

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

### - in Data & Image Analysis 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 Data & Image Analysis of Arthritis Progression.

The aim of the research is to use clinical imaging techniques to examine progression in postmenopausal osteoarthritis patients and measure trajectories of change driving tissue remodelling.

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 conduct in-depth image analysis into microstructures of the cartilage and bone to seek specific patterns of damage, (2) to assess links between fracture risk and the sex hormone estrogen, 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. This PhD project will be based at the University of Toronto with a 24 month stay at the University of Melbourne. The student will be enrolled in the Collaborative Program in Musculoskeletal Sciences at the University of Toronto. 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 data or image analysis, or interest in machine learning, neural network applications, biomedical engineering or similar, and be willing to work at the interface of engineering, biological and clinical research.

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.

The University of Melbourne  
Integrative Cartilage Research Group  
Department of Biomedical Engineering  
The University of Melbourne, Victoria 3010 Australia  
T: +61 3 8344 9761  
E: [kstok@unimelb.edu.au](mailto:kstok@unimelb.edu.au)