Comprehensive Research Experience for Medical Students
Summer Research Program 2020

Supervisor/Project Information Form
Due February 6, 2020 by email to crems.programs@utoronto.ca

Supervisor Name: Marcus Butler

Project Title: Immunological Impact of Sustained Immune Checkpoint Blockade

Hospital/Research Institution: Princess Margaret Cancer Centre, University Health Network

Email: marcus.butler@uhn.ca

Field of Research (2 keywords): Immunology, oncology

Department: Department of Internal Medicine, Department of Immunology

School of Graduate Studies Appointment (IMS, LMP, IHPME etc)? Yes/No: Yes  If YES, please name: Department of Immunology

Brief Project Description (<300 words):
Recent breakthroughs in clinical oncology have demonstrated that immune based therapies can result in meaningful clinical responses patients with a variety of liquid and solid tumors. Recent Health Canada approvals of immune checkpoint inhibitors have revolutionized the treatment of cancer in advanced stages and have also resulted in the use of these agents in the adjuvant setting. Consequently, cancer patients may undergo successful immunotherapy treatments lasting more than 1-2 years in length. Understanding the effects of these therapies in the clinical setting in oncology patients is critical as we design clinical trials to improve outcomes and address the development of treatment resistance. We have collected patient samples from patients undergoing prolonged therapies in the setting of metastatic disease and in the adjuvant setting. We are endeavoring to study these samples by analyzing them through flow cytometry, CTYOF, ELISA, ELISpot, and T cell culture. A CREMS student would have the opportunity to expand their understanding of standard immunology laboratory techniques and conduct experiments using human samples and correlate with clinical outcomes. With the completion of this work, students would ultimately have the opportunity for presentations at national meetings and publication in peer reviewed journals.