



UNIVERSITY OF LEEDS

## CANDIDATE BRIEF

Research Fellow in Experimental Biomechanics of the Human Natural Knee, Faculty of Engineering & Physical Sciences



**Salary: Grade 7 (£33,797– £40,322 p.a)**

**Reference: EPSME1028**

**Closing date: 22 October 2020**

**Fixed-term until 30 September 2021**

**We will consider flexible working arrangements**

# **Research Fellow in Experimental Biotribology of the Human Natural Knee, Institute of Medical and Biological Engineering, School of Mechanical Engineering.**

**Are you an ambitious researcher looking for your next challenge? Do you have an established background in biomedical engineering? Do you want to further your career in one of the UKs leading research intensive Universities?**

This project is part of a £4M EPSRC Programme Grant on Optimising Knee therapies, held within the Institute of Medical and Biological Engineering (iMBE). The aim of the programme is to develop preclinical testing methods for early-stage treatments for knee osteoarthritis so their performance can be optimised. In the UK, one third of people aged over 45 have sought treatment for osteoarthritis. The knee is the most common site for osteoarthritis and there is a major unmet clinical need for effective earlier stage interventions that delay or prevent the requirement for total knee replacement surgery. Such treatments involve repair or replacement of diseased or damaged tissues in the knee joint, such as the meniscus, or a small region of cartilage and underlying bone.

The aim of this project is to develop, evaluate and apply an experimental simulation model of the natural human knee joint, specifically to investigate the biotribological and biomechanical function of early knee interventions. Examples of interventions include total meniscus replacement and cartilage repair. You will have a strong background in biotribology, biomechanics, bioengineering or a closely related subject. Due to the environment within the iMBE, you will have a proactive approach to working in a multidisciplinary team with engineers, biologists and clinicians.

## **What does the role entail?**

As a Research Fellow your main duties will include:

- Develop the natural human knee tribological experimental simulation system to investigate interventions of the human knee, such as meniscus replacement and/or cartilage repair, evaluating and validating the simulation system;



- Designing, planning and conducting a programme of investigation for the biomechanical and tribological assessment of early knee interventions considering a range of variables, such as surgical positioning;
- Managing aspects of the project and co-ordinating work with other internal and external collaborators;
- Documenting and reporting research work to industry standards as expected through good laboratory practice guides;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals, by presentation at national and international meetings;
- Participating in the Institute of Medical and Biological Engineering (iMBE) public and patient engagement activities;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- Contributing to the supervision of less experienced researchers and PhD students and acting as a mentor to less experienced colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and relating such evaluations to your own research;
- To contribute to, and to encourage, a safe working environment.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

## What will you bring to the role?

As a Research Fellow, you will have:

- A PhD (or close to completion) in biomedical engineering, or a closely allied discipline;
- Experience in *in vitro* mechanical testing;
- Experience in dissection of human and/or animal tissues;
- Experience in metrology, such as optical profilometry;
- The ability to work as part of a multidisciplinary team involving engineers, clinicians and biological personnel;
- Strong analytical skills, with the ability to work accurately and carefully, designing, executing and writing up research independently;





- A proven track record of peer-reviewed publications in high impact factor journals, or international conference presentations, commensurate with level of experience;
- The ability to work well both independently and as part of a team;
- Strong initiative and a pro-active approach, with excellent organisational, planning and self-management skills, including the ability to prioritise workloads to meet deadlines/demand and deliver high quality under pressure;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience in receiving, documenting and tracking human tissue samples through to disposal, in accordance with the Human Tissue Act;
- Experience in GMP, GCP;
- Experience of tribology and biomechanics of the knee;
- Experience in using experimental simulation systems to investigate orthopaedic tribology and/or biomechanics;
- Experience of working in the field of orthopaedic bioengineering, preferably with some knowledge of cartilage.

## How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

## Contact information

To explore the post further or for any queries you may have, please contact:

**[Dr Louise Jennings](#), Associate Professor of Medical Engineering**

Email: [l.m.jennings@leeds.ac.uk](mailto:l.m.jennings@leeds.ac.uk)



## Additional information

### Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering & Physical Sciences](#), and the [School of Mechanical Engineering](#) and the [Institute of Medical & Biological Engineering](#)

### A diverse workforce

The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN Bronze or Silver Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

### Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.

### Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at [disclosure@leeds.ac.uk](mailto:disclosure@leeds.ac.uk).

## Criminal record information

### Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

