacts, which not only includes our members, but also individuals with diabetes interests located at other universities, employed by industry, or involved in diabetes health care delivery.

ADMINISTRATIVE STRUCTURE and COMMITTEES

The administrative structure of the BBDC was established to provide both broad based input and an efficient decision making process. The BBDC administrative structure is as follows:



The Director reports to the Dean, Faculty of Medicine. The Director of the Diabetes Centre and the Executive Committee form the principal decision making body of the Centre. The Research Committee and the Diabetes Care and Education Committee serve as the principal working committees. The Diabetes Core Laboratory provides laboratory, analytical, and technical support to the diabetes investigators on a cost recovery basis.

EXECUTIVE COMMITTEE

This is the principal decision making body of the Centre established to ensure that the goals of the Centre are appropriately implemented. The Executive Committee provides leadership and representation for the University of Toronto diabetes community.

Director: Dr. Daniel J. Drucker	Department of Medicine, Division of Endocrinology & Metabolism*
Dr. Patricia Brubaker	Department of Physiology*
Dr. I. George Fantus	Department of Medicine, Division of Endocrinology & Metabolism*
Dr. Avrum Gotlieb	Laboratory Medicine and Pathobiology*
Dr. Jacqueline James	Department of Medicine, Division of Endocrinology & Metabolism*
Dr. Amira Klip	Department of Biochemistry*
Dr. Catharine Whiteside	Department of Medicine, Division of Nephrology*
Dr. Bernard Zinman	Department of Medicine, Division of Endocrinology & Metabolism*

RESEARCH COMMITTEE

Among its many responsibilities, the Research Committee advises the Executive Committee on new research initiatives to be undertaken by the Centre, and implements the scientific review of the BBDC research competitions.

Chair: Dr. Patricia Brubaker	Department of Physiology*
Dr. Michelle Bendeck	Laboratory Medicine and Pathobiology*
Dr. Andrew Boright	Department of Medicine, Division of Endocrinology & Metabolism*
Dr. Adria Giacca	Department of Physiology*
Dr. Anthony Hanley	Department of Medicine, Division of Endocrinology & Metabolism*
Dr. Tianru Jin	Department of Medicine; and Department of Laboratory Medicine and Pathobiology*
Dr. Dominic Ng	Department of Medicine, Division of Endocrinology & Metabolism*
Dr. Robert Tsushima	Department of Medicine*
Dr. Minna Woo	Department of Medicine, Division of Endocrinology & Metabolism*

DIABETES CARE AND EDUCATION COMMITTEE

This committee develops and publishes standards for the total health care of diabetic patients in Toronto area hospitals, and communicates these standards to health care practitioners nationally. The Diabetes Care and Education Committee organizes continuing medical education in diabetes for the health care team which is comprised of physicians, nurse educators, dietitians, pharmacists, and other health care professionals.

Chair: Dr. Jacqueline James	Department of Medicine, Division of Endocrinology & Metabolism*
Ms. Marianne Beckstead	Clinical Nurse Specialist in Diabetes, Toronto General Hospital
Dr. Gillian Booth	Department of Medicine, Division of Endocrinology & Metabolism*
Miss Jennifer Buccino	Clinical Dietitian, Hospital For Sick Children
Ms. Margaret De Melo	Clinical Dietitian and Diabetes Educator, Toronto Western Hospital
Mr. Henry Halapy	Diabetes Pharmacist, St. Michael's Hospital
Ms. Carolyn Lawton	Nurse Practitioner Diabetes, Sunnybrook & Women's College Health Sciences Centre
Ms. Heather Munro	Diabetes Nurse Clinician, Scarborough Hospital
Dr. Kusiel Perlman	Department of Medicine, Division of Endocrinology & Metabolism*

* *University of Toronto faculty member*

FINANCIAL REPORT (Statement of operations for the fiscal year ended June 30, 2005 with comparative figures for the fiscal year ended June 30, 2004)

INCOME	2005	2004
Unrestricted:		
Endowment income*	428,177	403,997
Donations/miscellaneous income	18,666	81,745
Restricted:		
BBDC/Novo Nordisk Studentship endowment fund* (amount available as of May 1/04)	208,420	255,910
Yow Kam-Yuen Scholarship endowment fund* (amount available as of May 1/04)	14,901	18,769
Tamarack Graduate Award endowment fund* (amount available as of May 1/04)	24,716	26,172
Archie Sopman endowment fund – U.H.N.** (amount available as of February 1/05)	35,842	37,700
BBDC fellowship/personnel funds	105,000	57,500
TOTAL INCOME	835,722	881,793
EXPENSES		
Administration:		
Salary support and benefits	83,540	80,208
Office supplies/review expenditures/miscellaneous	18,509	5,108
Educational Functions:		
BBDC Seminar Series	5,597	8,817
BBDC and T.G.R.I. Diabetes Investigator Seminar Series	4,175	712
Workshops	0	2,106
Annual Scientific Day	14,524	14,352
Funding Programs for Trainees:		
Hugh Sellers and BBDC Postdoctoral Fellowships	105,000	57,500
BBDC/Novo Nordisk Studentships	196,577	197,700
Yow Kam-Yuen Graduate Scholarship in Diabetes Research	14,000	15,000
Tamarack Graduate Award in Diabetes Research	20,505	17,000
Charles Hollenberg Summer Studentship Program (2005)	33,600	42,000
Trainee Travel Awards	28,447	21,699
Annual Trainee Awards (prizes provided by Novo Nordisk Canada Inc.)	0	0
Funding Programs and Support for Faculty:		
Reuben & Helene Dennis Scholar in Diabetes Research	10,000	20,000
New Investigator Awards For Diabetes Research	40,000	0
Pilot and Feasibility Grants	89,790	75,000
Equipment Grants for Diabetes Research	59,246	52,479
Travel allowance for committee chairs	3,671	3,975
Other Funding Programs:		
Pilot Grants for Innovative Activities Related to Diabetes Education, Management, and Care	39,919	17,549
Archie Sopman Diabetes Research Competition (2005 calendar year)	11,000	13,000
TOTAL EXPENSES	778,100	644,205
INCOME LESS EXPENSES	57,622	237,588

* Endowment income reflects the return on investment generated by the University of Toronto Long-Term Capital Appreciation Pool. The annual endowment income available to the BBDC may change depending on market conditions and rate of investment return.

** University Health Network, Toronto General and Western Hospital Foundation

DESCRIPTION OF FUNDING PROGRAMS and FUNDING DECISIONS

The BBDC's funding programs are only open to full-time University of Toronto faculty members involved in diabetes research (i.e. BBDC Members) with the exception of the following programs:

- 1) Pilot Grant for Innovative Activities Related to Diabetes Education, Management and Care
- 2) Archie Sopman Diabetes Research Competition
- 3) Pilot and Feasibility Funding
- 4) Reuben & Helene Dennis Scholar in Diabetes Research; and
- 5) New Investigator Awards for Diabetes Research

ANNUAL TRAINEE AWARDS

(Formerly the BBDC/Toronto Diabetes Association Annual Trainee Awards)

Each year graduate students and postdoctoral fellows are invited to submit their abstracts for the Annual Trainee Awards competition. To be eligible, the trainee's supervisor must be a member of the BBDC. The abstract must be directly related to diabetes research and the trainee must be first author. Abstracts are reviewed by members of the Research Committee. This year's prizes and plaques were generously provided by **Novo Nordisk Canada Inc.**, therefore, funds for this competition are not included in the BBDC Financial Report on page 6. This year's prize winners are:

Award	Supervisor	Title of Abstract
1st Prize: Jingyu Diao	Dr. Michael Wheeler	Glucose concentration-dependent glucagon secretion requires insulin receptor expression in α -cells
2nd Prize: Jiwanjeet Dhaliwall	Dr. Adria Giacca	<i>In Vivo</i> Effect of Insulin to Decrease Matrix Metalloproteinase (MMP) -2 activity
3rd Prize: Daphne Yau	Dr. Michael Wheeler	Insulin Resistance Precipitates Loss of Glucose Sensitivity and β -cell Expansion in a Non-obese Model of Type 2 Diabetes
Honourable Mention: Holly Bates	Dr. Mladen Vranic and Dr. Stephen Matthews	Chronic Intermittent Stress Improves Glycemia and Glucose Tolerance in ZDF Rats
Honourable Mention: Kinh-Tung Nguyen	Dr. Minna Woo	<i>In vivo</i> role of PTEN on β cell mass and function
Honourable Mention: Kristin Marie Beard	Dr. I. George Fantus	Bradykinin (BK) Potentiates the Insulin signaling Pathway in Rat Adipocytes via Inhibition of JNK1/2
Honourable Mention: Wasim El-kholy	Dr. Michael Wheeler	Hyperpolarization-Activated Cyclic-Nucleotide-Modulated Channels in the β -cell

ARCHIE SOPMAN DIABETES RESEARCH COMPETITION

This award is only open to full and part-time University Health Network employees (i.e. employees of Toronto General Hospital, Toronto Western Hospital, or Princess Margaret Hospital). To be eligible, the applicant must be either a staff physician, dietitian, nurse, social worker, pharmacist, scientist, research technician, or clinical trial coordinator who is involved in diabetes research, diabetes education, or diabetes clinical care. Hence, applicants are not required to be members of the BBDC. Funding can be used for: 1) Travel to a national or international diabetes meeting occurring in the year 2005 or 2) To support a visiting lecturer in diabetes or metabolic disorders in the year 2005. Applications are reviewed by the chair of the Diabetes Care and Education Committee and the BBDC's director. Funding for this program is provided by the Toronto General and Western Hospital Foundation, Archie Sopman endowment fund. The 11 funding recipients for the 2005 calendar year are:

Applicant	Position and UHN Site	Purpose	Award
Lynn Baughan	Nurse-Clinician, Diabetes Toronto General Hospital	Travel to diabetes meeting	Up to \$1,000
Marianne Beckstead	Clinical Nurse Specialist, Diabetes Toronto General Hospital	Travel to diabetes meeting	Up to \$1,000
Kathy Camelon	Practice Leader, Clinical Nutrition Toronto General Hospital	Travel to diabetes meeting	Up to \$1,000
Ann Cook	Diabetes Educator Toronto Western Hospital	Travel to diabetes meeting	Up to \$1,000
Margaret De Melo	Practice Leader, Clinical Nutrition Toronto Western Hospital	Travel to diabetes meeting	Up to \$1,000
Lorna Lawrence	Clinical Dietitian, Diabetes Toronto Western Hospital	Travel to diabetes meeting	Up to \$1,000
Louisa Li	Clinical Dietitian, Diabetes Educator, Toronto Western Hospital	Travel to diabetes meeting	Up to \$1,000
Kitty Mak	Diabetes Nurse Educator Toronto Western Hospital	Travel to diabetes meeting	Up to \$1,000
Ann Murphy	Clinical Dietitian Toronto General Hospital	Travel to diabetes meeting	Up to \$1,000
Ana Offenheim	Diabetes Nurse Educator Toronto Western Hospital	Travel to diabetes meeting	Up to \$1,000
Mary Weiland	Clinical Dietitian, Diabetes Educator, Toronto Western Hospital	Travel to diabetes meeting	Up to \$1,000

CHARLES HOLLENBERG SUMMER STUDENTSHIP PROGRAM 2005

This program is designed to introduce young undergraduate students to diabetes research. This year the BBDC awarded 14 studentships valued at \$4,800 each to qualified undergraduate and/or medical students to carry out full-time summer research in diabetes in the laboratory of a BBDC member. The student's stipend is shared by the BBDC and the supervisor(s). Students are required to participate in the program's *Weekly Seminar Series* and to present their work at the end of the summer in a workshop format at the *Mini-conference*. Applications are reviewed and ranked by members of the Research Committee as well as the Summer Studentship Program Coordinator, Dr. David Irwin. The following are the 2005 summer studentship recipients:

Student	Supervisor	Title of Research
Florence Chan	Dr. Michael Wheeler	The role of potassium channel drugs on glucose stimulated insulin secretion in mice
Alex Cheng	Dr. Amira Klip	Localization of insulin signals by the cytoskeleton
Vinca Chow	Dr. Maria Rozakis Adcock	Characterization of a novel actin and IRS-1 binding protein the regulation of GLUT4 trafficking in insulin-responsive L6 muscle cells
Melissa Jenny Ho	Dr. Stephen Matthews	Effects of repeated restraint stress on the expression of catecholamine-synthesizing enzymes in the adrenal medulla of STZ-diabetic rats
Shiyong Liu	Dr. Qinghua Wang	Role of Akt kinase in regulating glucagon secretion in A-cells
Golnaz Madadi	Dr. Adria Giacca	Mechanism of Insulin Action on Vascular Smooth Muscle Cell (VSMC) Migration After Arterial Injury
Amber Menezes	Dr. Mladen Vranic	Intermittent Stress Attenuates the Progression of Type 2 Diabetes Mellitus in the Male Zucker Diabetic Fatty

		(ZDF) Rat
Leslie Po	Dr. Pamela Ohashi	Understanding signaling pathways during T cell activation versus tolerance
Roshan Abdul Razik	Dr. I. George Fantus	Mechanisms of crosstalk between bradykinin and insulin signal transduction pathways
Tracey Teodoro	Dr. Allen Volchuk	Development of an Assay to Monitor ATF6 Pathway Signalling in Pancreatic β -cells
Wilson Wan	Dr. Herbert Gaisano	Role of Munc18b and Munc18c in insulin exocytosis
Lesley Wu	Dr. Minna Woo	Tissue-specific Role of Caspase-8 in Beta Cell Homeostasis
Andrea Yeung	Dr. Patricia Brubaker	Role of novel fatty acid transporters, GPR40 and GPR120, in the regulation of glucagon-like peptide-1 secretion
Ann Young	Dr. Thomas Wolever	Effects of thronine 54 variant of the fatty acid-binding protein 2 (FABP2) gene on postprandial insulin response of Type II diabetes patients

EQUIPMENT GRANTS FOR DIABETES RESEARCH

A minimum amount of \$5,000 and a maximum amount of \$30,000 is made available for the one-time purchase of laboratory equipment for diabetes research. To be eligible, the applicant must be a full-time faculty member of the University of Toronto conducting diabetes research. Those who wish to purchase equipment costing over \$30,000 are required to obtain the remaining funds from other sources before the BBDC releases the funds to successful applicants. Applications are reviewed and ranked by members of the Research Committee as well as an external reviewer(s). The following are the Equipment Grant recipients for 2004-2005:

Applicant	Title of Research	Award
Dr. Patricia Brubaker	Real-time PCR analysis of single endocrine cells	\$30,000
Dr. Herbert Gaisano	In situ examination of islet cell function using organotypic slices	\$29,246

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 (*OSOTF*), 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. Each year the BBDC invites applications from students who are registered with the Faculty of Medicine, School of Graduate Studies at the University of Toronto. To be eligible for this award, students must demonstrate financial need, and must be carrying out studies in diabetes research. Applications are ranked and reviewed by the Research Committee. This year the BBDC was able to award 13 studentships of up to \$21,000. The following are the BBDC/Novo Nordisk Studentship recipients for 2004-2005:

Applicant	Supervisor	Title of Research
Kristin Beard	Dr. George Fantus	Bradykinin sensitizes rat adipocytes to insulin-stimulated glucose transport via an endothelial nitric oxide synthase-protein kinase G-dependent signaling pathway
George Bikopoulos	Dr. Sandy Der	Regulation of transcription by epigenetic mechanisms in pancreatic beta cells after chronic exposure to lipotoxic/glucotoxic stresses
Holly Douglas-Bates	Dr. Mladen Vranic	The Effect of Repeated Restraint Stress on the Development of the Diabetic Phenotype in the Male

		Zucker Diabetic Fatty (ZDF) Rat
Edwin Kwan	Dr. Herbert Gaisano	Molecular mechanisms of priming of insulin exocytosis
Nicole Liadis	Dr. Pamela Ohashi and Dr. Minna Woo	The Role of Caspase-3 in Type 1 Diabetes
Gareth Lim	Dr. Patricia Brubaker	Insulin-resistance impairs secretion of glucagon-like peptide-1
Kyu Yol Edward Park	Dr. Adria Giacca	Mechanisms of Free Fatty Acid (FFA)-induced Impairment of Hepatic Insulin Action and Clearance
Konstantinos Gus Sidiropoulos	Dr. Khosrow Adeli	Translational Regulation of Apolipoprotein B
Jane Sun	Dr. Tianru Jin	Cell type specific regulation of proglucagon gene expression: The involvement of insulin and Wnt signalling molecules
Tanvi Talsania	Dr. Patricia Brubaker	Interactions of Glucagon-like Peptide-1 with Other Mediators of Food Intake
Christine Tang	Dr. Adria Giacca	The role of oxidative stress in beta cell glucotoxicity in vivo
Fuzhen Xia	Dr. Robert Tsushima	Role of Membrane Cholesterol in Stimulus-Secretion Coupling of Beta- and Alpha-Cells
Daphne Yau	Dr. Michael Wheeler	Mechanisms of Beta-Cell Expansion in a Transgenic Model of Type 2 Diabetes

GRADUATE STUDENTSHIPS:

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 (*OSOTF*). To be eligible for this award, students must demonstrate financial need, and must be carrying out studies in diabetes research. Applicants must also be registered with the Faculty of Medicine, School of Graduate Studies at the University of Toronto. Applications are ranked and reviewed by the BBDC Research Committee and preference is given to those students whose primary area of study is vascular problems of diabetes. Applications are ranked and reviewed by the Research Committee. This year the income earned on the endowment enabled the BBDC to award two studentships of up to \$12,000. The following students are the 2004-2005 Tamarack Graduate Award recipients:

Applicant	Supervisor(s)	Title of Research
Michael Kiraly	Dr. Mladen Vranic	The Effects of Six Weeks of Aerobic Exercise Training on Beta-Cell Mass Dynamics in the Zucker Diabetic Fatty Rat Model of Type 2 Diabetes Mellitus
Karen Sison	Dr. I. George Fantus	Podocyte function and diabetic nephropathy

GRADUATE STUDENTSHIPS:

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 (*OSOTF*). To be eligible for this award, students must demonstrate financial need, and must be carrying out studies in diabetes research. Applicants must also be registered with the Faculty of Medicine, School of Graduate Studies at the University of Toronto. Applications are ranked and reviewed by the Research

Committee. This year the income earned on the endowment enabled the BBDC to award one \$14,000 studentship. The following student is the 2004-2005 Yow Kam-Yuen Graduate Scholarship recipient:

Applicant	Supervisor	Title of Research
Victor Wong	Dr. Gary Lewis	Molecular Mechanism of Insulin Sensitization by Vasopeptidase Inhibitor

HUGH SELLERS and BBDC POSTDOCTORAL FELLOWSHIPS

The support of research fellows has been a major priority of the BBDC. Since the inception of the BBDC and through the generosity of the Sellers family, one Hugh Sellers Postdoctoral Fellowship has been awarded annually. Whenever possible, the Centre endeavours to support additional trainees a year if extra funding is available. This program provides one year of funding for an individual holding an M.D. or Ph.D. who is carrying out full-time diabetes research training at the University. Stipends approximate those of the CIHR postdoctoral fellowship program. Applications are reviewed by members of the Research Committee plus an external reviewer(s). The Hugh Sellers and BBDC Fellowship recipients for 2004-2005 are:

Applicant	Supervisor	Title of Research
Hugh Sellers Fellow: Dr. Lixin Li	Dr. Patricia Brubaker	Glucagon-like peptide-1 regulates beta-cell growth and survival through PI3-Kinase-PKB signalling pathway
BBDC Fellow: Dr. Feng-hua Yi	Dr. Tianru Jin	Cell type specific regulation of proglucagon gene expression -Role of insulin and Wnt signaling molecules
BBDC Fellow: Dr. Christine Longuet	Dr. Daniel Drucker	Tissue-specific actions of the glucagon receptor
BBDC Fellow (July to December 2004): Munira Xaymardan	Dr. Gary Lewis	Determining the mechanism of HDL lowering in hypertriglyceridemic, insulin resistant and diabetic states.

PILOT AND FEASIBILITY GRANTS

This program provides funding of up to \$30,000 per applicant, for one year, to enable eligible investigators to explore completely new initiatives in the area of diabetes research. This competition is open to both new and established full-time faculty members of the University of Toronto. Applicants new to the field of diabetes research do not need to be a member of the BBDC, but are encouraged to join the membership. Applications are reviewed and ranked by members of the Research Committee as well as an external reviewer(s). The following are the Pilot and Feasibility Grant recipients for 2004-2005:

Applicant	Title of Research	Award
Dr. Dominic Ng	The role of HDL as therapeutic target in metabolic syndrome	\$30,000
Dr. Esteban Parra	Construction of an admixture mapping panel to study type 2 diabetes	\$30,000
Dr. James Woodgett	Role of Glycogen Synthase Kinase-3 in diabetes	\$29,790

PILOT GRANTS FOR INNOVATIVE ACTIVITIES RELATED TO DIABETES EDUCATION, MANAGEMENT, AND CARE

This program provides funding of up to \$20,000 per applicant for pilot projects which are one to two years in length. Funding is intended to support new research initiatives in the following general areas: 1) Diabetes care

delivery; 2) Evaluation of diabetes education programs; and 3) Practical issues in diabetes management. It is designed to encourage new academic research activities from individuals not usually supported by traditional granting processes, specifically, front line health care professionals working at the University of Toronto-affiliated hospitals or working with U of T-affiliated academics. Hence, applicants are not required to be members of the BBDC. Applications are reviewed by members of the Diabetes Care and Education Committee. The following are the Pilot Grant recipients for 2004-2005:

Applicant(s)	Title of Research	Award
Dr. Denise Feig (PI) Dr. Lorraine Lipscombe Dr. Diane Donat Dr. Catherine Kelly Dr. Ian Blumer Dr. George Tomlinson	Barriers to breastfeeding in Women with Diabetes	\$19,965
Ana Offenheim (PI) Raquel Figueroa Beatrise Poroger-Edelstein Eidemara Tavares Keegan Barker	Walking for Health: An exercise and nutrition program for sedentary people with type 2 diabetes. Is it effective?	\$19,953.93

REUBEN & HELENE DENNIS SCHOLAR IN DIABETES RESEARCH and NEW INVESTIGATOR AWARDS FOR DIABETES RESEARCH

In 2004 the BBDC merged the two competitions into one which will now be held every two years. These awards were established to support new University of Toronto diabetes research faculty. The New Investigator Awards provide funding of \$20,000 per year for two years, and the Dennis Scholar Award provides \$10,000 per year for two years. To be eligible, the applicant must be involved in diabetes research and must be a principal investigator who holds a full-time academic appointment with the University of Toronto. Faculty are eligible for this funding normally within **five** years of their first faculty appointment. Applications are reviewed and ranked by members of the Research Committee as well as an external reviewer(s). The recipients of these two-year awards are:

Reuben & Helene Dennis Scholar in Diabetes Research

Applicant	Title of Research	Award
Dr. Minna Woo	The role of caspase-3 in islet destruction in type 1 diabetes	\$10,000 for 2004/2005 \$10,000 for 2005/2006

New Investigator Awards for Diabetes Research

Applicant	Title of Research	Award
Dr. Anthony Hanley	Longitudinal Associations of Adipocytokines and markers of Sub-Clinical Inflammation with Changes in Insulin Resistance and Beta-Cell Function in Women with a History of Gestational Diabetes Mellitus	\$20,000 for 2004/2005 \$20,000 for 2005/2006
Dr. Bruce Perkins	Early nerve function decline in type 1 and type 2 diabetes	\$20,000 for 2004/2005 \$20,000 for 2005/2006

TRAINEE TRAVEL AWARDS

The Trainee Travel Awards are available to 30 postdoctoral fellows and graduate students conducting diabetes research in the laboratory of a BBDC member. Trainees are eligible for a Travel Award of up to \$1,000 (CDN) each to defray the expense of attending a national or international meeting. The trainee must be presenting a first-author abstract

which has been accepted for presentation at the meeting. Applications are reviewed by members of the Research Committee. The following are the Trainee Travel Award recipients for 2004-2005:

Applicant	Supervisor	Title of Research
Heather Basciano	Dr. Khosrow Adeli	A novel animal model of insulin resistant diabetes and metabolic dyslipidemia
Holly Bates	Dr. Mladen Vranic	Chronic Intermittent Stress Improves Glycemia and Glucose Tolerance in ZDF Rats
Kristin Beard	Dr. I. George Fantus	Bradykinin (BK) Potentiates the Insulin Signaling Pathway in Rat Adipocytes via Inhibition of JNK1/2
George Bikopoulos	Dr. Sandy Der	Human Islet Transcriptional Profiling Following Exposure to Non-esterified Fatty Acids
Jiwanjeet Dhaliwall	Dr. Adria Giacca and Dr. Michelle Bendeck	In Vivo Effect of Insulin to Decrease Matrix Metalloproteinase (MMP) 12 activity
Chandrasagar Dugani	Dr. Amira Klip	Morphological Characterization of Insulin-responsive GLUT4 Compartments in L6 Muscle Cells
Irene Hadjiyanni	Dr. Daniel Drucker	The Effects of the GLP-1R Agonist Exendin-4 on Diabetes Development
Tanya Hansotia	Dr. Daniel Drucker	Elimination of incretin receptor signalling impairs the β cell response to high fat feeding but attenuates the development of obesity and insulin resistance
Lellean JeBailey	Dr. Amira Klip	Skeletal Muscle Cells and Adipocytes Differ in Their Reliance on TC10 and RAC for Insulin-reduced Actin Remodeling
Michael Kiraly	Dr. Mladen Vranic	Six Weeks of Swim Training Delays the Onset of Type 2 Diabetes mellitus (T2DM) in the Male Zucker Diabetic Fatty (ZDF) Rat
Edwin Kwan	Dr. Herbert Gaisano	Glucagon-like Peptide 1 regulates sequential and compound exocytosis in pancreatic islet β cells
Nicole Liadis	Dr. Pamela Ohashi and Dr. Minna Woo	<i>In Vivo</i> Role of Caspase-3 in T Cell Priming in Type 1 Diabetes Model
Lixin Li	Dr. Patricia Brubaker	Role of the Phosphatidylinositol 3-kinase γ (PI3K γ) in beta-cell Growth: Interaction with Glucagon-like Peptide-1
Gareth Lim	Dr. Patricia Brubaker	Inhibitory Effect of Insulin on Glucagon-like Peptide-1 Secretion by the GLUTag Cell Line
Lorraine Lipscombe	Dr. Janet Hux	Increased Rates of Prior Breast Cancer in Women with Newly Diagnosed Diabetes
Juan Liu	Dr. Kue Young and Dr. Anthony Hanley	Regional Variation in Metabolic Syndrome Prevalence and Characteristics among Native Canadians
Kinh-Tung Nguyen	Dr. Minna Woo	The <i>in vivo</i> role of PTEN in pancreatic β cell
Andrei Oprescu	Dr. Adria Giacca	The antioxidant taurine prevents lipotoxicity on beta cell function <i>in vitro</i> and <i>in vivo</i>
Ravi Retnakaran	Dr. Bernard Zinman	Elevated C-reactive Protein in Native Canadian Children: An Ominous Early Complication of Childhood Obesity
Baiju Shah	Dr. Janet Hux	Specialized care results in more aggressive cardiovascular risk modification than primary care
Konstantinos Gus Sidiropoulos	Dr. Khosrow Adeli	Translational Control of ApoB mRNA: Role of the PKC signaling cascade
Laura Stavar	Dr. I. George Fantus	Evidence for a Role of Src Tyrosine Kinase in Diabetic Nephropathy
Hubert Tsui	Dr. H-Michael Dosch	Initiation, Persistence and Relevance of Peri-Islet Schwann Cell Autoimmunity in Type 1 Diabetes
Robert Wallis	Dr. Philippe Poussier	Characterization of a novel Type 1 Diabetes susceptibility

		locus identified in the BB rat model
Fuzhen Xia	Dr. Robert Tsushima	Expression of Ion channels and SNARE Proteins in Pancreatic α -cells and Targetting of SNARE Proteins to Lipid Rafts Microdomains
Ling Xia	Dr. Catharine Whiteside	In High Glucose, Mesangial Cell NADPH Oxidase Upregulation Is PKC-Dependent and Required for Collagen IV Accumulation
Changting Xiao	Dr. Gary Lewis	Differential effects of monounsaturated, polyunsaturated and saturated fat ingestion on glucose-stimulated insulin secretion, sensitivity and clearance in overweight or obese, non-diabetic humans
Daphne Yau	Dr. Michael Wheeler	Insulin Resistance Precipitates Loss of Glucose Sensitivity and β -cell Expansion in a Non-obese Model of Type 2 Diabetes
Fenghua Yi	Dr. Tianru Jin	Cell type specific activation of proglucagon gene expression and GLP-1 synthesis by insulin: Role of TCF-4 and G2 enhancer elements
Jessica Yue	Dr. Stephen Matthews	Discordant Hypoglycemic Counterregulation in Normal and Diabetic Rats With or Without Recurrent Restraint Stress (RRS)

ACKNOWLEDGEMENTS

The BBDC would like to thank the members of the **Research Committee** and members of the **Diabetes Care and Education Committee** for reviewing applications for the Centre's numerous funding programs.

As an integral part of the application review process, the BBDC also obtains scientific reviews from University of Toronto faculty who are involved in diabetes-related research. The BBDC would like to thank the following faculty for acting as our **external reviewers** this past year for various BBDC funding programs:

Dr. Myron Cybulsky
Dr. Hans-Michael Dosch
Dr. Harry Elsholtz
Dr. George Fantus
Dr. David Irwin
Dr. Amira Klip
Dr. Cecil Pace-Asciak
Dr. Allen Volchuk

EDUCATIONAL ACTIVITIES OF THE CENTRE

BBDC SEMINAR SERIES (In conjunction with City-wide Endocrine Rounds)

An ongoing responsibility of the Centre is to invite researchers within Canada and the United States to present their work on diabetes research 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 8 a.m. in the Private Dining Room at the Mount Sinai Hospital. The presentations for the 2004-2005 year were as follows:

Friday, October 29, 2004	Beta Cell Homeostasis and the Unfolded Protein Response Dr. David Ron Professor of Medicine and Cell Biology New York University School of Medicine Skirball Institute of Biomolecular Medicine New York, New York
Friday, December 17, 2004	Intracellular Trafficking of the Insulin-responsive Glucose Transporter, GLUT4 Dr. Jeffrey E. Pessin Professor and Chair Department of Pharmacological Sciences Stony Brook State University of New York Stony Brook, New York
Friday, February 11, 2005	Human Genome Variation and the Genetics of Common Disease Dr. David Altshuler Assistant Professor of Genetics and of Medicine Harvard Medical School Massachusetts General Hospital Boston, Massachusetts
Friday, April 22, 2005	Dipeptidyl Peptidase IV Inhibition for the Treatment of Type 2 Diabetes Nancy A. Thornberry Metabolic Disorders Merck Research Laboratories Rahway, New Jersey

BBDC and T.G.R.I. DIABETES INVESTIGATOR SEMINAR SERIES

These monthly seminars provide an opportunity for Toronto General Research Institute (TGRI) diabetes investigators associated with the BBDC to exchange diabetes research data. (See page 22 for more information on diabetes investigators associated with the BBDC.) The meetings are usually held on the first Friday of each month from 12 to 1 p.m. at the Toronto General Hospital. Unlike the BBDC Seminar Series described on the previous page, this seminar series is only attended by the seven BBDC associated investigators and their trainees. The BBDC gratefully acknowledges support of this seminar series by **Merck Frosst Canada**. The 2004-2005 BBDC and T.G.R.I. Diabetes Investigator Seminar Series schedule was as follows:

BBDC and T.G.R.I. DIABETES INVESTIGATOR SEMINAR SERIES 2004-2005

12:00 to 1:00 p.m.

Toronto General Hospital

200 Elizabeth Street

Eaton Wing North, 1st Floor, Room 429/430

Friday, October 1, 2004	Dr. I. George Fantus presenting
Friday, November 5, 2004	Dr. Daniel Drucker presenting
Friday, December 3, 2004	Dr. Tianru Jin presenting
January 2005	No seminar
Friday, February 4, 2005	Dr. Gary Lewis presenting
Friday, March 4, 2005	Dr. Harry Elsholtz presenting
Friday, April 1, 2005	Dr. David Irwin presenting
Friday, May 6, 2005	Dr. Allen Volchuk presenting

16th ANNUAL SCIENTIFIC DAY

This annual event which is organized by the Research Committee provides an opportunity for BBDC members to exchange scientific information and ideas, and to assist 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 postdoctoral fellows and graduate studentship recipients present posters of their work. The event focuses on the latest diabetes research topics with both clinical and laboratory applications. In addition, the Director of the Centre has an opportunity to review the activities of the BBDC over the past year with the Centre membership at large. This event is open and free to all BBDC members and their trainees. The program normally includes one internationally renowned guest faculty as well as University of Toronto faculty equally renowned for their work in diabetes research.

The 16th Annual Scientific Day was held on **Friday, May 13, 2005** at The Estates of Sunnybrook. We gratefully acknowledge partial support of this event by **Eli Lilly Canada Inc., GlaxoSmithKline, Merck Frosst Canada Ltd., Novo Nordisk Canada Inc.,** and **LifeScan Canada** for partial support of the guest speaker. The program was as follows:

BANTING AND BEST DIABETES CENTRE 16th ANNUAL SCIENTIFIC DAY Friday, May 13, 2005 Vaughan Estate, The Estates of Sunnybrook 2075 Bayview Avenue, Toronto	
8:30 - 9:00 A.M. CONTINENTAL BREAKFAST (lower level Courtyard Ballroom)	
Chair: Dr. Anthony Hanley	
9:00 - 9:30	Mechanisms of Smooth Muscle Cell Migration in Atherosclerosis and Diabetes Dr. Michelle Bendeck
9:30 - 10:00	The Changing Paradigms of Early Kidney Disease in Type 1 Diabetes Dr. Bruce Perkins BBDC New Investigator Award recipient 2004-2006
10:00 - 10:30	Admixture Mapping: Admixture as a Tool for Identifying Disease Genes Dr. Esteban Parra BBDC Pilot & Feasibility Grant recipient 2004/2005
10:30 - 11:15 POSTER PRESENTATIONS (lower level Courtyard Ballroom)	
Chair: Dr. Robert Tsushima	
11:15 - 11:45	TCF-4 Mediates Cell-type Specific Regulation of Proglucagon Gene Expression by Beta-catenin and GSK-3beta Dr. Fenghua Yi BBDC Postdoctoral Fellow 2004/2005
11:45 - 12:15 P.M.	Free Fatty Acids and Endoplasmic Reticulum Stress in INS1 Pancreatic Beta-cells Dr. Allen Volchuk
12:15 - 12:25	Director's Report: Dr. Daniel J. Drucker Director, Banting and Best Diabetes Centre Professor, Department of Medicine, Division of Endocrinology & Metabolism

University of Toronto

12:25 - 12:35

BBDC Annual Trainee Awards Presentation

Sponsored by Novo Nordisk Canada Inc.

Dr. Patricia Brubaker, Chair, BBDC Research Committee and

Ms. Maye Machnouk, Novo Nordisk Canada Inc.

12:35 - 1:30

LUNCH (lower level Courtyard Ballroom)

Chair: Dr. Patricia Brubaker

1:30 - 2:30

Charles Hollenberg Lecture:

Type-2 Diabetes - A Matter of β -Cell Life and Death: An IRS-2 Centric Point of View

Dr. Christopher J. Rhodes

2:30

EVALUATION AND ADJOURNMENT

GUEST SPEAKER

Christopher J. Rhodes, PhD

Associate Scientific Director, Pacific Northwest Research Institute

Professor of Pharmacology, University of Washington

TORONTO SPEAKERS

Michelle Bendeck, PhD

Associate Professor, Department of Laboratory Medicine & Pathobiology

University of Toronto

Esteban Parra, BSc, PhD

Assistant Professor, Department of Anthropology

University of Toronto at Mississauga

Bruce Perkins, MD, MPH, FRCPC

Assistant Professor, Department of Medicine, Division of Endocrinology & Metabolism, University of Toronto

Clinician Scientist, University Health Network

Allen Volchuk, PhD

Scientist, Division of Cellular & Molecular Biology, Toronto General Research Institute

Assistant Professor, Department of Biochemistry, and Department of Medicine,

Division of Endocrinology & Metabolism, University of Toronto

Feng-hua Yi, PhD

BBDC Postdoctoral Fellow 2004/2005

DIABETES UPDATE

Diabetes Update is a biannual, full-day continuing education event which is organized by the Diabetes Care and Education Committee and the Faculty of Medicine Continuing Education staff. **Diabetes Update 2005 – Combination Therapies in the Management of Diabetes** was held on Friday, April 8, 2005 at the Metro Toronto Convention Centre, and was attended by almost 700 diabetes health care professionals such as physicians, nurses, dietitians and pharmacists from across Ontario and beyond. The event focused primarily on the use of combination therapies in the management of diabetes and provided an update on current practice guidelines and management strategies. The BBDC would like to thank the following corporate sponsors for supporting this event: MAJOR CORPORATE SPONSORS: **GlaxoSmithKline** and **Sanofi-Aventis**. CORPORATE SPONSORS: **AstraZeneca, Eli Lilly Canada, LifeScan Canada, Merck Frosst/Schering Pharmaceuticals, Novo Nordisk Canada Inc., and Pfizer Canada Inc.** The program was as follows:

DIABETES UPDATE 2005 – COMBINATION THERAPIES IN THE MANAGEMENT OF DIABETES Friday, April 8, 2005 Metropolitan Toronto Convention Centre North Building 100 Level 255 Front Street West, Toronto, Ontario		
7:45 A.M.	Registration & Breakfast	
8:30	Welcome	Daniel J. Drucker, MD, FRCPC , Director, Banting and Best Diabetes Centre
	Learning Objectives	Jacqueline James, MD, MEd, FRCPC , Course Director
8:35	Lecture 1 Chair: J. James	Stewart Harris, MD, MPH, FCFP, FACPM CDA Guidelines Update: The Need for Aggressive Management
9:25	Lecture 2 Chair: M. De Melo	Marion J. Franz, MS, RD, CDE Always Part of the Combination: Diet and the Effectiveness of Medical Nutrition Therapy in Diabetes Management
10:15	Refreshment Break	
10:45	Concurrent Session 1 Chair: G. Booth	Amir Hanna, MD, FRCPC When and How to Combine Oral Agents With Each Other and With Insulin
	Concurrent Session 2 Chair: H. Munro	Denice Feig, MD, FRCPC Glycemia and Reproduction: A Strategy for Pre-pregnancy Counseling and Management of Women With Type 2 Diabetes
	Concurrent Session 3 Chair: H. Halapy	Phil McFarlane, MD, FRCPC The Use of ACE's and ARB's in the Management of Diabetes
12:15 P.M.	Lunch Break	

1:15	Lecture 3 Chair: K. Perlman	Jean-François Yale, MD, CSPQ Can We Combine the Information From Glucose Monitoring Devices With the Management of Diabetes in an Efficient and Effective Way?
2:05	Lecture 4 Chair: J. James	Dominic Ng, PhD, MD, FRCPC What is the Role of Combining Lipid Lowering Therapies in Diabetes Management?
2:55	Refreshment Break	
3:25	Concurrent Session 4 Chair: J. Buccino	Jill Hamilton, MD, FRCPC Combining Oral Agents and Insulin in the Pediatric Population
	Concurrent Session 5 Chair: C. Lawton	Paul Oh, MD, FRCPC, FACP Adding an Exercise Regimen to Diabetes Management: Practical Aspects of Assessing and Prescribing Exercise for High Risk Individuals
	Concurrent Session 6 Chair: M. Beckstead	Lori MacCallum, BScPhm, PharmD Combining Antihypertensives in People With Diabetes
4:55	Evaluation & Adjournment	

GUEST SPEAKERS

Stewart B. Harris, MD, MPH, FCFP, FACPM
Associate Professor, University of Western Ontario
Ian McWhinney Chair of Family Medicine Studies

Marion J. Franz, MS, RD, CDE
Nutrition Concepts by Franz, Inc.
Minneapolis, Minnesota

Jean-François Yale, MD, CSPQ
Director, Royal Victoria Hospital Metabolic Day Centre
Professor, McGill Nutrition and Food Science Centre

TORONTO SPEAKERS

Denice Feig, MD, FRCPC
Associate Professor*
Department of Medicine, Division of Endocrinology & Metabolism
Mount Sinai Hospital

Jill Hamilton, MD, FRCPC
Assistant Professor*
Department of Pediatrics
Hospital For Sick Children

Amir Hanna, MD, FRCPC
Professor of Medicine*

Deputy Division Director, Endocrinology
St. Michael's Hospital

Lori MacCallum, BScPhm, PharmD
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St. Michael's Hospital

Dominic Ng, PhD, MD, FRCPC
Assistant Professor*
Department of Medicine, Division of Endocrinology & Metabolism
St. Michael's Hospital

Paul Oh, MD, FRCPC, FACP
Lecturer*
Department of Medicine, Division of Clinical Pharmacology
Medical Director, Cardiac Rehab & Secondary Prevention Program
Toronto Rehabilitation Institute

**Faculty of Medicine, University of Toronto*

CORE LABORATORY

Director: Dr. I. George Fantus

The Core Laboratory was established in 1984 to provide analytical and technical support to the University of Toronto diabetes research community. A wide range of research quality assays are provided for investigator initiated clinical/basic research as well as for industry sponsored trials. The Core Laboratory will collaborate with the investigator to establish new assays to carry out and enhance diabetes-related research at the University. A list of the current services provided by the Core Laboratory are provided on the BBDC's website, www.bbdc.org. In 2001, the Core Laboratory partnered with Pathology and Laboratory Medicine at Mount Sinai Hospital and moved its facilities to that location, although it still remains a part of the BBDC.

DIABETES INVESTIGATORS ASSOCIATED WITH THE BBDC

(Located at the Toronto General Hospital)

There are seven Toronto General Research Institute (TGRI) scientists associated with the Banting and Best Diabetes Centre: **Dr. Daniel Drucker, Dr. Harry Elsholtz, Dr. I. George Fantus, Dr. David Irwin, Dr. Tianru Jin, Dr. Gary Lewis and Dr. Allen Volchuk.**

The BBDC has laboratory space in the Max Bell Research Wing at the Toronto General Hospital, University Health Network. All of the scientists' laboratories are located in the Max Bell Research Wing with the exception of Dr. Tianru Jin. The investigators have shared access to a broad range of specialized research equipment on the 4th floor of the Max Bell Research Wing, and make use of BBDC offices for lab meetings and administrative core activities. The investigators meet as a group monthly at the *BBDC and T.G.R.I. Diabetes Investigator Seminar Series (see page 16)* to review research progress, while participating fully in the spectrum of research activities ongoing at the University of Toronto.

Drs. Daniel Drucker, George Fantus, Tianru Jin, Gary Lewis and Allen Volchuk hold their primary appointment with the Department of Medicine; and Drs. Harry Elsholtz and David Irwin hold their primary appointment with the Department of Laboratory Medicine and Pathobiology.

- Understanding insulin action, lipid metabolism, and signal transduction (Drs. Elsholtz, Lewis and Fantus)
- Regulation of gene transcription (Drs. Elsholtz, Drucker, Irwin, and Jin)
- Biology of the glucagon-like peptides (Drs. Drucker and Irwin)
- Studying the cell biology of insulin secretion and exocytosis, with a focus on translation stress and the unfolded protein response in normal β cells and in models of β cell dysfunction (Dr. Volchuk)

PUBLICATIONS

WEB SITE www.bbdc.org

Visitors to our site can view detailed information on all of our funding programs, funding decisions, educational activities, membership, clinical trials at University of Toronto-affiliated hospitals, diabetes research at the University of Toronto, links to international diabetes meetings, and much more. All application forms for BBDC funding programs can be downloaded from the site.

New to the web site this year:

- **2004 RESEARCH HIGHLIGHTS** The annual research highlights were added to facilitate increased public awareness of the many exciting diabetes-related research developments that occur each year at the University of Toronto. The site is intended to provide information for the general public and will describe, in lay language, one or two highlights of diabetes research carried out by University of Toronto faculty members, published during the 2004 calendar year. Links to their publications are provided. The 2004 Research Highlights are located within the 'Research at the University' section of the web site and is updated annually.

APPROACH TO THE MANAGEMENT OF DIABETES MELLITUS (Fifth Edition)

This 68-page document is a guide to the current concepts and management strategies practiced by health care professionals at the University of Toronto and its affiliated teaching hospitals in the care of individuals with diabetes. It is meant to provide practical information to help medical students, residents, physicians, diabetes educators and other health care professionals in the management of individuals with diabetes. The BBDC has been publishing and updating this monograph since 1986 as a part of our mandate to promote diabetes education and patient care at the University of Toronto. The fifth edition was updated in early 2002 with the generous help of many diabetes health care professionals at the University of Toronto teaching hospitals. The entire document (in PDF format) or individual chapters can be downloaded from the 'Diabetes Information' section of the BBDC's web site, www.bbdc.org. A sixth edition will be launched on the web site in September 2005 in a new and improved user-friendly, web-based format.

BBDC NEWSLETTER

The Banting and Best Diabetes Centre distributes a quarterly newsletter entitled **BBDC NEWS** by e-mail to those who have joined our e-mail distribution list. Issues are normally distributed in September, December, March, and June of each year. The newsletter highlights upcoming BBDC events, funding opportunities, award results, and BBDC seminars. Current and past issues are available on the BBDC's web site www.bbdc.org

SUPPORTERS OF THE BANTING AND BEST DIABETES CENTRE

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