

# Collaborative Program in Neuroscience (CPIN)

## University of Toronto

Newsletter – Vol. 37, No. 4 – December 2020



Photo Credit: Iulia Park

## Happy Holidays from CPIN

On behalf of the CPIN Virtual Research Day Organizing Committee, we wish to thank all faculty, postdoctoral and graduate students who participated to make CPIN's first Virtual Research Day today a success! We are especially grateful to our student volunteers and faculty judges.

The CPIN Research Day Report will be published in the January Newsletter.

**We wish all members a happy and restful holiday season!**

The CPIN Office will be closed from December 21, 2020 to January 1, 2021 inclusive.

## Featured In This Issue

**News – CPIN Faculty** Congratulations to **Dr. Amy Ramsey** and her lab on their recent publication in *Molecular Psychiatry*. Please see page 2 for details.

**Welcome New CPIN Faculty** We would like to welcome **Dr. Jennifer Rabin** as a new faculty member to the CPIN community. Please see page 2 for details.

**Neuroscience Opportunities** Please see page 2 for details.

**Sex & Gender Differences Competitive Fellowship** Please see page 3 for details.

## 2020-21 CPIN Distinguished Lectureship Series

<http://www.neuroscience.utoronto.ca/events/lectureship.htm>



**CPIN Distinguished Lecture/Mark Rochon Distinguished Lecture Series**  
Speaker | **Doug Weber**, PhD, Professor, Department of Mechanical Engineering and Neuroscience, Carnegie Mellon University  
Title | *Implantable, injectable, and wearable devices for sensing and effecting neurological functions*

Date & Time | **Monday, January 11 2021, 12:00 PM**

Location | Online; Live stream here: <https://youtu.be/PinWe33wvWI>

Host | José Zariffa, PhD, PEng, Senior Scientist, KITE - Toronto Rehab - UHN, Associate Professor, Institute of Biomedical Engineering, UofT

Co-Sponsor | The Kite Research Institute, Toronto Rehabilitation Institute, UHN

Submit your questions here: <https://app.sli.do/event/e84dbz1f>

Talk Details | <https://www.kite-uhn.com/talk/wearable-device-sensors>

<http://www.neuroscience.utoronto.ca/communications/newsletter.htm>

### CPIN Newsletter

Zhong-Ping Feng  
Director  
CPIN  
Graduate Studies

Iulia Park  
Administrator  
CPIN Office

CPIN Office  
[p.neuroscience@utoronto.ca](mailto:p.neuroscience@utoronto.ca)  
Tel.: 416 978 8637

**Lead Faculty**  
Temerty Faculty of Medicine

**CPIN Participating Units**  
Applied Psychology &  
Human Development  
Biochemistry  
Biomaterials & Biomedical  
Engineering  
Cell & Systems Biology  
Computer Science  
Dentistry  
Laboratory Medicine &  
Pathobiology  
Medical Biophysics  
Medical Science  
Music  
Pharmaceutical Sciences  
Pharmacology & Toxicology  
Physiology  
Psychology  
Public Health  
Rehabilitation Science

**Contributors:**  
Heart & Stroke/Richard  
Lewar Centre of Excellence in  
Cardiovascular Research

Human Biology Program  
Krembil Research Institute  
St. Michael's Neuroscience  
Research Program

# Collaborative Program in Neuroscience (CPIN)

## University of Toronto

Newsletter – Vol. 37, No. 4 – December 2020

### News – CPIN Faculty Members

[http://www.neuroscience.utoronto.ca/communications/news\\_cpिन\\_faculty\\_members.htm](http://www.neuroscience.utoronto.ca/communications/news_cpिन_faculty_members.htm)



Congratulations to **Dr. Amy Ramsey** (Associate Professor, Department of Pharmacology and Toxicology, University of Toronto) and members of her lab on their recent publication in *Molecular Psychiatry*. <https://doi.org/10.1038/s41380-020-00859-4>

Dr. Ramsey's laboratory studies schizophrenia using genetic mouse models of the disease with altered levels of neurotransmitter receptors and regulatory proteins. These models are studied at the molecular level, examining changes in gene expression and protein biology, and at the whole animal level, examining changes in behavioral pharmacology.

One of the principal efforts of the Ramsey laboratory is to understand the physiological consequences of NMDA receptor deficiency using a genetic mouse model that expresses low levels of the receptor throughout the brain. The NMDA receptor is a subtype of glutamate neurotransmitter receptors that regulates the formation and maintenance of synaptic connections between neurons. It plays an important role in the way that neurons wire together and change the strength of synaptic connections with experience. It is also implicated in a number of disease states including schizophrenia, a devastating mental illness.

The lab's previous work has demonstrated that NMDA receptor deficient mice represent a model of schizophrenia, exhibiting behavioral abnormalities that can be partially reversed with antipsychotic drugs. More recent studies have focused on the biochemical composition of the synapse, and the resulting morphology of the postsynaptic spine. The goal is to understand which proteins and signal transduction systems are altered when NMDA receptors are deficient. This knowledge may provide new insights into therapeutic treatments for schizophrenia, which can be experimentally tested in our model systems.



We would like to welcome **Dr. Jennifer Rabin** (Assistant Professor, Department of Medicine (Neurology); Psychological Clinical Science, UTSC; Rehabilitation Sciences, University of Toronto; Scientist, Sunnybrook Research Institute; Neuropsychology lead, Harquail Centre for Neuromodulation) as a new faculty member to the CPIN community.

Dr. Rabin is a clinical neuropsychologist and scientist at Sunnybrook Research Institute. Her research program focuses on two main themes. As the neuropsychology lead in the Harquail Centre for Neuromodulation, her research characterizes cognitive, behavioural, and psychosocial changes associated with novel neuromodulation strategies. This includes low-intensity focused ultrasound (FUS) to open up the blood-brain barrier in patients with Alzheimer's disease, and high-intensity FUS to treat severe psychiatric and neurological conditions, such as obsessive-compulsive disorder, major depressive disorder, and essential tremor. Another line of her research combines multimodal neuroimaging, such as MRI and PET, with sensitive neuropsychological measures to better understand modifiable risk factors that may delay the progression of Alzheimer's disease and other dementias.

### Neuroscience Opportunities

[http://www.neuroscience.utoronto.ca/communications/Positions\\_Available.htm](http://www.neuroscience.utoronto.ca/communications/Positions_Available.htm)

**Canada Research Chair (Tier II) in Complex Neural System Modelling**  
**Canada Research Chair (Tier II) in Computational Behavioural Neuroscience**

Department of Physics & Astronomy  
University of Calgary  
[Click here for details](#)

**Postdoctoral (2) and PhD Positions (2)**  
OPIRA laboratory  
The University of Illinois at Chicago (UIC)  
[Click here for details](#)

<http://www.neuroscience.utoronto.ca/communications/newsletter.htm>

### Sex & Gender Differences Competitive Fellowship

<http://www.neuroscience.utoronto.ca>



## SEX & GENDER DIFFERENCES COMPETITIVE FELLOWSHIP

### SEX, GENDER, & THE BRAIN

The Wilfred and Joyce Posluns Chair in Women's Brain Health and Aging is offering four fellowships of \$5,000 each for graduate students enrolled in the University of Toronto Collaborative Program In Neuroscience (CPIN) & the Department of Psychology.

The purpose of this top-up fellowship is to enable a student to add sex and/or gender considerations to their research.

### DEADLINE: MAY 01 2021

Applicants must provide:

1. A 2,000-character description of their research project, including how they will add sex and/or gender considerations to their project
2. A transcript of graduate course grades; and
3. A letter of support from their supervisor.

### DID YOU KNOW...?

- Women bear the brunt of Alzheimer's disease. Is it sex and/or gender?
- Male and female rodents have different mechanisms underlying chronic pain. Why do so many more women than men have chronic pain syndromes?
- Men and women perform differently on spatial cognitive tasks. Is it life experience or hormones?

### FELLOWSHIP RESPONSIBILITIES

1. End of year synopsis (4,000-characters max) of your sex and/or gender differences research findings, presentations or publications.
2. Participation in a graduate student led conference on women's brain health.

Please submit your completed applications to Galo Ginocchio at [Galo.Ginocchio@utoronto.ca](mailto:Galo.Ginocchio@utoronto.ca)

The Posluns Family  
Foundation

