

## Joint PhD Position at the University of Toronto & University Melbourne

### - in Time-lapsed Imaging of Arthritis Progression

The Integrative Cartilage Research Group headed by Associate Professor Kathryn Stok at the Department of Biomedical Engineering, The University of Melbourne, and Assistant Professor Andy Kin On Wong in the School Public Health at the University of Toronto are seeking an excellent PhD candidate in Time-lapsed Imaging of Arthritis Progression.

The aim of the research is to perform *in vivo* longitudinal contrast enhanced micro-computed tomography and investigate mechanisms driving remodelling due to arthritis.

Arthritis is a common and painful disease triggering structural and biochemical changes. Nevertheless, factors influencing changes at the interface between cartilage and bone (osteochondral interface) are not yet well understood. The specific aims of this PhD project will therefore be (1) to develop preclinical imaging techniques for live capture of the osteochondral interface, (2) to assess genetic and biochemical determinants that mediate remodelling in a mouse model, and (3) to evaluate cartilage and bone remodelling and compare with biomarkers of disease.

This PhD project forms part of a cluster collaboration between the University of Toronto and the University of Melbourne. Prior to arriving at the University of Melbourne, the student will be enrolled in the Collaborative Program in Musculoskeletal Sciences at the University of Toronto for 18 months. They will be trained in basic sciences of bone, muscle and joint biology, image processing, seminars on other PhD students' work in similar fields, and have opportunities to collaborate across departments.

If you are interested in pursuing this PhD and have an adventurous spirit, you are highly recommended to apply. In order to qualify for the UoM/UoT Joint Postgraduate scholarship,

- you should have a four-year bachelor degree in a relevant discipline which includes a substantial research component equivalent to at least 25% of one year of full-time study and has achieved a minimum weighted average of 75% in the final year subjects or equivalent, or a masters degree in a relevant discipline which includes a substantial research component equivalent to at least 25% of one year of full-time study and achieved a minimum weighted average of 75% or equivalent,
- any prior research experience is an advantage.

Only candidates who qualify for a scholarship will be considered.

**The successful candidate should have** a strong background in health sciences and technology, biomedical engineering or similar, and be willing to work at the interface of engineering, biological and preclinical research. Previous experience in imaging or image analysis is advantageous.

The successful candidate must be a keen learner, creative, possess effective written and oral communication skills in English, have good time management, be willing to perform and/or be involved in testing of human and animal biological specimens, and most importantly have a strong ability to work in an international and dynamic team environment.

To apply, please send your application including a motivational letter, a curriculum vitae, university transcripts, and contact details of two academic or professional references to to Dr Kathryn Stok, [kstok@unimelb.edu.au](mailto:kstok@unimelb.edu.au) and Dr Andy Wong, [andy.wong@uhnresearch.ca](mailto:andy.wong@uhnresearch.ca). For further information, please contact Dr Stok directly or visit

<https://toronto.research.unimelb.edu.au/2020/12/15/understanding-the-pathogenesis-of-postmenopausal-knee-osteoarthritis-at-the-subchondral-bone-and-cartilage-interface-using-mri-and-ct-imaging/>

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