

4th Annual Canadian Neurometabolic Club Meeting



May 28-29, 2016
Sheraton Centre Toronto

Scientific organizers:

Thierry Alquier
Stephanie Fulton
Maia Kokoeva
Tony Lam

We are grateful to the following companies for educational grants

The Lilly logo is written in a red, cursive script font.The Shire logo features a blue stylized 'S' icon followed by the word 'Shire' in a bold, blue, sans-serif font.

**Thank you to the Canadian Association for Neuroscience
for satellite meeting support**



CAN-ACN

CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

PROGRAM AT A GLANCE

Saturday, May 28 Cedar Room - Sheraton Centre Toronto

5:00 – 6:00 Badge pick-up
6:00 – 7:00 KEYNOTE LECTURE: Dr. Martin Myers
7:30 – Dinner, drinks and entertainment at SPIN

Sunday, May 29 Osgoode Ballroom East - Sheraton Centre Toronto

8:30 – 10:00AM **Session I: GUT-BRAIN CONTROL OF GLUCOSE HOMEOSTASIS**
10:00 – 10:30AM Coffee and snack break
10:30 – 1:00PM **Session II: HYPOTHALAMUS AND CIRCUMVENTRICULAR ORGANS IN ENERGY HOMEOSTASIS**
1:00 – 2:00 PM Buffet lunch
2:00 – 4:10PM **Session III: REWARD AND COMPULSIVE-LIKE BEHAVIOUR IN APPETITE CONTROL**
4:10 PM Concluding remarks and prize announcements

VENUE: Sheraton Centre Toronto: 123 Queen Street West • Toronto • M5H 2M9

SATURDAY, MAY 28 - CEDAR ROOM

5:00 – 6:00PM Badge pick-up and presentation drop-off

6:00 – 7:00PM **Keynote lecture: Martin Myers, MD, PhD**
Professor, Department of Internal Medicine, University of Michigan
Director, Michigan Diabetes Research & Training Center

“Molecular and neural mechanisms of leptin action”

7:30PM Social, dinner & entertainment at **SPIN Ping-Pong bar**
(461 King St. West) <http://toronto.wearespin.com/>

SUNDAY, MAY 29 - OSGOODE BALLROOM EAST

8:30 AM - SESSION I

GUT-BRAIN CONTROL OF GLUCOSE HOMEOSTASIS

8:30 AM

Upper small intestinal fatty acid sensing improves glucose tolerance through suppression of hepatic glucose production

PV Bauer ()^{1,2}, BA Rasmussen^{1,2}, FA Duca¹, SC Hamr^{1,2} and TKT Lam^{1,2,3,4}*

¹Toronto General Research Institute and Department of Medicine, University Health Network, Toronto, ON

²Department of Physiology, University of Toronto, Toronto, ON

³Department of Medicine, University of Toronto, Toronto, ON

⁴Banting and Best Diabetes Centre, University of Toronto, Toronto, ON

8:48 AM

Olanzapine abolishes the ability of central insulin to suppress hepatic glucose production

Celine Tao (CAMH), Chantel Kowalchuk (U of T, Institute of Medical Science, CAMH), Virginia Wilson (CAMH), Araba Chintoh (U of T, Dept of Psychiatry), Loretta Lam (U of T, Dept of Physiology), Adria Giacca (U of T, Dept of Physiology), Gary Remington (CAMH, Complex Mental Illness; U of T, Dept of Psychiatry; U of T, Institute of Medical Science), Margaret Hahn (CAMH, Complex Mental Illness; U of T, Dept of Psychiatry; U of T, Institute of Medical Science)*

9:06 AM

Growth hormone secretagogue receptor antagonism in the dorsomedial hypothalamus alters substrate utilization patterns and improves glucose clearance

Lindsay Hyland, Robert Aukema, Bria Macdonald, Su Bin Park and Alfonso Abizaid
Carleton University, Ottawa ON, Canada*

8:24 AM

Resistance training exercises and Type 2 Diabetes : An exploratory study on the perception of effort and neurophysiological determinants.

Olivier Mannella, Ph.D.^{1,2}, Nathalie Ann Chapados, Ph.D.², Danik Lafond, Ph.D.^{1,2}
1-Département de kinésiologie, Université de Montréal ; 2-Institut de recherche de l'Hôpital Montfort, Ottawa.*

9:42 AM

Tubby protein regulates expression of genes involved in metabolism and neuronal functions

Hamza Taufique, Sabine P. Cordes*

Department of Molecular Genetics, University of Toronto

Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital

10:00 – 10:30 AM
COFFEE BREAK

10:30 AM - SESSION II

HYPOTHALAMUS AND CIRCUMVENTRICULAR ORGANS IN ENERGY HOMEOSTASIS

10:30 AM

Effects of the Saturated Fatty Acid Palmitate on Cellular Neuroinflammation and Pomc Gene Expression in mHypoA-POMC/GFP Hypothalamic Neuronal Cell Models

Erika K. Tse^{[1]}, Denise D. Belsham^[1,2,3]*

Department of Physiology^[1], Medicine^[2], and Obstetrics and Gynaecology^[3] Faculty of Medicine, University of Toronto, Ontario, Canada

10:48 AM

PALMITATE-MEDIATED NEUROINFLAMMATION IN AN IMMORTALIZED MICROGLIAL CELL LINE BV-2 AND CO-CULTURE WITH HYPOTHALAMIC NEURONS

M. Kim^{1}, J. Chalmers¹, D.D. Belsham^{1,2,3}*

Department of physiology¹, Medicine², and Obstetrics and Gynaecology³ Faculty of Medicine, University of Toronto, Ontario, Canada

11:06 AM

Role of ACBP in hypothalamic control of energy homeostasis: Astrocyte fatty acid metabolism and gliotransmission

Bouyakdan K^{1}, Chrétien C², Budry L¹, Rodaros D¹, Liénard F², Marcher AB³, Mandrup S³, Biron*

E⁴, Fulton S¹, Pénicaud L², Fioramonti X² et Alquier T¹

¹CRCHUM & Université de Montréal, ²Université de Bourgogne, ³University of Southern Denmark, ⁴CRCHUQ & Université de Laval

11:24 AM

Varicosities of Arcuate Leptin Receptor Expressing Neurons

Sarah Robins, Tina Djogo, Xiaohong Liu and Maia Kokoeva*

McGill University, Department of Medicine, Division of Endocrinology and Metabolism, Montreal, Canada

11:42 AM

Time-lapse imaging of hypothalamic leptin receptor neurons in living mice

Liliia Butiaeva, Xiaohong Liu and Maia Kokoeva,*

McGill University, Department of Medicine, Division of Endocrinology and Metabolism, Montréal, Canada

12:00 PM

The effects of neuropeptide Y on dissociated subfornical organ neurons

Lauren Shute, Samantha Lee, Mark Fry*

University of Manitoba

12:18 PM

α/β -hydrolase domain 6 in the ventromedial hypothalamus controls energy metabolism flexibility

**Alexandre Fisette^{1,2}, Stephanie Tobin^{1,2}, Léa Décarie-Spain^{1,3}, Khalil Bouyakdan^{1,4}, Marie-Line Peyot¹, S.R. Murthy Madiraju¹, Marc Prentki^{1,2,4}, Stephanie Fulton^{1,2}, Thierry Alquier^{1,4,5}.
¹CRCHUM and Montreal Diabetes Research Center and Departments of: ²Nutrition, ³Neuroscience, ⁴Biochemistry and Molecular Medicine, ⁵Medicine, Université de Montréal, Montreal QC H3T1J4, Canada.*

12:36 PM

The Effect of Endocrine Disrupting Chemicals on Hypothalamic-Feeding Related Neurons

Neruja Loganathan^{[1]}, Denise Belsham^[1,2,3]
Departments of Physiology^[1], Medicine^[2] and Obstetrics and Gynecology^[3], Faculty of Medicine, University of Toronto, Ontario, Canada*

1:00-2:00 PM Buffet lunch

2:00 PM - SESSION III

REWARD AND COMPULSIVE-LIKE BEHAVIOUR IN APPETITE CONTROL

2:00 PM

Saturated high-fat feeding and compulsive sucrose-seeking behaviour: role for inflammation in the nucleus accumbens

Léa Décarie-Spain^{(1,2)}, Sandeep Sharma^(1,2), Cécile Hryhorczuk^(1,2), Victor Issa Garcia⁽¹⁾, Philip Barker⁽³⁾, Nathalie Arbour⁽¹⁾, Thierry Alquier^(1,2) & Stephanie Fulton^(1,2)
¹CRCHUM & Université de Montréal, ²Montreal Diabetes Research Centre and ³University of British Columbia*

2:18 PM

High-fat western style diet unmasks long term synaptic depression in orexin neurons

**Linehan, Victoria & Hirasawa, Michiru
Division of Biomedical Sciences, Memorial University*

2:36 PM

Effect of high-fat diet bingeing on orexin neurons

Todd Rowe and Michiru Hirasawa
Division of Biomedical Sciences, Faculty of Medicine, Memorial University, NL*

2:54 PM

Impairments in the OFC with diet induced obesity

*JL Thompson, B Lau, M Kaur, K Pitman, M Drysdale and *SL Borgland
University of Calgary*

3:12 PM

STAT3 Signaling in midbrain dopamine neurons is a key mediator of physical activity, dopamine tone and the rewarding effect of running

Maria F. Fernandes^{1,2}, Dominique Matthys^{1,4}, Cécile Hryhorczuk^{1,2}, Sandeep Sharma¹, Shabana Mogra¹, Thierry Alquier¹ and Stephanie Fulton^{1,3}*

1-CRHCUM and Montreal Diabetes Research Center, 2-Department of Physiology, 3-Department of Nutrition, 4-Department of Neurosciences, Faculty of Medicine, University of Montréal, Montreal, QC, Canada

3:30 PM

Electrophysiological and optogenetic inhibition of anterior dorsomedial accumbens shell neurons mitigates stress-induced anorexic response towards sucrose intake.

Arojit Mitra^{1}, Josee Seigneur², Genevieve Guevremont¹, Igor Timofeev² and Elena Timofeeva¹.*

1. IUCPQ, Département de Psychiatrie et de Neurosciences, Faculté de Médecine, Université Laval, Québec, G1V 0A6, Canada

2. IUSMQ, Département de Psychiatrie et de Neurosciences, Faculté de Médecine, Université Laval, Québec, G1V 0A6, Canada

3:48 PM

Ghrelin receptor mutation leads to deficits in social behavior and food-seeking behavior in a stressful environment

*Park, S^{*1}; Wilson, A. ¹, Ellis, M.², Woodside, B. ³, and Abizaid, A¹.*

¹Department of Neuroscience, Carleton University, Ottawa ON, Canada

²Department of Biochemistry, University of Ottawa, Ottawa ON, Canada

³Department of Psychology, Concordia University, Montreal QC, Canada

4:10 PM - CONCLUDING REMARKS AND PRIZE ANNOUNCEMENTS

THANK YOU FOR YOUR PARTICIPATION!

Thanks to **Eli Lilly Canada** and **Shire Pharma Canada** for educational grants and to the **Canadian Association for Neuroscience** for support and organization

Special thanks to Shawn Penny, Cecile Hryhorczuk and Michelle Smith for their valuable contribution to the organization of this meeting

E-mail: info.neuroclub@gmail.com

Follow us on Twitter: [@NeuroClub](https://twitter.com/NeuroClub)