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 ASSISTANT IN CELL & DEVELOPMENTAL BIOLOGY OR BIOMECHANICS

VACANCY REF: BMH-029918

Salary:	Grade 5, £32,080 to £36,636 per annum, depending on relevant experience
Hours:	35 hours
Duration:	Fixed term for 12 months from 3 November 2025
Location:	Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:
Name: Sarah Woolner
Email: sarah.woolner@manchester.ac.uk

BACKGROUND

A Research Assistant with a background in biological sciences or biomechanics is sought to contribute to a research project investigating how mechanical forces regulate cell division in complex tissue environments. Alongside project work, the post will also involve general lab management roles (e.g., ordering laboratory consumables, maintaining laboratory protocols and health and safety documentation, managing antibody and plasmid stocks).

This interdisciplinary project is funded by the Wellcome Trust and is a collaboration between researchers in the Faculty of Biology, Medicine & Health and the Faculty of Science & Engineering. The post-holder will be based primarily in the Manchester Cell-Matrix Centre, which brings together the world's largest team of Primary Investigators studying cell-matrix interactions, who develop research from basic discovery science through to clinical application.

The position is available from 3 November 2025, or another mutually agreed date. The position is full-time, but applications from individuals seeking part time (minimum 0.6 FTE) or flexible working arrangements are also welcome.

Scientific Background: Cells within biological tissues must respond to internal and external mechanical forces to maintain tissue structure, ensure tissue homeostasis and coordinate embryonic development. Mechanical regulation of cell division is emerging as a key route to control proliferation in tissues, but our knowledge of the mechanisms involved is still in its infancy. This is important considering the mechanical strains experienced by proliferating tissues during embryonic development and in common diseases, such as cancer. A major gap in our understanding is how the speed of mechanical change impacts mechano-regulation. Most studies expose cells to fast, instantaneous, changes in mechanical strain but in vivo tissues frequently experience a much slower build-up of strain, such as during morphogenesis or fibrosis. Crucially, in preliminary work, we find a marked difference in cell division response when tissue is stretched at different speeds.

In this project we will use a combination of tissue-stretch, live-imaging, proteomics and mathematical modelling to determine how the speed versus strength of strain regulates cell division in complex tissue environments. Unravelling how tissues respond to strain rate provides a new window into the fundamentals of mechano-regulation not previously explored and will reveal mechanisms vital to tissue function that can be exploited in regenerative medicine.

Overall Purpose of the Job

The post-holder will work as part of an interdisciplinary team in the Woolner lab researching how cells and tissues respond to mechanical force. The overall purpose of the role will be to contribute to project work by collecting and analysing laboratory data (primarily live confocal imaging including FLIM techniques) and to ensure the smooth running of the laboratory through general lab management roles (e.g., ordering laboratory consumables, maintaining laboratory protocols and health and safety documentation, managing antibody, plasmid and *Xenopus* stocks).

Key Responsibilities, Accountabilities or Duties

- Perform experimental procedures and analyse datasets to produce high-quality work for publication in peer-reviewed journals.
- To ensure the validity and reliability of data at all times.
- Keep accurate and up-to-date records of methods and results.
- To maintain up-to-date records of lab stocks and reagents (e.g., plasmids, antibodies, *Xenopus* lines).
- To assist the PI in management of the *Xenopus* colony.
- To supervise practical work and advise students on techniques.
- 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.
- Assist in the supervision of student projects.
- Contribute to the production of research reports and publications.
- Contribute to the planning of research projects.
- Actively participate as a member of the research team.
- Attend and contribute to relevant meetings.
- Actively read the scientific literature relating to the project.
- Deal with problems which may affect the achievement of research objectives and deadlines.
- Contribute to decisions affecting the work of the team.
- Analyse and interpret the results of own research and generate original ideas based on outcomes.
- Plan own day-to-day research activity within the framework of the agreed programme.
- Co-ordinate own work with that of others to avoid conflict or duplication of effort.
- Continue to update knowledge and develop skills and undertake any necessary training.

PERSON SPECIFICATION

Essential

- Have, or be about to obtain, an undergraduate degree in a relevant biological science.
- Experience of advanced microscopy techniques including FLIM.
- Experience of working with Xenopus
- Experience in cell biology/molecular biology techniques.
- Proven ability to maintain accurate and complex records/databases.
- Excellent communication and interpersonal skills
- Excellent time management and organisational skills
- Ability to work independently and as part of a team
- Ability to liaise confidently and effectively with a range of individuals
- Flexible approach to dealing with research problems as they arise
- Willingness to learn and develop
- Good written and spoken English.
- Ability to present in both written and oral publications
- Ability to meet deadlines

Desirable

- Have, or be about to obtain, a post-graduate degree in a relevant biological science.
- Experience of laboratory management
- Experience of measuring membrane tension in cells and tissues
- Knowledge of image analysis software and machine-learning tools, e.g., CellPose, ImageJ, Imaris.