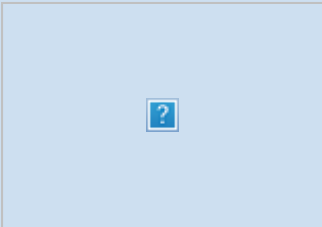




Landmark Funding Awarded to UHN

On August 20, 2008, Dr. Eliot Phillipson, President and CEO of the Canada Foundation for Innovation (CFI) announced the investment of \$119.9M towards UHN's Advanced Therapeutics Research Platform.



The award--the largest in UHN's history-- includes \$92.3M in new funding towards construction projects at Venus/Krembil, OCI and TGRI. It will fund significant new equipment across the seven research themes including signaling, clinical studies, stem cells, medical imaging, immunity, biomarkers and drug discovery programs.

"This is fantastic news for all of UHN," says UHN CEO Dr. Bob Bell. "This new investment by CFI will provide a further important boost to UHN's global impact. It will allow our research community to establish critical new resources that will transform healthcare for our patients, our community and the world."

"The award is a tribute to the internationally recognized strength of UHN's researchers and research programs," notes Dr. Christopher Paige, VP Research, UHN. "It represents a unique opportunity to create pioneering research platforms integrated across UHN's labs and clinics. On behalf of UHN I offer our thanks to the researchers and staff who developed the winning proposal."

In addition, CFI announced a contribution of \$27.6M in institutional operating funding related to the award.

Male Fertility: Cancer Protein Involved in Sperm Development

Surprising findings from the research labs of OCI's Dr. [Hitoshi Okada](#) and from York University and Tohoku University have determined that a well-known cancer protein may be a possible molecular target in the battle against male infertility.



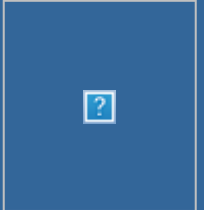
Using a series of molecular tests in mice, study findings indicate that mice unable to make the Bat3 protein—responsible for regulating cell death—were completely infertile, indicating that Bat3 is essential for the survival and maintenance of male germ cells.

"We've been able to biochemically and genetically show that Bat3 prevents the destruction of the HSP70-2 protein which is critical to normal sperm development," explains Dr. Okada.



Krembil Researcher Wins Heart and Stroke's Innovation Award

UHN congratulates Dr. Lyanne Schlichter, Krembil Senior Scientist, on her Rick Gallop Award from the Heart and Stroke Foundation of Ontario.

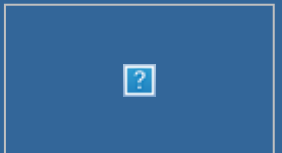


Dr. Schlichter's work focuses on neuroimmunology. Her current research addresses mechanisms underlying inflammation in the central nervous system, especially after ischemic stroke and cerebral hemorrhage.

The Award recognizes research excellence and encourages innovation in the field of cardiovascular and cerebrovascular science. This award is named after Rick Gallop, who served as the President and CEO of the Heart and Stroke Foundation of Ontario for 16 years.

Congratulating Early Researchers

UHN congratulates Drs. Peter Cheung and Douglas Lee on being awarded Early Research



Awards (ERA) from the Ministry of Research and Innovation.

OCI's Dr. Cheung has been awarded funds to continue his research in "Dissecting Epigenetic Mechanisms that Regulate Gene Expression in Normal and Cancer Cells" by examining how histone-modifying proteins affect gene expression and cancer development.

TGRI's Dr. Lee will use funds to explore the "Development of Instruments to Predict Acute Heart Failure Outcomes in Emergent Care" to validate these methods to identify heart failure patients in the emergency department who are at high risk of death, repeated visits to the emergency room, and subsequent hospitalization.

The study also demonstrated that Bat3 is important for proper chromosome pairing during the exchange of genetic information.

"It's interesting to see Bat3 work to stabilize and regulate this very important process. With future studies, we could determine whether or not mutations in Bat3 might play a major role in male infertility and create treatments to deal with this accordingly."

J Cell Biol. 2008 Aug 11;182(3):449-58. Epub 2008 Aug 4. [[Pubmed abstract](#)]. Research supported by the Canadian Institutes of Health Research, the National Institute of Child Health and Human Development/National Institutes of Health (Specialized Cooperative Centers Program in Reproduction and infertility Research).

Dr. Okada notes that this work acknowledges Dr. Peter B Moens and his outstanding contributions in the field of reproductive cell biology. This work could not have been completed without his help and encouragement.

Autoimmune Liver Disease: Clarifying the Importance of a Diagnostic Marker

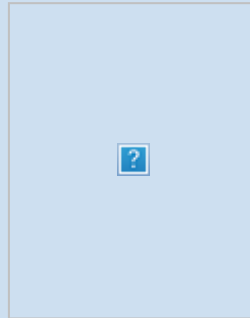
Antimitochondrial antibodies (AMA) are well recognized to be the hallmark of a chronic autoimmune biliary disease called Primary Biliary Cirrhosis (PBC) formally considered disease specific. However, findings from a Krembil-led study are providing evidence that AMA detection may not, in fact, mean the patient has PBC at that time or later.

"Patients diagnosed with PBC show the presence of AMAs in their blood, but whether all individuals with AMAs in their blood will develop PBC is less clear," comments study lead Dr. Jenny Heathcote.

The Krembil, US and German team evaluated 15 patients given a diagnosis of autoimmune hepatitis over a follow-up period of 1 to 27 years, a unique feature in this study. Reviewing their findings, the team has determined that although all patients had detectable AMA throughout follow up, none subsequently developed PBC.

Notes Dr. Heathcote, "Early treatment of their AIH with prednisone may have prevented the development of PBC but there are also many other possibilities to explain the finding. What we do know is that these patients can be managed with only medication for their autoimmune hepatitis if they do not develop PBC over the long term."

Hepatology. 2008 Aug;48(2):550-6. [[Pubmed abstract](#)].



The ERA program is designed to help recently-appointed Ontario researchers build their research teams of graduate students, post-doctoral fellows, research assistants and associates.

Young Researcher Named Top Innovator by MIT Publication

UHN congratulates Dr. Milica Radisic, affiliate TGRi scientist, who was recently named one of MIT Technology Review's 2008 Young Innovators Under 35 in recognition for her outstanding work in regenerative medicine. The prestigious award honors internationally recognized young innovators whose inventions and research are considered world-leading by the editors.

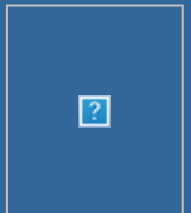
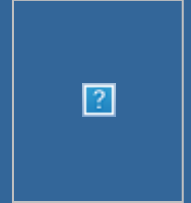
Dr. Radisic's work focuses on cardiac tissue engineering and biomaterials as a means of controlling the development of cardiac tissues to treat heart attacks and heart failure.

"I was very excited and honoured to be recognized as one of the top innovators under 35. It is also important to emphasize that this creative work is enabled by the outstanding students and post-docs in my laboratory, specifically Jana Dengler, Hannah Song and Heidi Au," notes Dr. Radisic.

Dr. Radisic will be featured in the September-October 2008 edition of the Technology Review

Endocrine Investigator Recognized

Congratulations are extended to TGRi Senior Investigator Dr. Daniel Drucker who has been awarded the 2009 Clinical Investigator Award from the Endocrine Society for his ability to integrate basic and clinical studies in the pathogenesis and therapy of endocrine diseases.



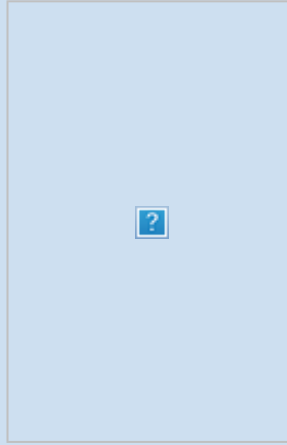
Immunity: Reporting on a New Molecular Tool

OCI investigators have creatively designed a glowing 'reporter' mouse that is used to study the CD83 promoter, a region of an immune gene responsible for the development of immune cells in the lymphoid organs.

The mouse, designed by a group led by Dr. [Tak Mak](#), glows in fluorescent light. The researchers showed that it is a valuable tool for monitoring the activation status and migration of dendritic cells and other immune cells during environmental stresses (for example, hyperthermia) that activate the immune system.

"Understanding how the components of the immune system get started is key to creating future therapies that are targeted and highly specific in function. Only in this way can we build therapies which decrease side effects and increase their effectiveness." explains Postdoctoral Fellow Matthias Lechmann, study lead.

Proc Natl Acad Sci U S A. 2008 Aug 19;105(33):11887-92. Epub 2008 Aug 13. [\[PubMed abstract\]](#). Research supported by the German Science Foundation Grant.



Lung Cancer: Markers of Treatment Response

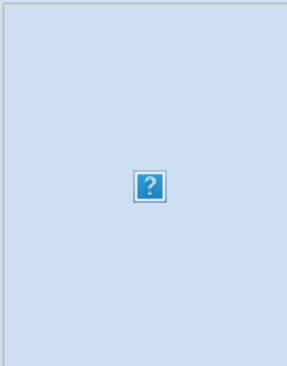
The response of patients to the new non-small-cell lung cancer (NSCLC) drug erlotinib that targets epidermal growth factor receptor (EGFR) is now becoming clearer thanks to a research partnership between PMH, OCI, National Cancer Institute of Canada Clinical Trials Group and Queen's University clinical investigators and scientists.

UHN researchers Drs. [Ming-Sound Tsao](#), [Frances Shepherd](#) and [Suzanne Kamel-Reid](#), analyzed tumors from over 200 patients participating in a clinical trial that evaluated the clinical benefit of erlotinib and looked at mutations in the KRAS and EGFR genes—shown to play a role in NSCLC—using highly sensitive techniques to detect abnormalities.

Patients with tumors containing mutations or increased copy number of the EGFR gene experienced a higher response to erlotinib treatment, while patients with KRAS gene mutations are unlikely to benefit from the drug.

"With continued research, we will be able to use these markers in the selection of patients for EGFR therapy," says Dr. Tsao. "Our hope is that we can use these markers to determine which patients will most likely benefit from anti-EGFR drugs, thus increasing treatment efficacy and cost-effectiveness in this type of cancer."

J Clin Oncol. 2008 Jul 14. [Epub ahead of print]. [\[PubMed abstract\]](#). Research supported by the Ontario Institute of Cancer Research and the Canadian Cancer Society



Diabetes: Digesting Eating Patterns in Female Teens

Teenage girls and young women with type 1 diabetes have increased risks of developing clinical eating disorders because of disturbed eating behavior (DEB) that can worsen over time; new research findings from TGRi investigators show that nearly half of their sample of young teenage girls developed DEB between the ages of 11 and 17.

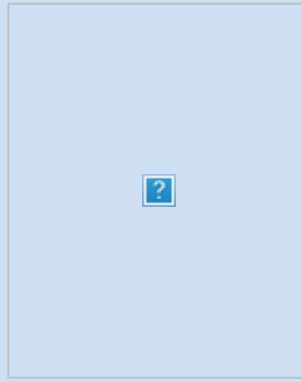
"Attention to planning and control of dietary intake is critical in managing diabetes and this can amplify the focus on eating, body weight and body image in young women with diabetes," says study lead Dr. [Marion Olmsted](#).

In the prospective clinical study, the team interviewed and gathered self-reports of over 100 teenage girls with diabetes who had not yet developed DEB and followed them for a period of 5 years. In comparing girls who developed DEB to those that did not, predictors of DEB onset included higher BMI (body mass index) percentile; higher depression and weight and shape concerns; and lower global and physical appearance-based self-worth.

Mean scores on the measures of psychological functioning did not reach the levels seen in clinical samples, indicating that modest elevations of these measures suggest the development of problems over the next few years.

"We need to lower the threshold for identifying girls with diabetes who are at risk for DEB," notes Dr. Olmsted. "Early interventions need to focus on helping girls develop positive feelings about themselves and their weight to protect them from DEB and encourage a healthy lifestyle."

*Diabetes Care. 2008 Jul 15. [Epub ahead of print]. [[PubMed abstract](#)]
Research supported by the Juvenile Diabetes Foundation International and the Medical Research Council of Canada/Canadian Institutes of Health Research.*



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