



The Canadian Association
for Neuroscience presents

10th Annual Canadian Neuroscience Meeting 2016

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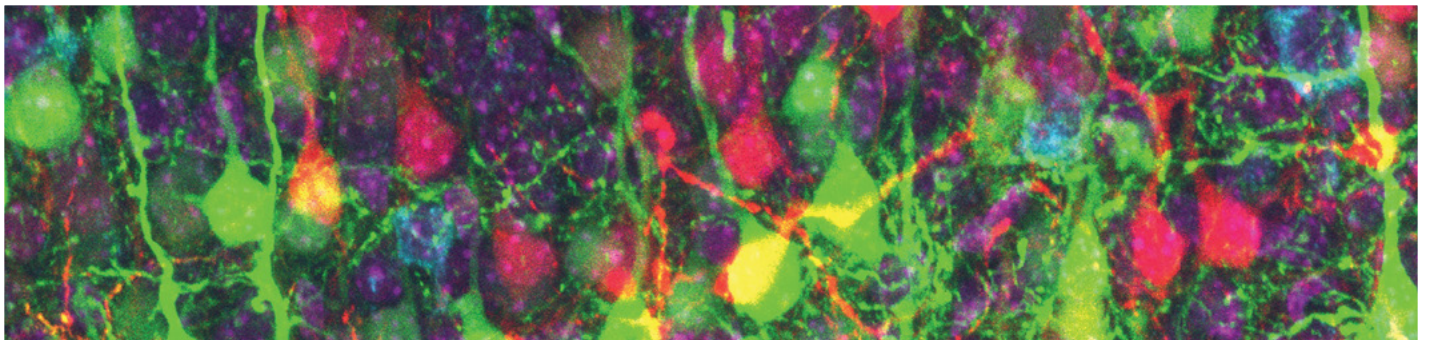
MEETING PROGRAM



May 29–June 1, 2016
Toronto, Ontario
Sheraton Centre Toronto Hotel

CAN-ACN 
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

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11th Annual CAN-ACN Meeting

Montreal, Québec · May 28 – 30, 2017



Hotel Bonaventure Montreal

Abstract submission opens November 2016 · Registration opens early 2017

Special CAN-ACN rates:

Double Room (single or double occupancy) \$199



CAN-ACN
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

ABOUT CAN-ACN

The Canadian Association for Neuroscience is a community of scientists, researchers and students brought together with the common purpose of representing the interests of Canadian neuroscientists at national and international levels. CAN's mission is to promote communication among neuroscientists throughout Canada, and generate interest and understanding of the importance of scientific research and development.

CAN-ACN Annual Meeting

Since 2007, the Canadian Neuroscience Annual Meetings have been an important platform for researchers to present their work, generate scholarly debate, and obtain valuable feedback and be informed about the important neuroscience research done across country and abroad. This highly regarded conference is in its 10th year.

10th Annual Canadian Neuroscience Meeting 2016

The Canadian Association
for Neuroscience presents

CAN-ACN PRESIDENTS 1981 – PRESENT

Term	Name	Affiliation
1983 – 1985	Alberto Aguayo	McGill University
1985 – 1987	Sergey Fedoroff	University of Saskatchewan
1988 – 1989	Richard B Stein	University of Alberta
1990 – 1991	Robert W Dykes	McGill University
1992 – 1993	Penny Moody-Corbett	Memorial University
1994 – 1995	Harold Atwood	University of Toronto
1996 – 1997	Alain Beaudet	McGill University
1998 – 1999	Andrew Bullock	University of Calgary
2000 – 2001	Vincent F Castellucci	Universite de Montreal
2002 – 2003	P. Ken Rose	Queen's University
2004 – 2005	Valerie MK Verge	University of Saskatchewan
2005 – 2008	Jonathan Dostrovsky	University of Toronto
2008 – 2010	Brian MacVicar	University of British Columbia
2010 – 2012	Yves De Koninck	Universite Laval
2012 – 2014	Samuel David	McGill University
2014 – Present	Douglas Munoz	Queen's University

LETTER FROM THE PRESIDENT

DEAR COLLEAGUES AND FRIENDS,

It is my pleasure to welcome you to the Canadian Neuroscience Meeting in Toronto in 2016. This year marks a key milestone for CAN-ACN as we celebrate the 10th anniversary of the annual meeting and acknowledge some of the individuals who played a large role in the growth and development of CAN-ACN and the annual meeting. Our Scientific Program committee has put together an impressive list of Keynote and Plenary speakers that showcases some of the best of neuroscience research in the world.

I wish to thank all our members who submitted abstracts and session proposals for the annual meeting. It is the quality of these submissions that drives the content and excellence of our meeting. I especially want to thank all our members who have submitted proposals for parallel symposia this year. As you will see in the program, parallel symposia, organized by our members, are a very important part of our meeting, and feature a wide range of research topics.

The CAN meeting is an ideal place to meet and interact with colleagues from across the country. It is also a great place for trainees to present their work, get valuable feedback, and make connections for the future. We also have special mentoring and career development sessions planned for trainees and junior investigators.

I hope you enjoy the meeting, and I look forward to seeing you in person in Toronto.

Best Regards,



Doug Munoz,
President of the Canadian Association for Neuroscience

CHERS COLLÈGUES ET AMIS,

Il me fait plaisir de vous accueillir au congrès canadien de neuroscience 2016. Cette année marque une étape clé pour CAN-ACN puisque nous célébrons le 10^{ème} anniversaire du congrès annuel et reconnaissons quelques-unes des personnes qui ont joué un rôle important dans la croissance et le développement de CAN-ACN et de notre congrès. Notre comité du programme scientifique a assemblé une liste impressionnante de conférenciers d'honneur et pléniers qui présenteront un échantillon de la meilleure recherche en neuroscience au monde.

Je tiens à remercier tous nos membres qui ont présenté des résumés et des propositions de session pour la réunion annuelle. C'est la qualité de ces soumissions qui définit le contenu et l'excellence de notre congrès. Je tiens particulièrement à remercier tous nos membres qui ont soumis des propositions pour des symposiums parallèles cette année. Comme vous le verrez dans le programme, les symposiums parallèles, organisés par nos membres, forment une partie très importante de notre congrès, et permettent de présenter un large éventail de sujets de recherche.

Le congrès de l'ACN est l'endroit idéal pour rencontrer et interagir avec des collègues de partout au pays. Il s'agit également d'une excellente occasion pour les étudiants et stagiaires de présenter leurs recherches et d'obtenir un feedback important d'experts reconnus. Des sessions spéciales de mentorat et de développement de carrière pour les jeunes chercheurs sont également organisées.

Je vous souhaite un excellent congrès, et j'ai bien hâte de vous accueillir en personne à Toronto!

Bien à vous,



Doug Munoz
Président de l'Association canadienne des neurosciences

CAN-ACN LEADERSHIP

Elected members govern the Canadian Association for Neuroscience. These members comprise the Board of Directors who in turn elects Officers that comprise the Executive Committee. The Society's Bylaws govern how the Board manages the Society.

Executive Committee:

President: **DOUG MUNOZ**, Queen's University
Vice-president
(President-elect): **FREDA MILLER**, University of Toronto
Secretary: **KATALIN TOTH**, Université Laval
Treasurer: **ELLIS COOPER**, McGill University

Board Members:

Past President: **SAMUEL DAVID**, McGill University
CHARLES BOURQUE, McGill University
WILLIAM COLMERS, University of Alberta
EDWARD RUTHAZER, McGill University
MELANIE WOODIN, University of Toronto

2016 Scientific and Local Program Committee



Conference Chair
DR. KATHLEEN CULLEN
Professor, Department of Physiology,
McGill University



Co-chair
DR. JAIDEEP BAINS
Professor, Physiology & Pharmacology,
University of Calgary



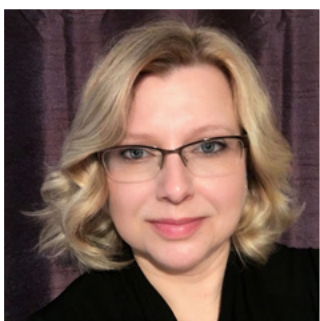
Local Organizing Committee Chair
DR. MELANIE WOODIN
Associate Professor, Cell & Systems Biology
University of Toronto

Committee Members

GAUTAM AWATRAMANI University of Victoria
SHERNAZ BAMJI University of British Columbia
MAURICE CHACRON McGill University
JEAN-FRANÇOIS CLOUTIER McGill University
JODY CULHAM University of Western Ontario

JOHN HOWLAND University of Saskatchewan
STEFAN KOHLER University of Western Ontario
NEIL MAGOSKI Queen's University
SARAH MCFARLANE University of Calgary
CATHERINE RANKIN University of British Columbia

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Advocacy Chair
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Université Laval

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JEAN-CLAUDE BÉIQUE University of Ottawa
MICHAEL HENDRICKS McGill University
JAY INGRAM Science Writer and Communicator
DAVID KAPLAN University of Toronto
BEVERLEY ORSER University of Toronto
ANASTASIA VORONOVA University of Toronto, Liaison to CSM

CAN-ACN Administration

ASSOCIATION SECRETARIAT & CONFERENCE MANAGEMENT

secretariat@can-acn.org

PODIUM CONFERENCE SPECIALISTS

- Marischal De Armond
- Michelle Smith
- Gabriela Dominguez
- Heather Reive

COMMUNICATIONS DIRECTOR AND WEBMASTER

info@can-acn.org

- Julie Poupart

Membership Information

CAN membership is open to all scientists, principal investigators and students actively involved in neuroscience research from across Canada and around the world. CAN membership dues are paid annually and cover the calendar year from September 1st to August 31st.

Benefits

CAN-ACN membership includes the following benefits:

- Eligibility to submit or sponsor communications at CAN Scientific meetings
- A significant reduction on registration for our annual meeting
- Networking opportunities
- The possibility of advertising positions and meetings on the CAN-ACN website
- A forum to exchange information with colleagues and the general public
- Eligibility for CAN-ACN prizes and awards
- Members, Honorary Members and Emeritus Members, but not Student Members or Corporate Members, shall have the right to vote at any duly constituted business meeting of the Association and shall have the right to hold office in the Association.

TO BECOME A CAN-ACN MEMBER PLEASE VISIT US AT THE REGISTRATION DESK TODAY.



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GENERAL CONFERENCE INFORMATION

Conference Venue

SHERATON CENTRE TORONTO HOTEL

123 Queen Street West, Toronto, ON M5H 2M9

All conference sessions will take place in this location.

Registration

Annual Conference registration fees include access to all sessions including panel, symposium, and poster sessions. Registration also includes 2 daily refreshment breaks.

Name Badges

Your name badge is your admission ticket to the conference sessions, coffee breaks, and receptions. Please wear it at all times. At the end of the Conference we ask that you recycle your name badge in one of the name badge recycling stations that will be set out, or leave it at the Registration Desk.

LOST NAME BADGES:

There is a \$25 replacement fee for any lost or missing name badges – If you've lost your name badge, visit the registration desk for a replacement as soon as possible.

Registration and Information Desk Hours

The CAN-ACN Registration and Information Desk, located in the Grand Ballroom Foyer will be open during the following dates and times:

Sunday, May 29	8:00 AM to 8:00 PM
Monday, May 30	8:00 AM to 7:00 PM
Tuesday, May 31	8:00 AM to 7:00 PM
Wednesday, June 1	8:00 AM to 4:00 PM

If you need assistance during the conference, please visit the Registration Desk.

Poster Information

SET-UP / REMOVAL

There are three Poster Sessions during the Meeting and posters have been allocated to one of the sessions based on poster themes. Poster presenters must set-up and remove their posters during the following times.

POSTER SESSION 1 Monday, May 30

Poster hours	10:15 – 10:45 AM
(Lunch on own – posters will remain open)	12:00 PM – 1:30 PM
Poster hours	3:30 – 5:30 PM

Poster set-up:

Sunday, May 29:	7:00 – 8:00 PM
Monday, May 30:	7:30 – 8:30 AM

Removal of all posters by: 7:00pm on May 30

POSTER SESSION 2 Tuesday, May 31

Poster hours	10:15 – 10:45 AM
(Lunch on own – posters will remain open)	12:00 PM – 1:30 PM
Poster hours	3:30 – 5:30 PM

Poster set-up:

Tuesday, May 31:	7:30 – 8:30 AM
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Removal of all posters by: 7:00pm on May 31

POSTER SESSION 3 Wednesday, June 1

Poster hours	10:15 – 10:45 AM
(Lunch on own – posters will remain open)	12:00 PM – 1:30 PM
Poster hours	1:30 – 3:30 PM

Poster set-up:

Wednesday, June 1:	7:30 – 8:30 AM
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Removal of all posters by: 5:00pm on June 1

Information on Poster Authors, Poster Numbers and Poster Titles begins on page 31. Digital copies can be downloaded from the Member Only section of the [CAN-ACN Website](#). Posters can also be browsed using the CAN App by downloading the app from the Apple Store/Google Play Store.

WiFi Information

CAN is pleased to offer complimentary WiFi this year.

Network: Sheraton Meetings Network

Password: CAN2016

Please note the wireless is good for basic internet usage but it is not strong enough for streaming videos or social media usage.

Message Board

For your convenience, a Message Board will be located near the Registration Desk. Feel free to leave messages of interest to other conference participants.

Staff

CAN-ACN staff from Podium Conference Management can be identified by ribbons on their name badges. Feel free to ask anyone of our staff for assistance. For immediate assistance please visit us at the Registration Desk.

Nearby Amenities

Link Café – Opens at 6:00am daily and can be found in the Lobby Level of the Sheraton Centre

BnB Restaurant – Open from 6:30am – 1:00am daily and can be found in the Lobby Level of the Sheraton Centre

Queen Mother Café – 208 Queen Street West (5 minute walk)

Longo's Supermarket – 111 Elizabeth Street (7 minute walk)

Underground Food Court – (5 minute walk)

Bannock - 401 Bay Street (3 minute walk)

The Sheraton Centre Toronto Hotel is a newly renovated hotel in the heart of downtown Toronto. With multiple food and beverage options, conveniently connected to the financial and entertainment districts, and with a two acre Waterfall Garden, the Sheraton Centre Toronto is sure to provide a distinct Toronto experience.

PROGRAM AT A GLANCE

TIME	Saturday 28-May	Sunday 29-May	Monday 30-May	Tuesday 31-May	Wednesday 1-Jun																	
8:00	CAN 2016 Public Lecture Charles Tator Margot Taylor Sick Kids Auditorium 4:00-6:00PM	4th Annual Meeting of the Canadian Neurometabolic Club Satellite CAPnet / CPS Joint Satellite: 9:00AM-4:30PM Action & Perception: Cognition, Coding and Clinical Populations 9:00AM-4:30PM Canadian Neurophotonics Platform: 9:00AM-4:30PM 4th Annual Meeting of the Canadian Neurometabolic Club Satellite 8:30AM - 4:30PM Special CAN-ACN Satellite: Speak Up: The role of modern neuroscience 2:00-4:00PM	Registration & Information Desk Open 8:00am-7:00pm	Registration & Information Desk Open 8:00AM-5:00PM	Plenary Symposium 3 8:30-10:15AM																	
8:15						Department of Physiology (University of Toronto) Satellite conf (At University of Toronto) 9:00AM-1:00	Coffee Break Posters & Exhibits 10:15-10:45AM Brainstar Award 10:45-11:00AM	Coffee Break Posters & Exhibits 10:15-10:45AM Brainstar Award 10:45-11:00AM														
8:30									Plenary Symposium 1 8:30-10:15AM	Plenary Symposium 2 8:30-10:15AM												
8:45											Plenary Speaker 1 Larry Abbott 11:00AM-12:00PM	Plenary Speaker 2 Ann Graybiel 11:00AM-12:00PM										
9:00													Lunch on own 12:00-1:30PM	CAN-ACN AGM 12:00-12:30PM								
9:15															Parallel Symposia 1-4 1:30-3:00PM	Parallel Symposia 5-8 1:30-3:00PM						
9:30																	Coffee Break 3:00-3:30PM	Coffee Break 3:00-3:30PM				
9:45																			Poster Session 1 & Exhibits 3:30-5:30PM	Poster Session 2 & Exhibits 3:30-5:15PM		
10:00																					Parallel Sessions 5:30-7:00PM	Young Investigator Award & Lecture Presented by Samuel David 5:15 - 6:00
10:15																						
10:30	Non-hosted Reception 7:00-8:00PM	Non-hosted Reception 7:00-8:00PM																				
10:45			CAN Student Social The Ballroom - 2nd Floor 7:30-9:30PM	Non-hosted Reception 7:00-8:00PM																		
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9:00			Opening Reception (hosted) 7:00-8:15PM	Non-hosted Reception 7:00-8:00PM																		

2016 CAN YOUNG INVESTIGATOR AWARDEE

The Canadian Association for Neuroscience (CAN) is proud to announce that **MATTHEW HILL**, from The Hotchkiss Brain Institute, University of Calgary, has been awarded the 2016 CAN Young Investigator Award for the 10th Annual Canadian Neuroscience Meeting in Toronto, Ontario.

Sponsored by:

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**The Young Investigator Award Lecture will take place on
Tuesday, May 31 from 5:30pm – 6:00pm in the Grand Ballroom East.**



MATTHEW HILL

The Hotchkiss Brain Institute,
University of Calgary

Dr. Matthew Hill's research has deepened our understanding of how the brain responds and adapts, or fails to adapt, to stress. His research has helped demonstrate the important role of the endocannabinoid system in buffering stress response and regulating emotional response in the brain. His

pioneering work with rodents has demonstrated that exposure to chronic stress results in a collapse of the endocannabinoid system. He also showed that enhancing the endocannabinoid system produced behavioral changes suggesting reduced anxiety and active coping responses to stress, and that conventional antidepressants use the endocannabinoid system to dampen activation of the stress response. This body of work has led to the hypothesis that deficient endocannabinoid signaling may be an underlying cause of stress-related psychiatric conditions such as depression and posttraumatic stress disorder, or PTSD.

In addition to showing that endocannabinoids regulate stress, Dr. Hill has worked to elucidate the mechanisms through which they act. In a series of highly-cited publications he showed that endocannabinoid signaling can prevent the activation of the stress response, that stress hormones recruit endocannabinoids to terminate the stress response, and that endocannabinoid signaling is required to modulate the excitability of stress circuits, thereby contributing to the ability of the brain to adapt to repeated exposure to stress.

His current work focuses on understanding how chronic stress hinders endocannabinoid signalling to generate pathological anxiety. The insight Dr. Hill has gained through research done with animals has prompted him to collaborate with clinicians to investigate the role of endocannabinoids in humans. This work has shown that the endocannabinoid system regulates stress response in humans and that this system is defective in individuals suffering from major depression or PTSD. This research has led to the exploration of new therapeutic avenues, investigating the potential of endocannabinoids for the treatment of these psychiatric illnesses.

Matthew Hill's productivity, both in terms number and quality of scientific publications, is impressive. He has published in top journals in the field such as the Journal of the American Medical Association (JAMA), Nature, Nature Neuroscience, Neuron, the Journal of Neuroscience and Molecular Psychiatry. Dr. Hill's leadership in research, the originality and quality of his work, and the impressive level of recognition he has gathered internationally make him stand out as an exceptional young neuroscientist. The Canadian Association for Neuroscience is very proud to present Dr. Hill with the 2016 CAN Young Investigator Award.

ABSTRACT:

Endocannabinoid Signaling in the Amygdala and the Regulation of Stress and Anxiety.

Endocannabinoids (eCB) have a well documented inhibitory role over the stress response, whereby impairments in eCB signaling enhance, and facilitations in eCB signaling constrain, neurobehavioral responses to stress. Several converging lines of evidence have suggested that the amygdala may represent a hub by which eCB signaling exerts control over the stress response. Our ongoing work has sought to identify the mechanisms by which interactions between stress and the eCB system in the amygdala govern the stress response. Using a combination of approaches, our studies have demonstrated that exposure to acute stress results in a rapid decline of anandamide (AEA) content within the amygdala, which is mediated by an increase in the AEA-hydrolyzing enzyme fatty acid amide hydrolase (FAAH). This stress-induced change in FAAH activity appears to be mediated by the release of the stress-promoting neuropeptide corticotropin releasing hormone (CRH) and its subsequent activation of the CRHR1 receptor. This interplay between CRH and FAAH regulates the generation of anxiety states, and seems to also contribute to extra-hypothalamic regulation of the HPA axis. At a cellular level, the ability of AEA signaling to gate activation of the amygdala in response to stress appears to occur through an inhibition of afferent corticothalamic glutamatergic inputs. Through translational genetic studies, it has been demonstrated that a common mechanism appears to regulate stress-induced activation of the amygdala and the generation of anxiety states in humans as well. Together, these data create a template by which we can understand how eCB signaling can temper neural activity in the amygdala to modulate changes in both anxiety and HPA axis activation following exposure to stress.

BRAIN STAR AWARDEE TALKS 2016

Each year, since 2001, the Institutes for Neuroscience, Mental Health and Addiction (INMHA) of the Canadian Institutes of Health Research (CIHR) selects up to 15 great research articles and award their authors a Brain Star Award. These awards were designed to recognize the excellence of research done in Canada by students and trainees in all fields and disciplines covered by INMHA, to promote research careers in neuroscience, mental health and addiction in Canada, and to stimulate the participation of trainees in the planning and development of INMHA activities.

The top three Brain Star Awardees are invited by INMHA and CAN to present their award-winning research at the Canadian Neuroscience Meeting. INMHA also gives the recipient a prize of \$1,500, and recognition on the INMHA website and communications.

RUIFENG CAO MD, PHD

Department of Biochemistry and Goodman Cancer Research Centre, McGill University | ruifeng.cao@mail.mcgill.ca

MONDAY, MAY 30, 10:45AM

Light-regulated translational control of circadian behavior by eIF4E phosphorylation.

The circadian (~24 h) clock is continuously entrained (reset) by ambient light so that endogenous rhythms are synchronized with daily changes in the environment. Light-induced gene expression is thought to be the molecular mechanism underlying clock entrainment. mRNA translation is a key step of gene expression, but the manner in which clock entrainment is controlled at the level of mRNA translation is not well understood. We found that a light- and circadian clock-regulated MAPK/MNK pathway led to phosphorylation of the cap-binding protein eIF4E in the mouse suprachiasmatic nucleus of the hypothalamus, the locus of the master circadian clock in mammals. Phosphorylation of eIF4E specifically promoted translation of Period 1 (Per1) and Period 2 (Per2) mRNAs and increased the abundance of basal and inducible PER proteins, which facilitated circadian clock resetting and precise timekeeping. Together, these results highlight a critical role for light-regulated translational control in the physiology of the circadian clock.

RAVI L. RUNGTA PHD

Djavad Mowfaghian Centre for Brain Health, University of British Columbia | rlrungta@gmail.com

TUESDAY, MAY 31, 10:45AM

The cellular mechanisms of neuronal swelling underlying cytotoxic edema.

Cytotoxic brain edema triggered by neuronal swelling is the chief cause of mortality following brain trauma and cerebral infarct. Using fluorescence lifetime imaging to analyze contributions of intracellular ionic changes in brain slices, we find that intense Na(+) entry triggers a secondary increase in intracellular Cl(-) that is required for neuronal swelling and death. Pharmacological and siRNA-mediated knockdown screening identified the ion exchanger SLC26A11 unexpectedly acting as a voltage-gated Cl(-) channel that is activated upon neuronal depolarization to membrane potentials lower than -20 mV. Blockade of SLC26A11 activity attenuates both neuronal swelling and cell death. Therefore cytotoxic neuronal edema occurs when sufficient Na(+) influx and depolarization is followed by Cl(-) entry via SLC26A11. The resultant NaCl accumulation causes subsequent neuronal swelling leading to neuronal death. These findings shed light on unique elements of volume control in excitable cells and lay the ground for the development of specific treatments for brain edema.

PIERRE MATTAR PHD

Institut de recherches cliniques de Montreal | pierre.mattar@ircm.qc.ca

WEDNESDAY, JUNE 1, 10:45AM

A conserved regulatory logic controls temporal identity in mouse neural progenitors.

Neural progenitors alter their output over time to generate different types of neurons and glia in specific chronological sequences, but this process remains poorly understood in vertebrates. Here we show that *Cas21*, the vertebrate ortholog of the *Drosophila* temporal identity factor *castor*, controls the production of mid-/late-born neurons in the murine retina. *Cas21* is expressed from mid/late stages in retinal progenitor cells (RPCs), and conditional deletion of *Cas21* increases production of early-born retinal neurons at the expense of later-born fates, whereas precocious misexpression of *Cas21* has the opposite effect. In both cases, cell proliferation is unaffected, indicating that *Cas21* does not control the timing of cell birth but instead biases RPC output directly. Just as *Drosophila* *castor* lies downstream of the early temporal identity factor *hunchback*, we find that the *hunchback* ortholog *Ikzf1* represses *Cas21*. These results uncover a conserved strategy regulating temporal identity transitions from flies to mammals.

SPECIAL MEETINGS & SOCIAL EVENTS

SATURDAY, MAY 28

4:00 – 6:00 PM

Auditorium of the Peter Gilgan Centre
for Research and Learning at SickKids

686 Bay Street, Toronto, ON

CAN 2016 PUBLIC LECTURE

Impact of innate vs. acquired brain disorders

Why Concussions are a Significant Public Health Concern

CHARLES H TATOR, Krembil Research Institute, University of Toronto

and

Probing the autistic brain

MARGOT TAYLOR, Hospital for Sick Children, University of Toronto

SUNDAY, MAY 29

6:00 – 7:00 PM

Grand Ballroom East

PRESIDENTIAL LECTURE

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

Grand Ballroom Foyer

OPENING RECEPTION (hosted)

Join us for a special celebration of 10 years of CAN! Enjoy good food while catching up with old friends and making new ones to start off the annual meeting.

MONDAY, MAY 30

7:00 – 8:00 PM

Grand Ballroom Foyer

RECEPTION (non-hosted)

Grab a quick drink in the Grand Ballroom Foyer with your colleagues at the end of the first day. Bars will be set up in the Foyer space to make evening plans, discuss the day and network with fellow attendees.

7:30 – 9:30 PM

The Ballroom

2nd Floor, 143 John Street

(Corner of Richmond and John Street)

CAN STUDENT SOCIAL

Located only a short walk of 10 minutes from the hotel. First drink is on complimentary for students.

SPECIAL MEETINGS & SOCIAL EVENTS

TUESDAY, MAY 31

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

Grand Ballroom East All CAN members are invited to attend

6:00 – 7:00 PM KEYNOTE LECTURE

Grand Ballroom East Sponsored by **Sick Kids Program in Neuroscience & Mental Health and The Center for Brain & Mental Health**

KARL DEISSEROTH, Stanford University

Integrated brainwide structural and functional analysis

7:00 – 8:00 PM RECEPTION (non-hosted)

Grand Ballroom Foyer

Grab a quick drink in the Grand Ballroom Foyer with your colleagues at the end of the second day. Bars will be set up in the Foyer space to make plans and discuss the day. Enjoy the last evening of CAN with your colleagues.

7:00 – 8:30 PM PARKINSON SOCIETY OF CANADA – DONALD CAYNE RECEPTION AND LECTURE

Osgoode East Ballroom

(Pre-Event Registration required)

Join the Parkinson Society of Canada for the Donald Cayne Reception and Lecture.

7:30 PM CANADIAN ACTION AND PERCEPTION NETWORK (CAPNET) SOCIAL

C'est What

Restaurant and Beer Garden
67 Front Street East at Church
Food provided and a cash bar

(everyone welcome)

Please join us for a social evening at C'est What! Limited food and a cash bar will be available.



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CAN SATELLITE MEETINGS

Each year, the opportunity for like-minded groups to hold a Satellite Meeting at CAN-ACN is offered. This year, CAN-ACN is pleased to offer the following satellite meetings. If you or a group you are involved in are interested in holding a satellite meeting at future CAN-ACN meetings, please stop by the registration desk to speak to a member of the planning team.

SATURDAY MAY 28

1:00 PM – 5:00 PM

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

UNIVERSITY OF TORONTO PHYSIOLOGY DEPARTMENT SYMPOSIUM

This symposium will bring together outstanding faculty and trainees associated with the Dept currently or in the past to highlight glorious accomplishments in the past 25 years and prospective outlooks of the future; to honor several senior neuroscientists who have made tremendous contributions to the field and commemorate the late John F MacDonald and Hubert van Tol; and most importantly, to discuss emerging horizons of new areas, ranging from fundamental mechanisms of synaptic transmission, plasticity and behavior to stem cells therapy and translational medicine to treat stroke, pain and other neurological and neuropsychiatric disorders.

**6:00 PM – Open Keynote
by Martin Myers**

Cedar Room

4TH ANNUAL MEETING OF THE CANADIAN NEUROMETABOLIC CLUB

Annual meeting gathering Canadian researchers working on CNS controls of appetite, energy metabolism, energy expenditure and related pathologies such as obesity and eating, mood and neurological disorders. Keynote lecture of Martin Myers on Saturday evening. All day short talks by trainees will be held on Sunday May 29th.

SUNDAY MAY 29

9:00 AM – 1:00 PM

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

UNIVERSITY OF TORONTO PHYSIOLOGY DEPARTMENT SYMPOSIUM

8:30 AM – 4:30 PM

Osgoode Ballroom East

4TH ANNUAL MEETING OF THE CANADIAN NEUROMETABOLIC CLUB

9:00 AM – 4:45 PM

Grand Ballroom Centre

CAPNET-CPS CAN SATELLITE SYMPOSIUM “ACTION & PERCEPTION: COGNITION, CODING AND CLINICAL POPULATIONS”

This one-day satellite symposium focuses on perception and sensorimotor processes underlying the control of vision and movement in healthy and clinical populations.

It is jointly organized by the Canadian Action and Perception Network (CAPnet), a neuroscience research consortium that focuses on sensation, perception, and movement control, and by the Canadian Physiological Society (CPS).

9:00 AM – 4:30 PM

Grand Ballroom West

A SHORT COURSE BY THE CANADIAN NEUROPHOTONIC PLATFORM

One of the greatest challenges of modern science is to decipher the functional connectome of nature's most complex organ, the human brain. A key to success in this effort is to develop and exploit technologies that allow us to probe and manipulate brain microcircuits from the level of single synapses – and even nanoscale substructures within synapses – to entire circuits in the intact brain in behaving animals. Light-based tools represent the enabling technology in this endeavour. An all-day short course to articulate new methods and applications of light microscopic imaging and optogenetic manipulation of nervous system tissues. Optogenetics topics include: optogenetic probe development, optogenetic activation and inhibition, with emphasis on region selective expression, light, and probe delivery. Imaging topics include: in vivo approaches (2-photon fast scanning, wide-field), super-resolution imaging, and methodologies for assessing the structure and function of large brain networks. Data analysis topics include visualization of activity in large networks, and image processing strategies to improve light microscopic images.

2:00 PM – 4:00 PM

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

SPEAK UP: THE ROLE OF COMMUNICATION IN MODERN NEUROSCIENCE

Whether you are trying to write an effective review article, talk about your work at a conference, or start a blog, science communication is a vital part of modern neuroscience. That's why it's important to understand the many roles that concise, skillful communication has in our science, and the ways we can use science communication to both develop professionally and increase the impact of our science in society. This session will include a series of presentations from researchers and professional science communicators on the roles of communication in neuroscience, and the many paths to a career in science communication. The presentations will be followed by a discussion panel and question and answer period.

IN NEUROSCIENCE, NETWORKS MATTER



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2016 ANNUAL CONFERENCE SCHEDULE

SATURDAY, MAY 28, 2016

4:00 – 6:00 PM

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

CAN 2016 PUBLIC LECTURE

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

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

SATELLITE 3

University of Toronto Physiology Department CAN Satellite

6:00 – 8:00 PM

Cedar Room

SATELLITE 4

4th Annual Meeting of the Canadian Neurometabolic Club

SUNDAY, MAY 29, 2016

9:00 AM - 4:45 PM

Grand Ballroom Centre

SATELLITE 1

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

9:00 AM - 4:30 PM

Grand Ballroom West

SATELLITE 2

Canadian Neurophotonics Platform: Neurophotonics

9:00 AM - 1:00 PM

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

SATELLITE 3

University of Toronto Physiology Department CAN Satellite

8:30 AM - 4:30 PM

Osgoode Ballroom East

SATELLITE 4

4th Annual Meeting of the Canadian Neurometabolic Club

2:00 - 4:00 PM

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

SPECIAL CAN-ACN SATELLITE

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

Grand Ballroom East

PRESIDENTIAL LECTURE

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

Grand Ballroom Foyer

OPENING RECEPTION (hosted)

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 BÉŦQUE**, 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 BÉŦQUE, 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

2016 ANNUAL CONFERENCE SCHEDULE

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
Restaurant and Beer Garden
67 Front Street at Church
Everyone Welcome
Food provided, Cash bar

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

Osgoode Ballroom East

SYMPOSIUM 10

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

Grand Ballroom West

SYMPOSIUM 11

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

Grand Ballroom East

SYMPOSIUM 12

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 –

PLENARY SYMPOSIA AND KEYNOTE SESSIONS

SUNDAY, MAY 29

PRESIDENTIAL LECTURE

JOHN O'KEEFE, University College London

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

Sponsored by:

HOTCHKISS BRAIN INSTITUTE



**HOTCHKISS
BRAIN INSTITUTE**

Locating ourselves in familiar environments, navigating flexibly around those environments, and remembering where important objects can be found in them represent some of the most fundamental cognitive tasks that the brain performs.

In the first part of my talk, I will describe the discovery of the place cells and how they led to the formulation of the idea that the hippocampus was the neural substrate for a cognitive map.

In the second part I will summarise our current understanding of the components of the map: the place, direction, grid and boundary cells in the hippocampal formation. In addition to providing inputs for the construction of place representations, the grid cells appear to be good candidates to provide the distance metric for the map although recent evidence from our own lab suggests they may not be able to do this in all environments.

In the third part, I will look a little bit into the future and describe some of the emerging technologies which I think will give us a greater insight into how the networks of cells in the hippocampal formation cooperate together to provide spatial representations.

MONDAY, MAY 30

PLENARY SYMPOSIUM

Chair: **FRANCES SKINNER**, Krembil Research Institute/UHN and University of Toronto

Toward Theoretical and Experimental Synergies in Neuroscience

While it is abundantly clear that modeling and theory is needed in neuroscience, it is not always clear how to bring about synergies with experiment. I will briefly describe some of my older work along with recent work from my lab as examples of such synergy and its evolution.

MAURICE CHACRON, McGill University

Cracking the neural code

Understanding how neurons process sensory information in order to give rise to behavioral responses (i.e. the neural code) remains a central problem in neuroscience. Here I will highlight some of our recent advances towards understanding neural coding that have been successful because of a tight integration between experimental and theoretical approaches in both the electrosensory system of weakly electric fish and the vestibular system of

macaque monkeys. These two sensory systems appear to be quite different at first glance: one senses electricity while the other senses movement. Despite these differences, I will show that the neural coding strategies used by both systems are not so different from one another when the statistics of the natural electrosensory and vestibular environments are actually taken into account. I will then show how simple phenomenological models can explain these coding strategies and their importance in establishing a paradigm shift towards understanding neural coding in these two systems. These approaches are likely to shed new insights into developing general theories of neural coding applicable across systems and species.

GAUTAM AWATRAMANI, University of Victoria

The Fine Balancing Act of GABAergic/Cholinergic Retinal Starburst Amacrine Cells

Over the last 25 years, a surprisingly large number of neurons with the ability to co-release both fast excitatory and inhibitory transmitters have been identified throughout the brain. However, the computational benefits of dual transmitter release remain poorly understood. It is possible that inhibition and excitation arising from a common source leads to cancellation. Alternately, co-transmission of inhibitory/excitatory transmitters may allow neural networks to maintain balanced states, especially under limiting conditions where network variability is high. Here, I will address the role of co-release of ACh and GABA by starburst amacrine cells, which are integral components of the retinal direction-selective circuit. I will discuss how we have combined pharmacology, optogenetics and linear regression methods to estimate the spatiotemporal profiles of GABA, acetylcholine and glutamate signalling evoked by moving stimuli, and formulate a new theory on how the network of starbursts finely controls the balance of inhibition and excitation that shapes directional responses of downstream ganglion cells.

FEATURED PLENARY SPEAKER

LARRY ABBOTT, Columbia University

Sense from Randomness in Neural Circuits

Many neural circuits are interconnected with remarkable precision, but others appear to be wired randomly. How extensive is randomness and how can randomly connected circuits perform useful functions? I will address these questions using experimental data and models from a number of different systems. I will also discuss how a characteristic feature of randomly wired neural populations, small numbers of synapses, optimizes their performance.

TUESDAY, MAY 31

PLENARY SYMPOSIUM

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

The decision to allocate effort in pursuit of reward is a function of the nucleus accumbens. Glutamate inputs here likely encode goals and action plans. To gain insight into these signals, we measured pathway specific glutamate input activity in mice during a discriminative reward seeking task using GCaMP-based fiber photometry.

STEVE LAVIOLETTE, The University of Western Ontario

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

The 'disease model' model of addiction has dominated the clinical and pre-clinical realms of drug abuse research for decades. This paradigm considers addiction primarily from the perspective of chronic and static alterations to brain reward circuits, leaving the brain in a permanently altered state of drug dependence and persistent vulnerability to relapse. However, considerable evidence demonstrates that the process of addiction involves discrete molecular and neuronal events occurring both in primary reward processing regions such as the ventral tegmental area, and in neural regions critical for reward-related associative memory formation, such as the amygdala and prefrontal cortex. Equally important, mounting evidence points to the remarkable plasticity of drug-related exposure effects on select brain reward and molecular memory mechanisms, as well as the reversibility of many of these drug-induced neuroadaptations. Using pre-clinical rodent models of opiate addiction, our research program has focused on identifying addiction switching mechanisms in the mammalian brain that control separate and distinct reward and associative memory pathways. We have found that both the primary rewarding effects and associative memories related to opiate exposure depend upon separate neuroanatomical, neuronal and molecular substrates. In turn, these addiction switching mechanisms are controlled by the brain's opiate exposure state during either the acute, early rewarding effects of opiates vs. the motivational effects of opiates after dependence and withdrawal has developed. This presentation will discuss the implications of these addiction-related plasticity mechanisms in terms of re-conceptualizing our theoretical, neurobiological and clinical approaches to addiction treatment.

RICK BENINGER, Queen's University

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

Incentive learning is the acquisition by neutral stimuli of an increased ability to elicit approach and other responses. Inverse incentive learning (IIL) is the loss by stimuli of ability to elicit approach and other responses. When dopamine neurons signal negative prediction error, IIL may take place. IIL is observed

using (paired) rats treated with low dose haloperidol (e.g., 0.25 mg/kg) and tested once daily by placing them with their forepaws resting on a horizontal bar at a height of 10 cm. Paired rats descend immediately during the first session but over sessions latencies gradually increase. Control (unpaired) rats, tested following injection of saline but given haloperidol later in their home cage, continue to descend immediately over sessions. After 10 days, when both groups are tested following injection of haloperidol, increased descent latencies are observed only in the paired group even though both groups have a similar history of 10 haloperidol injections over 10 days. Results confirm the conditioned nature of the effect. The effect is seen with spiroperidol (0.25 mg/kg) or with bilateral microinjections of haloperidol (10 µg/0.5 µl/side) into the nucleus accumbens but not dorsal striatum. Using c-Fos immunohistochemistry, lower neuronal counts were observed in the nucleus accumbens core and ventral pallidum of paired versus unpaired or saline control rats following testing all groups with haloperidol after 15 conditioning sessions. D1-like and D3 dopamine receptors have been differentially implicated. IIL may take place when dopamine neuron firing is inhibited and may serve to reduce responsiveness to specific environmental stimuli.

FEATURED PLENARY SPEAKER

ANN GRAYBIEL, McGovern Institute for Brain Research at MIT

The Striatum and Decision-Making Based on Value

This lecture will review experiments done in non-human primates and rodents suggesting that a circuit interconnecting the medial prefrontal cortex and striatum is differentially engaged in cost-benefit decision-making. This circuit leads through the striosomal system of the striatum toward the dopamine-containing substantia-nigra. This work is leading to the view that the striosome-matrix architecture of the striatum represents an evolutionarily ancient system that likely is associated in humans with emotional states including anxiety. We hope to contribute to an understanding of how these striosomal microcircuits are integrated into forebrain networks modulating movement and emotion.

KEYNOTE LECTURE

KARL DEISSEROTH, Stanford University

Integrated brainwide structural and functional analysis

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PLENARY SYMPOSIA AND KEYNOTE SESSIONS

This talk will address the discovery and engineering of optical tools for precise, high-resolution investigation of intact biological systems, focusing on optogenetics (a technology for precisely controlling millisecond-scale activity patterns in specific cell types using microbial opsin genes and fiberoptic-based neural interfaces) and CLARITY (a technology for creating composites of biological molecules in tissue covalently linked to polymer hydrogels—typically acrylamide-related—allowing removal of unlinked tissue elements to create transparency and accessibility to macromolecular labels; the resulting new structure allows high-resolution optical access to structural and molecular detail within intact tissues without disassembly). The talk will focus on fundamental biochemical and structural discoveries regarding the operation of channelrhodopsins, strategies for targeting opsins and light to meet the constraints of the freely-behaving mammal, engineering of opsin genes spanning a range of optical and kinetic properties, development of high-speed behavioral and neural activity-readout tools compatible with real-time optogenetic control, recent advances in imaging of clarified tissue, and applications of these tools for circuit-based insight into motivated behaviors.

WEDNESDAY, JUNE 1

PLENARY SYMPOSIUM

Signal integration and plasticity

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

Non-ionotropic functions of NMDA receptors

In the classical view, the NMDA receptor requires ligand binding (glutamate and glycine) in conjunction with membrane depolarization to open its ion channel and signal. I will discuss a new signalling modality where the NMDA receptor can activate downstream effectors upon ligand binding but without its ion channel activity.

KATALIN TOTH, Université Laval

Presynaptic calcium dynamics and information transfer at hippocampal mossy fibres

Presynaptic terminals play a key role in the translation of presynaptic firing patterns to a neurotransmitter release profile. Unique features of the presynaptic terminal will determine for example whether repeated firing leads to increased (facilitation) or decreased (depression) neurotransmitter release. The process of signal translation is largely defined by presynaptic calcium dynamics. Neuronal calcium elevations are shaped by several key parameters, including the properties, density, and the spatial location of voltage-gated calcium channels (VGCCs). Short-term plasticity is synapse-specific, the same firing pattern is 'interpreted' differently by various neurons. What is the structural and functional reason of this diversity? How do the same building blocks endow terminals with synapse-specific features? We identified two distinct presynaptic mechanisms that are involved in short-term facilitation in hippocampal mossy fibers. The combination of multivesicular release and the recruitment of additional release sites act together to increase glutamate release during burst activity. This is supported by the compartmentalized

spatial profile of calcium elevations in boutons and helps to expand the dynamic range of mossy fibers information transfer. We also identified the specialized roles different types of VGCCs play in neurotransmitter release. N-type VGCCs permit fast glutamate release at a limited number of release sites and support short-term facilitation by enhancing multivesicular release through close association with active zones. In contrast, Ca_v2+ entry via P/Q-type VGCCs promotes the recruitment of additional release sites through activity-dependent homogenization of Ca_v2+ elevations. This is made possible by the strategic distribution of P/Q-type VGCCs further away from active zones. Altogether, our results highlight the specialized contribution of P/Q- and N-types VGCCs to neurotransmitter release.

KURT HAAS, University of British Columbia

In vivo imaging of brain circuit refinement

How neural circuits capable of complex information processing are formed remains a leading question in developmental neuroscience. Specifically, it remains unclear to what extent, and how, activity-dependent mechanisms interact with intrinsic genetic patterning. Functional circuit formation requires appropriate growth of each neuron's elaborate dendritic and axonal arbors and precise selection of hundreds to thousands of synaptic partners. We study these events using direct, rapid time-lapse imaging of neuronal growth, synaptogenesis and encoding in the awake developing brain, and post-imaging comprehensive quantification of large 4D datasets. We find that growth and connectivity of visual brain circuits arises through a program of experience-driven self-organization following rules that optimize encoding of the stimuli encountered. These rules act at the levels of growing dendritic processes and their synapses, but are influenced by tuning of neuronal firing. While shedding light on normal development, these mechanisms provide insight to the origins of neurodevelopmental disorders in which aberrant synaptic transmission drive abnormal growth and connectivity.

PLENARY SPEAKER

NELSON SPRUSTON, Janelia Research Campus

Neuronal Diversity and Complexity in the Hippocampus

The hippocampus plays a crucial role in learning and memory. In rodents, this function is manifested in both spatial and emotional memories, which are thought to be encoded in the dorsal and ventral aspects of the hippocampus, respectively. Although the cellular organization of the hippocampus has been extensively studied using traditional anatomical methods, the diversity of cell types that comprise the circuit can now be probed with modern molecular, genetic, anatomical, and physiological approaches. My lecture will outline our progress toward using these techniques to explore the cellular organization and function of the hippocampus. We have identified subclasses of the major cell types in the hippocampus and we are relating the key molecular, anatomical, and functional features of these cell types, with the long-term goal of understanding how the menagerie of cell types works together to produce sophisticated functions such as spatial maps and memories. About half of the talk will feature new, unpublished data.

PARALLEL SYMPOSIA

Please note: the individual abstracts of all symposium presentations listed below are available on the CAN Conference App, and on the CAN-ACN website.

MONDAY, MAY 30

SYMPOSIUM 1: *Voltage-gated ion-channels of the mammalian central nervous system*

Chair: **DEREK BOWIE**, McGill University

Overview:

Voltage-gated ion-channels (VGICs) are a family of signaling proteins expressed throughout the developing and adult mammalian brain that are critical for its normal function but also implicated in many disorders, from pain sensation and epilepsy to dysfunction of immune cells. The symposium on "Voltage-gated ion-channels of the mammalian CNS" brings together 4 speakers whose work is at the forefront of this field of study. Dr. Lyanne Schlichter will discuss the role of VGICs in the activation of microglia, the resident immune cells of the brain. Dr. Terry Snutch will present his latest results on voltage-gated calcium channels in epilepsy and migraine. Bowie lab graduate student Ryan Alexander will present data on a new role for TTX-resistant sodium channel in the cerebellum. Finally, Dr. Ray Turner will describe how T-type calcium channels form complexes with specific potassium channels to effect multiple forms of control over cell excitability and signal processing.

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

SYMPOSIUM 2: *Structural and functional features of neural connectivity and plasticity in emerging and mature networks*

Chair: **JEAN-CLAUDE BÉIQUÉ**, University of Ottawa

Sponsored by: **CENTRE DE RECHERCHE INSTITUT UNIVERSITAIRE EN SANTÉ MENTALE DE QUÉBEC**



Overview:

Specialized information processing in neural networks is critically dependent on the fine-scale organization of synaptic connectivity. This symposium will highlight recent advances on our understanding of how specific structural features of connectivity are acquired during key developmental periods and how they regulate processing properties in mature networks. Dr. Bamji will begin the session by presenting data on the molecular mechanisms underlying activity-mediated synapse formation and plasticity. Dr. Lefebvre will then describe how neurons use a large family of recognition molecules to discriminate self from non-self for proper coverage of their dendritic territory. Dr. Béïque will follow and describe how developing dendrites encode spatiotemporal features of synaptic inputs and how these mechanisms spatially regulate synaptic connectivity. Dr. Araya will close the session by discussing how the structural plasticity of dendritic spines influences their electrical properties and how this ultimately regulates the transmission, integration and storage of information in mature neurons.

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

PARALLEL SYMPOSIA

JEAN-CLAUDE BÉIQUÉ, Université de Montréal

Spatiotemporal feature detection and plasticity rules in emerging neural networks

ROBERTO ARAYA, University of Ottawa

Input transformation by dendritic spines of pyramidal neurons

SYMPOSIUM 3: *Circadian regulation and clock genes link neuronal physiology to behavior*

Chair: **VALÉRIE MONGRAIN**, Université de Montréal

Overview:

Circadian rhythm research, especially that concerning the central nervous system, shapes understanding of the intimate relationship between circadian oscillators, comprising clock genes, and neuronal physiology and functions. As such, the molecular clockwork has been increasingly linked to neuronal and behavioral plasticity that has been previously recognized to be associated with various types of brain functions and behaviors including learning and sleep. The symposium will feature new data obtained from research in flies and rodents regarding both the regulation and the role of the circadian timing system and of its molecular elements and will highlight the important contribution of the Canadian research community to the state of the knowledge in circadian rhythm research. The last two presentations of the symposium will also discuss the implication of these 'circadian' findings for social behavior and sleep regulation.

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 VERWAY, 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

SYMPOSIUM 4: *Low-level circuits for sophisticated sensorimotor control: lessons from four model systems*

Chair: **J. ANDREW PRUSZYNSKI**, Western University

Sponsored by: **ONTARIO BRAIN INSTITUTE**



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Overview:

It is obvious that robustly integrating sensory inputs is essential for maintaining perceptual stability. It is less obvious, and thus often forgotten, that robustly integrating sensory inputs is also essential for generating accurate motor commands. Recently, substantial progress has been made in determining the neuronal mechanisms that underlie sensory integration for motor control. This symposium will highlight work by four new faculty - studying different sensory modalities, motor effectors and model systems - all showing the striking role of peripheral and subcortical circuits in sophisticated motor behaviour. Michael Hendricks will show how subcellular signalling contributes to sensory modulation during nematode orienting. Kathy Nagel will explain how synaptic and circuit mechanisms promote broadband transmission of olfactory stimuli and how they may contribute to drosophila navigation in a natural landscape. Tuan Bui will describe how a class of dorsal spinal interneurons enables cutaneous control of hand grasping in mice. Andrew Pruszyński will show how first-order neurons in the human skin signal edge-orientation and how these signals could support object manipulation.

Speakers:

ANDREW PRUSZYNSKI, Western University

Geometric feature extraction in the human tactile periphery

MICHAEL HENDRICKS, McGill University

Sensorimotor integration at the subcellular level

KATHERINE 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

SYMPOSIUM 5: *Mechanisms of Plasticity*

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

Overview:

From the simplest invertebrate species to man, mechanisms contributing towards neuronal plasticity are crucially involved in development, enable behavioural adaptations and form the basis for human perception, reasoning, learning and memory. The proposed symposium brings together Canadian experts whose research is focused on elucidating mechanisms responsible for the establishment and maintenance of plasticity. Topics covered will include an overview of studies exploring the signalling requirements for developmental plasticity in zebrafish, the importance of translational control as a determinant of bi-directional plasticity in *Aplysia*, the use of reverse genetics to elucidate the molecular underpinnings that regulate the form and function of dendritic spines in mice and the mechanisms that guide higher-order plasticity in well-defined circuits underlying odor preference in rats. Note: Session co-chaired by Drs Michael Jackson and Tabrez Siddiqui. Dr Siddiqui is entered as a speaker but will not be presenting.

Speakers:

WAYNE 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

ZHENGPIG JIA, University of Toronto

Genetic analysis of synaptic and spine plasticity

Qi Yuan, Memorial University

Shaping odor coding neuronal ensembles by reward and norepinephrine

SYMPOSIUM 6: *Neuroimmunology: A key interface in neurophysiology, neurodegeneration and repair*

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

Overview:

The immune system plays a pivotal role in maintaining homeostasis in the brain and spinal cord. In addition, immune cells are increasingly found to be involved in the pathogenesis, progression, and/or resolution of diseases and injuries of the central nervous system (CNS) and peripheral nervous system. This symposium will highlight research showing that immune cells such as microglia, T cells and macrophages, and their regulators [Cystatin C (Ousman), chondroitin sulfate proteoglycan (Yong) and ion channels (Schlichter)] promote not only injury but also repair of the CNS during diseases such as Alzheimer's disease (Rivest), multiple sclerosis (Ousman, Yong) and stroke (Schlichter).

Speakers:

SHALINA OUSMAN, Hotchkiss Brain Institute, 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, Université Laval

Neuroprotective properties of the innate immune cells.

V. WEE YONG, University of Calgary

Harnessing the benefits of inflammation for repair of the CNS.

PARALLEL SYMPOSIA

SYMPOSIUM 7: *Novel Experimental Models of Epilepsy*

Chair: **JESPER SJÖSTRÖM**, McGill University

Sponsored by: **CENTRE DE RECHERCHE INSTITUT UNIVERSITAIRE EN SANTÉ MENTALE DE QUÉBEC**



Overview:

Approximately 60 million people worldwide suffer from epilepsy, a devastating neurological disorder characterised by recurrent seizures. Despite major recent advances, about 30% of cases cannot be controlled with current therapies, and the key steps by which the healthy brain undergoes epileptogenesis remain unclear. This symposium highlights novel findings in epilepsy research obtained by advances in experimental animal models. These models rely on a range of contrasting approaches, from trauma and ischemia to optogenetics, which enables researchers to focus on different factors that contribute to epileptogenesis.

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, Université Laval

Age dependency of trauma induced epileptogenesis

JESPER SJÖSTRÖM, McGill University

Optogenetic kindling as a model of epilepsy

SYMPOSIUM 8: *Circuit and systems basis of emotion and emotional learning*

Co-chairs: **SHEENA JOSSELYN**, The Hospital for Sick Children and **STEPHANIE BORGLAND**, University of Calgary

Sponsored by: **ONTARIO BRAIN INSTITUTE**



Overview:

Learning about the environmental cues that predict biologically significant events plays an essential role in survival. Indeed, these emotional memories [either negative (e.g., fear conditioning) or positive (e.g., palatable food, illicit drug or alcohol reward)] may attain a privileged status in memory. Perturbation of emotional learning may underlie pathological conditions including anxiety disorders and overeating. Therefore a greater understanding of the mechanisms mediating emotional conditioning may inform the development of more effective treatments for these disorders.

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, The Hospital for Sick Children

Winner-take-all neuronal competition for fear memory encoding

SYMPOSIUM 9: *Shedding light on the function of cholinergic midbrain neurons*

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

Sponsored by: **TUCKER-DAVIS TECHNOLOGIES**



Overview:

Neurons of the midbrain cholinergic cell groups Ch5 and Ch6 project to wide-spread areas in the brain and are part of the ascending reticular activating system. The specific function of these neurons have been elusive, due to the fact that bilateral lesions of these neurons are lethal, unless they are performed in a way that allows the brain to compensate. Not surprisingly, functional consequences are then minimal. Transient activation and inhibition of these neurons using optogenetics or DREADDS allow for the first time to probe for their specific function. S. Steidl will present data of cholinergic versus glutamatergic projections to the ventral tegmental area and their crucial role in reward and addiction. G. Felsen reports of the effect of cholinergic projections to the superior colliculus and its importance for selecting orienting responses. E Azzopardi will revisit the long-standing dogma that these neurons mediate sensorimotor gating through descending projections to the brainstem, and C. Van Dort will report about the role of the same cholinergic projections to the reticular formation in inducing and maintaining REM sleep in mice.

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

SYMPOSIUM 10: *Nociceptive Circuits: From Molecules to Behaviour*

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

Overview:

Understanding the specific anatomical and functional wiring of sensory circuits transmitting touch and pain information is a fundamental challenge in neuroscience. Recent transgenic mouse technology combined with advancements in optogenetics/pharmacogenetics, functional imaging, anatomical and analytical techniques now provide an unprecedented detailed and dynamic view of complex neural networks. In this symposium, we will discuss how we have combined such techniques to understand the workings of the circuitry of the spinal cord involved in nociception (pain). Attempting to bridge the gap between our understanding of the cellular connectivity, network activity and pain perception, the symposium will focus on 4 major questions: 1) What are the molecular pathways underlying the proper development of nociceptive somatotopy? (AK) 2) What do we learn from the optogenetic and chemogenetic control of pain pathways? (PS) 3) How do interneurons in touch-processing circuits gate pain? (RSN) 4) How spinal networks process information and how that processing impacts pain perception? (SP)

Speakers:

ARTUR KANIA, IRCM

A genetic and functional analysis of nociceptive somatotopy

PHILIPPE 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, The Hospital for Sick Children

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

PARALLEL SYMPOSIA

SYMPOSIUM 11: *Mechanisms governing cerebrovascular structure and function in health and disease*

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

Overview:

The cerebrovasculature is a critical component of a properly functioning nervous system. All aspects of the cerebrovasculature, from structural elements like the blood-brain barrier, to functional coupling of blood flow with neural activity, are tightly regulated and controlled in the healthy brain. In small and large vessel disease states such as ischemia, diabetes, vascular dementia or Alzheimer's disease, the mechanisms that govern cerebrovascular structure and function can go awry, which has profound implications for the maintenance of, or recovery of sensory, motor and cognitive abilities. The proposed symposium brings together 4 Canadian scientists actively exploring these fundamental issues. First, Dr. Grant Gordon (Calgary) will discuss his latest research imaging the cellular and molecular mechanisms of tonic astrocytic control of cerebral blood flow. This will be followed by Dr. Edith Hamel (McGill) who will describe how the coupling between sensory-evoked neuronal activity and cerebrovascular responses is affected by acute changes in brain states and by chronic loss of cholinergic neuromodulation. Third, Dr. Craig Brown (Victoria) will reveal with longitudinal imaging approaches, how vascular networks in the healthy and disease-affected brain modify patterns of blood flow or structure to deal with micro-vessel obstructions. And finally, Dr. Andy Shih (MUSC, USA) will describe how matrix-metalloproteinase secretion from pericytes regulate blood brain barrier opening during ischemia.

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

SYMPOSIUM 12: *Temporal sequences in brain and memory*

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

Sponsored by: **CENTRE DE RECHERCHE INSTITUT UNIVERSITAIRE EN SANTÉ MENTALE DE QUÉBEC**



Overview:

The ability to temporally organize the sequence of events is required for extracting meaning from experiences and guiding adaptive behaviour in the future. Past investigations highlighted the role of the hippocampus in remembering the flow of events in distinct experiences and the role of prefrontal cortex in using the memory to organize behaviour in time. This symposium reviews recent studies in animals and humans that examined how neurons in these regions represent the temporal sequence of events and how these regions work in concert with other regions to connect temporally disparate events. These findings provide a new insight into how the brain processes temporal sequences, an evolutionary foundation for many cognitive phenomena, including episodic memory, working memory, and goal-directed behavior. This, along with disruptions of temporal sequence processing in various mental disorders, should make this symposium attractive and informative for both basic and clinical researchers across many research topics.

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

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- E Homeostatic and Neuroendocrine Systems**
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- G Novel Methods and Technology Development**
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Wang, T	1-C-69			York, E	3-B-41	Zuo, K	1-C-88

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A - Development

1-A-1 *Gene expression profiling in the prenatal brain of Cyclooxygenase-1 and -2 knockout mice - a model system for Autism Spectrum Disorders*

Eizaaz Ahmad¹, Ravneet Bhogal¹, Hongyan Li¹, Dorota Crawford¹

¹York University

1-A-2 *Rescue of neuroanatomical impairments following Mecp2 reactivation in adult mice*

Rylan Allemang-Grand¹, Leigh Spencer-Noakes², Jacob Ellegood², Brian Nieman², Jason Lerch²

¹University of Toronto, ²Hospital for Sick Children

1-A-3 *Examining the lineage potential of a novel population of OCT4 expressing primitive neural stem cells in the postnatal brain*

Ashkan Azimi¹, Cindi Morshead¹

¹University of Toronto

1-A-4 *A Neurodevelopmental and Behavioural Study of Mice Following In Utero and Early Postnatal Exposure to Imidacloprid, a Neonicotinoid Pesticide*

Andrew Burke¹, David Hampson¹

¹University of Toronto

1-A-5 *Embryonic Sim1 expression establishes a patterned V3 neurogenesis profile and subsequent functional separation of V3 subpopulations*

Dylan Deska-Gauthier¹, Jeremy Chopek¹, Ying Zhang¹

¹Dalhousie University

1-A-6 *Early Adolescent Adversity and its Long-Term Effects on Long Evans Rats Aggression-Related Behaviours and Serotonin Fibre Density*

Prateek Dhamija¹, Cindy Tao¹, Linda Booij², Janet Menard¹

¹Queen's University, ²Concordia

1-A-7 *Reduced clustered protocadherin diversity alters retinal circuitry*

Samantha Esteves¹, Julie Lefebvre¹

¹University of Toronto

1-A-8 *Neural network disturbances in children treated for brain tumors*

Samantha Gauvreau¹, Colleen Dockstader¹, Diana Harasym², Janine Piscione³, Suzanne Laughlin³, Brian Timmons², Ute Bartels³, Jovanka Skocic³, Cynthia de Medeiros³, Katrin Scheinemann², Eric Bouffet³, Sam Doesburg⁴, Donald Mabbott³

¹University of Toronto, ²McMaster University, ³The Hospital for Sick Children, ⁴Simon Fraser University

1-A-9 *The Effects of Gestational and Lactational Bisphenol A Exposure on Rat Pup Morphological Measurements and on Adrenal Gland Glucocorticoid Receptor Gene Expression*

Julia Hajjar¹, Anne Konkle¹, Karen Phillips¹

¹University of Ottawa

1-A-10 *Investigating the role of hnRNP-M in RNA localization during neurogenesis.*

Dendra Hillier¹, Anastasia Smart¹, John Vessey¹

¹University of Guelph

1-A-11 *Development of brain networks after neurodevelopmental insult: the impact of gestational exposure to methylazoxymethanol acetate (MAM)*

Kally O'Reilly¹, Maria Perica¹, André Fenton¹

¹New York University

B – Neural Excitability, Synapses, and Glia: Cellular Mechanisms

1-B-12 *Using optogenetics to probe neuronal excitability in dissociated dorsal root ganglion neurons*

Dhekra Al-Basha¹, Steve Prescott²

¹The University of Toronto, ²The Hospital for Sick Children

1-B-13 *Detecting Gangliosides Expression Profile Changes in Microglial Activation*

Mona Alshaikh¹, Gilles Lajoie¹, Shawn Whitehead¹

¹University of Western Ontario

1-B-14 *Still unidentified: The channel driving spreading depolarization during ischemia*

Peter Gagolewicz¹, Kaitlyn Tresidder¹, David Andrew¹

¹Queen's University

1-B-15 *Effects of Pannexin Knockout on Neocortical Neurons in Mice*

Mark Aquilino¹, Lihua Wang¹, Berj Bardakjian², Peter Carlen¹

¹Toronto Western Hospital, ²University of Toronto

1-B-16 *Dynamic interaction between Cav3 channels and calmodulin triggers a second messenger cascade of CaMKII and CREB activation*

Hadhimulya Asmara¹, Ileana Micu¹, Arsalan Rizwan¹, Giriraj Sahu¹, Brett Simms¹, Fang Zhang¹, Peter Stys¹, Gerald Zamponi¹, Ray Turner¹

¹University of Calgary

1-B-17 *Histone acetylation by VPA is associated with melatonin receptor upregulation*

Sarra Bahna¹, Lennard Niles¹

¹McMaster University

1-B-18 *Molecular characterization and modulation of electrical synapses between neuroendocrine cells*

Christopher Beekharry¹, Neil Magoski¹

¹Queen's University

1-B-19 *The cellular and molecular mechanisms underlying the role of LIMK1 in synaptic plasticity*

Youssef Ben Zablah¹, Zheng Ping Jia¹

¹Hospital for sick children

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1-B-20 *Identifying protein microdomains in complex three-dimensional astrocytes in situ*

Kristin Milloy¹, Matt Joel¹, Neil Rasiah², Travis Moore¹, Adrienne Benediktsson¹

¹Mount Royal University, ²University of Calgary

1-B-21 *Panx1 modulates glutamatergic transmission by regulating the synaptic ananamide concentration*

Jennifer Bialecki¹, Nicholas Weilingner¹, Matthew Hill¹, Roger Thompson¹

¹Hotchkiss Brain Institute

1-B-22 *Rescuing NMDA receptor hypofunction in a mouse model of schizophrenia: Neurophysiological consequences in prefrontal cortex*

Mary Binko¹, Catharine Mielnik¹, Amy Ramsey¹, Evelyn Lambe¹

¹University of Toronto

1-B-23 *The role of cGMP in regulating postsynaptic structure underlying bidirectional plasticity*

Jelena Borovac¹, Thomas T Luyben¹, Kenichi Okamoto¹

¹University of Toronto

1-B-24 *Understanding the structural basis of NMDA receptor activation*

Bryan Daniels¹, Maria Musgaard², Mark Arousseau¹, Philip Biggin², Derek Bowie¹

¹McGill University, ²Oxford University

1-B-25 *AMPA and kainate receptor auxiliary proteins relieve polyamine block by enhancing polyamine permeation*

Patricia Brown¹, Hugo McGuire¹, Derek Bowie¹

¹McGill University

1-B-26 *The role of Neuroligin 2 and inhibitory transmission in the function of thalamic circuitry during epilepsy*

Feng Cao¹, Jia Liu¹, Zhengping Jia¹

¹The Hospital for Sick Children

1-B-27 *Ca²⁺-Dependent KCC2 Dephosphorylation as a Mechanism for Inhibitory STDP*

Annik Carson¹, Vivek Mahadevan¹, Jessica Pressey¹, Joseph Raimondo², Melanie Woodin¹, Blake Richards¹

¹University of Toronto, ²University of Cape Town

1-B-28 *Synaptopodin is Necessary for Homeostatic Synaptic Scaling at CA3-CA1 Synapses*

Melanie Chan¹, David Verbich¹, Philip K.Y. Chang¹, R. Anne McKinney¹

¹McGill University

1-B-29 *Using Local Field Potential (LFP) modeling to understand inhibitory cellular contributions to network rhythms in hippocampus*

Alexandra Chatzikalymniou¹, Katie Ferguson², Frances Skinner³

¹Krembil Research Institute, University Health Network, Toronto, ON; Department of Physiology, Univer, ²Department of Neuroscience, Yale School of Medicine, New Haven CT; Krembil Research Institute, Unive, ³Krembil Research Institute, University Health Ne

1-B-30 *Cation channel regulation by reactive oxygen species in Aplysia neuroendocrine cells*

Alamjeet Chauhan¹, Neil Magoski¹

¹Queen's University

1-B-31 *Electron Microscopy Analysis of Synaptic Vesicle Tethering by Calcium Channels at Presynaptic Active Zones*

Robert Chen¹, Arup Nath¹, Elise Stanley¹

¹Krembil Research Institute

1-B-32 *Changes in cation-chloride cotransporter complexes with NMDA receptors following brain trauma*

Jonah Chevrier¹, Vivek Mahadevan², Christophe Pellegrino³, Melanie Woodin¹

¹University of Toronto, ²National Institutes of Health, ³Institut de Neurobiologie de la Méditerranée

1-B-33 *Aberrant Chloride Homeostasis and Inhibitory Synaptic Transmission in Huntington's Disease*

Zahra Dargaei¹, Melanie Woodin¹

¹University of Toronto

1-B-34 *cGMP-dependent protein kinase regulates synaptic growth and function at the Drosophila larval neuromuscular junction*

Jeffrey Dason¹, Aaron Allen¹, Marla Sokolowski¹

¹University of Toronto

1-B-35 *Activation of AMPA receptor-auxiliary protein complexes is coordinated by distinct structural pathways*

George Dawe¹, Maria Musgaard², Mark Arousseau¹, Philip Biggin², Derek Bowie¹

¹McGill University, ²University of Oxford

1-B-36 *Organization of paranode axoglial domain requires the netrin-1 receptor UNC5B*

Omar de Faria Jr.¹, Mihai Mocanu¹, Roland Pilgram¹, Jenea Bin¹, Diane Nakamura¹, Amir Shmuel¹, Abbas Sadikot¹, Timothy Kennedy¹

¹Montreal Neurological Institute/McGill University

1-B-37 *The Effects of Retinoic Acid on Voltage-Gated Calcium Channels in CNS Neurons*

Eric de Hoog¹, Mark Lukewich¹, Gaynor Spencer¹

¹Brock University

1-B-38 *Circadian and homeostatic remodeling of excitatory synapses*

Graham Diering¹, Raja Nirujogi¹, Richard Roth¹, Paul Worley¹, Akhilesh Pandey¹, Richard Huganir¹

¹Johns Hopkins University

1-B-39 *Enhancement of neuronal excitability as a trigger for memory consolidation in the mollusc Lymnaea stagnalis*

Nancy Dong¹, Zhong-Ping Feng¹

¹University of Toronto

1-B-40 Finite element modelling of Calcium dynamics in dendritic spines

Nicolas Doyon¹, Frank Boahen¹

¹Laval University

1-B-41 Cloning of the chick CaV2.1 voltage gated calcium channel
Brittany Elliott¹, Qi Li¹, Elise Stanley¹

¹Krembil Research Institute

1-B-42 Cholinergic neurotransmission in the substantia nigra pars compacta modulates dopaminergic neuronal activity

Jasem Estakhr¹, Raad Nashmi¹

¹University of Victoria

1-B-43 Determinants of the heterogeneous synaptic function at the mature calyx of Held synapse

Adam Fekete¹, Lu-Yang Wang¹

¹The Hospital for Sick Children

1-B-44 The Involvement of Satellite Glial Cells in Different Models of Tooth Pulp Inflammatory Pain in Rats

Helena Filippini¹, Paulo Scalzilli², Kesiane Costa³, Raquel Freitas³, Graziella Molska¹, Limor Avivi-Arber¹, Barry Sessle¹, Maria Campos³

¹University of Toronto, ²Pontificia Universidade Catolica do Rio Grande do Sul -PUCRS, ³Pontificia Universidade Catolica do Rio Grande do Sul - PUCRS

1-B-45 The Mis trafficking of Christianson Syndrome-Linked Mutation NHE6ΔES Impairs the Structure and Viability of Hippocampal Pyramidal Neurons

Andy Gao¹, Sara Kasem¹, Alina Ilie¹, John Orlowski¹, R. Anne McKinney¹

¹McGill University

1-B-46 Ionotropic and metabotropic kainate receptor signalling regulates KCC2 and synaptic inhibition

Danielle Garand¹, Melanie Woodin²

¹University of Toronto, ²University of Toronto

1-B-47 The Influence of Postsynaptic Structures on Missing Quanta at the Drosophila Neuromuscular Junction

Christine Nguyen¹, Bryan Stewart¹

¹University of Toronto

1-B-48 The transcription of Neuroligin-1 is regulated by core clock transcription factors

Emma O'Callaghan¹, Erika Bélanger-Nelson¹, Nicolas Cermakian², Jean Martin Beaulieu³, Valerie Mongrain¹

¹Centre d'Études Avancées en Médecine du Sommeil, Hôpital du Sacré-Coeur de Montréal, Université de M, ²Douglas Mental Health University Institute, McGill University, Montreal, ³Centre de Recherche de l'Institut Universitaire en Santé Mentale de Québec an

C- Disorders of the Nervous System

1-C-49 Insulin stimulates retinal ganglion cell dendrite regeneration through activation of the mammalian target of rapamycin complex 1 (mTORC1) and complex 2 (mTORC2).

Jessica Agostinone¹, Adriana Di Polo¹

¹University of Montreal Hospital Research Center

1-C-50 Neural synchronizations involved in emotion-detection in psychiatry: Exploration by depth electrodes in bipolar patients

Golnoush Alamian¹, Etienne Combrisson², Dmitrii Altukhov³, Daniel Kaping⁵, Nir Lipsman⁴, Andres Lozano⁴, Thilo Womelsdorf⁵, Karim Jerbi¹

¹Université de Montréal, ²Université Claude Bernard Lyon 1, ³Moscow State Pedagogical University, ⁴University of Toronto, ⁵York University

1-C-52 Title: The Effects of Childhood Maltreatment on Epigenetic Regulation of the Oxytocinergic System in Male Suicide Completers

Daniel Almeida¹, Laura Fiori¹, Naguib Mechawar¹, Gustavo Turecki¹

¹McGill

1-C-53 Cell swelling during simulated ischemia in neocortical brain slices

Hala El-Kerdawy¹, Jessica Carr¹, David Andrew¹

¹Queen's University

1-C-54 Effects of metformin and enriched rehabilitation on recovery following neonatal hypoxia-ischemia

Sabina Antonescu¹, Jessica Livingston-Thomas¹, Matthew Jeffers¹, Cindi Morshead², Dale Corbett¹

¹University of Ottawa, ²University of Toronto

1-C-55 Advances in Gene Therapy Strategies to Treat Fragile X Syndrome

Jason Arseneault¹, Yosuke Niibori¹, Shervin Gholizadeh¹, David Hampson¹

¹University of Toronto

1-C-56 Inhibition of alpha5GABA-A receptors improves post-traumatic memory deficits

Sinziana Avramescu¹, Heping Sheng¹, Dian-Shi Wang¹, Beverley Orser¹

¹University of Toronto

1-C-57 Sodium nitroprusside reduces psychotic-like behaviour in the ketamine animal model of schizophrenia

Priscila Balista¹, Ludmyla Kandravicius², Jose Peixoto-Santos², Serdar Dursun¹, Glen Baker¹, Jaime Hallak²

¹University of Alberta, ²University of Sao Paulo

1-C-58 Theta burst stimulation of the substantia nigra pars reticulata in Parkinson's disease patients

Diellor Basha¹, Suneil Kalia², Mojgan Hodaie², Andres Lozano², William Hutchison¹

¹University of Toronto, ²Toronto Western Hospital

1-C-59 Pharmacological Chaperones of the Dopamine Transporter Rescue Dopamine Transporter Deficiency Syndrome Mutations

Pieter Beerepoot¹, Vincent Lam¹, Ali Salahpour¹

¹University of Toronto

1-C-60 AMP-activated protein kinase, a conserved energy biosensor, signals early neuronal pathogenesis in glaucoma through inhibition of the mammalian target of rapamycin.

Nicolas Belforte¹, Jorge Cueva Vargas¹, Adriana Di Polo¹

¹University of Montreal Hospital Research Centre (CRCHUM)

1-C-61 Microglia are recruited at the interface of infiltrating leukocytes and the astroglial scar after spinal cord injury.

Victor Bellver¹, Martine Lessard¹, Nicolas Vallières¹, Alexandre Paré¹, Steve Lacroix¹

¹Centre de recherche du Centre hospitalier universitaire (CHU) de Québec - CHUL

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1-C-62 *Brain-derived progenitor cells - potential for therapeutic neurotrophic factor delivery*

Simon Benoit¹, Matthew Hebb¹, Susanne Schmid¹, Hu Xu¹

¹University of Western Ontario

1-C-63 *Modeling the cognitive impairments of schizophrenia: acute amphetamine and PCP are most suited for representing impulsivity, compulsivity, and avolition using 5-CSRTT*

Jayant Bhandari¹, Ritesh Daya¹, Ashley Bernardo¹, Roohie Sharma¹, Sharnpreet Kooner¹, Aaron Edward¹, Rodney Johnson¹, Ram Mishra¹

¹McMaster University

1-C-64 *Phase coherence of inhibition with seizure states in a rodent model of neocortical epilepsy*

Vanessa Breton¹, Berj Bardakjian², Peter Carlen¹

¹Krembil Discovery Tower, Toronto Western Hospital, ²University of Toronto

1-C-65 *Quantitative EEG in the Evaluation of Patients with Post-Concussion Syndrome and Chronic Pain Following a Motor Vehicle Accident*

Derrick Matthew Buchanan¹, Tomas Ros², Richard Nahas¹

¹The Seekers Centre, ²University of Geneva

1-C-66 *Blocking spinal P2X7Rs attenuates morphine withdrawal*

Nicole Burma¹, Heather Leduc-Pessah¹, Zoe Cairncross¹, Tuan Trang¹

¹University of Calgary

1-C-68 *Age-dependent increase in membrane lipid deregulation observed in brain regions vulnerable to neurodegenerative diseases*

Sarah Caughlin¹, David Cechetto¹, Shawn Whitehead¹

¹The University of Western Ontario

1-C-69 *An optogenetic kindling model of neocortical epilepsy*

Elvis Cela¹, Andrew Chung², Taiji Wang³, Per Jesper Sjöström³

¹Integrated Program in Neuroscience, McGill University, ²McGill University,

³The Research Institute of the McGill University Health Centre

1-C-70 *The influence of beta-amyloid on intrinsic brain network adaptation in Parkinson's disease*

Leigh Christopher¹, Marion Criaud¹, Aaron Kucyi², Yuko Koshimori¹, Pablo Rusjan¹, Nancy Lobaugh¹, Anthony Lang¹, Sylvain Houle¹, Antonio Strafella¹

¹University of Toronto, ²Harvard University

1-C-71 *On the origins of autism: The Quantitative Threshold Exposure hypothesis*

Sarah Crawford¹

¹Southern Connecticut State University

1-C-72 *Heme oxygenase-1 modulates microRNA expression in cultured astroglia: Implications for chronic brain disorders*

Marisa Cressatti¹, Wei Song¹, Shih-Hsiung Lin¹, Hillel Zukor¹, Eugenia Wang², Hyman Schipper¹

¹McGill University, ²Advanced Genomic Technology

1-C-73 *Innate deficits in dendritic outgrowth in Parkinson's patient-derived neurons are rescued by NRF2-mediate activation of the anti-oxidant response*

Chris Czanietki¹, Arianne Cohen¹, Juliane Heide¹, Scott Ryan¹

¹University of Guelph

1-C-74 *Intra-VTA leptin decreases the augmentation of heroin seeking induced by chronic food restriction.*

Tracey D'Cunha¹, Melissa Russo¹, Soraya Le Noble¹, Damaris Rizzo¹, Emilie Daoud¹, Uri Shalev¹

¹Concordia University

1-C-75 *A new perspective for the treatment of schizophrenia: positive allosterism of the dopamine D2 receptor*

Ritesh Daya¹, Jayant Bhandari¹, Sharnpreet Kooner¹, Hetashree Joshi¹, Christopher Rowley¹, Nick Bock¹, Ram Mishra¹

¹McMaster University

1-C-76 *Hippocampal subfield volume loss in children and adolescent survivors of pediatric brain tumors*

Alexandra Decker¹, Kamila Szulc², Jovanka Skocic², Cynthia de Medeiros², Lily Riggs², Eric Bouffet³, Colleen Dockstader¹, Suzanne Laughlin², Uri Tabori², Donald Mabbott¹

¹The Hospital for Sick Children and the University of Toronto, ²The Hospital for Sick Children, ³The Hospital for Sick Children

1-C-77 *Eye movement deficits in a zebrafish model of Parkinson's disease*

Adib Dehghany¹, Dylan Zamani¹, Rafael Godoy¹, Marc Ekker¹, Tuan Bui¹

¹University of Ottawa

1-C-78 *Effects of an Acute Bout of Soccer Heading on Neurovascular Coupling*

Jillian Dierijck¹, Jonathan Smirl¹, Alexander Wright¹, Colin Wallace¹, Kelsey Bryk¹, Mike Kennefick¹, Kevin Bouliane¹, Jonathan McNulty¹, Maggie McLeod¹, Jason Purpur¹, Paul van Donkelaar¹

¹University of British Columbia, Okanagan Campus

1-C-79 *IVIg immunotherapy combined with MRI-guided focused ultrasound enhances neuronal plasticity in an amyloidosis mouse model*

Sonam Dubey¹, Alison Burgess¹, JoAnne McLaurin¹, Donald Branch², Kullervo Hynnen¹, Isabelle Aubert¹

¹Sunnybrook Research Institute, ²University of Toronto

1-C-80 *The role of RGMa/Neogenin Signalling in Multiple Sclerosis*

Ahmad Ellabban¹, Nardos Tassew¹, Philippe Monnier¹, Christopher Barden²

¹University of Toronto / Toronto Western Hospital, ²Toronto Western Hospital

1-C-81 *Significantly increased total brain volume and other neuroanatomical differences in a mouse model of Nance Horan Syndrome (NHS).*

Jacob Ellegood¹, Ryan Yuen¹, Amie Creighton¹, Leigh Spencer Noakes¹, Brian Nieman¹, Lauryl Nutter¹, Stephen Scherer¹, Jason Lerch¹

¹The Hospital for Sick Children

1-C-82 Hypoxia resulting from repeated seizures augments memory impairment and AD-like pathology in the 5XFAD mouse.

Jordan Farrell¹, Joseph Sparling¹, Kwaku Addo-Osofo¹, Peter Stys¹, G. Campbell Teskey¹

¹Hotchkiss Brain Institute

1-C-83 Muscarinic acetylcholine receptor type-1 antagonists modulate post-translational modifications of Ca²⁺/calmodulin-dependent protein kinase kinase beta in adult sensory neurons

Paul Fernyhough¹, Mohammad Sabbir²

¹University of Manitoba, ²St Boniface Hospital Research Centre

1-C-84 Age-Related Changes in Learning and Memory in the Hebb-Williams Maze in the 3xTG Mouse Model of Alzheimer's Disease

Emre Fertan¹, Nicole Woodland¹, Richard Brown¹

¹Dalhousie University

1-C-85 The effect of obesity on the vascular and glial response to endothelin-1 induced focal ischemic stroke.

Kathleen Fifield¹, Jacqueline Vanderluit¹

¹Memorial University of Newfoundland

1-C-86 Repeated Seizures Alter the Functional Integration of Adult-Born Neurons into Behavioral Circuits

Alena Kalinina¹, Joshua Carr¹, Holly Turner¹, Dana Kousmanidis¹, Hugo Lehmann¹, Neil Fournier¹

¹Trent University

1-C-87 Microelectrode Recordings of the Internal Segment of the Globus Pallidus in Cerebral Palsy

Majid Gasim¹, Luis Fernando Botero Posada², Adriana Lucia Lopez Rios², William Hutchison¹

¹University of Toronto, ²Hospital Universitario San Vicente de Paul

1-C-88 Role of altered palmitoylation in mis-trafficking of NMDA receptors in Huntington disease mouse model

Rujun Kang¹, Liang Wang¹, Shaun Sanders¹, Matthew Parsons², Kurt Zuo¹, Michael Hayden¹, Lynn Raymond¹

¹Univ of BC, ²Memorial University of Newfoundland

1-C-89 Detecting covert levels of awareness using a hierarchy of cognitive and different neuroimaging modalities in patients with disorders of consciousness.

Laura Gonzalez-Lara¹, Raechelle Gibson¹, Steve Beukema¹, Lorina Naci¹, Davinia Fernández-Espejo², Damian Cruse², Adrian Owen¹

¹Western University, ²University of Birmingham

1-C-90 Behavior as a signature of neuroimmunological interactions

Katya Gris¹, Jean-Philippe Coutu², Denis Gris²

¹Bishops University, ²University of Sherbrooke

1-C-91 Tardive dyskinesia induced by prolonged antipsychotic treatments in a non-human primate model is associated with Akt/GSK-3 β kinase activities

Giovanni Hernandez¹, Souha Mahmoudi¹, Michel Cyr², Pierre Blanchet¹, Daniel Lévesque¹

¹Université de Montréal, ²Université du Québec à Trois-Rivières

1-C-92 The effect of Dopaminergic therapy on Stimulus-response learning and decision-making in Parkinson's disease using 3T MRI

Nole Hiebert¹, Adrian Owen¹, Ken Seergobin¹, Penny MacDonald¹

¹University of Western Ontario

1-C-93 Prevalence of incidental findings in a multi-diagnosis psychosis, addiction and infection population in Vancouver's Downtown Eastside

Melissa Woodward¹, Alexandra Vertinsky², Manraj Heran², Jason Chew², Allen Thornton³, Kristina Gicas³, Heather Baitz³, Chantelle Giesbrecht³, Nena Wang³, Tiffany O'Connor³, Kristina Walclawik³, Alexander Rauscher¹, G MacEwan¹, Fidel Vila-Rodriguez¹, Olga

¹University of British Columbia, ²Vancouver General Hospital, ³Simon Fraser University

1-C-94 ERP abnormality induced by cholinergic deficiency in rats: a potential biomarker for Alzheimer's disease

Bardia Nourizabari¹, Susmita Sarkar¹, Stephanie Tanninen¹, Kaori Takehara-Nishiuchi¹

¹University of Toronto

1-C-95 A three-dimensional map of hindlimb movements evoked by intraspinal microstimulation in the lumbar spinal cord in rats

Randolph Nudo¹, Jordan Borrell², Shawn Frost¹

¹University of Kansas Medical Center, ²University of Kansas

D – Sensory and Motor Systems

1-D-96 Relative contributions of perception and prediction to hand localization in visuomotor adaptation

Bernard 't Hart¹, Denise Henriques¹

¹York University

1-D-97 Modulation of visual-proprioceptive integration weights during reach planning due to stochastic reference frame transformations

Parisa Abedi Khoozani¹, Gunnar Blohm¹

¹Queen's University

1-D-98 Role of muscle spindle feedback in the generation of the swing movement during walking in mice

William Mayer¹, Turgay Akay¹

¹Dalhousie University

1-D-99 Investigation of the Relationship between Chronic Stress, Hearing Sensitivity and Noise-Induced Hearing Loss using a Rat Model

Anna Tyker¹, Ashley Schormans¹, Julia Abitbol¹, Marei Typlt¹, Brian Allman¹

¹Western University

1-D-100 Cortical Control of Olfactory Information Processing: The Role of the Anterior Olfactory Nucleus and Ventral Hippocampus in Vivo

Afif Aqrabawi¹, Caleb Browne¹, Junchul Kim¹

¹University of Toronto

1-D-101 Concurrent reach and tracking adaptations of static and moving targets

Maria Ayala¹, Priyanka Sharma¹, Denise Henriques¹

¹York University

1-D-102 Characterisation of spinofugal nociceptive neurons via new genetic tools

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Farin B. Bourojeni¹, Artur Kania¹

¹McGill University

1-D-103 *Transsaccadic integration of spatial frequency information in an fMRI paradigm*

Bianca Baltaretu¹, Benjamin Dunkley², J. Douglas Crawford¹

¹York University, ²The Hospital for Sick Children

1-D-104 *Colour Modulates Inhibitory Control*

Shawn Blizzard¹, Adriela Fierro Rojas², Mazyar Fallah¹

¹York University, ²Benemérita Universidad Autónoma de Puebla

1-D-105 *Assessing the Effects of Deafness on the Neuroanatomical Projections to the Second Auditory Cortex (A2) of the Cat*

Blake Butler¹, Stephen Lomber¹

¹University of Western Ontario

1-D-106 *Effector-specific cortical mechanisms for memory-guided reaches and saccades: progression from target memory through motor planning and execution*

David Cappadocia¹, Simona Monaco², Ying Chen³, J. Douglas Crawford¹

¹York University, ²University of Trento, ³Queen's University

1-D-107 *Changing the form of feedback (error-based versus reinforcement-based) leads to dissociable motor adaptation.*

Joshua Cashaback¹, Ayman Mohatarem¹, Heather McGregor¹, Paul Gribble¹

¹Western University

1-D-108 *Wii Balance Board and Modified Balance Error Scoring System to assess changes in postural balance in young-adult male hockey athletes over athletic season*

Hilary Cullen¹, Yao Sun¹, Brian Christie¹, E. Paul Zehr¹

¹University of Victoria

1-D-109 *Brain Plasticity after Concussion in Young Rats: Brain Change without Behavioural Change*

Allison Dyck¹, Tammy Ivanco¹

¹University of Manitoba

1-D-110 *The role of conjugate eye movements to symmetric disparity stimuli*

Ian Erkelens¹, William Bobier¹

¹University of Waterloo

1-D-111 *Tonic Endocannabinoid Signaling Controls Excitatory Drive in the Superficial Lamina (I/II) of the Mouse Spinal Cord*

Katherine Evelyn¹, Arin Bhattacharjee¹, Samir Haj-Dahmane¹

¹State University of New York at Buffalo

1-D-112 *Connectivity of dl3 Interneurons during development of the mouse spinal cord*

Carl Farah¹, Tuan Bui¹

¹University of Ottawa

1-D-113 *Functional characteristics of putative premotor areas in the intact, awake cat*

Nicolas Fortier Lebel¹, Nabihah Yahiaoui¹, Toshi Nakajima¹, Trevor Drew¹

¹Université de Montréal, GRSNC

1-D-114 *Slow and fast nerves regenerate into appropriate endoneurial tubes to reinnervate tibialis anterior (TA) muscles after common peroneal (CP) nerve cut and repair; size-dependent branching occurs more distally in intramuscular sheaths*

Tessa Gordon¹, Joanne Totozy de Zepetnek²

¹Hospital for Sick Children, ²Global Regulatory Lead, Shire

1-D-115 *Overexpression of the muscarinic receptors following visual training paired with cholinergic enhancement*

Marianne Groleau¹, Mira Chamoun¹, Elvire Vaucher¹

¹Université de Montréal

1-D-116 *Biologically Realistic Deep Supervised Learning*

Jordan Guerguiev¹, Timothy Lillicrap², Blake Richards¹

¹University of Toronto Scarborough, ²Google DeepMind

1-D-117 *Sensorimotor processing of ipsilateral and contralateral limbs in primary motor cortex*

Ethan Heming¹, Stephen Scott¹

¹Queen's University

E – Homeostatic and Neurendocrine Systems

1-E-118 *Corticosteroid Binding Globulin Programming by Prenatal Predator Odour Exposure in Mice*

Sameera Abuaish¹, Benjamin Hing¹, Sophie St-Cyr¹, Rudy Boonstra¹, Patrick McGowan¹

¹University of Toronto

1-E-119 *Glycemic condition influences subfornical organ neuron responsiveness to angiotensin*

Nicole Cancelliere¹, Alastair Ferguson¹

¹Queen's University

1-E-120 *MicroRNA involvement in estradiol-mediated synaptic plasticity*

Carolyn Creighton¹, Jon LaMarre¹, Neil MacLusky¹

¹University of Guelph

1-E-121 *Hypothalamic CRH neurons orchestrate stress induced behaviours*

Tamás Füzési¹, Nuria Daviu¹, Jaclyn Wamsteeker Cusulin¹, Robert Bonin², Jaideep Bains¹

¹Hotchkiss Brain Institute, ²University of Toronto

1-E-122 *Weight Loss in the 5XFAD Mouse Model of Alzheimer's Disease: A Behavioural and Hormonal Analysis*

William Gendron¹, Stephanie Pelletier¹, Michael Landsman¹, Younes Anini¹, Richard Brown¹

¹Dalhousie University

1-E-123 *Optogenetic manipulation of clock driven activity in the OVL*

Claire Gizowski¹, Cristian Zaelzer², Charles Bourque²

¹Research Institute of the McGill University Health Centre, ²Research Institute of the McGill University Health Centre

F – Cognition and Behaviour

1-F-124 *Circuit principles of neuronal processing in larval drosophila melanogaster thermotaxis*

Bruno Afonso¹, Mason Klein², Matthew Berck¹, Ivan Larderet³, Marc Gershow⁴, James Truman⁵, Simon Sprecher³, Albert Cardona⁵, Aravinthan Samuel⁶, Marta Zlatić⁵

¹HHMI Janelia / Harvard University, ²University of Miami, ³University of Fribourg, ⁴NYU, ⁵HHMI Janelia, ⁶Harvard University

1-F-125 *Utility of a Reading Span Task in assessing cognition in early-phase relapsing-remitting multiple sclerosis*

Maha Abu-AlHawa¹, Jason Berard², Lindsay Berrigan³, Lisa Walker⁴

¹Carleton University, ²University of Ottawa, ³St. Francis Xavier University, ⁴The Ottawa Hospital

1-F-126 *Differences in neural circuits activated by safety learning or fear extinction in rodents*

Maimoona Altaf¹, Alixandra Albert¹, Holly Turner¹, Alena Kalinina¹, Hugo Lehmann¹, Neil Fournier¹

¹Trent University

1-F-127 *Effects of forced swimming in neonatal rats with excitotoxic lesion in the corpus callosum*

Alfonso Arrazola¹, Gina Quirarte¹, Thalía Harmony¹

¹Instituto de Neurobiología de la Universidad Nacional Autónoma de México

1-F-128 *The Relationship between Schizotypy and the Propensity to Accept Extraordinary Social Roles*

Gifty Asare¹, Ana Fernandez Cruz², Ola Mohamed Ali¹, Ishan Walpola¹, Julia Segal³, Jacques Bruno Debrulle⁴

¹McGill University, ²McGill University Integrated Program in Neuroscience, ³McGill University, Douglas Mental Health University Institute, ⁴McGill University, Douglas Mental Health University Institute, Department of Neurology and Neurosurgery

1-F-129 *The role of the cholinergic midbrain in sensorimotor gating*

Erin Azzopardi¹, Andrea Louttit¹, Susanne Schmid¹

¹University of Western Ontario

1-F-130 *Characterization of Hippocampal Inhibitory Stress Circuitry using Optogenetics*

June Jee Bang¹, Shubham Sharma¹, Junchul Kim¹

¹U of T

1-F-131 *Neuronal Pattern Separation in a Computational Model of Motion Discrimination*

Nareg Berberian¹, Amanda MacPherson², Lydia Richardson¹, Jean-Philippe Thivierge¹

¹University of Ottawa, ²McGill University

1-F-132 *High-Throughput Behavioural Analyses to Bridge the Genotype-Phenotype Gap*

Aram Bernardos¹, Andrew Giles¹, Rex Kerr², Catharine Rankin¹

¹The University of British Columbia, ²Calico Labs

1-F-133 *Focused-Attention versus Open-Monitoring Meditation: An MEG investigation of the underlying oscillatory brain networks*

Daphné Bertrand-Dubois¹, David Meunier², Tarek Lajnef¹, Annalisa Pascarella³, Vittorio Pizzella⁴, Laura Marzetti⁴, Karim Jerbi¹

¹CERNEC, Dept. Psychologie, Université de Montréal, ²Centre de Recherche en Neurosciences de Lyon (CRNL), ³Consiglio Nazionale delle Ricerche (CNR - National Research Council), ⁴Department of Neuroscience, Imaging and Clinical Sciences, G. d'Annunzio Univ

1-F-134 *A neuroactive bacteria attenuates stress-induced behavioural deficits and inflammation independent of restoring the gut microbiota*

Aadil Bharwani¹, Firoz Mian¹, Jane Foster¹, Michael Surette¹, John Bienenstock¹, Paul Forsythe¹

¹McMaster University

1-F-135 *A Comparison of Pre-Surgical Language Mapping Paradigms Between MEG and fMRI*

Ronald Bishop¹, Christopher O'Grady², Steven Beyea¹, Gail Eskes², Tynan Stevens², Timothy Bardouille¹

¹IWK Health Centre, ²Dalhousie University

1-F-136 *Representational similarity analysis of category-related recognition-memory signals in the human medial temporal lobe*

Anna Blumenthal¹, Bobby Stojanoski¹, Chris Martin², Rhodri Cusack¹, Stefan Köhler¹

¹University of Western Ontario, ²University of Toronto

1-F-137 *Cognitive Function as Related to Cumulative Head Impact Exposure in Football: Effects of Position*

Danielle Brewer Deluce¹, Timothy Wilson¹, Adrian Owen¹

¹Western University

1-F-138 *Concussion Does Not Affect an Athletes Ability to Inhibit a Motor Response*

Kelsey Bryk¹, Jonathan Smirl¹, Alexander Wright¹, Michael Kennefick¹, Colin Wallace¹, Paul van Donkelaar¹

¹The University of British Columbia

1-F-139 *Examining the effect of chronic intranasal oxytocin administration on the neuroanatomy and behaviour in two different autism-related mouse models*

Zsuzsa Buchwald¹, Jacob Ellegood¹, Monique Stuijve¹, Evdokia Anagnostou², Jason Lerch¹

¹Mouse Imaging Center, Hospital for SickKids, ²Holland Bloorview Research Institute

1-F-140 *Automatic detection of the slow waves in non-anaesthetised mice: comparison of traditional and novel methods*

Olga Bukhtiyarova¹, Sara Soltani¹, Sylvain Chauvette¹, Igor Timofeev¹

¹Institut universitaire en santé mentale de Québec

1-F-141 *Comparing effects of alcohol and marijuana: A go/nogo fMRI study in young adults*

Aziza Byron - Alhassan¹, Taylor Hatchard¹, Ola Mioduszezski¹, Andra Smith¹

¹University of Ottawa

POSTER SESSION 1 – MONDAY, MAY 30, 2016

1-F-142 *The Effects of Early Life Trauma on the Self in Eating Disorders*

Samantha Carlucci¹, Giorgio Tasca², Georg Northoff³

¹The University of Ottawa, ²The Ottawa Hospital, ³The Royal Ottawa Hospital

1-F-143 *Utilization of Loss- and Gain- of- Function Approaches to test the Functional Role of Progenitor Cells in Stroke Recovery*

Maheen Ceizar¹, Karah Lee¹, Marc Vani¹, Anthony Carter¹, Mirela Hasu¹, Matthew Jeffers¹, Amar Sahay², Heather Cameron³, Dale Corbett¹, Diane Lagace¹

¹University of Ottawa, ²Centre of Regenerative Medicine, Harvard Medical School, ³Neuroscience, National Institute of Health

1-F-144 *Mice with deletion of choline acetyltransferase in VGLUT3-positive neurons present memory deficits and altered social behaviour*

Kevin Chen¹, Helena Janickova¹, Marco A. M. Prado¹, Vania F. Prado¹

¹Robarts Research Institute

1-F-145 *Neural correlates of trial-to-trial adjustments of speed-accuracy trade-offs in premotor and primary motor cortex*

Guido Guberman¹, David Thura², Paul Cisek²

¹McGill University, ²University of Montreal

1-F-146 *Nicotinic restoration of GABAergic transmission in prefrontal cortex mediates facilitative effects on multisensory integration deficits in rodent models of schizophrenia*

Jacob Cloke¹, Robin Nguyen², David Wasserman¹, Stephanie De Lisio¹, Junchul Kim², Craig Bailey¹, Boyer Winters¹

¹University of Guelph, ²University of Toronto

1-F-147 *Electrophysiological correlates of subphonemic processing in spoken word recognition*

Samantha Kramer¹, Karen Tucker¹, Anna Moro¹, Elisabet Service¹, John Connolly¹

¹McMaster University

1-F-148 *ERP investigation of attentional and language processes after concussion*

Kyle Ruiter¹, Robor Boshra¹, Carol DeMatteo¹, Michael Noseworthy¹, John Connolly¹

¹McMaster University

1-F-149 *Characterizing Eye-movement Behaviour and Kinematics of Non-Human Primates in a Virtual Environment*

Ben Corrigan¹, Roberto Gulli¹, Guillaume Doucet¹, Julio Martinez²

¹McGill University, ²University of Western Ontario

1-F-150 *Disturbed Object Processing in 3xTG and 5xFAD Mouse Models of Alzheimer's Disease: Going Beyond "Object Recognition"*

Samantha Creighton¹, Daniel Palmer¹, Vania Prado², Marco Prado², Boyer Winters¹

¹University of Guelph, ²University of Western Ontario

1-F-151 *Phosphorylation of Glucocorticoid Receptor in Hippocampal Neurons of Rats Trained in Inhibitory Avoidance*

América Cruz-Quiroz¹, Diego González-Franco¹, Paola Bello-Medina¹,

Roberto Prado-Alcalá¹, Mauricio Díaz-Muñoz¹, Gina Quirarte¹

¹Instituto de Neurobiología, Universidad Nacional Autónoma de México

1-F-152 *Differential effects of the T-type calcium channel antagonist, Z944, on behaviours associated with morphine and amphetamine addiction*

Jonathan Cunningham¹, Carine Dias¹, Maya Nesbit¹, David Montes¹, Terrance Snutch¹, Anthony Phillips¹

¹University of British Columbia

1-F-153 *Brain circuits involved in cross-modal target selection for gaze-shift*

Mehdi Daemi¹, Douglas Crawford¹

¹York University

1-F-154 *Effect of steady-state methadone exposure on hedonic reactivity and caloric intake in rats*

Stephen Daniels¹, Mick Pratt¹, Francesco Leri¹

¹University of Guelph

1-F-155 *Role for striatal NFκB in neuroinflammation and depressive-like behaviours induced by saturated high-fat feeding.*

Léa Décarie-Spain¹, Sandeep Sharma¹, Cecile Hryhorczuk¹, Victor Issa Garcia¹, Philip Barker², Nathalie Arbour¹, Thierry Alquier¹, Stephanie Fulton¹

¹Centre hospitalier de l'Université de Montréal, ²University of British Columbia

1-F-156 *Effect of developmental lesioning of prefrontal cortex on attentional set-shifting in rats*

Sagar Desai¹, Brian Allman¹, N Rajakumar¹

¹University of Western Ontario

1-F-157 *Hook, worm, and noodle: Parsing perceptual and conceptual processes of the medial temporal lobe*

Danielle Douglas¹, Rachel Newsome², Louisa Man¹, Morgan Barense²

¹University of Toronto, ²University of Toronto, Rotman Research Institute

1-F-158 *Differential implication of sleep stages in procedural memory consolidation following a daytime nap: a comparison between meditators and non-meditators.*

Simon Dubé¹, Elizaveta Solomonova¹, Cloé Blanchette-Carrière¹, Alexandra Duquette¹, Olivier Dussault¹, Michelle Carr¹, Tyna Paquette¹, Tore Nielsen¹

¹Université de Montréal

1-F-159 *Building informative neural ensembles to decode attention in primate lateral prefrontal cortex*

Lyndon Duong¹, Matthew Leavitt², Sebastien Tremblay², Adam Sachs³, Julio Martinez-Trujillo¹

¹Western University, ²McGill University, ³The Ottawa Hospital

1-F-160 *Synaptic zinc is required for the enhancement of adult hippocampal neurogenesis*

Michael Chrusch¹, Jacqueline Boon¹, Simon Spanswick¹, Jo Anne Stratton¹, Prajay Shah¹, Haley Vecchiarelli¹, Jeff Biernaskie¹, Matthew Hill¹, Richard Dyck¹

¹University of Calgary

1-F-161 *Enhanced morphological development of adult generated neurons by optogenetic stimulation decreases memory stability.*

Jonathan Epp¹, Gisella Vetere¹, Axel Guskjolen¹, Yusing Gu¹, Sheena Josselyn¹, Paul Frankland¹

¹Hospital for Sick Children

1-F-162 *Polyunsaturated Fatty Acids And Their Metabolites As Possible Mediators Of Depression-Like Behaviors In Rats*

Maria Fernandes¹, David Mutch², Francesco Leri²

¹Université de Montréal, ²University of Guelph

1-F-163 *Does Physical Activity prevent Dementia? A systematic review*

Viviane Grassmann¹, George Mammen², Guy Faulkner³

¹University of Toronto, ²Centre for Addiction and Mental Health, ³The University of British Columbia

1-F-164 *Using pupil response to assess cognitive function across the healthy lifespan*

Jeff Huang¹, Matthew Smorenburg¹, Brian Coe¹, Chin-An Wang¹, Douglas Munoz¹

¹Queen's University

1-F-165 *Using eye movements to establish distinct biomarkers across the healthy lifespan*

Matthew Smorenburg¹, Rachel Yep¹, Brian Coe¹, Donald Brien¹, Douglas Munoz¹

¹Queen's University

G – Novel Methods and Technology Development

1-G-166 *Novel formulation using dendrimers for the intranasal drug delivery to brain*

Kosalan Akilan¹, Yogesh Katare¹, Ritesh Daya¹, Jayant Bhandari¹, Abhay Chauhan², Ram Mishra¹

¹McMaster University, ²Concordia University

1-G-167 *An axicon-based light sheet microscope for large scale and high resolution brain imaging*

Cléopha Akitegetse¹, Véronique Rioux¹, Yves De Koninck¹, Daniel Côté¹, Martin Lévesque¹

¹Université Laval

1-G-168 *Zero-Mode Waveguide Technology for Fluorescent Single-Subunit Counting*

Mark Arousseau¹, Hugo McGuire¹, Derek Bowie¹

¹McGill University

1-G-169 *Using Induced Pluripotent Stem Cells to Model Rare Neurodevelopmental Disorders*

Scott Bell¹, Huashan Peng¹, Carl Ernst¹

¹McGill University

1-G-170 *Optogenetic control of cAMP and cGMP signalling in living neurons*

Fiona Bergin¹, Megan Valencia¹, Kenichi Okamoto¹

¹University of Toronto

1-G-171 *Anesthetic Detection of Covert Consciousness in a Patient with Unresponsive Wakefulness Syndrome*

Stefanie Blain-Moraes¹, John Connolly², George Mashour³

¹McGill University, ²McMaster University, ³University of Michigan

1-G-172 *Novel defined medium GAD-67-GFP-positive organotypic mouse spinal cord cultures; preservation of dorsal horn neuronal and astrocyte phenotypes*

Paul Boakye¹, Emma Schmidt¹, Kerri Whitlock¹, Vladimir Rancic¹, Bijal Rawal¹, Klaus Ballanyi¹, Peter Smith¹

¹University of Alberta

1-G-173 *Machine learning based framework for EEG/ERP analysis*

Rober Boshra¹, Kyle Ruiter¹, James Reilly¹, John Connolly¹

¹McMaster University

1-G-174 *Ultrafast two-photon measurement of membrane potential using a genetically encoded voltage indicator*

Simon Chamberland¹, François St-Pierre², Michael Lin³, Katalin Toth¹

¹Université Laval, ²Baylor College of Medicine and Rice University, ³Stanford University

IBRO – International Brain Research Organization

1-IBRO-175 *Chronic cannabinoid exposure during adolescence disrupts sensorimotor gating and downregulates COMT function in the prefrontal cortex in rats*

Oualid Abboussi¹

¹University of KwaZulu-Natal

1-IBRO-176 *Identification of a molecular mechanism leading to failure in neuroglial differentiation in focal cortical dysplasias (FCDs) offers clues to brain development*

Simoni Avansini¹, Fabio Torres¹, Danyella Dogini¹, André Vieira¹, Fabio Rogério¹, Ana Coan¹, Rodrigo Secolin¹, Helder Tedeschi¹, Luciano Queiroz¹, Fernando Cendes¹, Iscia Lopes-Cendes¹

¹University of Campinas

1-IBRO-177 *Iron-induced oxidative stress activates AKT and ERK1/2 and decreases Dyrk1B and PRMT1 in neuroblastoma SH-SY5Y cells.*

Elizabeth Bautista¹, Paula Vergara¹, Jose Segovia¹

¹CINVESTAV

1-IBRO-178 *Increased epileptic-like activity in synapsin-silenced Helix neurons associated with increased Ca2+ and Ca2+-activated BK currents.*

Oscar Brenes¹, David Vandael², Emilio Carbone², Pier Giorgio Montarolo², Mirella Ghirardi²

¹University of Costa Rica, ²University of Turin

1-IBRO-179 *Functional changes in hippocampal neurons induced by the effects of ApoE4 on AMPA-type channels*

Diana Marcela Cuestas Torres¹, Fernando Cardenas¹

¹Universidad de los Andes

POSTER SESSION 2 – TUESDAY, MAY 31, 2016

A – Development

2-A-1 *The Immune Role in Sexual Dimorphism*

Roksana Khalid¹, Jane Foster¹

¹McMaster University

2-A-2 *The ENU-3 protein family members function in the Wnt pathway parallel to UNC-6/Netrin to promote motor neuron axon outgrowth in C. elegans.*

Roxana Florica¹, Victoria Hipolito¹, Stephen Bautista¹, Costin Antonescu¹, Marie Killeen¹

¹Ryerson University

2-A-3 *The role of BDNF in Hebbian structural plasticity in the developing visual system*

Elena Kutsarova¹, Martin Munz¹, Alex Wang¹, Olesia Bilash¹, Carmelia Lee¹, Yuan Yuan Zhang¹, Edward Ruthazer¹

¹Montreal Neurological Institute, McGill University

2-A-4 *Role of HDAC2 in GABAergic Parvalbumin-positive cell maturation in basolateral amygdala*

Marisol Lavertu Jolin¹, Théo Badra¹, Graziella Di Cristo¹

¹CHU Sainte-Justine, Université de Montréal

2-A-5 *Purkinje cell axon torpedoes in the developing mouse cerebellum*

Lovisa Ljungberg¹, Angela Yang¹, Sriram Jayabal¹, Sabrina Quilez¹, Alanna Watt¹

¹McGill University

2-A-6 *The functional requirement for clustered Protocadherin diversity in dendrite self-avoidance*

Julie Marocha¹, Julie Lefebvre¹

¹Hospital for Sick Children

2-A-7 *Postnatal development of cerebellar Purkinje cell firing properties*

Autumn Metzger¹, Charlotte Rosen¹, Alanna Watt¹

¹McGill University

2-A-8 *Roles of Semaphorin/Plexin signaling in synapse map formation in C. elegans*

Kota Mizumoto¹

¹University of British Columbia

2-A-9 *The Mesocorticolimbic Dopamine Pathway Exhibits A Phenotypic Plasticity To The Experience Of Early Life Adversity*

Niki Hosseini-Kamkar¹, J. Bruce Morton¹

¹University of Western Ontario

2-A-10 *Cellular mechanisms involved in retinoic acid-induced growth cone turning during neuronal regeneration*

Tamara Nasser¹, Gaynor Spencer¹

¹Brock University

B – Neural Excitability, Synapses, and Glia: Cellular Mechanisms

2-B-11 *Characterization of a synaptic vesicle binding site near the tip of the CaV2.2 C-terminal*

Sabiha Gardezi¹, Arup Nath¹, Fiona Wong¹, Qi Li¹, Elise Stanley¹

¹Krembil Research Institute

2-B-12 *Target-specific modulation of the cortico-raphe pathway by cannabinoids, but not serotonin*

Sean Geddes¹, Saleha Assadzada¹, David Lemelin¹, Alexandra Sokolovski¹, Richard Bergeron¹, Samir Haj-Dahmane¹, Jean-Claude Beique¹

¹University of Ottawa

2-B-13 *Netrin-1 is a potent regulator of synaptic function in the adult hippocampus*

Stephen Glasgow¹, Ian Beamish¹, Julien Gibon¹, Anne McKinney², Philippe Séguéla¹, Edward Ruthazer¹, Timothy Kennedy¹

¹Montreal Neurological Institute, ²McGill University

2-B-14 *State- and frequency-dependent modifications of medial temporal lobe activity following deep brain stimulation in macaques*

Andrea Gomez Palacio Schjetnan¹, Timothy Leonard¹, Omid Talakoub¹, Kari Hoffman¹

¹York University

2-B-15 *Corticosterone as an Acute Model of Stress: Effects on 5-HT7 Receptor Signalling in the HT22 Hippocampus-Derived Cell-Line*

Nyasha Gondora¹, Afroditi Blandin², Michael Beazely¹, John Mielke¹

¹University of Waterloo, ²Technische Universität Braunschweig

2-B-16 *Mechanism of asymmetric electrical coupling between a pair of cardiorespiratory neurons*

Yueling Gu¹, Guan Zhu¹, Neil Magoski¹

¹Queen's University

2-B-17 *Developing Multi-Compartment Models of Interneuron Specific 3 (IS3) Cells in Hippocampus Using a Semi-Automated Approach*

Alexandre Guet-McCreight¹, Olivier Camiré², Lisa Topolnik², Frances Skinner¹

¹Krembil Research Institute & University of Toronto, ²Centre de Recherche du CHU de Québec, Université Laval

2-B-18 *Calcium Responses to Single Action Potentials in Spinal Cord Lamina I Neurons*

Erika Harding¹, Michael Salter¹

¹The Hospital for Sick Children

2-B-19 *New evidence for the involvement of BDNF and pro-BDNF in the regulation of aggressive behavior*

Tatiana Ilchibaeva¹, Anton Tsybko¹, Elena Kondaurova¹, Rimma Kozhemyakina¹, Vladimir Naumenko¹

¹The Institute of Cytology and Genetics SB RAS

2-B-20 Astrocyte independent neurovascular coupling

Adam Institoris¹, Grant Gordon¹

¹University of Calgary

2-B-21 Effects of phosphorylation on neurosteroid-induced modulation of GABAA receptor currents

Jaymin Jeong¹, Michael Poulter¹

¹University of Western Ontario

2-B-22 Persistent postanesthetic memory deficits are mediated by an inflammatory pathway

Kirusanthi Kaneshwaran¹, Sean Haffey¹, Gang Lei¹, Dian-Shi Wang¹, Beverley Orser²

¹University of Toronto, ²University of Toronto; Sunnybrook Health Sciences Centre

2-B-23 Exploring the energetics of a high-frequency neuronal oscillator using computational models

Illya Kozak¹, John Lewis¹

¹University of Ottawa

2-B-24 Oscillations promote neuronal discrimination of EPSP events with single neurons and population codes

Eric Kuebler¹, Jean-Philippe Thivierge¹

¹University of Ottawa

2-B-25 Expression and roles of K⁺ channels (Kir2.1, Kv1.3) in microglial anti-inflammatory states: Proliferation and migration

Doris Lam¹, Lyanne Schlichter¹

¹Krembil Research Institute, University of Toronto

2-B-26 NMDA receptor elevation of cytosolic reactive oxygen species strengthens GABAergic signaling

Erik Larson¹, Michael Accardi¹, Derek Bowie¹

¹McGill

2-B-27 Morphine-mediated phosphorylation of the P2X7 receptor critically gates analgesic tolerance

Heather Leduc-Pessah¹, Nicholas Weilinger¹, Churmy Fan¹, Nicole Burma¹, Roger Thompson¹, Tuan Trang¹

¹University of Calgary

2-B-28 Correlated synaptic inputs drive dendritic calcium amplification and cooperative plasticity during clustered synapse development

Kevin Lee¹, Cary Soares¹, Jean-Philippe Thivierge¹, Jean-Claude Beique¹

¹University of Ottawa

2-B-29 AMPK-dependent regulation of the sodium channel Nav1.3 in rat subfornical organ

Samantha Lee¹, Lauren Shute¹, Mark Fry¹

¹University of Manitoba

2-B-30 The role of PAK signaling in the entorhinal cortex in the regulation of synaptic plasticity and social memory

Celeste Leung¹, Feng Cao¹, Zhengping Jia¹

¹The Hospital for Sick Children

2-B-31 Glycine primes depression of NMDA receptor-mediated synaptic transmission in pyramidal neurons but not interneurons in the CA1 region of the hippocampus

Hongbin Li¹, Ameet Sengar¹, Lu Han¹, Pragya Komal¹, Michael Salter¹

¹The Hospital for Sick Children

2-B-32 Presynaptic NMDA receptors act via RIM1a β to control the readily releasable pool in neocortical layer-5 pyramidal neurons

Therese Abrahamsson¹, Sally Li¹, Christina You Chien Chou¹, Adamo Mancino¹, Erin Nuro¹, William Todd Farmer¹, Rui Costa², Kate Buchanan³, Dale Elgar³, Arne Blackman³, Julia Oyrer³, Adam Tudor-Jones³, Mark Van Rossum², Keith Murai¹, Per Jesper Sjöström¹

¹McGill University, ²University of Edinburgh, ³University College London

2-B-33 Molecular mechanisms of IGF-1 on the growth cone guidance in developing motoneuron.

Jau-Cheng Liou¹, Kun-Lin Yang¹

¹National Sun Yat-Sen University

2-B-34 Rapid postsynaptic cAMP modulates synapse structural potentiation (sLTP)

Thomas Luyben¹, Jelena Borovac¹, Megan Valencia¹, Mustafa Khan¹, Kenichi Okamoto¹

¹The Lunenfeld-Tanenbaum Research Institute

2-B-35 Binding Affinity of Guanosine to the G1 Receptor

Crystal Mahadeo¹, Cai Jiang¹, Ritesh Daya¹, Yong-Fang Zhu¹, Ram Mishra¹, Shucui Jiang¹

¹McMaster University

2-B-36 Sex Differences in Microglia and P2X4 Receptor Mediation of Neuropathic Pain in Rats

Josiane Mapplebeck¹, Orla Moriarty², Simon Beggs¹, Yushan Tu¹, Jeffrey Mogil¹, Michael Salter¹

¹Hospital for Sick Children, ²University College London

2-B-37 Neuronal correlates for bi-directional adaptation of the hypothalamic-pituitary-adrenal (HPA) axis during chronic stress.

Sara Matovic¹, Eric Salter¹, Wataru Inoue¹

¹Robarts Research Institute

2-B-38 Theta Burst Neural Activity Alters Resting Astrocyte Ca²⁺ and Arteriole Tone

Eslam Mehina¹, Grant Gordon¹

¹University of Calgary

2-B-39 Origins of voltage-gated sodium and calcium channels in primordial single-celled eukaryote *Salpingoeca rosetta*

Amrit Mehta¹, David Spafford¹

¹University of Waterloo

2-B-40 NMDA receptor/CaMKII signaling modulates firing properties in cerebellar stellate cells

Lois Miracourt¹, Ryan Alexander¹, Derek Bowie¹

¹McGill University

2-B-41 Regulation of entorhinal cortical input to hippocampal granule cells by local inhibitory network in the dentate gyrus

Yanina Mircheva¹, Katalin Toth¹

¹University of Laval, Institut Universitaire de la sante mentale Robert Giffard

2-B-42 PV⁺ Interneurons Constrain the Lateral Amygdala Engram to a Sparse Representation

Dano Morrison¹, Chen Yan¹, Adelaide Yiu¹, Sheena Josselyn¹

¹University of Toronto

POSTER SESSION 2 – TUESDAY, MAY 31, 2016

2-B-43 *Dexmedetomidine prevents an anesthetic-induced persistent increase in GABAA receptor current*

Fariya Mostafa¹, Irene Lecker¹, Dian-Shi Wang¹, Junhui Wang¹, Kirusanthi Kaneshwaran¹, Sinziana Avramescu², Gang Lei¹, Beverley Orser²

¹University of Toronto, ²University of Toronto; Sunnybrook Health Sciences Centre

2-B-44 *Non-convulsive seizures observed from adult mice following middle cerebral artery occlusion: Involvement of hippocampal circuitry*

Sivakami Mylvaganam¹, Justin Wang¹, Saeyon Mylvaganam¹, Chiping Wu¹, James Eubanks¹, Liang Zhang¹

¹Toronto Western Hospital

2-B-45 *Netrin-1 Regulates Mitochondrial Dynamics in Oligodendrocytes*

Diane Nakamura¹, Timothy Kennedy¹

¹Montreal Neurological Institute

2-B-46 *Synaptic gain control in the neuroendocrine stress axis*

Eric Salter¹, Sara Matovic¹, Wataru Inoue¹

¹University of Western Ontario

C – Disorders of the Nervous System

2-C-47 *Amyloid- β Clearance by Glia of wild-type and FAD amyloid*

Shireen Hossain¹, Meng Zhang¹, Nancy He¹, Guillermina Almazan¹, Gerhard Multhaup¹

¹McGill University

2-C-48 *Exploring the effect of scyllo-inositol treatment on the transcriptome in a mouse model of Alzheimer's disease*

Qingda Hu¹, Mary Brown², Aaron Lai¹, JoAnne McLaurin¹

¹University of Toronto, ²Sunnybrook Health Sciences Centre

2-C-49 *GSK-3 β specific inhibitor, TDZD-8, is neuroprotective against neonatal hypoxic ischemic brain injury*

Sammen Huang¹, Haitao Wang¹, Ahmed Abussaud¹, Ekaterina Turlova¹, Ana Martinez², Hong-Shuo Sun¹, Zhong-Ping Feng¹

¹University of Toronto, ²Centro de Investigaciones Biologicas-CSIC

2-C-50 *Microstimulation-induced tremor oscillations in human globus pallidus*

William Hutchison¹, Shane Ellis¹, Diellor Basha¹, Andres Lozano¹, Mojdan Hodaie¹, Suneil Kalia¹, Adriana Lopez Rios²

¹University of Toronto and Toronto Western Hospital, ²Hospital Universitario San Vicente de Paul Rionegro-Medellin

2-C-51 *Effects of a nutraceutical formulation on hippocampal neurogenesis, brain-derived neurotrophic factor and memory in the 3xTg-AD mouse model of Alzheimer's disease*

Craig Hutton¹, Ledor Babatinc¹, Judith Tran¹, Elyse Rosa¹, Jennifer Lemon¹, Minesh Kapadia¹, Boris Sakic¹, C. David Rollo¹, Douglas Boreham¹, Margaret Fahnestock¹, J. Martin Wojtowicz², Suzanna Becker¹

¹McMaster University, ²University of Toronto

2-C-52 *A simple network simulates symptoms of schizophrenia by integrating functions of inhibitory, excitatory, and neuromodulatory systems*

Nathan Insel¹, Blake Richards²

¹University of Toronto, ²University of Toronto Scarborough

2-C-54 *Interaction between Alzheimer's Disease and Metabolic syndrome*

Nadezda Ivanova¹, Nina Weishaupt¹, Shawn Whitehead¹, David Cechetto¹

¹Western University

2-C-55 *4-Aminopyridine alleviates ataxia and reverses cerebellar cortical output deficiency in a mouse model of spinocerebellar ataxia type 6*

Sriram Jayabal¹, Alanna Watt¹

¹McGill University

2-C-56 *Combinational Therapeutics in Alzheimer Disease: A Novel Treatment Paradigm*

Stefan Jevtic¹, Mingzhe Liu², Kelly Markham-Coultes³, Kullervo Hynynen², Isabelle Aubert², JoAnne McLaurin²

¹University of Toronto, ²University of Toronto, Sunnybrook Research Institute, ³Sunnybrook Research Institute

2-C-57 *After intracerebral hemorrhage, oligodendrocyte precursors proliferate and differentiate inside white-matter tracts in the rat striatum*

Michael Joseph¹, Jayalakshmi Caliaaperuma², Lyanne Schlichter¹

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2-C-58 *Defining the circuitry of Infantile Spasms using the Ts65Dn mouse model.*

Krutika Joshi¹, Ara Karakashian¹, Lily Shen¹, Miguel Cortez¹, O.Carter Snead¹

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2-C-59 *PAOPA - A promising drug candidate for neuropsychiatric disorders and its neuroprotective effects through increased expression of neurotrophic factors*

Hetshree Joshi¹, Shreya Prashar¹, Ram Mishra¹

¹McMaster University

2-C-60 *Functional Integration Of New Cortical Neurons Following Focal Stroke*

Timal Kannangara¹, Jean-Claude Béique¹, Diane Lagace¹

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2-C-61 *Characterizing Spontaneous Recovery of Motor Function Following Cortical and Subcortical Stroke*

Sudhir Karthikeyan¹, Matthew Jeffers¹, Anthony Carter¹, Dale Corbett¹

¹University of Ottawa

2-C-62 *Inhibitory Synaptic Transmission and KCC2 Function in the Motor Cortex of the Presymptomatic ALS Mouse*

Sahara Khademullah¹, Zahra Dargaei¹, Melanie Woodin¹

¹University of Toronto

2-C-63 *Toward a valid animal model of alcohol use disorder in schizophrenia: an assessment of face, predictive and construct validities*

Jibran Khokhar¹, Alan Green¹

¹Dartmouth College

2-C-64 *SUM01 over-expression in adult neurogenesis and Alzheimer's disease pathology*

Erin Knock¹, Grace Rooke², Joseph Silburt¹, Kyung Han¹, Kathy Ha¹, Zhilan Wang¹, Rosemary Ahrens¹, Isabelle Aubert³, Ottavio Arancio⁴, Paul Fraser¹

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2-C-65 *DIXDC1 phosphorylation and control of dendritic morphology is impaired by rare genetic variants*

Vickie Kwan¹, Claudia Hung¹, Nicholas Holzapfel¹, Nadeem Murtaza¹, Brianna Unda¹, Sean White¹, Kristin Hope¹, Ray Truant¹, Stephen Scherer², Karun Singh¹

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2-C-66 *Molecular basis of using scyllo-inositol as a treatment for neuropsychiatric symptoms*

Aaron Lai¹, Qingda Hu¹, JoAnne McLaurin¹

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2-C-67 *Characterization of functional and pathological changes in the brain microvasculature in a rat model of Alzheimer's disease*

Lewis Joo¹, Aaron Lai¹, John Sled², JoAnne McLaurin¹, Bojana Stefanovic¹

¹Sunnybrook Research Institute, ²Hospital for Sick Children

2-C-68 *The role of hypertension and inflammation in an Alzheimer disease rat model*

Alexander Levit¹, Vladimir Hachinski¹, Shawn Whitehead¹

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2-C-69 *Inhibition of co-chaperone proteins to mitigate dopaminergic neurodegeneration*

Stanley Li¹, Suneil Kalia¹

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2-C-70 *Abeta Intermediates in the CSF of Patients with Mild Cognitive Impairment versus Alzheimer Disease*

Filip Liebsch¹, Luka Kulic², Charlotte Teunissen³, Christoph Hock², Judes Poirier¹, John Breitner¹, Gerd Multhaup¹

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2-C-71 *Interleukin-4-evoked alternative microglial activation increases neutrophil infiltration, astrogliosis and neuron damage if injected into the brain at the onset of ischemia*

Starlee Lively¹, Sarah Hutchings², Lyanne Schlichter³

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2-C-72 *Compensatory forelimb opportunity affects performance in a rat model of post-stroke reaching.*

Jessica Livingston-Thomas¹, Matthew Jeffers¹, Dale Corbett¹

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2-C-73 *Neuronal nitric oxide synthase regulates the slow EPSC of cerebellar PF-PN synapses by modulating STIM1-mediated gating of TRPC3 channels*

Wei-Yang Lu¹, Le Gui¹, Yun-Yan Xiang¹, Wataru Inove¹, Qingping Feng¹

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2-C-74 *Vasculotide treatment accelerates restoration of the blood-brain barrier after focused ultrasound in a mouse model of Alzheimer's disease*

Madelaine Lynch¹, Meaghan O'Reilly¹, Kelly Coultres¹, Paul Van Slyke², Dan Dumont¹, Kullervo Hynynen¹, Isabelle Aubert¹

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2-C-75 *Mobilization of Hematopoietic Precursor Cells Highly Expressing the Interleukin-1 Receptor to the Central Nervous System During Experimental Autoimmune Encephalomyelitis*

Benoit Mailhot¹, Sébastien Lévesque¹, Alexandre Paré¹, Daniel Coutu², Timm Schroeder², Steve Lacroix¹

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2-C-76 *Examining the protective effects of physical exercise on the hippocampal formation in a mouse model of Alzheimers disease*

Ewelina Maliszewska-Cyna¹, Jonathan Oore¹, Kristiana Xhima¹, Lynsie Thomason¹, Joseph Steinman², JoAnne McLaurin¹, John Sled², Bojana Stefanovic¹, Isabelle Aubert¹

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2-C-77 *Identification of protein interactions regulated by alpha-synuclein serine 129 phosphorylation*

Maria Marano¹, Ye Liu¹, Kyung Han¹, Meredith Fraser², Tammy Langman¹, Anurag Tandon¹

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2-C-78 *Neuroprotective Potential of Epsilon-Viniferin in a Cellular Model of Parkinson's Disease*

Alex Gelinis¹, Justine Renaud¹, Valérie Leblanc¹, Jérôme Guillard², Maria Martinoli¹

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2-C-79 *Behavioral and neurochemical changes in mice with increased dopamine transporter and decreased vesicular monoamine transporter 2 expression*

Shababa Masoud¹, Amy Ramsey¹, Gary Miller², Ali Salahpour¹

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2-C-80 *High-throughput phenotypic profiling of genes implicated in Autism Spectrum Disorders*

Troy McDiarmid¹, Catharine Rankin¹

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2-C-81 *Are There Sex Linked Differences Following Ischemic Injury Across the Longitudinal Axis of the Rat Hippocampus?*

Sheleza Ahad¹, John Mielke¹

¹University of Waterloo

2-C-82 *A novel chemo-optogenetic model of inducible focal epileptic seizures*

Rea Mitelman¹, Dana Levy¹, Ilan Lampi¹, Ofer Yizhar¹

¹Weizmann Institute of Science

2-C-83 *The role of the subthalamic nucleus in response inhibition: evidence from both single-cell level and local field potentials in the*

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human sub-thalamic nucleus with Parkinson's disease

Negar Mohammadi¹, Luis Fernando Botero Posada², Adriana Lucia Lopez Rios², William Hutchison¹

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2-C-84 Multi-drug therapeutic approach enhances neurogenesis in Alzheimer's disease mice

Christopher Morrone¹, Lynsie Thomason¹, Mary Brown¹, Isabelle Aubert¹, JoAnne McLaurin¹

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2-C-85 Intellectual Outcome in Molecular Subgroups of Medulloblastoma

Iska Moxon-Emre¹, Michael Taylor¹, Eric Bouffet², Kristina Hardy³, Cynthia Campen⁴, David Malkin¹, Cynthia Hawkins¹, Normand Laperriere¹, Vijay Ramaswamy², Nadia Scantlebury², Laura Janzen¹, Nicole Law¹, Karin Walsh³, Donald Mabbott¹

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2-C-86 Disruption of TAO2 in Autism Spectrum Disorders and the Characterization of TAO2 KO Mice as an ASD Model

Nadeem Murtaza¹, Melanie Richter², Sean White¹, Vickie Kwan¹, Susan Walker³, Stephen Scherer³, Froylan Calderon de Anda², Karun Singh¹

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2-C-87 Neuroprotective and Immunomodulatory Effects of the Plasmalogens Precursor, PPI-1011, in the Enteric Nervous System in Parkinson's Disease

Jordan Nadeau¹, Édith Miville-Godbout¹, Mélanie Bourque¹, Marc Morissette¹, Sara Al Sweidi², Tara Smith², Mélissa Côté³, Asuka Mochizuki², Vijitha Senanayake², Dushmanthi Jaysinghe², Li Wang², Thérèse Di Paolo¹, Denis Soulet¹

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2-C-88 GABA and glutamate levels in the brains of people with multiple sclerosis are related to markers of demyelination and clinical impairment

Julia Nantes¹, Sébastien Proulx¹, Jidan Zhong², Scott Holmes¹, Sridar Narayanan¹, Lisa Koski¹

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2-C-89 Brain state dependent signaling and function of CRF1 receptors

Chakravarthi Narla¹

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2-C-90 TrkB Activation Rescues PI3K/Akt Signaling and Autistic-Like Behavior in the Valproic Acid-Induced Mouse Model

Chiara Nicolini¹, Vadim Aksenov¹, Elyse Rosa¹, Bernadeta Michalski¹, David Rollo¹, Jane Foster¹, Frank Longo², Margaret Fahnestock¹

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2-C-91 Quantitating Neuropathological Features in the Cerebellum of a Mouse Model of Fragile X Syndrome

Yosuke Niibori¹, David Hampson¹

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2-C-92 Characterizing the Effects of CBD in the Mesolimbic Dopamine System

Christopher Norris¹, Jordan Zunder², Michael Loureiro³, Justine Renard¹, Steven Laviolette¹

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2-C-93 Gait disturbances in the 5xFAD transgenic mouse model of Alzheimer's Disease

Wai-Jane Lee¹, Flavio Beraldo¹, Matthew Cowan¹, Boyer Winters², Vania Prado¹, Marco Prado¹

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D – Sensory and Motor Systems

2-D-94 Activation of a Respiratory Medullary Motor Circuit by Remote Control

Garret Horton¹, Jimmy Fraigne¹, Zoltan Torontali¹, Jennifer Lapierre¹, Hattie Liu¹, Gaspard Montandon¹, John Peever¹, Richard Horner¹

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2-D-95 Dynamic neural tuning and perception enables adaptation to natural sensory stimuli under behaviorally-relevant contexts

Chengjie Huang¹, Diana Martinez¹, Michael Metzen¹, Maurice Chacron¹

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2-D-96 Interactions between Posterior Parietal and Primary Motor Cortices relates to Rubber Hand Illusion

Reina Isayama¹, Michael Vesia², Gaayathiri Jegatheeswaran¹, Behzad Elahi³, Carolyn Gunraj², Lucilla Cardinali⁴, Alessandro Farne⁵, Robert Chen¹

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2-D-97 Subcortical encoding of speech cues in children with attention deficit hyperactivity disorder

Zahra Jafari¹, Saeed Malayeri², Reza Rostami³

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2-D-98 Modulation Effects and Time Course of Target-Distractor Similarity on Saccade Curvatures

Devin Kehoe¹, Selvi Aybulut¹, Mazyar Fallah¹

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2-D-99 Multisensory electrophysiology reveals overt and subthreshold non-auditory influences on dorsal auditory cortex

Melanie Kok¹, Andres Carrasco¹, Marvin Meredith², Stephen Lomber¹

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2-D-100 Real-time in vivo plasticity of corticostriatal afferent activity during skill learning

David Kupferschmidt¹, Guohong Cui², David Lovinger¹

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2-D-101 Galvanic Vestibular Stimulation in Primates: Recording Vestibular Afferents during Transmastoid Stimulation

Annie Kwan¹, Diana Mitchell¹, Patrick Forbes², Jean-Sébastien Blouin³, Kathleen Cullen¹

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2-D-102 Noise enables multiplexed coding of fast and slow signals through synchronous and asynchronous spiking

Milad Lankarani¹, Stephanie Ratte¹, Steven Prescott¹

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2-D-103 Effect of allocentric cues on primate gaze behaviour in a cue conflict task

Jirui Li¹, Amir Sajad¹, Robert Marino², Xiaogang Yan¹, Saihong Sun¹, Hongying Wang¹, John Crawford¹

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2-D-104 An adaptation-induced tactile spatial illusion: experimental demonstration and Bayesian modelling

Luxi Li¹, Daniel Goldreich¹

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2-D-105 Encoding of gravity by the periphery and the central neurons during passive and active head tilt

Isabelle Mackrous¹, Jérôme Carrier², Kathleen Cullen¹

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2-D-106 Effects of enriched environment exposure on retinal and visual cortex functions

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2-D-107 Functional plasticity in primary somatosensory cortex supports motor learning by observing

Heather McGregor¹, Joshua Cashaback¹, Paul Gribble¹

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2-D-108 Frequency-specific activity in the subthalamic nucleus during isometric hand contraction

Luka Milosevic¹, Suneil Kalia¹, Mojgan Hodaie¹, Andres Lozano¹, Milos Popovic¹, William Hutchison¹

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2-D-109 Plasticity within early vestibular pathways: implications for the efficacy of a vestibular prosthesis

Diana Mitchell¹, Charles Della Santina², Kathleen Cullen¹

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2-D-110 Effect of novel cannabinoid type 2 in an animal model of acute inflammatory orofacial pain.

Graziella Molska¹, Helena Filippini¹, Limor Avivi-Arber¹, Barry Sessle¹

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2-D-111 Adapted use of audiovisual information for person and object recognition in people with one eye

Stefania Moro¹, Adria Hoover¹, Jennifer Steeves¹

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2-D-112 Lack of adenylate cyclase 1 (AC1): Consequences on corticospinal tract development and on locomotor recovery after spinal cord injury

Hanane Nait Taleb Ali¹, Sophie Scotto-Lomassese², Isabelle Dusart², Patricia Gaspar², Mohamed Bennis¹

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2-D-113 Cholinergic denervation of the rat posterior parietal cortex impairs complex stimulus discrimination

Hoang Nam Nguyen¹, Frédéric Huppé-Gourgues¹, Elvire Vaucher¹

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2-D-114 Effects of Passive Stretch on Reflex Excitability in Neurologically Intact Participants

Steven Noble¹, Greg E.P. Pearcey¹, Paul Zehr¹, Caroline Quartly²

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E – Homeostatic and Neuroendocrine Systems

2-E-115 Subfornical organ neurons respond differentially to applications of cholecystokinin and angiotensin II

Sebastian Gorlewski¹, Nicole Cancelliere¹, Alastair Ferguson¹

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2-E-116 Inhibition of corticotropin-releasing factor (CRF) by teneurin C-terminal associated peptide (TCAP)-1: A molecular switch to regulate mitochondrial function.

David Hogg¹, Ola Michalec¹, Mia Husic¹, David Lovejoy¹

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2-E-117 Prostaglandin E2 drives neuroendocrine stress response through presynaptic inhibition of GABA release

Zahra Khazaeipool¹, Wataru Inoue¹

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2-E-118 Effects of Intranasal Insulin Administration on Memory in the 5XFAD Mouse Model of Alzheimer's Disease

Amanda Glenn¹, William Gendron¹, Michael Landsman¹, Stephanie Pelletier¹, Sooyoun Shin¹, Younes Anini¹, Richard Brown¹

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2-E-119 High fat diet primes excitatory synapses of orexin neurons to express long term depression

Victoria Linehan¹, Michiru Hirasawa¹

¹Memorial University of Newfoundland

2-E-120 Adropin Elicits Concentration-Dependent Effects on Hypothalamic Paraventricular Nucleus Neurons

Spencer Loewen¹, Alastair Ferguson¹

¹Queen's University

F – Cognition and Behaviour

2-F-121 Determining cognitive deficits in mouse models of alzheimer's disease using touchscreen tasks: improving the transition from bench to bedside

Flavio Beraldo¹, Talal Masood¹, Daniel Palmer², David Wasserman², Samantha Creighton², Matthew Cowan¹, Benjamin Kolisnyk¹, Mohammed Al-Onaizi¹, Wai-Jane Virginia Lee¹, Tom Gee³, Shuai

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Liang³, Robert Bartha¹, Stephen Strother³, Vania Prado¹, Boyer Winters²

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2-F-122 Longitudinal assessment of behavioural flexibility and visual spatial integration learning in the 5xFAD mouse model of Alzheimer's disease using automated touchscreen systems

Daniel Palmer¹, David Wasserman¹, Samantha Creighton¹, Theresa Martin¹, Jessica Davidson¹, Flavio Beraldo², Matthew Cowan², Wai-Jane Lee², Talal Masood², Vania Prado², Marco Prado², Boyer Winters¹

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2-F-123 Longitudinal assessment of behavioural flexibility and visual spatial integration learning in the 3xTG mouse model of Alzheimer's disease (AD) using automated touchscreen systems

David Wasserman¹, Daniel Palmer¹, Samantha Creighton¹, Theresa Martin¹, Jessica Davidson¹, Flavio Beraldo², Wai-Jane Lee², Talal Masood², Matthew Cowan², Vania Prado², Marco Prado², Boyer Winters¹

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2-F-124 Functional Mapping of Brain Circuits Supporting Social Modulation of Pain in Mice

Holly Turner¹, Sivaani Sivaselvachandran², Dana Kousmanidis¹, Salsabil Abdallah², Loren Martin¹, Neil Fournier¹

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2-F-125 Glutamatergic SubC cells are the core of the REM sleep network

Jimmy Fraigne¹, Zoltan Torontali¹, John Peever¹

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2-F-126 The Hypnotized Brain: An Examination of the iEEG Correlates of Neutral Hypnosis

Shelagh Freedman¹, Jaime Gomez-Ramirez², Diego Mateos², Jose Luis Perez-Velazquez², Taufik Valiante⁴

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2-F-127 Modelling gambling disorder in rats: interaction of responding for uncertainty and reward predictability on dopamine sensitization and risky decision-making

Victoria Fugariu¹, Martin Zack¹, Paul Fletcher², Fiona Zeeb²

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2-F-128 Resting-state functional connectivity studies in common marmoset monkeys at 9.4T

Maryam Ghahremani¹, Ravi Menon¹, Stefan Everling¹

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2-F-129 Somatosensory attention identifies both overt and covert awareness in disorders of consciousness

Raechelle Gibson¹, Srivas Chennu², Davinia Fernández-Espejo³, Adrian Owen¹, Damian Cruse³

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2-F-130 Social isolation reveals a dopamine-independent rewarding motivational response to acute nicotine that is not observed in group-housed mice

Taryn Grieder¹, Mandy Yee¹, Derek van der Kooy¹

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2-F-131 Place coding in the monkey hippocampus is task-dependent during virtual navigation

Roberto Gulli¹, Guillaume Doucet¹, Benjamin Corrigan¹, Lyndon Duong², Sylvain Williams¹, Julio Martinez-Trujillo²

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2-F-132 Characterization of a rostrocaudal differentiation in the nucleus accumbens core in processing conditioned cues of conflicting valence

Laurie Hamel¹, Tharshika Thangarasa¹, Osai Samadi¹, Rutsuko Ito¹

¹University of Toronto

2-F-133 A comparison of fMRI-based functional connectivity during resting state and naturalistic stimulation

Amelie Haugg¹, Rhodri Cusack¹, Bettina Sorger², Adrian Owen¹, Lorina Naci¹

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2-F-134 Effects of socially-based ensemble music training on children's executive functions: ERP evidence

Nina Hedayati¹, Kylie Schibli¹, Amedeo D'Angiulli¹

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2-F-135 The role of noradrenaline in the affective properties of metabolic stressors in laboratory rats

Thomas Horman¹, Francesco Leri¹, Fernanda Fernandez¹

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2-F-136 The effects of fornix stimulation on memory in non-human primates.

Ahmed Hussin¹, Andrea Gomez Palacio Schjetnan¹, Kari Hoffman¹

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2-F-137 Behavioural characterization of Grk3 knockout mice

Sophie Imbeault¹, Markus Larsson¹, Sophie Erhardt¹

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2-F-138 Implicit Learning Facilitates Cognitive Control in a Response Switching Task

Silvia Isabella¹, Charline Urbain², J. Allan Cheyne³, Douglas Cheyne¹

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2-F-139 Molecular pathways responsible for NMDA receptor-mediated behavioural plasticity.

Rehnuma Islam¹, Catharine Mielnik¹, Wendy Horsfall¹, Beverly Orser¹, Amy Ramsey¹

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2-F-140 Wnt inhibitor, IWP-2, impairs expression of amphetamine-produced conditioned place preference in rats

Farhana Islam¹, Richard Beninger¹

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2-F-141 Co-allocation of Appetitive and Aversive Memories in the Lateral Amygdala

Alexander Jacob¹, Asim Rashid², Chen Yan¹, Paul Frankland², Sheena Josselyn²

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2-F-142 Human rGDF-11 counteracts age-related short-term memory impairments in middle-aged mice

Min Zhang¹, Nafisa Jadavji¹, Patrice Smith¹

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2-F-143 The Adverse Effect of Auditory Stress on Mice Performance: Impact of Different Type of Stresses and Pregnancy

Zahra Jafari¹, Bryan Kolb¹, Majid H Mohajerani¹

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2-F-145 Contextual Fear Conditioning in Zebrafish

Justin Kenney¹, Ian Scott¹, Sheena Josselyn¹, Paul Frankland¹

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2-F-146 Striatal Regulation by Acetylcholine and Glutamate Co-transmission

Ornela Kljakic¹, Helena Janickova¹, Diana Sakae², Mathieu Favier², Salah Mestikawy², Marco Prado¹, Vania Prado¹

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2-F-147 Behavior, brain serotonin system and pharmacological responses to stimulation of 5-HT1A receptors in recombinant mouse lines with different predisposition to catalepsy

Elena Kondaurova¹, Elizabeth Kulikova², Anton Tsybko¹, Elena Kondaurova¹, Daria Bazovkina¹

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2-F-148 The Facilitative Effects of Fame on Working Memory

Jaeger Lam¹, Nathan Spreng², Gary Turner¹

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2-F-149 Cortical mechanisms underlying reach-grasp integration

Ada Le¹, Simona Monaco², Ying Chen¹, J Crawford¹

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2-F-150 Non-selective neurons contribute information to neuronal ensembles by modifying noise correlation structure

Matthew Leavitt¹, Adam Sachs², Julio Martinez-Trujillo³

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2-F-151 Sharp Wave Ripples during Visual Exploration in the Primate Hippocampus

Timothy Leonard¹, Kari Hoffman²

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2-F-152 Synaptic impairment of frontal cortical fast-spiking basket cells induces cognitive and behavioural deficits in mice with a Cacna1a loss-of-function mutation

Alexis Lupien-Meilleur¹, Ilse Riebe², Lena Damaj¹, Catherine Vanasse¹, Louise Gagnon¹, Jean-Claude Lacaille², Elsa Rossignol¹

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2-F-153 Differential Effects of Dopamine Antagonists on Cognitive

Performance in Healthy Controls

Robert Marino¹, Ian Prescott¹, Pauline Gaprielian¹, Ron Levy¹

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2-F-154 Placebo Analgesia in a Chronic Neuropathic Pain Model in Mice

Sarasa Tohyama¹, Loren Martin¹

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2-F-155 Increased Glucocorticoid Receptor Activity in the Medial Prefrontal Cortex Prevents the Expression of Empathy in Mice

Sivaani Sivaselvachandran¹, Salsabil Abdullah¹, Sarasa Tohyama¹, Loren Martin¹

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2-F-156 Recovery of memory in mice that model Alzheimer's disease

Valentina Mercaldo¹, Adelaide Yiu¹, Derya Sargin¹, Asim Rashid¹, Jonathan Epp¹, Rachael Neve², Paul Frankland¹, Sheena Josselyn¹

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2-F-157 Lateral Occipital Complex activation in response to repetitive visual stimuli in People with Migraine Headaches

Marla Mickleborough¹, Layla Gould¹, Chelsea Ekstrand¹, Eric Lorentz¹, Ron Borowsky¹

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2-F-158 Inducible rescue of NMDA receptor deficiency to measure the plasticity of neural networks in a model of schizophrenia

Catharine Mielnik¹, Mary Binko¹, Rehnuma Islam¹, Marija Milenkovic¹, Wendy Horsfall¹, Evelyn Lambe¹, Amy Ramsey¹

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2-F-159 Effect of sexual experience on the rewarding state induced by mating in the female rat.

Isid Min Poblete¹, Raul Paredes Guerrero¹

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2-F-160 Dissociable roles of GADD45a/β in the rat perirhinal cortex and hippocampus for object memory: Different forms of DNA methylation?

Krista Mitchnick¹

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2-F-161 Hyper-activation of Right Inferior Frontal Gyrus in Pediatric Obsessive-Compulsive Disorder during a Mental Flexibility Task

Alexandra Mogadam¹, Paul Arnold², Amanda Robertson³, Anne Keller³, Margot Taylor⁴, Jason Lerch³, Evdokia Anagnostou⁵, Elizabeth Pang⁴

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2-F-162 The spatio-temporal dynamics of ?Theory of Mind? in school age children born very preterm

Sarah Mossad¹, Mary Lou Smith¹, Margot Taylor¹

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G – Novel Methods and Technology Development

2-G-163 *Counting all possible neuronal circuits for input-output data*

Anthony Richard¹, Patrick Desrosiers¹, Simon Hardy¹, Nicolas Doyon¹

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2-G-164 *Analysis of apoptotic cell death contribution in Caspase-3 null mice using an endothelin-1 model of cerebral ischemia*

Chesarahmia Dojo Soeandy¹, Faraz Salmasi¹, Jeffrey Henderson¹

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2-G-165 *Parametric modelling of oscillatory sources in MEG*

Peter Donhauser¹, Sylvain Baillet¹

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2-G-166 *A probabilistic approach to identifying cerebrovascular differences between mouse strains*

Sahar Ghanavati¹, Jason Lerch¹, John Sled¹

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2-G-167 *Examination of Drosophila Eye Development with THG microscopy*

Abiramy Karunendiran¹, Danielle Tokarz², Richard Cisek¹, Virginijus Barzda¹, Bryan Stewart¹

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2-G-168 *A novel approach to assess neurovascular patterning and remodeling in the mouse brain*

Cesar Comin¹, Luciano da F. Costa¹, Baptiste Lacoste²

¹University of Sao Paulo, ²The Ottawa Hospital Research Institute, University of Ottawa

2-G-169 *Low profile halo head fixation in non-human primates*

Kousha Azimi¹, Ian Prescott¹, Robert Marino¹, Andrew Winterborn¹, Ron Levy¹

¹Queen's University

2-G-170 *Opto-Panx1: Engineering a new optically controlled Pannexin 1 channel*

Alexander Lohman¹, Wei Zhang², Robert Campbell², Roger Thompson¹

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2-G-171 *Application of Support Vector Machines to Longitudinal Functional Neuroimaging Data*

Alexander Rudiuk¹, Steve Patterson², Steven Beyea², Timothy Bardouille²

¹Dalhousie University, ²IWK Health Centre

2-G-172 *Single-Cell Optical Control with a Digital Multi-Mirror Device*

Kanghoon Seo¹, Matthew Tran¹, Michael Kohl², Jee Hyun Kwag³, Blake Richards¹

¹University of Toronto, ²University of Oxford, ³Korea University

2-G-173 *Micropillar arrays selectively coated with humidified microcontact printing reveal cue-dependent traction forces and molecular recruitment within single cells*

Abhishek Sinha¹, Sebastien Ricoult¹, Liangcheng Xu², David Juncker¹, Timothy Kennedy¹

¹McGill University, ²University of Toronto

2-G-174 *Advances in Fiber-based Tissue Identification for Electrode Placement in Deep Brain Stimulation Neurosurgery*

Damon DePaoli¹, Nicolas Lapointe¹, Laurent Goetz¹, Martin Parent¹, Léo Cantin², Michel Prud'Homme², Younes Messadeq¹, Daniel Côté¹

¹University of Laval, ²Hôpital de l'Enfant-Jésus

IBRO – International Brain Research Organization

2-IBRO-175 *Differential expression of Sox2 in two models of adult neurogenesis*

Mahmoud Dahab¹, Sherine Abdel Salam¹, Hussein Khamis¹, Cyrene Ben Dhaou², Marie Mofteh¹, Emmanuel Moysé²

¹Faculty of Science, Alexandria university, ²Centre INRA of Tours, PRC (Physiology of Reproduction and Behavior) Unit

2-IBRO-176 *Stress effects and serotonin 4 receptors in mouse Central nervous system*

Mariama El Ouahli¹, Fatiha Chigr¹, Mohamed Najimi¹, Valérie Compan²

¹Faculté des sciences et techniques Béni Mellal, ²Institut de génomique fonctionnelle

2-IBRO-177 *The anxiolytic-like effect of cannabidiol in chronically stressed mice is mediated by the endocannabinoid system: role of neurogenesis, autophagy and dendritic remodeling*

Manoela Fogaça¹, Alline Campos¹, Ludmila Coelho¹, Ronald Duman², Francisco Guimarães¹

¹Medical School of Ribeirão Preto, University of São Paulo (FMRP-USP), ²Abraham Ribicoff Research Facilities, Yale School of Medicine

2-IBRO-178 *Manganese-induced DAergic toxicity is reduced in trt-1 mutation of Caenorhabditis elegans*

Omamuyovwi Ijomone¹, Mahfuzur Miah², Tanara Peres², Michael Aschner², Polycarp Nwoha³

¹Cross River University of Technology, Okuku Campus, ²Albert Einstein College of Medicine, ³Obafemi Awolowo University

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A – Development

3-A-1 *A heterosynaptic mechanism controls axon branch dynamics in the *Xenopus laevis* visual system*

Tasnia Rahman¹, Martin Munz¹, Edward Ruthazer¹

¹Montreal Neurological Institute

3-A-2 *The RNA-binding protein Musashi2 regulates asymmetric neural precursor cell divisions of the developing cerebral cortex*

Kathryn Reynolds¹, John Vessey¹

¹University of Guelph

3-A-3 *Investigating the functional role of RNA-binding protein hnRNP-Q, in regulating asymmetric cell divisions of neural precursor cells during cortical development*

Anastasia Smart¹, Fraser McCready¹, Dendra Hillier¹, John Vessey¹

¹University of Guelph

3-A-4 *The Impact of Early-Adolescent Adversity on Social Behaviour and Serotonergic Innervation in Adulthood*

Cindy Tao¹, Prateek Dhamija¹, Linda Booij², Janet Menard¹

¹Queen's University, ²Concordia University

3-A-5 *TRPM7 regulates axonal outgrowth and maturation of primary hippocampal neurons.*

Ekaterina Turlova¹, Christine YouJin Bae¹, Marielle Deurloo¹, Wenliang Chen¹, Andrew Barszczyk¹, David Horgen², Andrea Fleig³, Zhong-Ping Feng¹, Hong-Shuo Sun¹

¹University of Toronto, ²Hawaii Pacific University, ³University of Hawaii

3-A-6 *Re-defining the niche of neural stem cells: determining new roles for forebrain interneuron-secreted signals in cortical progenitor cell oligodendrogenesis*

Anastassia Voronova¹, David Kaplan¹, Freda Miller¹

¹Hospital for Sick Children

3-A-7 *Loss of CREB alters brain anatomy*

Dulcie Voutsden¹, Matthijs van Eede¹, Leigh Spencer Noakes¹, Sheena Josselyn¹, Paul Frankland¹, Brian Nieman¹, Jason Lerch¹

¹Hospital for Sick Children

3-A-8 *Examination of microRNAs in response to retinoic acid during growth cone guidance*

Sarah Walker¹, Robert Carlone¹, Gaynor Spencer¹

¹Brock University

3-A-9 *Translational control of neuronal subtype specification by the 4E-T repressive complex in neural precursor cells*

Guang Yang¹, Siraj Zah², Hilal Kazan³, Gianluca Amadei², David Kaplan², Freda Miller²

¹The Hospital for Sick Children, ²The Hospital for Sick Children; University of Toronto, ³Antalya International University

3-A-10 *Early white matter development and outcomes in children born very preterm*

Julia Young¹, Benjamin Morgan¹, Wayne Lee¹, Mary Lou Smith¹, Manohar Shroff¹, John Sled¹, Margot Taylor¹

¹The Hospital for Sick Children

B – Neural Excitability, Synapses, and Glia: Cellular Mechanisms

3-B-11 *Amyloid beta modulates excitotoxic currents during hypoxia.*

Laura Palmer¹, Alexander Lohman¹, Roger Thompson¹

¹University of Calgary

3-B-12 *Microglia analysis in T cell deficient mice*

Sureka Pavalagantharajah¹, Angela Fan¹, Roksana Khalid¹, Douglas Chung¹, Shawna Thompson¹, Jane Foster¹

¹McMaster University

3-B-13 *Unitary EPSCs at single primary afferent-lamina I neuron synapses show predominant role of GluN2B- and GluN2D-containing NMDA receptors*

Graham Pitcher¹, Livia Garzia¹, Sorana Morrissey¹, Michael Taylor¹, Michael Salter¹

¹SickKids

3-B-14 *Optogenetic Modulation of Septal Glutamatergic Neurons in the Freely Moving Mouse*

Jennifer Robinson¹, Sylvain Williams¹

¹McGill University

3-B-15 *Effect of pirenzepine and muscarinic toxin-7 on muscarinic acetylcholine type-1 receptor internalization and downstream signaling cascades.*

Mohammad Sabbir¹, Paul Fernyhough¹

¹St. Boniface Research Centre

3-B-16 *Chronic ghrelin enhances long-term potentiation and memory in hippocampal CA2 region following streptozotocin-induced diabetes*

Bahman Sadeghi¹

¹Institute for Research in Fundamental Sciences (IPM)

3-B-17 *L-type calcium channels functionally couple to IKCa channels to generate an I_{SAHP}*

Giriraj Sahu¹, Jason Miclat¹, Gerald Zamponi¹, Ray Turner¹

¹University of Calgary

3-B-18 *p11 corticostriatal neurons have distinctive 5-HT responses sensitive to chronic social isolation stress and to antidepressant treatment*

Derya Sargin¹, Kristina Perit¹, Eric Schmidt², Revathy Uthaiiah², Nathaniel Heintz², Paul Greengard², Evelyn Lambe¹

¹University of Toronto, ²The Rockefeller University

3-B-19 *ATP-binding Cassette Transporter A7 (ABCA7) Loss of Function Alters Alzheimer Amyloid Processing*

Kanayo Satoh¹, Sumiko Abe-Dohmae², Shinji Yokoyama³, Peter St George-Hyslop¹, Paul Fraser¹

¹University of Toronto, ²Nagoya City University Graduate School of Medical Sciences, ³Chubu University

3-B-20 *An Evolutionary Switch in ND2 enables Src kinase regulation of NMDA receptors*

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David Scanlon¹, Alaji Bah¹, Mickaël Krzeminski¹, Wenbo Zhang¹, Heather Leduc-Pessah¹, Yina Dong¹, Julie Forman-Kay¹, Michael Salter¹

¹The Hospital for Sick Children

3-B-21 *Role of Calpain in synaptic potentiation*

Kapil Sehgal¹, Valerie Clavet Fournier¹, Paul De Koninck¹

¹Université Laval

3-B-22 *Investigating spiking resonance in computational models of oriens-lacunosum/moleculare (O-LM) hippocampal interneurons with dendritic synaptic inputs*

Vladislav Sekulic¹, Josh Lawrence², Frances Skinner¹

¹Krembil Research Institute and University of Toronto, ²Texas Tech University Health Sciences Center

3-B-23 *The local and global influences of neuronal field effects in synchronized networks*

Aaron Shifman¹, John Lewis¹

¹University of Ottawa

3-B-24 *The X-linked Intellectual Disability Gene, DHH9, in Neurite Outgrowth and Synapse Formation*

Jordan Shimell¹, D. Jovellar¹, Gian Brigid¹, Igor Tatarnikov¹, Dayne Kelly¹, Austen Milnerwood¹, Shernaz Bamji¹

¹University of British Columbia

3-B-25 *Complex molecular and functional outcomes of single versus sequential cytokine stimulation of microglia*

Tamjeed Siddiqui¹, Starlee Lively¹, Lyanne Schlichter¹

¹Krembil Research Institute

3-B-26 *Radial Glial Motility Regulates Synaptic Development in the Visual System*

Mari Sild¹, Marion Van Horn¹, Dantong Jia¹, Anne Schohl¹, Edward Ruthazer¹

¹McGill University

3-B-27 *Theta-frequency stimulation of the parasubiculum promotes short- and long-lasting changes in entorhinal cortex responses to sensory cortical input*

Daniel Sparks¹, C. Andrew Chapman¹

¹Concordia University

3-B-28 *Extracellular Turrets in Domain II and Domain IV as Critical Determinants of Ion Selectivity in LCav3, the T-type Calcium Channel from *Lymnaea stagnalis**

Robert Stephens¹, Wendy Guan¹, Omar Mourad¹, David Spafford¹

¹University of Waterloo

3-B-29 *Modulation of a non-selective cation channel by PIP2 and its metabolites controls excitability in *Aplysia* bag cell neurons*

Raymond Sturgeon¹, Neil Magoski¹

¹Queen's University

3-B-30 *The Application of FTIR Spectroscopy to Image Metabolic Alterations Associated with the Glial Response Following Brain Ischemia*

Nicole Sylvain¹, Mark Hackett², Huishu Hou¹, Sayed Uzair Admed¹, Sharleen Weese Maley¹, Michael Kelly¹

¹University of Saskatchewan, ²Curtin University

3-B-31 *Two-photon imaging of GABAA receptor-mediated antidromic discharge in primary somatosensory neurons*

Petri Takkala¹, Steven Prescott¹

¹University of Toronto

3-B-32 *Mechanisms of cocaine-induced increases in mu opioid receptor expression in PC12 cells*

Karson Theriault¹, Bettina Kalisch¹, Francesco Leri¹

¹University of Guelph

3-B-33 *Serotonin and mechanisms of cortical gain control: A novel synergy between 5-HT1A and 5-HT2A receptors in layer 6 pyramidal neurons of prefrontal cortex*

Michael Tian¹, Evelyn Lambe¹

¹University of Toronto

3-B-34 *Investigating the transcriptomic basis of brain-wide electrophysiological diversity*

Shreejoy Tripathy¹, Brenna Li¹, Dmitrii Tebaykin¹, Lilah Toker¹, Ogan Mancarci¹, Paul Pavlidis¹

¹University of British Columbia

3-B-35 *The effect of selective 5-HT2A receptor agonists on the BDNF, GDNF and CDF genes expression in the mouse brain*

Anton Tsybko¹, Tatyana Ilchibaeva¹, Elena Filimonova², Vladimir Naumenko¹

¹The Institute of Cytology and Genetics SB RAS, ²Novosibirsk State University

3-B-36 *NMDAR co-agonist D-serine promotes synapse maturation and stabilization of axonal branches in the developing visual system*

Marion Van Horn¹, Arielle Strasser¹, Lorendano Pollegioni², Ed Ruthazer¹

¹Montreal Neurological Institute, ²University of Insubria

3-B-37 *Hypoxic glioblastoma cells utilize a specialized protein synthesis machinery to synthesize PB-cadherin during migration and invasion*

Joseph Varga¹, Nicole Kelly¹, Erin Specker¹, Christina Romeo¹, Jim Uniacke¹

¹University of Guelph

3-B-38 *Learning Regulates the mRNA Demethylase FTO and mRNA Methylation*

Brandon Walters¹, Valentina Mercaldo¹, Colleen Gillion¹, Matthew Yip¹, Paul Frankland¹, Sheena Josselyn¹

¹Hospital for Sick Children

3-B-39 *GABAA receptors are novel targets for ketamine*

Dian-Shi Wang¹, Antonello Penna¹, Beverley Orser²

¹University of Toronto, ²University of Toronto; Department of Anesthesia, Sunnybrook Health Sciences Centre

3-B-40 *Intersectin1 is required for developmental enhancement of Ca²⁺-dependent replenishment of the readily-releasable synaptic vesicles*

Yi-Mei Yang¹, Ameet S. Sengar¹, Jamila Aitoubah¹, Sean E. Egan¹, Michael W. Salter¹, Lu-Yang Wang¹

¹The Hospital for Sick Children

3-B-41 *TLR4-mediated increase of microglial glycolysis inhibits expression of LTP through IL-1 β*

Elisa York¹, Jingfei Zhang¹, Hyun Choi¹, Rebecca Ko¹, Brian MacVicar¹

¹University of British Columbia

3-B-42 *BK Channels in Synaptic Plasticity Underlying Sensory Filtering Associated with Learning and Memory*

Tariq Zaman¹, Mahabba Smoka², Susanne Schmid¹

¹University of Western Ontario, ²University of Alberta

3-B-43 *Mu opioid receptor function in the anterior cingulate cortex*

Maria Zamfir¹, Philippe Séguéla²

¹McGill University, ²Montreal Neurological Institute (MNI)

3-B-44 *The Role of the Tubulin-Cytoskeleton in the Modulation of the Connexin 36 Nexus*

Cherie Brown¹, Ryan Siu¹, Christiane Zoidl¹, David Spray², Georg Zoidl¹

¹York University, ²Albert Einstein College of Medicine

3-B-45 *Dissecting the Role of Connexin 36 and Calmodulin in the Plasticity of Electrical Synapses*

Ryan Siu¹, Ekaterina Smirnova¹, Cherie Brown¹, Logan Donaldson¹, Georg Zoidl¹

¹York University

3-B-46 *Stable changes in H2A.Z incorporation and acetylation during memory formation and maintenance*

Klotilda Narkaj¹, Amber Azam¹, Alexandria Angco¹, Karina Servado², Iva Zovkic²

¹University of Toronto Mississauga, ²University of Toronto Mississauga

C – Disorders of the Nervous System

3-C-47 *The Ontario Neurodegenerative Disease Research Initiative (ONDRI) Study: Using eye movements to identify cognitive and motor impairments in neurodegeneration*

Brian Coe¹, Donald Brien¹, Sandra Black, Michael Borrie, Leanne Casaubon, Tiffany Chow, Dar Dowlatshahi, Liz Finger, Corinne Fischer, Andrew Frank, Morris Freedman, Angeles Garcia, David Grimes, Mandar Jog, Sanjeev Kumar, Tony Lang, Jennifer Mandzia, Conn

¹Queen's University, ²ONDRI

3-C-48 *The role of the 'cholesterol ester transfer protein' in Alzheimer's disease pathology*

Felix Oestereich¹, Elizabeth-Ann Kranjec², Hanyi Yu¹, Pierre Chaurand², Lisa-Marie Münter¹

¹McGill University, ²Université de Montréal

3-C-49 *Improved Phenotype in Adult Sandhoff Disease Mice Following Intravenous Administration of Self-complementary Adeno-associated Viral Vector Expressing a Novel Hexosaminidase Enzyme*

Karlaina Osmon¹, Evan Woodley¹, Patrick Thompson¹, Subha

Karumuthil-Melethil², Steven Gray³, Jagdeep Walia¹

¹Queen's University, ²University of North Carolina, ³University of North Carolina

3-C-50 *Redox switch in Neuronal Autophagy and apoptosis: Implication of Thioredoxin system*

Nagakannan Pandian¹, Mohamed Ariff Iqbal¹, James Thliveris¹, Mojgan Rastegar¹, Saeid Ghavami¹, Eftekar Eftekharpour¹

¹University of Manitoba

3-C-51 *Myeloid cell-derived IL-1beta triggers CNS endothelial cell activation and autoimmunity.*

Alexandre Paré¹, Sébastien Lévesque¹, Benoit Mailhot¹, Marc-André Lécuyer², Hania Kébir², Alexandre Prat², Steve Lacroix¹

¹Université Laval, ²Université de Montréal

3-C-52 *Dysfunctional decision-making processes in Parkinson's patients playing a strategic game*

Ashley Parr¹, Brian Coe¹, Giovanna Pari¹, Douglas Munoz¹

¹Queen's University

3-C-53 *RHBDL4-mediated cleavage of the amyloid precursor protein reduces Amyloid-beta generation*

Sandra Paschkowsky¹, Mehdi Hamzé¹, Felix Oestereich¹, Bernadeta Michalski², Margaret Fahnestock², Lisa Marie Munter¹

¹McGill University, ²McMaster University

3-C-54 *Supervised learning improves the ability of MEG to detect Alzheimer's disease*

Steve Patterson¹, Alexander Rudiuk², Tim Bardouille¹

¹WK Health Centre, ²Dalhousie University

3-C-55 *Histopathological studies of the Effects of Combined Administration of Duovir-N and Vitamin E on the Cerebellum of Wistar rats.*

Aniekan Peter¹, Moses Ekong¹, Onyemaechi AZU¹, Jegede Ayoola², Ugochukwu Ofori¹

¹University of Uyo, ²University of Kwazulu Natal

3-C-56 *Neuroprotective and anti-inflammatory roles of estrogenic receptors in the myenteric plexus of a mouse model of Parkinson's disease*

Andrée-Anne Poirier¹, Mélissa Côté¹, Mélanie Bourque¹, Marc Morissette², Thérèse Di Paolo¹, Denis Soulet¹

¹Laval University, ²CHUQ Research Center (CHUL)

3-C-57 *Investigating the Role of CDNF, MANF, and BDNF as Biomarkers and Therapeutic Targets for Parkinson's Disease.*

Shreya Prashar¹, Hetshee Joshi¹, Sharnpreet Kooner¹, Ram Mishra¹

¹McMaster University

3-C-58 *Exogenous Dopamine Application and Synaptic Plasticity in the Normal Globus Pallidus*

Ian Prescott¹, Robert Marino¹, Ron Levy¹

¹Queen's University

3-C-59 *Characterization of the effects of FDA-approved drugs on human cells: A potential treatment for C9ORF72 ALS cases.*

Amélie Quoibion¹, Martine Therrien², Simon Girard³, J. Alex Parker², Patrick Dion¹, Guy Rouleau¹

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¹McGill University (Montreal Neurological Institute), ²Université de Montréal (CRCHUM), ³McGill University

3-C-60 *Cadherins mediate cocaine-induced synaptic plasticity and behavioural conditioning*

Andrea Globa¹, Fergil Mills¹, Shuai Liu², Catherine Cowan¹, Mahsan Mobasser¹, Anthony Phillips¹, Stephanie Borgland², Shernaz Bamji¹

¹University of British Columbia, ²University of Calgary

3-C-61 *Assessing outcomes of an Endothelin-1 induced stroke injury in an APP transgenic rat*

Aaron Regis¹, Vladimir Hachinski¹, Shawn Whitehead¹

¹Western University

3-C-62 *The 3xTG-AD and 5XFAD mouse models of Alzheimer's disease show differences in signal detection and response bias on an automated odour discrimination task*

Kyle Roddick¹, Heather Schellinck¹, Richard Brown¹

¹Dalhousie University

3-C-63 *TAU Modulates BDNF Expression and Mediates AB-Induced BDNF Down-Regulation in Animal and Cellular Models of Alzheimer's Disease*

Elyse Rosa¹, Sujeivan Mahendram¹, Stephen Ginsberg², Yazi Ke³, Lars Ittner³, Margaret Fahnestock¹

¹McMaster University, ²New York University School of Medicine, ³The University of New South Wales

3-C-64 *Dopamine D3 receptor activity and its downstream signaling targets are altered within the basolateral amygdala following chronic opiate exposure*

Laura Rosen¹, Walter Rushlow¹, Steven Laviolette¹

¹The University of Western Ontario

3-C-65 *Cerebral aquaporins (AQPs) and their co-localised potassium channel as potential drug targets and/or biomarkers in Temporal Lobe Epilepsy (TLE)*

Mootaz Salman¹, Mariam Sheilabi¹, D. Bhattacharyya², Alessandra Princivalle¹, Matthew Conner¹

¹Sheffield Hallam University, ²Royal Hallamshire Hospital

3-C-66 *Personalized botulinum toxin type A therapy of bilateral upper limb essential tremor by multi-sensor kinematic technology*

Olivia Samotus¹, Hadi Moradi¹, Mandar Jog¹

¹London Health Sciences Centre

3-C-67 *Prohibition of Neogenin interaction with lipid rafts promotes functional recovery after ischemic stroke*

Alireza Shabanzadeh Pirsaraei¹, Paulo Koeberle², Philippe Monnier¹

¹University of Toronto/Toronto Western Research Institute, ²University of Toronto

3-C-68 *Different Forms of Disinhibition Have Distinct Effects on Dorsal Horn Circuits*

Husain Shakil¹, Kwan Yeop Lee², Steven Prescott²

¹University of Toronto, ²The Hospital for Sick Children

3-C-69 *The role of PAR2 activation in the pathophysiology of synucleinopathies with emphasis on Multiple System Atrophy (MSA)*

Seyedeh Zahra Shams Shoaie¹, Lili-Naz Hazrati², JoAnne McLaurin¹

¹Sunnybrook Research Institute (SRI), ²The Hospital for sick children (Sickkids)

3-C-70 *LPS-Induced Blood-Brain Barrier Disruption: Assessing Lithium's Molecular and Therapeutic Effects*

Roohie Sharma¹, Aaron Edward¹, Ritesh Daya¹, Jay Patel¹, Benicio Frey¹, Ram Mishra¹

¹McMaster University

3-C-71 *Traumatic brain injury induces progressive and degenerative changes resembling motor neuron disease that are exacerbated by pathological TDP-43*

Sandy Shultz¹, David Wright¹, Xin Tan¹, Terence O'Brien¹

¹The University of Melbourne

3-C-72 *Effect of Normal and Parkinson's Disease-Mutant Alpha-Synuclein on Synaptic Vesicle Recycling in Human CNS Presynaptic Terminals*

Christine Snidal¹, Robert Chen¹, Arup Nath¹, Qi Li¹, Taufik Valiente², Elise Stanley¹

¹Krembil Research Institute, ²University of Toronto

3-C-73 *The effects of microglia-mediated inflammation on neuronal development in vivo*

Cynthia Solek¹, Nasr Farooqi¹, Edward Ruthazer¹

¹Montreal Neurological Institute, McGill University

3-C-74 *The role of thalamo-motor fibre damage in overt motor responses in disorders of consciousness.*

Clara Stafford¹, Adrian Owen¹, Davinia Fernandez-Espejo²

¹University of Western Ontario, ²University of Birmingham

3-C-75 *History of Traumatic Brain Injury Moderates Relationships Between Polygenetic Risk and Neural Substrates of ADHD Symptoms*

Sonja Stojanovski¹, Daniel Felsky², Aristotle Voineskos², Russell Schachar¹, Anne Wheeler¹

¹Hospital for Sick Children, ²Centre for Addiction and Mental Health

3-C-76 *Differential Effects of Hippocampal Kindling in Young and Aging Mice*

Kurt Stover¹, Chiping Wu², Paul Stafford¹, Donald Weaver¹, James Eubanks¹, Liang Zhang¹

¹Krembil Research Institute, University Health Network, ²University of Toronto

3-C-77 *Characterization of Anatomical Brain Recovery after Treatment with Metformin in Hypoxia-Ischemia Mouse Model of Childhood Brain Injury Using Micro-MRI*

Kamila Szulc¹, Parvati Dadwal², Neemat Mahmud², Rebecca Ruddy², Christine Laliberté¹, Jacob Ellegood¹, Brian Nieman¹, Cindi Morshead², Donald Mabbott¹

¹The Hospital for Sick Children, ²University of Toronto

3-C-78 Entorhinal tau pathology decouples hippocampal and prefrontal oscillations without impairing associative memory
Stephanie Tanninen¹, Bardia Nourizabari¹, Mark Morrissey¹, Ronald Klein², Kaori Takehara-Nishiuchi¹

¹University of Toronto, ²Louisiana State University Health Sciences Center

3-C-79 Childhood maltreatment is associated with a global impairment of oligodendrocyte function in the anterior cingulate cortex of depressed suicides

Arnaud Tanti¹, Pierre-Eric Lutz¹, Alicja Gasecka², John Kim¹, Marina Wakid¹, Meghan Shaw¹, Marc-Aurele Chay¹, Sarah Barnett-Burns¹, Volodymyr Yerko¹, Gary Chen¹, Maria Antonietta Davoli¹, Daniel Zhou¹, Kathryn Vaillancourt¹, Jean-François Thérault¹, Alexan

¹McGill Group for Suicide Studies, ²Centre de Recherche de l'Institut en Santé Mentale de Québec, ³Institut universitaire en santé mentale de Québec

3-C-80 Investigating Perivascular Changes and the Blood Brain Barrier in Fetal Alcohol Spectrum Disorder

Uilki Tufa¹, Suzie Dufour², Meera Ramani², Iliya Weisspapir², Berj Bardakjian¹, Peter Carlen²

¹University of Toronto, ²Toronto Western Hospital

3-C-81 OTUD7A is a novel candidate driver gene of neurodevelopmental abnormalities in the 15q13.3 microdeletion syndrome

Brianna Unda¹, Mohammed Uddin², Sean White¹, Nicholas Holzapfel¹, Vickie Kwan¹, Nadeem Murtaza¹, Annika Forsingdal³, Jacob Nielsen³, Kristin Hope¹, Stephen Scherer², Karun Singh¹

¹McMaster University, ²The Hospital for Sick Children, ³H. Lundbeck A/S

3-C-82 The Biochemical and Behavioural Effects of Tyrosine Hydroxylase Overexpression in Transgenic Mice

Laura Vecchio¹, M. Kristel Bermejo¹, Gary Miller², Amy Ramsey¹, Ali Salahpour¹

¹University of Toronto, ²Emory University

3-C-83 Extensive white matter pathology in aged wildtype and APP transgenic rats used to model post-stroke dementia

Nina Weishaup¹, Shawn Whitehead¹, David Cechetto¹, Vladimir Hachinski¹

¹University of Western Ontario

3-C-84 Amyloid- β induced insulin resistance leads to diabetes and aggravated neurodegeneration in transgenic mice

Nadeeja Wijesekara¹, Rosemary Ahrens¹, Ling Wu¹, Kathy Ha¹, Miheer Sabale², Giuseppe Verdil¹, Paul Fraser¹

¹University of Toronto, ²Curtin University of Technology

3-C-85 Reopening the critical period for recovery by augmenting spinal plasticity after cortical stroke

Anna Wiersma¹, Karim Fouad¹, Ian Winship¹

¹University of Alberta

3-C-86 Changes in behaviour and resting state functional connectivity in a primate model of Alzheimer's Disease

Robert Wither¹, Susan Boehnke¹, Ann Lablans¹, Brian Coe¹, Joe Nashed¹, DJ Cook¹, Fernanda De Felice², Douglas Munoz¹

¹Queen's University, ²Federal University of Rio de Janeiro

3-C-87 Long-term amelioration of seizure-induced hypoxia: Effect on epileptogenesis and behavioural disturbances

Marshal Wolff¹, Simon Spanswick¹, Malek Amr¹, Jordan Farrell¹, Gordan Teskey¹

¹University of Calgary

3-C-88 Indications of impaired cerebrovascular buffering of rapid blood pressure changes following one season of participation in contact sports

Alexander Wright¹, Jonathan Smirl², Michael Kennefick², Colin Wallace², Kelsey Bryk², Paul van Donkelaar²

¹University of British Columbia, ²University of British Columbia Okanagan

3-C-89 MRI-guided focused ultrasound-mediated delivery of shRNA targeting α -synuclein in a mouse model of Parkinson's disease

Kristiana Xhima¹, Fadl Nabbouh², Kelly Markham-Coultes¹, Paul Nagy¹, Alison Burgess¹, Kullervo Hynynen¹, Isabelle Aubert³, Anurag Tandon²

¹Sunnybrook Research Institute, ²Tanz Centre for Research in Neurodegenerative Diseases, ³University of Toronto

3-C-90 Electrophysiological investigation in neurons derived from human induced pluripotent stem cells with disruptions of SHANK2

Wenbo Zhang¹, Kirill Zaslavsky¹, P Joel Ross¹, Asli Dedeagac¹, Alina Piekna¹, Graham Pitcher¹, Stephen Scherer¹, James Ellis¹, Michael Salter¹

¹The Hospital for Sick Children

3-C-91 Investigating the effects of Amyloid-beta GxxxG-motif-targeting agents on Abeta42-induced toxicity in a D. melanogaster model

Yifei Zhong¹, Filip Liebsch¹, Gerhard Multhaup¹

¹McGill University

D – Sensory and Motor Systems

3-D-92 rTMS to the OFA shows increased correlation to right and left FFA

Francisco Parreira¹, Sara Rafique¹, Lily Solomon-Harris¹, Jennifer Steeves¹

¹York University

3-D-93 Altered structural connectivity associated with visual hallucinations following occipital stroke

Sara Rafique¹, John Richards², Francisco Parreira¹, Jennifer Steeves¹

¹York University, ²University of California, Davis, Medical Center

3-D-94 Cannabinoid type 2 receptors modulate visual information in the primary visual cortex.

William Redmond¹, Umit Keysan¹, Destiny Lu-Cleary², Bruno Cécyre¹, Sébastien Thomas¹, Jean-François Bouchard¹, Christian Casanova¹

¹Université de Montréal, ²University British Columbia

3-D-95 Genetic identification of pain circuits using developmentally regulated Cre expression

Robert Roome¹, Artur Kania¹

¹Institut de Recherches Cliniques de Montréal

3-D-96 Central Pattern Generator modelling for swimming activity in Zebrafish larva spinal cord

Yann Roussel¹, Tuan Bui¹

¹University of Ottawa

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3-D-97 *Time Course Of Change In Reaches And Proprioception: After Reaching With A Misaligned Cursor*

Jennifer Ruttie¹, Erin Cressman¹, Denise Henriques¹

¹York University

3-D-98 *Spatial codes in the superior colliculus delay activity during memory-guided gaze task*

Amirsaman Sajad¹, Morteza Sadeh¹, Xiaogang Yan¹, Hongying Wang¹, Douglas Crawford¹

¹York University

3-D-99 *Altered Laminar Processing in Multisensory and Auditory Cortical Areas Following Adult-Onset Noise-Induced Hearing Loss*

Ashley Schormans¹, Marei Typlt¹, Brian Allman¹

¹Western University

3-D-100 *Audiovisual Temporal Processing in Rats as Assessed by Novel Operant Conditioning Tasks*

Kaela Scott¹, Ashley Shormans¹, Anna Tyker¹, Albert Vo¹, Dan Stolzberg¹, Brian Allman¹

¹University of Western Ontario

3-D-101 *A pixel-computable stabilized supralinear network model of V1*

Ben Selby¹, Bryan Tripp¹

¹University of Waterloo

3-D-102 *Challenging the Labeled Line Theory: Itch and Pain can be Coded by a Single Afferent Population*

Behrang Sharif¹, Ariel Ase¹, Alfredo Ribeiro da Silva¹, Philippe Séguéla¹

¹McGill University

3-D-103 *Von Economo neurons in Indian green Ring neck Parrot (Psittacula krameri): possible role in vocal learning*

Shubha Srivastava¹, Sudhi Shrivastava²

¹K N P G College Gyanpur S R N Bhadohi, ²Barkatullah University Bhopal M P

3-D-104 *Deactivation of PMd and A5 in non-human primates impairs corrective responses to mechanical disturbances of the limb*

Tomohiko Takei¹, Stephen Lomber², Douglas Cook¹, Stephen Scott¹

¹Queen's University, ²Western University

3-D-105 *Sciatic Nerve Exposure to Non-Compressive Nucleus Pulposus Elicits an Acute Inflammatory Neuritis Mediated by Neurotrophin Expression*

YuShan Tu¹, Mohammed Shamji², Michael Salter¹

¹Hospital for Sick Children, ²Toronto Western Hospital

3-D-106 *Peripheral Hypersensitivity to Subthreshold Stimuli Persists after Resolution of Acute Experimental Disc-Herniation Neuropathy*

Mohammed Shamji¹, YuShan Tu², Michael Salter²

¹Toronto Western Hospital, ²Hospital for Sick Children

3-D-107 *Goal-dependent modulation of the long-latency stretch response accounts for orientation of the arm*

Jeff Weiler¹, Paul Gribble¹, Andrew Pruszynski¹

¹University of Western Ontario

3-D-108 *Pannexin Channel Expression and Function in the Olfactory System of a Knock Out Panx1 Mouse Model*

Paige Whyte - Fagundes¹, Stefan Kurtenbach¹, Georg Zoidl¹

¹York University

3-D-109 *DTI reveals asymmetry in the optic radiations following early monocular enucleation*

Nikita Wong¹, Sara Rafique¹, Krista Kelly², Stefania Moro¹, Jennifer Steeves¹

¹York University, ²Retina Foundation of the Southwest

3-D-110 *HD-tDCS over the mIPSS affects movement planning*

Sisi Xu¹, Jason Gallivan¹, Gunnar Blohm¹

¹Queen's University

3-D-111 *Two-stage bimanual coordination learning*

Maral Yeganeh Doost¹, Jean Jacques Orban de Xivry², Yves Vandermeeren¹

¹UCL (Université Catholique de Louvain), ²KULeuven (Katholieke Universiteit Leuven)

3-D-112 *Cortical movement representations during unimanual and bimanual wrist movements in humans*

Atsushi Yokoi¹, Diogo Duarte², Jörn Diedrichsen¹

¹The University of Western Ontario, ²University of Lisbon

3-D-113 *V3 Spinal Interneurons Are Crucial In Regulating Weight-Loading Movement*

Han Zhang¹, Dylan Gauthier¹, Ying Zhang¹

¹Dalhousie University

E – Homeostatic and Neuroendocrine Systems

3-E-114 *The GABAergic neurosteroid 3 α -androstenediol protects SH-SY5Y human neuroblastoma cells against prolonged ERK phosphorylation induced by hydrogen peroxide and amyloid β peptide*

Ari Mendell¹, Neil MacLusky¹

¹University of Guelph

3-E-115 *The role of Growth Hormone as a neurotransmitter involved in depression: A human model*

Shubham Sharma¹, Michael Cusimano¹, Rowan Jing², Khalid Fahoum¹, Mubarak Algahtany³, Stanley Zhang²

¹University of Toronto/ St. Michael's Hospital, ²St. Michael's Hospital, ³College of Medicine, King Khalid University

3-E-116 *The effects of neuropeptide Y on dissociated subfornical organ neurons.*

Lauren Shute¹, Samantha Lee¹, Mark Fry¹

¹University of Manitoba

3-E-117 *Stress as a contagion: Synaptic imprinting following social interactions in rodents*

Toni-Lee Sterley¹, Dinara Baimoukhametova¹, Jaideep Bains¹

¹University of Calgary

3-E-118 *The Tubby protein regulates expression of genes involved in metabolism and neuronal functions*

Hamza Taufique¹, Sabine Cordes¹

¹University of Toronto

3-E-119 *Maternal Circuits that Respond to Mouse Pup Vocalizations: D2 Dopamine and Oxytocin Receptors*

John Yeomans¹, Brian Pereira¹

¹University of Toronto

F – Cognition and Behaviour

3-F-120 *Induction of 50 kHz vocalizations by dopamine and apomorphine from nucleus accumbens and lateral septum*

Michael Silkstone¹, Kevin Mulvihill¹, Christina Jobson¹, Stefan Brudzynski¹

¹Brock University

3-F-121 *5-HT1A receptor and its transcription factors Freud-1 and Freud-2 in the brain of rats with genetically determined fear-induced aggression or its absence*

Vladimir Naumenko¹, Tatyana Ilchibaeva¹, Anton Tsybko¹, Rimma Kozhemyakina¹, Elena Kondaurova¹

¹Federal Research Center Institute of Cytology and Genetics

3-F-122 *The effect of d-gavadine on the rewarding properties of d-amphetamine*

Maya Nesbit¹, Carine Dias¹, Jonathan Cunningham¹, Anthony Phillips¹

¹University of British Columbia

3-F-123 *Evaluating the role of GABA interneurons in the medial prefrontal cortex during working memory in mice*

Robin Nguyen¹, Junchul Kim¹

¹University of Toronto

3-F-124 *Opposite effects of nucleus accumbens shell D1 and D2 receptor antagonism in approach-avoidance conflict resolution*

David Nguyen¹, Victoria Fugariu¹, Rutsuko Ito¹

¹University of Toronto

3-F-125 *Correlation between cognitive decline and blood pressure in elderly patients with controlled hypertension*

Adrián Noriega de la Colina¹, Rong Wu¹, Laurence Desjardins-Crépeau², Maxime Lamarre-Cliche¹, Pierre Larochelle¹, Louis Bherer³, Hélène Girouard¹

¹Université de Montréal, ²Université de Québec à Montréal (UQAM),

³Concordia University

3-F-126 *fMRI reveals the evolution of representational content during a delayed match-to-sample task*

Edward O'Neil¹, Andy C.H. Lee¹

¹University of Toronto

3-F-127 *Resting-state MEG oscillations predict working memory scores on neuropsychological tests*

Victor Oswald¹, Younes Zerouali¹, Aubrée Boulait-Craig¹, Maja Krajcinovic¹, Caroline Laverdière¹, Daniel Sinnett¹, Pierre Jolicœur¹, Sarah Lippé¹, Karim Jerbi¹, Philippe Robaey¹

¹University of Montreal

3-F-128 *Genetic predictors of neurocognitive outcome in children treated for medulloblastoma*

Adeoye Oyefiade¹, Nadia Scantlebury¹, Nicole Law¹, Anna Goldenberg¹, Donald Mabbott¹

¹The Hospital for Sick Children

3-F-129 *Role of the ventral hippocampal projections to the lateral septum in fear and anxiety*

Gustavo Parfitt¹, June JY Bang¹, Junchul Kim¹

¹UoF

3-F-130 *The lateral entorhinal cortex encodes combinations of physical and relational features of stimuli in environmental context*

Maryna Pilkiw¹, Nathan Insel¹, Yonghua Cui², Caitlin Finney¹, Simone Cheng¹, Mark Morrissey¹, Kaori Takehara-Nishiuchi¹

¹University of Toronto, ²Medical College of Soochow University

3-F-131 *Basal forebrain cholinergic lesions attenuate the reinstatement of cocaine-seeking produced by a discriminative stimulus in goal-trackers but not sign-trackers*

Kyle Pitchers¹, Jonte Jones¹, Terry Robinson¹, Martin Sarter¹

¹University of Michigan

3-F-132 *Optical Imaging of Forgetting in the Mouse Hippocampus*

Adam Ramsaran¹, Jessica Jimenez², Sheena Josselyn¹, Mazen Kheirbek², Paul Frankland¹

¹Hospital for Sick Children, ²Columbia University

3-F-133 *Linking of fear memories by temporally limited changes in both excitatory and inhibitory neuron activity in the lateral amygdala*

Asim Rashid¹, Chen Yan¹, Valentina Mercaldo¹, Hwa-Lin (Liz) Hsiang¹, Antonietta DeCristofaro¹, Sungmo Park¹, Paul Frankland¹, Sheena Josselyn¹

¹The Hospital For Sick Children

3-F-134 *Pathway-specific recording of thalamic input to nucleus accumbens during reward seeking task*

Sean Reed¹, Christopher Lafferty¹, Thomas Davidson², Logan Groseknick², Karl Deisseroth², Jonathan Britt¹

¹McGill University, ²Stanford University

3-F-135 *Neurocognitive alterations in adult rats following neonatal treatment with domoic acid*

Mark Robbins¹, Catherine Ryan¹, Tracy Doucette¹

¹University of Prince Edward Island

3-F-136 *Metformin promotes cognitive recovery in two mouse models of juvenile brain injury*

Rebecca Ruddy¹, Daniel Derkach¹, Parvati Dadwal¹, Wenjun Xu¹, Cindi Morshead¹

¹University of Toronto

3-F-137 *Insights into how the Hippocampus Governs the Drive to Explore*

Jean-Philippe Dufour¹, Alejandro Tsai Cabal², Sabine Egli³, Christopher Barnes³, Horea-Ioan Ioanas³, Mahboubah Ahmadi⁴, Adrienne Müller Herde³, Silvan Boss³, Stefanie Krämer³, Simon Ametamey³, Markus Rudin³, Javad Mirnajafi-Zadeh⁴, Christopher Pryce⁵, Eri

POSTER SESSION 3 – WEDNESDAY, JUNE 1, 2016

¹University of Zürich, ²Friedrich Miescher Institute, ³Swiss Federal Institute of Technology, ⁴Tarbiat Modares University, ⁵University of Zurich Hospital for Psychiatry

3-F-138 Involvement of CB1 receptor on fear memory processing and on long-term potentiation in the hippocampus and infralimbic cortex.

Fabiana Santana¹, Rodrigo Ordonez¹, Ana Paula Crestani¹, Krislei Scienza¹, Josué Haubrich¹, Ricardo Sachser¹, Flavia Santos¹, Fernanda Lotz¹, Lucas Alvares¹, Jorge Quillfeldt¹

¹UFRGS/ Brazil

3-F-139 N400 evidence for embodied processing of concrete words after a picture context

Daniel Schmidtke¹, Elisabet Service¹, Richard Mah¹, John Connolly¹

¹McMaster University

3-F-140 The neural basis of episodic memory transformation in humans

Melanie Sekeres¹, John Anderson², Morris Moscovitch¹, Gordon Winocur¹, Cheryl Grady¹

¹Baycrest, ²York University

3-F-141 An anatomical interface for guidance of visual behavior by medial temporal lobe representations

Kelly Shen¹, Gleb Bezgin¹, Rajajee Selvam¹, Anthony McIntosh¹, Jennifer Ryan¹

¹Rotman Research Institute

3-F-142 GABA Cells in the Central Nucleus of the Amygdala Control Cataplexy

Matthew Snow¹, Jimmy Fraigne¹, Victoria Chuen¹, Richard Horner¹, John Peever¹

¹University of Toronto

3-F-143 Memory functions of adult neurogenesis are modulated by stress and sex

Jason Snyder¹, Timothy O'Leary¹

¹University of British Columbia

3-F-144 Hippocampus place cell network properties in a Fmr1 knockout model of Fragile X Syndromic Autism Spectrum Disorder

Fraser Sparks¹, Zoe Talbot¹, Dino Dvorak¹, André Fenton¹

¹New York University

3-F-145 Programming of adult behaviour and epigenetic gene regulation in rat offspring through prenatal exposure to predator odour

Sophie St-Cyr¹, Sameera Abuaish¹, Patrick McGowan¹

¹University of Toronto

3-F-146 Feedback inhibition underlies slot-like capacity and resource-like neural coding: a biophysical model of multiple-item working memory

Dominic Standage¹, Martin Pare¹

¹Queen's University

3-F-147 Remote object memory destabilization involves a

pathway linking M1 receptors to proteasome-mediated protein degradation

Mikaela Stiver¹, Natalie Nightingale¹, Julian Rizos¹, William Messer², Boyer Winters¹

¹University of Guelph, ²University of Toledo

3-F-148 Do multivoxel patterns of activity within the hippocampus carry information about temporal duration contained within event sequences?

Sathesan Thavabalasingam¹, Edward O'Neil¹, Andy Lee¹

¹University of Toronto

3-F-150 Neurogenesis' Influence on Learning and Memory: A Computational Approach to Dynamics of Circuit Remodeling

Lina Tran¹, Adam Santoro¹, Sheena Josselyn², Paul Frankland²

¹University of Toronto, ²Hospital for Sick Children

3-F-151 Excitability of human dorsal premotor cortex and ipsilateral primary motor cortex interactions prior to grasp

Michael Vesia¹, Michael Vesia¹, Gaayathri Jegatheeswaran¹, Reina Isayama¹, Ada Le², Jody Culham³, Robert Chen¹

¹Toronto Western Research Institute, ²York University, ³Western University

3-F-152 Interrogation of a Fear Memory Network

Gisella Vetere¹, Frances Xia¹, Justing Kenney¹, Lina Tran¹, Anne Wheeler¹, Sheena Josselyn¹, Paul Frankland¹

¹Hospital for Sick Children

3-F-153 Dissociable contributions of dopamine D1 and D2 receptors to regulation of rule-guided oculomotor behaviour by dorsolateral prefrontal cortex

Susheel Vijayraghavan¹, Alex Major¹, Stefan Everling¹

¹University of Western Ontario

3-F-154 Generation of neural trajectories with oscillations in the absence of ongoing external stimulation

Philippe Vincent-Lamarre¹, Jean-Philippe Thivierge¹

¹University of Ottawa

3-F-155 Levodopa impairs learning in healthy young adults: Implications for levodopa in Parkinson's disease

Andrew Vo¹, Ken Seergobin¹, Penny MacDonald¹

¹University of Western Ontario

3-F-156 Behavioral effects of CCK-GABA neurons: implications for schizophrenia

Paul Whissell¹, Ikram Khan¹, Junchul Kim¹

¹University of Toronto

3-F-157 Event-related Brain Potentials and Oscillatory Changes in Response to Semantic and Syntactic Aspects of Sentence Processing

Erin White¹, Anne Keller¹, Taufik Valiante², Elizabeth Pang¹

¹The Hospital for Sick Children, ²University Health Network

3-F-158 The Theory of Mind network: brain connectivity patterns underlying ToM processing in adults

Simeon Wong¹, Elizabeth Pang¹, Margot Taylor¹

¹Hospital for Sick Children

3-F-159 Parvalbumin-positive interneurons modulate hippocampal-cortical coupling and fear memory consolidation

Frances Xia¹, Blake Richards², Sheena Josselyn¹, Kaori Takehara-Nishiuchi², Paul Frankland¹

¹Hospital for Sick Children, ²University of Toronto

3-F-160 Effects of cognitive training on motor skills in elderly

Yu Hua Feng¹, Ruth Santos-Galduroz², Bagesteiro Leia², Raiane Borges³, Marisete Safons¹

¹Universidade de Brasília, ²UNIVERSIDADE FEDERAL DO ABC, ³Ministério da Saúde

G – Novel Methods and Technology Development

3-G-161 Plasma ADAM10 level as a potential biomarker for traumatic brain injury

Nam Pham¹, Yushan Wang², Thomas Sawyer², Changiz Taghibiglou¹

¹University of Saskatchewan, ²DRDC, Suffield Research Centre

3-G-162 Closed-loop interruption of hippocampal ripples in macaque

Omid Talakoub¹, Andrea Gomez Palacio Schjetnan¹, Milos Popovic², Taufik Valiente², Kari Hoffman¹

¹York university, ²university of toronto

3-G-163 Microfluidic manufacture of RNA-lipid nanoparticles leads to highly efficient delivery of potent nucleic acid therapeutics for controlling gene expression

Grace Tharmarajah¹, Eric Ouellet¹, Oscar Seira², Jie Liu², Anitha Thomas¹, Timothy Leaver¹, Andre Wild¹, Yuping Li², Yu Tian Wang², Wolfram Tetzlaff², Carl Hansen², Pieter Cullis², James Taylor¹, Euan Ramsay¹

¹Precision NanoSystems Inc., ²University of British Columbia

3-G-164 Development of a two-photon optogenetic tool box for studying cAMP and cGMP in living neurons

Megan Valencia¹, Fiona Bergin¹, Thomas Luyben¹, Kenichi Okamoto¹

¹University of Toronto

3-G-165 MRI-guided focused ultrasound delivery of AAV6 and AAV1/2 to the brain under control of the neuron-specific synapsin promoter

Danielle Weber-Adrian¹, Joseph Silburt², Zeinab Noroozian², Kairavi Shah², Alison Burgess¹, Sebastian Kügler³, Kullervo Hynynen¹, Isabelle Aubert¹

¹Sunnybrook Research Institute, ²University of Toronto, ³University of Göttingen

3-G-166 Construction of a head-mount fluorescent miniature microscope

Chen Yan¹, Valentina Mercaldo¹, Alexander Jacob¹, Yasaman Soudagar¹, Paul Frankland¹, Sheena Josselyn¹

¹Hospital for Sick Children

3-G-167 Multimodal imaging of structural covariance in the mouse brain

Yohan Yee¹, Darren Fernandes¹, Jacob Ellegood², Lindsay Cahill², Dulcie Vousden¹, Leigh Spencer-Noakes², Jan Scholz², Brian Nieman², John Sled², Jason Lerch²

¹University of Toronto, ²Hospital for Sick Children

3-G-168 Direct detection of axonal and somatodendritic release of Arginine Vasopressin by sniffer cells.

Cristian Zaelzer¹, Claire Gizowski¹, Charles Bourque¹

¹Research Institute of McGill University Health Centre

H - History, Teaching , Public Awareness and Societal Impacts in Neuroscience

3-H-169 Neuroscience Findings in Canadian National News: 2000-2015

Zoey Cheng¹

¹Institute of Medical Science, University of Toronto

3-H-170 The neuroscience classroom 2016: online pedagogical changes to enhance student-focussed learning

Justin Huang¹, Catherine Matolcsy¹, Lily Huang¹, Jeff Stulberg¹, Bill Ju¹

¹University of Toronto

3-H-171 Advertising & Articulating Neuroscience: Human Brain in Performance on Commercial Ads

Andrea Valent¹

¹York University

IBRO – International Brain Research Organization

3-IBRO-172 ROS Released By Astrocytes in Response to AβOs Affect Neuronal Distribution and Function of pSerStat3

Yorka Munoz¹, Andrea Paula-Lima¹, Marco Nunez¹

¹University of Chile

3-IBRO-173 Downregulation of autophagy attenuates axonal degeneration after traumatic lesion to the central nervous system.

Vinicius Ribas¹, Björn Vahsen², Marcos Costa¹, Uwe Michel², Mathias Bähr², Paul Lingor²

¹Federal University of Rio Grande do Norte, ²University Medicine Goettingen

3-IBRO-174 Involvement of proteasome in Aβ oligomers-induced synaptic dysfunction

Felipe Ribeiro¹, Juliana Fortuna¹, Danielle Cozachenko¹, Fernanda De Felice¹, Sergio Ferreira¹

¹Federal University of Rio de Janeiro

3-IBRO-175 Retinal Neuroprotective effects of A2a receptor antagonist SCH58261

Manuel Soliño¹, Ester López², Leonardo Juárez², Noelí Martignone², Mariana Bareiro², Elena Girardi², Juan López-Costa²

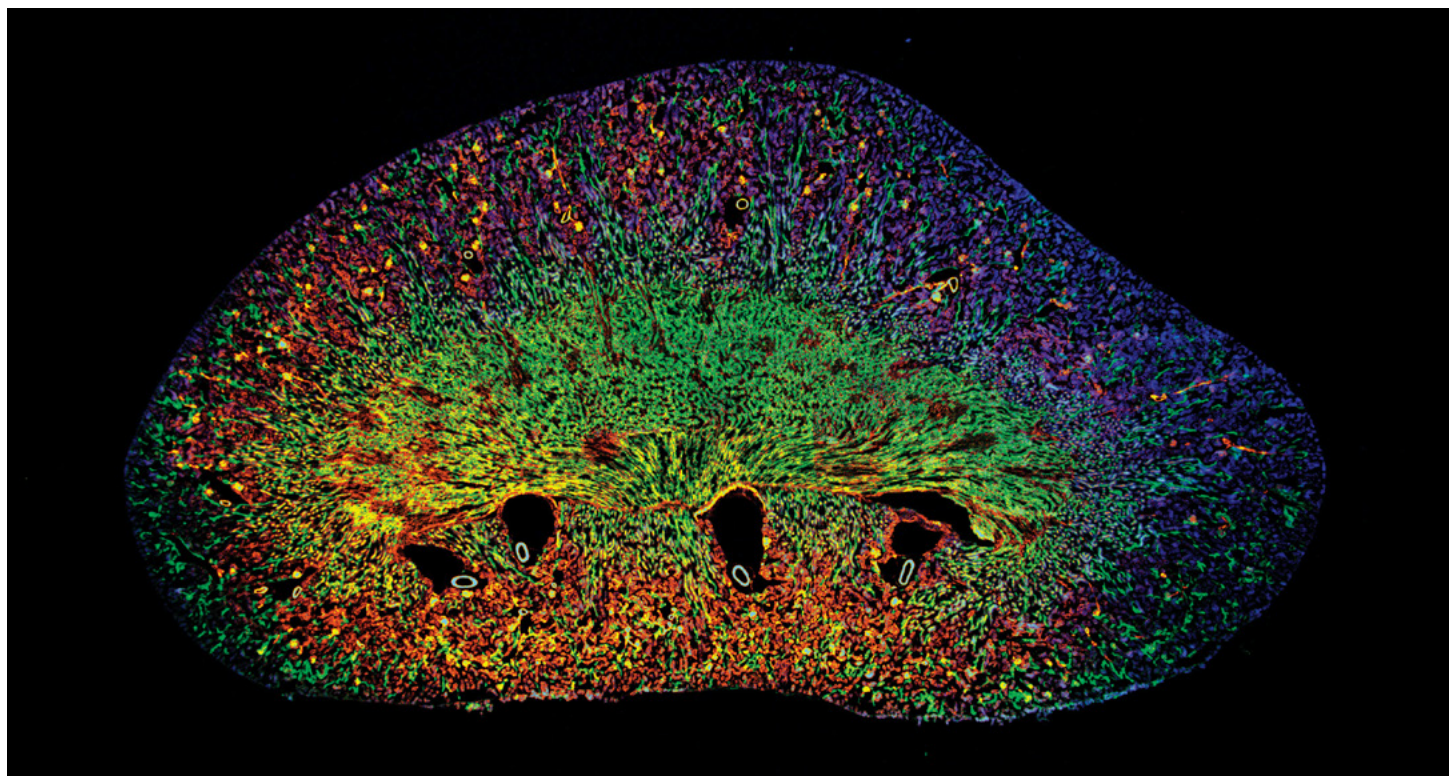
¹NCBI "Prof. E. De Robertis" UBA-CONICET; School of Medicine, ²Buenos Aires University

3-IBRO-176 Long term effects of early-ethanol exposure on the developing rat brain: A proteomic study.

Patricia Swart¹, Vivienne Russell¹, Jacqueline Dimatelis¹

¹University of Cape Town

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Confocal image of mouse kidney captured with 1.25x objective using the FV3000.

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Booth 2

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Table 03

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Table 04

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ANT North America Inc.

Booth 18

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Blackrock Microsystems

Booth 15

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Brain Vision, LLC

Booth 8

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The Canadian Neurophotonic Platform

Table 11

The Canadian Neurophotonic Platform is a technology platform that drives development of leading-edge photonics technologies for the study, diagnostics and treatment of brain diseases. Neurophotonic enables the investigation of neural circuits in a non-destructive manner, using light to activate, repress or simply detect activity in living tissues. The Neurophotonic Platform brings together the complementary expertise of leading Canadian chemists, physicists, neurobiologist and computational modelers who work in collaboration to develop and test novel neurophotonic tools and technologies. This close collaboration generates a rapid feedback loop for development of novel tools.

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The Centre for Drug Research and Development Booth 10

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CIHR Institute of Neurosciences, Mental Health and Addiction Booth 3

The CIHR Institute of Neurosciences, Mental Health and Addiction (CIHR-INMHA) fosters research into the functioning and disorders of the brain and the mind, the spinal cord, the sensory and motor systems and mental health, mental illness and all forms of addiction. CIHR-INMHA aims to translate new knowledge into improved health outcomes and quality of life for all Canadians.

Email diane.parsons@cihr.gc.ca

GALLERIESherrington Table 05

Amanda Sherrington is a graduate architecture student, as well as an artist and partner of GALLERIESherrington, mesmerized by the intricate complexity of neuroscience art. Amanda's experiences as an architectural historian and photographer have led her to a particular interest in the representation of organic yet systematic streetscapes and landscapes that has influenced her visual representations of neurons and networks in the brain.

Web www.etsy.com/ca/shop/GALLERIESherrington

Integrated DNA Technologies Booth 5

Integrated DNA Technologies (IDT) is the world's leading manufacturer of custom oligonucleotide products, including short strands of DNA and RNA. Their products for qPCR and functional genomics (RNAi, antisense, and CRISPR-Cas9 genome editing) support neuroscience research. IDT provides PNI with products for encapsulation in lipid nanoparticles.

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Mayo Clinic/Mayo Medical Laboratories Booth 7

Mayo Medical Laboratories is a global reference laboratory operating within Mayo Clinic's Department of Laboratory Medicine and Pathology. Mayo Medical Laboratories has supported community-based laboratory medicine for more than 45 years, providing both complex testing and pathology consultation to more than 5,000 hospital, clinics and laboratories in the United States and around the world.

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Web www.neuralynx.com

Neurescence Inc. Table 07

Neurescence offers a miniature fluorescence microscope that can simultaneously image MULTIPLE REGIONS of the brain and spine of freely behaving animals. With our device you SEE and LONGITUDINALLY MONITOR the activities of individual neurons in different regions, hence you can make a causal connection between your experimental parameter, such as behavior or drug, and neuronal activity in different regions of the Central Nervous System. We are a start-up in Toronto and are currently looking for early adopters. We offer you a significant discount and partner with you to ensure your success and publication in high impact journals, since it is a means of advertisement for Neurescence.

NeuroNexus Booth 14

NeuroNexus is a global leader for innovative neural interface products and technologies to meet current and emerging needs in neuroscience research, neurosurgery, and neurostimulation. Our diverse line of products is used in species ranging from fruit flies to non-human primates to precisely record, stimulate, and deliver drugs across all areas of the nervous system. Our technologies and products are aimed at advancing brain research and therapies.

Email support@NeuroNexus.com
Web NeuroNexus.com
Twitter [@neuronexustech](https://twitter.com/neuronexustech)

Noldus Information Technology Booth 22

Noldus Information Technology: powerful software tools, fully integrated labs, and expert consultancy. We have been making professional tools and instruments for animal behavior research for more than 25 years. These products enable the collection, integration, analysis, management, and presentation of behavioral and other data. Our product range for neuroscience research includes EthoVision XT video tracking, The Observer XT behavior annotation, CatWalk XT footprint and gait analysis, ErasmusLadder cerebellar phenotyping, PhenoTyper home cage testing, DanioScope zebrafish embryo and larvae measurements, and DanioVision zebrafish larvae activity monitoring. Our latest new addition is Ultra.

Email yvonne@noldus.com
Web www.noldus.com

Olympus Canada Inc Booth 23

Olympus Canada Scientific Solutions Group provides innovative microscopy and image analysis solutions to researchers, clinicians, educators, and to industry. Olympus microscope systems offer unsurpassed optics, superior construction, and system versatility to meet the ever-changing needs of microscopists, paving the way for future advances in science, medicine and engineering. Please visit us at www.olympuscanada.com for more information on all our products.

Email andrew.millar@olympus.com
Web www.olympuscanada.com

Parkinson Canada Table 02

Parkinson Canada is the national voice of Canadians living with Parkinson's disease. From diagnosis to discovery, since 1965 the organization provides education, advocacy and support services to individuals and health care professionals. The National Research Program funds innovative research to search for better treatments and a cure. Parkinson Canada is an accredited organization under the Imagine Canada Standards Program.

For information and support near you, contact 1-800-565.3000 or visit online at www.parkinson.ca. Health professionals visit www.ParkinsonClinicalGuidelines.ca.

Email research@parkinson.ca
Web www.parkinson.ca
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CAN-ACN EXHIBITORS

PeproTech, Inc

Booth 1

Supporting Life Science Research since 1988, PeproTech has grown into a global enterprise manufacturing an extensive line of Recombinant Human, Murine and Rat Cytokines, Animal-Free Recombinant Cytokines, Monoclonal Antibodies, Affinity Purified Polyclonal Antibodies, Affinity Purified Biotinylated Polyclonal Antibodies, ELISA Development Kits, Cell Culture Media Products and GMP Cytokines.

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Plexon

Booth 21

Plexon is a pioneer and leading innovator of custom, high performance data acquisition, behavior and analysis solutions specifically designed for scientific research. We collaborate with and supply thousands of customers including the most prestigious neuroscience laboratories around the globe driving new frontiers in areas including basic science, brain-machine interfaces (BMI), neurodegenerative diseases, addictive behaviors and neuroprosthetics. Plexon offers integrated solutions for in vivo neurophysiology, optogenetics and behavioral research -- backed by its industry-leading commitment to quality and customer support. www.plexon.com.

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Precision NanoSystems Inc.

Booth 5

Precision NanoSystems Inc. (PNI) provides innovative nanotechnology solutions that help scientists to understand the molecular basis of disease and develop new treatment regimens. Our proprietary platform, NanoAssemblr, and companion SUB9KITS reagent kits allow easy manufacturing of novel nanoparticles for clinical use and medical research.

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Rogue Research Inc.

Booth 4

Rogue Research develops the Brainsight® family of neuronavigation products, including Brainsight TMS, the first and most popular neuronavigation system designed specifically for TMS. Brainsight NIRS is a unique fNIRS system designed specifically for multimodality applications, allowing fNIRS acquisition during TMS and simultaneous fNIRS acquisition along with EEG, fMRI or MEG.

Email diane@rogue-research.com
Web www.rogue-research.com
Twitter twitter.com/brainsight

Society for Neuroscience

Booth 6

The Society for Neuroscience (SfN) is the world's largest organization of scientists and clinicians devoted to understanding the brain and nervous system. Founded in 1969, SfN now has nearly 38,000 members in more than 90 countries and 150 chapters worldwide. Membership in the Society benefits neuroscience professionals at all career stages, providing access to venues for sharing great science, support for career development, and public education and outreach. SfN members also enjoy exclusive discounts on Neuroscience 2016 registration fees, as well as submission fees for SfN's journals, eNeuro and JNeurosci.

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Web SfN.org
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Spectra-Physics, A Newport Company

Booth 30

As the first laser company, Spectra-Physics is singularly focused on helping customers use precision laser technologies to advance science and propel industries forward. The company does so by offering groundbreaking technologies, deep applications expertise, disruptive cost-performance, and a commitment to world-class customer experience. Our product portfolio spans CW to nanoseconds to femtosecond, UV to mid-infrared, and fiber to DPSS lasers. We enable applications in industrial and microelectronics manufacturing, medical and life sciences, and scientific research.

Email sales@spectra-physics.com
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Stoelting Co.

Booth 12

Stoelting Co. has been an innovator in producing superior neuroscience research equipment since 1886. We proudly offer a variety of behavioral testing equipment, including ANY-maze video tracking software, surgical instruments and stereotaxic equipment. As the exclusive North American distributor of Ugo Basile products, Stoelting Co. is better able to serve customers, offering the finest, most extensive pain product line in the industry. At Stoelting, we have a strong commitment to support scientific research. We seek to offer only high quality, reliable instruments, with prompt, educated customer service from our staff of experienced science professionals.

Email Lauren@StoeltingCo.com
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Facebook www.facebook.com/Stoelting-Co-204220626288748/?ref=aymt_homepage_panel

Thought Technology

Table 06

Founded in 1975, Thought Technology is the world's leading neurofeedback and psychophysiological instrument manufacturer. Our instrumentation not only monitors and records a wide variety of physiological and mechanical signals, but also analyzes and provides feedback in real time, through a variety of auditory and visual means, to promote self-regulation and conditioning. Thought Technology is redefining EEG based biofeedback with systems that can take your practice into new realms of neurological self-regulation.

Email helen@thoughttechnology.com

Web www.thoughttechnology.com

Tucker-Davis Technologies Booth 17

Tucker-Davis Technologies (TDT) provides products for basic and applied research in the neurophysiology, hearing, and speech sciences as well as for general data acquisition applications. We offer a complete line of modular DSP-based data acquisition and stimulus generation systems. At TDT, we work closely to achieve our common goal: to supply you with the highest quality, most up-to-date technology available at an affordable price. We believe we can best meet this goal when all areas of our business work together in a cooperative and collaborative environment.

Email rrojas@tdt.com

Web www.tdt.com

Weston Brain Institute Table 10

The Weston Brain Institute accelerates the development of breakthrough treatments for neurodegenerative diseases of aging, including Alzheimer's, Parkinson's and ALS. The Institute is Canada's largest privately funded national initiative. It directly supports world-class translational research through its focus on high-risk, high-reward projects, independent of commercial potential, using an innovative fast-track granting model. Support includes things like grants (up to \$1.5m), counsel and access to important networks. Funding for the Institute's Canadian programs comes from The W. Garfield Weston Foundation. International programs are supported by the Selfridges Group Foundation.

Email neuro@weston.ca

Web www.westonbraininstitute.ca

Twitter [@WestonBrain](https://twitter.com/WestonBrain)

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World Precision Instruments Booth 11

World Precision Instruments (WPI) has a 50 year history as a manufacturer of Electrophysiology equipment, Amplifiers, Stimulators, Isolators, Electrodes and supplies. New at our booth is a motor driven Stereotaxic frame, glass electrode Pipette Puller, complete line of Cannulas and an innovative Fluorescent Imaging light source equipped with timing & filtering. Leading in Biosensing and a major supplier of Surgical Instruments, also on display this year are: Electrophysiology equipment, Manipulators, pumps, micro volume fluid handling, microinjection gear and stereotaxic frames.

Email perry@wpiinc.com

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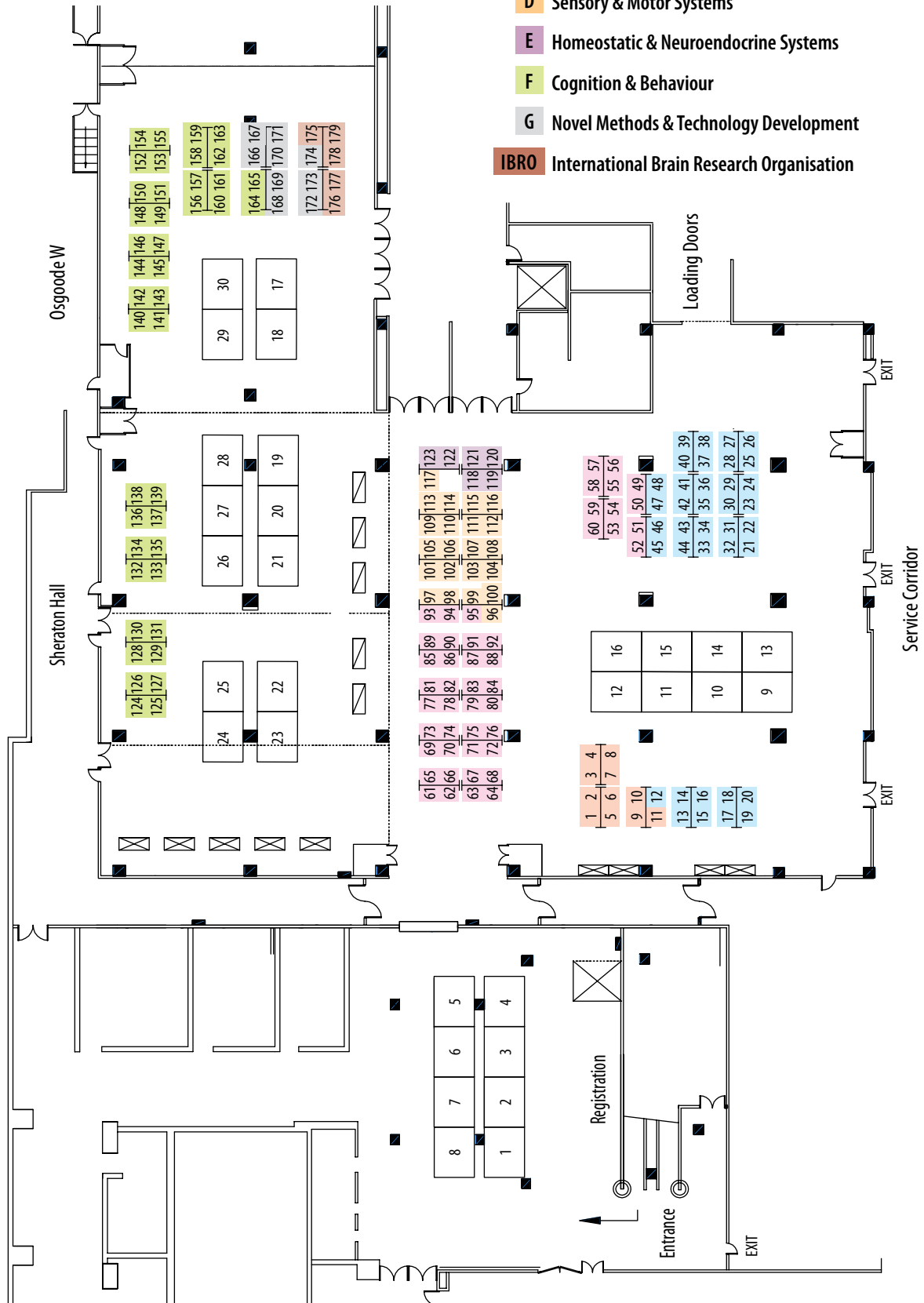
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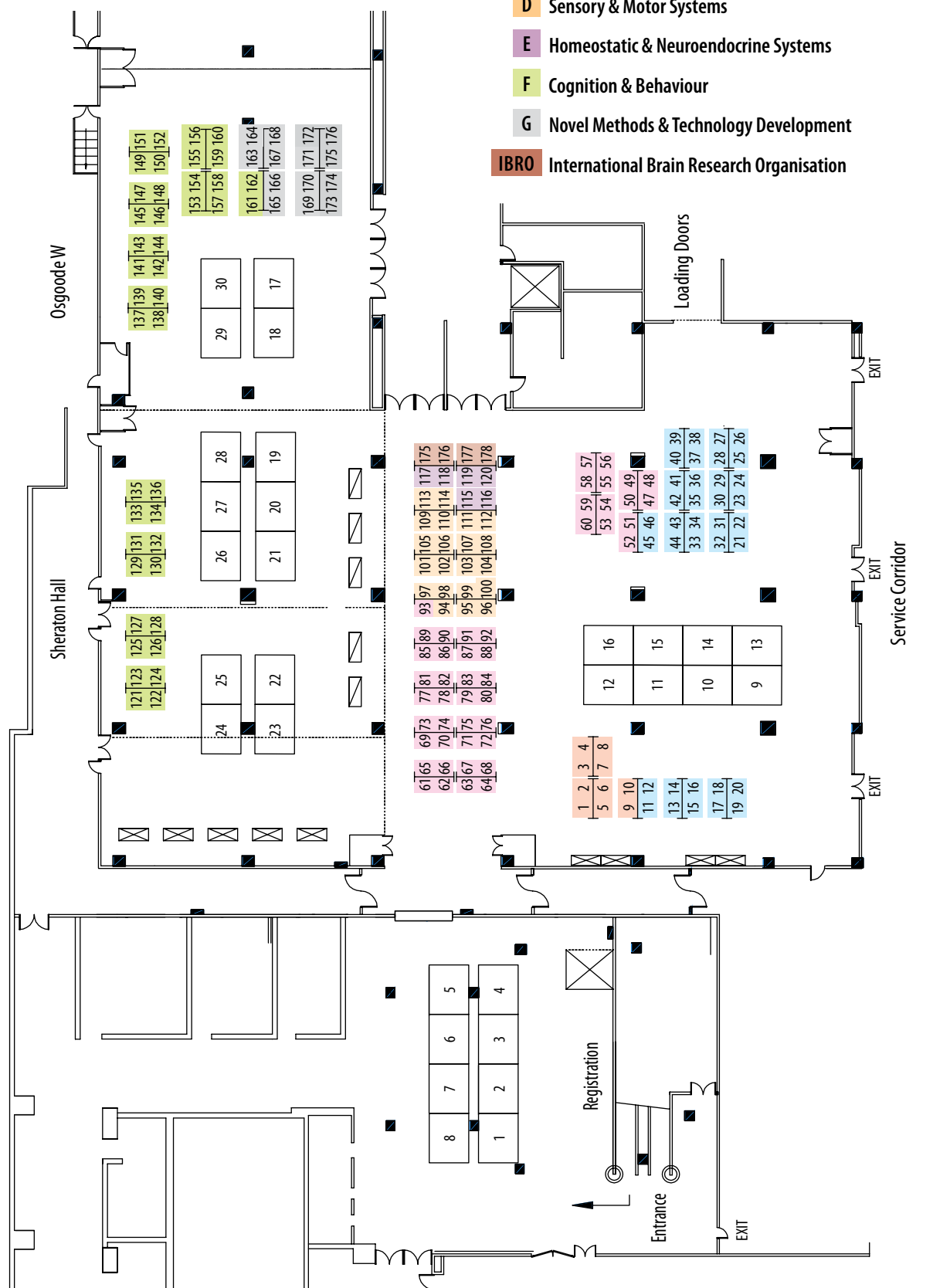
Day 1 – Monday, May 30

- A** Development
- B** Neural Excitability, Synapses & Glia: Cellular Mechanisms
- C** Disorders of the Nervous System
- D** Sensory & Motor Systems
- E** Homeostatic & Neuroendocrine Systems
- F** Cognition & Behaviour
- G** Novel Methods & Technology Development
- IBRO** International Brain Research Organisation

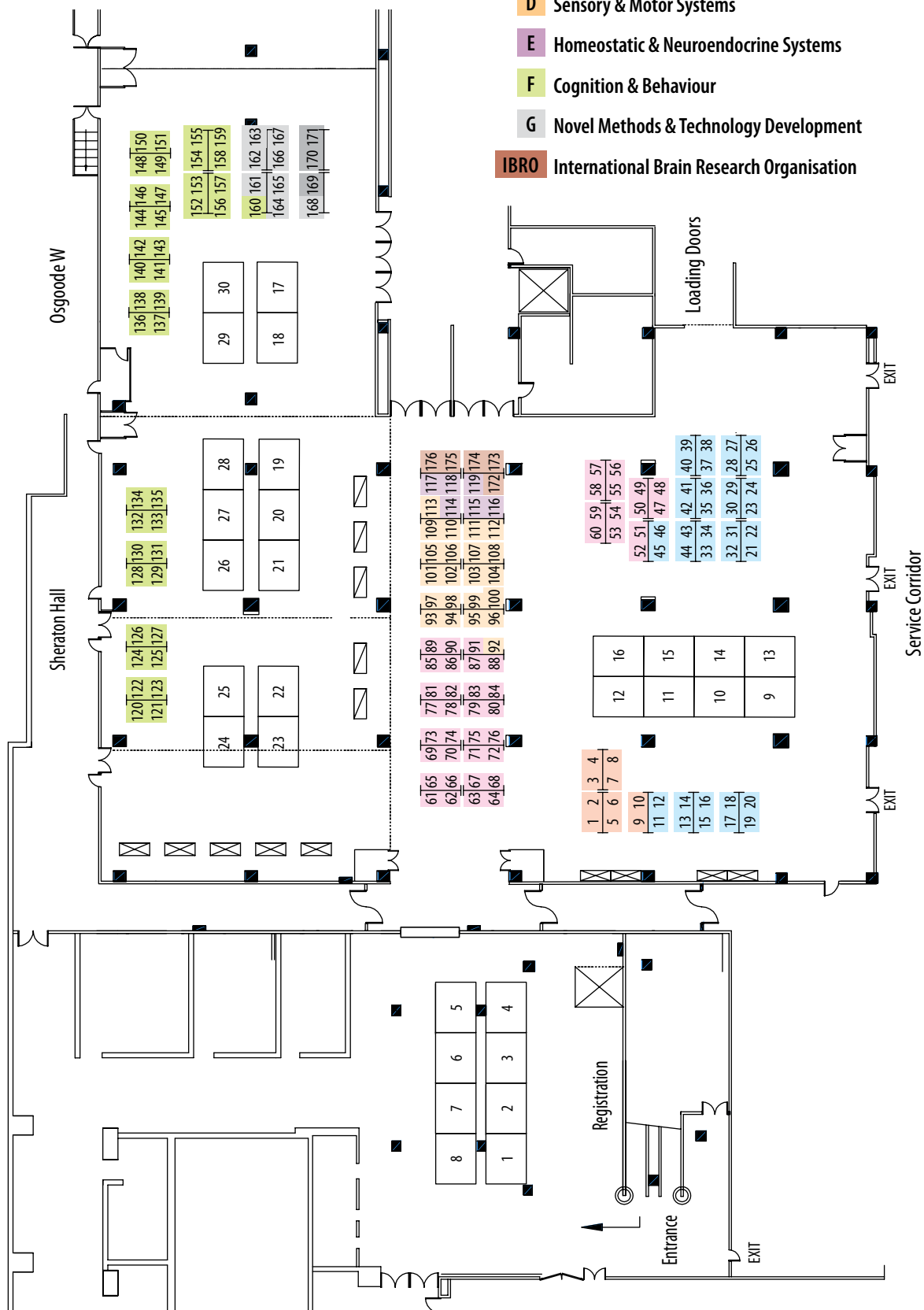


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Day 2 – Tuesday, May 31



Day 3 – Wednesday, June 1





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