

THE UNIVERSITY OF MANCHESTER  
PARTICULARS OF APPOINTMENT  
FACULTY OF BIOLOGY, MEDICINE & HEALTH  
SCHOOL OF BIOLOGICAL SCIENCES  
DIVISION OF MOLECULAR AND CELLULAR FUNCTION  
RESEARCH ASSOCIATE IN MOLECULAR CELL BIOLOGY  
VACANCY REF: BMH-030204

**Salary:** Grade 6, £37,694 to £42,254 per annum, depending on relevant experience

**Hours:** Full time

**Duration:** Fixed term available for 36 months

**Location:** Oxford Road, Manchester

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**Enquiries about the vacancy, shortlisting and interviews:**

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**Background**

This is an exciting opportunity to join a dynamic and growing cancer cell biology laboratory. The laboratory uses systems-level approaches, integrating state-of-the-art proteomics, bioinformatics, functional cell biology, super-resolution imaging and cancer models, to discover new properties of cancer cell adhesion networks. Our research aims to generate mechanistic insights into cellular interactions with, and responses to, the tumour microenvironment that control fundamental aspects of cancer cell behaviour.

Cell function is profoundly influenced by the physical environment of the body, and changes in the stiffness of the tissue microenvironment are vital for organs to grow and wounds to heal. Yet remarkably little is known about how force leads to the precise gene expression changes required for cells to respond to their physical environment. This project will investigate how regulation of the cytoskeleton at the nucleus controls cell behaviour and gene expression. The project will determine molecular mechanisms regulating a range of nuclear responses to changes in substrate stiffness, such as those encountered in the tissue microenvironment during tissue decline. The work will use a wide range of molecular and cell biological approaches, including recombinant DNA technology, RT-PCR, fluorescent microscopy and biochemical and proteomic techniques to characterise cytoskeletal and nuclear protein localisation and function in skin cancer cells.

The team are part of the Faculty of Biology, Medicine and Health at the University of Manchester, with access to state-of-the-art facilities for mass spectrometry, genomic technologies, sequencing and imaging (including confocal microscopy, super-resolution microscopy, light-sheet and lattice light-sheet microscopy, TIRFM, FRAP and FRET). 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.

### **Overall Purpose of the Job**

This post is for a molecular cell biologist with experience in cytoskeletal and nuclear protein research. The researcher will use cutting-edge techniques to investigate how regulation of the cytoskeleton at the nucleus controls cell behaviour and gene expression. The successful candidate would be expected to demonstrate experience and pre-existing skills relevant to the project to allow for delivery of research goals within the employment period. The successful candidate would be expected to perform experiments independently and to work alongside the Principal Investigator to conceptualise studies, design experiments and publish their findings in appropriate journals. The role will involve contributing to a team-science approach in the laboratory, supporting other team members and trainees intellectually and practically and working collaboratively with new and existing internal and external collaborators.

### **Key Responsibilities, Accountabilities or Duties**

The range of duties will include:

- Be involved in the assessment of student knowledge and supervision of projects.
- Assist in the development of student and junior staff research skills.
- Develop research objectives and proposals for own or joint research, with the assistance of a mentor if required.
- Conduct individual and collaborative research projects.
- Write up research work for publication.
- Continually update knowledge and understanding in field or specialism.
- Translate knowledge of advances in the subject area into research activity.
- Deal with routine communication using a range of media.
- Communicate complex information, orally, in writing and electronically.
- Prepare proposals and applications to external bodies, e.g. for funding and contractual purposes.
- Communicate material of a specialist or highly technical nature.
- Liaise with colleagues and students.
- Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
- Join external networks to share information and identify potential sources of funds.
- Manage own research and administrative activities, with guidance if required.
- Work with colleagues on joint projects, as required.
- Collaborate with academic colleagues on areas of shared research interest.
- Attend and contribute to relevant meetings.
- Use new research techniques and methods.
- Use initiative and creativity to identify areas for research, develop new research methods and extend the research portfolio.
- Use creativity to analyse and interpret research data and draw conclusions on the outcomes.
- Contribute to collaborative decision making with colleagues in areas of research.
- Use research resources, laboratories and workshops as appropriate.

- Plan and manage own research activity in collaboration with others.
- Balance, with help, the competing pressures of research and administrative demands and deadlines.
- Be aware of the risks in the work environment and their potential impact on their own work and that of others.

## **Person Specification**

### **Essential**

- Have a PhD (or equivalent) in Biochemistry, Molecular and/or Cellular Biology
- Have an Integrated Masters or BSc (Hons) in Biochemistry or a relevant biological science
- Extensive and up-to-date theoretical and practical knowledge in mammalian cell biology
- Extensive experience in core molecular biology research methods and techniques (including cloning, CRISPR/Cas9 gene editing, transfections, PCR and RT-PCR)
- Extensive experience in core cell biology research methods and techniques (including immunoblotting, immunohistochemistry, immunocytochemistry and confocal microscopy)
- Experience in proteomics research methods and techniques (including proximity labelling approaches and affinity purification)
- Experience of analysing protein splice variants
- Extensive IT skills (including experience with core research software, e.g. Microsoft Office, GraphPad Prism and Dotmatics SnapGene, and lab management software, e.g. LabCup)
- Excellent communication and interpersonal skills
- Excellent time management and organisational skills
- Ability to work independently and as part of a team
- Ability to liaise and work confidently and effectively with colleagues at all levels
- Flexible approach to dealing with research problems as they arise
- Willingness to learn and develop
- Ability to present in both written and oral publications
- Ability to meet deadlines
- Publications in peer-reviewed journals
- Ability to evaluate complex data
- Good written and spoken English
- Ability to contribute to broader management and administrative processes
- Ability to assess and organise resources
- Strong organisational skills in good practice for data storage, management and reporting
- Willingness to contribute to the work of others by offering practical and intellectual help
- Understand equal opportunity issues as they may impact on areas of research content