

THE UNIVERSITY OF MANCHESTER
PARTICULARS OF APPOINTMENT
FACULTY OF BIOLOGY, MEDICINE & HEALTH
SCHOOL OF BIOLOGICAL SCIENCES
RESEARCH ASSOCIATE IN IMMUNOLOGY
VACANCY REF: BMH-032051

Salary: Grade 6, £37,649 to £42,254 per annum, depending on relevant experience

Hours: 1 FTE

Duration: Fixed term available for 3 years

Location: Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:

Name: Matt Hepworth

Email: matthew.hepworth@manchester.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 (a) an outstanding teaching and learning experience; (b) contributing to the social and economic success of local, national and international communities; (c) producing the highest calibre graduates; (d) and developing our staff to be amongst the very best of their peers. Our trajectory is excellent, evidenced by recently being named as the world number one university in the THE Impact rankings.

We are unique in the UK higher education sector in having Social Responsibility as one of our three core strategic goals, sitting equally alongside our commitments to research and teaching. 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 University of Manchester strives to make our community a welcoming, caring and enthusiastic one, fueling ambition, combined 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 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 our ambition is 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.

The Faculty of Biology, Medicine and Health (FBMH)

The Faculty of Biology, Medicine and Health was created on 1 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 Faculty is comparable in size to a medium-sized UK university. Thirty undergraduate and 90 postgraduate programmes offer over 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 nine, 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, enables us to have a very significant and positive impact on people's lives.

Our strategic partnerships

The faculty has developed key strategic partnerships that underpin its ambitions to deliver ground-breaking research.

It 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 related business resources to deliver an innovative health ecosystem that significantly enhances our scientific standing and acts as a magnet for inward investment.

As part of this, the faculty works collaboratively with six local NHS Trusts in a strategic partnership that unites healthcare providers with academics and researchers to deliver leadership for our regional health system - at the same time creating an internationally recognised centre for applied health research and education.

Key partnerships in the charitable sector include Cancer Research UK; Diabetes UK; and the Wellcome Trust; and the faculty will also have 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

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Hepworth Lab

This is an exciting opportunity to join a dynamic lab at the forefront of research into mucosal immunology and interdisciplinary research. The Hepworth lab is based within the Lydia Becker Institute of Immunology and Inflammation.

(<https://www.bmh.manchester.ac.uk/research/domains/infection-immunity-inflammation-repair/immunology/>).

This role will undertake a project in collaboration with the labs of Judi Allen and Doug Dyer, focused on immune matrix interactions in infection and inflammation. The project is further embedded within the framework of the Wellcome Trust Cell-Matrix Centre (<https://www.manchester-matrix.org>) and MRC Centre of Research Excellence (CoRE) in Exosome Immunology (<https://www.bmh.manchester.ac.uk/research/institutes-centres/mrc-core-exosome/>).

The Hepworth lab is interested in the immune mechanisms that mediate homeostasis, immunity and tissue repair within barrier tissues such as the gastrointestinal tract and airways. In particular, the project will investigate how interactions between group 2 innate lymphoid cells, fibroblasts and the extracellular matrix determine tissue function, health or disease. Where possible we also endeavour to translate our basic research findings utilizing patient cohort samples in clinically relevant inflammatory diseases.

The project will utilize cutting edge methodologies, including transgenic *in vivo* systems, multimodal imaging approaches, and 'omics to disentangle mechanisms of immune-matrix crosstalk.

Selected relevant publications and reviews from the lab and project team include:

Roberts L.B., Kelly A.M., **Hepworth M.R.**

There's No Place Like Home: How Local Tissue Microenvironments Shape the Function of Innate Lymphoid Cells.

Mucosal Immunology (2025). Apr; 18(2):279-289. Doi: 10.1016/j.mucimm.2025.01.012. [PMID: 39900201]

Sutherland T.E., Dyer D.P., Allen J.E.

The extracellular matrix and the immune system: A mutually dependent relationship.

Science (2023). Feb 17;379 (6633):eabp8964. Doi: 10.1126/science.abp8964. [PMID: 36795835]

Parkinson J.E., Ghafoor M, Dodd R.J., Tompkins H.E., Fergie M, Rattray M, Allen J.E., Sutherland T.E.

Extracellular matrix phenotyping by imaging mass cytometry defines distinct cellular matrix environments associated with allergic airway inflammation.

BioRxiv (2024).

Overall, Purpose of the Role

The researcher employed will be drive a recently funded project by the BBSRC, including the opportunity to utilize cutting edge spatial and imaging approaches, as well as a wide range of conditional knockout models and models of infection and disease. The researcher will also contribute to new and existing collaborations as well as to ongoing projects in the lab. The candidate would be expected to demonstrate experience and pre-existing skillsets relevant to the project to allow for delivery of research goals within the employment period, while additional cross-disciplinary experience and skillsets from other emerging areas of immunology are welcomed.

Main Responsibilities

- To take initiatives in the planning of research.
- To identify and develop suitable techniques, and apparatus, for the collection and analysis of data.
- To conduct data analysis.
- To ensure the validity and reliability of data at all times.
- To maintain accurate and complete records of all findings and appropriately store all data and metadata to meet funder requirements.
- To write reports for submission to research sponsors.
- 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 referee journals.
- To contribute to writing bids for research grants.
- To provide guidance to staff and students.
- To undertake instruction of PhD students, undergraduates and masters students.
- To supervise practical work and advise students on techniques.
- 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 the PI 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 the laboratory, Faculty and wider University.

Other Duties

- To undertake appropriate administration tasks.
- To attend relevant meetings and seminars.

- 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.

Person Specification

Essential Skills, Knowledge and Experience

- Hold (or expect to hold shortly) a PhD in Immunology, or other relevant discipline in Biomedical Sciences.
- BSc (hons) in a relevant Biological Science.
- Extensive and up-to-date theoretical and practical knowledge in Immunology, particularly Mucosal Immunology or other relevant subdiscipline (e.g. matrix or fibroblast biology).
- Excellent technical skills in core lab techniques and benchwork.
- Extensive experience in core Immunological Techniques (*e.g. multiparameter flow cytometry, tissue processing, ELISA, RT-PCR etc*).
- Experience in transgenic animal models and/or *in vivo* interventions and disease models.
- Proven ability to use initiative to efficiently plan, optimise and progress project and communicate findings
- Extensive IT skills (including experience with core research software including Office, Prism etc).
- Experience and organisational skills in good practice for data storage and reporting.
- Excellent interpersonal and communication skills and ability to work with colleagues at all levels
- Good written and spoken English
- A willingness to contribute to the development and work of others by offering practical and intellectual help

Desirable Skills, Knowledge and Experience

- Experience with imaging mass cytometry (or equivalent high dimension imaging approaches), spatial transcriptomics and other imaging techniques.
- Experience in cross-disciplinary aspects of immunology, particularly fibroblast biology and/or extracellular matrix biology.
- Hold a UK Home Office License (or equivalent experience outside UK).

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.
