

Collaborative Program in Neuroscience (CPIN)

University of Toronto

Newsletter – Vol. 32, No. 7 – March 2016

Featured In This Issue

Welcome New CPIN Participating Unit CPIN would like to welcome our newest Participating Academic Unit, the **Dalla Lana School of Public Health**. Please see page 3 for details.

2016 CPIN Research Day & Call for Judges Registration and abstract submission for the CPIN Research Day that will be held on **Thursday, May 19, 2016 at the Medical Sciences Building, U of T is now open!** We are also seeking the help of faculty members to judge the trainee presentations at the event. Please visit the CPIN website for details:
http://www.neuroscience.utoronto.ca/events/CPIN_Research_Day.htm

Thank you to the 2016 Toronto Brain Bee Sponsors The **18th Annual Toronto Brain Bee** will be held on **Friday, April 1, 2016** at U of T. We would like to thank our sponsors; the **Firefly Foundation, the Dept. of Physiology & the Ontario Ministry of Research and Innovation** via Early Researcher Award outreach funds provided by **Dr. Morgan Barese** (Psychology), **Dr. Patrick McGowan** (Biological Sciences, Cell & Systems Biology), **Dr. John Ratcliffe** (Ecology & Evolutionary Biology) & **Dr. Kaori Takehara-Nishiuchi** (Psychology). For further details, please visit: <http://www.neuroscience.utoronto.ca/events/brainbee.htm>

CPIN Young Researcher Seminar Series is a new platform launched to showcase the outstanding work of senior CPIN trainees while allowing them to receive invaluable feedback from CPIN faculty members and fellow peers. CPIN members are encouraged to attend the next event on **Wednesday, April 20, 2016**. Please see page 2 for speaker details.

CPIN Neurotalk Please see page 3 for details.

CPIN NeuroCentricArts Competition Both U of T and external personnel are welcome to register to view the exciting entries at our upcoming free-form art competition on **April 29, 2016**. We would also like to thank the **Krembil Research Institute** for providing sponsorship for the event. Please see page 3 for visitor registration and other details.

News – CPIN Faculty Members Congratulations to **Dr. Graham Collingridge** (Professor & Chair, Physiology; Senior Investigator, Lunenfeld-Tanenbaum Research Institute) on being one of the recipients of the Brain Prize awarded by the Grete Lundbeck European Brain Research Foundation. Congratulations to **Dr. Sidney H. Kennedy** (Professor, Institute of Medical Science & Psychiatry) for accepting the Arthur Sommer Rotenberg (ASR) Chair in Suicide and Depression Studies. We would also like to welcome **Dr. Michael H. Thaut** (Professor, Music; Director, MaHRC) to the CPIN community. Please see page 4 & 5 for details.

News – CPIN Trainees Congratulations to CPIN student member **Danielle S. Cha** (Institute of Medical Science; Supervisor Dr. Roger S. McIntyre) on recently completing the CPIN requirements and graduating from her MSc program. Please see page 5 for details.

CPIN NeuroSci 101: Year in Review Please see page 6 for a year-end review of this free annual neuroscience course for high-school students in the GTA region.

2015-16 CPIN Distinguished Lectureship Series

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



Speaker | **Dr. Tim Bussey**, Western Research Chair, Molecular Medicine Research Group, Robarts Research Institute & Dept. of Physiology and Pharmacology, Schulich School of Medicine & Dentistry, Western University, London, ON, Canada; The Brain and Mind Institute, Western University, London, ON, Canada; Professor of Behavioural Neuroscience, Dept. of Psychology, University of Cambridge UK

Title | *Strategies for cognitive translation from animals to humans: neurogenesis, neurodegenerative and neuropsychiatric disease*

Date and Time | **Wednesday, March 30, 2016, 11:00am**

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

Host | Dr. Graham Collingridge, Chair and Professor, Dept. of Physiology, U of T

Co-sponsor | Department of Physiology, U of T

CPIN Newsletter

Zhong-Ping Feng
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CPIN
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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:

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

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2015-16 CPIN Distinguished Lectureship Series (contd.)

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



Speaker | **Dr. Clifford B. Saper**, James Jackson Putnam Professor of Neurology and Neuroscience, Harvard Medical School; Chairman, Department of Neurology, Beth Israel Deaconess Medical Center
Title | *Genetic manipulations of hypothalamic circuitry for regulation of sleep*
Date | **Friday, April 15, 2016**
Time | 2:00 pm
Location | 103 Main Lecture Room, FitzGerald Building, 150 College Street, U of T
Hosts | (i) Dr. John Peever, Professor, Departments of Cell & Systems Biology and Physiology, Director, Centre for Brain Sciences, Vice-President, Canadian Sleep Society; (ii) Dr. Richard Horner, Professor, Departments of Medicine and Physiology, Canada Research Chair in Sleep and Respiratory Neurobiology, Director, *Sleep and Biological Rhythms Toronto*
Sponsor | CIHR Team Research and Training Program: *Sleep & Biological Rhythms Toronto*



Speaker | **Dr. Gustavo Turecki**, Professor and Chair, Department of Psychiatry, and Director, McGill Group for Suicide Studies, McGill University
Title | *Revisiting Suicide Risk: Experience, Development and Psychopathology*
Date | **Thursday, April 28, 2016**
Time | 4:00 pm
Location | Li Ka Shing Knowledge Institute, 209 Victoria Street, 2nd floor, Room 209-Allan Waters Family Auditorium
Host & Sponsor | Arthur Sommer Rotenberg Chair in Suicide & Depression Studies at St. Michael's Hospital, U of T



Speaker | **Dr. Bryan Traynor**, Neurologist & Senior Investigator, National Institute on Aging, National Institutes of Health; Chief, Neuromuscular Diseases Research Section, Laboratory of Neurogenetics, National Institutes of Health
Title | *Genomics of amyotrophic lateral sclerosis: past, present and future?*
Date | **Friday, April 29, 2016**
Time | 8:00 am
Location | Main Auditorium, West Wing, 2nd floor, Room 401, Toronto Western Hospital
Host | Dr. Carmela Tartaglia, Assistant Professor, Department of Medicine, Division of Neurology, U of T
Co-sponsor | Grand Rounds at University Health Network (UHN), Division of Neurology

2015-2016 CPIN Young Researcher Seminar Series



Speaker | **Michael Tso**, PhD Candidate, Institute of Medical Science, U of T
Title | *Interrogating the gene expression profile of blood-brain barrier endothelial cells after experimental subarachnoid hemorrhage*
Date | **Wednesday, April 20, 2016**
Time | 4:00 pm
Location | Rm. 2173, Medical Sciences Building, 1 King's College Circle, U of T
Supervisor | Dr. R. Loch Macdonald, Scientist, Li Ka Shing Knowledge Institute; Professor, Surgery/Neurosurgery, U of T



Speaker | **Mohan Pabba**, Postdoctoral Fellow, Pharmacology & Toxicology, U of T; Centre for Addiction and Mental Health
Title | *Proteomic profiling of orbitofrontal cortex layer 2/3 during human aging*
Date | **Wednesday, April 20, 2016**
Time | 4:30 pm
Location | Rm. 2173, Medical Sciences Building, 1 King's College Circle, U of T
Supervisor | Dr. Etienne Sibille, Chair of the Campbell Family Mental Health Research Institute; Senior Scientist, Centre for Addiction and Mental Health; Professor, Departments of Psychiatry and Pharmacology & Toxicology, U of T

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Welcome New Participating Academic Unit

<http://www.neuroscience.utoronto.ca/aboutus/units.htm>

CPIN would like to welcome our newest Participating Academic Unit, the **Dalla Lana School of Public Health**, to the U of T neuroscience community.



UNIVERSITY OF TORONTO
DALLA LANA SCHOOL OF PUBLIC HEALTH

The Dalla Lana School of Public Health is a Faculty of the University of Toronto that originated as one of the Schools of Hygiene begun by the Rockefeller Foundation in 1927. The School went through a dramatic renaissance after the 2003 SARS crisis and it is now the largest public health school in Canada, with more than 800 faculty, 850 students, and research and training partnerships with institutions throughout Toronto and the world.

With \$32.6 -million in research funding per year, the School supports discovery in global health, tobacco impacts on health, occupational disease and disability, air pollution, inner city and Indigenous health, among many other areas. For more information, visit the website: <http://www.dlsph.utoronto.ca/>

2015-16 CPIN Neurotalk

<https://www.facebook.com/groups/CPINneurotalk/>

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

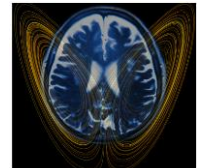
CPIN Neurotalk 19: The Interface of Physics and Neuroscience

Grad Room, northeast corner of Spadina & Harbord, in the Second Cup, downstairs.

Date & time: Thursday, March 31 at 5:00pm

Moderated by: Sara Mahallati, Institute of Biomaterials & Biomedical Engineering

Physics has contributed to neuroscience through the tools and devices which are based on physical principles: EEG: electrical waves and fields, TMS: magnetic fields, fMRI: magnetic resonance and most recently optogenetics. We want to discuss in what ways physics has enabled us to extend our exploration of neural systems. Beside the technical advances, adopting a theoretical physics approach to study the organization in neural systems has resulted in promising findings. Theoretical physics is about the search for mathematical descriptions of nature while never confronted with the raw data. However in neuroscience we are investigating systems with enormously diverse components, dealing with complex data. Is searching for underlying universal principles, or laws in physics sense of the term, for organization in neural systems a suitable approach?



CPIN NeuroCentricArts Competition

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

UNIVERSITY OF TORONTO Collaborative Program In Neuroscience (CPIN)
Proudly Presents

NEUROCENTRICARTS COMPETITION
University of Toronto
April 29, 2016
A free-form art competition open to everyone
Please visit the CPIN website for details:
<http://www.neuroscience.utoronto.ca/>

The poster features a brain scan image with a colorful, abstract overlay representing neural activity or connections. The text is arranged in a clean, professional layout.

Both U of T and external personnel are welcome to register to view the exciting entries at our upcoming free-form art competition on **April 29, 2016**. Prizes will be awarded to the best entries.

The Cause: All proceeds from the event will used to fund CPIN educational activities and outreach programs. Donations boxes and informational pamphlets will be present at the event.

Event Location and Time:
University of Toronto, April 29, 2016.

Visitor Registration: To attend the event, please complete [the online visitor registration form](#) by **Friday, April 8, 2016** to ensure free Early-Bird registration.

Event Sponsor: Krembil Research Institute

Krembil
Relentless.

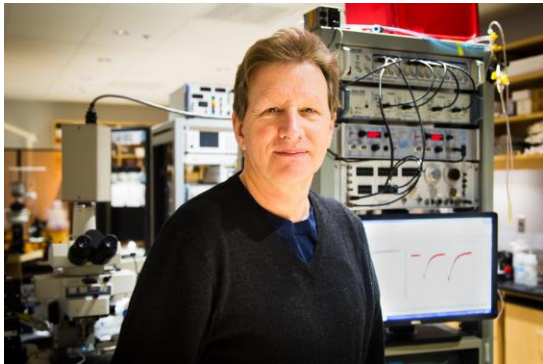
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News - CPIN Faculty Members

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



Congratulations to **Dr. Graham Collingridge** (Professor and Ernest B. and Leonard B. Smith Chair, Department of Physiology; Senior Investigator, Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital) on being one of the recipients of the prestigious Brain Prize, awarded by the Grete Lundbeck European Brain Research Foundation in Denmark, for his research into the mechanisms of memory.

Faculty of Medicine News Link:

<http://medicine.utoronto.ca/news/collingridge-wins-1m-brain-prize-nobel-neuroscience>

In his early work, Dr. Collingridge discovered the role of NMDA receptors in synaptic plasticity, a cellular mechanism that the brain uses to control the strength of connections and communication. He later identified the role of other types of glutamate receptors (AMPA, metabotropic and kainate) in synaptic plasticity and other neuronal functions. Dr. Collingridge is currently studying the downstream signalling molecules involved in learning and memory, and how aberrant synaptic plasticity contributes to brain dysfunction. He aims to find treatments to restore behavioural and cognitive function and to prevent the neurodegenerative processes that afflict people with Alzheimer's and other neurodegenerative conditions.

The research focuses on the hippocampus, a brain region that is critical for learning and memory. Electrophysiology and imaging are used to investigate two main forms of synaptic plasticity, known as long-term potentiation (LTP) and long-term depression (LTD). His team employs disease models to study the genetic and molecular signaling pathways that go awry. For example, glutamate receptors, cAMP, JAK/STAT, Akt/GSK-3 and calcium signals are important modulators of neuronal responses and learning and memory. As most brain illnesses involve impairments in neuronal signaling and plasticity, the research has the potential of helping the millions of people who are afflicted worldwide.

Note: One of the co-recipients of the Brain Prize renowned for his work in the discovery of LTP – Dr. Timothy Bliss - will be presenting two lectures in the Department of Physiology in early May 2016: 1) Physiology's Macallum Lecture on Wednesday May 11th (3 pm, Macleod Auditorium, Faculty of Medicine) [More information](#) ; and 2) Frontiers in Physiology (FIP) Lecture on Thursday May 12th (11 am, Macleod Auditorium, Faculty of Medicine). [More information \(FIP\)](#)



Congratulations to **Dr. Sidney H. Kennedy** (Professor, Institute of Medical Science & Department of Psychiatry) for accepting the Arthur Sommer Rotenberg (ASR) Chair in Suicide and Depression Studies at St. Michael's Hospital.

Dr. Kennedy's work involves new drug evaluation, neuroimaging and neurostimulation therapies in depression, and the development and renewal of treatment guidelines for both Major Depressive Disorder and Bipolar Disorder. He is also a Professor of Psychiatry at the University of Toronto, a Scientist at the Li Ka Shing Knowledge Institute and Toronto Western Research Institute, and the Principal Investigator for the Canadian Biomarker Integration Network for Depression (CAN-BIND).

The ASR Chair was founded by the Doris Sommer-Rotenberg in 1997 as a legacy to her son, a physician who died by suicide at the age of 36. In the last 20 years, the ASR program has focused on evaluating suicide risk assessment, access to care and the role of psychotherapy interventions for people at high risk. Dr. Kennedy's vision for the Chair over the next several years will be to identify biological markers of suicide risk, in addition to continuing to develop clinical interventions and education/advocacy initiatives.

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News - CPIN Faculty Members (contd.)

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



We would like to welcome **Dr. Michael H. Thaut** (Professor, Faculty of Music) to the CPIN community. Dr. Thaut has also been appointed Director of the Music and Health Research Collaboratory (MaHRC) at the Faculty of Music since January 1, 2016.

Dr. Thaut received his PhD in music with a cognate minor in movement science in 1983 and his masters in music in 1980, both from Michigan State University. At Colorado State University (CSU) he was Professor Music since 1986-2015 and Director of the School of the Arts 2001-2010. He received a joint appointment as Professor of Neuroscience in 1998. He was Director of the Center for Biomedical Research in Music since 1994. Since 2016 he is Professor of Music with cross appointments in Neuroscience and Rehabilitation Sciences at the University of Toronto where he directs the Music and Health Research Collaboratory (MaHRC) and the Masters/PhD programs in Music and Health Sciences. He has been a Visiting Professor in medical and music schools around the world (Germany, Italy, USA, Japan), and 2010-2012 was chancellor of the SRH University System in Germany.

Over the past decade he and his co-investigators have received over 4 million in prestigious and highly competitive research funding from the US National Institutes of Health (NIH) and private foundations. He has received the American Music Therapy Association's National Research Award in 1993 and its National Service Award in 2001. Dr. Thaut has authored/co-authored about 250 scientific publications in multiple fields. His research career has been focused on the neural and psychophysical basis of music and rhythm perception and clinical application of music and rhythm to motor, speech/language, and cognitive training in neurologic disorders. He is the founder of the evidence-based treatment system of Neurologic Music Therapy whose certificate training has been endorsed by the World Federation of Neurorehabilitation.

News - CPIN Trainees

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



Congratulations to CPIN student member **Danielle S. Cha** (Institute of Medical Science; Supervisor Dr. Roger S. McIntyre) on recently completing the CPIN requirements and graduating from her MSc program.

Danielle S. Cha conducted psychopharmacological research evaluating the effects of intranasal insulin in individuals with major depressive disorder under the supervision of Dr. Roger S. McIntyre at the Mood Disorders Psychopharmacology Unit, University Health Network, through the Institute of Medical Science, University of Toronto. Danielle's Master's in Medical Science resulted in a total of 36 peer-reviewed publications; opportunities to contribute to texts describing the impact of mood disorders on cognitive function (i.e., *Cognition in Major Depressive Disorder*, Oxford University Press); 6 abstracts presented at scientific conferences; invited speaking engagements on the topic of metabolic and mood disorders at both national and international scientific conferences; as well as acting as associate editor for Cambridge University Press on the topic of cognitive impairment in major depressive disorder (i.e., *Cognitive Impairment in Major Depressive Disorder: Clinical Relevance, Biological Substrates, and Treatment Opportunities*). In addition to her graduate studies, Danielle involved herself in teaching activities through the Human Biology Department at the University of Toronto as a guest speaker (HMB300H1), teaching assistant (HMB300H1, HMB220H1, HMB200H1, HMB491H1), as well as assisting with course development and training programs (HMB200H1). Moreover, she actively sought opportunities to engage students through extracurricular activities including, but not limited to, acting as Co-Chair for the University of Toronto Chapter of the Canadian Obesity Network; being an active copy editor and journalist for the IMS Magazine; and introducing/managing the "Undergraduate Article" section to the IMS Magazine website. Following her MSc, Danielle plans to continue her career in clinical research and teaching.

Select Publications:

Cha DS, Carvalho AF, Rosenblat JD, Ali MM, McIntyre RS (2014). Major depressive disorder and type II diabetes mellitus: mechanisms underlying risk for Alzheimer's disease. *CNS Neurological Disorders Drug Targets*. 13(10):1740-9.

Cha DS, Kudlow PA, Baskaran A, Mansur RB, McIntyre RS. Implications of epigenetic modulation for novel treatment approaches in patients with schizophrenia. *Neuropharmacology*. 2014 Feb;77:481-6. doi: 10.1016/j.neuropharm.2013.08.038. Epub 2013 Sep 17.

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

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CPIN NeuroSci 101: Year in Review

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

For a number of years now, CPIN has been proudly offering high school students in the GTA a free neuroscience course at the University of Toronto as part of its outreach initiatives to promote early interest in neuroscience. With the rebranding of the program to NeuroSci 101, this year has seen unprecedented success. Attendance was consistent at 40-50 high school students each class, with 34 students qualifying for the completion certificate at the end. CPIN graduate students coordinated the program, with **Sofia Raitsin** (IMS, Meyer lab) as the Head Coordinator, **Jonathon Chio** (IMS, Fehlings lab) as the Administrative Manager, and **Nancy Dong** (Physiology, Feng lab) as the Communications Manager, overseen by Dr. Zhong-Ping Feng and with support from Suhail Asrar at the CPIN Office.

Running from October 2015 to February 2016, this year featured 13 lectures covering a wide range of topics such as neuroanatomy, neurochemistry, sensory systems, learning and memory, neurodegenerative conditions and imaging techniques. The classes were expertly taught by CPIN graduate students, post-docs and faculty members: **Iva Brunec** (PhD student, Psychology), **Jonathon Chio** (MSc student, IMS), **Nancy Dong** (MSc student, Physiology), **Dr. William Ju** (Faculty, Human Biology Program), **Jabir Mohamed** (MSc student, IMS), **Mohadeseh Mehrabian** (PhD student, Laboratory Medicine and Pathobiology), **Sofia Raitsin** (PhD student, IMS), **Dr. Iman Kamali Sarvestani** (Postdoctoral Fellow, Laboratory Medicine and Pathobiology), **Dr. Dave Scanlon** (Research Associate, Physiology), **Vladislav Sekulic** (PhD student, Physiology), **Ekaterina Turlova** (PhD student, Physiology) and **Dulcie Vousden** (PhD student, Medical Biophysics). We are looking forward to another strong year in 2016-17!

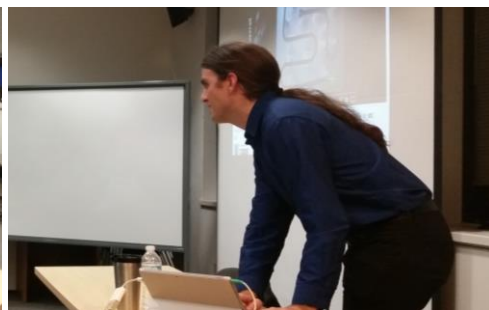


Photo Credits: Sofia Raitsin & Dr. Zhong-Ping Feng

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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

SickKids Centre for Brain & Mental Health's Annual Brain and Mental Health Day Conference: White Matter and Oligodendrocytes in Mental Health

Event Date: April 6, 2016

PGCRL Auditorium (686 Bay Street)

View the [full program, registration details and speakers here](#)

LENS Memories 2016 (in support of Firefly Foundation)

Event Date: April 8, 2016

Desautels Hall, Rotman School of Management, 105 St. George Street, Toronto

For further information and to purchase tickets, [please visit the event website](#)

Toronto Rehabilitation Institute 2016 Alzheimer Symposium, The Human Face of Dementia Care: Exploring Today's Possibilities

Event Date: April 15, 2016

Chestnut Conference Centre, Toronto

View the [full program, registration details and speakers here](#)

Physiology's Annual Frontiers in Physiology 2016 and Macallum Lecture

Event Dates: May 11-12, 2016

Medical Sciences Building & JJR Macleod Auditorium, U of T

View the [event website](#)

Collaborative Program In Neuroscience (CPIN) Research Day

Event Date: May 19, 2016

Medical Sciences Building, U of T

View the [event webpage](#)

10th Annual Canadian Neuroscience Meeting

Event Dates: May 29-June 1, 2016

Sheraton Centre Toronto Hotel

[Visit the conference website for the full program and registration information](#)

Reminders

Call for CPIN 2016-2017 Distinguished Lecturer Nominations CPIN trainee & faculty members are welcome to nominate potential speakers for the 2016-2017 Distinguished Lectureship Series. The nominations will be reviewed by the CPIN Executive Committee for approval. Your participation is important and contributes to the multidisciplinary nature of the lectureship. The online form can be found at the following link:

http://www.neuroscience.utoronto.ca/events/lectureship/distinguished_lecturer_nominations.htm

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