

Collaborative Program in Neuroscience (CPIN)

University of Toronto

Newsletter – Vol. 32, No. 5 – January 2016

Featured In This Issue

News – CPIN Faculty Members We would like to welcome **Dr. Deryk Beal** (Assistant Professor, Department of Speech-Language Pathology and Rehabilitation Sciences Institute), **Dr. Andras Nagy** (Professor, Department of Obstetrics & Gynaecology and Institute of Medical Science) and **Dr. Jeremie Lefebvre** (Assistant Professor, Department of Mathematics) as new faculty members to the CPIN community. Please see page 2 for more details.

News – CPIN Trainees Congratulations to CPIN student member **Nancy Butcher** (Institute of Medical Science; Supervisor, Dr. Anne Bassett) on recently completing the CPIN requirements and graduating from her PhD program. Please see page 3 for more details.

CPIN NeuroTalk Please see page 3 for details.

CPIN Special Undergraduate Outreach Event The **CPIN Graduate Special Event Group** partnered with the **Neuroscience Association for Undergraduate Students (NAUS)** to develop the joint undergraduate mentorship program (JUMP) and hosted their first event in collaboration with the **Human Biology Department** on Thursday, January 14th, 2016 at MSB 3231. We would like to thank the guest panelists and other volunteers who helped to make this event possible. Please see page 4 for details.

Congratulations CPIN Graduating Students Please see page 5 for more details.

Thanks to the CPIN Postdoctoral Fellows and Graduate Students For responding to the online surveys to assess CPIN activities and programs. Your participation is greatly appreciated.

2015-16 CPIN Distinguished Lectureship Series

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



Speaker | **Dr. Catharine Rankin**, Professor, Department of Psychology, University of British Columbia; Member, Graduate Program in Neuroscience, University of British Columbia; Member, Graduate Program in Cellular and Physiological Sciences, University of British Columbia

Title | *High-Throughput Behavioural Phenotyping Reveals New Interpretations of Habituation in C. elegans*

Date | **Wednesday, January 20, 2016**

Time | 4:00 pm

Location | 2nd Floor- Red Seminar Room, Donnelly Centre, 160 College Street, U of T

Host | Dr. Derek van der Kooy, Professor, Institute of Medical Science, Dept. of Medical Biophysics, Dept. of Molecular Genetics, U of T

Sponsor | Donnelly Centre, U of T



Speaker | **Dr. Michael Thaut**, Professor, Director of the Music and Health Research Collaboratory (MaHRC), Faculty of Music, U of T

Title | *Music and the Brain: From Neuroscience to Clinical Translations*

Date | **Tuesday, February 23, 2016**

Time | 1:00 pm

Location | Walter Hall, Faculty of Music, Edward Johnson Building, 80 Queens Park, U of T

Host | Dr. Lee Bartel, Professor, Associate Director of MaHRC, Director of the Canadian Music Education Research Centre (CMERC), Faculty of Music, U of T

Co-sponsor | Faculty of Music, U of T

CPIN Newsletter

Zhong-Ping Feng
Director
CPIN
Graduate Studies

Suhail Asrar
Administrator
CPIN Office

CPIN Office

p.neuroscience@utoronto.ca

Tel.: 416 978 8637

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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News - CPIN Faculty Members

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



We would like to welcome **Dr. Deryk Beal** (Assistant Professor, Department of Speech-Language Pathology and Rehabilitation Sciences Institute) as a new faculty member to the CPIN community.

Dr. Beal is a Clinician-Scientist with the Bloorview Research Institute at Holland Bloorview Kids Rehabilitation Hospital. Dr. Beal received his PhD in Speech-Language Pathology and the Collaborative Program in Neuroscience at the University of Toronto where he studied the neural mechanisms of sensorimotor integration for speech production using structural, functional and diffusion magnetic resonance imaging and magnetoencephalography. He then completed a Canadian Institutes of Health Research (CIHR) funded postdoctoral fellowship in cognitive and neural systems at Boston University, Massachusetts Institute of Technology and Massachusetts General Hospital where he studied neural network modeling of motor program sequencing and advanced neuroimaging methodologies for the study of the human brain. He was an assistant professor and the executive director of the Institute for Stuttering Treatment and Research at the University of Alberta from 2012-2015. Dr. Beal's research focuses on improving outcomes and quality of life for children with acquired and developmental neuro communication disorders. He is interested in the neurobiology of communication and its disorders for the express purpose of innovating and evaluating neurorehabilitation treatments for children with communication disorders. He is also interested in the advancement of neuroimaging techniques for the study of the neural network supporting speech and oral motor control. Funding is available for a graduate student (M.Sc. or Ph.D. degrees) interested in the area of neuroimaging of motor learning in both children who are typically developing and those with developmental disorders. Please contact Dr. Beal for more information.



We would like to welcome **Dr. Andras Nagy** (Professor, Department of Obstetrics & Gynaecology and Institute of Medical Science) as a new faculty member to the CPIN community.

Dr. Nagy is also currently a Shawn Kimel Senior Scientist at the Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Investigator at the McEwen Centre for Regenerative Medicine and Adjunct Professor at the Monash University, Melbourne. He holds a Tier I Canada Research Chair in Stem Cells and Regeneration. He also has a Fellowship of the Royal Society of Canada in the Life Sciences Division of the Academy of Science.

Dr. Nagy has made significant breakthroughs in the development of mouse and human pluripotent stem cells (both embryonic and induced) that could accelerate research in regenerative medicine and lead to future therapies for currently incurable diseases, such as blindness, diabetes, arthritis, spinal cord injury and many others. His team created the first two Canadian human embryonic stem cell lines and developed a novel method for generating non-viral induced pluripotent stem cells. His current research focuses on understanding the process of reprogramming to stem cells at the molecular level and using sophisticated genome editing methodology to pave the way leading to safe and effective cell based therapies of diseases.



We would like to welcome **Dr. Jeremie Lefebvre** (Assistant Professor, Department of Mathematics) as a new faculty member to the CPIN community.

Dr. Lefebvre is also a principal investigator at the Krembil Research Institute. Dr Lefebvre's research lies at the interface of computational and mathematical neuroscience, addressing questions that relate to nonlinear dynamics and biomathematics. His lab develops and analyzes models of neural circuits to better understand the brain, and the dynamics of neurodegenerative diseases. He received his PhD in Physics from the University of Ottawa by studying pattern formation in large-scale neural networks. He then completed his postdoctoral appointments in Fundamental Neuroscience at the University of Geneva (Switzerland) and University of Lausanne (Switzerland), connecting principles of emergent dynamics to problems in machine learning, population coding and brain imaging. A significant part of his work has been devoted to the characterization of synchronous dynamics in recurrent neural networks, and to the investigation of driven nonlinear systems. He also works in close collaborations with clinicians and experimentalists.

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News - CPIN Trainees

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



Congratulations to CPIN student member **Nancy Butcher** (Institute of Medical Science; Supervisor, Dr. Anne Bassett) on recently completing the CPIN requirements and graduating from her PhD program.

Nancy used an approach that combined neuroimaging and genetics to investigate a novel genetic risk factor, the 22q11.2 deletion, for early-onset Parkinson's disease. Her doctoral studies have yielded 11 manuscripts (4 first-author) and 24 abstracts presented at scientific conferences. This body of work has helped to expand knowledge about the genetic architecture of Parkinson's disease and has changed the standards of care for adults with the associated 22q11.2 deletion syndrome.

Nancy's doctoral research was supported by national funding awards including a Brain Canada Mental Health Training Award (one of only four recipients), a CIHR Banting and Best Canada Graduate Scholarship, and the Dr. Hubert van Tol Brain Canada Travel Fellowship. She was also the recipient of an Institute of Medical Science Entrance Scholarship and a School of Graduate Studies Travel Award. Along with her doctoral studies, Nancy was also an active journalist and copy-editor, becoming the managing editor of the IMS Magazine. She plans to continue her career in clinical research as well as her outreach activities.

Select publications:

Butcher NJ*, Kiehl T-R*, Hazrati L-N, Chow EWC, Rogaeva E, Lang AE, Bassett AS. 2013. Association between early-onset Parkinson disease and 22q11.2 deletion syndrome: Identification of a novel genetic form of Parkinson disease and its clinical implications. *equal contributions. *JAMA Neurology*. 70:1359-1366.

Butcher NJ, Fung WLA, Fitzpatrick L, Guna A, Andrade DM, Lang AE, Chow EWC, Bassett AS. 2015. Response to clozapine in a clinically identifiable subtype of schizophrenia. *The British Journal of Psychiatry*. 206:484-491.

2015-16 CPIN Neurotalk

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

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

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

Date & time: Friday, January 15th at 4:00pm

Moderated by: Kairavi Shah

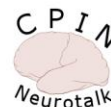
By the time we die, about 6 years of our time is spent dreaming. Our discussion this month is inspired by this phenomenon of Dreams – a strange mystery of our minds and brains. For centuries, dreams have intrigued philosophers and scientists alike, and yet we haven't been able to solve it. Our dreams can take us into a whole new world of limitless possibilities. We can bend the laws of nature; we can fly or walk through a wall, go back in time or travel to the future and even visit new dimensions and much more. Dreams have been inspirations behind many scientific discoveries. They often mirror our deepest fears or rejoice our happiest moments – but what really are dreams and what does neuroscience has to say about this bizarre yet extremely common phenomenon? According to science, do dreams serve a purpose? Why do dreams have survived the process of natural selection? Scientific research has demonstrated that dreaming is not unique to humans. Other animals such as cats, dogs and even rodents can dream. What does that tell us about the evolutionary advantage of dreaming? Neuroscience has also shown that specific brain wave patterns can tell us that a person is dreaming. Can molecular and cellular processes of the brain explain the production of dreams? If so, do we have a "dream area" in our brain and can damage to such an area abolish the creation of dreams? Where is science in explaining dreams and where is it headed? Would science ever be able to explain the phenomenon of dreams, or better yet have the ability to change or recreate them? Can we stimulate brain regions to implant dreams? Join us for an exhilarating journey through the past, present and future of the neuroscience of dreams.

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

Collaborative Program in Neuroscience (CPIN) Neurotalk presents
Neurotalk 17

The Neuroscience of Dreams

Moderated by Kairavi Shah
University of Toronto



4:00PM, January 15th

Grad Room, 66 Harbord St
Join us for a drink and discussion
and enjoy an evening about
neuroscience!



Topics of discussion will include:

- * What are dreams and what does neuroscience have to say about this bizarre yet extremely common phenomenon?
- * What is the importance of dreaming for it to have been evolutionarily selected for?
- * Where in the brain does the capacity for dreaming reside?

for more information visit
[facebook.com/groups/CPINneurotalk/](https://www.facebook.com/groups/CPINneurotalk/)
[neuroscience.utoronto.ca/events/Neurotalk](http://www.neuroscience.utoronto.ca/events/Neurotalk)

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CPIN Special Undergraduate Outreach Event

On Thursday, January 14th, 2016, the CPIN Graduate Special Event Group partnered with the Neuroscience Association for Undergraduate Students (NAUS) and organized the first Joint Undergraduate Mentorship Program (JUMP) event at MSB 3231. JUMP has been established and led by CPIN Grad Exec **Ekaterina Turlova** (Physiology) and NAUS Execs **Jessica Gosio** (HMB) and **Jaclin Simonetta** (HMB). The event was held in collaboration with the Human Biology Department (HMB) and CPIN.

The event started with a panel discussion addressing questions from undergraduate students on their home departments, the application process & the overall graduate school experience. The panel discussion was joined by 7 CPIN graduate students (**Stephanie Cheung**, Institute of Biomaterials & Biomedical Engineering; **Alicia Hilderley**, Rehabilitation Sciences Institute; **Samantha Lauby**, Cell & Systems Biology; **Tsukiko Miyata**, Medical Biophysics; **Daniel Morrison**, Physiology; **Sofia Raitsin**, Institute of Medical Science; **Petri Takkala**, Institute of Medical Science) & a Graduate Administrator, **Ian Buglass** (Cell & Systems Biology), and was moderated by CPIN Grad Exec **Ekaterina Turlova** (Physiology) and **Dr. Melanie Woodin** (Director of HMB; CPIN Faculty member). The discussion was also joined by other CPIN faculty members, **Dr. Zhong-Ping Feng** (Director of CPIN), **Dr. Bill Ju** (HMB) and graduate students. Following the panel discussion was a mixer/networking hour for informal interaction which went beyond the scheduled time to accommodate the students' needs. Over 80 students and faculty members participated in this successful event.

The other individuals who volunteered at the event included CPIN students **Andrew Barszczyk** (Physiology), **Michael Chang** (Institute of Medical Science), **Marielle Deurloo** (Physiology), **Sammen Huang** (Physiology), **Kirusanth Kaneshwaran** (Physiology), **Ji-Sun Kim** (Physiology), **Chantel Kowalchuk** (Institute of Medical Science), **Nishanth Lakshman** (Institute of Medical Science), **Melissa Polonenko** (Institute of Medical Science) and **Karolina Urban** (Rehabilitation Sciences Institute) as well as **Suhail Asrar** (CPIN Office) and **Nick Fernando** (HMB Office).



Photo Credits: Dr. William Ju & Dr. Zhong-Ping Feng

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Congratulations CPIN Graduating Students

Surname	First	Home Unit	Degree	Supervisor
Audrain	Samantha	PSY	MA	Mary Pat McAndrews
Easson	Amanda	PSY	MA	Sam Doesburg
Guet-McCreight	Alexandre	PSL	MSc	Frances Skinner
Himberger	Kevin	PSY	MA	Christopher Honey
Hutka	Stefanie Andrea	PSY	PhD	Claude Alain
Jiang	David	PCL	MSc	David Hampson
Lam	Susy	IMS	MSc	Robert Chen
Lee	Christina	PSY	MA	William Cunningham
Liu	Zhong Xu	APHD/OISE	PhD	Marc Lewis & Morris Moscovitch
McCutcheon	Victoria	IMS	MSc	Andrew Baker
Mossad	Sarah	PSY	MA	Margot Taylor
Oyefiade	Adeoye	PSY	MA	Donald Mabbott
Saverino	Cristina	PSY	PhD	Cheryl Grady
Ta	Eva	IMS	MSc	Anne-Marie Guerguerian
Thavabalasingam	Sathesan	PSY	MA	Andy Lee
Ting	Windsor	IMS	MSc	Michael Cusimano
Van Kampen	Lyn	PSY	MA	Paul Frankland
Verwheel	Lee	RSI	MSc	Michelle Keightley

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

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

Volunteer Opportunity at the 2016 Toronto Brain Bee CPIN Faculty and trainee members are invited to volunteer at the **18th Annual Toronto Brain Bee** that will be held on **Friday, April 1, 2016** at the University of Toronto. Please fill out the online volunteer form at <http://www.neuroscience.utoronto.ca/events/brainbee.htm>

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

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