CAN Connection

The Canadian Association for Neuroscience Newsletter | Summer Edition - June 2014

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It is with great enthusiasm that I take on the role of President of the Canadian Association for Neuroscience. Our meeting in Montreal last month showcased once again the great strength of neuroscience research in this country, and I am proud to represent such an impressive group of researchers.

Part of our strength stems from our ties and collaborations, and I believe fostering networking is an important role of CAN and the Annual Meeting, and it will be an important part of my mandate as President. Our Association aims to bring together neuroscientists from all subdisciplines, doing either basic or clinical research.

Increasing public awareness of the importance of the research we do is also vital. Showcasing our research to the general public leads to a better understanding of the importance of our work, to the recognition of the necessity for continued support. It is my aim to further develop public awareness for neuroscience in Canada

CAN also aims to advocate for the importance of neuroscience research to policy makers and government. Investments in neuroscience research will lead to a better understanding our brain functions, and lead to better treatments for people suffering from mental health issues and neurological disorders.

I look forward to working with all of you in representing our collective interests to promote neuroscience research in Canada and abroad.

Douglas Munoz
President
Canadian Association for Neuroscience

CAN2014 - Meeting Highlights

The **8th annual meeting of the Canadian Association for Neuroscience**, held in Montreal last May, was once a again a demonstration of the importance of neuroscience research in this country, and its promises to improve the lives of Canadians.

We first want to thank **Sheena Josselyn**, Chair of the Scientific Program Committee, and **Kurt Haas**, Co-Chair, and the members of the committee for their dedication and hard work that lead to the meeting's success. Over 900 neuroscientists participated in this year's meeting, which featured researchers from all fields of neuroscience research. The full program, including the impressive list of plenary speakers featured this year can be found on the meeting website.

The 2014 Presidential lecture was given by Dr. **Lynn Raymond**, from the University of British Columbia, who presented a promising approach to slow brain degeneration in **Huntington's disease**. Dr. Raymond presented research that shows that a drug that is already being used to treat Alzheimer's disease, called memantine, could delay the appearance of symptoms in a mouse model of Huntington's disease. As Huntington's disease is caused by a genetic defect that can be detected years before the appearance of symptoms, this discovery

2014 CAN Public Lectures

Gustavo Turecki and Sam David

The 2014 CAN Public Lectures were given by **Gustavo Turecki** (in French) and **Michael Meaney** (in English) on May 24th, and discussed "**How life experiences impact on Mental Health**". Pioneering work done by Meaney and Turecki, both from McGill University - Douglas Institute has shown that early life experiences, such as the quality of maternal care or traumatic events, can affect how the brain works, modify behaviors and responses to stress in a heritable matter, through epigenetics signals. These can in turn affect learning and memory.

A lively discussion followed each lecture, with a very interested crowd. **We wish to thank Drs. Meaney and Turecki** for their very informative and entertaining presentations!

Albert Aguayo, Michael Meaney and Sam David

could have a real impact on patients by giving them treatment options that could be used even before they become ill. **"This will make it possible to delay onset of disease,"** said Dr. Raymond.

The meeting was an opportunity to highlight new and emerging talent in Canadian Neuroscience research. Two **CAN 2014 Young Investigator Awards** were given this year, to **Brian Chen,** from **McGill University,** and **Stephanie Borgland,** from **University of Calgary**. The CAN 2014 Nominations Committee, chaired by Yves De Koninck, unanimously voted to honour both of these highly deserving young researchers.

Dr. **Stephanie Borgland** studies the neuroscience behind addiction and obesity. Most people that become obese overeat despite the knowledge that the consequences will be harmful. Similarly, a key feature of addiction is the inability to stop drug use despite negative consequences. Dr. Borgland believes the mechanisms in the brain underlying abnormally heightened motivation leading to obesity and addiction may be similar. Dr. Borgland and her research team focus on the neural mechanisms that underlie eating for reasons other than hunger. She has identified a number of molecules, such as the hormones ghrelin and insulin, and neurotransmitters such as dopamine, that interact to modify food interest behaviors. Her research has also helped explain how exposure to sweet and high fat food can lead to brain modifications that inhibit self control. Statistics Canada estimates one in five children and youth are overweight or obese; a better understanding of the cues leading to overeating is a first step towards preventing an obesity epidemic.

Stephanie Borgland

Dr. Brian Chen, from McGill University, investigates how connections between neurons form in the brain. While his interest lies in the fundamental mechanisms of how a brain is built, his research has lead to further understanding of events that occurs when the brain connections do not form normally, such as in Fragile X and Down Syndromes, which are main causes of intellectual disability.

Brian Chen and Yves De Koninck

In his presentation, Dr. Chen also highlighted the importance of collaborative work and networking in neuroscience. As new technical opportunities develop, having a network of experts working together to pool their expertise allows research to advance at a much faster pace. Development of open-access and collaborative tools, such as the genedigest.org platform Dr. Chen has developed to "democratize access to genomics information", will help all researchers.

Ellis Cooper and IBRO School students

IBRO Canadian Neuroscience School

The 8th Canadian International Brain Research Organization (IBRO) School of Neuroscience on Development and Plasticity took place in Montreal,

May 14 – 28, 2014. In addition to a full program of courses, participants, coming from Africa and Latin America, participated in the CAN meeting and met with neuroscientists. Dr. Ellis Cooper, CAN treasurer, acted as coordinator of this event, which also included lab visits. More information about this event and the Organizing committee can be found on the IBRO website.

CAN Parliament Hill Day

CAN is planning a day on **Parliament Hill to advocate for Neuroscience research in Canada**. Canada has great strength in neuroscience research and we wish to showcase our important contributions to the government, and thank them for they continuing support. In times when ressources are scarce, it is important to be represented and visible to policy leaders, to ensure we receive the support we need to pursue our research endeavours. As Advocacy Officer, David Kaplan will lead this project. If you are interested in participating, or in giving your input, please contact us at advocacy@can-acn.org.

Annual General Assembly

The annual assembly was an occasion to thank **Sam David** and **Yves De Koninck**, whose terms as President and as Chair of the Nominations Committee, respectively, ended in May. Sam David will continue to serve on the Board of Directors, as Chair of the Nominations Committee, where he is replacing Yves De Koninck. **Freda Miller**, taking office as new Vice-President, and **Doug Munoz**, as new President, received a warm welcome.

Sam David

Katalin Toth, CAN Secretary, informed the assembly that the **CAN Social at SfN** in Washington, DC, will be held at the **Canadian Embassy November 17th 2014.** Invitations will be sent by the Embassy to CAN members in advance of the event.

More pictures of the meeting can be viewed in the CAN Flickr Gallery

CAN 2015 - Vancouver

Planning is underway for our next annual meeting, which will take place at the Westin Bayshore in Vancouver.

Save the dates: **May 24 to 27 2015**.

You can already reserve your room at the Westin at the CAN preferential rate by using this link:

Book now!

Hot neuroscience topic: Memory

Every week, we feature new press releases published by universities and research institutes from across Canada about about important neuroscience discoveries. In recent weeks, we have included multiple postings on memory.

Forgetting may be good for you

Studies done with mice in the laboratory of **Shernaz Bamji** (University of British Columbia) has shown that if the connections between nerve cells that form a memory are made stronger, or "sticky", mice become unable to learn a slightly modified task, such as a new version of a maze. The authors suggest you need to be able to forget to learn (Read more: Press release or Article in PNAS).

Paul Frankland (University of Toronto) and his team reached a similar conclusion while studying infantile amnesia. They found that formation of new neurons causes old memories to be forgotten, and that the high number of new neurons being formed in infants could explain infantile amnesia. Frankland suggests this could be viewed as "spring cleaning", and that "decluttering" the brain of old information could allow new and important information to be stored. (Read more: Press release or Article in Science)

Memories evolve with experience

Other recent studies show that rather than being stable recordings, our memories evolve with experience and time, to allow us to develop a "big picture" perspective of the world. **Paul Frankland** and his team showed that rather than recording every event as a distinct memory, the brain tends to amalgamate memories to remember patterns and identify commonalities. (Read more: Press release or Article in Nature Neuroscience)

These results conform to the multiple trace/ transformation theory, developed by **Morris Moscovitch**, (Rotman research institute) and presented at the our meeting this year. This theory, which explains how different forms of memory are encoded in different regions of the brain, holds that two forms of memory are present in the brain: the first, stored in a brain region called the hippocampus, is called the episodic memory and is rich in contextual details, while the second, stored in the neocortex, called the semantic memory, is a schematic recording of the gist of the episodic memory. Every time a memory is recalled, it is re-encoded with its new context in the brain, producing a trace of the event, which is recorded. Over time, a memory is thus transformed, from a context-rich episodic memory to a more schematic, semantic memory. (Read more: Press release or Article in Trends in Cognitive Sciences)

Studies about memory, in addition to furthering to our knowledge of how our brain works, could also help ameliorate the lives of older adults and people suffering from dementia, by suggesting approaches that could help them recall important information.

We'd love to hear from you!

Send us your ideas and comments about this newsletter, our website or our activities at info@can-acn.org.

Or send us a tweet @can_acn!

Visit our website for more neuroscience news, a list of upcoming events, job offers, and more!

http://can-acn.org/

You can view archives of all neuroscience news stories posted on our website this year here:

http://can-acn.org/2014/

Have a great Summer!