



MSc and PhD opportunities in Chondrocyte Mechanobiology and Osteoarthritis Research

ABOUT THE PROJECT

One MSc and one PhD graduate student positions are available in the laboratory of [Dr. Andrea Clark](#) in the Department of Human Health and Nutritional Sciences, College of Biological Science, University of Guelph, Canada. The proposed projects are in the area of **chondrocyte mechanobiology and osteoarthritis research**.

Osteoarthritis is a debilitating disease resulting in joint stiffness, swelling and pain for three million (1 in 10) Canadians. Osteoarthritis is characterized by the breakdown of articular cartilage, a soft tissue normally maintained by chondrocytes and lining the articulating surfaces of bones. There is currently no treatment to stop or reverse the progression of joint degeneration. The goal of this research program is to identify novel targets for pharmaceutical intervention to slow down, stop or reverse the progression of osteoarthritis. Our approach is to identify and characterize signal transduction mechanisms through which chondrocytes respond to mechanical and chemical changes in cartilage with a biological response using a unique combination of innovative real-time confocal microscopy and genetically engineered mice. The role of the collagen receptor integrin $\alpha 1\beta 1$ and primary cilia in chondrocyte mechanobiology and osteoarthritis development are of particular interest.

These position are available to students starting in Fall 2020 or Winter 2021 semester.

REQUIREMENTS

Independent and self-motivated applicants with a strong background in cell biology, biomedical engineering, biomechanics or equivalent are encouraged to apply. Strong interpersonal and communication skills as a team player are also required. Experience with rodent research models, dissection, microscopy and cell culture would be desirable.

This position is open to Canadian citizens or permanent residents. Other strong candidates are also welcome to apply.

INTERESTED IN APPLYING?

Interested applicants should submit a CV, unofficial transcript, a letter describing their fit for the position and career goals, and contact information for two referees to Dr. Andrea Clark (alclark@uoguelph.ca).



FUNDING

MSc students in the College of Biological Science are funded at a minimum of \$21,259 per year, and the minimum guaranteed duration of support is 6 semesters. PhD students in the College of Biological Science are funded at a minimum of \$25,259 per year, and the minimum guaranteed duration of support is 12 semesters. For more details regarding funding, see [Student Stipend Information](#).

Depending on eligibility, students may also apply for a wide range of internal and external scholarships. See the full list of available [Scholarships and Awards](#) for more information.

WHY CHOOSE GUELPH?

The University of Guelph is consistently ranked as one [of Canada's top research universities](#) and our faculty attract more research dollars per capita than any other comprehensive university in Canada.

The [Department of Human Health and Nutritional Sciences](#) resides within the College of Biological Science and conducts innovative, world-class research exploring the biological aspects of human health. It has 27 full-time faculty working in several research areas; fighting obesity and diabetes with a healthy lifestyle, examining the role of dietary fatty acids in health and disease, using functional foods and nutraceuticals to prevent disease and promote health, examining the genomic and metabolic effects of nutrients in health and disease, understanding the regulation of the cardiovascular system in health and disease, examining mobility and stability from a biomechanical and physiological perspective, and advancing knowledge through the teaching, learning and knowledge transfer research group. Graduate students are an important and valued component of the Department, and there are a number of graduate programs from which to choose.

LOOKING FOR MORE INFORMATION?

[Office of Graduate Studies](#)

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