

# NEUROSCIENCE NEWSLETTER

## PROGRAM NEWS

### NEW PIN STUDENTS:

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

Student's Name	Degree	Supervisor	Department
Andreea Diaconescu	PhD	Randy McIntosh	Psychology
Anthony Senzel	MSc	Zhong-Ping Feng	Physiology

### GRADUATING STUDENTS:

We would like to congratulate the following PIN graduates:

Student's Name	Degree	Supervisor	Department
Andreea Diaconescu	MA	Randy McIntosh	Psychology
<u>Thesis Title:</u> "Brain mechanisms of sensorimotor learning: "What" and "where" neural processes support sensorimotor integration in intramodal and crossmodal cueing paradigms"			
Marie St-Laurent	MA	McAndrews/ Moscovitch	Psychology
<u>Thesis Title:</u> "Experiential Details, and Not Temporal Specificity, Determines Autobiographical Memory in Patients with Unilateral Temporal Lobe Epilepsy or Excisions"			

### PIN FACULTY NEWS

#### Honours & Awards

Very many congratulations to Dr. Zhong-Ping Feng who was selected as this year's winner of the Boehringer Ingelheim Young Investigator Award.

*from Physiolink, May 4, 2007*

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### Program Committee Members

J.O. Dostrovsky / PHYSIOLOGY (Dir.)	J. Peever / CELL AND SYSTEMS BIOLOGY.
W.M. Burnham / PHARMACOLOGY	S. Nag / LAB. MED. PATHOBIOL.
P. Carlen / INST. MED. SCIENCE	J. Roder / MOL. MED. GENETICS
L.F.De Nil / SPEECH LANG. PATHOL.	B.J. Sessle / DENTISTRY
Z. Jia / PHYSIOLOGY	M. Shoichet / INST. BIOMAT. & BIOMED. ENG.
N. Kabani / MEDICAL BIOPHYSICS	W. Trimble / BIOCHEMISTRY
M. Lewis / HUMAN DEVELOPMENT AND APPLIED PSYCHOLOGY	J.W. Wells / PHARMACY
W. McIlroy / REHAB. SCI.	J.S. Yeomans / PSYCHOLOGY

**PIN Office:** Room 102, Tanz Neuroscience Building, M5S 3H2.

Telephone: 416-978-4894 Fax: 416-978-1878

e-mail: [p.neuroscience@utoronto.ca](mailto:p.neuroscience@utoronto.ca).

<http://www.utoronto.ca/neurosci>

Office Hours: Wednesdays - 1:15pm-5:00pm;

Thursdays - 8:45am-5:00pm; Fridays - 8:45am-5:00pm

### Scientific American cover story

Congratulations also to PIN faculty member Dr. Beverley Orser. Her article entitled "Lifting the Fog around Anesthesia" is the cover story in next month's issue of Scientific American.

Lifting the Fog around Anesthesia; June 2007; Scientific American Magazine; by Beverley A. Orser; 8 Page(s).

### Globe and Mail Article

Dr. John Roder (PIN faculty member) was featured on May 3<sup>rd</sup> in the Globe and Mail's Health Section. Please read this fascinating article .....

### A clue to schizophrenia's elusive cause

**Son's diagnosis spurred cancer specialist to refocus his efforts**

**ANDRÉ PICARD**

**From Thursday's Globe and Mail**

**May 3, 2007 at 4:36 AM EDT**

John Roder was an internationally recognized cancer researcher doing groundbreaking work with "killer cells" that could be dispatched to seek out and destroy cancerous cells in the body.

But when he learned his son Nathan was suffering from schizophrenia, Dr. Roder dropped everything and turned his attention to understanding the complex brain disorder.

The about-face was unusual, particularly moving from cancer, a high-profile, richly funded area, to mental health, which is underfunded, marginalized and cloaked in stigma.

But the move is now paying dividends in a big way.

In a paper to be published today in the journal *Neuron*, Dr. Roder, a senior investigator at the Samuel Lunenfeld Research Institute at Mount Sinai Hospital in Toronto, along with a team of Canadian and Scottish scientists, has pinpointed one of the elusive genetic causes of schizophrenia.

The article, "Behavioral phenotypes of *Discl* missense mutations in mice," demonstrates for the first time that a malfunctioning gene can cause the disorder. Further, it offers a tantalizing clue that the big three psychiatric disorders - depression, bipolar disorder and schizophrenia - may have the same underlying genetic cause.

"From a psychiatric point of view, that's important. It could change the way we think about diagnosis and open the door to new treatments," Dr. Roder said.

But, he added wistfully, "It's not a cure."

In other words, this breakthrough won't help Nathan, at least not in the short term.

"I'm realistic. I know that my research is mostly for others. If there's a payoff for my son, it won't be tomorrow. It may be five or 10 years away," Dr. Roder said.

Still, the high-profile paper does provide validation for the sharp turn in his career trajectory, and a bit of hope in an area where good news is in short supply.

By his own admission, Dr. Roder said, "You would have to be 'crazy' yourself to work in the mental health field without personal motivation."

His motivation was a teenaged son gripped by a cruel disease.

Nathan was an excellent student, but near the end of his high-school years in 2001, he began acting strangely, with odd gesticulations and quirky theories.

"Suddenly, I knew all the answers to the questions of the universe," he said in an interview. "But I was oblivious to how weird I was being."

A school friend recognized the signs and symptoms of schizophrenia, an illness characterized by delusions, hallucinations and disturbances in thinking, and which usually develops into a full-blown illness in late adolescence.

Nathan got help quickly and has largely controlled his illness with medication. He is an accomplished musician and studied computer

programming in college but, at age 25, still lives at home and is unable to hold down a full-time job.

The diagnosis devastated his parents.

"You have hopes and dreams for your kids and they don't include schizophrenia," said Maria Roder, Nathan's mother. "It took a while to accept that this would be a long-term illness and a lifetime commitment on our part."

But Mrs. Roder said she also realized that as an educated, well-to-do family, they also had the means to help break the stigma surrounding mental illness, and schizophrenia in particular.

"You just have to be brave enough to say we have this illness in our family and it's amazing how people open up," she said.

According to the Schizophrenia Society of Canada, about 300,000 Canadians, or 1 per cent of the population, will suffer from the illness. The media image of schizophrenics is that of crazed killers, but the reality is that most are lost souls, and the greatest harm they do is to themselves.

While Mrs. Roder became a caregiver for her son and an advocate for others suffering from mental-health problems, Dr. Roder's coping mechanism was to turn to what he knew best - science.

"The only thing I could do was change my research focus," he said. "I thought I could make a difference."

The practical result was a dramatic downsizing of his lab, scrounging for research funding when it was once plentiful, and participating in sparsely attended mental-health awareness walks instead of running in high-profile Terry Fox runs.

"You could say it wasn't a great career move," Dr. Roder deadpanned. "Mental health is where cancer was 30 years ago."

James Woodgett, director of research at the Samuel Lunenfeld Research Institute, and Dr. Roder's boss, said people don't realize how difficult it is to jump from one field to another in the hyperspecialized world of basic science research.

"John has gone from being a world-renowned expert in one area to being a world-renowned expert in another, and he's done it in just a few years.

"It's pretty inspirational."

Dr. Woodgett said that Dr. Roper's success is due to his bringing "fresh eyes" to a field with a lot of preconceived notions.

"He's brought the discipline of genetic analysis to this area that is often touchy-feely," he said.

But the most important accolade Dr. Roder has received for his work has not come from the editor of a scientific journal, from those who fund his research, from his peers, or from his bosses. Rather, it has come from his son.

"Half of what he says goes over my head, but I'm happy he's doing research in this area," Nathan said.

"I know he's doing this for me, and I'm pretty proud of him."

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## DEVASTATING DISEASE

Schizophrenia is a complex mental disorder marked by personality and behaviour changes. Early warning signs may include:

Withdrawal from activities and social contacts;

Irrational, angry or fearful responses to friends and family;

Deterioration in studies or work;

Delusions, off-the-wall ideas and inappropriate use of language;

Sudden excesses, such as extreme religiosity, extreme activity;

Deterioration in personal hygiene;

Difficulty controlling thoughts, difficulty concentrating;

Visual and auditory hallucinations;

Paranoia: a constant feeling of being watched;

Inability to turn off the imagination.

About one in every 100 people has schizophrenia, a disease that usually strikes in late adolescence or early adulthood.

The precise causes are unknown but, like most mental illnesses, there appears to be some combination of genetic predisposition, environmental influences and triggers such as stress.

The symptoms of schizophrenia can be largely controlled with anti-psychotic medication, but one of the characteristics of the illness is an unwillingness to get treatment. (The drugs can also have unpleasant side effects.)

The economic cost of schizophrenia is estimated at \$4-billion-a-year in Canada.

*Source: Schizophrenia Society of Canada*

*from Physiolink, May 4, 2007*

## 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 U of T NEUROSCIENCE NEWS

### Symposium: Membrane Proteins and Molecular Therapeutics

Friday, June 15 8:30 am - 4:30 pm  
Conference Room, Health Sciences Building, 155 College St. 6th Floor

Themes:

- Cystic Fibrosis

Gergely Lukacs (SickKids, Toronto)  
David Thomas (McGill University, Montreal)  
Ron Rubenstein (University of Pennsylvania)

- Bacterial Infection

Chris Whitfield (Guelph University)  
Joseph Lam (Guelph University)

- Neuroscience and Stroke

Daniel Minor (UCSF)  
Michael Salter (SickKids, Toronto)

Oral Presentations by Trainees

Everyone Welcome, No Registration Required

Supported by the CIHR Strategic Training Programme in the Structural Biology of Membrane Proteins Linked to Disease

Contact: Christine Bear: bear@sickkids.ca

### Neural Signalling Meeting

Synchronization of Brain Signals:  
What is real, What is not

Toronto, July 11<sup>th</sup> 2007

Location: TBA

Organizers: Jose Luis Perez Velazquez and Richard Wennberg

Preliminary program  
(tentative and subject to variations)

9:15 – 10:00

Ramon Guevara

Synchrony in the presence of signal superposition

10:00 – 10:20

Coffee Break

10:20 – 11:00

Roberto Galan

Applicability and limitations of the phase oscillator approximation in neuroscience

11:00 – 11:40

Jurgen Kurths

Inferring complex synchronization from EEG data: potentials and limits.

11:40 – 12:20

Steven Schiff

The analysis of Spatiotemporal Patterns and Coherent Structures in Cortex.

12:30 – 13:30

Lunch Time

13:30 – 14:15

Axel Hutt

Mutual phase synchronization in single brain signals

14:15 – 15:00

Jess Gillis

Time-frequency methods applied to neuronal modelling

15:00 – 15:20

Coffee Break

15:20 – 16:00

Hecke Schrobsdorff

Response-Time Corrected Averaging of Event-Related Potentials

16:00-17:00

Extra time

Possible discussion or time used to accommodate new speakers

## OTHER NEUROSCIENCE NEWS

### 2007 Provincial Acquired Brain Injury Conference

Holiday Inn Hotel & Conference Centre

Kitchener, Ontario

October 24th – Oct 26th, 2007

To register simply download the registration form at [www.obia.on.ca/2007conference](http://www.obia.on.ca/2007conference) and fax or e-mail the registration portion of your form to OBIA. If you need assistance contact OBIA at [obia@obia.on.ca](mailto:obia@obia.on.ca) or call 1-800-263-5404.

### **Mental Health and the Brain: Implications for Lifelong Learning A Symposium**

Thursday, November 15 and Friday November 16, 2007

Northwestern University, Thorne Auditorium  
375 E. Chicago Avenue, Chicago

Register online at [www.fhponline.org/symposium2007](http://www.fhponline.org/symposium2007)

## POSITIONS AVAILABLE

## UNIVERSITY OF TORONTO AND AFFILIATED INSTITUTIONS

### POSTDOCTORAL POSITIONS

#### **Postdoctoral Positions in Spinal Cord Injury Regenerative Medicine, Toronto Western Hospital**

Postdoctoral positions in the laboratory of Dr. Michael G. Fehlings are available in a variety of projects linked to neuroprotective and neuroregenerative strategies for spinal cord injury. Current projects include the use of neural stem cells and tissue engineering, anti-apoptotic strategies and gene therapy approaches. These projects are supported by the Canadian Institutes for Health Research (CIHR) and are linked to a CIHR New Emerging Team in Regenerative Medicine, Tissue Engineering and Nanotechnology. The Fehlings laboratory is a member of the McEwen Center for Regenerative Medicine at the University Health Network and the McLaughlin Center for Molecular Medicine at the University of Toronto, which provides an outstanding, collaborative environment to pursue excellence in regenerative neuroscience.

Interested applicants should hold a PhD or MD degree with relevant research experience and should submit a CV, cover letter and 3 letters of reference to: Michael G. Fehlings MD PhD, Krembil Chair in Neural Repair and Regeneration, University of Toronto, McLaughlin Scholar in Molecular Medicine, Senior Scientist McEwen Center for Molecular Medicine, c/o Ms. Amy Lem, Toronto Western Hospital, 399 Bathurst Street, Suite 4W-449, Toronto, ON M5T 2S8, E: [SCI-program@uhnres.utoronto.ca](mailto:SCI-program@uhnres.utoronto.ca).

#### **Graduate Student and Postdoctoral Fellowship Position in Spinal Cord Electrophysiology, Toronto Western Hospital**

Opportunities for PhD-level and postdoctoral fellowship training in spinal cord electrophysiology (in vivo evoked potentials; in vitro extra and intracellular techniques) and molecular imaging exist in the laboratory of Dr. Michael Fehlings. This work is supported by grants from the Canadian Institutes for Health Research (CIHR) and the Heart and Stroke Foundation of Canada. The Fehlings laboratory is a member of the McEwen Center for Regenerative Medicine at the University Health Network and the McLaughlin Center for Molecular Medicine at the University of Toronto, which provides an outstanding, collaborative environment to pursue excellence in molecular and cellular neuroscience.

Interested applicants should submit their CV, 3 letters of reference and a cover letter to: Michael G. Fehlings MD PhD, Krembil Chair in Neural Repair and Regeneration, University of Toronto, McLaughlin Scholar in Molecular Medicine, Senior Scientist McEwen Center for Molecular Medicine, c/o Ms. Amy Lem, Toronto Western Hospital, 399 Bathurst Street, Suite 4W-449, Toronto, ON M5T 2S8, E: SCI-program@uhnres.utoronto.ca.

## CANADA

### FACULTY POSITION

#### **Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph**

The Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, is seeking applicants for a tenure-track faculty position, at the Assistant or Associate Professor level. Applicants should have a PhD or equivalent degree in either Anatomy or Physiology, combined with postdoctoral research experience. A DVM or equivalent qualification would be desirable, but is not essential. The successful candidate will contribute to teaching Anatomy and Physiology in the undergraduate BSc and/or DVM programs, and will also be expected to develop an externally funded research program to support graduate student training in the department. Applicants whose research activities complement existing strengths in the department (cancer biology, reproductive biotechnology, biomechanics, cardiovascular function, neurosciences, toxicology) are particularly encouraged to apply.

The Ontario Veterinary College is a founding college of the University of Guelph, which is Canada's leading comprehensive university. The city of Guelph ([www.city.guelph.on.ca](http://www.city.guelph.on.ca)) is a pleasant community of 100,000 people located in southern Ontario approximately one hour west of central Toronto. The Department of Biomedical Sciences, together with the Departments of Clinical Studies, Pathobiology and Population Medicine, comprise the academic core of the Ontario Veterinary College. The Department of Biomedical Sciences offers undergraduate courses in the Doctor of Veterinary Medicine (DVM) program, as well as in the Bio-Medical Science and the Biomedical Toxicology BSc majors. The University of Guelph has significant collaborative links with other universities and health science centres in southern Ontario, as well as a unique relationship with the Ontario Ministry of Agriculture and Food (OMAF), providing access to research stations and support funding. The Department offers MSc and PhD programs, and is also involved in the Doctor of Veterinary Science (DVSc) graduate program administered by the College. Further information about the undergraduate programs can be found on the university, college and departmental websites: <http://uoguelph.ca>; <http://www.ovc.uoguelph.ca>; <http://www.ovc.uoguelph.ca/BioMed>.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents of Canada will be given priority. The University is committed to an Employment Equity Program that includes special measures to achieve diversity among its faculty and staff. We therefore particularly encourage applications from qualified

aboriginal Canadians, persons with disabilities, members of visible minorities, and women.

Salary is negotiable and commensurate with experience and qualifications. The deadline for applications is June 15, 2007, or until the position is filled. Please send a letter of application, a complete curriculum vitae, which should include a teaching dossier and the names and addresses of four referees to: Dr. N.J. MacLusky, Chair, Department of Biomedical Sciences, Ontario Veterinary College, University of Guelph, Guelph, ON N1G 2W1, Canada. Fax: (519) 767-1450; E-mail: [nmaclusk@ovc.uoguelph.ca](mailto:nmaclusk@ovc.uoguelph.ca).

#### **Associate Director, Scientific Affairs Montreal Neurological Institute and Hospital McGill University**

The Montreal Neurological Institute and Hospital will hire an Associate Director for Scientific Affairs, who will implement the scientific mission of the Institute and Hospital under the guidance of the Director. This person will be responsible for the success of the scholarly mission of the Institute, which has both basic research and clinical components, and engages about 75 faculty and 400 staff members. He or she will play a central role in the recruitment of new faculty, organizing the Institute's internal grant review program; preparing scientific reports; planning scientific retreats; and organizing large institutional grant applications. He or she will also serve as the liaison with McGill University and the McGill University Hospital Centre for academic and research issues. Strong interpersonal skills and expertise in writing are essential talents for this position. Applicants with MD or PhD degrees and experience in university or industry-based research organizations, or in foundations that fund medical research will be of particular interest. Applications should be sent by email to [scientific-affairs.mni@mcgill.ca](mailto:scientific-affairs.mni@mcgill.ca) or by mail to: Dr. David Colman, Director, Montreal Neurological Institute, 3801 University Street, Room 636, Montreal, Quebec, H3A 2B4 [www.mni.mcgill.ca](http://www.mni.mcgill.ca). Deadline for receipt of applications is July 15, 2007. All qualified candidates are encouraged to apply; however Canadians and permanent residents of Canada will be given priority. McGill University is committed to Equity in Employment.

#### **Research Position Michael G. DeGroote Institute for Pain Research and Care McMaster University**

The Michael G. DeGroote School of Medicine, Faculty of Health Sciences, McMaster University invites applications for a research position in the Michael G. DeGroote Institute for Pain Research and Care. This faculty position will build upon existing expertise in clinical research and management of pain, basic mechanisms of pain, imaging of pain and research on psychosocial aspects of pain, to position the university as a world leader in pain research.

The Michael G. DeGroote Institute for Pain Research and Care is sited at McMaster University in Hamilton, Ontario, Canada. The Institute was founded by a generous gift of \$20 million from Michael G. DeGroote. With a healthy pain research and

management community, McMaster provides an exceptional multidisciplinary pain research environment, including imaging and pain models in bone, the GI tract and CNS. Recruitment is sought particularly in the areas of immunology and inflammation, brain imaging and cellular electrophysiology. Candidates must hold a Ph.D. and/or M.D. degree with a strong record or research accomplishments in the area of pain. Academic rank will be commensurate on qualifications. The successful candidate will be appointed to the appropriate basic science and/or clinical Department and must have demonstrated potential for independently funded research. Successful candidates will be expected to participate in teaching at the undergraduate and graduate levels, and to maintain an on-going program of independently-funded research.

McMaster is one of Canada's premier research intensive universities and, along with our affiliated teaching hospitals and research institutes, we provide an exceptional environment for interdisciplinary research within a fully integrated academic health network. Please send curriculum vitae, a short statement of research interests, and names and addresses of 3 referees prior to June 30, 2007 to: Dr. James L. Henry, Scientific Director, Michael G. DeGroote Institute for Pain Research and Care, McMaster University, 1200 Main Street West, HSC 1J11, Hamilton ON L8N 3Z5, Canada.

## USA

### CHAIR

#### **Chair, Department of Neurosciences College of Medicine The University of Toledo Health Science Campus**

The University of Toledo College of Medicine seeks an internationally-recognized neuroscientist as Professor and Chair of the Department of Neurosciences. The recent merger of the University of Toledo with the former Medical University of Ohio has created dramatic growth opportunities, and neuroscience research has been targeted for significant development. Substantial resources including new research space and faculty positions are available to create a nationally-recognized department, complementing current departmental research strengths

(<http://hsc.utoledo.edu/depts/neurosciences/index.html>) including sensory physiology, neurodevelopment, neuroendocrine synaptic physiology, and related areas in structural anatomy and intravital imaging. State-of-the-art imaging, proteomics/genomics and flow cytometry cores as well as AAALAC-accredited animal facilities are available on the modern Health Science Campus. The new Chair must have a distinguished record of extramural-funding, strong leadership and administrative skills, and should promote alliances with clinical neuroscientists to stimulate research with translational implications in such areas as drug abuse, developmental neurobiology, stroke, epilepsy, neurooncology, neuroimmunology, functional brain imaging, Parkinson's disease or neurodegeneration. The successful candidate must also be committed to medical and graduate education, supporting the use of innovative educational technologies in gross and microscopic anatomy, and fostering development of the Neurosciences

and Neurological Disorders Ph.D. training program. The University of Toledo is a state supported institution in the vibrant port city of Toledo (<http://www.toledo.com>). Candidates should send a curriculum vita and a cover letter summarizing research, educational and administrative background to: Chair, Neurosciences Search Committee, c/o Shirley Joseph, COM Dean's Office, 3045 Arlington Avenue, University of Toledo Health Science Campus, Toledo, OH 43614; or e-mail [shirley.joseph@utoledo.edu](mailto:shirley.joseph@utoledo.edu) (PDF format).

The University of Toledo is committed to diversity and equal opportunity. Applications from women and minority candidates are strongly encouraged.