Department of Medicine Research:
Current/Upcoming Opportunities for Residents

The following is a list of current/upcoming research opportunities for residents as identified by Faculty in the Department of Medicine. This list is not exhaustive. If the projects identified in the list below aren't relevant to your area of interest, we encourage you to visit the Department of Medicine website and connect with Faculty members with similar research interests.

DIVISION OF CARDIOLOGY

Dr. Adrian Baranchuk
barancha@kgh.kari.net

- *Sleep Apnea model in Rats. Hypercoagubility states induced by sleep apnea and the role of NOACs:* Participation in implementing the study.
- *Reading habits in med students:* Assist in Survey design and writing abstract/manuscript.
- *Atrial infarction:* Learning to write a review manuscript.
- *Holter monitoring in patients with severe sleep apnea and no history of AF:* Writing abstract/manuscript.

Dr. Amer Johri
cinq.research@gmail.com

The Journal of Point of Care Ultrasound (POCUS Journal) is looking for residents to collect cases demonstrating the application of POCUS to enhance internal medicine practice. Cases will be reviewed and published. http://pocusjournal.com/

Dr. Damian Redfearn
redfeard@kgh.kari.net

No specific projects currently available. Dr. Redfearn is open to opportunities to work with mentor with interested residents working on their research projects.

Dr. Kevin Michael
michaelk@kgh.kari.net

- *VF Rotor mapping in a pre-clinical model:* We now understand that VF is sustained by rotors. We postulate that VF rotors have a predictable ventricular trajectory or oscillation. These rotors will be mapped in closed chested pigs using a multipolar catheter deployed in the left ventricle of adult pigs under general anaesthesia.
- *Biventricular defibrillation in a pre clinical model:* ICDS save lives by detecting VF or VT and delivering a shock in the right ventricle. These shocks are painful and can damage the myocardium. We postulate that a shock delivered between an electrode in an LV branch of the coronary sinus and the lead in the right ventricle will reduce the energy of the shock and minimize the pain and damage to the myocardium.

- *The impact of pre procedural skin preparation on cardiac device infections:* Cardiac devices like pacemakers and ICDS are plagued by the risk of post-operative infections despite prophylactic antibiotics and sterile implantation techniques. We wish to evaluate if a cost effective pre-implant skin preparation with a medicated scrub to the chest wall by the patient or nurse will influence these infection rates.
- *Paced fusion as a means to resynchronize RBBB in patients with underlying cardiomyopathy:* Cardiac resynchronization therapy has not been shown to be beneficial for patients with underlying cardiomyopathies and RBBB. We postulate that by pacing the septum of the RV in these patients through the implanted dual chamber ICD will help to create fusion between the paced and conducted QRS complex. This will over come the dysschrony in patients with RBBB and result in improved heart failure status in these patients.

Dr. Raveen Pal
rs.pal@queensu.ca

- *Electomagnetic guidance paired with echocardiography for pericardioscentesis training using the PerK tutor*
- *Defining "stunned" myocardium using echo strain in athletes*
- *Factors that determine high maternal CV risk*
- *SPEED study - Specialized chest pain evaluation in the Emergency Department*
- *Diagnosis of pericardial effusion: CT v Echo*

Dr. Stephen Archer
stephen.archer@queensu.ca

Dr. Archer has expertise in mitochondrial dynamics and pulmonary hypertension-related translational research. No projects currently available - stay tuned for potential upcoming research opportunities in Summer 2017.

DIVISION OF INFECTIOUS DISEASES

Dr. Gerald Evans
evansg@queensu.ca

- *Lyme disease, specifically health care utilization and economics* (CIHR supported Project Scheme grant – CoPI)
- *BALANCE study: RCT looking at duration of therapy for ICU patients with bacteremia* (CIHR supported Project Scheme grant– CoI)
- *Use of technology in antibiotic stewardship*
- *Microbiology of well water* (CFID supported Safe Water grant)
- *The role of screening & isolation for MDROs in hospital infection control*

Dr. Jorge Martinez-Cajas
jm209@queensu.ca

- *Descriptive study:* Physical function measures on people aging with HIV infection. PI Jorge Martinez-Cajas. Recruitment completed. Database available for analysis. Descriptive data on measures of physical function in HIV patients older that 45. Opportunity to explore hypotheses about aging in HIV patients.
- *HPV-SAVE study:* PI Dr. I Salit, University of Toronto. On feasibility assessment. This study will assess anal pap smears in patients living with HIV as a method to screen premalignant lesions. In Kingston, pap smears will be performed in MSM patients with HIV and those with high-grade lesions will be referred to high-resolution anoscopy. Frequency and severity of lesions detected through pap smears will be determined in the cohort of patients followed in Kingston. Kingston site investigators; Dr. Wendy Wobeser and Dr. Jorge Martinez-Cajas.

Dr. Elaine Petrof
elaine.petrof@queensu.ca

- *C difficile and stool transplants:* Several projects available including basic science, translational and clinical. Research program is well established (CFI and NIH-funded, good opportunity for publications, etc). In collaboration with GI Division and with Microbiology, also includes strong cross-specialty interactions with opportunities to expand studies to microbiome of other GI diseases (e.g., IBD, IBS, etc). Available immediately.
- *Effect of stool transplants on host colonization by antibiotic resistant-organisms:* In preliminary stages, more descriptive / exploratory; would be more appropriate for an elective in 2017.
- *Prosthetic joint infections and biofilms:* Use of novel REIMS/DESI approaches for rapid diagnosis of PJIs. In collaboration with Microbiology and Dept of Orthopedics, both basic science and translational projects. Available immediately.
- *Use of iKnife to examine microbiome in various conditions of cancer (e.g., breast cancer):* Will be largely descriptive clinical study comparing microbiome of cancerous state compared to age-matched healthy controls. In collaboration with Dept. Surgery, will be linked to their larger clinical trials using the "iKnife" technology. Still in preliminary stages, therefore would be better suited for an elective in 2017-2018.

DIVISION OF NEUROLOGY

Dr. Birgit Frauscher
birgit.frauscher@queensu.ca

- *Development and Validation of novel non-invasive EEG biomarkers for improved epilepsy diagnosis and prognosis:* Looking for a candidate interested in building experience and working with HD-EEG and recording of sleep during the night. Medical basic skills and good communication are assets. Can offer a co-authorship and a small bursary.

DIVISION OF RHEUMATOLOGY

Dr. Tabitha Kung
kungt@kgh.kari.net

No projects currently available, but open to connecting with residents and projects may become available in the future. Dr. Kung's areas of interest include rheumatoid arthritis (diagnosis and management), systematic reviews, meta-analyses.

Dr. Tanveer Towheed
tt5@queensu.ca

No projects currently available, but open to connecting with residents and projects may become available in the future. Dr. Towheed's areas of interest include osteoarthritis, osteoporosis, systematic reviews, meta-analyses.

DIVISION OF GERIATRICS

Dr. Christopher Frank
frankc@providencecare.ca

Dr. Frank's research interests are broad and relate to his clinical involvement in both Geriatric Medicine and Palliative Care. His research activities include projects examining undergraduate medical education, the use of physical restraints, end-of-life decision-making (including determination of code status), the management of constipation and pressure ulcers, and drug treatments targeted at frail older adults (e.g., Parkinson's disease).

Dr. Michelle Gibson
gibsonm1@providencecare.ca

Dr. Gibson can offer medical education opportunities, with many ideas that could be launched quickly with an interested resident. For example, one of our recent Care of the Elderly graduates (Katrin Dolganova) initiated a project that could be further developed (focus: assessing the effectiveness of the death certification module).

Dr. Sudeep Gill
gills@providencecare.ca

Dr. Gill's research interests include: inappropriate prescribing practices among older adults; drug and other health services utilization by older adults with dementia; quality of care in the long-term care setting; assessment of rehabilitation potential and predictors of successful geriatric rehabilitation. He has a special interest in pharmacoepidemiology and drug treatments for older adults with dementia.

Dr. John Puxty
puxtyj@providencecare.ca

Dr. Puxty has special interests in the areas of age friendly communities, advance care planning (ACP) and consent, falls and cognitive impairment, and care of older offenders over the next few years. Some opportunities could include:

- *Improving use of ACP within ER and IMU*
- *Age friendly healthcare - primary care settings and ER*
- *Cognitive impairment as risk factor for predicting future falls and treatment option*
- *Developing eBooks linked to common geriatric issues*

Queen's UNIVERSITY