

# THE UNIVERSITY OF MANCHESTER

# PARTICULARS OF APPOINTMENT

## FACULTY OF BIOLOGY, MEDICINE & HEALTH

## SCHOOL OF BIOLOGICAL SCIENCES

## DIVISION OF CELL MATRIX BIOLOGY AND REGENERATIVE MEDICINE

# **RESEARCH ASSOCIATE**

## VACANCY REF: BM&H-14465

**Salary:** Grade 6 £32,236 to £39,609 per annum (according to relevant experience)

Hours: Full Time

Duration: Fixed term Until 20 January 2021

Location: Oxford Road, Manchester

## Enquiries about the vacancy, shortlisting and interviews:

Name: Martin Schwartz Email: <u>martin.schwartz@manchester.ac.uk</u>

The University of Manchester is the largest single-site university in the UK with around 38,000 students and more than 11,000 staff. We aim to become one of the top 25 research universities in the world by 2020 and are committed to delivering an outstanding teaching and learning experience; 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 ambitious goals we aim to attract and retain the very best people to work across a range of academic disciplines and support functions.

## The Faculty of Biology, Medicine and Health (FBMH)

The Faculty of Biology, Medicine and Health was created in 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 new Faculty is comparable in size to a medium-sized UK university. Thirty undergraduate and 90 postgraduate programmes will offer our 11,000 students opportunities to develop the skills and knowledge they need for a successful career. The Faculty's matrix 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, provides us with a real opportunity to have a very significant and positive impact on people's lives.

#### Our strategic partnerships

Working alongside six local NHS Trusts, the Faculty is a key member of the <u>Manchester</u> <u>Academic Health Science Centre (MAHSC)</u> - a federation of equal partners that unites leading healthcare providers with world-class academics and researchers. It aims to be a global centre for the delivery of applied health research and education and provide leadership for our local and regional health systems.

It also plays a leading role in <u>Health Innovation Manchester (HInM)</u>, 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 life science related business resources across the region to deliver an innovative health ecosystem that can help accelerate innovation into our local health and social care systems, enhance our global scientific standing and act as a magnet for inward investment.

Key partnerships in the charitable sector include Cancer Research UK; Diabetes UK; and the Wellcome Trust; and the Faculty will also has 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 <u>benefits package</u> 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 development.

We have a genuine commitment to <u>equality of opportunity</u> 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, <u>culturally diverse city</u>, we welcome applicants of all nationalities. To help international job applicants plan for life in the UK, we have put together some useful <u>information on passports and visas</u>, travel to the UK, accommodation and a number of other practical considerations.

# Welcome Trust Centre for Cell-Matrix Research

The <u>Wellcome Trust Centre for Cell-Matrix Research (WTCCMR)</u> is a facility integrated with the Faculty of Biology, Medicine and Health at the University of Manchester. The Centre brings together the world's largest team of Primary Investigators studying cell-matrix interactions and provides access to excellent Core Facilities for mass spectrometry, biomolecular analysis and



microscopy. Research is divided into three complementary themes, inspired by groundbreaking discoveries in the field: 'ImmunoMatrix' (synergy between matrix and the immune system); 'MechanoMatrix' (the biomechanical role of matrix); and 'ChronoMatrix' (circadian rythythm and matrix regulation). The Centre is committed to developing cell-matrix research from basic discovery science through to clinical application.

## Overall Purpose of the Role

Fibrosis is a major contributor to multiple serious disorders including heart failure, atrial fibrillation, atherosclerosis, hypertension, cancer, lung, liver and kidney failure. A major bottleneck has been our limited understanding of physiological tissue homeostasis that maintains the organization and stiffness of healthy tissues. Without understanding the normal mechanisms, data on the transition to fibrosis are difficult to interpret. The goal of this project is to elucidate the pathways by which cells sense the properties of their extracellular matrix and adjust rates of matrix synthesis, assembly and degradation to keep those properties constant, and how these mechanisms are overcome in fibrosis. The successful candidate will work with **Professor Martin Schwartz** to elucidate how cellular stiffness sensing pathways regulate matrix synthesis and turnover. These studies will utilize a combination of biophysical, cell biological and tissue engineering approaches to address these questions.

## Main Responsibilities

- To take initiatives in the planning of research.
- To identify and develop suitable techniques for the collection and analysis of data.
- To conduct data analysis with appropriate statistical testing.
- To ensure the validity and reliability of data at all times.
- To maintain accurate and complete records of all findings.
- To write regular internal reports (as agreed).
- To prepare material for presentation in oral and poster formats.
- To present findings to colleagues and at conferences.
- To draft publications and prepare them for submission to refereed journals.
- To contribute to writing bids for research grants.
- To provide guidance and training to staff and students.
- To take responsibility for organising resources and effective decision making in support of research.
- To attend relevant workshops and conferences as necessary.
- 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 Centre 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.
- To promote the reputation of laboratories within the Centre, the Faculty and wider University.

## Other Duties

- To undertake appropriate administration tasks.
- 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 PI / supervisor.

Facilities for animal research are first rate and are validated by all the appropriate Home Office licences. However, if you have any medical, social or ethical reasons for avoiding work on experimental animals, then do not apply for this post.

Successful candidates may be subject to pre-employment screening carried out on our behalf by a third party. The offer of employment will be dependent on the successful candidate passing that screening. Whilst you will be required to provide express consent at a later stage, by continuing with your application now you acknowledge that you are aware that such screening will take place, and agree to take part in the process."

# Person Specification: Essential Skills, Knowledge and Experience

# Essential

- Hold a PhD (or equivalent) in genetics, cell biology, molecular biology, cancer biology or related discipline.
- Have good interpersonal and communication skills.
- Able to summarise data and produce scientific ideas.
- Be competent in statistical analysis.
- Demonstrable ability to author research papers and present data at scientific meetings.
- The ability to manage your own research independently on a day-to-day basis.
- Be an enthusiastic and hard working individual.
- The ability to develop and refine techniques and experimental approaches.
- Be willing to contribute to the work of others in the lab by offering practical and intellectual help.
- Be able to work collaboratively as part of a larger team.

## Desirable

- Knowledge of principle concepts in mechanobiology, biophysics or tissue mechanics.
- Familiarity with cell biology and biochemistry methods such as cell culture, SDS-PAGE and Western blotting.
- Hands-on experience in molecular biology techniques such as qPCR, DNA sequencing, CRISPR and cloning.
- Experience with light microscopy methods such as immunofluorescence and immunohistochemistry.

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