Program in Neuroscience University of Toronto

NEUROSCIENCE NEWSLETTER

Volume 24 Number 2 October 2007

PROGRAM NEWS

NEW PIN STUDENTS:

We would like to welcome the following students to the Neuroscience Program:

Student's Name	Degree	Supervisor	Department
Udi Blankstein	MSc	Karen Davis	IMS
Jerry Chen	MSc	Karen Davis	IMS
Liz Cumyn	MSc	Howard Mount	IMS
Andrea Gauster	MSc	Yana Yunusova	Sp-Lang Path
Ekta Lakhani	MSc	Carol Westall	IMS
Massieh Moayedi	MSc	Karen Davis	IMS
Nasrin Nejatbakhsh	MSc	Zhong Ping Feng	Physiology
Ishita Siddiq	MSc	Andrew Baker	IMS
Sara Stevens	PhD	Joanne Rovet	Psychology
Marie St-Laurent	PhD	McAnd./Mosc.	Psychology
Nathalie Tordjman	MSc	Evelyn Lambe	Physiology
Alexander Weber	MSc	Qi Wan	Physiology
Greg West	PhD	Jay Pratt	Psychology
Steven Woltering	PhD	Marc Lewis	HDAP
Wen Jia Zhang	MSc	M. Tymianski	Physiology

GRADUATING STUDENT:

We would like to congratulate the following PIN graduate:

Student's Name	Degree	Supervisor	Department
Kunjumon Vadakkan	PhD	Min Zhuo	Physiology

Thesis title: "Development of animal models and characterization of molecular mechanisms in muscle and neuropathic pain"

UPCOMING PIN DISTINGUISHED LECTURES – FALL 2007

Please check http://www.utoronto.ca/neurosci for updates.

PIN Office: Room 102, Tanz Neuroscience Building, M5S 3H2.
Telephone: 416-978-4894 Fax: 416-978-1878
e-mail: p.neuroscience@utoronto.ca.
http://www.utoronto.ca/neurosci
Office Hours: Wednesdays - 1:15pm-4:30pm;
Thursdays - 8:45am-5:00pm; Fridays - 8:45am-5:00pm

Tuesday, October 16, 2007 4pm
SUSAN RESNICK, National Institutes of Health
"Brain Changes in the Baltimore Longitudinal Study of Aging: Distinguishing Normal from Pathological Aging"
Leslie Dan Pharmacy Building, 144 College St., Rm B150

Wednesday, December 5, 2007 Time: TBA
MATT WILSON, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology
Title: TBA
Location: TBA

Thursday, December 6, 2007 4pm
HERTA FLOR, Central Institute of Mental Health, Clinical and Cognitive Neuroscience, Mannheim, Germany
Title: TBA
Medical Sciences Building, Rm 3153

PIN STUDENT NEWS

CIHR BRAIN STAR AWARD

Many congratulations to PIN student **Moran Weinberger** (PhD Student, Dostrovsky Lab) on receipt of the Brain Star Award from the Canadian Institutes of Health Research for her paper:

Weinberger M, Mahant N, Hutchison WD, Lozano AM, Moro E, Hodaie M, Lang AE, Dostrovsky JO (2006) Beta oscillatory activity in the subthalamic nucleus and its relation to dopaminergic response in Parkinson's disease. J Neurophysiol 96(6):3248-56

The Brain Star Award recognizes the excellence of research done in Canada by graduate students (M.A., M.Sc. and Ph.D), post-doctoral fellows, and residents in all fields and disciplines covered by the Institute of Neurosciences, Mental Health and Addiction.

Please see the following link for all the exciting details: http://www.irsc.gc.ca/e/34838.html

from Physiolink, Sept. 14, 2007

PIN FACULTY NEWS

We are pleased to announce that **Dr. Abhijit Guha, Dr. Greg Stanisz, and Dr. Stephen Strother** of the Department of Medical Biophysics and **Dr. Michelle Keightley** of the Departments of Occupational Science, Occupational Therapy and Rehabilitation Science have joined the PIN faculty.

Dr. Guha's research interests:

My research interests center on studying signaling complexes relevant to nervous system tumors with the aim of undertaking pre-clinical proof-of-principle experiments, which may translate into effective clinical therapies. I study two tumors: Astrocytomas- The most common primary central nervous system (CNS) tumor, studies of which I will describe below; Neurofibromas- The most common peripheral nervous system (PNS) tumors. Specifically we utilize in vitro, xenograft, transgenic models and operative specimens to determine how mutant receptors such as EGFR and PDGFR and their downstream signaling pathways (p21-Ras, PI3K) promotes growth of astrocytomas and neurofibromas. We study the expression, activity and interactions of these aberrant signaling pathways and how they may be altered to inhibit growth of these two tumors.

Dr. Guha can be contacted at: Clin: 4W-446, Western Hosp, 399 Bathurst St, Toronto, Ontario, Canada M5T-2S8; Lab: TDMT-101 College St, 11th floor, Toronto, ON M5G 1L7. Tel: Clinical: 416-603-5740; Lab: 416-813-6688; Fax: Clinical: 416-603-5298; Lab: 416-813-8456; e-mail address: Abhijit.Guha@uhn.on.ca.

Dr. Stanisz' research interests:

Dr. Stanisz' research is in the area of Magnetic Resonance Imaging (MRI), which proved to be a very useful and spectacular diagnostic tool that allows him to image soft tissue non-invasively. Measured MRI signal characteristics depends on the physical and chemical processes experienced by water molecules in tissues. His work involves studies that quantitatively characterize the MRI signal behaviour in various types of normal and pathological tissues in order to obtain information about tissue microstructure. Quantitative MRI can be used to estimate physical tissue parameters such as: cell dimensions, cell membranes permeabilities, translational and rotational motion of water in different tissue compartments (intra- and extracellular).

Current research involves measuring basic MR properties of neural tissue at 1.5 and 3T and developing tissue multi-compartmental models in order to correlate experimental data with quantitative tissue histopathology. He is particularly interested whether NMR measurements such as T1, T2 relaxation times, diffusion and Magnetization Transfer between water and macromolecules can be used to evaluate the processes of neural tissue degeneration and regeneration following trauma and stroke. He is also studying the efficacy of MRI techniques in monitoring stem cell therapies in spinal cord injury and stroke. Dr. Stanisz will use a large animal facility (300 rats/year) and will be using a 7T MRI, surgery suite (stroke and spinal cord injury in animal models) and PET facility to measure functional recovery after stem cell therapies.

Dr. Stanisz can be reached at: Imaging Research, Room S672, 2075 Bayview Avenue, Toronto M4N 3M5. Tel: 416-480-5725; Fax: 416-480-5714; e-mail: stanisz@sri.utoronto.ca.

Dr. Strother's research interests:

My research is directed at developing and testing a set of optimal experimental planning and analysis tools for neuroimaging researchers, coupled with a neuroimaging research data-base that is integrated with the national and international neuroimaging and neuroscience research communities. My primary focus is to optimize the experimental designs, data-analysis algorithms and associated software tools being developed for cognitive neuroscience and clinical fMRI as a function age, in the so-called "fMRI processing pipeline". Second, we are developing a neuroimaging database with an international standard for cataloging and searching neuroimaging results and meta-data. Our ultimate goal here is to merge both our own, and others' neuroimaging and meta-data in a more principled manner to yield new insights into human mental functions, how they are changed with normal aging, and compromised by damage and disease. Finally we are developing optimized experimental neuroimaging protocols for Vascular Cognitive Impairment using multiple behavioural tasks that take only a short time to complete, and are suitable as clinical probes of cognitive brain function. Our goal is to develop a database library of such probes to assist in designing new multi-task protocols that can be tailored to a particular clinical or research goal.

Dr. Strother can be contacted at: Rotman Research Institute, 3560 Bathurst Street, Toronto, ON, M6A-2E1. Tel: 416 785-2500 ext. 2956; Fax: 416 785-2862; e-mail address: sstrother@rotman-baycrest.on.ca.

Dr. Keightley's research interests:

In general, my research program focuses on the identification, management and treatment of acquired brain injury (ABI) in pediatric populations. More specifically this research includes mild traumatic brain injury (mTBI) as well as Fetal Alcohol Spectrum Disorder (FASD). Many of the issues surrounding diagnosis,

management and treatment of FASD are similar to mild TBI. This line of research includes investigation of social justice issues relevant to Aboriginal community partners such as barriers and access to services for remote communities. I am currently participating in research and clinical initiatives that explore novel therapeutic approaches (e.g. healing arts programs) to cognitive and emotional rehabilitation, as well as a longitudinal study of the effects of mild TBI. For example, we are examining the effectiveness of a theatre skills training program as a means to improve social communication and integrate youth with a brain injury back into the community. This program of research includes Aboriginal youth with FASD who are exposed to a number of traditional Aboriginal arts in addition to more general expressive and performing arts. In addition, we are monitoring selected girls' and boys' minor hockey teams over the course of a three year period to explore the influence of puberty and development on the onset of co-morbidities (i.e. ADHD) following sports-related TBI.

Dr. Keightley can be contacted at: Rehabilitation Sciences Building 160-500 University Ave., Rm 920, Toronto, ON, M5G 1V7. Tel: 416-946-4004; Fax: 416-946-8570; e-mail: michelle.keightley@utoronto.ca.

NOTICE TO GRADUATING STUDENTS

Please notify the PIN office upon your graduation to ensure that you will receive the notation "completed Collaborative Program in Neuroscience" on your degree transcript as well as a separate certificate suitable for framing from the PIN office to indicate that you have completed the program's requirements. Please let the office know the address you wish your certificate sent to and please also send us your thesis title. If you have transferred from a Master's degree to a Ph.D., please notify the PIN office.

OTHER NEUROSCIENCE NEWS

ANDP Forum for Students and Postdoctoral Trainees
Monday, November 5, 2007 11:30 a.m. - 1:00 p.m.
San Diego Marriott Hotel and Marina, Ballroom, Salon F

The forum will focus on "Managing the Balancing Act—Between Life and a Career in Neuroscience" and will include breakout and panel discussions of strategies for successful life/work balance in neuroscience. ANDP President-Elect Michael Lehman, has organized the forum. Additional information is available on the ANDP website http://www.andp.org. You may be interested in picking up the special issue of Nature Neuroscience, available at the SfN meeting, that includes comments from Michael Lehman, ANDP President-Elect, on neuroscience career issues.

ANDP/SfN STUDENT HOSPITALITY SUITE will be located in Room 10 on the upper level of the San Diego Convention center and will be open each day of the SfN meeting from November 3 - 7. We invite students to take advantage of this quiet place to relax and socialize with other students. ANDP Councilor Daniel Tranel is supporting the suite this year.

CAN AGM and Reception at SfN meeting.

The Canadian Association for Neuroscience Annual General Meeting and Reception at SfN in San Diego is scheduled to take place at the San Diego Marriott Hotel and Marina in Meeting Room: Marina Ballroom Salon G, on Tuesday, November 6, from 6:30pm-9pm.

University Health Network Presents:
4th Annual Krembil Neuroscience Symposium
November 15 & 16, 2007
Toronto, Canada

"Thinking Beyond the Box"

The 4th Annual Krembil Neuroscience Symposium will be taking place on November 15 & 16, 2007 at the Chestnut Residence in Toronto, Canada.

This conference will once again provide a forum for health care professionals caring for individuals with neurological and neurosurgical pathologies, an opportunity to gain new knowledge and insight into the management of a very complex patient population.

Please see the website http://www.uhn.ca/about_uhn/nursing/site/ for information and registration.

7th Annual Neuroscience Day
Hospital for Sick Children

Tuesday, November 20, 2007
7:30am – 4pm
Hollywood Theatre, 1st Floor Elm Wing
Registration Deadline: November 5, 2007
For further information, please call 416 – 813-4996.

The 18th Annual Rotman Research Institute Conference
NEUROIMAGING IN DEMENTIA
The Four Seasons Hotel, 21 Avenue Road, Toronto Canada

Pre-Conference Clinical Session - Monday, March 24, 2008
Conference - Tuesday, March 25 and Wednesday, March 26, 2008
Registration begins October 1st!

For additional information, please visit the web-site: http://www.rotman-baycrest.on.ca

Queries can be directed to (416) 785-2500 ext. 2363 or e-mail pferreira@baycrest.org

XVII International Conference of the International Society of Electrophysiology and Kinesiology

June 18 to June 21, 2008
Niagara Falls, Ontario, Canada
https://www.isek2008.ca

Seven excellent keynote speakers will discuss topics ranging from "Spasticity Assessment" (Kaufman) to "Virtual Reality in Rehabilitation" (Deutsch). Four pre-conference workshops will be offered on "EMG Decomposition" (McGill and Clancy), "FES in Spinal Cord Injury" (Popovic and Ditor), "Neurophysiology of Aging" (Doherty and Rice), and "Pelvic Floor Muscle Function" (Hodges). The conference website (https://www.isek2008.ca) will be open soon for abstract submission and early registration.

New Graduate Program in Neuroscience at McMaster University

Brain Gain: McMaster Neuroscience Attracts Brightest Minds Seeking To Unlock Mysteries of the Brain

Twenty-one graduate students drawn to new collaborative program involving Science, Health Sciences, Engineering and Social Science faculties

HAMILTON, ONTARIO, CANADA, SEPTEMBER 18 – A new neuroscience training program launches at McMaster University this month with the largest first-year enrolment for a graduate program in the school's modern history. With more than 100 qualified applicants from around the world, McMaster researchers have chosen the 21 top candidates – all Canadians – to engage in neuroscience research ranging from Alzheimer's and autism to vision and mood disorders.

"One in four Canadians will suffer from a psychiatric or neurological disorder in their lifetime," said Kathy Murphy, Professor of Psychology, Neuroscience and Behaviour and Program Director. "This represents the single largest cost area for Canada's health care system and our goal is to attract the brightest graduate minds to the field of neuroscience – to better understand the human brain at all stages of life."

The new neuroscience program will build on research already underway at McMaster, which ranges from studies of early childhood brain development through to studies of the aging brain and disorders such as perceptual changes, memory loss, Alzheimer's, and Parkinson's.

"More than 60 faculty members from across 10 departments have collaborated on the development of this program, making it a remarkable cross-disciplinary effort," said John Capone, Dean of the Faculty of Science. "The opportunity to integrate McMaster's considerable strengths in neurosciences is already providing exciting new opportunities for graduate students interested in this diverse field. It is clear that new provincial funding aimed at boosting graduate enrolments announced last fall has played a significant role in supporting our efforts."

Specific research projects the new graduate students will be investigating include:

• The balance between nature and nurture in the developing brain
• Skill acquisition and practice factors in individuals with Alzheimer's Disease
• Mathematical models of auditory physiology for predicting and improving hearing loss
• The role of hormones in reproduction, stress and aggression
• New treatment strategies for people with mood disorders
• Age-related changes in perception and attention
• The molecular underpinnings of schizophrenia, autism, Alzheimer's disease

"Canada boasts some of the top researchers working in neuroscience today," said Murphy. "However, the future of neuroscience in this country depends on our ability to create opportunities for the brightest graduate minds to pursue formal degrees in the field. We have done just that with this program."

The Neuroscience program is a jointly administered program between McMaster's Faculties of Science and Health Sciences with participation of faculty members from Engineering, and Social Sciences. One of the unique strengths of the new neuroscience program is its research focus and integrative approach to solve the complex mysteries of the brain.

Programs offered at the Master's level include research project, coursework and thesis requirements, leading to a Master of Science degree in Neuroscience. Ph.D. programs include research project, coursework, seminar, comprehensive and thesis requirements, leading to a Doctoral degree in Neuroscience.

POSITIONS AVAILABLE

CANADA

FACULTY POSITION

Faculty Position in Developmental Neurobiology

Department of Obstetrics & Gynaecology
Schulich School of Medicine & Dentistry
The University of Western Ontario

The Department of Obstetrics & Gynaecology, Schulich School of Medicine and Dentistry at the University of Western Ontario has an opening for a limited term or probationary appointment at the rank of Assistant Professor although outstanding applicants at a higher level will be considered for a possible tenured appointment in the area of developmental neurobiology. The Department has a long tradition of research excellence in Reproductive Biology and Fetal Physiology, and continues to be a base for CIHR Group Study in Fetal and Neonatal Health and Development.

Candidates should possess a PhD or equivalent in the biological sciences and relevant postdoctoral research experience. A strong research background in fetal/neonatal conditioning of brain development including cortical organization/neuronal connectivity

and related neurobehavioural functioning is desirable. This individual will interact closely with the Perinatal Research Group, with other Children's Health Research Institute (CHRI) investigators, as well as investigators with expertise in neuroimaging located at both the Robarts and Lawson Health Research Institutes. The successful candidate will have access to new animal care facilities for chronic sheep studies and non-invasive guinea pig based studies including longer term offspring follow-up, and to a newly established neurobehavioural core facility for testing cognitive function and emotional behaviour in animal models. The successful candidate will be expected to establish an independent, externally funded research program, and participate in the teaching programs of the Department of Obstetrics and Gynaecology and Physiology/Pharmacology or Anatomy/Cell Biology which will become the candidate's cross appointed basic science department as deemed appropriate. This position offers a competitive start-up package, laboratory space, compensation and benefits. Additional information about the Department can be found at our website: http://www.uwo.ca/obsgyn/browsepage.html.

Interested candidates should send their curriculum vitae which should include research accomplishments and relevant publications, a one-page statement with research interests, and the names and address of three references to: Ms Maria Sinacori, Perinatal Research Administrator, Department of Obstetrics & Gynaecology, Schulich School of Medicine & Dentistry, St Joseph's Health Care, 268 Grosvenor Street, Room E4-153, London, Ontario, Canada N6A 4V2, Telephone: 519-646-6100 ext. 64710, Fax: 519-646-6213, Email: msinacor@uwo.ca

Applications will be accepted until the position is filled.

Positions are subject to budget approval. Applicants should have fluent written and oral communication skills in English. All qualified candidates are encouraged to apply; however Canadians and permanent residents will be given priority. The University of Western Ontario is committed to employment equity and welcome applications from all qualified women and men, including visible minorities, aboriginal people and persons with disabilities.

RESEARCH SCIENTIST

Victhom – Human Bionics
Saint-Augustin-de-Desmaures, Quebec

Job Description: Research Scientist
Reference: CON20070815B
Reporting to the Chief Operating Officer, Neurobionix division, the employee will be responsible for the initiation, design, development, execution, and implementation of scientific research projects.
More specifically, the employee will:
a) Investigate the feasibility of applying scientific principles and concepts to potential technologies, materials, processes, and products;
b) Plan and execute laboratory research to prove feasibility of concepts;
c) Conduct research on application of proprietary technologies to new diseases and disabilities;
d) Conduct research on identification of new and/or improved therapies;
e) Be able to work independently with little supervision on design and execution of research studies;
f) Maintain substantial knowledge of state-of-the-art principles and theories and contribute to scientific literature and conferences;
g) Participate in intellectual property evaluations and development of patent applications;
h) Consult and interact with outside and inside experts;
i) May coordinate interdepartmental activities and research efforts. Compensation and benefits will be a function of the selected applicant's level of expertise as per corporate policy. Do you wish to get involved in the development of an innovating company? Are you interested in this career opportunity? Then please send us your application. Only qualified applicants will be contacted.

Required Skills
Technical Expertise
1 Essential Experience in research and development
2 Essential Experience in neuromodulation and signal analysis
3 Essential Excellent knowledge in design and execution of research studies
4 Important Knowledge in intellectual property filing

General Criteria
1 Essential Ph.D. in neuroscience, neuroanatomy, or neurobiology
2 Essential Minimum 2 years of related work experience
3 Important Capable of conducting research with minimal supervision
4 Important Excellent communication skills, oral, written, and in presentations
5 Important Bilingual (French-English)

For information on how to apply, please go to
http://www.victhom.com/en/jobs.htm

USA

POSTDOCTORAL POSITIONS

Case Western Reserve University
Cleveland

A postdoctoral position is available in experimental and computational neuroscience for up to two years, starting around March 2008, in the Department of Neurosciences at Case Western Reserve University in Cleveland. The position will be devoted to the study of spontaneous activity in cortical networks from in vitro preparations of the mouse brain. The ideal candidate will have a strong experimental background in electrophysiology and/or imaging techniques. Some mathematical or computational background is not required, but will be considered an asset.

We offer the opportunity to join a young and energetic research group that applies a multidisciplinary approach to studying neural network dynamics. The selected candidate will have the chance to learn and further develop solid computational and analytical skills in

an interactive environment. The appointee will receive a competitive salary according to the candidate's experience.

To apply for this position, please send (preferably in PDF format) a cover letter, a CV including a list of publications, and the names and electronic addresses of two mentors willing to provide a recommendation letter to Dr. Roberto Fernández Galán (email: rfgalan@gmail.com). Applications will be accepted until the position is filled. In employment, as in education, Case Western Reserve University is committed to Equal Opportunity and Diversity.
Lab website:
http://neurosciences.case.edu/faculty/galan/index
Overview on past research:
http://www.andrew.cmu.edu/user/rfgalan/home.htm
Department's webpage:
http://neurosciences.case.edu/index
The Department houses state - of - the - art imaging facilities:
http://neurosciences.case.edu/imaging/index
Cleveland is a middle - size, affordable city at the shore of Lake Erie:
http://www.cleveland.oh.us/
http://en.wikipedia.org/wiki/Cleveland,_Ohio

Post-Doctoral and Research Assistant Positions in Molecular and Cellular Neurobiology at the University of Rochester, NY

Applications are invited for full-time Post-doctoral and Research Assistant positions in the group of Dr. Raphael Pinaud, Department of Brain and Cognitive Sciences, University of Rochester. Work in our lab is focused on the molecular and cellular mechanisms of experience-dependent plasticity in the auditory and visual systems. We aim to characterize the molecular machinery and cascades that are impacted by sensory processing and learning, and memory formation. In addition, our group aims at establishing causal links between experience-regulated molecules and the physiology of neural circuits and behavior. For more information visit http://www.pinaudlab.org. Specific details for each position are outlined below.

Research Assistant Position:

The principle responsibilities of the Research Assistant will be to conduct standard molecular biology techniques (e.g., cloning, PCR, genotyping), tissue preparation for histology (cryostat sectioning), in-situ hybridization and immunocytochemical procedures. In addition, the Research Assistant will be involve in some behavioral work, animal breeding and will provide organizational support for the lab (e.g., day-to-day ordering of equipment and laboratory maintenance). The ideal candidate will have rigorous training in molecular biology, in-situ hybridization and immunocytochemistry, in addition to histological routines. Experience with viral vectors, proteomics and surgical procedures are a plus, but not a requirement. Applicants should have a BSc/MSc/PhD in Molecular and Cell Biology or other relevant discipline, be interested in neurobiology, have a strong work ethic, and have previous experience with methods in molecular biology. Ability to work and communicate within a team is a must. Instructions on how to apply below.

Post-Doctoral Fellow Position:

A Post-doctoral fellowship is available for individuals who have excellent records of research and are highly motivated and enthusiastic about the neural basis of sensory systems plasticity and learning. The ideal candidate should have a Ph.D. in the biological sciences and extensive experience in molecular and cell biology. Experience in neurobiology, quantitative proteomics, patch-clamp electrophysiology, extracellular recordings in awake animals and/or neuroanatomy is a plus; candidates with experience in some or all of these techniques are highly encouraged to apply. Preference will be given to candidates who have obtained their Ph.D. within the last two years.

Both full-time positions are available immediately. A 1-year commitment is required but a 2-year commitment is strongly preferred. Salary will be commensurate with experience and competitive benefits are provided. Applications will be reviewed immediately and continue until the positions are filled. Candidates should e-mail a short letter of interest, a detailed CV with a summary of research experiences, and the names and contact information of three referees, to Dr. Raphael Pinaud, Department of Brain and Cognitive Sciences, University of Rochester, NY, USA. E-mail: pinaud@bcs.rochester.edu.

POSITION WANTED

Seeking Research Associate Position

After completing her M.Sc. under the supervision of Dr. Ian R. Brown (Dept of Zoology, U of T), **Sandra Vetiska** received her Ph.D. in neurobiology from the University of Toronto (under the supervision of Dr. Yu Tian Wang) in 2004. She has two years postdoctoral training (Dr. Hubert Van Tol's lab), also in the neurosciences field, and has worked in a short-term research associate position (Dr. David R. Hampson's lab) in the Faculty of Pharmacy for the last 7 months.

She has technical expertise in protein biochemistry and her scientific background includes the regulation of neurotransmitter receptors as well as intracellular signaling and protein trafficking mechanisms. She is currently seeking a research associate position.

Sandra can be reached at: svetiska@cogeco.ca