THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE & ENGINEERING

SCHOOL OF NATURAL SCIENCES

DEPARTMENT OF MATHEMATICS

NEUMANN FELLOWSHIPS IN MATHEMATICS (2 POSTS AVAILABLE)

VACANCY REF: SAE-015654

Salary:	£41,526 to £51,034 per annum (according to relevant experience)
Hours:	Full Time
Duration:	Fixed Term From 01 January 2021 to 31 December 2025
Location:	Oxford Road, Manchester

Enquiries about vacancy shortlisting and interviews:
Dr Charles Eaton (Head of Pure Mathematics)
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Professor Andrew Hazel (Head of Applied Mathematics)
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Dr Ian Hall (Head of Probability & Statistics)
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JOB DESCRIPTION

Applications are invited for the above posts, which are five-year research fellowships, continuing to permanent academic appointments subject to satisfactory performance and probation requirements.

The positions will start in January 2021, or at another mutually agreed date. They are typically full-time, but applications from individuals seeking part time, job share or flexible working arrangements are also welcome. Applicants should have research experience commensurate with their career stage (with allowance made for career breaks) and a genuine commitment to, and enthusiasm for, the teaching of mathematics and knowledge transfer.

The Fellows' primary duty will be conducting high quality research in any area of mathematics that complements and extends existing research activity within the Department of Mathematics. It is expected that each Fellow will develop an independent research programme which tackles fundamental and challenging areas of mathematics. For the duration of their fellowship, Fellows will have limited teaching and administrative duties, typically lecturing one course per year. They

will contribute to the rich research life of the Department of Mathematics, for example by hosting conferences and supervising PhD students. Substantial funds will be available to support research and travel expenses. Fellows will also be encouraged to spend time on activities and initiatives to promote equality and diversity in mathematics, and achievements in this area will be fully recognised. At the end of the fellowship, subject to satisfactory performance and probation requirements, Fellows will transition to full academic roles with standard teaching and administration responsibilities, within the Department of Mathematics.

The Department of Mathematics, the School of Natural Sciences and the University as a whole are committed to the well-being and work-life balance of all staff. In addition to attractive rewards and benefits, the University offers a suite of family-friendly policies covering flexible working, career breaks and entitlement to enhanced maternity, paternity and adoption leave which are applicable to all employees. For more details on these and other benefits see http://www.manchester.ac.uk/connect/jobs/benefits-working-here/.

The appointees will be required to adhere to all policies and procedures of the University including those relating to Equal Opportunities, Harassment, Health and Safety, and Smoking at Work.

Successful applicants will be expected to enhance the international reputation of the Department and University by:

- Undertaking high quality research, in collaboration with colleagues in the University and other institutions as appropriate, and publishing the results in world-leading journals, books or other appropriate outlets

- Attending relevant conferences and workshops, presenting papers, and disseminating recent research results

- Seeking grants and funding to support their research from relevant bodies

- Seeking to attract and supervise postgraduate research students and research assistants, associates and fellows

- Contributing to the research life of the Department of Mathematics by participating in and organising research events and activities

- Undertaking knowledge transfer and external engagement activities that enhance the impact of research

Successful applicants will be expected to contribute to the delivery of a world-class educational programme by:

- Working independently and with colleagues to teach undergraduate and postgraduate students by means of lectures, seminars, tutorials and examples classes, assuming responsibility for courses where appropriate

- Supervising undergraduate and postgraduate projects

- Setting and marking assignments and examination papers in accordance with the Department's agreed procedures

- Developing teaching material and learning experiences for students in the light of current educational practice, including online and face-to-face delivery

- Supervising postgraduate students in their research and in their preparation of dissertations and theses

- Depending on previous experience, successful applicants may be required to attend the University's training programme for new academic staff

- Candidates will be expected to contribute to outreach activities or other forms of external engagement

In addition, all staff are expected to adhere to all policies and procedures of the University including those relating to Equal Opportunities, Harassment, Health and Safety, and Smoking at Work

PERSON SPECIFICATION

The successful applicants will be mathematical scientists of outstanding ability and/or potential, who are seeking a friendly, vibrant, supportive and collegial environment in which to develop an academic career. Applicants should have (or expect shortly to obtain) a PhD or equivalent, and a research track record commensurate with career stage (with allowance made for career breaks) in any area of mathematics that complements or extends existing research activity within the Department. Applications are especially welcome from candidates with an interest in, or experience of, promoting and advancing equality and diversity within mathematics.

It is **essential** that the individuals appointed have:
- PhD (or expect shortly to obtain) or equivalent research experience in mathematics or a closely related area

- A strong record of high quality original research in mathematics (broadly defined), typically evidenced by publications in internationally leading journals or, if at an earlier career stage, other evidence of exceptional promise and ability

- The ability to make a strong and independent contribution to the Department's research activities, in areas which enhance or complement the existing strengths and strategic priorities of the Department of Mathematics

- The potential to obtain external funding to support their research

- ability and enthusiasm for teaching at both undergraduate and postgraduate levels

- willingness and ability to supervise postgraduate research students and taught postgraduate dissertations

- The skills to communicate effectively with staff, students and external collaborators

It is **desirable** (but not essential) that the individuals appointed have:
- The ability to serve as a role model to students and staff from a broad range of backgrounds

- Interests, experience or expertise which contribute to the Department's aims in promoting equality and diversity in mathematics

- Experience of effective teaching at undergraduate and/or postgraduate level

- A track record of obtaining funding to support their research

- The ability to contribute to the Department's public engagement activities

BACKGROUND

Manchester is the largest city in Northern England, with a metropolitan area population of over 2.5 million. Traditionally a commercial and industrial powerhouse, today it is also a cosmopolitan centre of education, media, arts and sport. Internationally famed for spectator sport and nightlife, it also has world-class facilities for music, participation in sport, arts and shopping. Direct rail links connect to cities across the UK, and the international airport provides direct flights across Europe and to major hubs worldwide. Just outside the city, the Peak District National Park provides some of the country's best-loved terrain for outdoor activities, while the Yorkshire Dales, Snowdonia and Lake District National Parks are also easily accessible.

The **University of Manchester** (www.manchester.ac.uk) was formed in 2004 by combining the Victoria University of Manchester and UMIST. It is the largest non-federal university in the UK, with 12,000 staff, 40,000 students and an annual income of over £1billion. It and its predecessor institutions have a distinguished history of research and teaching, tracing back to 1824 and having produced 25 Nobel laureates. Research highlights include Rutherford's work on splitting the atom (leading to the 1908 Nobel prize for physics), the world's first stored-program computer (the Manchester University Mark I), Turing's work on the foundations of computation, the world's first steerable radio telescope (at Jodrell Bank), the birth of chemical engineering, and most recently the discovery of graphene (leading to the 2010 Nobel prize for physics). The Academic Ranking of World Universities currently rates Manchester as the 27th best university in the world and 8th best in Europe. The University has more than half a million alumni in 190 countries. The University is a partner of the Alan Turing Institute, the UK's national institute for data science and artificial intelligence.

Families and Work-life Balance. The Department and University are committed to the well-being and work-life balance of all staff and are keen to accommodate staff with family or caring responsibilities. The University offers a package of family-friendly policies covering flexible working, career breaks and entitlement to paid maternity, paternity and adoption leave. For more details on these and other benefits see http://www.manchester.ac.uk/connect/jobs/benefits-working-here/. The positions are usually full time, but applications from individuals seeking part-time, job-share or flexible working arrangements are welcome. The Department of Mathematics is fully committed to Athena SWAN principles to promote women in science, and is a supporter of the LMS Good Practice Scheme. The Department is also committed to social responsibilty in its research, teaching and staffing practices: see https://www.maths.manchester.ac.uk/connect/social-responsibility/

The **Department of Mathematics** (www.maths.manchester.ac.uk) is one of the larger integrated mathematics departments in the UK, with over 90 permanent academic staff, 30 research assistants and fellows, 1,100 undergraduate students and 250 postgraduate students. Based in the purpose-built Alan Turing Building, we pride ourselves on providing a friendly, supportive and collegial environment to foster world-class research and teaching. In the 2014 Research Excellence Framework, 90% of the School's research was rated as internationally excellent or world-leading. The Department is divided for management purposes into three groups, with focus respectively on pure mathematics, applied mathematics, and probability & statistics. The Manchester Institute for Mathematical Sciences (MIMS) provides a focus for research activities in

the Department. It has dedicated space for research activities, including two seminar rooms, a hot-desking area, an AccessGrid room, and offices for research visitors

Research in the Department is organised into seven themes: algebra, logic & number theory; analysis, geometry & dynamical systems; continuum mechanics; mathematics in the life sciences; numerical analysis & scientific computing; probability, financial mathematics and actuarial science; statistics, inverse problems, uncertainty & data science. Research groups organise regular seminars and colloquia, and arranges advanced courses attended by both graduate students and staff. The Department's dedicated research space in the Alan Turing Building also allows us to host numerous visitors, conferences and workshops. A legacy held in trust provides income to support an extensive programme of distinguished research visitors, research events and public engagement activities. The Department currently hosts 5 Heilbronn Fellows, who are affiliated with the northern office of the Heilbronn Institute for Mathematical Research (HIMR).

Neumann Fellowships. The Neumann Fellowships are named in honour of Bernhard Neumann (1909-2002) and Hanna Neumann (1914-1971), leading mathematicians who worked at our two predecessor institutions (the Victoria University of Manchester and UMIST respectively) and who made seminal contributions to the development of group theory. They are supported by a generous philanthrophic donation to the University.