7th Annual Meeting of the Canadian Neurometabolic Club

Satellite meeting of the Canadian Association for Neuroscience

May 21-22, 2019
Toronto – Sheraton Centre
We are grateful for sponsorship from

Organizers:
Thierry Alquier
Alfonso Abizaied
Stephanie Fulton
Maia Kokoeva
Claire-Dominique Walker
# PROGRAM AT A GLANCE

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**VENUE:** SHERATON CENTRE TORONTO

## TUESDAY, MAY 21:

### 5:00 – 6:00 PM KEYNOTE LECTURE

**Lori Zeltser, PhD**

Associate Professor  
Department of Pathology and Cell Biology  
Naomi Berrie Diabetes Center  
Columbia University

*Genetic Influences on Eating Disorder Risk*

### 6:30 – 10:00 PM SOCIAL (Artful Dodger Pub and Restaurant – 10 Isabella St.)
WEDNESDAY, MAY 22

8:00 – 8:25 AM  BADGE PICK-UP AND PRESENTATION DROP-OFF

8:30 AM – ORAL SESSION 1

IMPACT OF METABOLISM ON COGNITION

8:30 AM - EXTRACELLULAR MATRIX AND PARVALBUMIN INTERNEURON ALTERATIONS CONTRIBUTE TO COGNITIVE IMPAIRMENT ASSOCIATED WITH DIET-INDUCED OBESITY
*Reichelt, A.C., Hare, D.J., Singh, A., Bussey, T.J., Saksida, L.M.
Western University, London, ON

8:45 AM - LACTATE DEHYDROGENASE IN DROSOPHILA IMPACTS LIFESPAN AND LONG-TERM MEMORY
*Ariel K. Frame, Anne F. Simon, Robert C. Cumming
Western University, London, ON

9:00 AM - DOSAGE DEPENDENT EFFECT OF ADIPORON ON MODULATING ADULT HIPPOCAMPAL NEUROGENESIS AND COGNITIVE LEARNING AND MEMORY IN MICE
*Sonata Suk-yu Yau
Hong Kong Polytechnic University

9:15 AM - THE ADAPTOR PROTEIN P66Shc REGULATES CNS CELL METABOLISM AND REDOX STATE VIA THE KEAP1-NRF2 AXIS
*Asad Lone & Robert C. Cumming
University of Western Ontario, London, ON

9:30 AM – ORAL SESSION 2

REWARD CIRCUIT MODULATION BY METABOLIC SIGNALS

9:30 AM - DYSFUNCTION OF THE ORBITOFRONTAL CORTEX IN DIET-INDUCED OBESITY
*Lindsay Naef, Lauren Seabrook, Corey Baimel, Stephanie Borgland
University of Calgary, Calgary, AB

9:45 AM - DINNER FOR TWO: DIGGING INTO HOW GHRELIN & ENDOCANNABINOID SYSTEMS REGULATE FEEDING IN THE VENTRAL TEGMENTAL AREA
*Alexander Edwards¹, Lindsay Hyland¹, Matthew Hill² and Melissa Chee¹
¹Carleton University, Ottawa, Ontario; ²University of Calgary, Calgary, Alberta

10:00 AM - THE IMPACT OF GROWTH HORMONE SECRETAGOGUE RECEPTOR IN THE VENTRAL TEGMENTAL AREA ON STRESS-INDUCED FEEDING IN MICE
*Andrea Smith, Brenna MacAulay, Rebecca Prowse, Lindsay Hyland, and Alfonso Abizaid
Department of Neuroscience, Carleton University, Ottawa, Ontario
10:15 AM - IMPACT OF ALPHA/BETA-HYDROLASE DOMAIN 6 IN THE VENTRAL MIDBRAIN ON FEEDING, BODY WEIGHT, AND FOOD REWARD
*David Lau, Léa Décarie-Spain, Amélie Ardilouze-Groleau, Murthy Madiraju, Marc Prentki and Stephanie Fulton
Université de Montréal & Centre de Recherche du CHUM, Montréal, QC

10:30 AM - PERINATAL HIGH FAT DIET ALters MATERNAL MILK mi-RNA EXPRESSION AND PROGRAMS THE DNA METHYLome IN THE AMYGDLA
*Sanoji Wijenayake1,2, Sameera Abuaish1,2, Wilfred C. de Vega1,2, Christine M.W. Lum1,2, Aya Sasaki2, Patrick O. McGowan1,2,3
1Department of Biological Sciences & Center for Environmental Epigenetics & Development, 2Department of Cell & Systems Biology, 3Department of Psychology, Department of Physiology, University of Toronto, Toronto, ON, Canada

10:45– 11:15 AM  COFFEE BREAK

11:15 AM – ORAL SESSION 3
CENTRAL NUTRIENT & HORMONAL SENSING

11:15 AM - Neurons AND ASTROCYTES CONTROL LOCAL BRAIN BLOOD FLOW ON DISTINCT TIMESCALES
*Adam Institoris, David Rosenegger, Govind Peringod, Grant Gordon
University of Calgary, Department of Physiology and Pharmacology, Calgary, Canada

11:30 PM - Leptin RECEPTOR EXPRESSION AND THE BLOOD-BRAIN BARRIER
*Liliia Butiaeva, Sarah Robins, Tal Slutzki, Xiaohong Liu, Maia Kokoeva
McGill University, Montréal, Canada

11:45 AM - DORSAL VAGAL COMPLEX IS A SITE FOR BRAIN LIPID SENSING TO REGULATE LIPID HOMEOSTASIS
*Battsetseg Batchuluun1, T M Zaved Waise1, Jessica T Yue2, Tony K Lam1
1Toronto General Hospital Research Institute, Toronto ON; 2University of Alberta, Edmonton AB

12:00 PM - GLUCOREGULATORY IMPACT OF GLUCOSE SENSING IN THE DORSAL VAGAL COMPLEX
*Jing Wen Li1,2, Song-Yang Zhang2, Battsetseg Batchuluun2, Mona A. Abraham1,2 and Tony K. T. Lam1,2,3,4
1Department of Physiology, University of Toronto, Toronto, ON; 2Toronto General Hospital Research Institute, UHN, Toronto, ON; 3Department of Medicine, University of Toronto, Toronto, ON; 4Banting and Best Diabetes Centre, University of Toronto, Toronto, ON

12:15 PM - DIETARY FRUCTOSE INDUCES SYNAPTIC PLASTICITY AT NEUROPEPTIDE Y NEURONS
*Mikayla A. Payant, Jenny Campbell, Alex J. Hebert, Eleftheria Maratos-Flier, Melissa J. Chee
Carleton University, Ottawa, Ontario
12:30 – 1:30 PM   BUFFET LUNCH

1:30 PM – ORAL SESSION 4

**HYPOTHALAMIC CONTROLS OF ENERGY BALANCE**

1:30 PM - ADIPOSE TRIGLYCERIDES LIPASE (ATGL) IN MEDIOBASAL HYPOTHALAMIC NEURONS PLAYS A KEY ROLE IN ENERGY HOMEOSTASIS REGULATION
*R. Manceau*(1), A. Labarre*(1), S. Audet*(1), A.I. Machucca-Parra*(1), K. Bouyakdan*(1), A. Fisette*(1), D. Rodaros*(1), G. Mitchell*(2), A. Parker*(1), S. Fulton*(1), T. Alquier*(1)

(1)Centre de Recherche du CHUM- Université de Montréal; (2)CRCHU Ste Justine, Montréal

1:45 PM - MICROGLIAL ATGL REGULATES INFLAMMATORY RESPONSES IN VITRO AND DIET-INDUCED OBESITY
*Arturo Israel Machuca-Parra*, Demetra Rodaros, Romane Manceau, Cyril Laurent, Nathalie Arbour, Stephanie Fulton and Thierry Alquier

CRCHUM, CHUM, Université de Montréal, QC, CA

2:00 PM - GLUCOCORTICOID ACTION IN THE MEDIOBASAL HYPOTHALAMUS REGULATES GLUCOSE PRODUCTION IN VIVO
*Emilie Beaulieu-Bayne*, Miguel Cardoso, Hyejun Kim, Shuling Yang, Jessica T.Y. Yue

University of Alberta, Edmonton, AB, Canada

2:15 PM – VITAMIN B6 AND N-ACETYLCYSTEINE PROTECT HYPOTHALAMIC NEURONS FROM BISPHENOL A-MEDIATED INDUCTION OF NEUROPEPTIDE Y GENE EXPRESSION
*Neruja Loganathan*(1), Emma K. McIlwraith*(1), Denise D. Belsham*(1,2)

Department of (1)Physiology; (2)Medicine, and Obstetrics and Gynaecology, University of Toronto, Ontario, Canada

2:30 PM - SPECIFIC microRNAs ARE REGULATED IN HYPOTHALAMIC NEURONS AFTER EXPOSURE TO THE SATURATED FAT PALMITATE AND ENDOCRINE DISRUPTING CHEMICAL BISPHENOL A
*Emma K. McIlwraith* (1), Denise D. Belsham (1, 2)

Departments of (1)Physiology, (2)Medicine, and Obstetrics and Gynaecology, University of Toronto

2:45 PM - NOVEL NEURONAL SUBTYPE INVOLVED IN LEPTIN SENSING AND FEEDING BEHAVIOUR
*Tal Slutzki*, Sarah Robins, Liliia Butiaeva, Xiaohong Liu and Maia Kokoeva

McGill University, Montréal, Canada

3:00 PM - LOSS OF NPAS4 IN ARCUATE NUCLEUS POMC NEURONS PROTECTS AGAINST DIET-INDUCED OBESITY
*Ji Soo Yoon* (1,2), Daniel Gamu (1,2), William T. Gibson (1,2) and Francis C. Lynn (1,2)


3:15 PM - NITRIC OXIDE INDUCES S xmlns, GALANIN RECEPTOR 2 AND GALANIN RECEPTOR 3 mRNA INDEPENDENTLY OF THE cGMP/PKG PATHWAY AND ENHANCES C/EBP-b BINDING TO THE Spx 5’ REGULATORY REGION
*Andy Tran*1, Denise Belsham2
3:30 PM – **PERINATAL HIGH-FAT DIET ALTERS THE NEUROENDOCRINE STRESS RESPONSE TO NEONATAL IMMUNE ACTIVATION**

*Mouly F. Rahman*\(^1,2\), Ceren B. Yuksel\(^1\), Patrick O. McGowan\(^1,2,3,4\)

\(^1\)Department of Biological Sciences, \(^2\)Department of Cell and Systems Biology, \(^3\)Department of Psychology, \(^4\)Department of Physiology, University of Toronto

3:45 PM - **ROLE OF BMAL1 IN WESTERN DIET-INDUCED DISRUPTION OF CIRCADIAN HYPOTHALAMIC FEEDING NEUROPEPTIDES**

*Matthew N. Clemenzi*\(^1\), Alexandre Martchenko\(^1\), Jennifer A. Chalmers\(^1\), Erika K. Tse\(^1\), Patricia L. Brubaker\(^1,2\), Denise D. Belsham\(^1,2,3\).

Departments of \(^1\) Physiology, \(^2\) Medicine and \(^3\) Obstetrics and Gynaecology; University of Toronto, Toronto, ON, Canada

4:00 PM – **ELECTROPHYSIOLOGICAL EFFECTS OF NEUROTENSIN ON SUBFORNICAL ORGAN NEURONS**

*Colleen S Peterson*, W Mark Fry

Department of Biological Sciences, University of Manitoba

4:15 PM - **CONCLUDING REMARKS AND PRIZE ANNOUNCEMENTS**

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**THANK YOU!**

Thanks to Cecile Hryhorczuk for meeting organization

E-mail: info.neuroclub@gmail.com

Twitter: @NeuroClub