



Comprehensive Research Experience for Medical Students (CREMS) 2022 Supervisor and Project Information Form

Please complete and return via email ONLY to crems.programs@utoronto.ca by **February 18, 2022**.

Supervisor Information

NOTE: CREMS will not support pre-determined pairings of students and supervisors. Supervisors must agree to open their projects to all students and interview all that are interested.

Name:

Husam Abdel-Qadir

Email:

h.abdel.qadir@utoronto.ca

Department:

Medicine

Hospital/Research Institution:

Womens College Hospital

SGS Department(s) (if applicable):

IHPME

ORCID ID (see <https://orcid.org/> - If you do not have an ORCID ID we encourage you to sign up for one):

0000-0002-7105-7931

Location of Work:

Remote

Field of Research (up to 4 keywords):

Cardiology, oncology, medical imaging, health effectiveness

Student contact time (number of hours per week YOU are available to the student for any concerns or to review progress):

2 hours/ week standing meeting, up to 2 extra hours per day on Mon, Tues, Thurs, Fri



Project Information

NOTE: If this project is selected, this information will be posted on CREMS website for interested student applicants to view research opportunities.

PROJECT TITLE:

Wholesale cardiac Imaging Surveillance with Echocardiography and Radionuclide assays during breast cancer chemotherapy (WISER)

PROJECT DESCRIPTION:

Including background, aim(s), methodS and significance of the project. **Maximum 300 words.**

Anthracyclines and trastuzumab are early breast cancer (eBC) treatments that can injure the heart; this is referred to as cardiotoxicity (CTox). The long-term consequences of mild CTox are poorly defined, but extrapolation from the limited data available suggests that it increases the risk of heart failure (HF). We cannot predict who will develop CTox, so it is recommended that most women get cardiac imaging (usually nuclear imaging or echocardiography) to evaluate left ventricular ejection fraction (LVEF, a measure of heart function) before starting treatment. LVEF assessments are also mandated every 3 months during trastuzumab therapy, even if patients are well and all prior tests are normal. In a single-centre pilot study, we showed that 97% of routine tests did not lead to changes in care of trastuzumab-treated women between 2007-2012. However, we only studied patients treated before 2013 in a tertiary care centre, so our findings are not generalizable to contemporary treatment settings or other cancer centres.

This project aims to **develop data-driven approaches to cardiac surveillance of women with eBC** who receive anthracyclines or trastuzumab, using inferences from a multicenter cohort that reflects contemporary eBC management. We have 3 objectives:

- 1) Identify predictors of cardiac imaging tests that are more likely to uncover CTox or lead to changes in care during eBC treatment.
- 2) Describe the risk of HF in women with asymptomatic CTox detected through routine surveillance.
- 3) Describe healthcare utilization and costs associated with detection of asymptomatic CTox.

The medical student will help with data collection, with mentoring from second-year medical students who participated in this study last summer. Beyond data collection and analysis for research, this experience will provide the student an opportunity to learn about the diagnosis and management of cardiovascular disease and breast cancer, as well as interpretation of cardiac tests.

Is this project remote-capable (in case of new restrictions) or have an alternative remote option?

Yes, remote capable No

Yes, alternate remote option. Please specify (100 words max): [Click or tap here to enter text.](#)

If human subjects are involved, have the appropriate Research Ethics Board approvals been obtained?

Yes No Not Applicable

If yes, please list the application submission date:

Do you expect this work will be published?

Yes No Uncertain / Other





Research Environment and Student Roles and Responsibilities

Please be specific as possible. Please describe the research environment, including availability of required facilities/equipment/expertise, supervisor's experience and mentorship plans. Please clearly outline the student role(s) and responsibilities related to the project, potential educational value, and indicate who will serve as the student's direct report for daily oversight (PI, PHD student, technician, etc.). **Maximum 300 words.**

I will serve as the principal investigator, with mentorship from two senior clinician-scientists who are international leaders in their respective fields (Dr. Paaladinesh Thavendiranathan and Dr. Sacha Bhatia). The student will directly report to me.

The CREM funds will be used to fund a first-year medical student, to join a team of 3 second-year medical students returning to support this project. The students will lead data collection, with the second-year students providing mentorship to the first year student. Beyond data collection and analysis for research, this experience will provide the student an opportunity to learn about the diagnosis and management of cardiovascular disease and breast cancer, as well as interpretation of cardiac tests.

Furthermore, I will work with each trainee to develop research questions to inform secondary analyses which they would lead using ICES administrative data. This is ongoing for the second year students. My vision is to work with the selected student through their HSR course in second-year medical school to similarly develop a project of mutual interest that can then be executed after the course's conclusion.

The students will be included in the research activities accessible through the Womens College and Toronto General Hospital Research Institutes, ICES, and our team lab meetings. Topics covered include journal clubs, statistical methods, presentation skills, manuscript preparation and knowledge translation.