Comprehensive Research Experience for Medical Students
Summer Research Program 2021
Supervisor/Project Information Form

Due February 24, 2021 by email to crems.programs@utoronto.ca

Supervisor Name: Dr. Sarah Ferguson

Project Title: Oncologic and Pathologic Outcomes of Cervical Cancer Patients Undergoing Minimally Invasive and Open Radical Hysterectomy

Hospital/Research Institution: Princess Margaret Cancer Centre/Sinai Health System

Email: sarah.ferguson@uhn.ca

Field of Research (2 keywords): Cervical cancer, surgery

Department: Obstetrics & Gynecology

School of Graduate Studies Appointment (IMS, LMP, IHPME, etc.)? Yes/No: Yes
If YES, please name: Institute of Medical Sciences
Brief Project Description (<300 words):

**Background:** Recent studies of cervical cancer patients undergoing first-line hysterectomy have shown that minimally invasive surgery (MIS) is associated with increased rates of recurrence and mortality compared to traditional open surgery. The underlying mechanism for this unexpected finding remains unclear.

**Objective:** To determine whether the association between surgical approach and oncologic outcomes in cervical cancer patients depends on tumor size.

**Methods:** We recently performed a population-based cohort study of 958 cervical cancer patients in Ontario, using linked administrative databases held at ICES (formerly known as the Institute for Clinical Evaluative Sciences), which showed that MIS was associated with a 2-fold increase in death and recurrence (Cusimano et al., AJOG 2019). The current project expands on that work. We have secured biopsy and hysterectomy pathology reports for all 958 patients from Cancer Care Ontario. Pathologic data will be abstracted from these reports and then linked to our already-established cohort of 958 cervical cancer patients held at ICES. Multivariable survival analysis will be used to explore the interaction between surgical approach and tumor size (modelled as a restricted cubic spline).

**Feasibility & Medical Student Role:** Pathology reports have already been transferred from CCO to University Health Network (UHN). Ethics approval and data sharing agreements for ICES linkage are in place. With ample support from principal investigator Dr. Sarah Ferguson, PhD student Dr. Maria Cusimano, study statistician Dr. Rinku Sutradhar, and UHN research assistants, our student will participate in primary data abstraction of pathology reports, data analysis/interpretation, and manuscript drafting.

**Significance:** MIS has important benefits for patients in reducing perioperative morbidity and the healthcare system in minimizing resource utilization. With unique pathologic data, this study will identify whether there is a subset of patients with small tumours in whom MIS remains safe, and thus inform practice standards in this population.

**Word Count:** 297 (maximum 300)