

2016 ANNUAL CONFERENCE SCHEDULE

SATURDAY, MAY 28, 2016

4:00 – 6:00 PM CAN 2016 PUBLIC LECTURE

Auditorium of the Peter Gilgan Centre
for Research and Learning at SickKids
686 Bay Street, Toronto, ON

Impact of innate vs acquired brain disorders

Why Concussions are a Significant Public Health Concerns

CHARLES H TATOR, Krembil Research Institute, University of Toronto

Probing the Autistic Brain

MARGOT TAYLOR, Hospital for Sick Children, University of Toronto

1:00 – 5:00 PM SATELLITE 3

University of Toronto
McLeod Auditorium and Stone Lobby
of the Medical Science Building

University of Toronto Physiology Department CAN Satellite

6:00 – 8:00 PM SATELLITE 4

Cedar Room

4th Annual Meeting of the Canadian Neurometabolic Club

SUNDAY, MAY 29, 2016

9:00 AM - 4:45 PM SATELLITE 1

Grand Ballroom Centre

CAPnet / CPS: Action & Perception: Cognition, Coding and Clinical Populations

9:00 AM - 4:30 PM SATELLITE 2

Grand Ballroom West

Canadian Neurophotonics Platform: Neurophotonics

9:00 AM - 1:00 PM SATELLITE 3

University of Toronto
McLeod Auditorium and Stone Lobby
of the Medical Science Building

University of Toronto Physiology Department CAN Satellite

8:30 AM - 4:30 PM SATELLITE 4

Osgoode Ballroom East

4th Annual Meeting of the Canadian Neurometabolic Club

2:00 - 4:00 PM SPECIAL CAN-ACN SATELLITE

University of Toronto
McLeod Auditorium and Stone Lobby
of the Medical Science Building

Speak Up: The Role of Communication in Modern Neuroscience

WELCOME AND OPENING REMARKS

5:00 - 6:00 PM

Grand Ballroom East

DOUG MUNOZ, President of the Canadian Association for Neuroscience

Anniversary Celebration of the 10th Annual Canadian Neuroscience Meeting

6:00 - 7:00 PM PRESIDENTIAL LECTURE

Grand Ballroom East

Sponsored by **HOTCHKISS BRAIN INSTITUTE**

JOHN O'KEEFE, University College London

Hippocampus as a cognitive map: past, present, and future.

7:00 - 8:15 PM OPENING RECEPTION (hosted)

Grand Ballroom Foyer

MONDAY, MAY 30, 2016

8:30 – 10:15 AM PLENARY SYMPOSIUM

Grand Ballroom East

Chair: **FRANCES SKINNER**, Krembil Research Institute/UHN and University of Toronto
Toward Theoretical and Experimental Synergies in Neuroscience

MAURICE J CHACRON, McGill University
Cracking the Neural Code

GAUTAM AWATRAMANI, University of Victoria
The Fine Balancing Act of GABAergic/Cholinergic Retinal Starburst Amacrine Cells

10:15 – 10:45 AM COFFEE BREAK - Poster & Exhibit Hall

10:45- 11:00 AM BRAIN STAR TALK

RUIFENG CAO, McGill University

Light-regulated translational control of circadian behavior by eIF4E phosphorylation

11:00 AM – 12:00 PM FEATURED PLENARY SPEAKER

Grand Ballroom East

LARRY ABBOTT, Columbia University
Sense from Randomness in Neural Circuits

12:00 – 1:30 PM LUNCH ON OWN - Posters & Exhibits

PARALLEL SYMPOSIA

1:30 – 3:00 PM SYMPOSIUM 1

Grand Ballroom West

Voltage-gated ion-channels of the mammalian central nervous system

Chair: **DEREK BOWIE**, McGill University

Speakers:

LYANNE SCHLICHTER, University of Toronto
Expression and regulation of K⁺ channels that control microglia functions

TERRY SNUTCH, University of British Columbia
New Insights into Familial Hemiplegic Migraine Type-1

RYAN ALEXANDER, McGill University
Regulation of voltage-gated ion channels by NMDA receptors in cerebellar stellate cells

RAY TURNER, University of Calgary
T-type calcium and potassium channel interactions

2016 ANNUAL CONFERENCE SCHEDULE

1:30 – 3:00 PM **SYMPOSIUM 2**
Grand Ballroom East
Structural and functional features of neural connectivity and plasticity in emerging and mature networks
Sponsored by **CENTRE DE RECHERCHE INSTITUT UNIVERSITAIRE EN SANTÉ MENTALE DE QUEBEC**
Chair: **JEAN-CLAUDE BÉÏQUE**, University of Ottawa
Speakers:
SHERNAZ BAMJI, University of British Columbia
Regulation of synapse form and function through palmitoylation
JULIE LEFEBVRE, University of Toronto
Molecular mechanisms of neuron self/non-self recognition in dendrite patterning and wiring specificity
JEAN-CLAUDE BÉÏQUE, University of Ottawa
Spatiotemporal feature detection and plasticity rules in emerging neural networks
ROBERTO ARAYA, Université de Montréal
Input transformation by dendritic spines of pyramidal neurons

1:30 – 3:00 PM **SYMPOSIUM 3**
Grand Ballroom Centre
Circadian regulation and clock genes link neuronal physiology to behavior
Chair: **VALÉRIE MONGRAIN**, Université de Montréal
Speakers:
VALÉRIE MONGRAIN, Université de Montréal
Clock genes, cell adhesion molecules and sleep regulation
MARY CHENG, University of Toronto Mississauga
G protein-coupled receptor kinase 2 (GRK2): putting the brakes on the circadian clock
MICHAEL VERWEY, Concordia University
Dopaminergic modulation of rhythmic PER2 expression in the dorsal striatum
JOEL LEVINE, University of Toronto Mississauga
Circadian Control of Social Behaviour in Drosophila

1:30 – 3:00 PM **SYMPOSIUM 4**
Osgoode Ballroom East
Low-level circuits for sophisticated sensorimotor control: lessons from four model systems
Sponsored by **ONTARIO BRAIN INSTITUTE**
Chair: **ANDREW PRUSZYNSKI**, Western University
Speakers:
ANDREW PRUSZYNSKI, Western University
Geometric feature extraction in the human tactile periphery
MICHAEL HENDRICKS, McGill University
Sensorimotor integration at the subcellular level
KATHY NAGEL, New York University
Cellular and synaptic specializations for navigation in turbulent odor plumes
TUAN BUI, University of Ottawa
A class of spinal neurons integrates cutaneous information for motor control

3:00 – 3:30 PM **COFFEE BREAK**

3:30 – 5:30 PM POSTERS & EXHIBITS – POSTER SESSION 1

5:30 – 7:00 PM PARALLEL SESSIONS

Sessions of Potential Interest to All (choose your preference)

Grand Ballroom West **SESSION 1 *Advocacy and Public Outreach – CAN Advocacy Committee***

Invited Speaker:

WENDY SUZUKI, New York University

Grand Ballroom East **SESSION 2 *Careers Inside Academia***

Organizer: **MELANIE WOODIN**

Panelists:

KARUN SINGH, McMaster University

JULIE LEFEBVRE, Sick Kids Research Institute

ALANNA WATT, McGill University

TUAN TRANG, University of Calgary

Osgoode Ballroom East **SESSION 3 *NSERC and CIHR Funding Updates***

Presentations by:

DALE DEMPSEY, CIHR

GUILLAUME SABOURIN, NSERC

7:00 – 7:30 PM RECEPTION (non-hosted)

Grand Ballroom Foyer

7:30 – 9:30 PM CAN STUDENT SOCIAL

The Ballroom, 2nd Floor

142 John Street

Corner of Richmond and John St

TUESDAY, MAY 31, 2016

8:30 – 10:15 AM PLENARY SYMPOSIUM

Grand Ballroom East

Reward learning: neurons, circuits and behavior.

Chair: **JONATHAN BRITT**, McGill University

Reward seeking and reward consumption in relation to glutamate input to the nucleus accumbens

Speakers:

STEVE LAVIOLETTE, the University of Western Ontario

Hunting the Brain's Addiction Switch: Implications for Neurobiological and Clinical Approaches to Drug Dependence

RICK BENINGER, Queen's University

Inverse incentive learning: decreased responding to stimuli associated with low dopaminergic neurotransmission

10:15 – 10:45 AM COFFEE BREAK – Poster & Exhibit Hall

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10:45 – 11:00 AM BRAIN STAR TALK

RAVI L RUNGTA, University of British Columbia
The cellular mechanisms of neuronal swelling underlying cytotoxic edema

11:00 AM – 12:00 PM FEATURED PLENARY SPEAKER

Grand Ballroom East

ANN GRAYBIEL, McGovern Institute for Brain Research at MIT
The Striatum and Decision-Making Based on Value

12:00 – 12:30 AM CAN-ACN ANNUAL GENERAL MEETING

Grand Ballroom East

All CAN members invited to attend

12:30 – 1:30 PM LUNCH ON OWN - Posters & Exhibits

PARALLEL SYMPOSIA

1:30 – 3:00 PM SYMPOSIUM 5

Grand Ballroom East

Mechanisms of Plasticity

Co-Chairs: **MICHAEL JACKSON**, University of Manitoba and
TABREZ J SIDDIQUI, University of Manitoba

Speakers:

WAYNE S SOSSIN, McGill University
Regulation of eEF2 phosphorylation bi-directionally regulates translation-dependent synaptic plasticity in Aplysia

DECLAN ALI, University of Alberta
Synaptic Plasticity at developing Synapses in Zebrafish

ZHENGPING JIA, University of Toronto
Genetic analysis of synaptic and spine plasticity

QI YUAN, Memorial University
Shaping odor coding neuronal ensembles by reward and norepinephrine

1:30 – 3:00 PM SYMPOSIUM 6

Grand Ballroom West

Neuroimmunology: A key interface in neurophysiology, neurodegeneration and repair

Chair: **SHALINA OUSMAN**, University of Calgary

Speakers:

SHALINA OUSMAN, University of Calgary
Pathogenic immune-mediated mechanisms in multiple sclerosis and its animal model, experimental allergic encephalomyelitis.

SAM DAVID, McGill University
Macrophage and microglia plasticity - they are what they eat.

SERGE RIVEST, University Laval
Neuroprotective properties of the innate immune cells.

V.WEE YONG, University of Calgary
Harnessing the benefits of inflammation for repair of the CNS.

1:30 – 3:00 PM
Grand Ballroom Centre

SYMPOSIUM 7

Novel Experimental Models of Epilepsy

Sponsored by **CENTRE DE RECHERCHE INSTITUT UNIVERSITAIRE EN SANTÉ MENTALE DE QUEBEC**

Chair: **JESPER SJÖSTRÖM**, McGill University

Speakers:

PETER CARLEN, University Health Network
Neocortical ischemia and seizures

AYLIN REID, University of Toronto
Electrophysiological abnormalities during epileptogenesis after fluid percussion injury

IGOR TIMOFEEV, University Laval
Age dependency of trauma induced epileptogenesis

JESPER SJÖSTRÖM, McGill University
Optogenetic kindling as a model of epilepsy

1:30 – 3:00 PM
Osgoode Ballroom East

SYMPOSIUM 8

Circuit and systems basis of emotion and emotional learning

Sponsored by **ONTARIO BRAIN INSTITUTE**

Co-Chairs: **SHEENA JOSSELYN**, Hospital for Sick Children and

STEPHANIE BORGLAND, University of Calgary

Speakers:

MAITHE ARRUDA-CARVALHO, University of Toronto
Maturation of the Prefrontal-Amygdala circuit and the encoding of fear memories

LINDSAY NAEF, University of Calgary
Dysfunction of the orbitofrontal cortex in diet-induced obesity

THOMAS KASH, University of North Carolina
Dissecting the role of "Aversive" circuitry in Addiction

SHEENA JOSSELYN, Hospital for Sick Children
Winner-take-all neuronal competition for fear memory encoding

3:00 – 3:30 PM **COFFEE BREAK** – Poster & Exhibit Hall

3:30 – 5:15 PM **POSTERS & EXHIBITS - POSTER SESSION 2**

5:15 – 5:30 PM **YOUNG INVESTIGATOR AWARD PRESENTATION**
Grand Ballroom East
SAMUEL DAVID, Chair of the Nominations Committee

5:30 – 6:00 PM **YOUNG INVESTIGATOR AWARD LECTURE**
Grand Ballroom East
Sponsored by **ONTARIO BRAIN INSTITUTE**
MATTHEW HILL, The Hotchkiss Brain Institute, University of Calgary
Endocannabinoid Signalling in the Amygdala and the Regulation of Stress and Anxiety

6:00 – 7:00 PM **KEYNOTE LECTURE**
Grand Ballroom East
Sponsored by **the Sick Kids Program in Neuroscience & Mental Health & The Center for Brain & Mental Health**
KARL DEISSEROTH, Stanford University
Integrated brainwide structural and functional analysis

2016 ANNUAL CONFERENCE SCHEDULE

7:00 – 7:30 PM RECEPTION (non-hosted)
Grand Ballroom Foyer

7:30 PM CANADIAN ACTION AND PERCEPTION NETWORK (CAPNET) SOCIAL
C'est What Everyone Welcome
Restaurant and Beer Garden Food provided, Cash bar
67 Front Street at Church

WEDNESDAY, JUNE 1, 2016

8:30 – 10:15 AM PLENARY SYMPOSIUM

Grand Ballroom East

Signal integration and plasticity

Chair: **ROGER THOMPSON**, University of Calgary

Non-ionotropic functions of NMDA receptors

Speakers:

KATALIN TOTH, Université Laval

Presynaptic calcium dynamics and information transfer at hippocampal mossy fibres

KURT HAAS, University of British Columbia

In vivo imaging of brain circuit refinement

10:15 – 10:45 AM COFFEE BREAK - Poster & Exhibit hall

10:45 – 11:00 AM BRAIN STAR TALK

PIERRE MATTAR, Institut de recherches cliniques de Montréal

A conserved regulatory logic controls temporal identity in mouse neural progenitors

11:00 AM – 12:00 PM FEATURED PLENARY SPEAKER

Grand Ballroom East

NELSON SPRUSTON, Janelia Research Campus

Neuronal Diversity and Complexity in the Hippocampus

12:00 – 1:30 PM LUNCH ON OWN - Posters & Exhibits

1:30 – 3:30 PM POSTERS & EXHIBITS - POSTER SESSION 3

PARALLEL SYMPOSIA

3:30 – 5:00 PM SYMPOSIUM 9

Grand Ballroom Centre

Shedding light on the function of cholinergic midbrain neurons

Sponsored by **TUCKER-DAVIS TECHNOLOGIES**

Chair: **SUSANNE SCHMID**, University of Western Ontario

Speakers:

STEPHAN STEIDL, Loyola University Chicago

Laterodorsal tegmental nucleus inputs to the ventral tegmental area drive reward

JOHN THOMPSON, University of Colorado

Mesencephalic representations of recent experience influence decision making

ERIN AZZOPARDI, University of Western Ontario

The role of mesopontine cholinergic neurons in sensorimotor gating

CHRISTA VAN DORT, Harvard Medical School

Activation of cholinergic neurons in the PPT and LDT induces REM sleep.

3:30 – 5:00 PM SYMPOSIUM 10

Osgoode Ballroom East

Nociceptive Circuits: From Molecules to Behaviour

Chair: **STEVEN PRESCOTT**, Hospital for Sick Children

Speakers:

ARTUR KANIA, IRCM

A genetic and functional analysis of nociceptive somatotomy

PHILLIPE SÉGUÉLA, McGill University

Selective functional control of peripheral somatosensory neurons in pain circuits

REZA SHARIF NAEINI, McGill University

Dorsal horn parvalbumin inhibitory neurons act as gate-keepers of touch-evoked pain after nerve injury

STEVEN PRESCOTT, Hospital for Sick Children

Disruption of circuit-level pain processing by chloride dysregulation in spinal dorsal horn

3:30 – 5:00 PM SYMPOSIUM 11

Grand Ballroom West

Mechanisms governing cerebrovascular structure and function in health and disease

Chair: **IAN WINSHIP**, University of Alberta

Speakers:

CRAIG BROWN, University of Victoria

Imaging microvessel recanalization and remodelling following occlusion

GRANT GORDON, University of Calgary

Blood Flow Control Across a Spectrum of Brain Activity States

EDITH HAMEL, McGill University

Hemodynamic signals: how reliable are they to map changes in neuronal activity?

ANDY SHIH, Medical University of South Carolina

The Double Life of a Cerebral Pericyte

3:30 – 5:00 PM SYMPOSIUM 12

Grand Ballroom East

Temporal sequences in brain and memory

Sponsored by **CENTRE DE RECHERCHE INSTITUT UNIVERSITAIRE EN SANTÉ MENTALE DE QUEBEC**

Chair: **KAORI TAKEHARA-NISHIUCHI**, University of Toronto

Speakers:

HOWARD EICHENBAUM, Boston University

Time cells in the hippocampus

KAORI TAKEHARA-NISHIUCHI, University of Toronto

Prefrontal time code underlying temporal associative memory

NANDAKUMAR NARAYANAN, University of Iowa

Prefrontal dopamine and temporal control of action

LIANG-TIEN HSIEH, University of California in San Diego

Temporal representation in the episodic recollection network

– END OF MEETING –