THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF BIOLOGY, MEDICINE & HEALTH

SCHOOL OF MEDICAL SCIENCES

DIVISION OF CANCER SCIENCES

RESEARCH ASSOCIATE

VACANCY REF: BMH-030406

Salary:	£37,694 - £41,064 per annum according to relevant experience
Hours:	Full time - 35 (1.0 FTE)
Duration:	01/03/2026 - 31/08/2027
Location:	Oglesby Cancer Research Building, 555 Wilmslow Road, M20 4GJ, University of Manchester

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Enquiries about the vacancy, shortlisting and interviews:
Name: Dr Frances Turrell
Email: frances.turrell@manchester.ac.uk

Summary

The Tumour Microenvironment and Metastasis (TMM) Group

The researcher will work in the group of Dr Frances Turrell at the Oglesby Cancer Research Building, which houses the Manchester Cancer Research Centre and is on the same site as the Christie Hospital and the new Cancer Research UK Manchester Institute building. As part of this exciting and collaborative research setting, the successful applicant will have access to state-of-the-art facilities and an intellectually stimulating environment, providing extensive opportunities to further their research career. The group aims to delineate age-associated changes in the primary tumour and secondary niches and their effect on breast cancer progression, metastasis and response to therapy to uncover novel treatment opportunities.

Project background and purpose of the post

Immunotherapy has revolutionised cancer treatment with impressive clinical benefit observed in a range of cancers. However, oestrogen receptor-positive (ER+) breast cancers, ~75% of breast

cancers, respond poorly to immune checkpoint blockade (ICB), partly due to low numbers of tumour-infiltrating lymphocytes (TILs). There is a critical need to determine the biology underpinning the poor immune responses in ER+ breast cancers to enhance susceptibility of these cancers to immunotherapy. However, limitations with preclinical models, particularly the lack of immunocompetent and, given patient demographics, age-appropriate ER+ models, have severely hampered elucidation of the mechanisms of immune regulation and resistance to ICB.

To tackle this, we have established syngeneic ER+ mouse mammary tumour models which, following orthotopic injection into immunocompetent mice, form mammary tumours with divergent patterns of TILs in young and aged mice. With this project, we aim to 1) define ER+ mammary tumour and metastatic microenvironments in young and aged mice, 2) determine age-associated drivers and mechanisms immunosuppression in ER+ tumours, and 3) identify novel immunotherapy approaches for ER+ breast cancer.

The researcher will use *in vivo* models of breast cancer, immune cell isolation and *in vitro* co-culture assays, immune (flow cytometry/IF/IHC) and cytokine (Luminex) profiling and molecular biology techniques to unpick the mechanisms of CD8+ T cell exclusion and inhibition in ER+ breast cancer. Human ER+ breast cancer datasets and tissue analysis will confirm patient-relevant, age-associated mechanisms of immunosuppression.

The position requires a strong understanding of cancer biology and specifically breast cancer biology, immunology and the tumour microenvironment. Applicants with substantial practical experience in a broad range of molecular and cellular biology techniques as well as hands-on experience working with mouse tumour models are encouraged to apply.

The successful applicant will work directly with Dr Frances Turrell and her team. They will also work closely and develop collaborations with other academic researchers and clinicians, both within and outside the Division, who have broad scientific backgrounds and areas of expertise.

Key Responsibilities, Accountabilities and Duties:

Research

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- Drive and manage the research project both intellectually and technically, with the assistance of a mentor if required.
- Conduct individual and collaborative research projects.
- Possess and maintain an up-to-date knowledge and understanding of the field, and translate knowledge of the advances in the field into research activity.
- Use initiative and creativity to identify areas for research.
- Design experiments and optimise and develop research methods.
- Write clear, updated experimental protocols for existing and new laboratory methods.
- Analyse and interpret experimental data.
- Keep organised data archives and establish and maintain laboratory databases.

- Be responsible for others for the daily housekeeping of the laboratory area, ensuring good laboratory practice.
- Write up research and actively participate in the production of manuscripts for publication.
- Organise and prioritise work effectively and efficiently.
- Display commitment to research dissemination via the presentation and publication of findings.
- Assist in the training and supervision of students and provide guidance and support to other, less experienced, members of the team.

Communication

- Interact and collaborate productively with other lab members and research teams.
- Clearly communicate complex information when required (orally, in writing and electronically).
- Contribute to the supervision of other research projects.
- Communicate effectively with various stakeholders (academics, health professionals, patients, and the public).
- Present research outputs clearly and effectively in internal seminars and meetings, and at external conferences.
- Ensure appropriate, effective and timely communication with the line manager.
- Maintain confidentiality regarding research data where required.

Collaboration

- Build a collaborative network of internal and external contacts.
- Collaborate with academic colleagues on areas of shared research interest.
- Contribute to collaborative decision making with colleagues in areas of research.
- Attend and contribute to relevant meetings.

General

- Manage your own research and administrative responsibilities, with guidance when required.
- Understand and be committed to promoting Equality, Diversity and Inclusion in line with the University's policies.

- Maintain confidentially of information in line with data protection requirements and University policy.
- Be aware of the risks in the working environment and their potential impact.
- Contribute to the University's agenda for social responsibility, including sustainability.

Person specification

Essential skills, knowledge or experience

- Have, or be about to obtain, a PhD in a relevant research area
- Experience in cancer biology and specifically in the tumour microenvironment or immunology research areas
- Substantial practical experience working with mouse tumour models
- Substantial laboratory experience in molecular and cellular biology techniques
- Experience conducting and analysing multiparameter flow cytometry experiments
- Experience driving research projects from initial hypothesis to completion
- Proven record of journal publications and conference presentations
- Enthusiasm for performing breast cancer research in a multi-disciplinary academic environment
- Excellent interpersonal skills
- Excellent organisational and time-management skills, and ability to meet deadlines
- Ability to contribute to broader management and administrative processes
- Ability to assess and organise resources
- Good written and spoken English
- Understanding of equal opportunity issues as they may impact on areas of research content

Desirable skills, knowledge or experience

- Experience of 3D cell culture and/or co-culture methods
- Experience of transcriptomic techniques and bioinformatic analysis (bulk/single cell RNAseq)
- Experience in the analysis of frozen or fixed tissue
- Ability to develop techniques as required for individual projects

- Experience of supervising student research projects
- Proven record of publishing and dissemination of high-quality publications in peer-reviewed journals
- Previous experience of applying for research funding

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.

Faculty of Biology, Medicine and Health

Please read the following for an introduction to the University of Manchester and the Faculty of Biology, Medicine and Health.

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 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 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 new Faculty inherits 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 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 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

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.