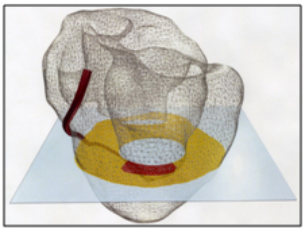
Université de Montréal






POSITION FOR A M.SC. STUDENT

Site: CRCHUM – Centre de recherche du Centre hospitalier de l'Université de Montréal, 900, rue-Saint-Denis, Montréal, Québec
Laboratory /Group: Dr. Saima Hassan, translational breast cancer group
Web site: http://icm.qc.ca/en/recherche-scientifique/chercheurs/dr-saima-hassan.html

Title: Predicting response to PARP inhibition in breast cancer

Project description: Triple-negative breast cancer is an aggressive subtype of breast cancer with limited therapeutic options. Lacking expression of two hormone receptors and HER2, triple-negative breast cancer patients could benefit from therapy that targets specific molecular aberrations in the tumor that can help improve efficacy and decrease toxicity. We are focusing on a family of targeted therapeutic agents that affect DNA damage and repair mechanisms: PARP inhibitors. Our laboratory has two main objectives: how to use PARP inhibitors in combination with other therapies, and how to select breast cancer patients that will best respond to PARP inhibitors. Your project will be determining the role of genetic and imaging-based predictors of response to anti-PARP therapy using patient-derived organoids and xenografts. My group has previously identified a 63-gene signature associated with response to a PARP inhibitor. We will further test the predictive potential of our gene signature with tumor samples from different patient cohorts using bioinformatic tools. Furthermore, we will quantify the DNA damage response using high-content imaging in order to better select patients that may best respond to PARP inhibition.

References:

- Beniey M, Haque T, Hassan S. Translating the role of PARP inhibitors in triple-negative breast cancer. Oncoscience. 2019 Jan; 6(1): 287-88.
- Hassan S, Esch A, Liby T, Gray JW, Heiser LM. Pathway-enriched gene signature associated with 53BP1 response to PARP inhibition in triple-negative breast cancer. Mol Cancer Ther. 2017 Dec;16(12):2892-2901.
- Hassan S, Buchanan M, Jahan K, Aguilar-Mahecha A, Gaboury L, Muller WJ, Alsawafi Y, Mourskaia AA, Siegel PM, Salvucci O, Basik M. CXCR4 peptide antagonist inhibits primary breast tumor growth, metastasis and enhances the efficacy of anti-VEGF treatment or docetaxel in a transgenic mouse model. Int J Cancer. 2011 Jul 1;129(1):225-32.

Mains themes /disciplines: Oncology, translational breast cancer, cellular imaging, biostatistics, bioinformatics

Program of formation: Biomedical Sciences

Qualifications:

- ❖ We would like to add to our team a highly motivated graduate student with lab research experience and good bench skills.
- ❖ Applicants should hold a B.Sc in biomedical sciences, biochemistry, physiology, cellular or molecular biology (or related topics).
- ❖ Knowledge of French and English is an asset.
- ❖ The candidate should be a Canadian citizen, permanent resident, or should already have a visa to study in Quebec.

Available: Fall 2019, opened until filled. Successful candidates will be supported by research grants (salary based on CIHR guidelines) and will have the opportunities to apply at various competitions for studentship.

Contact info: Applicants should send a letter of intent, and a resume to saima.hassan@umontreal.ca including a list of publications, university records and the names, with contact information, of two references that could comment on your academic and scientific achievements if possible in one .pdf document.