



Comprehensive Research Experience for Medical Students  
Summer Research Program 2019

Supervisor/Project Information Form

*Due February 20 2019 by email to [crems.programs@utoronto.ca](mailto:crems.programs@utoronto.ca)*

Supervisor Name: Victoria McCredie

Project Title: **Acute Fever Management in Critically Ill Subarachnoid Hemorrhage Patients**

Hospital/Research Institution: Toronto Western Hospital

Email: Victoria.McCredie@uhn.ca

Field of Research (2 keywords): Critical Care, hemorrhagic stroke

Department: Interdepartmental Division of Critical Care Medicine

School of Graduate Studies Appointment (IMS, LMP, IHPME etc)? No

**Brief Project Description (< 300 words):**

Subarachnoid hemorrhage (SAH) is an acute cerebrovascular event which can have devastating effects on the central nervous system. Management of SAH is complex, due in part to the severity of the underlying cerebral insult, the profound impact it has on several other organs, and the unpredictable clinical course. Brain injury is mediated by the initial hemorrhage and the inflammatory aftereffects of the subarachnoid blood around the brain. This inflammatory process includes the classic systemic signs such as fever during the acute hospitalization and has been linked with worsened outcome and increased mortality. However, there is limited data to support much of the neurocritical care provided to SAH patients in the ICU, leading to substantial practice pattern variation in treatment. Whether the avoidance of fever influences patient outcomes is unknown and represents a major knowledge gap in neurocritical clinical care. Furthermore, the modern critical care management of SAH within Canada has not been described. There appears to be a vital need for additional research to provide a rational basis for clinical management and clarify the optimal critical care management of SAH. Therefore, the purpose of this study is to understand the acute neurocritical care management and outcomes for critically-ill SAH patients at the University of Toronto. Conducting a comprehensive chart review, combined with data from Toronto Intensive Care Observational Registry (iCORE), a student will evaluate whether the avoidance of fever (i.e.  $<37.5^{\circ}\text{C}$ ) by use of pharmacological

agents and external cooling blankets in the first 7 days of admission to ICU is associated with a lower mortality.