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

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

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PROGRAM AT A GLANCE

**Saturday, May 28**  
**Cedar Room - Sheraton Centre Toronto**

- 5:00 – 6:00 PM  
  Badge pick-up

- 6:00 – 7:00 PM  
  KEYNOTE LECTURE: Dr. Martin Myers  
  Professor, Department of Internal Medicine, University of Michigan  
  Director, Michigan Diabetes Research & Training Center  
  “Molecular and neural mechanisms of leptin action”

- 7:30 PM  
  Dinner, drinks and entertainment at SPIN Ping-Pong bar  
  (461 King St. West)  
  http://toronto.wearespin.com/

**Sunday, May 29**  
**Osgoode Ballroom East - Sheraton Centre Toronto**

- 8:30 – 10:00 AM  
  **Session I**: GUT-BRAIN CONTROL OF GLUCOSE HOMEOSTASIS

- 10:00 – 10:30 AM  
  Coffee and snack break

- 10:30 – 1:00 PM  
  **Session II**: HYPOTHALAMUS AND CIRCUMVENTRICULAR ORGANS IN ENERGY HOMEOSTASIS

- 1:00 – 2:00 PM  
  Buffet lunch

- 2:00 – 4:10 PM  
  **Session III**: REWARD AND COMPULSIVE-LIKE BEHAVIOUR IN APPETITE CONTROL

VENUE:  
Sheraton Centre Toronto: 123 Queen Street West • Toronto • M5H 2M9
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 (*), BA Rasmussen¹,², FA Duca¹, SC Hamr¹,² and TKT Lam¹,²,³,⁴
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 Neuroflammation and POMC Gene Expression in mHypoA-POMC/GFP Hypothalamic Neuronal Cell Models
Erika K. Tse¹*, Denise D. Belsham¹,²,³
Department of Physiology¹, Medicine², and Obstetrics and Gynaecology³ 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. Kim¹*, J. Chalmers¹, D.D. Belsham¹,²,³
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 K¹*, Chrétien C², Budry L¹, Rodaros D¹, Liénard F², Marcher AB², Mandrup S³, Biron E¹, Fulton S¹, Pénicaud L², Fioramonti X² and 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
Lilia 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 Fisette1,2, Stephanie Tobin1,2, Léa Décarie-Spain1,3, Khalil Bouyakdan1,4, Marie-Line Peyot1, S.R. Murthy Madiraju1, Marc Prentki1,2,4, Stephanie Fulton1,2, Thierry Alquier1,4,5.
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 Loganathan1*, Denise Belsham1,2,3
Departments of Physiology1, Medicine2 and Obstetrics and Gynecology3, 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-Spain1,2*, Sandeep Sharma1,2, Cécile Hryhorczuk1,2, Victor Issa Garcia1, Philip Barker3, Nathalie Arbour1, Thierry Alquier1,2 & Stephanie Fulton1,2
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. Fernandes¹,², Dominique Matthys¹,⁴*, Cécile Hryhorczuk¹,², Sandeep Sharma¹, Shabana Mogra¹, Thierry Alquier¹ and Stephanie Fulton¹,³
¹-CRH CUM 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 Mitra¹*, 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, S¹; 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