Further Particulars

University of Bath
Department of Mathematical Sciences
Full Professor in Probability

The Department invites applications for a full professorship in probability.

The Department of Mathematical Sciences

The Department, which consists of over 70 academic members of staff, carries out internationally excellent research in mathematics and statistics. In the recent Research Excellence Framework, 88% of research activity was graded either 4* (world-leading) or 3* (internationally excellent).

Academic staff numbers have increased significantly in the last five years and further expansion is underway during 2017-18.

The Department's mission is to advance and promote knowledge of mathematics and its applications. We have a unified and connected view of mathematics as a subject of intrinsic interest and one with widespread application and impact. Our approach is outward looking, with a culture of interdisciplinary and engagement with industry. Our students are among the best in the UK. Our undergraduate syllabus, grounded in research, reflects the unity of mathematics and complements our excellent industrial placement schemes.

Our research embraces pure and applied mathematics, probability, and statistics and their interactions. Examples of our connections across research areas include (i) combining the analysis of partial differential equations with their applications to continuum mechanics, mathematical biology, mathematical control theory, and numerical analysis, (ii) links between statistical modelling, probability theory, and numerical analysis, and (iii) connecting analysis with geometry. The Department has a long tradition of combining rigorous theory with real applications.

The Department has regular specialist seminars in Analysis, Applied Analysis, Mathematical Biology, Networks and Collective Behaviour, Control Theory, Geometry, Statistics, Nonlinear Mechanics, Numerical Analysis and Probability, as well as a general "Mathematical Landscapes" colloquium.

In our multidisciplinary and industrially applied research, we foster synergies between research teams, while simultaneously emphasising mathematical rigour underpinning the applications. Many projects have been supported by industry, such as our long-running collaboration with the UK Met Office, which combines activity in stochastic processes, continuum mechanics, and scientific computing.

Other current examples of industrial interaction through Prob-L@B include, for example, a research fellow financially supported by the Heilbronn Institute, a PhD student project working on random graph colouring problems related to mobile smart technology sponsored by BT, and a PhD project and postdoc concerning the use of potential analysis of branching processes applied to the Monte-Carlo simulation of nuclear reactor cores sponsored by Amec-Foster-Wheeler.

The Department provides a stimulating and supportive research environment. We appoint high-calibre staff whose expertise complements and extends our research profile and we provide mentoring for new appointees appropriate to their career stage, and support for applications for research funding.

In 2010, the Department moved into a new five-storey building at the heart of the campus, providing bright new staff offices, space for collaborative discussion, and accommodation for support staff. There is also a custom-built lecture room with adjacent social and exhibition space which is used extensively for seminars, meetings and workshops organised by Department members.

Members of the Department are involved also in interdisciplinary research centres within the University. Four of these are directed by members of the Department: the Centre for Networks and Collective Behaviour (http://www.bath.ac.uk/research/centres/cncb/) which is a university-wide collaboration centred in Applied Mathematics, the Centre for Mathematical Biology (http://www.bath.ac.uk/cmb/) which encourages and supports collaboration between mathematicians, biologists, and others from across the University, the Centre for Nonlinear Mechanics (http://www.bath.ac.uk/cnm/) which hosts collaboration between applied mathematics, numerical analysis and areas of application for example in Mechanical Engineering, and the Probability Laboratory at Bath (http://www.bath.ac.uk/research/centres/probability-laboratory/) which is led by the probability group, with strong connections to other areas such as analysis and numerical analysis.

More details of the research activities of the Department can be found at http://www.bath.ac.uk/math-sci/research .

The Bath Institute for Mathematical Innovation

“Excellence in research and innovation” is a core goal for the University of Bath, and to help achieve this goal the University has invested in a number of University-wide Research Institutes. The Department of Mathematical Sciences has a central role within the new Bath Institute for Mathematical Innovation, which has members of the Department as Director (Professor Jonathan Dawes) and Deputy Director (Professor Chris Budd).

The Institute aims to support the excellent mathematics and mathematically related activity that exists across the University, to develop further the international profile of the University and to extend further our capacity for industrial collaborations in order to produce a step change in the impact and visibility of our research.

The Centre for Doctoral Training in Statistical Applied Mathematics (SAMBa)

In March 2014 the UK Engineering and Physical Sciences Research Council awarded the Department funding to establish a Centre for Doctoral Training in Statistical Applied Mathematics at Bath (SAMBa). This CDT is supporting five cohorts of four-year PhD studentships. Whilst the initial core of funding supported a total of 50 studentships, and additional 10 studentships have been leveraged since its inception and this figure will continue to increase with time. Indeed, SAMBa has a current total cohort of over 50 students at various stages of completion. The first students arrived in September 2014

SAMBa will train a new breed of mathematical researchers at the interface between Applied Mathematics, Statistics, and Probability theory, to engage students with industrial and interdisciplinary problems and hence to equip them to tackle key societal and industrial challenges related to areas such as data science, uncertainty quantification, and large-scale stochastic modelling and simulation. To achieve this, we have designed an innovative, student-centred approach at graduate teaching. For more details about SAMBa see http://www.bath.ac.uk/math-sci/postgraduate/cdt/

The Probability Laboratory at Bath (Prob-L@B)

The Probability Laboratory at Bath is one of the largest and most vibrant research groups of its kind in the UK with an outstanding international reputation. The driving principle of the laboratory is to maintain a strong network of international collaborations and to attract a high

volume flow of outstanding mathematical talents at the postgraduate and postdoctoral level. This is achieved by providing a highly active and reactive research centre through graduate courses, a high density of esteemed visitors and yearly research workshops on current themes. Coupled with the supervisory role of the experienced and internationally leading researchers permanently based within Prob-L@B, the unit has a long-term vision to self-perpetuate itself through a cycle of cutting edge research, a reputation of being a powerhouse of ideas for young and up-coming minds in probability, and a broad portfolio of research funding. The appointee will be expected to lead the laboratory forward towards this vision. For more details, visit the Prob-L@B webpages:
http://www.bath.ac.uk/research/centres/probability-laboratory/

Undergraduate Teaching

Undergraduate teaching activities of the Department encompass various degree programmes at Bachelor and Master level, and service teaching to other departments. Applications are currently buoyant and the department recruits around 300 very well prepared students each year to its ambitious undergraduate programme. The popularity of the degree programme is enhanced by the availability of options which combine advanced studies in Mathematical Sciences with a year either in industry or spent studying abroad. The MMath programme offers four years training in Mathematical Sciences in which students can choose a wide range of options in pure and applied mathematics and statistics and probability, as well as units from other departments. A new MMath with industrial placement option has recently been added to the degree scheme. The Department also contributes to joint degrees in Mathematics and Physics, Computer Science and Mathematics, and Economics and Mathematics.

Postgraduate Programmes

Departmental postgraduate taught provision includes established Masters Programmes in 'Mathematical Sciences' and 'Modern Applications of Mathematics', the latter including a Mathematical Biology stream, as well as the MRes programme which is part of the Centre for Doctoral Training SAMBa.

Postgraduate research is vibrant with an expanding PhD population, and substantial future expansion planned through initiatives to attract funding from industry and through internationalization activities. A decade ago, the Department pioneered the "Doctoral College" route to PhD in which students must pass 6 assessed graduate level mathematics courses during the first 18 months of 3.5 years' funded study. This broadens and deepens postgraduate provision, providing formal training in areas not necessarily directly related to the student's research, and it has since been widely adopted in other places. More recently our Doctoral College provision has been strengthened by the EPSRC-supported Taught Course Centre which involves Bath together with the Universities of Bristol, Oxford and Warwick, and Imperial College London. These five institutions share video-linked graduate mathematics courses using Access Grid technology.

Further details of our undergraduate and postgraduate programmes can be found at
http://www.bath.ac.uk/math-sci/admissions/

Career Development for New Staff

New lecturers, in particular Early Career Researchers, are given significantly reduced administration and teaching loads (normally only one lecture course in the first year), and receive priority in the allocation of PhD studentships and travel funding. New staff members are assigned mentors to provide wide-ranging support, including the development and implementation of a personal research strategy.

Further support is provided by the Staff Development Performance Review system. Probationary staff take the Bath Course on Enhancing Academic Practice which includes units on research management. The Faculty of Science provides start-up funds for selected projects of recent appointees.

The University's Research and Innovation Services (RIS) also provides assistance with the development of research proposals and knowledge transfer, and the Academic Staff Development programme offers a wide range of relevant training, for example in IT, research supervision, and management.

The University of Bath

The University, founded in 1966, is regularly placed among the top ten in the UK by national newspaper guides. Its buildings are set in an attractive hill-top site about a mile from the centre of Bath, a UNESCO-designated World Heritage City, which has fine amenities. The campus is safe and friendly for students and has first-class sports facilities. The university was named by The Sunday Times as the "University of the Year" for 2011-12, "Best Campus University" in 2014 and regularly reports very high levels of student satisfaction. For more information on the University and on the City of Bath see
http://www.bath.ac.uk/
http://www.bath.ac.uk/about/city/.

Conditions of service

See the website at http://www.bath.ac.uk/jobs/.