

2013 Canadian Association for Neuroscience Annual Meeting
Toronto, ON Canada
May 21 – 24, 2013
Preliminary Program –Subject to change

MONDAY, MAY 20, 2013

7:30 – 8:30 P.M. PUBLIC LECTURE

FREDA MILLER, Hospital for Sick Children and University of Toronto

AND

CINDI MORSHEAD, University of Toronto

"The hope and the hype: stem cells for brain repair"

Daniels Hollywood Theatre at The Hospital for Sick Children

TUESDAY, MAY 21, 2013

5:00 - 5:15 P.M. Welcome and Opening Remarks by **Samuel David**, President of the Canadian Association for Neuroscience
CAN 2013 Young Investigator Award Presentation, by **Yves De Koninck**, Chair of the Nominations Committee

5:15 - 5:30 Barbara Turnbull Award Presentation

5:30 – 6:00 **Anthony Phillips** (Director of the Institutes of Neuroscience, Mental Health and Addiction, CIHR)

6:00 - 7:00 Presidential Lecture: **Michael Meaney**, McGill University

Maternal regulation of genome structure and function: Implications for familial transmission

7:00 – 8:15 Opening Reception

WEDNESDAY, MAY 22, 2013

8:30 – 9:30 A.M. **Plenary symposium: Feeding/reward and addiction**

Chair: **Anthony Phillips**, University of British Columbia

Alain Dagher, McGill University

Addiction as impaired decision making: insights from functional brain imaging and neuroeconomics

Francesco Leri, University of Guelph

Rats, Oreos and high fructose corn syrup: an analysis of the food addiction hypothesis

9:30 – 9:45 **Brain Star talk**

9:45 – 10:00 Coffee break

10:00- 11:00 **Posters/exhibits**

11:00 – 12:00 **Featured Plenary speaker: Marina Picciotto**, Yale University

"Biological basis of the supermodel diet: effects of nicotine on feeding behavior"

12:00 – 1:00 Lunch on own

1:00-2:30 **Parallel symposia**

Symposium 1: ***Nicotinic acetylcholine receptors: From structure to cognitive enhancement***

Chair: **Evelyn Lambe**, University of Toronto

Speakers:

1. **Jack Waters**, Northwestern University USA:

Activation of nicotinic receptors in neocortex by synaptically released acetylcholine

2. **John Baenzinger**, University of Ottawa:

Lipids as allosteric modulators of the nicotinic acetylcholine receptor: From model bilayers to synaptic function

3. **Craig Brown**, University of Victoria:

Nicotinic acetylcholine receptors modulate cortical plasticity: New insights from in vivo imaging studies

4. **Evelyn Lambe**, University of Toronto: *Nicotinic acetylcholine receptors control prefrontal attention circuitry*

Symposium 2: ***Coupling neuronal communications to cellular metabolism***

Chairs: **Derek Bowie**, McGill University, and **Brian MacVicar**, University of British Columbia

Speakers:

1. **Brian MacVicar**, University of British Columbia: Metabolic communication between astrocytes and neurons

2. **Derek Bowie**, McGill University: GABAergic synapses and mitochondrial function

3. **Melanie Woodin**, University of Toronto: The metabolism of chloride homeostasis

4. **Timothy Murphy**, University of British Columbia: Neuronal excitability during global ischaemia

Symposium 3: ***Novel mechanisms of chronic pain***

Chair: **Yves De Koninck**, Université Laval

Speakers :

1. **Tuan Trang**, University of Calgary : *Paradoxical morphine hyperalgesia gated through microglia-neuron signalling*
2. **Ji Zhang**, McGill University: *Early spinal inflammatory mediators such as cytokines and chemokines are not involved in the maintenance phase of neuropathic pain*
3. **Catherine Cahill**, Queen's University and UC Irvine: *Neuropathic pain alters the dopamine reward pathway*
4. **Marc Landry**, Université de Bordeaux:
Disinhibition via dedimerization of GABAB receptors by endogenous 14-3-3ζ in chronic pain

Symposium 4: **Treatment of Alzheimer's disease: past experiences, present hope and future promises**

Chair: **Isabelle Aubert**, University of Toronto

Speakers:

1. **JoAnne McLaurin**, University of Toronto: *Preclinical and Clinical data guiding trials for AD therapies*
2. **Sébastien Hébert**, Université Laval: *MicroRNAs as diagnostic and therapeutic targets for Alzheimer's disease*
3. **Steffany Bennett**, University of Ottawa: *Aberrant glycerophosphocholine metabolism is a primary and targetable mediator of synaptic dysfunction in Alzheimer's disease*
4. **Isabelle Aubert**, University of Toronto: *Delivery of therapeutics to the brain using MRI-guided focused ultrasound*

2:30 – 5:00

Posters and Exhibits

5:00-6:00 PM

2013 Young Investigator Award talk

6:00-7:00 PM

Keynote Lecture:

Anatol Kreitzer (University of California, San Francisco)

7:00

Student Social at the Steam Whistle Brewery, 255 Bremner Blvd., Toronto

THURSDAY, MAY 23, 2013

8:30 – 9:30 A.M. **Plenary symposium: Brain Imaging and Circuitry**

Chair: **Ravi Menon**, *Robarts Institute*

Jean Gotman, McGill University:

"Non-invasive investigation of human epileptic networks by combined EEG-fMRI recordings"

Peter Williamson, Western University:

"A Framework for Interpreting Functional Networks in Neuropsychiatric Disorders Based on Unique Adaptions of the Human Brain"

9:30 - 9:45

Brain Star talk

9:45 - 10:00

Coffee break

10:00 - 11:00

Posters/exhibits

11:00 - 12:00

Featured Plenary speaker: Helen Mayberg (*Emory University*)

"Rethinking Depression and its Treatment: Insights from Studies of Deep Brain Stimulation"

12:00 - 1:00

Lunch on own

1:00 - 2:30

Parallel symposia

Symposium 5: **Integration, activation and behavioural functions of adult-born neurons.**

Chair: **Jason Snyder**, University of British Columbia

Speakers:

1. **Armen Saghatelyan**, Université Laval: *The maturation and integration of immature neurons in vivo*
2. **Martin Wojtowicz**, University of Toronto:
Modulation of adult hippocampal neurogenesis by GABA. Mechanisms and functional consequences.
3. **Diano Marrone**, Wilfrid Laurier University: *Activation of newborn neurons by behavioural experiences*
4. **Jason Snyder**, University of British Columbia: *Adult-born hippocampal neurons regulate the response to stress*

Symposium 6 : **Advances in the basic science and clinical understanding of brain arousal states**

Chair: **John Peever**, University of Toronto

Speakers:

1. **John Peever**, University of Toronto: *Neurochemical control of sleep-wake states*
2. **Antoine Adamantidis**, McGill University: *Optogenetic identification of a REM sleep circuit*
3. **Thanh Dang-Vu**, Concordia University: *Functional neuroimaging of brain rhythms during sleep*
4. **Peter Franzen**, University of Pittsburgh: *Imaging the sleeping and disordered brain*

Symposium 7: Convergence and divergence among methodologies in cognitive neuroscience

Chairs: **Asaf Gilboa**, Rotman Research Institute, Baycrest and **R. Shayna Rosenbaum**, York University

Speakers:

1. **Doug Crawford**, York University:

Spatial representation for action in human parietal cortex: an emerging story from fMRI, neuropsychology, and TMS

2. **Lesley Fellows**, McGill University: *How necessary are the frontal lobes for 'frontal executive' functions?*

3. **R. Shayna Rosenbaum**, York University:

Do patient and fMRI studies tell the same story? The case of 'mental displacement'

4. **Marian Berryhill**, University of Nevada Reno:

Investigating parietal contributions to episodic and working memory

Symposium 8: ***The recent advances in a monogenetic age-onset neurodegenerative disorder: Huntington's disease***

Chair: **Ray Truant**, McMaster University

Speakers:

1. **Simonetta Sipione**, University of Alberta: *GM1 Ganglioside Therapy in Huntington's disease*

2. **Stephen Ferguson**, Western University: *mGluR5 signaling and Huntingtin*

3. **Lynn Raymond**, University of British Columbia: *Extra synaptic NMDA signalling in Huntington's disease*

4. **Ray Truant**, McMaster University:

Using Biophotonics and Chemical Biology to define the Biological Function of Huntingtin

2:30 – 5:00

Posters and Exhibits

5:00 – 5:30

CAN Annual General Meeting – all CAN members invited to attend

5:30-6:30

Parallel sessions:

Brain Awareness/Outreach session

Brain Canada information session followed by

News from NSERC and NSERC funding possibilities (6:30-7:00)

Mentoring sessions: Meet the experts

for trainees and young faculty only - registration required, attendance limited to a max. of 50

- **Marina Picciotto** and **Jaideep Bains**: Systems neuroscience: addictions, stress, feeding, reward
- **Ravi Menon** and **Helen Mayberg**: Brain circuits and imaging
- **René Hen** and **Michael Meaney**: Memory, development, behavior, epigenetics
- **Brian MacVicar** and **Mike Salter**: Molecular cellular neuroscience: glia, electrophysiology, pain mechanisms

FRIDAY, MAY 24, 2013

8:30 – 9:30 A.M. **Plenary symposium: Mechanisms of Memory**

Chair: **Sheena Josselyn**, University of Toronto

Cathy Rankin, University of British Columbia:

"High-Throughput Phenotypic Analysis Reveals Multiple Genetically Dissociable Mechanisms of Habituation in *C. elegans*"

Paul Frankland, University of Toronto:

"Hippocampal neurogenesis, forgetting and infantile amnesia"

9:30 – 9:45

Brain Star talk

9:45 – 10:00

Coffee break

10:00- 11:00

Posters/exhibits

11:00 – 12:00

Featured Plenary speaker: René Hen (Columbia University)

Neurogenesis and generalization: impact on learning and anxiety

12:00 – 1:00

Lunch on own

1:00 – 3:30

Posters and Exhibits

3:30 – 5:00

Parallel symposia

Symposium 9: ***Traumatic brain injury as a neurodegenerative disorder?***

Chair: **Robin Green**, University of Toronto

Speakers:

1. **Robin Green**, University of Toronto:
Neurodegeneration in chronic moderate TBI: prevalence, behavioral correlates and treatment considerations
2. **Erin Bigler**, Brigham Young University: *Mechanisms of degeneration in moderate-severe TBI*
3. **Gary R Turner**, York University: *Negative neuroplastic change in chronic TBI: parallels with healthy aging*

Symposium 10: ***Different faces of polarized microglia in injured brain***

Chair: **Jasna Kriz**, Université Laval

Speakers:

1. **Lyanne Schlichter**, University of Toronto:
Potassium channels modulate classical versus alternative microglial activation
2. **Tiina Kauppinen**, University of Manitoba:
Poly(ADP-ribose)polymerase-1 (PARP-1) as a modulator of microglial functions
3. **Steve Lacroix**, Université Laval:
TGF- β 1 produced by myeloid cells contributes to early pathogenesis after spinal cord injury
4. **Jasna Kriz**, Université Laval:
Galectin-3 is endogenous modulator of injury-induced microglial activation and proliferation

Symposium 11: ***Functional plasticity of neural circuitry***

Chair: **Kurt Haas**, University of British Columbia

Speakers:

1. **Pejmun Haghighi**, McGill University: *Transcriptional regulation of synaptic growth and function: Genetic analysis of BMP signaling at the Drosophila NMJ*
2. **Shernaz Bamji**, University of British Columbia:
Making memories stick: Adhesion molecules and synaptic plasticity
3. **Gautam Awatramani**, University of Victoria:
Past, present and future: How the retina anticipates the future to “see” the present
4. **Alanna Watt**, McGill University: *Transient Purkinje-Purkinje GABAergic synapses: Driving propagating activity directing cerebellar circuit development*

Symposium 12: ***Making the leap from neural activity to behaviour and cognition***

Chair: **Jennie Z. Young**, MIT

Speakers:

1. **James M Hyman**, University of British Columbia: *Keeping track of the present: Contextual representation in the anterior cingulate cortex*
2. **Marshall G Hussain Shuler**, Johns Hopkins University: *A neural mechanism for learning reward timing*
3. **Daoyun Ji**, Baylor College of Medicine: *Competition between internal and external drives in hippocampal spatial memory codes revealed by a neurodegenerative mouse model*
4. **Kaori Takehara-Nishiuchi**, University of Toronto: *Learning-related changes in oscillatory coupling between the hippocampus, lateral entorhinal, and medial prefrontal cortices*

-- END OF MEETING --