



**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

Supervisor Name: Dr. Wendy Whittle

Project Title: Intrapartum fetal blood lactate sampling to reduce caesarean sections: A feasibility study

Hospital/Research Institution: Mount Sinai Hospital

Email: wendy.whittle@sinaihhealthsystem.ca

Field of Research (2 keywords): Obstetrics, Neonatology

Department: Maternal Fetal Medicine

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

Brief Project Description (<300 words):

There is an epidemic of caesarean sections in Canada: 34% of babies delivered at Mount Sinai Hospital are born by caesarean section. Although caesarean sections may save some mothers' and babies' lives, many are performed for suspected fetal distress and yet the baby is born well, *suggesting surgery could have been avoided*. Caesarean sections have both short and long term risks for mother, child and future pregnancies, and therefore *avoiding unnecessary caesarean sections is essential to prevent harm*. The WHO recommends urgent action to reduce unnecessary caesareans.

Some fetuses become hypoxic during labour requiring emergent delivery, but current clinical tools only assess the pattern of the fetal heart rate and are poor at identifying which fetuses are hypoxic and which are not. However, taking a small sample of blood from the baby is safe and easy to do in labour and can inform the obstetrician of the fetal acid-base status and true need for emergent delivery. However, it is not known if using this test reduces caesarean section rates or improves outcomes for the mother or baby.

We are planning a randomized controlled trial (RCT) of fetal blood sampling (FBS) in labour and are looking for a CREMS student to conduct a feasibility study in Summer 2019. This project will include:

- 1) Analyzing the existing data on the reason for caesarean sections at Mount Sinai to identify cases where FBS may have been useful prior to a caesarean being performed.
- 2) Defining the correlation between fetal umbilical artery pH and point-of-care lactate testing in women undergoing caesarean sections, and to document the rates of fetal pre-acidemia and acidemia.
- 3) Evaluating women's willing to participate in the proposed RCT using structured interviews
- 4) Evaluating obstetrician's understanding of FBS in labour and their willingness to participate in the proposed RCT.