

## **Research Associate**

### **Extracellular Vesicles Therapeutics for Bone Regeneration**

**(Fixed-term for 26-months)**

**REQ211091**

**As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.**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

Research within the School is characterised by excellence and breadth, and its quality was recognised by the 2014 Research Excellence Framework audit. A broad range of social and natural sciences contribute to the School's research activity which is organised within three overlapping themes:

- **Sport performance**, which aims to understand and enhance sport and exercise performance across the ability range by investigating the factors influencing, and methods for improving, human performance in sport and exercise;
- **Lifestyle for health and well-being**, which aims to improve human health and wellbeing throughout the lifespan by considering the social, behavioural and biological determinants and consequences of human lifestyles with specific emphases on physical activity, nutrition and chronic disease; and
- **Participation in sport and exercise**, which aims to analyse the sociological, economic, psychological, political, organisational and behavioural factors which inhibit and facilitate community participation in sport and exercise.

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:

The overarching aim of the project is to develop a unique regenerative platform technology for the co-ordinated delivery of bioinstructive cell-derived extracellular vesicles (EVs) to enhance bone regeneration. Research will be conducted in the lab of Dr Owen Davies and contribute toward the ongoing development of a range of pioneering vesicle therapeutics (<https://www.lboro.ac.uk/research/experts/owen-davies/>). This project will advance the group's current understanding of how EV subpopulations function in mineralisation and intercellular communication, leveraging this knowledge to design new therapeutic modalities. This translationally focused project benefits from collaborations with leading academics at the Universities of Glasgow and Nottingham, as well as industry partners. These collaborations will allow the applicant to work at the interface of biology, materials science and commercialisation.

### Job Duties:

- To lead an externally-funded EPSRC project on extracellular vesicle therapeutics.
- To isolate and characterise vesicles implicated in bone development.
- To utilise biomaterials for the local delivery of EVs in therapeutic systems.
- To spend periods of time at collaborating institutions (negotiable - likely weeks/months throughout the project).
- To be responsible for conducting the practical day-to-day running of the project.
- To formulate detailed plans for the project based on broad guidance from the project team.
- To feed-back to the project team on progress and make recommendations for next steps.
- Write up regular progress reports and present outcomes to all investigators and collaborators.
- Travel to attend meetings and make presentations both within the project partners working group and to external stakeholders.
- To support the project team by enhancing relationships with existing collaborators and by assisting the establishment of relationships with new collaborators.
- To write research papers suitable for publication in high quality academic journals.
- To attend and contribute to conferences.
- To contribute to project promotion and public engagement events.
- Contribute ideas for new research and enterprise directions.
- To assist the academic staff in the project team with the supervision of BSc, MSc and PhD project work, and the day-to-day supervision and support of other researchers.
- 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 Dr Owen Davies, Principal Investigator.

## 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
<b>Experience</b>	Experience of undertaking research in an area of bone biology/chemistry, materials science, bioengineering and/or extracellular vesicle biology	1,3
	Wet laboratory experience with techniques such as cell culture, PCR, ELISA, mass spectrometry	1,3
	A practical/theoretical understanding of cellular/acellular therapeutics and their translation	1,3
	Experience in the theory/formulation of material systems for bioengineering applications – preferably in hard tissue applications	1,3
	Authoring original work for academic journal papers, conference papers or technical reports	1
<b>Skills and abilities</b>	The ability to spend time at collaborating institutions (Glasgow/Nottingham) for periods of several weeks/months, if required	1,3
	An understanding of intellectual property and science enterprise	1,3
	Evidence of maintaining detailed lab books	1,3
	Excellent written and oral communication skills	1,3
	Self-motivated with the 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
<b>Training</b>	Demonstrate evidence of having undertaken further training in areas relevant to the project	1
<b>Qualifications</b>	PhD (or close to completion) in the area of bone biology/bioengineering or a closely related topic	1
<b>Other</b>	Commitment to observing the University's Equal Opportunities policy at all times	3

### DESIRABLE

Area	Criteria	Stage
<b>Experience</b>	Experience with Human Tissue Act regulations	1,3
	Practical experience of working with EVs (eg. isolation, characterisation) and using standard methods of EV analysis such as nanoparticle tracking analysis	1,3
	Practical experience of designing mineralisation assays	1,3
	Working in a high-quality academic research environment	1,3
	Experience of teaching and/or supervision of students in relevant areas	1,3
<b>Skills and abilities</b>	Able to work with computer software such as Origin and BioRender	1,3
	Experience in mass spectrometry and omics analysis	1,3

	Experience in bone demineralisation/decellularization techniques	1,3
<b>Qualifications</b>	Postgraduate degree in an aligned subject (eg. bioengineering)	1

## Conditions of Service

This full-time post is offered on a fixed-term contract for 26-months commencing 1<sup>st</sup> March 2022 (or as soon as possible thereafter) within the *Specialist & Supporting Academic (Research)* job family at Grade 6 (£31,406 - £37,467 per annum); starting salary to be agreed on offer of appointment.

The appointment will be subject to the University's normal Terms and Conditions of Employment for staff employed 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/>