

## 1 Advertisement

**Post Title:** Research Fellow

**School/department:** Brighton and Sussex Medical School, Department of Clinical and Experimental Medicine

**Hours:** full time or part time hours considered up to a maximum of 1.0 FTE.

Requests for flexible working options will be considered (subject to business need).

**Location:** Brighton, United Kingdom

**Contract:** Fixed term for 3 years.

**Reference:** 20657

**Salary:** starting at £36,333 to £43,155 per annum depending on experience.

**Placed on:** 07 July 2023

**Closing date:** 04 August 2023. Applications must be received by midnight of the closing date.

**Expected Interview date:** To be confirmed

**Expected start date:** July – September 2023

Applications are invited for the post of Research Fellow in Cancer Research (non-clinical) at Brighton and Sussex Medical School (BSMS). We are looking to recruit a scientist with a strong background in cancer research, or a related discipline to work on a recently awarded Blood Cancer UK project grant.

The appointee will join our internationally recognised haemato-oncology research team. The Haemato-oncology group is a successful collaborative partnership between clinicians and scientists based in the Medical Research Building at BSMS. The laboratory-based 'Pepper Team' (<https://pepper.science>) and computational systems biology 'Mitchell Team' (<https://mitchell.science>) currently represent the two largest groupings. Our main areas of expertise are in modelling the tumour microenvironment, understanding the role of NF- $\kappa$ B in disease progression and the development of drug resistance and the pre-clinical evaluation of novel targeted agents. The successful candidate will benefit from our strong network of national and international collaborators and our established links with academic medicinal chemists and pharmaceutical companies. The selected candidate will be part of the vibrant Haematology Research Group, spanning BSMS and the University of Sussex (<https://www.bsms.ac.uk/research/clinical-and-experimental-medicine/cancer/hrg/haematology-research-group.aspx>).

We are seeking a motivated and enthusiastic candidate with a PhD in a relevant area, who can demonstrate technical expertise in a range of laboratory techniques, ideally including tissue culture and flow cytometry. Computational skills are also desirable but the opportunity for training in computational biology will be available.

**Project title: Using NF- $\kappa$ B 'fingerprints' to identify therapeutic vulnerabilities within subsets of B cell malignancies.**

Although there have been major advances in treatments for B cell malignancies, heterogeneity both between and within diseases contribute to the variable responses to current therapies. Therefore, there is an urgent need for personalised strategies to accurately predict the optimal drug/drug combination for an individual patient. Aberrant NF-

$\kappa$ B transcription is a major player in B cell malignancies and is activated by numerous signalling pathways within the tumour microenvironment (BCR, TLR9, CD40L etc) resulting in proliferation and upregulation of anti-apoptotic proteins. The NF- $\kappa$ B signalling network is comprised of multiple components, which can be activated by different stimuli, giving rise to distinct NF- $\kappa$ B states. We have developed a novel flow cytometry-based NF- $\kappa$ B fingerprinting assay and demonstrated distinct expression patterns between and within different CLL patient samples and DLBCL cell lines. We propose that these different NF- $\kappa$ B fingerprints, coupled with nuclear NF- $\kappa$ B subunit activity, and global gene transcription states, are the key to identifying therapeutic vulnerabilities in individual tumours. The project will generate experimental data, using primary CLL cells and DLBCL cell lines, to create a library of NF- $\kappa$ B signalling states, and then use this library to inform mechanistic mathematical modelling/simulations. The ultimate goal of this interdisciplinary project is to exploit computational models to accurately identify the 'right drug(s) for the right patient' and then experimentally test these predictions in the laboratory using patient-derived tumour samples.

For informal enquires, please contact Professor Chris Pepper ([c.pepper@bsms.ac.uk](mailto:c.pepper@bsms.ac.uk)), Professor Andrea Pepper ([a.pepper@bsms.ac.uk](mailto:a.pepper@bsms.ac.uk)) or Dr. Simon Mitchell ([s.a.mitchell@BSMS.ac.uk](mailto:s.a.mitchell@BSMS.ac.uk)) at Brighton and Sussex Medical School.

The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority ethnic candidates, who are under-represented in academic posts in Science, Technology, Engineering, Medicine and Mathematics (STEMM) at Sussex.

For full details and how to apply see our [vacancies page](#), [www.brighton.ac.uk/jobs](http://www.brighton.ac.uk/jobs) [www.bsms.ac.uk](http://www.bsms.ac.uk)

*The University of Sussex values the diversity of its staff and students and we welcome applicants from all backgrounds.*

## 2. The School / Division

Please find further information regarding the school/division at <https://www.bsms.ac.uk/index.aspx>

## 3. Job Description

Job Description for the post of: Research Fellow

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|-----------------------------|---|
| <b>Department:</b>          | Department of Clinical and Experimental Medicine  |
| <b>Section/Unit/School:</b> | Brighton and Sussex Medical School.   |
| <b>Location:</b>            | Medical Research Building   |
| <b>Grade:</b>               | 7   |
| <b>Responsible to:</b>      | Professor Chris Pepper  |
| <b>Responsible for:</b>     | Delivering the aims of this Blood Cancer UK-funded project and supervising more junior team members as and when required. |

The appointee will join our internationally recognised Haemato-oncology research team working on a Blood Cancer UK funded 3-year project. Consequently, we are looking for an individual who is a motivated and determined team-player with a strong commitment to produce high-quality research.

From an academic perspective, this post will be based in the Department of Clinical and Experimental Medicine at BSMS. Cancer represents a major strategic priority for BSMS reflecting our interest in basic, translational and clinical oncology. The successful candidate will have experience in a range of laboratory techniques and familiarity with cancer biology; tissue culture and flow cytometry are highly desirable skills. An opportunity to learn computational skills will be available and previous experience is beneficial but not required.

The Haemato-oncology group is a successful collaborative partnership between clinicians, laboratory scientists and computational systems biologists. The laboratory-based 'Pepper Team' (<https://www.pepper.science>) and computational systems biology 'Mitchell Team' (<https://mitchell.science>) currently represent the two largest groupings. Our main areas of expertise are in modelling the tumour microenvironment, understanding the role of NF- $\kappa$ B in disease progression and the development of drug resistance and the pre-clinical evaluation of novel targeted agents. The team currently works on Chronic Lymphocytic Leukaemia, Acute Myeloid Leukaemia, Diffuse Large B Cell Lymphoma and Malignant Myeloma. The successful candidate will benefit from our strong network of national and international collaborators, our established links with academic medicinal chemists and pharmaceutical companies and will have the exciting opportunity to be part of our dynamic haemato-oncology research team at BSMS.

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## **PRINCIPAL ACCOUNTABILITIES**

1. To produce high quality research data, both as an individual and as part of the haemato-oncology team, leading to high-impact publications.
2. To support other team members with their research projects.
3. To actively engage with the laboratory housekeeping and ordering associated with high quality research activity.
4. To contribute fully to the school by participating in meetings and working groups when requested.
5. To present results at national and international Haemato-oncology meetings.

## **KEY RESPONSIBILITIES**

### **1. Research, Scholarship & Enterprise**

- 1.1 Conduct the Blood Cancer UK funded research project under the direction of the PI and Co-Is.
- 1.2 Analyse and interpret research findings, distill these findings into publication-quality figures and draw conclusions on the outcomes.

- 1.3 Produce high-quality research data that will have significant impact in the field, and be suitable for publication in leading journals.
- 1.4 Make presentations at national or international conferences or exhibit work in other appropriate events of a similar standing, and identify ways to disseminate research outputs informally via the internet, the media and other forms of public engagement.
- 1.5 Continually update knowledge and understanding in field or specialism and engage in continuous professional development.
- 1.6 Keep up-to-date and accurate records of all experimental data and make these accessible to the PI and Co-Is.

## **1. Contribution to School & University**

- 3.1 Attend and contribute to ECR and other school meetings when requested.

## **4. Role-specific duties**

- 4.1 Integrate into the Haemato-oncology research team and contribute to the supervision and management of junior team members including MD/PhDs and fellows.
- 4.2 Work with the existing Haemato-Oncology team to develop effective collaborations with clinical units and basic science laboratories within the region and more widely to optimise performance.
- 4.3 Contribute to laboratory housekeeping and management duties.
- 4.4 Assume responsibility of the Haemato-oncology team in the absence of senior team members.

## **INDICATIVE PERFORMANCE CRITERIA**

- Emerging track record of publishing research in high-quality journals.
- Other forms of externally recognised professional practice or creative output, of a standing equivalent to regular publication of original research.
- Pursuing a line of high-quality scholarly research appropriate to the project.

## **4. Person Specification**

### **Essential Criteria**

1. Educated to doctoral level, or other equivalent qualification, or appropriate level of experience, as appropriate to the discipline (see role-specific criteria below).
2. Evidence of engagement in high-quality, productive, research activity.

3. Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.
4. Ability to work both as a team and independently. Self-starters with a desire to use their own initiative to contribute to the development of this project are particularly encouraged to apply
5. Desire to contribute to a dynamic and collaborative interdisciplinary research environment.
6. Desire to gain computational biology expertise.
7. Ability to exercise a degree of innovation and creative problem-solving.
8. Excellent organisational skills.
9. Ability to prioritise and meet deadlines.

#### **Essential Role-Specific Criteria**

1. Postgraduate degree at Doctorate level, or other equivalent qualification.
2. Evidence of a competence in a wide range of laboratory-based skills including those associated with culturing and analysing tumour cells.
3. Evidence of successful collaboration as part of interdisciplinary teams.
4. Evidence of critical thinking and strong analytical skills.

#### **Desirable Criteria**

1. Experience of working with human tissue and HTA regulation
2. Experience of Flow cytometry.
3. Experience in laboratory housekeeping.
4. Experience writing computer programs.
5. Experience with quantitative/mathematical biology.