

Collaborative Program in Neuroscience (CPIN)

University of Toronto

Newsletter – Vol. 34, No. 3 – November 2017

Featured In This Issue

Congratulations CPIN Graduating Students Please see page 4 for details.

Welcome new CPIN faculty member We would like to welcome **Dr. Tarek K. Rajji** as a new faculty member to the CPIN community. Please see page 2 for details.

News – CPIN Faculty Members Congratulations to **Dr. Taufik A. Valiante** on the recent publication from his laboratory. Please see page 3 for details.

News – CPIN Trainees Congratulations to CPIN PhD student member **Michael Chang** on his recent publication in the journal *Neurobiology of Disease*. Please see page 3 for details.

2018 Toronto Brain Bee will be held on Thursday, April 12, 2018 at the University of Toronto. High school student participant registration is now open and CPIN member volunteer opportunities are available. Please see page 5 for details.

Neuroscience Opportunities Please see page 5 for details.

2017-18 CPIN Distinguished Lectureship Series

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

Speaker | **Dr. Dalton Dietrich**, Scientific Director, The Miami Project to Cure Paralysis and the Kinetic Concepts Distinguished Chair in Neurosurgery, University of Miami Miller School of Medicine

Title | *Translational Studies for Spinal Cord Injury: Current and Future Challenges*

Date and Time | **Friday, November 3, 2017, 4:20 pm**

Location | Main Dining Room, Faculty Club, University of Toronto, 41 Willcocks St, Toronto, ON M5S 3G3

Host | Dr. Michael Fehlings, Head, Spinal Program, UHN & Vice Chair Research, Dept. of Surgery, U of T

Co-Sponsors | (i) UHN; (ii) Krembil Neuroscience Centre; (iii) U of T Spine Program; (iv) the Spinal Cord Injury Research Unit; (v) the DeZwirek Family; (vi) Barbara Turnbull Foundation

Note: The Charles Tator-Barbara Turnbull Spinal Cord Injury Symposium will held on Fri. Nov 3rd between 12-5pm. CPIN students are welcome to attend all/part of the Symposium



Speaker | **Dr. John H. Zhang**, Professor, Departments of Anesthesiology, Physiology, and Neurosurgery; Director, Center for Neuroscience Research, Loma Linda University School of Medicine, Loma Linda, CA; Editor in Chief, Translational Stroke Research; Editor in Chief, Medical Gas Research; Editor in Chief, Proceedings of Neuroscience

Title | *Stroke: a 2400 years puzzle*

Date and Time | **Wednesday, November 15, 2017, 3:00 pm**

Location | Rm. 2172, Medical Sciences Building, 1 King's College Circle, U of T

Host | Dr. Hong-Shuo Sun, Associate Professor, Departments of Surgery, Physiology, Pharmacology & Toxicology and Institute of Medical Science, U of T

Co-sponsor | Division of Neurosurgery, Department of Surgery, U of T



CPIN Newsletter

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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
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. 34, No. 3 – November 2017

2017-18 CPIN Distinguished Lectureship Series (contd.)

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



CPIN Faculty Distinguished Lecture

Speaker | **Dr. Roger S. McIntyre**, Professor, Psychiatry, Pharmacology & Toxicology and the Institute of Medical Science, U of T; Executive Director, Brain and Cognition Discovery Foundation (BCDF), Toronto; Director, Depression and Bipolar Support Alliance (DBSA), Chicago, USA; Head, Mood Disorders Psychopharmacology Unit

Title | How does obesity metastasize to the brain?

Date and Time | **Tuesday, December 5, 2017, 4:00 pm**

Location | 610 Auditorium, Health Sciences Building, 155 College St., U of T

Host | Danny Pan, CPIN MSc student, Institute of Medical Science



Speaker | **Dr. Cory Miller**, Associate Professor, Department of Psychology, University California, San Diego

Title | *Neurobiology of Marmoset 'Conversations'*

Date and Time | **Wednesday, December 6, 2017, 12:15 pm**

Location | Rm. 1071, Sidney Smith Hall, 100 St. George Street, U of T (*Please note that this lecture room location will accommodate up to 101 people*)

Host | Dr. Amy Finn, Assistant Professor, Department of Psychology, U of T

Co-sponsor | Department of Psychology Ebbinghaus Empire Series, U of T



Speaker | **Dr. Kees van Heeringen**, Professor and Chair, Department of Psychiatry and Medical Psychology, and Director, Unit for Suicide Research, Ghent University, Belgium

Title | *Suicidal brains: structural and functional changes and their role in suicide risk and prevention*

Date and Time | **Wednesday, January 31, 2018, 4:00 pm**

Location | Li Ka Shing Knowledge Institute, 209 Victoria Street, 2nd Floor, Room 209-Allan Waters Family Auditorium

Host & Co-sponsor | Arthur Sommer Rotenberg Suicide and Depression Studies Program, St. Michael's Hospital, U of T

Welcome new CPIN Faculty Member



We would like to welcome **Dr. Tarek K. Rajji** (Canada Research Chair in Neurostimulation for Cognitive Disorders; Chief, Adult Neurodevelopment and Geriatric Psychiatry Division; Deputy Physician-in-Chief of Research, Centre for Addiction and Mental Health; Associate Professor of Psychiatry, U of T) as a new faculty member to the CPIN community.

Dr. Rajji obtained his M.D. from the American University of Beirut, Lebanon. He completed residency in general psychiatry at the University of Texas Southwestern Medical Center and clinical training in geriatric psychiatry at Western Psychiatric Institute and Clinic in Pittsburgh. In 2006, he joined CAMH and the University of Toronto as a research fellow in geriatric psychiatry and then as a clinician scientist and an Assistant Professor of Psychiatry in December 2009. He was promoted to Associate Professor in July 2013. Dr. Rajji is a Fellow of the Royal College of Physicians and Surgeons of Canada and certified by the American Board of Psychiatry and Neurology with subspecialty in Geriatric Psychiatry. Dr. Rajji has been leading several clinical initiatives at CAMH. He also received numerous research awards and honors. His research is supported by private, provincial, federal, national, and international agencies.

Dr. Rajji's research focuses on restoring brain function in older patients with severe mental illness and Alzheimer's disease. Towards this goal, he combines neurostimulation, cognitive, functional, and pharmacological methods to study and enhance neuroplasticity across the lifespan with a special focus on late life.

News - CPIN Faculty Members

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



Congratulations to **Dr. Taufik A. Valiante** (Associate Professor, Surgery, Institute of Biomaterials and Biomedical Engineering, Electrical and Computer Engineering and the Institute of Medical Science) on the recent publication from his laboratory entitled "*Brief activation of GABAergic interneurons initiates the transition to ictal events through post-inhibitory rebound excitation*" in the journal *Neurobiology of Disease*.

Link to publication:

<http://www.sciencedirect.com/science/article/pii/S0969996117302255?via%3Dihub>

Dr. Valiante completed his BSc in Physics, MD, PhD, and neurosurgical residency in Toronto, and while in Seattle, Washington he received fellowship training in Epilepsy Surgery. He is the co-Director of the Epilepsy Program at the Toronto Western Hospital (TWH), and a Scientist at the Krembil Research Institute. Early in his career, and through many years of advocacy, he established the first 5 bed Epilepsy Monitoring Unit (EMU) at the TWH, with subsequent efforts realizing the Provincial Epilepsy Strategy (PES) – the first and only regionalized approach to epilepsy care in the world. The PES led to further expansion of the EMU and the funds to operate what is now one of the largest and most academic Epilepsy Programs in Canada.

His research spans many spatial scales – from single cell properties of human neurons (in-vivo and in-vitro), to microcircuit dynamics, right up to developing prosthetic devices for humans to stop seizures and improve memory. He is the co-founder of CRANIA (Center for Advancing Neurotechnological Innovation to Application), and the Neuromodulation Institute which are collectively charged with building next generation neurotechnology, and training next generation neuroscientists. Ultimately none of the above would have been possible without multidisciplinary collaboration with world-class researchers here at the University of Toronto.

News - CPIN Trainees

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



Congratulations to CPIN PhD student member **Michael Chang** (Institute of Medical Science, Valiante lab) on his recent publication entitled "*Brief activation of GABAergic interneurons initiates the transition to ictal events through post-inhibitory rebound excitation*" in the journal *Neurobiology of Disease*.

Link to publication:

<http://www.sciencedirect.com/science/article/pii/S0969996117302255?via%3Dihub>

Michael Chang is a 4th year Ph.D. student at the University of Toronto, Institute of Medical Science. His research at the Krembil Research Institute focuses on the role of interneurons in seizure dynamics using optogenetic techniques, under the supervision of Dr. Taufik A. Valiante. Michael has previously been awarded the McMurrich Oral Presentation Award at Gallie Day 2015, the CPIN Oral Presentation Award at CPIN Day 2015, and a Mightex Student Research Grant from the California-based optogenetic hardware developer, Mightex Systems.

Prior to his Ph.D. studies, Michael co-founded Chang Property Development, a construction company that develops infrastructure in the Dawei Special Economic Zone. Chang Property Development also allocates a portion of its resources towards socially conscientious projects that work with the Myanmar government, the Norwegian Refugee Council, and Italian-Thai Development Company to build roads, schools, and homes for the locals in Dawei, Myanmar. Michael is continually fascinated by the parallels between science, business, and technology, and shares his insights as a science writer for University Health Network's online e-magazine The ORT Times.

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Newsletter – Vol. 34, No. 3 – November 2017

Congratulations CPIN Graduating Students



Name: Marie Kristel Bermejo

Program: PhD

Department: Pharmacology and Toxicology

Supervisor: Dr. Ali Salahpour

Thesis Title: Selective Rescue of NMDA Receptor Function in Dopaminergic Neurons of NMDA Receptor Deficient Mice



Name: Alexandra Mogadam

Program: MSc

Department: Institute of Medical Science

Supervisor: Dr. Elizabeth Pang

Thesis Title: The Neural Correlates of Mental Flexibility in Children with Neurodevelopmental Disorders



Name: Tyler Saumur

Program: MSc

Department: Rehabilitation Science

Supervisor: Dr. George Mochizuki

Thesis Title: Characterizing Cortical and Spinal Markers of Lower Limb Movement Preparation



Name: Filip Stojic

Program: MASc

Department: Biomaterials and Biomedical Engineering

Supervisor: Dr. Tom Chau

Thesis Title: A novel EEG-BCI dependent on discrimination of imagined stimuli in visual field quadrants



Name: Ilan Vonderwalde

Program: MASc

Department: Biomaterials and Biomedical Engineering

Supervisor: Dr. Cindi Morshead

Thesis Title: Transplantation of Directly Reprogrammed Human Neural Precursor Cells to Promote Repair in a Preclinical Model of Stroke



Name: Andrew Talor Wong

Program: MASc

Department: Biomaterials and Biomedical Engineering

Supervisor: Dr. Tom Chau

Thesis Title: Systematic Quantification of Superficial Blood Flow in Near Infrared Spectroscopy Brain Computer Interfaces in a Pediatric Context

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

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

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Newsletter – Vol. 34, No. 3 – November 2017

2018 Toronto Brain Bee

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

The Toronto Brain Bee is a knowledge-based competition organized by CPIN for high school students in the GTA region. It tests the knowledge of the students in neuroscience. The original contest format was derived from the traditional Spelling Bee. **The 20th Annual Toronto Brain Bee will be held on Thursday, April 12, 2018 at the University of Toronto.**

Related Links:

Official Toronto Brain Bee webpage: <http://www.neuroscience.utoronto.ca/events/brainbee.htm>

High-school Participant Registration Link: <http://www.neuroscience.utoronto.ca/events/brainbee/torontobbreg.htm>

CPIN member event volunteer sign-up form:

http://www.neuroscience.utoronto.ca/events/brainbee/brain_bee_volunteer_form.htm

Support the Toronto Brain Bee with a donation: <https://donate.utoronto.ca/give/show/218>

Neuroscience Opportunities

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

Postdoctoral Fellow Position

Brain Repair Centre, Dalhousie University, Halifax, Nova Scotia, Canada

Description: Position available for a postdoctoral fellow at the Brain Repair Centre (www.BrainRepair.ca), in the Faculty of Medicine, Department of Medical Neuroscience, Dalhousie University, under the directorship of Professor Victor Rafuse. The Rafuse lab (<http://victorrafuselab.com/>) studies various aspects of neuromuscular development, motor neuron diseases such as ALS, and ways to restore function to paralyzed skeletal muscles. We utilize multiple techniques ranging from mouse electrophysiology to in vitro studies using stem cell derived motoneurons and muscle fibers. One position will focus on the study of synaptic dysfunction at the neuromuscular junction using in vivo and in vitro models of ALS. A second position involves a more translational research project designed to restore function to paralyzed muscles using light-activated ion channels. Both positions are located in the Brain Repair Centre at Dalhousie University in beautiful Halifax, Nova Scotia, CANADA

<http://www.destinationhalifax.com>

For further information, please see the position attachment at the link below:

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

Reminders

Submissions for News Updates The CPIN Office requests 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

Follow CPIN on social media: CPIN faculty and trainee members are welcome to follow us at the following links:

Facebook: <https://www.facebook.com/Collaborative-Program-in-Neuroscience-212564644049/>

LinkedIn: <https://ca.linkedin.com/in/cpinuoft>

Twitter: https://twitter.com/CPIN_UofT

CPIN Student Completion Form CPIN graduate students who have completed both their home department and CPIN trainee requirements must fill in the online completion form located at the link below:

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

Faculty Profile Update The CPIN Office is looking to update the CPIN faculty member profiles on the website: <http://www.neuroscience.utoronto.ca/faculty/list.htm> If you wish to add or update your profile on the CPIN website, please contact the CPIN Office at p.neuroscience@utoronto.ca.