**THE UNIVERSITY OF MANCHESTER**

**PARTICULARS OF APPOINTMENT**

**FACULTY OF BIOLOGY, MEDICINE & HEALTH**

**SCHOOL OF HEALTH SCIENCES**

**DIVISION OF IMAGING, INFORMATICS AND DATA SCIENCE**

# RESEARCH ASSISTANT (G5) OR RESEARCH ASSOCIATE (G6) IN EPIDEMIOLOGY/BIOSTATISTICS

**VACANCY REF: BMH-026125**

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| **Salary:** | Grade 5 £30,487 to £34,980 or Grade 6, £36,024 to £39,024 per annum,, depending on relevant experience |
| **Hours:** | 1 FTE |
| **Duration:** | Fixed term for up to 12 months |
| **Location:** | Oxford Road, Manchester |

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**Enquiries about the vacancy, shortlisting and interviews:**
Name: Dr Joyce Huang
Email: joyce.huang-2@manchester.ac.uk

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## Background

We are seeking a talented and enthusiastic Research Assistant / Research Associate to join the Centre for Health Informatics at the university of Manchester. The successful candidate will work on a pilot project entitled “Effect of thiazolidinediones on preventing vascular dementia in type 2 diabetes in the UK” funded through Alzheimer's Research UK (ARUK). This project aims to investigate the association between antidiabetic medications such as thiazolidinediones (TZDs) and risk for incident vascular dementia among people with type 2 diabetes using innovative statistical methods, with particular focus on causal inference and longitudinal data modeling. Vascular dementia is the second most common type of dementia that has no targeted treatments available. This project therefore will build a fundamental theoretical knowledge underpinning the development of drug repurposing, fostering cost-effective and fast-track drug development. The findings of this project will therefore develop our knowledge on dementia risk and support future grant applications.

MANCHESTER 1824
The University of Manchester

**Job Description**

The successful candidate will work on a research project to apply statistical methods to assess the potential effect of TZDs or other antidiabetic medications on preventing vascular dementia in type 2 diabetes. The statistical methods will include (but not limited to) competing risk models incorporating propensity score matching, and landmark models that would enable repeated measurements of diabetes treatments and their dose over time. The post holder will be responsible for applying these methods/models to real-world electronic health records, the Clinical Practice Research Datalink (CPRD), a representative database of anonymised UK primary care electronic health records covering 20% of the population of England. Throughout all activities, the post holder will be expected to work in a transparent and reproducible manner, including writing coding scripts.

The role will be particularly appealing to anyone who has an interest in applying novel data science methods to solve real-world clinical questions. The successful candidate will work within the University's Centre for Health Informatics, which has expertise in data management/ analysis and statistical methodological development in the area of prediction and causal modelling. The successful candidate will work with Dr Joyce Huang and Dr David Jenkins, whilst well supported by pharmacoepidemiologists, clinicians, and dementia experts across the University of Manchester and Brighton and Sussex Medical School.

**Key Responsibilities, Accountabilities and Duties:**

- Work as part of a research team, and in collaboration with relevant stakeholders contribute to the detailed planning of research including drafting of study protocols
- Undertake academic literature searches, as needed; to prepare large electronic health datasets for pharmacoepidemiology research; and to identify appropriate statistical methods that might be suitable to address the project aims
- Lead statistical analysis, including the use of relevant data analysis software such as R and Stata
- Writing of reproducible code scripts in the R/ Stata language for both data wrangling process and real-world applications (data analysis)
- Contribute to producing reports and to disseminating research findings by writing reports to funders, publications for peer-reviewed scientific journals and practitioner focused journals, and giving presentations at conferences and meetings
- Liaising with other members of the research team; arranging and attending research meetings and taking notes
- Any other tasks as directed by line manager

**Key Responsibilities specifically for Grade 6:**

- Help draft ethics applications and seek other necessary research approvals
- Support internal and external reporting requirements, including funder annual reports and data requests for management teams
- Support grant applications, for example to the ARUK major grant scheme

This job description is intended as a guide and may be amended in discussion with the post holder to meet changing circumstances.

**PERSON SPECIFICATION**

| | Essential | Desirable |
|---|---|---|
| Qualifications and education | • Masters degree (**Grade 5**) or PhD (**Grade 6**) in medical statistics, epidemiology, data science or related discipline | |
| Experience | • Experience in manipulating and analysing real-world health data<br>• Experience of using STATA, R, Python or other appropriate statistical software packages<br>• Experience of systematic literature searching, scientific writing, preparing research presentations and reports **(desirable for Grade 5)**<br>• Emerging track record of productivity, including publication of research papers in international peer-reviewed journals as first author and as contributing author **(desirable for Grade 5)** | • Experience of working in an epidemiology research environment or of real-world health data analysis<br>• Experience with conducting causal inference and longitudinal modelling<br>• An interest or experience in pharmacoepidemiology<br>• Experience of writing scripts in a reproducible and transparent way; for example, embedding script development within Git/GitHub pipelines<br>• Experiences of contributing to research grant applications |
| Skills | • Able to design and conduct quantitative studies in health research<br>• Able to identify and implement appropriate statistical/ analytical methods for a given research question<br>• The ability to use initiative and judgment to predict problems, plan appropriate changes and provide recommendations to improve current procedures with the help of the study team **(desirable for Grade 5)**<br>• Excellent and demonstrable scientific writing skills with an ability to convey research ideas and findings clearly<br>• Excellent communication skills, both written and oral<br>• Ability to work independently and as part of a multidisciplinary | • Understanding of Good Clinical Practice and research ethics requirements/ processes<br>• Ability to exercise a high degree of personal initiative in organising own work<br>• Good critical and innovative thinking skills |

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| | research team **(desirable for Grade 5)**<br>• Demonstrate effective time management and ability to work to deadlines<br>• Demonstrate an enthusiasm for research | |
| Knowledge | • Knowledge of the design, conduct and reporting of epidemiological studies **(desirable for Grade 5)**<br>• Knowledge of fundamental techniques in statistical inference and modelling | |

**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 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**
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 our 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 eight, 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, provides us with a real opportunity to have a very significant and positive impact on people's lives.

**The Centre for Health Informatics**
The Centre for Health Informatics (CHI), led by Professor Georgina Moulton, conducts world-leading research in health informatics and forms a centre of excellence in digital health innovation for North England. The Centre has a national role in driving advanced methodological research to harness health data; and to build capacity in health informatics. CHI has a long history of health informatics research, including deep analysis of electronic health records at a UK-scale. Additionally, CHI provides an environment for industry and academia to collaborate over UK health data, methods and expertise in a timely, cost effective and citizen-engaged way, benefiting the UK economy.

The Centre is actively involved in delivering major initiatives including: NIHR programmes, including the NIHR BioMedical Research Centre, CONNECT, NIHR Applied Research Centre,; large European programmes such as PROFID; and international partnerships.

It has close links to the University of Manchester's Institute for Data Science and AI, and to the Alan Turing Institute, the UK's National Institute for Data Science and AI. Both the ARC-GM Digital Health Theme and the Division work closely with Health Innovation Manchester (https://healthinnovationmanchester.com/) and the recently established Christabel Pankhurst Institute for Health Technology Research and Innovation https://www.pankhurst.manchester.ac.uk

**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.

At the University of Manchester we are committed to the development of all staff and through-out this post will offer training and personal development opportunities relevant to your skills, experience and career aspirations.

Exceptional benefits package including:

- Contributory pension scheme
- Life insurance
- Generous holiday allowance plus 4 closure days
- Flexible and friendly working environment including flexi-time and hybrid working
- Training and development opportunities
- Cycle to work scheme
- Season ticket loans for public transport
- Staff discounts on a range of services, from books to computer software to car hire
- On-campus nurseries
- Tax relief on childcare

Application forms and further particulars are available from our website http://www.manchester.ac.uk/vacancies

If you are unable to go online you can request a hard copy of the details from the Directorate of Human Resources, Faculty of Biology, Medicine and Health. Tel: +44(0)161 275 8835 or email: bmh-hr@manchester.ac.uk

*The University will actively foster a culture of inclusion and diversity and will seek to achieve true equality of opportunity for all members of its community.*