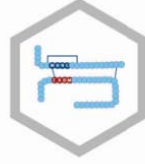


**Centre de Recherche  
du Diabète de Montréal**

*Comprendre pour prévenir et guérir*



**Montreal Diabetes  
Research Center**

*Understand to Prevent and Cure*

# REPORT OF ACTIVITIES 2005-2014



**CRCHUM**  
CENTRE DE RECHERCHE

Université   
de Montréal



**McGill**

 **IRCM**  
Institut de recherches cliniques de Montréal

 UNIVERSITÉ DE  
SHERBROOKE

  
uOttawa

**UQÀM**

 UNIVERSITÉ  
LAVAL

## Our supporters

The MDRC sincerely acknowledges endowed financial support from the following institutional and corporate contributors:



## Content

<b>Directors' Foreword</b> .....	4
<b>Overview of the Montreal Diabetes Research Center</b> .....	5
<b>Vision</b> .....	5
<b>Mission</b> .....	5
<b>Organizational Structure &amp; Committees</b> .....	6
Executive & Steering Committee.....	6
Outreach & Fund-raising Committee.....	6
<b>Investigators</b> .....	6
Membership.....	6
Benefits of Membership.....	7
Maintaining Membership and Full Member Status.....	7
Becoming a Member.....	7
Current MDRC Members and their Affiliation.....	7
Full Members.....	7
Associate Members.....	8
<b>Basic, Applied &amp; Clinical Research, &amp; Enabling Core Facilities</b> .....	9
Overview of Research Themes and Cores.....	9
Research Themes and Associated Investigators.....	9
Enabling Core Facilities.....	10
Selected Key Publications of MDRC Investigators.....	11
<b>Funding Programs &amp; Funding Decisions</b> .....	13
Faculté de Médecine de l'Université de Montréal Studentships.....	13
Postdoctoral Fellowship.....	13
Diabète Québec Pilot & Feasibility Grants.....	14
Sun Life Financial Pilot & Feasibility Grants.....	14
Trainees Travel Awards.....	15
Diabète Québec Research Technician Training Award.....	15
J Denis McGarry Lecture Award.....	16
George Cahill Lecture Award.....	17
<b>Training and Dissemination of Knowledge</b> .....	17
Seminar Series.....	17
Annual Retreat Meeting.....	18
<b>Selected Major Infrastructure, Research and Network Grants Obtained by MDRC Investigators</b> .....	20
Infrastructure Grants.....	20
Research Grants.....	20
Networks.....	21
Creation of spin-off companies.....	21
<b>Acknowledgements</b> .....	21
Persons.....	21
Sponsors.....	22
<b>APPENDIX I</b> (Trainees Travel Awards Recipients list, continued).....	23
<b>APPENDIX II</b> (Seminar Series Lecturers list, continued).....	24

## Directors' Foreword

**Marc Prentki, PhD**



We are proud to present you, for its tenth anniversary, the first report of activities of the Montreal Diabetes Research Center (MDRC). Since its inception in 2005, MDRC have made remarkable steps forward in building a successful and integrated diabetes Center that spans basic, clinical and population health research on all types of diabetes and its associated complications. The document describes our unique Center and lists key achievements and steps since its opening.

The MDRC was made possible thanks to four Canada Foundation for Innovation (CFI) grants. This provided the enabling infrastructure to build the Center where state of the art technology and complex instrumentation is at hand for the researchers and their teams. The Center, now the second largest in Canada, comprises fifty one principal investigators from six institutions:

Université de Montréal, McGill University, UQÀM, Université Laval, Université de Sherbrooke, University of Ottawa and their affiliated hospital research centers in particular the Centre de Recherche du Centre Hospitalier de l'Université de Montréal (CRCHUM) and the McGill University Health Centre (MUHC).

As you page through this report, you will appreciate that we can be proud of key achievements in terms of training the next generation of diabetes researchers, recruitment of young faculty, implementation of world-class technical platforms, landmark papers and clinical trials, outreach and partnerships, drug development and translational work, and the creation of Biotech companies. Thanks to the support from the pharma industry, Diabète Québec, CIHR, our institutions and donors, MDRC holds each year an annual retreat that now gathers more than two hundred participants with two major basic and clinical research lecture awards, and a seminar series with external and internationally renowned speakers (close to 100 in 9 years). The Center also has various funding programs for trainees, faculty and technicians, and since we began these programs in 2006, \$432K have been distributed competitively to fund directly research.

What are the opportunities, the challenges we face and milestones for the year to come?

First, the recent grouping of 13 MDRC teams of researcher on the 8th floor of the new CRCHUM building offers a tremendous opportunity for synergy among investigators, and we already see the benefits in term of new collaborations among basic researchers and importantly between clinical and basic scientists. McGill/CUSM researchers should be in a similar situation at the end of 2016. These superb environments where in the same building, research and clinical trials are being conducted will greatly facilitate communication; we should rapidly seize this opportunity in term of outreach with the pharma/biotech and nonprofit organization sectors and potential donors through the implementation of fund raising committees that will coordinate their activities with their respective institutions (CRCHUM and MUHC).

Perhaps the most important challenge we face is the dwindling funding rate for investigator-driven grant applications across all funding agencies, at a time when research becomes more expensive. MDRC has an important role to play and a track record of success to balance this difficult load through assisting young investigators in terms of mentorship and advice in grant writing, collaborative and team work and industry funded translational programs, as will be apparent in this report.

Finally, an effort should be made in developing novel technologies in the Core facilities. In particular, following our success at the leading edge CFI-7 competition, we will establish a world-class metabolomics facility and a team of researchers that will meet the challenge of integrating large omics data in animals and patients to identify novel pathways, drug targets, biomarkers for the emerging personalized medicine.

In summary, the MDRC started in 2005 and has begun to move from adolescence to maturity. We are beginning an exciting new phase of development to "understand to prevent and cure" as mentioned in our logo for the benefit of those living with diabetes. We should never forget this overreaching aim even when much excited by the data we generate. I wish to thank all MDRC members and their staff, members of the executive committee, our sponsors and partners for their enthusiastic and dedicated support.

## Overview of the Montreal Diabetes Research Center

Diabetes mellitus is a devastating disease, which is reaching epidemic proportions throughout the world. The Montreal Diabetes Research Center (MDRC) consists of a group of leading-edge scientists mainly located in the Montreal area, but also Quebec City, Sherbrooke and Ottawa, who perform basic, clinical and population health research in the fields of diabetes and its complications, as well as obesity and the metabolic syndrome.

More specifically, the MDRC regroups 51 research teams of basic scientists and clinicians from six universities (Université de Montréal, McGill University, Université du Québec à Montréal, Université Laval, Université de Sherbrooke, University of Ottawa) working in various aspects of both type 1 and 2 diabetes and their complications as well as cardiometabolic disorders. The MDRC was created in 2005 thanks to a major Canada Foundation of Innovation (CFI) infrastructure grant with Dr Marc Prentki as lead investigator. Two subsequent leading-edge CFI infrastructure grants were awarded to the MDRC in 2008 and 2013. The objective of the MDRC is to foster innovative basic, applied and clinical diabetes research and to provide an exceptional student training environment.

## Vision

As a leading-edge diabetes research center in Canada and worldwide in which basic, applied and clinical research are integrated, we search to understand the mechanisms implicated in diabetes and its complications and wish to very significantly contribute to its prevention, treatment and cure.

## Mission

By bringing together multidisciplinary teams of researchers from six universities and their affiliated hospitals, the ultimate goals of the MDRC are to:

- Improve diabetes patients' care and clinical outcomes by fostering innovative multi-disciplinary research and synergistic collaborations.
- Provide enabling research infrastructures, funding, communication and administrative supports as well as strategic and scientific leadership.
- Develop partnerships with other diabetes centers, industry and diabetes organizations.
- Foster exceptional training of students and young investigators in a stimulatory environment.

## Organizational Structure & Committees

The governance structure of the MDRC consists of a Director and an Executive/ Steering Committee. This committee is composed of the Director, two co-directors (UdeM/CRCHUM and McGill), two associate Directors (cores/development and administration) and two additional researchers (UdeM/CRCHUM & McGill).

The Committee that reports to UdeM/CRCHUM and McGill representatives, provides leadership and representation to the diabetes research, pharma and non-profit organization community in Quebec, and ensures that the mission of the Centre is appropriately implemented. It also seeks intramural and extramural funding of the Centre, implements the scientific review of MDRC funding programs, develops the Annual Scientific Retreat program, invites speakers for the Seminar Series and manages the MDRC website, annual report and research Core facilities.

### Executive & Steering Committee 2014

- **Marc Prentki**, PhD, Director and Chair, Departments of Nutrition and Biochemistry, UdeM
- **Vincent Poitout**, DVM, PhD, Co-Director/UdeM, Department of Medicine, UdeM and Scientific Director, CRCHUM
- **Erik Joly**, PhD - Associate Director/Cores & Development, CRCHUM
- **Alix Zutter** - Associate Director/Administration, CRCHUM
- **Thierry Alquier**, PhD, Department of Medecine, UdeM

### Outreach & Fund-raising Committee

The committee will be implemented in 2015. It will comprise CRCHUM, CHUM Foundation and UdeM representatives, members from the private sector and influential business people with motivation to fight diabetes.

## Investigators

### Membership

MDRC members are full or part-time independent investigators involved in diabetes research from various universities in the province of Quebec and their affiliated hospitals, and comprise some researchers from the University of Ottawa. Membership is open, free of charge, and eligibility requires a faculty or independent researcher position and extramural funding by a government or non-profit organization.

**Full members** commit to attend with their groups the annual retreat, the seminar series (not applicable to investigators outside Montreal) and participate in the review process of the funding programs; they are eligible to apply to these programs. The principal investigators or their trainees who obtain MDRC funding present their results at the annual retreat and acknowledge the MDRC in their publications. At the end of the first year of membership full members will be requested to provide a very brief report of their MDRC participating activities and, if criteria are fulfilled, their membership will be renewed for two years.



**Associate members** can attend all Center activities but are not eligible to the funding programs. Post-doctoral fellows, undergraduate and graduate students, research associates and technicians are not eligible for membership; however, they are welcome to join the e-mail list and all activities of the Center.

A total of 51 members (full and associate) are registered with the MDRC and are profiled on our website [www.mdrc.ca](http://www.mdrc.ca)

### Benefits of Membership

- Permits access to research core facilities and updated information about them.
- Allows eligibility of full members to apply for the Centre's funding programs.
- Enables researchers and all members of their group to attend and present at the MDRC Annual Scientific Retreat, and participate to an outstanding seminar series.
- Members are added to the MDRC e-mail list and receive all announcements regarding the Centre's activities, events or funding programs.
- The research activities and contact information of the members are posted on our website which enables trainees to identify potential supervisors, helps facilitate the development of collaborative activities and provide visibility to the researcher.

### Maintaining Membership and Full Member Status

Members are required to keep their MDRC website profile up to date. This is mandatory to maintain full membership. Once a year, members will be reminded to update their profile. Full member must regularly participate to MDRC activities as indicated. This is also mandatory to maintain eligibility to apply to the funding programs.

### Becoming a Member

Faculty involved in diabetes research should fill a form on the MDRC website ([www.mdrc.ca](http://www.mdrc.ca)) and attach their CV (CIHR format) and a brief one page letter of motivation.

### Current MDRC Members and their Affiliation

#### Full Members

ALQUIER, Thierry (PhD)  
CRCHUM & Dept of Medicine, **U de Montréal**

BERGERON, Raynald (PhD)  
Dept of Kinesiology, **U de Montréal**

CARPENTIER, André (MD)  
CHUS & Dept of Medicine, **U de Sherbrooke**

CHAN, John (PhD)  
CRCHUM & Dept of Medicine, **U de Montréal**

CHIASSON, Jean-Louis (MD)  
CRCHUM & Dept of Medicine, **U de Montréal**

DAGHER, Alain (MD)  
MNI & Dept of Neurology, **McGill U**

ESTALL, Jennifer (PhD)  
IRCM & Dept of Medicine, **U de Montréal**

FARAJ, May (PhD)  
IRCM & Dept of Nutrition, **U de Montréal**

FERRON, Mathieu (PhD)  
IRCM & Dept of Medicine, **U de Montréal**

FULTON, Stephanie (PhD)  
CRCHUM & Dept of Nutrition, **U de Montréal**

GAUVIN, Lise (PhD)  
CRCHUM & Dept of Social & Preventive Medicine,  
**U de Montréal**

GERALDES, Pedro (PhD)  
CHUS & Dept of Medicine, **U de Sherbrooke**

HAMET, Pavel (MD)  
CRCHUM & Dept of Medicine, **U de Montréal**

KOKOEVA, Maia (PhD)  
MUHC & Dept of Medicine, **McGill U**

LAROSE, Louise (PhD)  
Dept of Medicine, **McGill U**

LAVOIE, Julie (PhD)  
CRCHUM & Dept of Kinesiology, **U de Montréal**

LESAGE, Sylvie (PhD)  
CR-MR & Dept of Microbiology, **U de Montréal**

LIU, Jun-Li (PhD)  
MUHC & Dept of Medicine, **McGill U**

MARETTE, André (PhD)  
CRIUCPQ & Dept of Medicine, **U Laval**

MICHAUD, Véronique (PhD)  
CRCHUM & Faculty of Pharmacy, **U de Montréal**

MOUNIER, Catherine (PhD)  
Dept Sciences Biologiques, **UQÀM**

PICARD, Frédéric (PhD)  
CRIUCPQ & Faculty of Pharmacy, **U Laval**

PICCIRILLO, Ciro (PhD)  
MUHC & Dept of Microbiology & Immunology,  
**McGill U**

POITOUT, Vincent (PhD)  
CRCHUM & Dept of Medicine, **U de Montréal**

POSNER, Barry (MD)  
Depts Medicine, Anatomy & Cell Biology, **McGill U**

PRENTKI, Marc (PhD)  
CRCHUM & Dept of Nutrition, **U de Montréal**

RABASA-LHORET, Rémi (MD, PhD)  
IRCM & Dept of Nutrition, **U de Montréal**

ST-PIERRE, David (PhD)  
Dept of Kinanthropology, **UQÀM**

SAPIEHA Przemyslaw (PhD)  
HMR, **U de Montréal**

SCHMITZ, Norbert (PhD)  
Douglas MHUI & Dept of Psychiatry, **McGill U**

SCREATON, Robert (PhD)  
CHEO & Dept of Pediatrics, **U of Ottawa**

SLADEK, Robert (MD)  
Innovation Centre & Dept of Medicine, **McGill U**

SRIVASTAVA, Ashok (PhD)  
CRCHUM & Dept of Medicine, **U de Montréal**

STOCHAJ Ursula (PhD)  
Dept of Physiology, **McGill U**

TREMBLAY, Johanne (PhD)  
CRCHUM & Dept of Medicine, **U de Montréal**

WING, Simon (MD)  
Dept of Medicine, **McGill U**

ZHANG, Shao-Ling (PhD)  
CRCHUM & Dept of Medicine, **U de Montréal**

### Associate Members

BENDAYAN, Moïse (PhD)  
Dept of Pathology & Cell Biology, **U de Montréal**

GAUDREAU, Pierrette (PhD)  
CRCHUM & Dept of Medicine, **U de Montréal**

HADDAD, Pierre (PhD)  
Dept of Pharmacology, **U de Montréal**

HALLÉ, Jean-Pierre (MD)  
CR-MR & Dept of Medicine, **U de Montréal**

HEKIMI, Siegfried (PhD)  
Dept of Biology, **McGill U**

LEVY, Emile (MD, PhD)  
CHU Ste-Justine & Dept Nutrition, **U de Montréal**

MAYSINGER, Dusica (PhD)  
Dept of Pharmacology & Therapeutics, **McGill U**

MITCHELL, Grant (MD)  
CHU Ste-Justine & Dept Biochem., **U de Montréal**

POLYCHRONAKOS, Constantin (MD)  
Mtl Children's Hospital & Dept Pediatrics, **McGill U**

PSHEZHETSKY, Alexei (PhD)  
CHU Ste-Justine & Dept Pediatrics, **U de Montréal**

RUDNICKI, Michael A. (PhD)  
OHRI & Dept of Medicine, **U of Ottawa**

SEIDAH, Nabil (PhD)  
IRCM & Dept of Biochemistry, **U de Montréal**

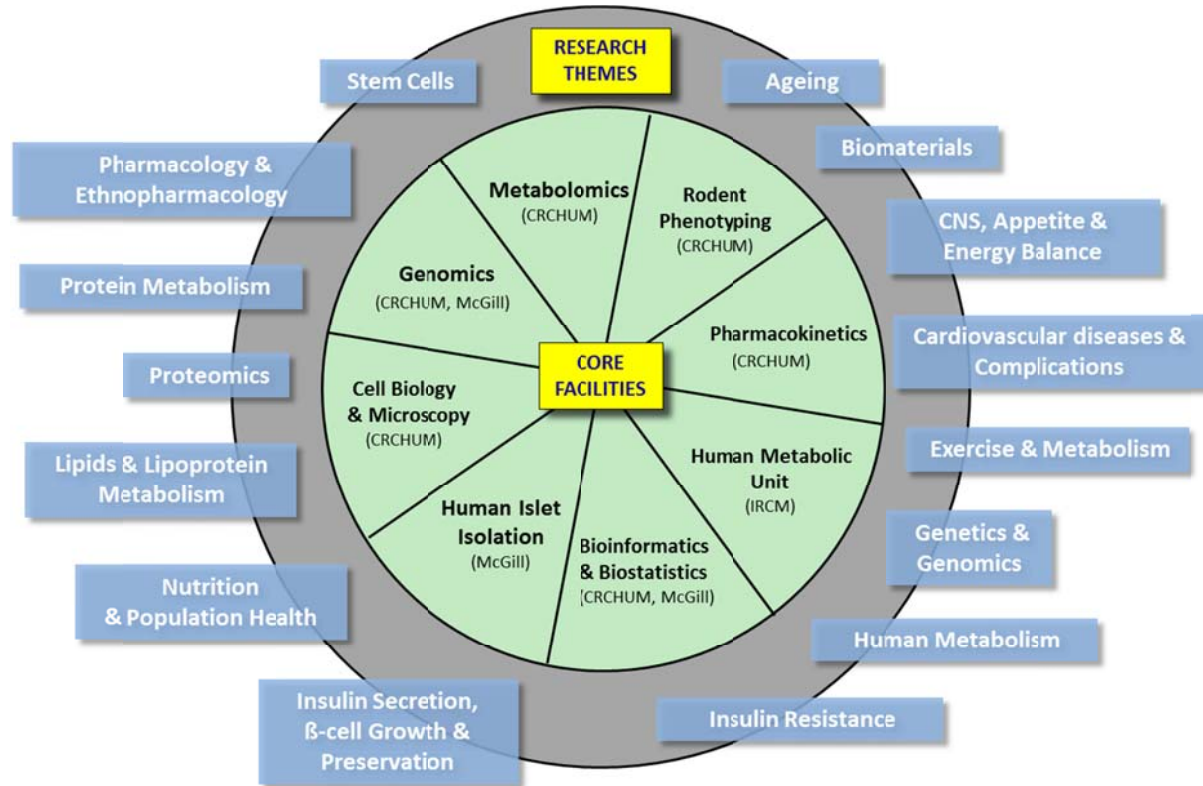
STRYCHAR, Irène (PhD)  
CRCHUM & Dept of Nutrition, **U de Montréal**

TURGEON, Jacques (PhD)  
CRCHUM & Faculty of Pharmacy, **U de Montréal**



# Basic, Applied & Clinical Research, & Enabling Core Facilities

## Overview of Research Themes and Cores



## Research Themes and Associated Investigators

Below are listed the main fields of research at MDRC and their corresponding investigators. Many investigators work in several of the listed fields but for the sake of simplicity they are listed under one topic only for which they are particularly renowned.

### Ageing

Siegfried Hekimi  
 Pierrette Gaudreau  
 Frédéric Picard  
 Ursula Stochaj

### CNS, Appetite & Energy Balance

Thierry Alquier  
 Alain Dagher  
 Maia Kokoeva  
 Stephanie Fulton

### Cardiovascular diseases & Complications

Moise Bendayan  
 John Chan  
 Pedro Geraldès  
 Julie Lavoie  
 Przemyslaw Sapieha  
 Johanne Tremblay  
 Shao-Ling Zhang

### Biomaterials

Jean-Pierre Hallé  
 Dusica Maysinger

### Exercise & Metabolism

Raynald Bergeron  
David St-Pierre

### Genetics & Genomics

Pavel Hamet  
Grant Mitchell  
Constantin Polychronakos  
Robert Sladek

### Human Metabolism

André Carpentier  
Jean-Louis Chiasson  
Remi Rabasa-Lhoret

### Insulin Resistance

Louise Larose  
Mathieu Ferron  
André Marette  
Catherine Mounier  
Barry Posner  
Ashok Srivastava

### Insulin secretion, $\beta$ -Cell Growth & Preservation

Jennifer Estall  
Jun-Li Liu  
Vincent Poitout  
Marc Prentki  
Robert Screaton

### Nutrition & Population Health

Norbert Schmitz  
Irene Strychar  
Lise Gauvin

### Lipids & Lipoprotein Metabolism

May Faraj  
Emile Levy  
Nabil Seidah

### Proteomics

Alexei Pshezhetsky

### Protein Metabolism

Simon Wing

### Pharmacology & Ethnopharmacology

Jacques Turgeon  
Véronique Michaud  
Pierre Haddad

### Stem Cells

Michael Rudnicki

### Type 1 Diabetes

Sylvie Lesage  
Cirriaco Piccirillo  
and several investigators

### Type 2 diabetes Obesity & Metabolic Syndrome

Most investigators

## Enabling Core Facilities

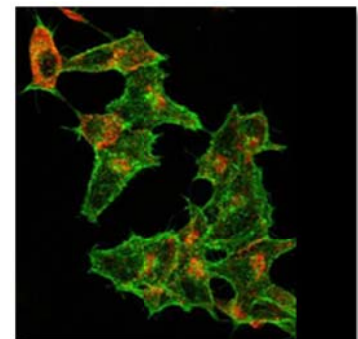
MDRC seeks to provide researchers with the best resources possible to foster leading-edge research and collaborations. Thanks to three CFI infrastructure grant awards a number of key activities have been centralized into service Cores to optimize the use of collective resources, and maximize the leverage power of our funds. These cores offer services to both MDRC researchers and the scientific community at large. Contact [MDRC@crchum.qc.ca](mailto:MDRC@crchum.qc.ca) for more information.

### Rodent metabolic phenotyping (CRCHUM)

- Diabetic rodent models
- Surgeries, organs and tissues collection
- Rodent islet isolation
- In-vivo tests (GTT, ITT clamps)
- Rodent phenotyping
- Organ perfusion (pancreas, heart and liver)
- Metabolic cages

### Imaging/microscopy/Cytometry (CRCHUM)

- Two-photon confocal imaging
- Several standard fluorescence microscopes
- Fluorescence-activated cell sorting (FACS)



### Human Metabolic Unit (IRCM)

- Metabolic investigations in humans
- Nutritional interventions
- Lifestyle behavioural research

### Metabolomics (CRCHUM)

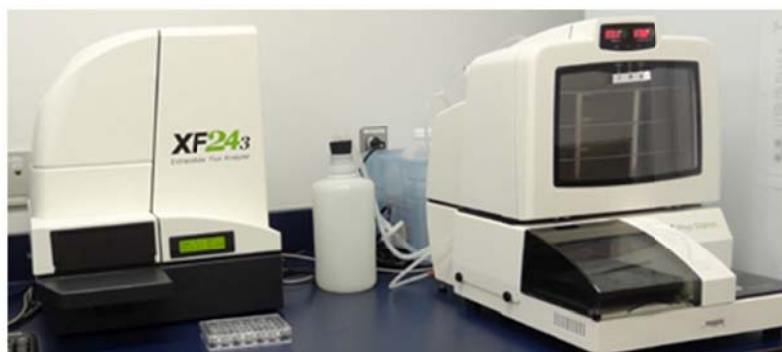
- Acid soluble metabolite identification and quantification
- Lipidomics
- HPLC, LC-MS/MS services

### Human Islet (McGill)

- Supply in human islets of Langerhans

### Genomics (CRCHUM & McGill)

- Genes arrays (Affymetrix)
- Genotyping
- Gene expression



### Selected Key Publications of MDRC Investigators

MDRC investigators have published since 2005 more than 1000 papers in high quality scientific journals. A few key publications that are particularly original and relevant to drug development and clinical care are indicated below. MDRC investigators are identified in bold.

**Defective insulin secretory response to intravenous glucose in C57Bl/6J compared to C57Bl/6N mice.** Fergusson G, Ethier M, Guevremont M, Chretien C, Attané C, Joly E, Fioramonti X, **Prentki M, Poitout V, Alquier T.** *In press Molecular Metabolism* 2014 (10.1016/j.molmet.2014.09.006)

**$\alpha/\beta$ -Hydrolase Domain-6-Accessible Monoacylglycerol Controls Glucose-Stimulated Insulin Secretion.** Zhao S, Mugabo Y, Iglesias J, Xie L, Delghingaro-Augusto V, Lussier R, Peyot ML, Joly E, Taib B, Davis MA, Brown JM, Abousalham A, Gaisano H, Madiraju SR, **Prentki M.** *Cell Metab.* 2014 Jun 3;19(6):993-1007.  
*Saturated monoacylglycerol identified as a signal for glucose induced insulin release and ABHD6 as a negative modulator of insulin secretion.*

**Role of the SIK2-p35-PJA2 complex in pancreatic  $\beta$ -cell functional compensation.** Sakamaki J, Fu A, Reeks C, Baird S, Depatie C, Al Azzabi M, Bardeesy N, Gingras AC, Yee SP, **Screaton RA.** *Nat Cell Biol.* 2014 Mar;16(3):234-44.  
*This work demonstrates that the SIK2-p35-PJA2 complex is essential for glucose homeostasis and provides a link between p35-CDK5 and the AMPK family in excitable cells.*

**The Intrinsic Apoptosis Pathway Mediates the Pro-Longevity Response to Mitochondrial ROS in *C. elegans*.** Yee C, Yang W, Hekimi S. *Cell*. 2014 May 8;157(4):897-909.

*Clarification of the relationships between mitochondria, ROS, apoptosis, and aging.*

**Protectin DX alleviates insulin resistance by activating a myokine-liver glucoregulatory axis.** White PJ, St-Pierre P, Charbonneau A, Mitchell PL, St-Amand E, Marcotte B, Marette A. *Nat Med*. 2014 Jun;20(6):664-9.

*The study supports the development of PDX-based selective muscle IL-6 secretagogues as a new class of therapy for the treatment of insulin resistance and type 2 diabetes.*

**Catalase Overexpression Prevents Nuclear Factor Erythroid 2-Related Factor 2 Stimulation of Renal Angiotensinogen Gene Expression, Hypertension and Kidney Injury in Diabetic Mice.** Abdo S, Shi Y, Otoukesh A, Ghosh A, Lo CS, Chenier I, Filep JG, Ingelfinger JR, Zhang SL, Chan JS. *Diabetes*. 2014 May 8. [Epub ahead of print]

*Identification of a novel mechanism by which hyperglycemia induces hypertension and renal injury in diabetic mice.*

**Diet-induced obesity promotes depressive-like behaviour that is associated with neural adaptations in brain reward circuitry.** Sharma S, Fulton S. *Int J Obes (Lond)*. 2013 Mar;37(3):382-9.

*Consumption of high-fat food and obesity was shown to induce changes in reward circuitry associated with depressive behavior. The study much attracted the attention of media.*

**Disruption of the expression of the proprotein convertase PC7 reduces BDNF production and affects learning and memory in mice.** Wetsel WC, Rodriguiz RM, Guillemot J, Rousselet E, Essalmani R, Kim IH, Bryant JC, Marcinkiewicz J, Desjardins R, Day R, Constam DB, Prat A, Seidah NG. *Proc Natl Acad Sci U S A*. 2013 Oct 22;110(43):17362-7.

*Identification of the role of Proprotein Convertase 7 in the regulation of certain types of cognitive performance via proBDNF processing.*

**MicroRNA-133 controls brown adipose determination in skeletal muscle satellite cells by targeting Prdm16.** Yin H, Pasut A, Soleimani VD, Bentzinger CF, Antoun G, Thorn S, Seale P, Fernando P, van Ijcken W, Grosveld F, Dekemp RA, Boushel R, Harper ME, Rudnicki MA. *Cell Metab*. 2013 Feb 5;17(2):210-24.

*MicroRNA-133 identified as a therapeutic target for the treatment of obesity.*

**Brown adipose tissue oxidative metabolism contributes to energy expenditure during acute cold exposure in humans.** Ouellet V, Labbé SM, Blondin DP, Phoenix S, Guérin B, Haman F, Turcotte EE, Richard D, Carpentier AC. *J Clin Invest*. 2012 Feb 1;122(2):545-52.

*Brown adipose tissue shown to act as a nonshivering thermogenesis effector in humans.*

**Glucose activates free fatty acid receptor 1 gene transcription via phosphatidylinositol-3-kinase-dependent O-GlcNAcylation of pancreas-duodenum homeobox-1.** Kebede M, Ferdaoussi M, Mancini A, Alquier T, Kulkarni RN, Walker MD, Poitout V. *Proc Natl Acad Sci U S A*. 2012 Feb 14;109(7):2376-81

*Identification of a novel mechanism by which glucose metabolism regulates the function of transcription factors in the nucleus to induce gene expression.*

**Genetic variant near *IRS1* is associated with type 2 diabetes, insulin resistance and hyperinsulinemia.** Rung J, Cauchi S, Albrechtsen A, Shen L, Rocheleau G, Cavalcanti-Proença C, Bacot F, Balkau B, Belisle A, Borch-Johnsen K, Charpentier G, Dina C, Durand E, Elliott P, Hadjadj S, Järvelin MR, Laitinen J, Lauritzen T, Marre M, Mazur A, Meyre D, Montpetit A, Pisinger C, Posner B, Poulsen P, Pouta A, Prentki M, Ribel-Madsen R, Ruukonen A, Sandbaek A, Serre D, Tichet J, Vaxillaire M, Wojtaszewski JF, Vaag A, Hansen T, Polychronakos C, Pedersen O, Froguel P, Sladek R. *Nat Genet*. 2009 Oct;41(10):1110-5.

*Identification of a risk allele near the *IRS1* gene associated with insulin resistance and hyperinsulinemia.*

**Intensive blood glucose control and vascular outcomes in patients with type 2 diabetes.** ADVANCE Collaborative Group, Patel A, MacMahon S, Chalmers J, Neal B, Billot L, Woodward M, Marre M, Cooper M, Glasziou P, Grobbee D, Hamet P, Harrap S, Heller S, Liu L, Mancia G, Mogensen CE, Pan C, Poulter N, Rodgers A, Williams B, Bompoint S, de Galan BE, Joshi R, Travert F. *N Engl J Med*. 2008 Jun 12;358(24):2560-72.

*Intensive glucose control yielded a 10% relative reduction in the combined outcome of major macrovascular and microvascular events, primarily as a consequence of a 21% relative reduction in nephropathy.*

**A genome-wide association study identifies KIAA0350 as a type 1 diabetes gene.** Hakonarson H, Grant SF, Bradfield JP, Marchand L, Kim CE, Glessner JT, Grabs R, Casalunovo T, Taback SP, Frackelton EC, Lawson ML, Robinson LJ, Skraban R, Lu Y, Chiavacci RM, Stanley CA, Kirsch SE, Rappaport EF, Orange JS, Monos DS, Devoto M, Qu HQ, Polychronakos C. *Nature*. 2007 Aug 2;448(7153):591-4.

*First GWAS study of type 1 diabetes. Novel susceptibility loci identified.*

**A genome-wide association study identifies novel risk loci for type 2 diabetes.** Sladek R, Rocheleau G, Rung J, Dina C, Shen L, Serre D, Boutin P, Vincent D, Belisle A, Hadjadj S, Balkau B, Heude B, Charpentier G, Hudson TJ, Montpetit A, Pshzhetsky AV, Prentki M, Posner BI, Balding DJ, Meyre D, Polychronakos C, Froguel P. *Nature*. 2007 Feb 22;445(7130):881-5

*The first large scale GWAS of a complex disease that identified novel diabetes genes. Declared paper of the year by the journal Science. Most quoted paper in the diabetes literature for 3 consecutive years.*

## Funding Programs & Funding Decisions

### Faculté de Médecine de l'Université de Montréal Studentships

In recognition of the success of the MDRC at the Canada Foundation for Innovation competitions, the Faculté de Médecine de l'Université de Montréal generously provides each year \$40,000 in funding for Msc and PhD studentships (UdeM students only). Four studentships of \$10,000 each are awarded each year (2011-2015, renewable). Deadline for application is November 30 of each year.

The following are the recipients:

Year	Student	Supervisor	Project title
2013	Shangang Zhao	Marc Prentki	Monoacylglycerol lipase $\alpha/\beta$ -domain containing hydrolase-6 (ABHD6) as a target for obesity and T2D
2013	Katherine Chabot	Rémi Rabasa-Lhoret	Évaluation de la relation entre la fibrose des tissus adipeux et le développement de l'insulino-résistance ..
2013	Xinping Zhao	Shao-Ling Zhang & John Chan	Le diabète maternel nuit à la néphrogenèse via l'augmentation de l'expression du gène Hhip
2013	Léa Decarie-Spain	Stephanie Fulton & Thierry Alquier	L'inflammation métabolique dans les comportements dépressifs induits par une diète riche en gras
2012	Shangang Zhao	Marc Prentki	$\alpha/\beta$ -domain containing hydrolase-6 (ABHD6) comme cible pour l'obésité et le diabète de type 2
2012	Véronique Gingras	Rémi Rabasa-Lhoret	Le syndrome métabolique chez des adultes atteints de diabète de type 1 (double diabète): facteurs de risque
2012	Simon Bissonnette	May Faraj	Effet des apoB-lipoprotéines et des acides gras oméga-3 sur l'inflammasome NLRP3, le tissu adipeux ...
2012	Shiao-Ying Chang	Shaoling Zhang	Maternal diabetes and perinatal programming of hypertension: roles of ACE2
2011	Yves Mugabo	Marc Prentki	Glycerolipid/fatty acid cycle, glycerol and fatty acid release in fuel excess detoxification by the $\beta$ -cell
2011	Sophie Ziai	Rémi Rabasa-Lhoret	Hyperglycémies, stress oxydatif et fonction lymphocytaire dans le diabète lié à la fibrose kystique
2011	Cécile Hryhorczuk	Stephanie Fulton & Thierry Alquier	Effets des acides gras sur les neurones dopaminergiques de l'aire tegmentale ventrale
2011	Daniel-Constantin Manolescu	Pangala Bhat & Jean-Louis Chiasson	Les rétinoïdes (RA-Acide Rétinoïque) dans l'obésité, la résistance à l'insuline et le diabète de type 2
2010	Meriem Semache	Vincent Poutout	PAS Kinase et régulation de l'expression du gène de l'insuline par le facteur de transcription PDX-1
2010	George Vardatsikos	Ashok Srivastava	Role of IGF-1R and c-Src in the modulation of microRNA 143 and 145 by ET-1 and Ang II

### Postdoctoral Fellowship

The MDRC started in 2014 to offer one postdoctoral fellowship of \$10,000. Deadline for application is March 31, each year.

The following is the first recipient:

Year	Student	Supervisor	Project title
2014	Chao-Sheng Lo	John Chan (CRCHUM)	Heterogeneous nuclear ribonucleoproteins, tubular apoptosis in diabetic mouse kidneys

## Diabète Québec Pilot & Feasibility Grants

Two "Pilot & Feasibility" grants of \$10,000 each per year are supported by a generous funding from Diabète Québec. These grants are intended to help junior investigators in obtaining preliminary data that can be used for a subsequent full grant application to a major funding agency. Deadline for application is January 31 each year.

The following are the recipients:

Year	Investigator	Institution	Project title
2013	Véronique Michaud	CRCHUM	Pharmacokinetics of Antiplatelet Drugs in T2D Patients
2013	Mathieu Ferron	IRCM	Identification of Novel Bone-Derived "Osteokines" by Mass Spectrometry
2012	Jennifer Estall	IRCM	A novel mouse model of $\beta$ -cell insufficiency in type 2 diabetes
2012	Stephanie Fulton	CRCHUM	ABHD6: Role in 2-AG endocannabinoid accumulation and appetite control
2012	Julie Lavoie	CRCHUM	The prorenin/renin receptor in obesity and glucose homeostasis
2011	Thierry Alquier	CRCHUM	Acyl-CoA Binding Protein in hypothalamic fatty acid sensing and energy balance
2011	Pedro Geraldès	Université de Sherbrooke	Podocyte injury in diabetic nephropathy: inhibition of nephrin signaling pathway
2010	Jean Buteau	Université Laval	The transcription factor ST18: regulator of pancreatic $\beta$ -cell mass and function
2010	Thierry Alquier	CRCHUM	Muscarinic signalling in $\beta$ -cell and $\beta$ -cell compensation induced by nutrient excess

## Sun Life Financial Pilot & Feasibility Grants

The MDRC has started in 2013 a partnership with Sun Life Financial who has made diabetes its national case. Sun Life awarded \$100,000 to MDRC-CRCHUM for two pilot and feasibility projects of \$50,000 each on the prevention of diabetes.

The following are the recipients:

Year	Investigator	Institution	Project title
2013	Stephanie Fulton	CRCHUM	Rôle de l'inflammation métabolique dans la récompense alimentaire et la dépression
2013	Vincent Poitout	CRCHUM	Exploiter la voie HB-EGF pour prévenir le diabète de type 2



## Trainees Travel Awards

Travel awards of \$700 are offered twice a year to MSc, PhD and post-doctoral trainees. The purpose is to cover part of the registration fees and travel expenses of MDRC students who will give oral or poster presentations at a scientific meeting. Deadline for applications are May 31 (4 awards) and September 30 (2 awards) of each year.

The following are the recipients in 2013 (recipients in previous years are listed in [Appendix I](#)):

Year	Student	Supervisor	Meeting	Project title
2013	Kimberley Smith	Norbert Schmitz	CSP, Lisbon, Portugal	Investigating the co-morbidity of anxiety and depression in a community sample with T2D
2013	Isma Benterki	Vincent Poitout	ADA, Chicago, IL	The $\Delta F508$ gene mutation of Cystic Fibrosis Transmembrane Regulator protein leads to a progressive...
2013	Cécile Hryhorczuk	Stephanie Fulton & Thierry Alquier	Keystone Symposia, Banff, AB	Differential modulation of mesolimbic dopamine-dependent behaviour by specific dietary fats
2013	Yves Mugabo	Marc Prentki	ADA, Chicago, IL	Mechanisms of fuel surfeit detoxification in pancreatic $\beta$ -cells
2013	Julie Dusseault	Louise Larose	Keystone Symposia, Vancouver, BC	Nck2 Deficiency Enhances Age-Dependent Development of Adiposity leading to Hepatic...
2013	Farah Lizotte	Pedro Geraldes	ASN, Atlanta, GA	Glycemic Memory in Diabetes Nephropathy, Role of SHP-1

## Diabète Québec Research Technician Training Award

In association with Diabète Québec, MDRC offers annually a training award for technicians working in a MDRC Core facility. This \$1,500 training award is intended for a lab personnel to attend an advanced training course in their field of expertise in order for the core facility to remain competitive. This award is offered on a continuous basis (no deadline). For an application, please contact Erik Joly (erik.joly@crchum.qc.ca).

Recipients of the MDRC - Diabète Québec Research Technician Training Awards are:

Year	Recipient	Core facility
2013	Grace Fergusson	Rodent metabolic phenotyping (CRCHUM)
2012	Mélanie Guévremont Annie Tardif	Cell Biology/Microscopy (CRCHUM) Research platform on obesity, metabolism and diabetes (IRCM)

## J Denis McGarry Lecture Award



In the memory of John Denis McGarry, an outstanding researcher in the field of intermediate metabolism and lipid signaling, the MDRC organizes each year during its annual retreat the “J Denis McGarry Lecture” given by world-leaders performing basic research on diabetes, obesity and metabolic syndrome.

Previous lecturers were:

Year	Recipient	Institution <i>Title of the lecture</i>
2014	Stephen Woods	University of Cincinnati, OH <i>Metabolic peptides, food intake and body weight: problems with the model</i>
2013	Steven E. Kahn	University of Washington, WA <i>The beta-cell in type 2 diabetes: is she still the main culprit?</i>
2012	Steven McKnight	University of Texas Southwestern, TX <i>Unique dependence of mouse embryonic stem cells on threonine catabolism</i>
2011	Juleen Zierath	Karolinska Institute, Sweden <i>Gene/Environmental influence on skeletal muscle insulin sensitivity</i>
2010	Bruce Spiegelman	Harvard Medical School, MA <i>Regulation of Brown Adipogenesis: Mechanisms and Therapeutics</i>
2009	Domenico Accili	Columbia University, NY <i>Understanding beta-cell failure: lessons from Foxo biology</i>
2008	Gökhan S. Hotamisligil	Harvard School of Public Health, MA <i>Inflammatory basis of metabolic diseases</i>
2007	Rudolph L. Leibel	Columbia University, NY <i>Quantifying pancreatic beta-cell mass in vivo in rodents and humans</i>
2006	Gerald I. Shulman	Yale University, CT <i>Role of dysregulated intracellular lipid metabolism in insulin resistance</i>

## George Cahill Lecture Award



In the memory of George F Cahill, Jr, an exceptional clinical researcher in the field of metabolism and associated diseases, the MDRC has created in 2014 the “George Cahill Lecture” given by world leaders in clinical research.

First lecturer was:

Year	Recipient	Institution <i>Title of the Lecture</i>
2014	Bernard Zinman	University of Toronto, Canada <i>The Diabetes Control and Complications Trial (DCCT). Impact on our understanding and prevention of complications in type 1 DM</i>

## Training and Dissemination of Knowledge

### Seminar Series

Each year the MDRC invites guest lecturers to present their work on diabetes, obesity and metabolic syndrome research at a Seminar Series.

The lecturers in 2013-2014 were (previous lecturers are listed in [Appendix II](#)):

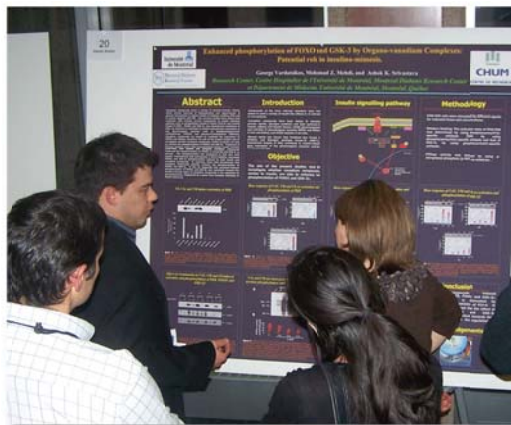
Date	Lecturer	Institution <i>Seminar Title</i>
2014/06/11	Susanne Mandrup	Southern Denmark University, Odensee, Denmark <i>Transcriptional Networks Regulating Adipocyte Differentiation and Metabolism</i>
2014/06/04	Jonathan Mark Brown	Cleveland Clinic Lerner Research Institute, Cleveland, OH <i>The ABHD enzyme family: Lipid metabolizing enzymes at the interface of cell signaling and energy metabolism</i>
2014/05/29	Xavier Fioramonti	Université de Bourgogne à Dijon, France <i>Hypothalamic glucose-sensing: beyond the classic KATP-dependent mechanism</i>
2014/05/14	Michael W. Schwartz	University of Washington, Seattle, WA <i>New Insights into Central Nervous System Control of Glucose Homeostasis</i>

2014/05/01	Alfred L. Goldberg	Harvard Medical School, Boston, MA <i>Molecular Mechanisms of Muscle Atrophy and Cachexia</i>
2014/04/16	Barbara E Corkey	Boston University School of Medicine, Boston, MA <i>Role of Redox Regulation in Obesity and Diabetes</i>
2014/04/03	Bret H. Goodpaster	Sanford Burnham Medical Research Institute, Burnham, FL <i>Mitochondrial energetics, intramyocellular lipids and insulin resistance</i>
2014/03/26	Suzanne Anjos	CARTaGENE, CHU Sainte-Justine, Montreal, QC <i>CARTaGENE, a detailed study on the health and environmental determinants in the largest sampling of the Quebec population</i>
2014/01/15	Alvin C. Powers	Vanderbilt University School of Medicine, Nashville, TN <i><math>\beta</math> Cell, Endothelial Cell, and Macrophage Networks and Islet Vascularization, Innervation and Regeneration</i>
2013/05/29	Debbie C. Thurmond	Indiana University, Indianapolis, IN <i>Insulin granule mobilization to the cell surface : PAK-ing them in</i>
2013/05/15	Barbara Kahn	Harvard Medical School, Boston, MA <i>Novel mechanisms by which adipocytes regulate glucose homeostasis and the risk of type 2 diabetes</i>
2013/04/17	Maureen Gannon	Vanderbilt University, Nashville, TN <i>Factors promoting pancreatic beta cell replication and regeneration</i>
2013/03/07	Joseph Avruch	Harvard Medical School, Boston, MA <i>mTOR, IGF2 mRNA binding proteins, and Type 2 Diabetes</i>
2013/02/07	Richard C. Austin	McMaster University, Hamilton, ON <i>Role of TDAG51 in obesity, diabetes and cardiovascular disease</i>

### Annual Retreat Meeting

This event that is held annually since 2005 at the beginning of the year provides an opportunity for MDRC members from six universities to exchange scientific information and ideas and foster collaborations among researchers. It also provides an opportunity for MDRC trainees to network and present their research. MDRC post-doctoral fellows, PhD and MSc students present their work in the form of posters and a few are selected for oral presentations. Awards are given to the best presentations in the various selected topics. The event also includes oral presentations by MDRC PIs, an external Montreal scientist working in the Industry sector, and the two Keynote basic and clinical research lectures. In addition, the Director has an opportunity to review the activities of the Centre over the past year and present the opportunities and vision for the next years. This event is open and free to all MDRC members, their trainees, research associates and technicians as well as to some participants from the private and non-profit sectors that generously support MDRC activities.

We gratefully acknowledge support of the past retreats (2005-2014) by: AstraZeneca, Boehringer Ingelheim, Bristol-Myers-Squibb, Eli Lilly, GlaxoSmithKline, Janssen, Medtronic, Merck Canada, Novartis, Novo Nordisk, Perkin Elmer, Pfizer, Sanofi, Servier, Sun Life Financial, Takeda, as well as by CFI (Canada Foundation for Innovation), CIHR (Canadian Institutes of Health Research), CMDO (Réseau de recherche en santé cardiométabolique, diabète et obésité), CRCHUM, Diabète Québec, IRCM (Institut de recherches cliniques de Montréal) and McGill University (Faculty of medicine).



The program of the last annual retreat that was held on 7 February 2014 is shown below.

Previous programs of the retreat can be found on the MDRC website ([www.mdrc.ca](http://www.mdrc.ca)).

### Final Program of the Eighth Annual Retreat

Montreal Diabetes Research Center

February 7, 2014

- 8:00 Inscription and Light Breakfast
- 8:30 **9<sup>th</sup> J Denis McGarry Lecture**  
**Stephen Woods, PhD, University of Cincinnati**  
*Metabolic Peptides, Food Intake and Body Weight: Problems with the Model*
- 9:30 Pause and Photo
- Oral Presentations, Session 1**
- 10:00 **Erin Coyne, MSc Student, Simon Wing**  
*USP19 Inactivation Protects Against Diet Induced Obesity and Diabetes*
- 10:20 **Kevin Vivot, Post-doc, Vincent Poitout**  
*The Regulator of G-Protein Signaling 16 (RSG16) Controls Insulin Secretion*
- 10:40 **Kimberley Smith, Post-Doc, Norbert Schmitz**  
*Depression and Diabetes Distress as Risk Factors for the Transition to Insulin*
- 11:00 **Michel Bouvier, PhD, Université de Montréal / IRIC**  
*Pharmacological Chaperones Targeting Misfolded MC4 Receptor as a Potential Treatment for Family Early Onset Severe Obesity*
- 11:45 **Serge Langlois, Président Directeur Général, Diabète Québec**  
*Remise des bourses aux lauréats du concours Pilot Grants MDRC/Diabète Québec*
- 12:00 Buffet and **Poster Session**
- 13:00 – 14:30 Poster Session: Evaluation by the jury
- Oral Presentations, Session 2**
- 15:00 **Mathieu Ferron, PhD, Université de Montréal / IRCM**  
*Mitochondrial Function and the Pathogenesis of Diabetes: Are PGC-1 $\alpha$ / $\beta$  Major Players?*
- 15:30 **Thierry Alquier, PhD, Université de Montréal / CRCHUM**  
*Hypothalamic Fatty Acid Sensing and Control of Energy Balance: Role of ACBP in Glial Cells*
- 16:00 **1<sup>st</sup> Annual George F Cahill Junior Lecture**  
**Bernard Zinman, MD, University of Toronto**  
*The Diabetes Control and Complications Trial (DCCT). Impact on Our Understanding and Prevention of Complications in Type 1 DM*
- 17:00 MDRC Award for Best Oral & Poster Presentations
- 17:15 Cocktail and Posters

## Selected Major Infrastructure, Research and Network Grants Obtained by MDRC Investigators

### Infrastructure Grants

**Canada Foundation for Innovation** (2013-2018); \$5.8M

The Montreal cardiometabolic biomarker and drug discovery consortium (BIOcMET).

Marc Prentki, PI

**Canada Foundation for Innovation** (2009–2014); \$15.7M

Linking basic, clinical & population health research to prevent & treat diabetes, metabolic syndrome & complications.

Marc Prentki, PI

**Canada Foundation for Innovation** (2004-2009); \$16.0M

Montreal Diabetes Research Center: from biology to innovative therapies.

Marc Prentki, PI

**Canada Foundation for Innovation** (2004-2009); \$4.5M

The Ecogenomic platform for the study of common metabolic diseases.

Pavel Hamet, PI

### Research Grants

**Genome Quebec/Canada** (2004-2007); \$16.3M

The genetics of type 2 diabetes.

Barry Posner, Marc Prentki and Robert Sladek: co directors

*The project resulted in a landmark paper (Sladek et al Nature 2007) declared paper of the year by the journal Science. It was the first Genome Wide Association Study (GWAS) study of a complex disease and the most quoted paper in the diabetes literature three consecutive years.*

**Canada Institute of Health Research (CIHR)** (2004-2009); \$4.5M

Team in Aboriginal Antidiabetic Medicines.

Pierre Haddad, PI

**Cystic fibrosis Canada** (2009-2012); \$1M

Mechanisms of cystic fibrosis-related diabetes.

Yves Berthiaume, PI; Emile Levy, Remi Rabasa-Lhoret and Vincent Poitout, co-PIs

**Amorchem Inc** (2013-2015); \$1.1M

Discovery and optimization of lead compounds that inhibit AB-hydrolase-domain 6 (ABHD6).

Marc Prentki, PI

*This is an industry funded project for a novel diabetes drug target.*

**Quebec Consortium for Drug Discovery (CQDM)** (2010-2013); \$ 2.1M

Development of biomarkers for measurement of early stage diabetes disease and for prediction of response to therapy.

Eustache Paramithiotis, PI; Marc Prentki and Rémi Rabasa-Lhoret co-PIs



**Quebec Ministry of Finances for a Healthy Quebec** (2014-2018); \$18.4M

Opti-Thera program. Optimization of therapeutic approaches in personalized primary care.  
Public/Private consortium.

Pavel Hamet, PI

## Networks



**Réseau de Recherche en Santé Cardiométabolique, Diabète et Obésité (CMDO)** (2013-2017); \$ 1.5M

Fonds de Recherche du Québec-Santé (FRQS)

André Carpentier, PI. Emile Levy, André Marette, Lise Gauvin, Vincent Poitout and Marc Prentki, co-PIs

## Creation of spin-off companies



**MEDPHARMGENE** (est. 2006; Pavel Hamet)

Development of clinical research with a focus on CVD, diabetes and genetics.



**PROGNOMIX** (est. 2007; Pavel Hamet)

Development of diagnostic and prognostics for diabetes complications.



**BETAGENEX** (est. 2011; Vincent Poitout, Thierry Alquier & Marc Prentki)

CRO specialized in rodent phenotyping and pancreatic beta cell function.

## Acknowledgements

### Persons

We would like to express our gratitude and appreciation to the following:

- **Ms Alix Zutter**, co-Dir Administration for her superb and competent dedication and her countless efforts to organize our seminar series, the annual retreat and implementing a feeling of belonging to MDRC investigators and students
- **Dr Erik Joly**, co-Dir Cores & development, for his very diverse expertise, dedication for students and countless advices on all aspects needed to ensure a successful Centre with optimal organization.
- **Ms Sylvie Roy** for her dedication related to communication aspects and participation to the annual retreat organization and seminar series.
- **Dr Julien Lamontagne** for his expert work related to the MDRC website.
- Members of the MDRC executive & steering committee

- The many scientists who served on committees evaluating applications for our various awards
- The many students who regularly participate in the organization of our well appreciated lunches following seminars

**INDIVIDUALS** who have donated to the MDRC

## Sponsors

The MDRC gratefully acknowledges support from the following since 2004:

### Pharma & Insurance Sectors

- Sun Life Financial
- Merck Canada
- AstraZeneca / Bristol-Myers Squibb Canada
- Eli Lilly Canada
- GlaxoSmithKline
- Servier Canada
- Pfizer
- Medtronic
- Sanofi
- Perkin Elmer
- Takeda Canada
- Janssen
- Roche
- Novo Nordisk
- Boehringer Ingelheim
- Novartis

### Institutions, Networks and Nonprofit organizations

- CFI (Canada Foundation for Innovation) through major infrastructure grants
- CMDO (Réseau de recherche en santé cardiometabolique, diabète et obésité)
- CRCHUM (Centre de Recherche du Centre Hospitalier de l'Université de Montréal)
- Diabète Québec
- IRCM (Institut de recherches cliniques de Montréal);
- CIHR (Canadian Institute of Health Research)
- McGill University (Faculty of Medicine)
- Université de Montréal (Faculté de médecine & Vice rectorat à la Recherche)

## APPENDIX I

### TRAINEES TRAVEL AWARDS (CONTINUED)

Year	Student	Supervisor	Meeting	Title project
2012	Shangang Zhao	Marc Prentki	ADA, Philadelphia, PA	Lipolysis-derived Long Chain Saturated Monoacylglycerol as a Metabolic Coupling Factor ...
2012	Bader Zarouki	Vincent Poitout	ADA, Philadelphia, PA	The FoxM1 pathway is implicated in nutrient-induced beta-cell proliferation in rats
2012	Daniel-Constantin Manolescu	Jean-Louis Chiasson	CSHRF, Winnipeg, MB	Impacts métaboliques et thérapeutiques des rétinoides (AR) dans l'obésité...
2012	Sophie Ziai	Rémi Rabasa-Lhoret	ADA, Philadelphia, PA	Increased expression of IL-17a in isolated circulating Th17 and treg cells of adults with cystic fibrosis
2012	Ahmad Haidar	Rémi Rabasa-Lhoret	ADA, Philadelphia, PA	Dual-hormone Closed-Loop (CL) system in adults with Type 1 Diabetes (T1D)...
2012	Katherine Desjardins	Rémi Rabasa-Lhoret	SFD, Montpellier, France	La collation en soirée ne prévient pas l'hypoglycémie nocturne – Données observationnelles...
2012	Zulaykho Shamansurova	Julie Lavoie	Canadian Hypertension Congress, Toronto, ON	Effects of (Pro)renin Receptor Blockade on Glucose Metabolism in Mice on High Fat High...
2011	Julie Amyot	Vincent Poitout	ADA, San Diego, CA	Activating transcription Factor 6 binds to the A5/Core of the rat insulin II gene promoter
2011	Basma Ahmed	Julie Lavoie	EMHCP, Milan, Italy	Implication of adipose tissue (pro)renin receptor in the regulation of body weight...
2011	Elaine Xu	André Marette	EASD, Lisbon, Portugal	Hepatocyte SHP-1, a key PTPase in the development of diet-induced insulin resistance
2011	Geneviève Gariépy	Norbert Schmitz	IEA Epidemiology, Edinbourg, Scotland	Types of smokers, depression and disability in type 2 diabetes: a latent class analysis
2011	Cécile Hryhorczuk	Stephanie Fulton & Thierry Alquier	Society Neuroscience Washington, DC	Fatty acid-sensing in the ventral tegmental area: Inhibition of food intake by oleate
2011	Sophie Ziai	Rémi Rabasa-Lhoret	Congrès annuel de la SQLNM, Québec, QC	Résultats préliminaires sur l'association entre des cellules immunitaires et les fluctuations...
2010	Melkam Kebede	Vincent Poitout	Keystone Symposium Whistler, BC	Metabolic regulation of GPR40 gene expression
2010	Georges Vardatsikos	Ashok Srivastava	Experimental Biology, Anaheim, CA	Requirement of c-Src in Angiotensin II and Endothelin 1-induced activation of MAPK in...
2010	Vanessa Houde	André Marette	ADA 2010, Orlando, FL	Chronic Inhibition of the mTOR Pathway in Rats Causes a Diabetes-like Syndrome by Upregulating...
2010	Armen Khatchadourian	Dusica Maysinger	ADA , Orlando, FL	Roles of lipid droplets in human islets
2010	Hoda Eid	Pierre Haddad	SMPNP, Berlin, Germany	The antidiabetic effect of W9, a medicinal plant from the pharmacopeia of the Cree of the...
2010	Nadine Taleb	Constantin Polychronakos	ASH, Washington, DC	RFX6, a novel gene necessary for the $\beta$ -cell phenotype
2009	Despina Harbilas	Pierre Haddad	ICPMS, Nice-Acropolis, France	Two Plant Extracts from the Canadian Boreal Forest prevent obesity and diabetes in a diet...

## APPENDIX II

### SEMINAR SERIES (CONTINUED)

Date	Lecturer	Institution Seminar Title
2012/12/12	Deborah Clegg	University of Texas Southwestern Medical Center, Dallas, TX <i>Estrogens, critical regulator of metabolism – The importance of a second « X »</i>
2012/11/14	Richard Carr	Merck, Copenhagen Denmark <i>Cardiovascular properties of incretins and incretin based drugs</i>
2012/11/01	Arun Sharma	Joslin Diabetes Center, Harvard Medical School, Boston, MA <i>Transcription factor MafA and formation and function of pancreatic beta cells: It is a matter of timing</i>
2012/10/10	Adolfo Garcia-Ocana	Mount Sinai School of Medicine, New York, NY <i>Growth factors and signaling pathways involved in the expansion of functional pancreatic beta cell</i>
2012/09/12	Richard Lehner	University of Alberta, Edmonton, AL <i>Role of carboxylesterases in lipid and glucose metabolism</i>
2012/06/22	Robert V. Farese Jr.	Gladstone Institute, University of California, San Francisco, CA <i>How we fatten up: Biology of fat synthesis and storage</i>
2012/05/24	Joseph T. Bass	Feinberg School of Medicine, Northwestern University, Chicago, MI <i>Molecular Clocks From Brain to Beta Cell</i>
2012/05/15	Joel K. Elmquist	University of Texas Southwestern Medical Center, Dallas, TX <i>The Rising Incidence of Obesity: Why is Your Brain not Listening</i>
2012/04/11	Karine Clément	Institute of Cardiometabolism, Hôpital Pitié-Salpêtrière, Paris, France <i>Inflammation and remodelling of adipose tissue in human obesity</i>
2012/04/05	Alexander Sorkin	University of Pittsburgh School of Medicine, Pittsburgh, PA <i>Regulation of EGF receptor and Dopamine Transporter by Endocytosis</i>
2012/03/14	Doris Stoffers	University of Pennsylvania School of Medicine, Philadelphia, PA <i>Of Mice and Men: Transcriptional regulation of the pancreatic beta-cell</i>
2011/12/12	David E. Moller	Lilly Research Laboratories, Indianapolis, IN <i>Challenges and Opportunities in Diabetes Drug Discovery</i>
2011/12/01	Tony Lam	University of Toronto, ON <i>Nutrient sensing and the neuronal regulation of glucose homeostasis</i>
2011/09/21	Andrew Fyfe Stewart	University of Pittsburgh School of Medicine, Pittsburgh, PA <i>Activation of Beta Cell Replication for Diabetes</i>
2011/06/08	Franz M. Matschinsky	University of Pennsylvania School of Medicine, Philadelphia, PA <i>Bioenergetics of insulin secretion in mouse and man</i>
2011/05/11	Robert T. Kennedy	University of Michigan, MI <i>Microfluidic and Metabolomic Analysis of Beta Cell Function</i>
2011/04/28	Kevin D. Hall	NIH, Bethesda, MD <i>The Calculus of Calories: Quantitative Physiology of Human Energy Metabolism and BW Change</i>
2011/04/20	George L. King	Joslin Diabetes Center, Harvard Medical School, Boston, MA <i>New perspectives for diabetic complications: Search for the protective factors</i>
2011/03/16	Randy Seeley	University of Cincinnati, Cincinnati, OH <i>How obesity went to our heads: Novel aspects of CNS regulation of energy balance</i>
2011/03/03	Sven Enerbäck	Göteborg University, Sweden <i>Brown adipose tissue of mice and man</i>
2011/02/16	Robert V. Farese Jr.	Gladstone Institute and University of California, San Francisco, CA <i>Obesity : The skinny on fat Synthesis</i>
2011/02/03	Jonathan M. Backer	Albert Einstein College of Medicine, Bronx, NY <i>Regulation of Class I and Class III PI 3-kinase</i>

2011/01/06	Pedro Geraldes	Université de Sherbrooke, QC <i>Diabetes and vascular complications: Beyond oxidative stress</i>
2010/12/02	James D. Johnson	University of British Columbia, Vancouver, BC <i>Pancreatic insulin hypersecretion is necessary for diet-induced obesity</i>
2010/10/18	Hubert Vidal	INSERM, Lyon, France <i>Mécanismes de l'insulino-résistance au cours du DT2: la mitochondrie vraiment en cause?</i>
2010/09/22	Raghu Mirmira	Indiana University School of Medicine, IN <i>Type 2 diabetes: Hypusinating the path to islet stress</i>
2010/04/09	Rémy Burcelin	Institut de Médecine Moléculaire Rangueil, Toulouse, France <i>Metabolic diseases: at the beginning was intestinal microflora...</i>
2010/03/30	Mark McCarthy	University of Oxford, UK <i>Monogenic forms of diabetes</i>
2010/03/17	Bruce Verchere	University of British Columbia, Vancouver, BC <i>Pathways to islet transplant failure: lessons learned from type 2 diabetes</i>
2010/03/10	Henri Brunengraber	Case Western Reserve University, Cleveland, OH <i>Potential of the association of metabolomics and mass isotopomer analysis for pathway discovery</i>
2010/03/04	Samuel Wright Cushman	NIH, Bethesda, MD <i>Dynamic molecular organization of GLUT4 and insulin-stimulated glucose transport</i>
2010/02/17	Martin G. Myers	University of Michigan, MI <i>Mechanisms of leptin action</i>
2009/12/10	Dan Drucker	University of Toronto, ON <i>Incretins and energy homeostasis</i>
2009/11/05	Frédéric Picard	Université Laval, Québec, QC <i>Transcriptional control of adipose tissue metabolism upon aging</i>
2009/10/01	Roberto Coppari	University of Texas Southwestern Medical Centre, Dallas, TX <i>Brain SIRT1: A novel target to treat diet-induced metabolic dysfunctions?</i>
2009/09/17	Susan Boner-Weir	Joslin Diabetes Center, Harvard Medical School, Boston, MA <i>What Defines a Pancreatic Beta Cell?</i>
2009/06/17	Bernard Thorens	Université de Lausanne, Suisse <i>GLP1/IGF2 signaling and the control of <math>\beta</math>-cell growth</i>
2009/05/13	Michael Wheeler	University of Toronto <i>Pancreatic Islet Hormone Secretion and Zinc</i>
2009/04/29	Alan Permutt	Washington University, St-Louis, MO <i>Zeroing in on the cause of Type 2 Diabetes</i>
2009/03/04	Klaus H. Kaestner	University of Pennsylvania, Philadelphia, PA <i>Foxa2: Master regulator of endocrine pancreas development and <math>\beta</math>-cell function</i>
2009/02/18	Alan D. Attie	University of Wisconsin-Madison <i>Genes, Gene Networks, and Type 2 Diabetes</i>
2008/12/10	Rohit Kulkarni	Joslin Diabetes Center, Harvard Medical School, Boston, MA <i>A role for the tribbles protein (TRB3) in pancreatic beta cells</i>
2008/10/28	Erol Cerasi	Hadassah University Hospital, Jerusalem, Israel <i>Balancing Needs &amp; Means: The Dilemma of the Pancreatic <math>\beta</math>-Cell</i>
2008/09/24	Orian Shirihai	Boston University, Boston, MA <i>Mitochondrial Dynamics in Beta cell Function and Dysfunction</i>
2008/05/27	Marcus Stoffel	ETH, University of Zürich, Switzerland <i>microRNAs and <math>\beta</math>-cell function</i>
2008/04/16	Rosalind Coleman	University of North Carolina at Chapel Hill, NC <i>Glycerol-3-phosphate acyltransferases and insulin resistance</i>
2008/03/12	Ronald G. Gill	Alberta Diabetes Institute, University of Alberta <i>Immune Dysregulation in Autoimmune Diabetes</i>
2008/02/20	Paul Robertson	Pacific Northwest Res Institute, University of Washington, Seattle, WA <i>Glucotoxicity of the B-cell And The Downward Spiral Of Type 2 Diabetes</i>

2008/02/07	Christopher B. Newgard	Duke University Medical Centre, NC <i>Comprehensive metabolic profiling for understanding of obesity and diabetes mechanisms</i>
2007/11/21	Christophe Magnan	Université Paris 7, France <i>Rôle des acides gras dans le contrôle nerveux de l'homéostasie énergétique : aspects physiologiques et physiopathologiques</i>
2007/10/26	Francesco del Prato	University of Pisa, Italy <i>Insulin resistance and <math>\beta</math>-cell dysfunction in type 2 diabetes</i>
2007/10/17	Herbert Gaisano	University of Toronto <i>Munc13 deficiency as a cause of insulin secretory deficiency in diabetes</i>
2007/09/19	Peter C. Butler	University of California Los Angeles <i>A Long Entanglement with Type 2 Diabetes</i>
2007/06/12	Rudy Leibel	Columbia University, New York, NY <i>Novel insights into pancreatic <math>\beta</math>-cell mass imaging</i>
2007/05/25	Amar Abderrahmani	Université de Lausanne, Suisse <i>Lipoproteins, oxidized lipids and <math>\beta</math>-cell dysfunction</i>
2007/05/09	Morris White	Howard Hughes Medical Institute, Harvard Medical School, Boston, MA <i>The integration of central and peripheral nutrient homeostasis by insulin signaling cascades</i>
2007/04/26	Bruce Spiegelman	Dana-Farber Cancer Institute, Harvard U, Boston, MA <i>Transcriptional control of adipogenesis</i>
2007/04/20	Alex Rabinovitch	University of Alberta <i>Gastro-intestinal Peptides for Beta-Cell Regeneration</i>
2007/04/05	Randal J. Kaufman	University of Michigan, Ann Arbor, MI <i>The unfolded protein response, oxidative stress, and cell death</i>
2007/03/27	Michael Brownlee	Albert Einstein College, Bronx, NY <i>Protein glycation and tissues dysfunction in diabetes</i>
2007/02/21	Timothy J. Kieffer	University of British Columbia, Vancouver, BC <i>Engineering Gut Cells for Insulin Replacement Therapy</i>
2007/01/17	David M. Kendall	Amylin Pharmaceuticals, Vancouver, BC <i>The Incretin Axis, GLP-1 and Integrated Neurohormonal Therapies for Diabetes and Obesity</i>
2006/11/16	Gerald Shulman	Yale University, New Haven, CT <i>Diacylglycerol, PKC enzymes and insulin resistance</i>
2006/11/09	Nancy A. Thornberry	Merck Research Laboratories, Rahway, NJ <i>New Agents for the Treatment of Type 2 Diabetes</i>
2006/11/03	Frédéric Tremblay	Wyeth Research, Cambridge, MA <i>mTOR and insulin resistance</i>
2006/11/02	Maximo Trucco	University of Pittsburgh, Pittsburgh, PA <i>Islet transplantation in type 1 diabetes</i>
2006/10/25	Christopher Rhodes	University of Chicago, Chicago, IL <i>Glucose signaling and the translational control of insulin production</i>
2006/04/26	Donald A. McClain	University of Utah School of Medicine <i>Iron as a Toxin and a Regulator of Metabolism: Implications for Diabetes</i>
2006/04/06	Eric Ravussin	Louisiana State University, Baton Rouge, LA <i>Caloric restriction and biomarkers of longevity: Preliminary results in non-obese humans</i>
2006/02/22	Stanislas Leibler	Rockefeller University, NY, NY <i>Fluctuations, information, and survival: some lessons from bacteria</i>
2005/10/14	Tony Lam	Albert Einstein College of Medicine, Bronx, NY <i>Hypothalamic Nutrient Sensing Regulates Hepatic Nutrient Production</i>
2005/05/26	Louis Castella	CHU Rangueil/Université Paul Sabatier, Toulouse, France <i>Adipose tissue development, ROS and mitochondria: from cell plasticity to obesity</i>
2005/02/08	Bernard Thorens	Université de Lausanne, Suisse <i>Multiple Glucose Sensors in the Control of Glucose and Energy Homeostasis</i>