

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  
DISCOVERY RESEARCH PLATFORM FOR CELL-MATRIX BIOLOGY  
BIOINFORMATICIAN  
VACANCY REF: BMH-025318

<b>Salary:</b>	£36,024-£44,263 per annum depending on relevant experience
<b>Hours:</b>	Full Time
<b>Duration:</b>	Fixed term from 1 <sup>st</sup> June 2024 until 31 <sup>st</sup> May 2027 with the possibility of a further 3 years
<b>Location:</b>	University of Manchester, Manchester
<b>Responsible to:</b>	Simon Hubbard and Sarah Woolner

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

**Email:** [simon.hubbard@manchester.ac.uk](mailto:simon.hubbard@manchester.ac.uk) or [sarah.woolner@manchester.ac.uk](mailto:sarah.woolner@manchester.ac.uk)

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*Manchester Centre for Cell-Matrix Research & Discovery Research Platform for Cell-Matrix Biology*

The [Manchester Centre for Cell-Matrix Research \(MCMC\)](#) brings together diverse research groups and technologists whose collective efforts are focussed on understanding the body's extracellular matrix. The extracellular matrix is a complex network that is essential for multicellular life, surrounds and supports cells and accounts for one third of our body mass. We believe that defining the principles that govern the two-way interaction between cells and matrix is fundamental to understanding vertebrate development, healthy ageing, and identifying why tissue failure is a major factor in most chronic diseases.

Located at The University of Manchester, the Centre is one of eight Discovery Research Platforms recently awarded by the Wellcome Trust. **The Discovery Research Platform for Cell-Matrix Biology** (DRP) will address a range of practical, technological, and methodological barriers to understanding how changes in the extracellular matrix leads to tissue failure. We are seeking driven and ambitious individuals to play a pivotal role in overcoming these barriers. Successful candidates will contribute to our bold vision to reprogramme extracellular matrix, which has the

potential to lead to innovative new diagnostic tools and treatments for diseases such as cancer and fibrosis. The platform will embrace a Team Science approach and provide an exciting opportunity to work with groups from diverse research areas and collaborate across disciplines.

### *Overall Purpose of the Role*

The new appointee will bring bioinformatics expertise to experimental design, pathway analysis, interrogation of databases, statistical analysis, data visualization and interpretation. They will work with researchers in the laboratory and Core Facilities to analyse, visualise and interpret acquired data from experiments that may include proteomics, transcriptomics, genomics and single-cell CyTOF, as well as new technologies that arise. The role will require the development of analysis solutions to complex biological problems, using established data-processing pipelines (e.g. for proteomics or image analysis; accessing online databases and repositories), novel coding and statistical analysis (e.g., using Python or R). The Bioinformatician will report to Simon Hubbard and Sarah Woolner and, depending on the experience and performance of the appointee, there will be scope for progression to Senior Bioinformatician over the course of the appointment.

### *Main Responsibilities*

- To identify and develop suitable computational techniques for the collection and analysis of data.
- To write code, develop pipelines, implement and document robust solutions, and assist others in their use where appropriate
- To develop novel analyses and methodologies to interpret large and complex datasets
- To take initiatives in the planning of research.
- Advise on design of experiments.
- Develop and deploy workflows and pipelines for reproducible 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 develop and deliver training and guidance material 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.
- To work alongside DRP and Centre PIs and other colleagues in a collegiate manner and build rapport within the team and the wider Faculty.
- Work closely with groups throughout the entire life cycle of a project, from initial design to publication.
- To develop contacts and research collaborations within the Faculty and the wider community.
- To promote the reputation of laboratories within the DRP and Centre, the Faculty and wider University.

### *Other Duties*

- Liaise with the wider bioinformatics community in the Faculty to share knowledge and expertise and encourage best practice
- To give presentations and run workshops on bioinformatics for members of the DRP and Centre and wider research community
- Assist with the supervision of PhD and undergraduate students when requested.
- 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.

### *Person Specification:*

#### *Essential Skills, Knowledge and Experience*

- Hold (or expect to hold shortly) a Higher level degree (or equivalent) in bioscience, bioinformatics or related field.
- Expertise in bioinformatics: e.g. experimental design, interrogation of databases, machine learning, statistical analysis, and computer programming.
- Expertise in handling data from '-omics' methods: e.g. genomics, transcriptomics, mass spectrometry proteomics, single-cell CyTOF.
- Excellent communication skills both oral and written
- Expertise in applying computer coding to support research in biological sciences.
- Expertise in statistical data analysis: e.g. coding in R or Python.
- Experience in one or more of the following:
  - (i) Working with a quantitative proteomics pipelines.
  - (ii) Working with a transcriptomics / genomics pipelines.
  - (iii) Multi-modal data integration and machine learning.
- Excellent IT skills. Required: word-processing (e.g. Microsoft Word); spread-sheets (e.g. Excel). Desirable: reference management (e.g. Endnote); image processing and graphics (e.g. ImageJ; Adobe Photoshop and Illustrator).
- Current knowledge of the methods used to study cell biology and a willingness to keep up-to-date.
- Proven ability to use initiative to efficiently plan, optimise and progress project and communicate findings
- Excellent interpersonal skills and ability to work with colleagues at all levels.
- A willingness to contribute to the work of others by offering practical and intellectual help.
- A record of publication in high quality peer-reviewed journals, commensurate with the applicant's career stage.
- Ability to communicate scientific work to a variety of audiences.
- Experience in working independently and using initiative to commence projects.

#### *Desirable Skills, Knowledge and Experience*

- Hold a PhD in computational biology or bioinformatics exploiting multi 'omics approaches to the understanding of biological function
- Familiarity with use of public domain biological data resources, such as ExpressionAtlas, GEO, ProteomeXchange/PRIDE, STRING etc.
- Expertise in handling data from degradomics, glycomics or labelled proteomics.
- Track record of developing and publishing computational tools for the analysis of biological data.
- Experience in initiating and carrying through successful collaborations with other scientists.
- Experience in contributing to grant proposals and providing costings for projects.

### *The University of Manchester*

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. 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.

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. Our high-quality research and teaching activities are organised into three Schools (Biological, Medical and Health Sciences) each with six Divisions that have their own coherent research and teaching focus, and drive their own research agendas, often around a single core theme (eg. Neuroscience, Cancer, or Pharmacy). However our overarching matrix structure provides a collaborative working environment that encourages team science to build research strengths and drive large-scale, ambitious projects. This formed a significant part of our recent success in the REF exercise, with notable results in UoA5 (Biological Sciences, top 4 on research power, top5 on GPA) and in UoA3 (Allied Health Professions, Dentistry, Nursing & Pharmacy).

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 [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.

It also 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 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 [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 development.

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.

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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.

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