

2010 B.H.Sc. Summer Research Scholarship Recipients

STUDENT	RESEARCH TOPIC & DESCRIPTION	SUPERVISOR / DEPARTMENT
Raad Yameen	<ul style="list-style-type: none"> ◆ The aim of the project will be to study the effects of centrally-induced depression on the gut microflora and inflammation in mice. Will be using 3 models of centrally-induced depression: maternal separation, serotonin depletion by reserpine and olfactory bulbectomy. Experiments will be performed in female SPF C57B1/6, BALB/c and NIH Swiss mice. 	Premysl Bercik Department: Medicine
Sameer Rawal	<ul style="list-style-type: none"> ◆ The project is developing manuscripts from a technology assessment on the diagnosis and treatment of secondary lymphedema that the Evidence Based Practice Centre (EPC) is completing soon. The technology assessment is a systematic review of the literature undertaken by the EPC for the purpose of determining what the most effective diagnostics and treatments are for secondary lymphedema. 	Mark Oremus Department: Clinical Epidemiology and Biostatistics (CE&B)
Abidur Rahman	<ul style="list-style-type: none"> ◆ Retinal Ganglion Cell loss in the mouse model of high tension glaucoma. 	Alexander K. Ball Department: Pathology and Molecular Medicine
Jagbir Khinda	<ul style="list-style-type: none"> ◆ Profiling microRNA expression in human sputum macrophages. Sputum-derived macrophages from various patient groups will be functionally analyzed to investigate changes in micro RNA expression during bacterial challenge with nontypeable Haemophilus influenza. An examination of microRNA in these cells may provide insight into mechanisms of COPD pathogenesis and novel therapeutic strategies. 	Martin Stampfli Department: Pathology and Molecular Medicine
Cheryl Liu	<ul style="list-style-type: none"> ◆ ER Utilization by Persons with Dementia: A Pilot Study This is an exploratory pilot study to be conducted at HHS and St. Joe's to investigate how patients with dementia are served in the ER and what follow-up they receive upon discharge. This study is linked to the Service Delivery Committee of the LHIN 4 Dementia Network's objective of developing a service model for ER utilization by persons with dementia to smooth the transition from a hospital to a community setting. 	Carrie McAiney Department: Psychiatry and Behavioural Neurosciences
Paul Min Cheon	<ul style="list-style-type: none"> ◆ Neural Circuitry of Compulsive Checking in the Rat. Study on the mechanisms of behavioural change associated with chronic exposure to psycho stimulant drugs. Drugs will be observed to see if it induces a behavioural syndrome resembling human OCD, obsessive compulsive disorder. 	Henry Szechtman Department: Psychiatry and Behavioural Neurosciences

Ahmad AlKhatib	<ul style="list-style-type: none"> ◆ Substitution of 8-OH DPAT in the quinpirole mode of obsessive-compulsive disorder. Szechtman & Wood (2004) proposed the existence of a security motivation system (SMS), which is responsible for organizing behaviour elicited by potential danger. The student will participate in a study that will utilize a pharmacological approach to identify the neurochemistry of the negative feedback signal of the SMS, using 8-OH DPAT (5-HT_{1A} agonist) and quinpirole (D2/D3 agonist). The student will perform all aspects of the study, ranging from experimental design, stereotaxic surgery, and drug injections to behavioural and statistical analyses. 	Henry Szechtman Department: Psychiatry and Behavioural Neurosciences
Richard You Wu	<ul style="list-style-type: none"> ◆ The student will be conducting organ-bath stimulations using small intestinal samples to characterize the various changes in mobility, peristalsis and contractile patterns in response to different lactobacillus species. In follow up, the direct mechanism by which the species modulate the peristalsis activity will be examined through further, physiological and eletrophysiological experimentations. 	Wolfgang Kunze Department: Psychiatry and Behavioural Neurosciences
Tracy (Seung Hyun) In	<ul style="list-style-type: none"> ◆ Developmental Regulation of Responses to House Dust Mite (HDM) Determining HDM responsiveness at different developmental stages, from birth to adulthood (6-8 week old mice). This will involve a comprehensive immunological lung profile (including T regulatory cells) as well as the assessment of Tlr expression at both the mRNA and protein level. 	Manal Jordana Department: Pathology and Molecular Medicine
Michael Herman	<ul style="list-style-type: none"> ◆ Characterization of Antiapoptotic VSV. Invitro tests of virus: growth curves, apoptosis levels. Possibly in vivo tests. 	Brian Lichty Department: Pathology and Molecular Medicine
Anthony Albina	<ul style="list-style-type: none"> ◆ Preparation, Radiolabeling & Screening of Potential Molecular Imaging Agents; student will prepare Ga-labelled insulin derivatives for biological screening. 	John Valliant Department: Chemistry / Medical Physics and Applied Radiation Sciences
Sarah Farr	<ul style="list-style-type: none"> ◆ Characterization of type IV pilus chemotaxis proteins in Pseudomonas aeruginosa : an investigation of the potential interaction between T4P chemotaxis proteins and pilus ATPases through construction of double mutants; further testing of protein localization using fluorescence microscopy. 	Lori Burrows Department: Biochemistry and Biomedical Sciences
Eric Coomes	<ul style="list-style-type: none"> ◆ Lithium Ion Electrolytes : A Solid State NMR Analysis This project involves the synthesis, structural and electrochemical characterization of electrolytes for lithium batteries. After solvo-thermol synthesis of garnet structure electrolytes, they will be analyzed and characterized by X-ray diffraction and solid-state ^{6,7}L:NMR. 	Gillian Goward Department: Chemistry and Chemical Biology

Shirley Ma	<ul style="list-style-type: none"> ◆ The use of mesenchymal stem cells as a therapy for hemophilia – use of microfluidics technology to encapsulate single stem cells. 	Gonzalo Hortelano Department: Pathology and Molecular Medicine
Peter Cmorej	<ul style="list-style-type: none"> ◆ Isolation and characterization of Monoclonal Antibodies to Breast Cancer Stem Cell Cell Surface Antigens. 	John A. Hassell Department: Biochemistry and Biomedical Sciences
Danielle Jerome	<ul style="list-style-type: none"> ◆ Angiotensin II mediated reactive oxygen species and reactive nitrogen species generation in human renal proximal tubular cell (HK-2) model system. 	Richard Austin Department: Medicine
Amit Bhatia	<ul style="list-style-type: none"> ◆ Characterization of type III secretion system proteins in Chlamydia pneumonia – purification and interaction of recombinant T3SS proteins. 	James Mahony Department: Pathology and Molecular Medicine
Chrystal Chan	<ul style="list-style-type: none"> ◆ T cell cytokine responses to modified histone peptides in Systemic lupus erythematosus (SLE) 	Mark Larche Department: Medicine
Vikas Srinivasan Sridhar	<ul style="list-style-type: none"> ◆ Studies on the biological basis of bone metastasis pain. The spread of breast cancer to bone is the most common cause of pain experienced by breast cancer patients, yet there are no mouse models available to allow us to study the cause of the pain or to develop new treatments. The objective of this project is to assess pain behaviours in an established mouse model of breast cancer bone metastasis and to apply these techniques to a new model for this disease. 	Gurmit Singh Department: Pathology and Molecular Medicine
Cassandra Cetlin	<ul style="list-style-type: none"> ◆ Electrophysiology and neuroimaging of language comprehension functions. Examination of cognitive functioning using behavioural, electrophysiological, and brain imaging techniques. The series of studies includes reading and listening to sentences manipulated syntactically and semantically, and looking at the impact that variations in phonetic/phonological features are reflected in the brain. 	John Connolly Department: Linguistics and Languages
Branavan Manoranjan	<ul style="list-style-type: none"> ◆ Regulation of Bmi1 by the Shh pathway in human medulloblastoma brain tumour initiating cells. Assessment of epigenetic regulation of Bmi1 using chromatin immunoprecipitation of unsorted neurospheres by immunoprecipitating with Gli1 antibody and analyzing the presence of the Bmi1 promoter through qPCR. 	Sheila Singh Department: Stem Cell and Cancer Research Institute (SCC-RI) / Surgery
Santa Rabi	<ul style="list-style-type: none"> ◆ Visualizing Enzyme Catalysis & Substrate Binding The student will use state of the art software and computers to study how and why enzymes work. 	Paul Ayers Department: Chemistry and Chemical Biology

Jacky (Chung Kit) Lai	<ul style="list-style-type: none"> ◆ In vitro Selection of Aptamers Acting as Biosensors – Focusing on the novel approach of designing aptamers that can act as biosensors through binding of their desired biological targets. 	Yingfu Li Department: Biochemistry and Biomedical Sciences
Hun-Je Park	<ul style="list-style-type: none"> ◆ The role of bone marrow derived vascular endothelial cells in airway angiogenesis in a mouse model of asthma. The aim of this project is to use a mouse model of allergic asthma to determine which immature cells move into the lungs in response to allergen challenge and what mature cells develop as a result. The purpose of this study is to describe a model of immature cell movement to the lungs in allergic asthma which can be used as a basis upon which future drug treatment studies can be used to target the specific factors involved. 	Roma Sehmi Department: Medicine