CSCI AWARDS

YIF Poster Awards 2007

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The Annual Meeting of the Canadian Society for Clinical Investigation once again featured the Young Investigators Forum, an opportunity for students from Canadian MD/PhD and Clinician Investigator Programs to present their research in poster and oral format. Here are this year's award recipients.

Development of a thermally responsive peptide for sustained delivery of soluble TNF receptor II to attenuate inflammatory events associated with radiculopathy

Dr. Mohammed Shamji is a Neurosurgery Resident at The Ottawa Hospital (Ottawa, ON). He completed his BSc/MSc training at Yale University followed by medical school at Queen's University. He has taken research leave during residency to pursue Biomedical Engineering PhD training at Duke University (Durham, NC) on a project involving controlled-release of depot anti-cytokine therapeutics to treat local neuroinflammation. This work is under the guidance of Professor Lori Setton. His future plans involve completion of his neurosurgical residency with potential subspecialization in minimally-invasive approaches to spine surgery. He fills his spare time as a husband to his wife, a father to one daughter and a second on-the-way, while also training for and running endurance races.

Intestinal microbiota balance modulates host susceptibility to infection with enteric pathogens

Inna Sekirov is a 5th year MD/PhD student at the University of British Columbia, currently in her 3rd year of research. She works in the laboratory of Dr. B. Brett Finlay, studying the contribution of the intestinal bacterial microbiota, i.e. the normal flora, to the progression of the enteric infectious diseases and to the host susceptibility to enteric pathogens. Next September she is planning to defend her PhD thesis and return to 3rd year Medicine and, upon graduation, to pursue a residency in either laboratory or internal medicine.

Mast cells release cytokines in response to mediators produced by virus-infected epithelial cells

Candy Tsang began the PhD portion of the MD/PhD program at the University of Alberta with Dr. Dean Befus in August 2005. As part of the Pulmonary Research Group in the Department of Medicine, her interest is in studying viral respiratory infections. Her current project focuses on the role of mast cell-epithelial cell interactions in the host defense against influenza virus. Cells in the immune system act in concert to fight pathogens, and my goal is to investigate how the exchange of signals between epithelial cells and underlying mast cells in the lungs affects the course of influenza infection in the host. When she has completed both her PhD and MD degrees, she plans ultimately to manage her own research lab as a clinician-scientist

and bring the cutting edge of knowledge into medical practice.

Elucidating the role of P63 during development of the mammalian nervous system

Sagar Dugani is a 3rd year MD/PhD student at the University of Toronto. He started his PhD studies in January 2007 under the supervision of HHMI International Research Scholar Dr. Freda Miller and Dr. David Kaplan, Canada Research Chairs, at The Hospital for Sick Children. Currently, he is exploring the role of the P53 family member, P63, in mammalian central nervous system development. Using in vitro culture approaches and knock-out mice models, he is exploring the role of p63 in embryonic and post-natal brain development. These studies will help to understand the involvement of p63 in normal development and disease-states. After his PhD studies, he will work towards a career that involves research and clinical work, with a greater emphasis on the former.

Examination of the dynamics of global DNA methylation pattern establishment during spermatogenesis

Kirsten Niles is currently in her 4th year of her MD/PhD at McGill University. She is conducting her research in the lab of Dr. Jacques

Trasler examining epigenetic changes in the male germ line. Kirsten played a key role in the initial organization of CITAC – the Clinician Investigator Trainee Association of Canada – and is a member of the Ultimate Frisbee team at McGill. She intends to continue her interest in genetics in the future and specialize in pediatric genetics.

The Warburg effect and tumor cell survival in human GBM

Amparo Wolf is currently in the third year of her PhD, a student of the MD/PhD program at the University of Toronto. She works in the lab of Dr. Abhijit Guha at the Sick Kids Research Institute. Her main research interests include investigating the molecular mechanisms associated with therapeutic resistance and recurrence in patients suffering from the most common primary brain tumor, Glioblastoma Multiforme. Upon completion of her PhD, Amparo plans to return to medicine with the goal of pursuing a residency in neurosurgery.

Gene transfer of endothelial No-synthase restores migratory capacity of endothelial progenitor cells from patients with coronary artery disease

Mike Ward is in his 4th year of the MD/PhD program at the University of Toronto and working under the supervision of two clinician scientists in cardiology, Dr. Duncan Stewart and Dr. Michael Kutryk. Generally, their work involves developing cell-based therapies for cardiovascular diseases, and our group currently is running a clinical trial of autologous cell-based gene therapy for pulmonary arterial hypertension, while preparing a similar trial for acute myocardial infarction. Mike's project deals specifically with addressing a caveat of autologous cell therapy in the clinical arena, that is, the endothelial progenitor cell (EPC) dysfunction found in patients suffering from coronary disease and atherosclerotic risk factors. This EPC dysfunction could explain the disappointing reports from clinical trials following very exciting results from preclinical models. He is employing gene transfer technology to attempt to overcome this

dysfunction and hopefully improve the efficacy of autologous cell therapy following acute MI. Mike is also the President of the Clinician Investigator Trainee Association of Canada (CITAC), which is currently developing a database of MD+ trainees in Canada and establishing a national mentorship program in association with the CSCI. He hopes that CITAC will grow to become a strong advocating body for MD+ trainees across the country.

Targeted deletion of discoidin domain receptor 1 decreases atherosclerosis, reduces inflammation and accelerates matrix accumulation in LDL receptor deficient mice

Chris Franco is currently in his fifth year of the MD/PhD program at the University of Toronto working under the supervision of Dr. Michelle Bendeck. His research involves investigating the role of a novel collagen receptor, the discoidin domain receptor 1 (*Ddr1*), in the pathogenesis of atherosclerosis. Chris' work with hypercholesterolemic mice has identified DDR1 as a positive regulator of atherogenesis. Deletion of DDR1 caused a persistent reduction in atherosclerotic plaque development and resulted in the formation of macrophage poor lesions that were abundant in extracellular matrix. Chris' future studies will attempt to further dissect the role of DDR1 in the regulation of fibrosis and chronic inflammation during atherosclerosis using bone marrow transplantation. After graduation, Chris hopes to pursue a residency in pathology and begin his career as a clinician-scientist.