

Biomechanical Engineering Research Lab: *In Vitro* Knee Joint Mechanics

The Biomechanical Engineering Research Lab at Western University is seeking a recently graduated PhD for a post-doc position in the area of *in vitro* knee joint mechanics. The candidate will primarily support a NIH-funded investigation of a self-powered load-sensing knee implant but will have many opportunities to participate in and lead other studies.

The successful candidate will have the skills (or ability to learn quickly) and background required to lead studies in a biomechanical engineering lab using a joint motion simulator robot. They will lead studies focusing on knee implant mechanics, considering both isolated prototype implants, as well as devices implanted into cadaver knees. As time permits, they will support or lead other studies using similar methodologies in the fields of arthroplasty and sports medicine. The ability to employ other methods, such as finite element methods or machine learning/AI, would also be beneficial.

The post-doc will be a leader in the lab and will therefore help mentor and support upcoming undergraduate and graduate students. This will include research skills development, communication, teamwork and ethics. The post-doc will also help support engineering aspects of surgical resident/fellow research projects and liaise with industry project sponsors.

The Biomechanical Engineering Research Lab (BERL), located in the Thompson Engineering Building at Western University, is directed by Dr. Ryan Willing (Mechanical and Materials Engineering). This CL-2 lab is equipped with an AMTI VIVO joint motion simulator, Certus motion capture system, Tekscan, dissection / specimen prep space, computing facilities and rapid prototyping capabilities. A second lab space, located in the basement of University Hospital, is a 10-minute walk away and houses similar equipment (including a 2nd VIVO). Western University is in London, in beautiful Southwestern Ontario. The University has close collaborations with neighboring hospitals (LHSC University Hospital and St. Joseph's Hospital), and prioritizes musculoskeletal research, as exemplified by the creation of Western's Bone and Joint Institute.

Applicants should have a PhD in Mechanical or Biomedical Engineering, although individuals with other relevant experience will be considered. The position can start immediately and will remain open until filled. A commitment of up to two years is expected, though longer/shorter periods can be considered.

Western Values Diversity. The University invites applications from all qualified individuals. Western is committed to employment equity and diversity in the workplace and welcomes applications from women, members of racialized groups/visible minorities, Indigenous persons, persons with disabilities, persons of any sexual orientation, and

persons of any gender identity or gender expression. Accommodations are available for applicants with disabilities throughout the recruitment process.

If interested, send an email (including your CV and a short statement of interest) to:

Dr. Ryan Willing, PhD, P.Eng
Associate Professor, Mechanical and Materials Engineering
Western University
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