

THE UNIVERSITY OF MANCHESTER**PARTICULARS OF APPOINTMENT****FACULTY OF BIOLOGY, MEDICINE AND HEALTH****SCHOOL OF BIOLOGICAL SCIENCES****DIVISION OF CELL-MATRIX BIOLOGY AND REGENERATIVE MEDICINE AND DIVISION OF
MOLECULAR AND CELL FUNCTION, AND
WELLCOME CENTRE FOR CELL-MATRIX RESEARCH****RESEARCH ASSOCIATE IN CIRCADIAN AND CELL BIOLOGY****VACANCY REF: BMH-018686**

Salary:	£33,309 to £40,927 per annum depending on relevant experience
Hours:	Full time
Duration:	Fixed term available for up to 30 months beginning from 01 June 2022
Location:	Michael Smith Building and AV Hill Building, Oxford Road, Manchester
Responsible to:	Professor Martin Lowe and Professor Qing-Jun Meng

Enquiries about the vacancy, shortlisting and interviews:

Name: Professor Martin Lowe and Professor Qing-Jun Meng

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Overview and Application process

UKRI-BBSRC has awarded the University of Manchester and the University of Bristol a major 5-year £4.6M Strategic Longer and Larger (sLoLa) research grant entitled '*Opportunities to modulate extracellular matrix secretion and assembly for long-term health*'. This job advertisement is for a postdoctoral research associate (PDRA) funded by this award, to be based in Manchester. The new PDRA will join an existing team of four PDRAs, a Senior Experimental Officer, and three technicians who are also funded by the sLoLa, who are based in Manchester and Bristol. The start date is 01 June 2022. The application process is described in the accompanying advert.

Introduction to the sLoLa research project

This position is funded by a strategic longer and larger (sLoLa) frontier bioscience research grant by UKRI-BBSRC (Biotechnology and Biological Sciences Research Council) to study '*Opportunities to modulate extracellular matrix secretion and assembly for long-term health*'. The sLoLa was jointly awarded to teams at the University of Manchester (lead PI, Professor Karl Kadler) and the University of Bristol (lead PI, Professor David Stephens) for a 5-year period, and started in 2020.

The sLoLa research project:

This sLoLa programme of research aims to elucidate the fundamental mechanisms of how cells build and repair collagen-rich tissues. Dysregulation of collagen is the hallmark of some of the most debilitating features of normal ageing and life-threatening diseases; insufficient collagen is associated with poor wound repair, osteoarthritis, and tendinopathy for which there are no effective treatments. Conversely, fibrosis – the dysregulated accumulation of collagen in place of functional tissue – is associated with 45% of all deaths including cardiovascular disease and cancer. Progress in treating these conditions has been hindered by a poor understanding of the fundamental mechanisms of how cells synthesise, maintain, and repair collagen-rich tissues.

This project builds on recent advances within the sLoLa team that include: identifying circadian clock control of collagen synthesis and homeostasis, understanding the role of the Golgi apparatus in controlling ECM regulation, obtaining new insights into how immune cells orchestrate wound healing, building predictive mathematical models of cell behaviour, and in designing and manufacturing mechanically- and chemically-tuneable scaffolds that control cell behaviour and tissue assembly.

This is a Frontier Bioscience project that will investigate a core topic in biology with far-reaching implications on our understanding of how tissues develop, are maintained, and age. This work underpins research into long-term human and animal health, as well as the development and use of synthetic scaffolds for regenerative medicine. At its core it develops our fundamental understanding of the cell and molecular biology of ECM function. The project focuses on the secretory machinery of cells, which addresses directly the strategic priority of Healthy Ageing, and has significance not only to human health but also to animal welfare.

The sLoLa team and research topics:

The **sLoLa team** comprises laboratories at the **University of Manchester**:

Professor Karl Kadler (extracellular matrix and collagen),

Professor Martin Lowe (Golgi protein trafficking),

Professor Qing-Jun Meng (circadian clock),

Dr. Joe Swift (biomechanics, proteomics and informatics) and

Professor Oliver Jensen (mathematics),

and laboratories at the **University of Bristol**:

Professor David Stephens (cell biology of protein trafficking),

Professor Paul Martin (wound healing) and

Dr. Chrissy Hammond (cartilage and bone diseases).

The Postdoctoral Research Associate position:

This position is for 2.5 years, and will allow the new PDRA to join the existing team of four additional PDRAs, a Senior Experimental Officer and three technicians. It will be based in Manchester, with direct supervision jointly provided by Professor Martin Lowe and Professor Qing-Jun Meng, co-I's on the sLoLa, who are experts in cell biology and chronobiology respectively. Secondment to other laboratories named on the award is possible, including those in Bristol.

The aim of the advertised PDRA position will be to obtain a detailed molecular understanding of the relationship between protein trafficking in the secretory pathway and the circadian clock. You will utilise a combination of bioinformatics, live imaging, time-resolved omics, and biochemical assays to characterise the changes that occur in secretory traffic and cargo protein modification

that follow circadian rhythms in several relevant cell models. This will be complemented by functional assays and genome editing techniques to obtain a detailed molecular understanding of the mechanisms at play. Together the work will address a fundamental but under-explored area of biology, which will have important implications for our understanding of collagen production and beyond. You will have a strong background in cell biology and/or circadian biology, with a PhD in a relevant discipline. You will work closely with other members of the Lowe and Meng labs, and also liaise more widely with the sLoLa team, with additional opportunities to work alongside the other members of the team.

Introduction to the University of Manchester and the Faculty of Biology, Medicine and Health

The University of Manchester is the largest single-site university in the UK with over 40,000 students and more than 12,000 staff. We are ranked 27th in the world according to the QS World University Rankings® 2021, and are committed to: delivering an outstanding teaching and learning experience for our students; contributing to the social and economic success of local, national and international communities; producing the highest calibre graduates; and developing our staff to be amongst the very best of their peers.

To achieve our goals we aim to attract and retain the very best people to work across a range of academic disciplines and professional services.

The Faculty of Biology, Medicine and Health (FBMH)

The Faculty of Biology, Medicine and Health was created on 1 August 2016 when the Faculty of Life Sciences and the Faculty of Medical and Human Sciences were brought together in a new, integrated structure to deliver a truly translational approach to the life sciences, ensuring smooth research pathways - from pure discovery science through to clinical application and patient care. With a total annual income of over £300 million, and over 3,000 members of staff, the Faculty is comparable in size to a medium-sized UK university. Thirty undergraduate and 90 postgraduate programmes offer over 11,000 students opportunities to develop the skills and knowledge they need for a successful career.

The Faculty's structure facilitates interdisciplinary working and enables us to learn from each other and share best practice; and our eight strategic Research Domains help to articulate our research strengths, drive large-scale, collaborative research activities and strengthen relationships with our research and healthcare partners.

The integration of discovery biology, clinical application and patient care within a single Faculty, particularly in a region with notable health inequality, enables us to have a very significant and positive impact on people's lives.

The Wellcome Centre for Cell-Matrix Research (WCCMR, <https://www.wellcome-matrix.org/>)

The successful PDRA will become a member of the WCCMR, which is one of 15 centres of excellence currently funded by Wellcome (<https://wellcome.ac.uk/what-we-do/our-work/research-centres-and-institutes>). The WCCMR comprises 22 laboratories at the University of Manchester focused around ChronoMatrix, ImmunoMatrix and MechanoMatrix themes to investigate the principles that govern cell and matrix interactions. The Centre has a strong focus on fibrosis, which aims to identify the principle features of matrix homeostasis and how this goes awry in fibrotic diseases. The WCCMR funds state-of-the-art infrastructure in imaging (light and EM), genomics, genome editing, proteomics, biomolecular analysis, and bioinformatics, managed by dedicated Senior Experimental Officers and technicians. The Centre has 150 staff (fellows, postdocs, technicians and postgraduate students). The Centre has teamed up with the Lydia Becker Institute at the University of Manchester to host a Wellcome Trust 4-Year PhD

ImmunoMatrix; the PDRA on the sLoLa project may be expected to co-supervise PhD students from this new programme as well as Masters and Undergraduate students who perform research in the Wellcome Cell-Matrix Centre.

Our strategic partnerships

The Faculty has developed key strategic partnerships that underpin its ambitions to deliver ground-breaking research.

It plays a leading role in Health Innovation Manchester (HInM), which was launched in September 2015, as part of the UK Government's decision to devolve health and social care responsibilities to Greater Manchester. HInM offers a unique opportunity to bring together health and social care, academic and related business resources to deliver an innovative health ecosystem that significantly enhances our scientific standing and acts as a magnet for inward investment.

As part of this, the Faculty works collaboratively with six local NHS Trusts in a strategic partnership that unites healthcare providers with academics and researchers to deliver leadership for our regional health system - at the same time creating an internationally recognised centre for applied health research and education.

Key partnerships in the charitable sector include Cancer Research UK; Diabetes UK; and the Wellcome Trust; and the Faculty will also have research and funding links to a number of commercial organisations including Unilever, AstraZeneca, GlaxoSmithKline and Boots, who will help us to bring new drugs and products to the market.

Working for the University of Manchester

The University of Manchester strives to make our community a welcoming, caring and enthusiastic one, fuelling ambition with opportunities and support to help us all achieve our personal and professional goals.

Our diverse job opportunities include an attractive benefits package with family-friendly policies that provide for flexible working. We care deeply about career and personal development, offering a structured induction programme for new staff, an annual performance and development review, staff training for all career stages and mentoring opportunities to support your career ambitions.

We have a genuine commitment to equality of opportunity for our staff and students, and are proud to employ a workforce that reflects the diverse community we serve.

As a global institution, situated at the heart of a lively, culturally diverse city, we welcome applicants of all nationalities. To help international job applicants plan for life in the UK, we have put together some useful information on passports and visas, travel to the UK, accommodation and a number of other practical considerations.

Main Responsibilities of the Postdoctoral Research Associate

- To take initiatives in the planning of research.
- To take responsibility for organising resources and effective decision making in support of research.
- To identify and develop suitable techniques, and apparatus, for the collection and analysis of data.
- To conduct data analysis.
- To ensure the validity and reliability of data at all times.
- To maintain accurate and complete records of all findings.
- To write regular reports for internal use and submission to research sponsors.
- To attend relevant workshops and conferences as necessary.
- To prepare material for presentation to colleagues and at conferences.
- To draft publications and submit to refereed journals.

- To contribute to writing bids for research grants.
- To provide guidance and supervision to staff and students.
- To be an active team-member and set positive examples by showing a commitment to achieving results, encouraging and supporting junior members of the team and raising suggestions for continuous improvement.
- To work alongside the PIs and other colleagues in a collegiate manner and build rapport within the team and the wider Faculty.
- To develop contacts and research collaborations within the Faculty and the wider community.

Other Duties

- To attend relevant meetings.
- To undertake any necessary training and/or development.
- Actively read the scientific literature relating to (and around) the project.
- To maintain safe workplace practice and procedures in accordance with the requirements of Health and Safety legislation.
- To maintain an up-to-date knowledge of relevant statutory Health and Safety legislation and recommendations and attend safety training as required.
- Any other duties commensurate with the grade of the post as directed by PIs.

Person Specification

Essential Skills, Knowledge and Experience

- Hold (or expect to hold shortly) a PhD or equivalent in biological sciences
- Have proven knowledge and expertise in cell biology (in particular protein trafficking) and/or circadian biology

Desirable Skills, Knowledge and Experience

- Have expertise in bioinformatics, omics, imaging, molecular cloning and/or genome engineering
- Be competent in statistical methods
- Have a publication track record commensurate with the duration of postgraduate or postdoctoral work
- Demonstrable ability to author research papers and present data at scientific meetings
- Proven ability to use initiative to efficiently plan, optimise and progress project and communicate findings
- The ability to manage your own research independently on a day-to-day basis
- Exhibit excellent interpersonal and communication skills and ability to work with colleagues at all levels
- Demonstrate a willingness to contribute to the work of others by offering practical and intellectual help
- Be able to work collaboratively as part of a larger team
- Have good written and spoken English skills

The above particulars are intended as a general guide to the duties of the post and the conditions of service. They do not constitute a contract of employment between the University and the person

appointed. The successful applicant will, however, receive a full set of conditions of service on appointment.
