Tissue Engineering & Applied Materials Hub

Carleton University

## MASc or PhD Position - Image Processing (Microscopy)

**Description:** We are looking for a highly motivated undergraduate student with interests in imaging, microscopy, and feature detection. The ideal candidate will be enrolled in engineering, computer science, or physics. The student will supervised by Dr. Leila Mostaço-Guidolin and will join the newly established Tissue Engineering and Materials Characterization Hub, based at Carleton University.

**Topic and qualifications:** The envisaged research will focus on the development of methods to capture metrics associated to fiber-like structures of the extracellular matrix (ECM) in tissue and 3D bioprinted samples (including the 3D reconstruction of such networks based on optical imaging). Collagen, for example, is one of the main components of the ECM. The evaluation of collagen-based hydrogels to be used as basis for the development of bio-inks suitable to model the ECM of different tissues have the unique potential to initiate cellular processes - including for example the differentiation of stem cells. In this project, the student will work with high-resolution optical microscopy images obtained with a state-of-the-art confocal microscope.

The ideal candidate will have an undergraduate degree in engineering, computer science, or physics. Previous research experience in image processing is an asset. We require excellent academic track record that demonstrates potential for successfully carrying on the project independently.

The envisaged starting date is Fall 2022 or Winter 2023 (negotiable). Applications will be reviewed as received and the position will remain open until filled. Written and verbal communication skills in English are required, and must meet the admission requirements listed here: https://graduate.carleton.ca/international/english-second-language/

Applications should include a curriculum vitae and supporting documents. These should be sent electronically as a single PDF file to leila.guidolin@carleton.ca. Submitted documents should include:

- A curriculum vitae;
- An academic transcript (electronic, unofficial);
- Names and contact information of 3 references;
- A brief summary of past research activities, and a brief statement of interest detailing the reasons you are interested in working on this project. Please keep it to a maximum of 2 pages.
- What extracurricular activities are you involved with and why?

We welcome applications from suitably qualified candidates regardless of age, gender, race, religion, or ethnic background. The position is subject to budgetary approval and only selected applicants will be contacted.

*October, 2021*