

Collaborative Program in Neuroscience (CPIN)

University of Toronto

Newsletter – Vol. 31, No. 9 – May 2015

Featured In This Issue

2015 CPIN Research Day & Neuroscience Symposium The 2015 Collaborative Program In Neuroscience (CPIN) Research Day will be held on **June 19, 2015** at the **Medical Sciences Building** at the University of Toronto. The **Sackler Distinguished Visiting Neuroscientist** Keynote Lecture will be delivered by **Dr. Jeffrey C. Magee** (Janelia Research Campus, Howard Hughes Medical Institute). For event details, please visit our website: http://www.neuroscience.utoronto.ca/events/CPIN_Research_Day.htm

Call for Trainee Presentation Judges on CPIN Research Day CPIN faculty members are welcome to serve as judges at the Research Day on June 19, 2015 during the morning oral presentations, the early afternoon poster presentations, or both. Please contact the CPIN Office (p.neuroscience@utoronto.ca) if you are available to participate. Your input would be a great help in providing feedback on the trainees' research work.

Poster and Oral Presentation Awards will be given out at the 2015 CPIN Research Day to the top rated CPIN trainees based on the judges' evaluation.

News – CPIN Faculty Members Welcome **Dr. Donald Weaver** (Director of the Toronto Western Research Institute; Professor, Departments of Medicine, Chemistry and Faculty of Pharmacy), as well as his research expertise in the design of new putative therapeutics for neurological disorders, to the CPIN community. Congratulations to **Dr. Isabelle Aubert** (Associate Professor, Department of Laboratory Medicine and Pathobiology) on her recent work in the use of MRI-guided focused ultrasound for drug delivery and treatment of Alzheimer's disease. Welcome new CPIN member **Dr. Loren Martin** (Assistant Professor, Department of Psychology) from the UofT Mississauga campus. Please see page 2 for details.

News – CPIN Students Congratulations to CPIN student members **Tatyana Mollayeva** Mollayeva (PhD, Rehabilitation Science; Supervisor Dr. Angela Colantonio), **Sakina Rizvi** (PhD, Pharmaceutical Sciences; Supervisors Dr. Sidney Kennedy and Dr. Beth Sproule) and **Luka Srejjc** (PhD, Institute of Medical Science; Supervisor Dr. William D. Hutchison) on recently completing the CPIN requirements and graduating from the program. Please see pages 3 and 4 for details.

Welcome New CPIN Students Please see below for details.

Sackler Distinguished Visiting Neuroscientist

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



Speaker | **Dr. Jeffrey Charles Magee**, Group Leader, Janelia Farm Research Campus, Howard Hughes Medical Institute

Title | *A fundamental low-level cortical microcircuit computation*

Date | **Friday, June 19, 2015**

Time | 3:20 pm

Location | Room 3154, CPIN Research Day, Medical Sciences Building, University of Toronto

Note: CPIN Trainees should fill the online lecture report form following the lecture

CPIN Newsletter

Zhong-Ping Feng
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Lead Faculty
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
Rehabilitation Science

Contributors:
St. Michael's Neuroscience Research Program
Toronto Western Research Institute

Welcome New CPIN Students

Last Name	First Name	Home Unit	Degree	Supervisor
Deshpande	Poorva	Institute of Medical Science	MSc	Anne Marie Guerguerian
Kim	Ji-Sun	Physiology	MSc	Zhong-Ping Feng
Yan	Chen	Institute of Medical Science	PhD	Sheena Josselyn

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News - CPIN Faculty Members

http://www.neuroscience.utoronto.ca/communications/news_cpin_faculty_members.htm

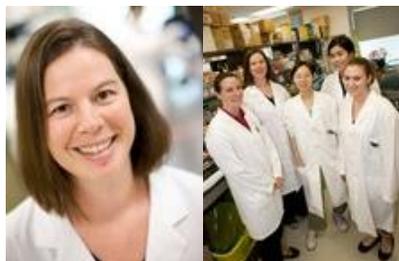


We would like to welcome **Dr. Donald Weaver** (Director of the Toronto Western Research Institute; Professor, Departments of Medicine, Chemistry and Faculty of Pharmacy) to the CPIN community.

Dr. Donald Weaver obtained his MD from Queen's University followed by a residency in clinical neurology at Dalhousie University. He also holds a PhD in organic chemistry, with emphasis on drug design and medicinal chemistry. From 1989-2001 he was on faculty at Queen's University, becoming Head of Neurology at Queen's from 1998-2001. From 2001-2013 he was on faculty at Dalhousie University, where he was a professor in the departments of medicine and chemistry and was also a CRC T1 Chair in neuroscience. In 2013 he moved to Toronto, becoming Director of the Toronto Western Research Institute. His research focusses on the design of new chemical entities (using computer-aided drug design methods)

as putative therapeutics for chronic neurological disorders.

Dr. Weaver's laboratory also performs the organic chemistry syntheses of these new agents, usually producing in excess of 150 new chemical entities per year. Dr. Weaver has either founded or co-founded eight start-up biotech companies. One of these companies (Neurochem Inc.) went to an initial public offering and was traded on the TSX and NASDAQ. Another company (Treventis Corp.) is currently supported by the UK-based Wellcome-Trust. Dr. Weaver has had two compounds reach Phase III human clinical trials. In addition to academic publications, he also holds more than 30 patents, with another 80 pending. He still has an active clinical practice, seeing patients with either epilepsy or dementia. Dr. Weaver is interested in both drug design research and clinical research.



Congratulations to CPIN Faculty member **Dr. Isabelle Aubert** (Associate Professor, Department of Laboratory Medicine and Pathobiology) on her recent work in the use of MRI-guided focused ultrasound to allow drugs to pass through the blood-brain barrier and stimulate neuronal and glial plasticity and function in efforts to provide improved medical treatment of Alzheimer's disease. The technology was developed by Dr. Kullervo Hynynen of the Sunnybrook Research Institute.

Link to U of T News story: <http://news.utoronto.ca/alzheimers-disease-researchers-offer-new-hope-treatment>

Dr. Isabelle Aubert heads the Brain Repair Group at Sunnybrook Research Institute, with a focus on developing regenerative therapies for Alzheimer's disease. Prior to joining SRI, Isabelle trained as a biochemist at the Université de Montréal (BSc) and received a PhD in Neuroscience from the Department of Neurology and Neurosurgery at McGill University. As a MRC fellow, Isabelle did her post-doctoral training at The Salk Institute for Biological Studies. The Brain Repair Group is involved in developing novel treatments in models of Alzheimer's disease halting the toxicity of beta-amyloid peptides & inducing neuronal survival & regeneration. The in vitro and in vivo evaluation of pharmacological approaches, immunotherapy and gene therapy is being assessed for their potential in maintaining neuronal health & inducing brain repair. The Brain Repair Group aims to develop treatments that will restore and preserve vital cognitive functions such as learning & memory in disease states.



We would like to welcome **Dr. Loren Martin** (Assistant Professor, Department of Psychology) to the CPIN community.

Dr. Loren Martin is an Assistant Professor in the Department of Psychology with a primary appointment on the Mississauga campus. Previously, he was a postdoctoral fellow in the laboratory of Dr. Jeffrey Mogil at McGill University. He obtained his PhD from the University of Toronto in 2009. He recently joined the University of Toronto Mississauga in January 2015. A large focus of his research aims to understand the bidirectional interplay between stress and pain. Each one (pain and stress) can have an impact on the other, creating a vicious cycle that sets the stage for chronic pain and chronic stress. Additionally, his work has shown that processes such as empathy are negatively affected (in mice and humans) by increased social stress and another aspect of his research explores the underlying biological mechanisms of empathy and prosocial behaviours (using both animal and human subjects). Dr. Martin also has a long-standing interest in the negative effects that pain has on cognition (learning, memory, brain plasticity) and social interactions when pain is experienced or starts during different developmental time points (neonatal, adolescence, adulthood).

News - CPIN Students

http://www.neuroscience.utoronto.ca/communications/news_cpin_students.htm



Congratulations to CPIN student member **Tatyana Mollayeva** (Rehabilitation Science, Supervisor Dr. Angela Colantonio) on recently completing the CPIN requirements and graduating from the program.

Tatyana Mollayeva received her medical degree from the Moscow Medical Academy and completed her epidemiology residency at the Turkmen State Medical University, and worked in the field of disease prevention. After immigrating to Canada in 2003, she became involved in sleep medicine, a passion that drove her pursuit of doctoral studies in the field of sleep and traumatic brain injury. Since 2011, she has been demonstrating Anatomy in the Division of Anatomy and co-supervising research by students enrolled in the Master's of Occupational Science and Occupational Therapy at the University of Toronto.

Tatyana has won several scholarships and awards, including the CIHR Frederick Banting and Charles Best Canada Graduate Scholarships Award for her project "Disorders of Sleep and Wakefulness among Ontario Workers with Traumatic Brain Injury: Prevalence and Impact". This research was conducted at the Toronto Rehab-UHN.

Tatyana is first author on 8 publications and book chapters on the topics of sleep and traumatic brain injury. Dr. Mollayeva hopes to continue her work in teaching and research, highlighting the significance of sleep dysfunction for health, safety, and productivity.

Select Peer-Reviewed Publications

Mollayeva T, Thurairajah P, Burton K, Mollayeva S, Shapiro CM, Colantonio A. The Pittsburgh sleep quality index as a screening tool for sleep dysfunction in clinical and non-clinical samples: a systematic review and meta-analysis. *Sleep Medicine Reviews* <http://dx.doi.org/10.1016/j.smrv.2015.01.009>

Mollayeva T, Kendzerska T, Mollayeva S, Colantonio A, Shapiro CM, Cassidy JD. A systematic review of fatigue in patients with traumatic brain injury: the course, predictors and consequences. *Neuroscience & Biobehavioral Reviews* 2014. doi: 10.1016/j.neubiorev.2014.10.024



Congratulations to CPIN student member **Sakina Rizvi** (Pharmaceutical Sciences, Supervisors Dr. Sidney Kennedy and Dr. Beth Sproule) on recently completing the CPIN requirements and graduating from the program.

Sakina Rizvi received her PhD in the Faculty of Pharmacy and Collaborative Program in Neuroscience (CPIN) at the University of Toronto in 2014. During her time as a graduate student, she garnered experience in psychiatry across the areas of neuroimaging, neuropsychology, psychotherapy, pharmacology, and scale development; specifically with a focus on elucidating the pathophysiology of treatment resistant Major Depressive Disorder (MDD) using positron emission tomography. Through this research Sakina won yearly

competitive scholarships including an Ontario Mental Health Foundation Studentship. This work also garnered recognition through awards and distinctions at prominent international meetings (International College of Neuropsychopharmacology, European College of Neuropsychopharmacology, Society of Biological Psychiatry).

Sakina has published over 35 peer-reviewed papers, chapters and articles. In her new role as Research Associate at St. Michael's Hospital and Scientific Associate at University Health Network in the Department of Psychiatry, Sakina is developing the suicide biomarker and treatment resistant depression research program.

In addition, as the Program Lead for the Ontario Depression Network, her goal is to promote mental illness advocacy, education and resource building across Ontario.

Select Peer-Reviewed Publications

Rizvi SJ, Grima E, Tan M, Rotzinger S, Lin P, McIntyre RS, Kennedy SH. Treatment Resistant Depression in Primary Care across Canada: Results from the InSight Study. *Canadian Journal of Psychiatry* 2014;59(7):349-357.

Rizvi SJ, Solomon T, Konarski JZ, Downar J, McIntyre RS, Kennedy SH. Neural response to emotional stimuli associated with successful antidepressant treatment and behavioral activation. *Journal of Affective Disorders* 2013;151(2):573-81.

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News - CPIN Students

http://www.neuroscience.utoronto.ca/communications/news_cpin_students.htm



Congratulations to CPIN student member **Luka Srejjc** (Institute of Medical Science, Supervisor Dr. William D. Hutchison) on recently completing the CPIN requirements and graduating from the program.

Luka Srejjc recently received his PhD from the Institute of Medical Science at the University of Toronto. He conducted his research at the Toronto Western Hospital, where he studied the neurophysiology of the subcallosal cingulate cortex in treatment resistant depression patients undergoing surgery for the implantation of deep brain stimulating (DBS) electrodes. Luka also used fast scan cyclic voltammetry and optogenetic techniques to characterize the effects of DBS on serotonin in animal models. His work brought significant insight into the mechanisms of DBS & the interplay between serotonin and plasticity in depression.

During his graduate studies, Luka earned several scholarships and awards, including the Ontario Graduate Scholarship and the Unilever Lipton Graduate Fellowship in Neuroscience. He has also authored a number of peer-reviewed publications in high-impact journals, such as *Biological Psychiatry*, and presented at several national and international scientific conferences.

Outside of the lab, Luka spent his time furthering scientific communication and functional knowledge exchange. As a member of the CPIN graduate executive committee, he launched *Neurotalk*, a robust neuroscience symposia geared towards fostering knowledge via informal discussions among students, post-docs, and faculty. Luka recently accepted the position of Neuromodulation Clinical Specialist at a leading medical device company.

Select Peer-Reviewed Publications

Srejjc LR, Hamani C, Hutchison WD. (2015). High frequency stimulation of the medial prefrontal cortex decreases cellular firing in the dorsal raphe. *European Journal of Neuroscience* 41:1219-1226

Srejjc LR, Prescott IA, Zhang P, Kennedy SH, Giacobbe P, Dostrovsky JO, Lozano AM, Hamani C, Hutchison WD. (2014). Paired pulse depression in the subcallosal cingulate region of depression patients. *Biological Psychiatry* (in press)

Upcoming Events

U of T Neuroscience Seminars

<http://neuroscience.utoronto.ca/events/seminar.htm>

Conferences and Meetings

http://neuroscience.utoronto.ca/events/Conf_M.htm

Graduate Student Award Opportunity

International Fellowships in Neuroscience 2015

The Weston Brain Institute is delighted to launch our **International Fellowships in Neuroscience** program to provide funding to University of Toronto graduate students who wish to advance their research abroad. The funding will provide students studying a neurodegenerative disease of aging the opportunity to travel internationally for up to 12 months. Additional information about the program, including the application form, can be found at:

<http://www.glse.utoronto.ca/news/2015-16-weston-brain-institute-international-fellowships-neuroscience>

Reminders

Submissions for News Updates The CPIN Office welcomes trainee and faculty members to submit updates in research discoveries, events, and other achievements involving CPIN members. Please send your submissions to p.neuroscience@utoronto.ca

Trainee Record Updates The CPIN Office is currently updating its records & requests that all CPIN students & postdoctoral fellows provide information pertaining to awards, publications & other achievements on the online form at the link below:

http://www.neuroscience.utoronto.ca/students/Trainee_Awards_and_Publications_Form.htm

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