RESEARCH SCHOLAR PROGRAM 2017
SUPERVISOR/PROJECT INFORMATION FORM

Due on or before October 21 2016. Forms received after this date will not be posted on the website.

## SUPERVISOR INFORMATION

Supervisor Name: ***Geoffrey Liu***

Mailing Address: ***610 University Avenue, 7-124, Toronto, Ontario, M5G2M9, Canada***

Telephone Number: ***416-946-4501 extension 34***28

Email Address: ***Geoffrey.Liu@uhn.ca***

Degree (MD, PhD, MD/PhD): ***MD***

Academic Rank: ***Associate Professor***

Field of Research: ***Oncology***

Graduate School Appointment (IMS, IHPME etc..): ***Medical Biophysics (University of Toronto) and Epidemiology (Dalla Lana School of Public Health), Full SGS appointments in both Departments***

Research Institute Affiliation (if applicable): ***Princess Margaret Cancer Centre / Ontario Cancer Institute / Dalla Lana School of Public Health***

Allocation of student contact time (# of hours per week you are available to the student for any concerns or to review progress): ***1-2 hours per week during academic year and 4 hours per week during each summer, all for 1:1 discussion of research project with Dr. Liu. In the summer, there will also be 2 hours of didactic teaching/seminars per week (see www.uhncombiel.com) co-led by Dr. Liu and Dr. Xu (Assistant Professor, biostatistician). In addition for each summer, there will 1 hour/day in the summer and 1 hour/week for teaching and discussion of research projects with our education coordinator, Cathi Brown, and additional scheduled time for biostatistical advice 1:1 with our COMBIEL biosttistical team..***

## PROJECT INFORMATION

Project Title: ***Patient Reported Outcomes of Cancer Symptoms and Toxicities and Cancer Pharmacogenomics***

Project Description (max 500 words):

***The laboratory of Geoffrey Liu has a diverse set of cancer research interests related to patient reported outcomes and pharmacogenomics: from mouse model development and testing of cancer drugs, to genomic evaluation of cancer drug outcomes and toxicity, and to health services research into patient reported outcomes of symptoms and toxicity. This is a unique opportunity for the right, committed, ambitious, and bright student seriously interested in oncologic, translational and/or clinical research to immerse herself or himself into one or more specific projects ongoing in the laboratory that will fit with the student's interests. As examples, past award winning and published Research Scholar CREMS projects have included the association of angiogenesis and microRNA polymorphisms with esophageal cancer outcomes, the role of second-hand smoking exposure to smoking cessation after a cancer diagnosis, and the determination of the first Canadian cancer standards for health utility scores. Current projects from which the student may select from include pharmacogenomic epidemiological analyses, heath service research into cancer associated health utility and symptoms measurement, and cancer biomarker analyses. The prototypical project for this student involves the measurement of blood-based biomarkers and their relationship to cancer-associated symptoms and toxicities. In addition to working on this project, clinico-epidemiological and/or translational research methodologic training will take place concurrently with the development, implementation, analysis, and interpretation of one or more subhypotheses within this larger project, under the direct supervision of Dr. Liu. Training support will be further provided by a dedicated research education coordinator with an epidemiology background (Cathi Brown), a genetic biostatistician (Wei Xu), and if necessary, senior clinical coordinators and laboratory technicians (Drs. Zhuo Chen and Dangxiao Cheng, Ms. Devalben Patel). The methodological training is designed to promote the development of the student towards performing future, independent research. The student will become integrated into the Cancer Outcomes, Medicine, Biostatistics, Informatics, Epidemiology, and Laboratory Medicine research training program (COMBIEL – www.uhncombiel.com, Dr. Liu is co-director – see list of past trainees from the undergraduate level through the senior fellowship and visiting scientist levels), and where appropriate, will also be exposed to other trainees in CIHR training programs in Molecular Pathology (www.molecularpathology.ca), Genetic Epidemiology (www.stage.utoronto.ca), and Radiation Oncology (http://www.radonc.utoronto.ca/stars21). Dr. Liu also teaches pharmacoepidemiology and research methods at the Dalla Lana School of Public Health, Faculty of Pharmacy, and the Departments of Medicine, Epidemiology, and Medical Biophysics, in addition to co-coordinating the research training month for the Medical Oncology residents. Past 20-month CREMS research scholars and/or summer CREMS students have won five American Society of Clinical Oncology Merit Awards, two Novartis Oncology Young Canadian Investigator Awards, and a CIHR ICR Publication Prize for their CREMS-related research projects. Each past 20 month CREMS research scholar has published at least three first author publications that resulted from work started during this Program, in addition to being a co-author on multiple other publications. Each has presented their research internationally. Additional project details and determination of specific subhypotheses to be led by the student will be discussed at an interview between the prospective CREMS trainee and Dr. Liu.***

If human subjects are involved, has Ethics been obtained?

☒YES ☐NO ☐Application Submitted ☐N/A

***All existing and planned projects have REB approval.***

Do you expect this work will be published within 20 months?

☒YES ☐NO ☐Uncertain

***Every past CREMS Research Scholar in our laboratory has published at least one manuscript by the end of the research period.***

Student's Roles / Responsibilities (Please be as specific as possible) Please indicate who will serve as the student's direct report. (PI, PDF, PhD student, technician etc…):

***Because of the intense nature of the CREMS Research Scholar program, the student will report directly to Dr. Liu, supported by Cathi Brown, an epidemiologist, and Wei Xu, a genetic and trials biostatistician. The student may also obtain study design and implementation help from other members of the laboratory. (see figure).***

***Student's Roles and Responsibilities:***

- ***(1) Develop or adapt at least one research subquestion from existing research projects, followed by development of the sub-hypothesis, study methods, and study procedures. The preference is to develop at least two or more parallel research projects throughout the 20 month period.***
- ***(2) Complete or write a research protocol, grant, and/or REB submission.***
- ***(3) Perform and/or supervise the research, followed by analysis and interpretation.***
- ***(4) Submit an abstract for presentation at a national or international meeting***
- ***(5) Write at least one scientific, original research related manuscript for publication.***
- ***(6) Attend the summer COMBIEL training program lecture and seminar series***
- ***(7) Present research proposal and/or results at COMBIEL session***
- ***(8) Work jointly with our biostatistical team on quantitative analyses of data.***
- ***(9) Commit to completing research project(s).***
- ***(10) Supervise other students and trainees as necessary to complete the research.***