THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF BIOLOGY, MEDICINE & HEALTH

SCHOOL OF MEDICAL SCIENCES

DIVISION OF CANCER SCIENCES

RESEARCH ASSOCIATE IN BIOINFORMATICS

VACANCY REF: BMH-022937

Salary:	Grade 6 £35,308 to £43,155 per annum, depending on relevant experience
Hours:	Part Time: 20 hours per wee
Duration:	Fixed Term For 5 Months From Start of Contract
Location:	University Campus and The Christie NHS Foundation Trust site, Withington, Manchester

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Enquiries about the vacancy, shortlisting and interviews:
Name: Lauren Hewitt
Email: lauren.hewitt@manchester.ac.uk

Overall Purpose Of The Job
We are seeking an experienced Bioinformatician to join a dynamic, new research group in Neuro-Oncology led by Dr Gerben Borst at the University of Manchester. You will contribute high-quality computational biology and bioinformatics support to innovative research projects which focus on glioblastoma.

The post holder will be dealing with multi-omic data analysis and storage, focusing particularly on data from spatial multi-omic profiling of brain metastases. Tasks range from low-level QC and mapping through to statistical analysis, data visualization, machine learning and biological interpretation.

A crucial element to the role is the ability to develop pipelines and workflows, contribute to experimental design prior to data collection and will contribute to writing up work for journal papers and presentations.

Key Responsibilities, Accountabilities or Duties:

- Perform high quality analyses in R/Bioconductor, and with reference to other software tools, as required
- Record and document data analysis workflows in order to allow other researchers to reproduce results

- Accurately store and annotate data; responsibility for quality control and troubleshooting
- Keep comprehensive and up-to-date records of projects and report to the Research/Group Lead
- Conduct individual and collaborative research projects agreed with the Group Leader
- Communicate material of a specialist or highly technical nature
- Present data to senior academics and industrial colleagues
- Write up data and code for publication in high impact journals
- Ensure successful completion of the projects and maximise publication output
- Write up research work for presentations and publication with appropriate acknowledgement, address referees' comments
- Continually update skills, knowledge and understanding in field; keeping up with scientific literature
- Present work at the University, across centres and at domestic and international meetings
- Interact with collaborators and companies
- Manage time efficiently to bring multiple concurrent projects to completion within a range of deadlines
- To perform other functions consistent with the position, nature of the post and as determined by the Group Leader and Research Leads

General

- Have an understanding of and commitment to promote the University's policies and procedures to support and promote Equality & Diversity
- To maintain confidentiality of information in line with data protection requirements and University policy
- To comply with Health and Safety requirements, including having an awareness of personal responsibilities to maintain a safe working environment
- To contribute to the University's agenda for social responsibility, including sustainability

PERSON SPECIFICATION

Knowledge, Skills and Experience

Essential:

- Have, or be about to obtain, a PhD in Statistics, Computational Biology/Bioinformatics, Mathematics or related discipline
- Significant experience writing complex bodies of code
- Demonstratable experience in analysing genomic data
- Familiarity with Next Generation Sequencing (NGS) and/or proteomic data analysis tools
- Demonstrable experience in applying appropriate statistical approaches to data analysis
- Substantial experience writing complex code in at least one of the following: R/Bioconductor, Perl, Python
- Substantial experience with troubleshooting and debugging software
- Ability to select and apply the correct statistical methodologies to complex data sets.
- Strong mathematical skills
- Attention to detail with coding and annotation
- Knowledge in the field of bioinformatics and computational biology

- Understanding of current statistical techniques applied to imaging and deep sequencing data analysis. 01/0

Desirable:

- Degree in Statistics, Computational Biology/Bioinformatics, Mathematics or related discipline (or equivalent) plus significant relevant experience
- Demonstrable experience in applying machine learning approaches to the analysis of high-throughput omics data sets
- OR strong statistical knowledge, including power analysis as well as analysis of quantitative and qualitative data, including multi-factorial designs
- Demonstrable ability to generate high quality publications
- Experience of delivering result reports in a service environment
- Proficiency in the use of high-performance computing clusters
- Ability to inspire and motivate colleagues, including students and technicians
- Innovative
- Able to clearly explain statistical and bioinformatics concepts to scientists
- Knowledge of brain cancer biology

Aptitude:

- Self-motivated
- Meticulous
- Interactive
- Organised
- Technically focused
- Willingness to learn and implement new management and experimental techniques
- To show commitment to equality and fairness and integrity in dealing with others
- To be willing to work across organisational boundaries
- To seek new knowledge and share ideas
- To be open and responsive to change and innovation
- Ability to work to strict deadlines
- Ability to work well within a team framework as well as on an individual project
- Willingness to learn new bioinformatics techniques
- To show commitment to equality and fairness and integrity in dealing with others
- Responsive to feedback

General Information

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 (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, fuelling 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 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 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.

Faculty of Biology, Medicine and Health (FBMH)

The Faculty of Biology, Medicine and Health (**Figure 1**) has an 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 our 11,000 students' opportunities to develop the skills and knowledge they need for a successful career. 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.

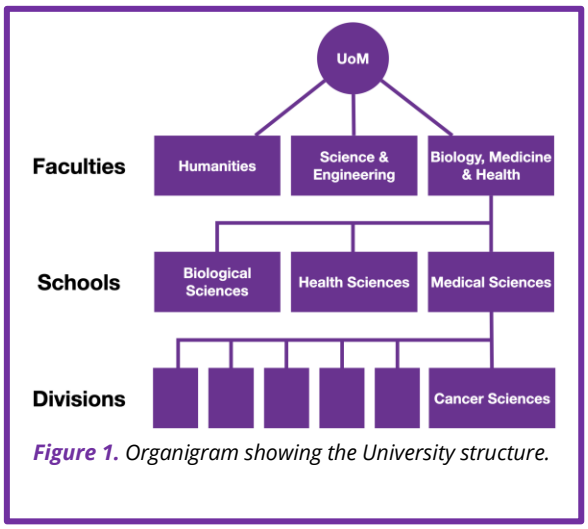


Figure 1. *Organigram showing the University structure.*

The School of Medical Sciences (SMS)

The School of Medical Sciences is one of three Schools which form the Faculty of Biology, Medicine and Health. Led by Professor Tony Heagerty, the School contains the Divisions of Cardiovascular Sciences; Cancer Sciences; Dentistry; Developmental Biology and Medicine; Diabetes, Endocrinology and Gastroenterology; and Medical Education. In an addition to a strong and diverse research base, SMS has a major teaching portfolio, being responsible for the MB ChB and BDS programmes plus a large suite of Masters courses.

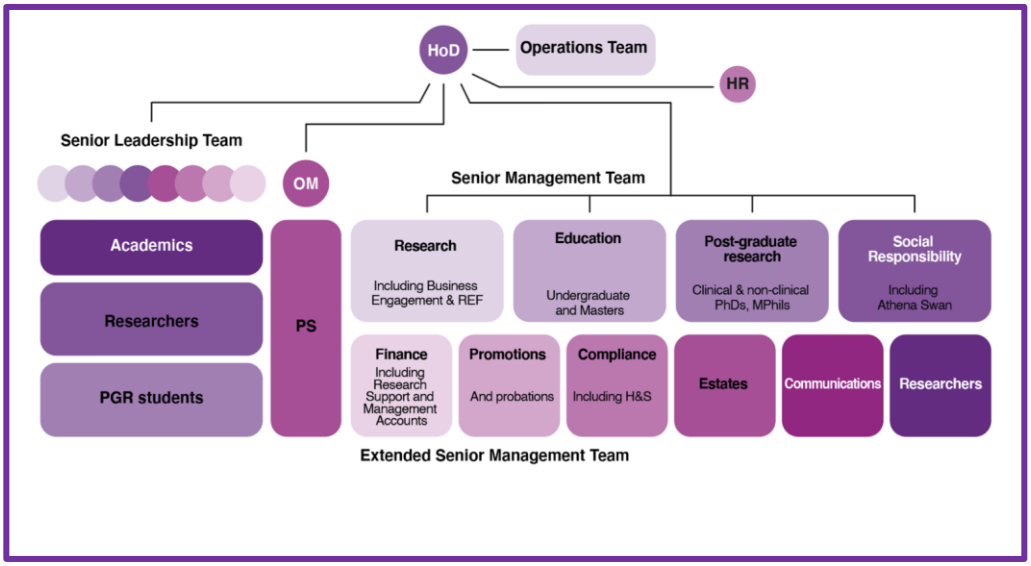
Division of Cancer Sciences (DCS)

The Division of Cancer Sciences (DCS), which is effectively a large university department, was created in August 2016 with Prof. Stephen Taylor appointed as Head of Division in February 2019. It is a major contributor to the University's Cancer beacon and the wider Manchester cancer ecosystem, with research interests spanning discovery science, translational research and clinical studies.

The Division currently comprises approx. 300 staff including 66 academics, 66 researchers, 131 trainees and 28 admin staff. 168 honorary staff are associated with the Division; while not employees of the University they make invaluable contributions to a wide range of our activities, adding breadth and depth to our research, business engagement, teaching, social responsibility and internationalization.

The Division of Cancer Sciences is very research active; with associated awards in 2016-2020 totalling over £450M. DCS has a strong portfolio of income from industry, working with a number of companies including Novartis, AstraZeneca, Merck, GlaxoSmithKline and Varian. The Division has a healthy pipeline of industrial collaborations, and we wish to build on these successful partnerships. Supporting a strong research profile, DCS generates a large number of high-quality publications, and we envisage a strong REF return at the next national audit. A large proportion of publications are in clinical oncology journals (e.g., Lancet Oncology, J Clin Oncol) consistent with the Division's strength in clinical research, but DCS staff also publish in high impact discovery journals (e.g., Nature, Cancer Cell).

Division staff contribute to a wide variety of teaching activities, including at undergraduate level within SMS (e.g., lectures, PBLs, PEPS and APEPs on the pre-clinical MB ChB program) and SBS (e.g., lectures, tutorials, practicals and projects on various life sciences units). The Division contributes to units in other Faculties, (e.g., medical physics in FSE). The Division also runs of a number of Masters programs in the oncology space (e.g. Experimental Cancer Medicine, Oncology, Cancer and Biology and Radiotherapy physics). In 2019, the Division made its first teaching-focused appointment with the primary objective of establishing a novel blended on-line Transformative Oncology Masters program. This is on schedule to be launched in September 2021 with the first students enrolling in September 2022, with a target of 30 students in the first year, rising to 45 and 60 in subsequent years.



To manage the Division, we have established a comprehensive sub-structure comprised of an Operations Team, a Senior Leadership Team, a Senior Management Team and committees (**Figure 1**). The Operations Team meets weekly to update, discuss and action a variety of operational matters. The Senior Leadership Team consists of senior academics whose role is to assist the Head of Division with line management and annual P&DRs of the academic staff, and to provide guidance and advice to the Head of Division. In Spring 2020, we established a comprehensive set of sub-committees covering key areas of activity. The key leads form the Senior Management Team (SMT) who meet

Figure 1. *Organigram showing the Division structure. OM, Operations Manager; PS, Professional Services; HR, Human Resources.*

frequently to develop and deliver the Division's strategy. This new structure provides a functional framework for the Division and is allowing researchers and junior academics to help shape the Division into a vibrant academic environment. For example, the Researcher Committee has established an internal seminar series, while in parallel, four junior academics have established a '*Next generation*' external seminar program which showcases external cancer-related research from investigators at the early stages of their independent careers. The Division now has an active Twitter feed to showcase our activities, and a popular use of this platform has been the *day in the life series*, where an individual takes over the account for a day to provide insight into the daily activities of our cancer researchers.

In January 2021, the Division of Cancer Sciences drafted a Vision for where it wants to be in 2026 and Strategic Plan for how to get there. A major component of this plan is a recruitment drive to appoint five high-flying early career researchers working in the discovery-translational oncology space, to tenure-track posts. This post is the first step on this path.

Manchester Cancer Research Centre
(http://www.mcrc.manchester.ac.uk)

The Manchester Cancer Research Centre (MCRC) was established in 2006 by three founding partners: The University of Manchester, Cancer Research UK and The Christie NHS Foundation Trust. Since its creation, the MCRC has widened its reach to drive forward cancer research in other NHS trusts within Greater Manchester and to link with other cancer-specific funding bodies.

The vision of the MCRC is to be a world-leading comprehensive centre for translational cancer research – transforming the clinical care of cancer patients by developing and implementing an integrated personalised medicine strategy.

Our strategy harnesses the power of basic and discovery research within the CRUK Manchester Institute, the wider scientific community within The University of Manchester, including the chemical and physical sciences, as well as the research taking place within the clinic.

We are home to disease specific Centres of Excellence and lead a number of research networks. Our researchers contribute to consortia involving academic and commercial organisations.