THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF BIOLOGY, MEDICINE & HEALTH

SCHOOL OF MEDICAL SCIENCES

DIVISION OF CARDIOVASCULAR SCIENCES

RESEARCH ASSOCIATE IN COMPUTATIONAL BIOLOGY / BIOINFORMATICS

VACANCY REF: BMH-029305

Salary:	Grade 6, £37,694 per annum, depending on relevant experience
Hours:	1 FTE
Duration:	Fixed term for 24 months
Location:	Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:
Name: Professor Maciej Tomaszewski
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Background

British Heart Foundation Manchester Centre of Research Excellence

The British Heart Foundation (BHF) has recently awarded one of its Centres of Research Excellence (CoRE) to The University of Manchester. This competitive award recognises the internationally leading cardiovascular science performed in our University and will provide £4M over the next five years to further develop our excellence. The University has matched the BHF investment with £4M of its own money. This £8M total commitment represents the most significant initiative in cardiovascular research in Manchester this century. The Centre is interdisciplinary, involving not only basic cardiovascular scientists and clinicians, but colleagues in inflammation biology, data science, computer science and engineering.

The British Heart Foundation is one of the largest charitable funders of heart and circulatory research in the world. BHF funds around half of all the cardiovascular research performed in the UK and focuses its resources on scientifically excellent projects with a potential to benefit the health of people with, or at risk of, cardiovascular disease.

BHF funded research has delivered many key advances for patients and their families, many of which are detailed on the BHF website.

The centre brings together 21 Principal Investigators from Faculty of Biology, Medicine and Health and Faculty of Science and Engineering united together to battle cardiovascular disease through commitment to edge-cutting research and clinical practice changing discoveries. Operationally, the Centre is divided into five Themes (Cardiovascular genomics and development,

Heart Failure, Inflammatory drivers of cardio- and cerebro-vascular disease, Cardiovascular data science, Computational modelling, simulation, and large language models) although the research conducted is cross-disciplinary and benefits from the wealth of expertise in science, medicine, big data and computational biology).

Clinical Environment

The clinical setting offers a unique opportunity to perform translational and clinical research in cardiovascular medicine and our close connections with the hospital bases provide an integrated and stimulating research environment. With a diverse population of 3.5 million people in our catchment area, and with the Northwest population suffering disproportionately from heart and circulatory disease and health inequalities, Manchester is an ideal and essential place to conduct cardiovascular research including large scale patient-based investigations.

The newly formed Manchester Heart Institute, one of the largest cardiac centre's in the country, provides specialist cardiology and cardiac surgical services to Greater Manchester, East Cheshire and East Lancashire. We deliver the nationally leading transplant service; the Northwest adult congenital heart disease service in partnership with Liverpool Heart and Chest Hospital; and host the regional level 1 service for maternal cardiology. The Manchester Vascular Centre provides specialist vascular surgical, radiological, and diagnostic services across Greater Manchester and the wider Northwest as a regional hub. It is one of the UK's largest tertiary vascular centre's and is the only vascular surgery service to have embedded podiatric surgery. The heart and vascular centre's also benefit greatly from proximity and close collaboration with Manchester Centre for Genomic Medicine (cardiovascular genomic hub for the North of England), Christie Hospital (largest cancer hospital in the North of England), Royal Manchester Children Hospital and St. Mary's Hospital.

Our clinical academic team currently comprises five clinical academic professors in cardiovascular medicine (Professors Greenstein, Heagerty, Keavney, Miller and Tomaszewski), clinical academic senior lecturers, MRC and BHF clinical intermediate fellows, and a number of academic clinical lecturers.

Overall Purpose of the Role

The post holder will contribute to bioinformatic and statistical analyses of the projects dedicated to genetic/congenital mechanisms of cardiovascular diseases led by the Principal and Associated Investigators affiliated with "Cardiovascular genomics and development" Theme of the British Heart Foundation Manchester Centre of Research Excellence.

Main Responsibilities

- To contribute to the planning of research and developing new concepts and research objectives to drive progress in translational research
- To identify and support development of new computational approaches to data analysis with an emphasis on genomics, epigenomics and transcriptomics
- To curate internal resources of data from studies on human "omics"

- To conduct data analysis using state-of-the-art computational, statistical and bioinformatic methods
- To take responsibility for the validity and reliability of data at all times
- To maintain accurate and complete records of all findings
- To write regular internal reports including those required by the funder
- To present findings from the research projects in oral and poster formats at national and international meetings
- To write up finding of research work for publication in high impact journals
- To contribute to development of grant applications for research funding from competitive external sources
- To support supervision of new staff and students, as required
- To supervise practical work and advise students on computational/bioinformatic analysis
- To take responsibility for organising resources and effective decision making in support of research
- To attend relevant training, 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 promote the reputation of the laboratory, Faculty and wider University

Other Duties

- To undertake appropriate administration tasks
- To attend relevant meetings
- To actively read the scientific literature relating to (and around) the project
- To undertake any necessary training and/or development
- To maintain an up-to-date knowledge of relevant statutory Health and Safety legislation and recommendations and attend safety training as required
- To act at all times in accordance with the University's policies and procedures relating to Health and Safety, Equal Opportunities, and all other policies and procedures that apply to the post.
- To understand and engage with the University's social responsibility agenda and contribute, as appropriate, to the making a positive difference to the world locally, nationally and internationally.
- To undertake any other duties commensurate with the grade of the post as directed by PI / supervisor

Person Specification

Essential Skills, Knowledge and Experience

- Hold a PhD in computational biology, bioinformatics, statistical genetics, statistics, computer science or applied mathematics
- Extensive and up-to-date theoretical and practical knowledge in computational biology, genetics, statistics, bioinformatics
- Excellent programming skills in e.g. C, perl, "R" Python,
- Extensive experience in analysis of data from modern omics – i.e. genomics, transcriptomics, epigenomics, pharmacogenomics

- Ability to lead on efficient planning, optimising and progressing projects and communicating findings
- Excellent interpersonal and communication skills and ability to work with colleagues at all levels
- Excellent time management and organisational skills
- Good written and spoken English
- A willingness to contribute to the work of others by offering practical and intellectual help
- Strong recent journal publication record
- Previous experience of evaluating complex data

Desirable Skills, Knowledge and Experience

- Previous experience in projects related to UK Biobank or any other big data
- Previous experience as a speaker at “conference presentations”
- Success in securing grant funding
- Prior interests/experience in cardiovascular disease research

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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.
