Funded PhD Position in Biomedical Engineering
University of Waterloo
Tissue Mechanics & Multiscale Imaging Laboratory &
Silicon Thin-Film Applied Research Team

Overview

A co-supervised PhD position within the Tissue Mechanics & Multiscale Imaging (TMMI) Laboratory (uwaterloo.ca/tmmi) and Silicon Thin-Film Applied Research (STAR) team is accepting applications for a PhD student to contribute to funded research projects. The labs are located within the Department of Kinesiology and Health Sciences and Electrical and Computer Engineering at the University of Waterloo, Waterloo, ON.

The TMMI lab uses a translational approach to improve understanding and treatment of bone and joint injury and disease. The TMMI uses advanced multiscale imaging techniques combined with computational and experimental biomechanical modeling to evaluate joint injury and osteoarthritis across disease stages. The STAR team are pioneers in the field of imaging technology and have been at the forefront of groundbreaking innovations since 1998. STAR develops spectral detector technologies and color X-ray innovations that are revolutionizing medical imaging by replacing traditional black-and-white X-rays, globally.

The project aims to advance research in quantitative X-ray using a novel point-of-care dual-energy spectral X-ray system. The project will explore imaging parameters related to musculoskeletal conditions such as osteoporosis and osteoarthritis. Experience with multi-modality imaging technologies and clinical populations are an asset. Building on the interdisciplinary nature of the project, there is also the opportunity to work within the diverse translational research team including upper extremity orthopaedic surgeons, radiologists, and imaging scientists.

Qualifications

- A bachelor's and master's degree in biomechanics, engineering (mechanical, biomedical, electrical), imaging, physics, or a related field
- Programming skills (Python/Matlab/C++)
- Experience with multiscale X-ray imaging (Clinical CT, spectral X-ray, microCT, CBCT, etc.)
- Experience with image processing software (Dragonfly, 3D Slicer, etc.)
- Desire to mentor undergraduate and graduate students
- Strong communication skills and track record of scientific dissemination

Application Process

- Submit a letter of interest including past research experience, unofficial transcripts, and CV to Dr. Nikolas Knowles (nknowles@uwaterloo.ca)
- Only shortlisted candidates will be contacted for video interview and applications will be accepted until a suitable candidate is found