

Heilbronn Research Fellow

1 JOB DESCRIPTION

Faculty / School or Division: School of Mathematics

Faculty/School or Division Address: University Walk, Bristol, BS8 1TW

Job Family:	Research		
Grade/Pathway:	J, Pathway 2	Salary range:	£36,613 - £41,212 per annum
Hours of work:	100% time	Contract type:	Fixed term for 3 years
Work pattern:	Mon-Fri	Vacancy Reference Number: ACAD102963	

1.1 Main Job Purpose

The Heilbronn Institute

The Institute was established by UK Government Communications Headquarters in association with the University of Bristol to conduct research in areas including but not restricted to **Algebra, Algebraic Geometry, Combinatorics, Computational Statistics, Data Science, Number Theory, Probability, and Quantum Information**. These areas are interpreted broadly: Research Fellows have previously been appointed with backgrounds in most of Pure Mathematics and Statistics, and several areas of Mathematical/Theoretical Physics.

The Heilbronn Institute has grown into a national research institute, where you will find some of the leading mathematicians in the UK working in a highly stimulating research environment. It partners with the Alan Turing Institute, the Clay Mathematics Institute, the Isaac Newton Institute, and the International Centre for Mathematical Sciences. For more information about the [Heilbronn Institute](http://heilbronn.ac.uk), including a programme of [workshops and conferences](#), [papers written](#), current [fellows](#), please see our website at <http://heilbronn.ac.uk>.

The Institute's research programme is divided equally into 'internal' research on behalf of GCHQ, and 'external' research in areas of the Fellows' choice. The external research may be in any area of mathematics and can be published in the usual way. Internal research may be externally publishable depending on its nature, but can only be published with GCHQ's agreement.

The Chair of HIMR, who is responsible for the external research and associated activities is Professor Jon Keating. Dr Daniel Shiu, the Head of HIMR, is responsible for the internal research programme. The Associate Chair of HIMR is Dr Julia Wolf, who is responsible for the Heilbronn Institute's activities and Fellows at the University of Bristol.

Research Environment

You will join a cohort of over 30 Heilbronn Research Fellows that includes some of the leading early-career mathematicians in the UK. Many former fellows have gone on to permanent academic appointments in leading universities.

The School of Mathematics provides an excellent mentoring programme as well as a series of regular career-development events designed specifically for Heilbronn research fellows. It also runs several active seminar series across all areas of pure mathematics as well as probability, statistics, mathematical physics and quantum information. In the REF2014, the School was ranked 4th overall and 2nd for impact when “intensity” is taken into account.

HIMR also supports a large number of conferences, workshops and other research events, including an Annual Conference, for more information please see this year’s Heilbronn Annual Conference 2017 webpage: <http://heilbronn.ac.uk/events/past/>

The internal research programme is determined by the Head of HIMR in conjunction with GCHQ. Fellows are presented with a range of challenging problems and are given the facilities and support to contribute to one or more problems, frequently in a collaborative effort as a member of a team.

Facilities and Research Support

Excellent facilities are provided for both the external and the internal research. In addition to work space at the Institute, Fellows also have desks in the School of Mathematics, which they can access 24/7.

Fellows work flexible hours, and for the most part can split their time between internal and external research in whatever way suits them best.

The Chair holds a generous budget for research expenses such as travel, equipment, and organising workshops and visits to the University of Bristol by collaborators from other institutions. Fellows may expect research expenses of up to £2000 pa, and are able to bid for further sums from the Chair’s fund for special projects. They may also bid for external funding.

Terms and Conditions

Terms and conditions of employment for Research Fellows will be based on those applicable to fixed-term externally-funded researchers in the University of Bristol.

There is a salary supplement of £3.5K pa, in recognition of the distinctive nature of these Fellowships. Payment of this supplement is conditional on a finished thesis having been accepted in final form, because we expect Heilbronn Fellows to hold PhDs before working at the Heilbronn Institute.

The University and the Heilbronn Institute reserve the right to terminate the fellowship in the event of loss of security clearance.

Intellectual Property Rights

The Institute acquires all IPR in the internal research. Rights in the external research are subject to the normal arrangements between Bristol University and its employees, subject to GCHQ acquiring a royalty-free license on any exploitable invention.

Security

Some of the Institute's work is highly confidential and subject to formal security procedures. All the internal research must be carried out within the Institute and not discussed, even in general terms, elsewhere, without explicit GCHQ permission.

Fellows need to acquire, and continue to qualify for, a security clearance ('Developed Vetting') from GCHQ; they are subject to provisions of the Official Secrets Acts and restrictions on travel to certain countries. UK resident UK nationals will normally be able to meet this condition. Non-UK citizens and UK citizens who are not UK residents should contact the Heilbronn Manager (see below) about eligibility before applying.

Informal Enquires

Enquiries about the fellowships may be addressed to the Heilbronn Manager:

Chrystal Cherniwchan, School of Mathematics, University of Bristol, Bristol BS8 1TW, UK Tel: (+44) 0117 331 5260

email: himr-recruitment@bristol.ac.uk

1.2 Main Statement of Responsibilities

Research Responsibilities

- Please refer to main job purpose above

Administration Responsibilities

- Please refer to main job purpose above

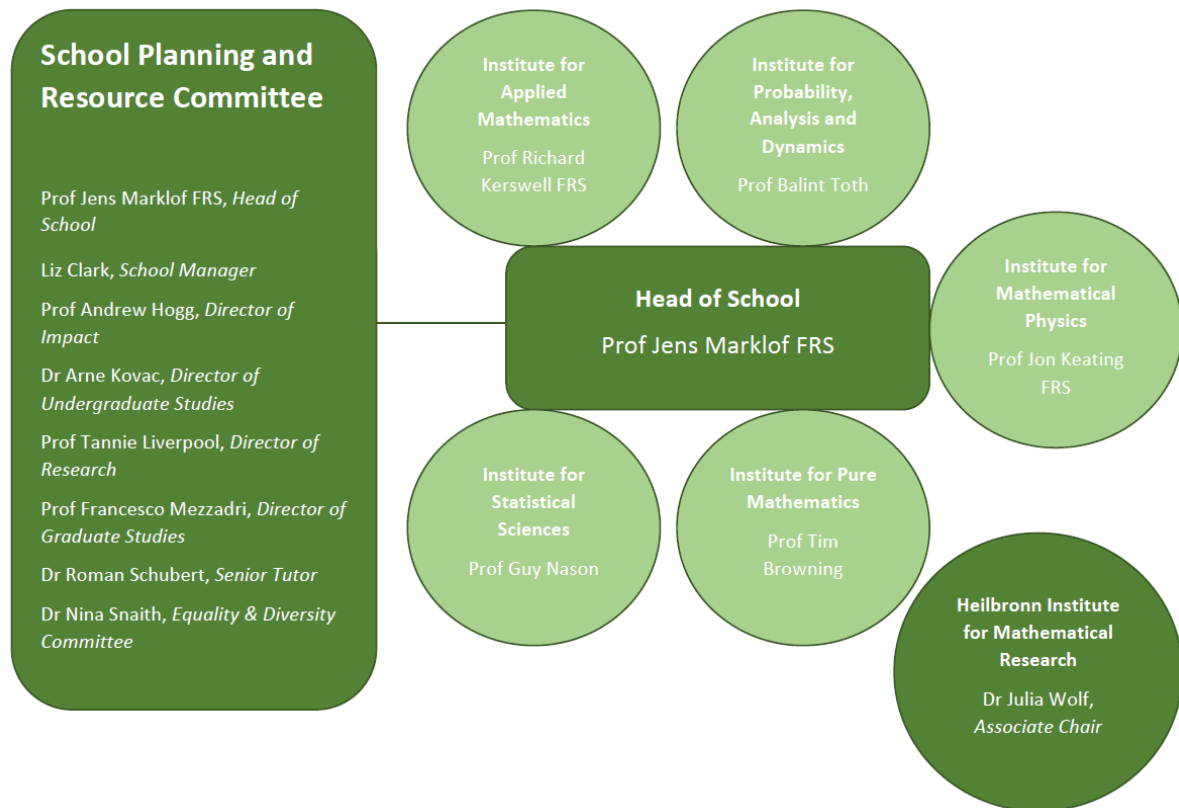
Teaching Responsibilities

As this role is a Pathway 2 (Research) role, there are no formally specified teaching duties required of the role-holder. However, other commitments permitting, the role-holder may be given development opportunities to undertake activities such as teaching on Masters and Doctoral programmes and/ or supervising MSc dissertations within the School of Mathematics, as appropriate.

1.3 Relationships

Line manager: Dr Julia Wolf

1.4 Organisation Charts



1.5 Job Hazards/Safety Critical Duties (Pre-employment health screening)

The following duties are an intrinsic part of the role and any offer of employment will be conditional upon satisfactory health screening by the University Occupational Health Service:

NOT APPLICABLE

2 PERSON SPECIFICATION

2.1 Relevant Experience, Skills and Knowledge

Essential

- Experience of leading independent research in Algebra, Algebraic Geometry, Combinatorics, Computational Statistics, Data Science, Number Theory, Probability, and Quantum Information or related area.
- A proven publication record.
- Self-motivation, initiative, and organisational skills in planning and carrying out research.

Desirable

2.2 Relevant Qualifications

Essential

- PhD or equivalent doctoral qualification in a relevant subject by the time you start this fellowship.

Desirable

2.3 Communication and Interpersonal Skills

Essential

- Excellent written and oral communication skills in English.

Desirable

2.4 Additional Criteria

Essential

- Fellows need to acquire, and continue to qualify for, a security clearance ('Developed Vetting') from GCHQ, typically only UK nationals can achieve this, please contact hmr-recruitment@bristol.ac.uk if you are unsure.

Desirable

3 CAREER PATHWAY AND OTHER RELEVANT INFORMATION

3.1 Career Pathways

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. Progression or promotion to the next level will occur after these competencies have been attained and where a role at the higher level is available.

The academic pathways are as follows:

Career Pathway One - academic roles that combine teaching, research and administrative duties.

Career Pathway Two - academic roles focusing on research and associated administrative duties.

Career Pathway Three – academic roles focusing on teaching and associated administrative pathways

This post is located on Pathway Two. Role Summaries setting out what is expected of an academic at each particular profile level on pathway two can be found below. Please note that an appointment may be made at any level of the pathway.

A schematic diagram of the career pathways can be found at:

<http://www.bristol.ac.uk/hr/grading/academic/>.

For Pathway Two roles progression to the next level will only occur where a role has been identified as being eligible for progression, having reached the relevant point on the salary scale and after the relevant competencies have been attained. A progressable role is a role at Level b or Level c that has been determined as being eligible for progression by the Head of Department, based on departmental needs, priorities and funds. Individuals in progressable roles at Level b or Level c are expected to develop their skills, knowledge and experience in order to ultimately progress to Level c or Level d, as applicable. A non-progressable role is one either at Level a (which are not subject to formal progression arrangements, although there may be opportunities to develop into a Level b role, based on departmental needs, priorities and funds), or at Level b or c for which the Head of Department has identified an ongoing need at that particular level. Movement to Level e will be by promotion only.

3.1.1 Role Summaries

Research Associate (Level a)

Role holders at this level are concerned with *assisting* an individual research leader or team to conduct a particular study (or group of studies). They will generally be involved in data generation and/or collection using standard and well-defined methods developed by others. They will be working under close supervision by, and direction from, a more senior researcher, who will be ultimately responsible for the project. This may be the entry level for some staff who are expected to train and/or develop

to take on more senior researcher roles. Role holders will be provided with academic and pastoral support within the department (including counselling on realistic career opportunities) and training will be available designed to develop their competences and to prepare them to take on more responsibilities associated with a higher grade.

Senior Research Associate (Level b)

Role holders at this level will be experienced and professional researchers (or have considerable professional experience) and will be specialists in a particular area or methodology, drawing upon knowledge gained from postgraduate research and/or working within a Level a role. They will be *associated* with a particular project (or projects) and will contribute ideas, and/or enhancement of techniques or methodologies. They will be expected to do some writing for dissemination outside the Department. They will still be working under supervision, but will be expected to take significant initiatives in their work and consult with the Principal Investigator over the details of the project. They may, where practical, contribute to the department's teaching, through supervision of projects, overseeing practical classes, or taking small group classes. They will be provided with academic and pastoral support within the department and training will be available designed to develop their competences (including counselling on realistic career opportunities) and prepare them to take on more responsibilities associated with a higher grade.

Research Fellow (Level c)

Role holders at this level will have substantial experience of research (normally not less than six years). They will initiate and take responsibility for some research projects and may be Principal Investigators or, where a Research Council does not permit this, act as though they were Principal Investigators. They will be involved in administration relevant to their projects (e.g. helping to prepare bids for research funding), managing other researchers and monitoring research budgets. They will be expected to be undertaking research individually and/or collectively and to be advancing the state of knowledge and understanding within their particular area of expertise. They will be publishing regularly in high quality outlets. They are likely to provide some teaching support for the department (consonant with the terms of their funding). They will be expected to be establishing a growing reputation within their particular research field and academic discipline and to be developing and demonstrating intellectual independence.

Senior Research Fellow (Level d)

Role holders at this level will have extensive experience in research and research management. They will normally be Principal Investigators, leading collaborative research bids and research teams, or driving forward innovative research themselves. They will be involved in scholastic projects (e.g. editing journals and academic books), and be making a significant leadership and/or management contribution within their department or the wider university, to be participating in national/international academic networks and conferences. They may be transferring their knowledge through some teaching and/or supervision to undergraduate or graduate students (consonant with the terms of their funding). Role holders at this level will be independent researchers and will have an established national and growing international reputation within their academic discipline generally and research field in particular.

Professorial Research Fellow (Level e)

Role holders at this level will have very extensive experience of research leadership and related management/administration. They will enjoy a wide recognition for their expertise within the academic community internationally (as evidenced by conference invitations, journal editorships, office holding in specialist groupings, associations with appropriate Research Councils etc.). They will have made recognised and significant contributions to the developing knowledge and understanding

of their research area. They will already have responsibilities for the creation, initiation, development and overall management of significant research programmes. They will 'profess' their discipline within the Department, as appropriate and consonant with the terms of their funding. They may also carry significant leadership roles within the Faculty or University.