

## PhD Position at the University of Melbourne, Australia - in Digital image Processing of Arthritis Progression

The Integrative Cartilage Research Group headed by Associate Professor Kathryn Stok at the Department of Biomedical Engineering, The University of Melbourne is seeking an excellent PhD candidate in Digital Image Processing of Arthritis Progression.

The aim of the research is to develop methods to evaluate data from *in vivo* longitudinal contrast enhanced micro-computed tomography to investigate mechanisms driving remodelling due to arthritis.

Arthritis is a common and painful disease triggering structural and mechanical changes. Nevertheless, factors influencing changes at the interface between cartilage and bone (osteocondral interface) are not yet well understood. The specific aims of this PhD project will therefore be (1) to develop image analysis and registration methods to determine osteochondral remodelling during arthritis progression, (2) to develop computational models to describe tissue mechanics with arthritis, and (3) to combine osteochondral remodelling image analysis with computational modelling to evaluate how arthritis progresses at the osteochondral interface.

If you are interested in pursuing this PhD and have an adventurous spirit, you are highly recommended to apply. In order to qualify for a UoM 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 computer science, mechanical engineering, biomedical engineering or similar, and be willing to work at the interface of engineering, biological and preclinical research. Previous experience in image analysis or computational modelling 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). For further information, please contact Dr Stok directly or visit

<https://toronto.research.unimelb.edu.au/2020/12/15/mechanisms-driving-osteocondral-remodeling-in-a-postmenopausal-animal-model-using-longitudinal-contrast-enhanced-micro-computed-tomography/>

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)