University of BRISTOL

Faculty of Science

Lecturer in Applied Mathematics

Further Particulars

Reference ACAD108097

Contents

1. Introduction

The School of Mathematics is seeking to appoint a Lecturer (analogous to Assistant Professor) to join its Institute of Applied Mathematics.

We are looking for a world-class researcher in any area of applied mathematics. The post-holder will be responsible for their own research programme, undertaking independent research, teaching undergraduate and postgraduate students, and taking on appropriate administrative duties.

Currently, the Institute has research activity in complex materials, dynamical systems, fluid dynamics, soft matter, and theoretical biophysics. A characteristic of the Institute is its outward looking approach to research, indicated by the fact that all of these areas benefit from collaboration outside the Institute, both within the School of Mathematics, and University wide.

The School is one of the UK's leading centres for mathematics (ranked 4th overall and 3rd for research output in the national REF2021 research assessment). Comprising over 150 academic, research and professional services staff, the School has moved to its new home in the historic Grade II-listed Fry Building in the heart of the University precinct. Following a £33 million three-year renovation project, the Fry Building provides state-of-the-art facilities for mathematics teaching and research.

The School is the principal partner of the Heilbronn Institute for Mathematical Research, a national facility headquartered in Bristol that supports a broad range of mathematical research across the UK. HIMR currently funds over 25 postdoctoral fellows in the School of Mathematics and sponsors numerous seminar series, workshops, conferences, and visitor programmes that extend and enrich our research environment. This includes several post-doctoral positions and funding for seminars and a distinguished visitor programme in Data Science. The School also delivers an MSc in the Mathematical Sciences, and an MSc by Research.

The University of Bristol offers competitive salaries, an outstanding research environment and access to excellent students. The city of Bristol is regularly ranked as among the best cities to live in the UK, and is a major centre for technology, innovation and creativity. The University of Bristol hosts *Isambard-AI*, set to be the nation's most powerful supercomputer, which is purpose-built for AI research. The School of Mathematics is committed to equal opportunities and to promoting diversity and an inclusive working environment. It is an Athena SWAN Silver Award holder and supporter of the LMS Good Practice Scheme aimed at advancing women's careers in mathematics. We particularly welcome applications from women and minorities for this post.

2. Job Description

a. Main job purpose

To carry out research in areas relating to applied mathematics; to undertake an appropriate teaching load as determined by the Head of School; to carry out appropriate administrative duties as determined by the Head of School.

Section 9 provides further details of the University's academic career pathways.

b. Statements of responsibilities

Specific activities will normally include:

Teaching
Take on teaching duties (both undergraduate and postgraduate) within the School of Mathematics, as required.

Research
Develop an internationally leading independent research programme, which may be in collaboration with researchers within and/or outside the School; supervise postdoctoral researchers and postgraduate students.

Administration
Take on administrative duties within the School of Mathematics and the University, as required.

c. Contacts

Line managed by:
- Head of School

Internal Contacts:
- Director of the Institute of Applied Mathematics
- School and faculty staff
- School undergraduate and post-graduate students and post-doctoral researchers
- Staff and students in the wider university

External Contacts:
- Government and industry
- Funding agencies

- UK and international research community

3. The Post: Person Specification

The person specification provides a summary of what is required to carry out this job effectively. It also forms the selection criteria on which the decision on whom to short-list and then whom to appoint will be made. Please ensure that you demonstrate how you meet these criteria in your application.

Experience, skills and knowledge
(J) Essential:

- Experience of leading independent research in applied mathematics
- Some experience of supervision, training and/or teaching of students in Mathematics, Applied Mathematics or a closely related field, commensurate with the taught programmes of the School of Mathematics
- A proven publication record
- Self-motivation, initiative, and organisational skills in planning and carrying out research

(K) Desirable:

- Experience of lecturing at undergraduate and postgraduate level

Relevant qualifications
(J) Essential:

- PhD or equivalent doctoral qualification in a relevant subject (or some professional equivalent) or be working towards one.

(K) Desirable:

- Effectiveness in the supervision, training and teaching of undergraduate and postgraduate students and postdoctoral researchers

Communication and interpersonal skills

(J) Essential:

- Excellent written and oral communication skills in English

(K) Desirable:

- Effectiveness in the supervision, training and teaching of undergraduate and postgraduate students and postdoctoral researchers

Other criteria:

(J) Essential:

- Commitment to teaching and the development of teaching skills
- Commitment to management activities within the research group and School
- Commitment to undertaking administrative duties

(K) Desirable:

- Track record of outreach activities
- Existing or potential connections with external organisations in industry, government and/or the charitable sector

4. The School of Mathematics

In 2019, as part of a major strategic expansion, the School of Mathematics relocated to a substantial Grade-II listed property, providing office space for over 100 academics, 100 post-graduate students and 80 post-docs. The building has been transformed into a state-of-the-art mathematics teaching and research facility at a cost of £33M. The University is a member of the prestigious Russell Group, is ranked within the top 10 UK universities in the latest QS World University Rankings.

The School of Mathematics is one of the UK's leading research centres in Pure and Applied Mathematics and in Statistical Science. In the last national research exercise REF2021, the School was ranked 4th in the country in the overall assessment (3rd on research output). The School has currently over 1000 undergraduate and 90 postgraduate students. The guiding principle of the School's teaching philosophy is to equip each student with a broad skill set in mathematics and its applications, leading from foundational training to advanced courses and projects that connect with cutting-edge research.

Research in the School of Mathematics is led by five research institutes: the Institute for Applied Mathematics, which currently includes research groups in Fluid Dynamics, Soft Matter, Materials Science, Computational Mathematics and Applied Dynamical Systems; the Institute for Mathematical Physics, which has groups in Semiclassical Analysis, Random Matrix Theory and Quantum Information; the Institute for Probability, Analysis and Dynamics, which includes groups in Pure and Applied Analysis, Probability Theory, Ergodic Theory and Dynamical Systems; the Institute for Pure Mathematics, comprising groups in Number Theory, Combinatorics, Algebra, Geometry, Set Theory and Logic; the Institute for Statistical Science, which covers the whole of modern statistics and data science.

The School has strong links with the Heilbronn Institute for Mathematical Research, which supports activities in various areas of mathematics, funds a total of about 25 research fellows, and runs a co-ordinated series of seminars, research programmes, conferences and workshops. The School receives outstanding levels of support from the EPSRC, the EU, the Royal Society, the Leverhulme Trust, the Ministry of Defence, the Wellcome Trust, the Medical Research Council, the John Templeton Foundation, the Office of Naval Research, the UK Government and a number of commercial organisations including Toshiba, Shell Research, British Energy and EDF. The School currently has a number of successful EPSRC New Investigator Awards, EPSRC New Horizons Awards, Turing Fellowships and Royal Society Fellowships.

The School has access to the University-wide state-of-the-art BluePebble cluster, including powerful GPU facilities. Members of the School also have access to high performance computing facilities for heavy jobs through the UoB's BlueCrystal Phase

4 clusters. Following a further investment by UoB (£16M), Phase 4 now has around 15,000 cores, a theoretical peak performance of over 600 Teraflops, 82TiB or RAM, and 65 high performance GPU's. BlueCrystal and BluePebble hardware are continually updated by capital investment funds from the Faculty.

5. The Faculty of Science and Engineering

The Faculty of Science and Engineering informs, develops and applies world leading scientific knowledge and expertise to address a wide array of global challenges. With research spanning from the theoretical and fundamental building blocks of the universe to applied solutions for real world problems, we pay attention to the needs of the local, UK based and global economy. Our mission is to develop blue sky ideas and take them to practical implementation setting our work within social and economic contexts enabling us to improve lives, livelihoods and societies around the world.

Our successes are due to our dedicated and talented academic, technical, and professional staff and our undergraduate and postgraduate students. The Faculty is home to a diverse and thriving community of over 1600 full-time equivalent (FTE) academic staff, supported by over 400 professional services staff, including a dedicated team of 165 technical specialists. We host over 7300 taught and 1000 research students. Around 35% of our cohort are overseas students, and we have a strong international staff body; we actively celebrate and support this diversity.

The Faculty of Science and Engineering is comprised of nine academic schools:
The School of Chemistry
The School of Civil, Aerospace, and Design Engineering
The School of Computer Science
The School of Earth Sciences
The School of Electrical, Electronic and Mechanical Engineering
The School of Engineering Mathematics and Technology
The School of Geographical Sciences
The School of Mathematics, and
The School of Physics.

Analysis of the 2021 Research Excellence Framework (REF) by Times Higher Education ranked all of our disciplines within the top 10 nationally for research, with *Chemistry* and *Geography and Environmental Studies* both 1st, *Earth Systems and Environmental Sciences* 2nd, *Mathematical Sciences* 4th, *Physics* 5th, *Engineering* 6th and *Computer Science* 7th in the UK.

Through our research excellence and exceptional learning environments we inspire the next generation of world-changing scientists and engineers; helping our students to reach their full potential to enable them to tackle the challenges of a future that we are yet to imagine. We offer a diverse range of programmes at undergraduate

and postgraduate level across the schools, including enticing taught master's courses and innovative interdisciplinary programmes.

The Faculty of Science and Engineering has been highly successful in securing competitive funding from UK Research and Innovation (UKRI) and its research councils to develop Centres for Doctoral Training (CDTs). These concentrate on areas of national need and emerging and interdisciplinary research themes. We currently lead Centres for Doctoral Training in Aerosol Science; Cyber Security; Engineering Biology; Innovation for Sustainable Composites Engineering; Practice-Oriented Artificial Intelligence; Superconductivity; Technology Enhanced Chemical Synthesis; and Quantum Information Science and Technologies. Additionally, we are involved in a collaborative CDT in Sustainable Sound Futures. We also spearhead the NERC-funded GW4 training partnership in earth and environmental sciences aimed at nurturing the next generation of science leaders.

We foster a culture and environment that encourages scientific excellence and maximises the societal impact of our research. The Faculty is supported by a comprehensive range of cutting-edge research facilities spanning all science and engineering disciplines. We continually invest in these facilities, including the Aerodynamics and Aeroacoustics Labs, Bristol Digital Futures Institute, Bristol Robotics Laboratory, Cleanroom, Interface Analysis Centre, NanoESCA, NMR, Organic Geochemistry Unit, Smart Internet Lab, and the Soil-Foundation-Structure Interaction Facility.

We see co-creation and collaboration as essential for driving successful research and innovation. By working in partnership with other academic disciplines, government agencies, non-profit organisations, spin outs, SMEs, and multinationals, we are inspired to dig deeper, try harder and achieve more. We enjoy close and productive relationships with many key industry players across a range of sectors such as Wessex Water, the Met Office, Airbus, Rolls-Royce, EDF Energy, Cisco, Aardman, Google, Toshiba, BT, Thales, Reuters, Hewlett-Packard, QinetiQ, Unilever, LV= and National Air Traffic Services. We also have strong connections to a number of UK Catapults, including hosting the National Composites Centre, and work closely with third sector organisations, charities and government e.g. the Environment Agency, Babbasa and The Grand Appeal.

Within the Faculty, we have teams who manage our links with industry and beyond. These include student facing roles, with well-established mentoring, internship and year in industry schemes. We provide other opportunities for students to engage with industry through projects, technical talks and sponsored events and competitions. We also have staff dedicated to providing project and research management and administrative support to research groups and major projects.

The University is building a major new campus in central Bristol. The Temple Quarter Enterprise Campus will focus on social and digital innovation and the ethics, business models and infrastructure needed to turn digital opportunities into jobs, wealth, and wellbeing for all. The Faculty of Science and Engineering will be instrumental in the

mission of the campus, which will host the Quantum Technology Innovation Centre and the Bristol Digital Futures Institute as well as our world-leading research groups and several of our Centres for Doctoral Training.

We are committed to cultivating a community that values diversity, equity, and inclusion. We believe that embracing a wide range of perspectives and experiences — including gender, ethnicity, disability, background, and experience — is essential for driving innovation, creativity, and impact. By promoting diversity, we aim to strengthen our faculty and achieve our vision. To support the needs of our community, we are open to discussing flexible working arrangements, such as job sharing, part-time positions, or adaptable schedules. We strive to accommodate individuals with caring responsibilities or other personal commitments. Our goal is to create a supportive environment where everyone feels valued, respected, and empowered to contribute meaningfully.

6. The University and the City of Bristol

The University of Bristol's roots date back to 1876. Since its formation it has become one of the leading institutions among the UK's Russell Group of universities and operates globally, where it is recognised for its research and academic excellence.

The University has a strong interdisciplinary approach and regularly features among the top-ranking institutions in global league tables.

The University of Bristol's mission is '*to pursue and share knowledge and understanding, both for their own sake and to help individuals and society fulfil their potential*'. This is underpinned by a vision where the University of Bristol is an international powerhouse of learning, discovery and enterprise, whose excellence is acknowledged locally, nationally and globally, and that is:

- dedicated to academic achievement across a broad range of disciplines, and to continuous innovation and improvement
- research-intensive, supporting both individual scholarship and interdisciplinary or thematic research of the highest quality
- a centre for intellectually demanding, research-informed education that nurtures independence of mind and helps students achieve their personal goals and serve society's needs, both during and after their time here
- an inclusive and collaborative community of scholarship that attracts and retains people with outstanding talent and potential from all walks of life and all parts of the world

- a stimulating and supportive environment for all students and staff, distinguished by a commitment to high standards, respect for the individual and a strong sense of collegiality
- committed to operating in a sustainable manner
- engaged with society's interests, concerns, priorities and aspirations
- a major contributor culturally, environmentally and economically to Bristol and the South West
- well led and responsibly run, with an emphasis on consultative decision-making and open communication as well as personal responsibility and accountability

Key to Bristol's vision is a clear and consistent articulation of and dialogue with its many stakeholders and the public about the wide range of research carried out at the Institution and hence is often featured in many national and international media. It has a proud history of two-way dialogue as part of its research activities and addresses the world's key challenges through an interdisciplinary approach.

The University also plays a lead role in the city of Bristol's cultural and economic well-being and carries out an extensive programme of events and activities on behalf of the city, as well as being a keen supporter of partner organisations' activities.

For more information, please see http://www.bris.ac.uk/university/

7. Academic Career Pathways

As part of the process of modernising its pay and grading systems, the University has introduced career pathways for academic staff. What this means is that all members of academic staff have a clear career pathway involving a series of levels with distinct role profiles, each with its unique requirements. Each profile sets out what is expected of an academic at the particular level. The role profiles also set out a collection of competencies expected for each level.

This post is located on Pathway One - academic roles that combine teaching, research and administrative duties.

8. Terms and Conditions

(a) We would like the successful applicant to take up the appointment from October 2025 or as soon as possible thereafter.

(b) The post is located in the School of Mathematics, Faculty of Science, at Fry Building, Woodland Road.

(c) This role is located on Pathway One, Profile Level b or c of the University's Academic Pathways and the successful candidate will be appointed as a Lecturer.

(d) The salary will be Grade J or K depending on experience. For further information on salary scales please see: http://www.bris.ac.uk/hr/salaries/

(e) The appointment will be subject to the terms and conditions for staff on grade J and above, details of which can be found at: http://www.bris.ac.uk/hr/terms/jandabovestaff.html

(f) This post is full time, 1.0 FTE.

(g) The post will be offered on a permanent/open ended contract subject to satisfactory performance.

(h) Subject to the rules of the scheme, the post holder may participate in the Universities' Superannuation Scheme (USS). Further information on the scheme can be found at www.uss.co.uk/. Unless newly appointed staff members declare in writing a wish not to participate in the USS, they will be deemed to be members from the start of employment, and contributions will be deducted accordingly. As a consequence of participating in this Scheme, University staff will be contracted out of the earnings-related part of the State Pension Scheme.

(i) A Pension Salary Exchange scheme is in operation in order to increase take-home pay and save costs. For more information see

http://www.bristol.ac.uk/hr/salaries/sal-exchange/

(j) Details of the University Relocation Expenses policy for staff relocating to take up post are available from http://www.bristol.ac.uk/hr/resourcing/practicalguidance/appointment/relocation1.html

(k) All staff newly appointed to Pathway 1 and Pathway 3 contracts, without a teaching in HE qualification should complete the CREATE scheme to gain Fellowship or complete the Health Professions Education programme. Engagement with CREATE/HPE should start within the first year of appointment, and completion should be within two years of appointment or before promotion (whichever is earlier). For those seeking promotion to Senior Lecturer, CREATE must be completed (ratified) before applying. See the Policy for staff participation in the CREATE scheme and CREATE webpages for further information.

(l) If you are employed on a fixed-term contract where the reason is cover or because it is a training/development role, your contract will normally come to an end under Ordinance 30 (Some Other Substantial Reason ("SOSR")) as set out in the Fixed Term Contracts Policy. If this is the case, you will not be eligible for redundancy pay or access to the University Redeployment Pool. The reason for offering a fixed-term contract will be made clear in the advert.

9. Application Procedure and Selection Process

Please visit our web site at www.bris.ac.uk/jobs, enter the vacancy number ACAD108097 into the job search and follow the link to the online application process.

Further information on the University's application process can be found at: http://www.bristol.ac.uk/jobs/application-process.html

Please note the following:

- A Selection Panel has been established to review all applications for this post and to conduct interviews of short-listed candidates.
- Short-listing is planned to take place in mid-August 2025.
- Candidates may be invited to give a presentation prior to their formal interview, as part of the final selection process. It is expected that the final selection process will be held in early September 2025.
- **The closing date for applications is Tuesday 1st July 2025**

10. Additional Information

Further information

For an informal discussion about the post, please contact:

Name: Professor Tanniemola Liverpool
Email: t.liverpool@bristol.ac.uk

Or alternatively;

Name: Professor Oliver Johnson, Head of School of Mathematics
E-mail: headofschool-maths@bristol.ac.uk

11. Organisation Chart