

THE UNIVERSITY OF MANCHESTER
PARTICULARS OF APPOINTMENT
FACULTY OF BIOLOGY, MEDICINE & HEALTH
SCHOOL OF BIOLOGICAL SCIENCES
DIVISION OF OF MOLECULAR AND CELLULAR FUNCTION
RESEARCH ASSISTANT (DIVISION OF MOLECULAR & CELLULAR FUNCTION)
VACANCY REF: BMH-024585

Salary: £30,487 to £34,980 per annum depending on experience

Hours: 35 hours per week (1 FTE)

Duration: Fixed Term for 12 months starting 1st May 2024

Location: Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:

Name: Clare Buckley

Email: ceb85@cam.ac.uk

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 around 38,000 students and more than 11,000 staff. We aim to become one of the top 25 research universities in the world 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

The integrated structure of our faculty enables a truly translational approach to biology, medicine and health - from pure discovery science through to clinical application and patient care. It also encourages collaborative working, enabling staff to deliver innovative, world-leading research that has a very real and positive impact on people's lives, as well as high-quality education and training to over 11,000 undergraduate and postgraduate students.

Our Strategic Partnerships

The faculty has established a number of key strategic partnerships that underpin its ambitions to develop ground-breaking research.

Working alongside six local NHS Trusts, the Faculty is a key member of the <https://mft.nhs.uk/withington/research/manchester-academic-health-science-centre-mahsc/> - 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.

We also play a leading role in <https://healthinnovationmanchester.com/>, 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 also has research and funding links to a number of commercial organisations including Unilever, AstraZeneca, GlaxoSmithKline and Boots, who 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 <https://www.staffnet.manchester.ac.uk/people-and-od/benefit/> 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 <http://www.manchester.ac.uk/connect/jobs/equality-diversity/awards/> 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, <http://www.manchester.ac.uk/study/experience/student-life/city/>, we welcome applicants of all nationalities. To help international job applicants plan for life in the UK, we have put together some useful <http://www.staffnet.manchester.ac.uk/employment/joining-the-university/international-staff/> travel to the UK, accommodation and a number of other practical considerations.

Background

We are searching for an outstanding research assistant to join us as the Buckley lab (@LabBuckley) moves to the exciting Division of Molecular & Cellular Function at the University of Manchester (@MCF_UoM) from April 2024. Start date can be flexible. Funding is initially available for 1 year.

The Buckley group strives to understand how mechanics and biochemical signalling work together to shape epithelial organs during morphogenesis. Our long-term goal is to identify mechanisms by which a dysregulation of this balance contributes to congenital diseases. We are currently particularly interested in understanding the links between apical-basal cell polarity, cell-cell adhesion, and cellular mechanics during the process of vertebrate secondary neurulation and mammalian early epiblast formation. To investigate these processes, we have recently developed *in vivo* optogenetic approaches, which allow us to image the behaviour of cells and tissue before, during and after a precise and reversible manipulation in cell mechanics or signalling at a subcellular scale deep within the zebrafish brain. We also use multicellular stem cell culture models of epiblast formation, with which we have recently uncovered a novel, Cadherin-mediated mechanism of apical membrane initiation site localisation during epithelial organ development.

The Division of MCF is home to world-leading research in cell and molecular biology across scales. It is a division of the wider Faculty of Biology, Medicine and Health, and is housed within the Michael Smith Building, fostering collaborative links between divisions. The Bioimaging facility provides an extensive range of cutting-edge microscopy systems, bespoke development of new imaging equipment and expert support. Manchester is a friendly and multicultural city with award-winning museums and world-famous football clubs, voted the UK's best city to live in for nine consecutive years.

Overall Purpose of the Job

The role is to provide research support within the exciting program of work in the Buckley lab to investigate fundamental mechanisms of early epithelial organ development from the molecular to tissue scale. The successful candidate would work collaboratively with other lab members, contribute to the general running of the lab and help with training. Initially the candidate would be instrumental during the transfer of the lab to Manchester; they would aid with setting up equipment, reagents and protocols and integrate these within the Division. They would likely visit our Cambridge lab during this time to learn experimental procedures and lab structure. The candidate would later be encouraged to develop a more independent research project, which could potentially form a PhD project within the lab. There are a range of research projects available, depending on expertise and interest. Candidates are encouraged to contact Clare Buckley directly to further discuss research interests.

The candidate should be a passionate researcher, with a degree or master's degree in a relevant subject (e.g. developmental biology, biophysics). Previous lab research experience is essential. Experience in quantitative image analysis/ modelling/ zebrafish /stem cell culture would be advantageous. The main requirement is a professional, organised, and collaborative work ethos, and a willingness to proactively develop creative approaches to challenging research problems.

Key Responsibilities, Accountabilities or Duties

The range of duties will include:

- Actively participate as a member of the research team; assisting with research in the lab, under direction from Dr. Buckley, regularly discussing progress.
- Carry out experimental techniques such as molecular biology, zebrafish transgenesis, CRISPR, 4D *in vivo* confocal imaging, optogenetics, stem cell culture

- Advanced analysis of imaging data using coding language such as Matlab and R, and imaging software such as IMARIS
- Keep abreast of developments in the field and help to further advance optogenetic and imaging technology in the lab
- Effectively communicate research findings at regular laboratory meetings
- Contribute to the production of research reports and publications
- Interact effectively with other members of the Buckley lab and collaborators
- Assist in the supervision of student projects and in training new lab members
- Proactively assist with general lab running such as maintenance of communal lab stocks, and implementing appropriate H&S in the lab, liaise with research colleagues and support staff on routine matters
- Use initiative to troubleshoot when necessary
- Plan own day-to-day research activity within the framework of the agreed programme, coordinating own work with that of others

Person Specification

Essential

- Is passionate about developmental morphogenesis
- Degree or master's degree in a relevant subject (e.g. developmental biology, biophysics)
- Experimental experience in a relevant area (e.g. cell & molecular biology, genetics, biophysics, imaging techniques)
- Is strongly motivated, proactive and reliable with a keen and enthusiastic approach to science, and a willingness to learn and develop.
- Excellent communication and interpersonal skills and collaborative approach
- Proven ability to work independently and as part of a team, with the ability to liaise confidently and effectively with a range of individuals
- A professional work ethic, with a commitment to help foster an inclusive and welcoming working environment and to promote EDI.
- Proven experience of managing their own workload and good planning/organisational skills, ability to meet deadlines.
- Proven ability to clearly present their own research ideas and data, with experience of giving presentations and writing publications.
- Has a recent good track record of research achievement.
- Ability to proactively contribute to broader management and administrative processes
- Flexible approach to dealing with research problems as they arise

Desirable

- The ability to evaluate complex data using coding language and advanced analysis packages
- Specialist expertise in imaging and optogenetics, CRISPR-Cas9 gene editing
- Experience in using zebrafish as a model organism
- Stem cell culture experience
- Experience in modelling