

The ORT Times

A monthly newsletter featuring UHN Trainees



www.uhntrainees.ca

Welcome!

Welcome to the inaugural UHN Office of Research Trainees (ORT) Newsletter, The ORT Times! This monthly newsletter features editorials related to trainee life, how to make the most of your research experience at the UHN, and furthering your career development. Each issue will showcase recent awardees, spotlight a recent graduate from UHN Research, and highlight high-impact research publications.

Contribute to the ORT Times!

To tailor our newsletters to the interests and needs of today's graduate students and postdoctoral fellows, we invite you to get involved. If you are interested in contributing a short article or have an idea you would like to see featured, please contact us!

In the coming months, you can look forward to a two-part mini-series on "The value of a PhD" (December 2011) and "The value of a PDF" (January 2011) in The ORT Times.

We would love to hear your feedback

If you have an idea for The ORT Times newsletter or the uhntrainees.ca website, we would love to hear from you. Contact us at: ort.admin@uhnres.utoronto.ca

November 2011

Inside this issue....

02

recent awardees

05

alumni focus

06

latest & greatest

07

upcoming events



International Travel Awardees



Awardees:

Left: Jasdeep Saggar, PhD Candidate (Dr. Ian Tannock Lab, OCl/PMH), "The Tumour Microenvironment & Anti-cancer Drug Distribution."

Right: Anton Mihic, PhD Candidate (Dr. Ren-ke Li Lab, TGRI), "Cardiac tissue engineering using human embryonic stem cell-derived cardiomyocytes."

Award: Bioscience & Medicine International Summer Academic Exchange Program; Shanghai Jiaotong University School of Medicine; July 16-23 – Shanghai, China

"This past summer Jasdeep Saggar and I had the great privilege of being selected to represent UHN and the University of Toronto at the Shanghai Jiaotong University School of Medicine. The prestigious institution invited students from around the world to participate in their annual bioscience and medicine summer exchange program. Participants were selected from universities and research institutes in Australia, Japan, Sweden, the Netherlands, the United States and Canada. In total, 17 foreign PhD students were paired with 17 PhD students from universities and hospitals in the Shanghai area. Together, this group enthusiastically participated in a host of academic and research activities organized around several cores including cancer, cardiovascular, tissue engineering and stem cell research. Daily activities included lectures by well-known local researchers, extensive tours of modern and well-equipped research institutions and hospitals, and research seminars given by the participating students. Of course, this exchange was also a wonderful opportunity for a meaningful cultural exchange. Activities included trips to the iconic Yuyuan Garden, spectacular temples, and a marvelous Chinese acrobatics show. Shanghai is an incredibly modern city and this was evident with trips to the Bund area, the World Financial Centre and the impressive Shanghai science and technology museum. Overall, this trip opened our eyes to the commitment Shanghai has made to the continued development of scientific research in China, as evidenced by the talented faculty and world-class research facilities we visited. We also became aware of how small and tight-knit our global research community can be, and continue to foster the new friendships that we developed during our short stay in China." - Anton

success



The ORT encourages trainees and scientists to send us pictures of the lab, departmental events, or eye-catching scientific images. Your submission will appear in the ORT Times' next issue.

(Photo: Courtesy of C. Bros, Penn Lab, OCI/PMH)

OSOTF UNILEVER/LIPTON Awardees



The ORT is pleased to announce the recipients of the 2011-2012 Ontario Student Opportunity Trust Funds (OSOTF) Unilever/Lipton Graduate Fellowship in Neuroscience. Thanks to Dr. Charles Tator's stewardship, funds were made available from Unilever/Lipton to support graduate students in Neuroscience at UHN.

Awardees (from Left to Right):

- ◆ Philbert F. Ip - PhD program, Dr. Avi Chakrabartty Lab, OCI; "Determining the misfolding pathways of ALS-causing SOD1 mutations and their implications for treatment."
- ◆ Danielle D. DeSouza - PhD program, Dr. Karen Davis Lab, TWRI; "Evaluating the analgesic effects of gamma knife radiosurgery on trigeminal neuralgia using structural MRI and quantitative sensory testing"
- ◆ Mahan Alavi - MSc program, Dr. William D. Hutchison Lab, TWRI; "Spatial extent of B-coherent activity in the STN and SNr of Parkinson's disease patients"
- ◆ Sarah A. Figley - PhD program, Dr. Michael Fehlings Lab, TWRI; "Examining the therapeutic effects of delayed AdV-ZFP-VEGF administration following traumatic spinal cord injury"
- ◆ Luka Srejc - PhD program, Dr. William D. Hutchison Lab, TWRI; "Cellular firing and evoked field potentials in the subgenual cingulate cortex of depression patients"



Banting Postdoctoral Fellowship Awardee

Postdoctoral Fellow (Left): Dr. Ryan Dowling
Supervisor (Right): Dr. Vuk Stambolic, OCI/PMH

On September 15th, 2011, Dr. Ryan Dowling was awarded the first Banting Postdoctoral Fellowship award. The prestigious award was presented by the Honourable Gary Goodyear, Minister of State of Science and Technology, and Dr. Alain Beaudet, President of the Canadian Institutes of Health Research. Ryan was chosen to speak on behalf of all award recipients at the event. Dr. Dowling's current research project focuses on: "Identification of a molecular profile predictive of metformin sensitivity in human breast cancer".
Well done Ryan!

Picture (Top Right) Source: Salvatore Sacco/CP Images - courtesy of Industry Canada



Walker-Marshall Awardee

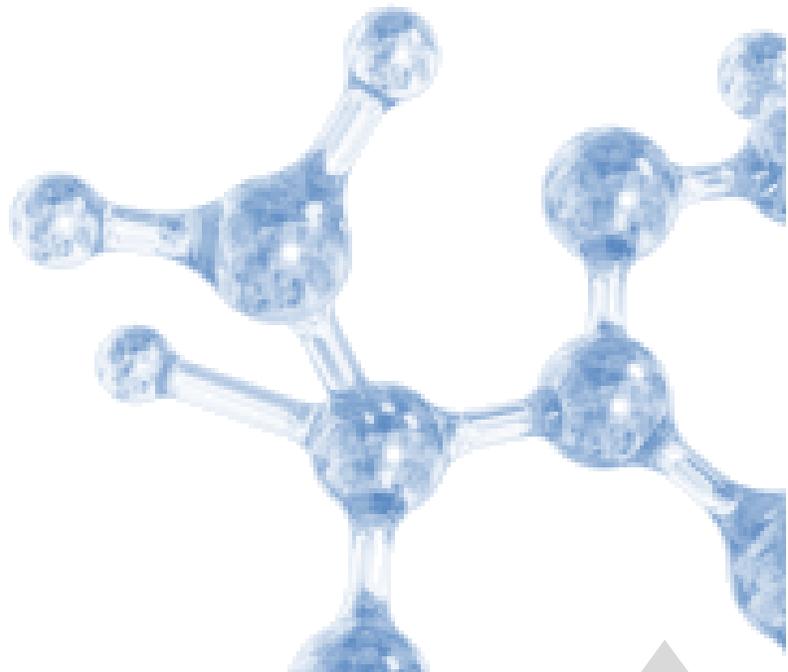


PhD Student: Megan Nelles
Supervisor: Dr. Christopher Paige, OCI/PMH

Each year at the Geneva Park Medical Biophysics Retreat, MPB presents the Walker-Marshall Award to a student who has completed or is expected to complete their PhD by the end of the year. This top award recognizes academic excellence of the highest standard, significant scientific impact from thesis work and participation in and contribution to the culture, student life and student welfare in the Department.

This year, the Walker-Marshall Award is given to Megan Nelles!

In summary of her research, Megan explains: "In our lab, we are studying a cell-based immunotherapeutic approach to treating cancer in a mouse model of leukaemia. This approach involves transducing leukaemia cells to produce interleukin-12 (IL-12), which activates the immune system to launch an effective response against the cancer. My current focus is characterizing the non-traditional cell population that is responsible for disease eradication, as well as understanding the cellular interactions that lead to its activation."



Dr. Klaus Hoeflich

Alumnus Klaus Hoeflich, a Senior Scientist working at Genentech Inc, is highly interested on disease-focused strategies for identifying new targets or therapeutic combinations.

"Following my time in the labs of Jim Woodgett (PhD) and Mitsu Ikura (2-year postdoc) I did 2 years postdoc training at Genentech. I received the Genentech Post-Doctoral Research Prize in 2005 and that helped me get a permanent position in 2006.

My laboratory supports small molecule drug discovery efforts for several intracellular kinases. In this capacity, we investigate cellular signaling, predictive diagnostics and combination therapies to advance new development candidates and support clinical planning for these targets. Over the past years, we have also focused on two major basic science areas:

1. Mitogen-activated protein kinase (MAPK) and phosphoinositide 3-kinase (PI3K) signaling network. We are interested in understanding crosstalk, feedback and points of convergence for the RAS/RAF/MEK and PI3K/AKT/mTOR pathways. These studies have been aided by use of novel investigational drugs: GDC-0973, an allosteric inhibitor of MEK1/2, and GDC-0941, an inhibitor of class I PI-3 kinases, both of which are in Phase I clinical trials. We have also completed a mass spectrometry-based phosphoproteomic analysis of MEK and PI3K signaling in tumor cells and biological characterization of novel targets is ongoing.

2. P21-activated kinases. PAK family serine/threonine kinases are important mediators of Rac and Cdc42 GTPases, however the contribution of these kinases to tumorigenesis has not been well defined. Together with collaborators at the University of Oxford, we have comprehensively examined the expression and prognostic significance of PAK1 in human tumors. The functional requirement and signaling mechanisms for PAK1 in cellular proliferation, survival and morphogenesis in select tumor indications is being investigated using genetic and pharmacologic approaches both in vitro and in vivo." - Klaus

latest & greatest



***In vitro* characterization of trophic factor expression in neural precursor cells.**

Hawryluk GW, Mothe AJ, Chamankhah M, Wang J, Tator CH, Fehlings MG. *Stem Cells Dev*, 2011; *in press*.
Toronto Western Research Institute

Dr. Gregory Hawryluk, a research fellow in Dr. Michael Fehling's lab at TWRI has spearheaded a study of what trophic factors, proteins that influence the development and survival of neurons, are expressed in neuronal precursor cells *in vitro*. These trophins may affect the success of neuronal precursor transplantation therapies meant to counteract damage in the central nervous system. In this work, similar expression profiles of trophic factors were detected in neuronal precursor cells from mouse or rat brain or spinal cord, and they differed from patterns of expression in non-neuronal cells. Different environmental or differentiation conditions could alter trophin production, which may translate to the

effects of changes in the host environment during neuronal precursor transplantation. [Click to read](#)

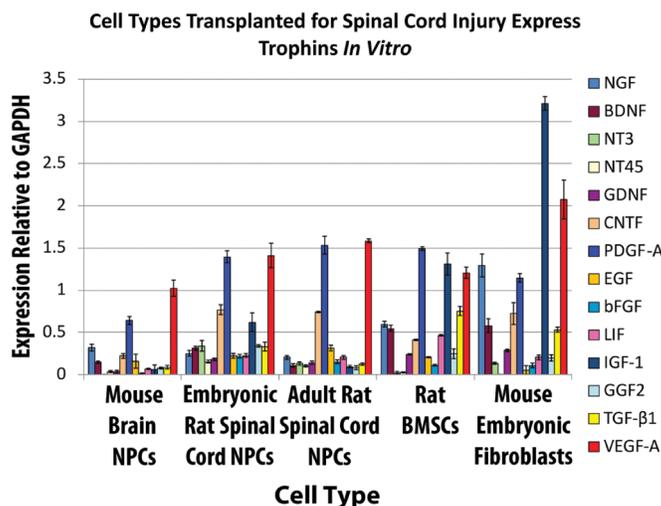
We caught up with Greg to discuss this recent publication:

ORT: Did you have a Eureka moment or did it slowly evolve?

GH: These results came early in my labwork when I had learned that qPCR must be performed with extreme precision if one is to produce a 'same' result when no true difference in expression exists between samples. I was very surprised that neural precursor cells isolated from diverse sources from two different laboratories indeed produced nearly identical values. This provided strong reassurance that my techniques were sound and that I had made a meaningful discovery about trophin production by neural precursor cells.

ORT: What was the most challenging part of the project?

GH: I ended up characterizing more samples and more trophins than I had initially anticipated... I ended up working with an extraordinary amount of data. In retrospect, a microarray might have been a better approach. Meticulous attention to detail and organization was critical to compiling and analysing the findings.





UPCOMING EVENTS CALENDAR:

11/15 Foundation
Fighting Blindness (FFB): PDF
Fellowship application due Nov15th.
[www. ffb.ca](http://www.ffb.ca)

11/17 Toronto Rehab
Day: "Rehabilitation Research: a Vision
for the Future". www.torontorehab.com

11/19 Second Annual
undergraduate Life Sciences Research
Conference. <http://ulsrconference.ca/>

11/24-26 Third Bi-Annual
Canadian Cytometry and Microscopy
Symposium. www.cytometry.ca

11/28—12/2 Comprehensive
Course on Fluorescence Microscopy.
www.aomf.ca

Visit www.uhntrainees.ca for more

QUESTIONS?

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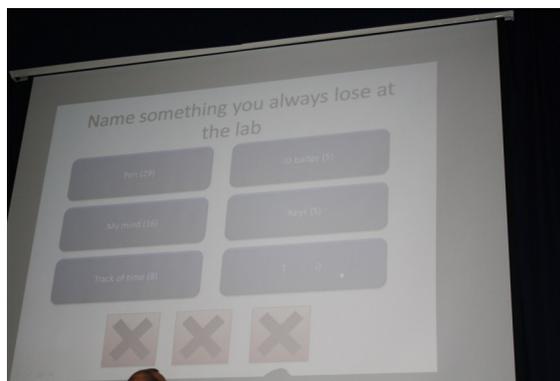
Acknowledgements: C. Goard, PhD Student
and Science Writer for ORT



Dr. Victor Ling, an MBP Alumnus

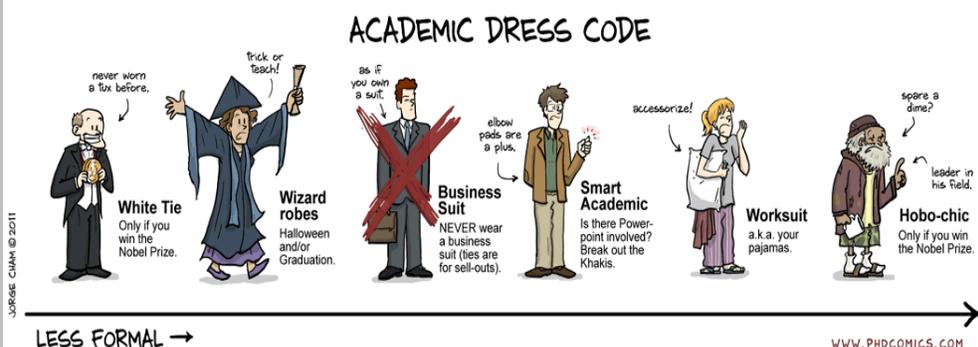


**MBP Retreat
Geneva Park
Oct.2-4**



The Department of Medical Biophysics (MBP), University of Toronto, is the academic home of many UHN Trainees.

(Photos: Courtesy of J. Jarvis, MSc Student, Barber Lab, OCI/PMH)



"Piled Higher and Deeper" by Jorge Cham
www.phdcomics.com