

RESEARCH ASSOCIATE

Musculoskeletal Cell Biology and Exercise Modelling

Full-time (37-hrs per week); Fixed-term for 16-months

Job Ref: REQ230229

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

Internationally recognised for its contribution to the study of sport, exercise and health, the School has wide-ranging expertise, encompassing such diverse areas as biomechanics, medicine, molecular and cellular biology, nutrition, pedagogy, psychology, physiology, sociology, economics and sport management.

The School has an active and ambitious plan to grow capacity and influence through developments as part of the National Centre for Sport and Exercise Medicine, Loughborough in London, and StemLab.

The School is extremely proud to hold an **Athena Swan Silver Award** since 2013, recognising the commitment and work of the School in addressing gender inequalities in Science and to improving career progress for female academics. The School is committed to ensuring that female students and staff are able to achieve their full potential; and provides a flexible and open working culture to enable staff to maintain a work-life balance.

We support our Athena SWAN initiatives by investing in:

- Bespoke leadership programmes to encourage and build confidence in women to take leadership roles.
- Working lunches where needed to enable meetings to be held between 10am and 4pm (as per our Silver Action Plan).
- Monthly coffee mornings which provide opportunities for networking and developing a sense of community within the School.
- Extra mile award which recognises the above and beyond contributions of staff from all job families and research students.

We also welcome applications from those who are looking to work part-time.

Further information about Athena SWAN and the School's commitment to uphold the Silver Award can be found at: <http://www.lboro.ac.uk/departments/ssehs/about/athena-swan/>

Research and Innovation

Research and Innovation within the School is characterised by excellence and breadth, and its quality was recognised in the 2021 Research Excellence Framework where Loughborough University ranked top for research power (GPA x volume) in Sport and Exercise Sciences, Leisure and Tourism. Loughborough University has also placed Number 1 in the QS world ranking for sport-related subjects for six consecutive years (2017-2022, every year since the category was introduced). A broad range of social and natural sciences contribute to the School's research and innovation activity which is organised within three overlapping themes:

- **Sport performance**, understanding and supporting the enhancement of athletes' performance in competitive sport;
- **Lifestyle for health and well-being**, encompassing research across several disciplines with the common goal of facilitating healthy living and ageing across the lifespan; and
- **Sport, Business and Society**, exploring how individuals, communities and organisations engage with and facilitate sport and exercise opportunities.

The School's research themes articulate in particular with the Sport and Exercise Beacon and the Health and Wellbeing Global Challenge which are key elements of the University's CALIBRE (Collective Ambition at Loughborough for Building Research Excellence) framework.

Further information about the School's research themes can be found at:
<http://www.lboro.ac.uk/departments/ssehs/research/> and about the University's CALIBRE framework at:
<http://www.lboro.ac.uk/research/calibre/>

Job Description

Job Family & Grade: Specialist & Supporting Academic (Research) Grade 6

Job Purpose: To undertake research that investigates the mechanism of exercise induced multi-tissue cross-talk by a) recreating protocols that mimic skeletal muscle during exercise within lab grown tissues, b) measure and monitor the exerkinins produced during this exercise c) administer these exerkinins to other tissues (eg. bones) so we can understand how they affect different parts of the body.

Job Duties:

- Bioengineer a tissue platform that accurately recreates the complexity of exercise-induced secretome from human skeletal muscle.
- Define regimes of mechanical and electrical tissue loading that recreate different exercise modalities within human bioengineered skeletal muscle tissue and model the subsequent adaptation.
- Compile a database of exerkinins released from human bioengineered SkM and provide understanding about how exercise alters the compositions of this secretome.
- Conceptualise the concept of exercise-mediated tissue cross talk, by modelling the effects of SkM secretome on osteogenesis within a bioengineered SkM-bone co-culture.
- To work with different cell types relating to the musculoskeletal system including cell lines, primary cells and stem cells.
- To conduct analysis of cell biology activities including functional assays, gene/protein analysis, immunocytochemistry, plate-based assays, cryosectioning, extracellular vesicle profiling.
- To undertake muscle biopsies and handle primary tissues.
- To assist the academic staff in the project team with the supervision of BSc, MSc and PhD project work and day-to-day supervision and support of other researchers.
- To engage with project sponsors and industry partners.
- Write up regular progress reports and present outcomes to all Investigators and Collaborators.
- To write research papers suitable for publication in high quality academic journals.
- To attend and contribute to conferences.
- Maintain confidentiality at all times and ensure that intellectual property (IPR) agreements are not violated.
- Engage in training programmes in the University (or elsewhere) that are consistent with the needs and aspirations of the project and those of the School.
- Undertake other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.

Teaching:

There are no specific teaching responsibilities for this position.

Points to Note:

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

Special Conditions:

All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.

All staff should hold a duty and commitment to observing the University's Equality & Diversity policy and procedures at all times. Duties must be carried out in accordance with relevant Equality & Diversity legislation and University policies/procedures.

Successful completion of probation will be dependent on attendance at the University's mandatory courses which include Respecting Diversity and, where appropriate, Recruitment and Selection.

Organisational Responsibility:

Reports to Prof Mark Lewis – Principal Investigator, Professor of Musculoskeletal Biology and Dean of School.

Person Specification

Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

- 1 – Application
- 2 – Test/Assessment Centre/Presentation
- 3 – Interview

ESSENTIAL

Area	Criteria	Stage	
Experience	Experience of undertaking research in the area of cell and molecular biology.	1,3	
	Research background in human physiology or a related subject.	1,3	
	Experience leading a research project and supervising postdoctoral and/or undergraduate research students.	1,3	
	Authoring original work for academic journal papers, conference papers or technical reports	1	
Skills and abilities	Experience with wet lab techniques relating to cell culture.	1,3	
	Experience with biochemical analytical techniques, eg. immunocytochemistry, gene/protein analysis, plate-based assays.	1,3	
	Experience working with different cell types, eg. cell lines, primary cells, stem cells.	1,3	
	Excellent written and oral communication skills	1,3	
	Self-motivated, with ability to meet deadlines	1,3	
	Excellent interpersonal and organisational skills	1,3	
	Ability to write project reports and make technical presentations to industrial and academic research groups	1,3	
	Knowledge of relevant Health & Safety issues	1,3	
	Training	Demonstrate evidence of having undertaken further training	1
	Qualifications	PhD in area of cell biology, biochemistry, human physiology, bioengineering or related topic	1
Other	Commitment to observing the University's Equal Opportunities policy at all times	3	

DESIRABLE

Area	Criteria	Stage
Experience	Experience working with hydrogels such as fibrin, collagen.	1,3
	Research experience in either bioengineering or musculoskeletal biology.	1,3
	Working in a high-quality academic research environment	1,3
Skills and abilities	Experience taking primary human samples, eg. skeletal muscle biopsies.	1,3
	Working knowledge of cryosectioning or histology.	1,3

Conditions of Service

This full-time post is offered on a fixed-term contract for 16th-months within the *Specialist & Supporting Academic (Research)* job family at Grade 6 (starting salary £32,348 per annum).

The appointment will be subject to the University's normal Terms and Conditions of Employment for staff on Grade 6 and above, details of which can be found [here](#).

The University is committed to enabling staff to maintain a healthy work-home balance and has a number of family-friendly policies which are available at <http://www.lboro.ac.uk/services/hr/a-z/family-leave-policy-and-procedure---page.html>.

We also offer an on-campus nursery with subsidised places, subsidised places at local holiday clubs and a childcare voucher scheme (further details are available at: <http://www.lboro.ac.uk/services/hr/a-z/childcare-information---page.html>

In addition, the University is supportive, wherever possible, of flexible working arrangements. We strive to create a culture that supports equality and celebrates diversity throughout the campus. The University holds a Bronze Athena SWAN award which recognises the importance of support for women at all stages of their academic career. For further information on Athena SWAN see <http://www.lboro.ac.uk/services/hr/athena-swan/>