

## 1 Advertisement

**Post Title:** Postdoctoral Research Fellow – Validating a new combinatorial approach for Palbociclib to target triple-negative breast cancer

**School/department:** Genome Damage and Stability Centre, School of Life Sciences

**Hours:** full time, core hours 10am-4pm. Requests for [flexible working](#) options will be considered (subject to business need).

**Contract:** fixed term until 13 March 2025

**Reference:** 9792

**Salary:** starting at £35,333 to £42,155 per annum

**Placed on:** 20 September 2022.

**Closing date:** 07 October 2022. Applications must be received by midnight of the closing date.

**Expected Interview date:** TBC

**Expected start date:** 01 December 2022

The [School of Life Sciences](#) at the University of Sussex is at the forefront of research in the UK. In the recent Research Excellence Framework assessment (REF 2021), 100% of our [Impact cases](#) in Biological Sciences and Chemistry were rated as world-leading or internationally excellent. The School has received substantial recent University investment and is embarking on an exciting and extensive, multi-million pound refurbishment and improvement project.

Based in the School of Life Sciences, the Genome Damage and Stability Centre (<http://www.sussex.ac.uk/gdsc/>), is an internationally renowned Institute carrying out research on the response of cells to DNA damage, genome instability and its relationship to disease. We provide a stimulating and supportive environment and our expertise covers a range of experimental systems.

We wish to appoint a postdoctoral fellow, funded by a Catalyst Award from Breast Cancer Now, starting Dec 1<sup>st</sup> 2022 to analyse a new signalling pathway that synergises with Cdk4/6 and could be exploited therapeutically in triple negative breast cancer cells.

Cdk4/6 inhibitors such as Pfizer's Palbociclib have been successfully employed to treat ER positive breast cancer. However, the most aggressive types of breast cancer do not respond well to Palbociclib and even cancer types that do respond often develop resistance to the treatment. This necessitates new combinatorial strategies to treat this pathway more effectively. This project will investigate a novel pathway that acts in parallel to Cdk4/6 in early G1 phase to uncover basic mechanisms and design therapeutic strategies for triple negative breast cancer patients.

Candidates must have experience in human cell culture, CRISPR-Cas9-mediated genome editing and be familiar with basic data science approaches (Python, Matlab) and the analysis of high throughput imaging data. They should have a strong

background in cell cycle control with evidence of independence and productivity (first authorship publication). This post is funded for 3 years.

Applications should be accompanied by a full CV, a statement of research interests and aspirations (up to a total of 4 pages), and the names of two academic referees. Informal enquiries are welcome and should be sent to Dr. Helfrid Hohegger at [hh65@sussex.ac.uk](mailto:hh65@sussex.ac.uk). *before applying*

The School of Life Sciences is committed to increasing the diversity of its staff and providing an inclusive working environment. The School currently holds an Athena SWAN Silver Award, has developed a Race Equity Action Plan and hosts an active Equality, Diversity and Inclusion working group.

Applications are particularly welcomed from Black and minority ethnic candidates, and women, trans and non-binary candidates, who are under-represented in the School of Life Sciences.

Applications to posts from candidates who wish to work part-time or as job-sharers are welcome.

The University offers various schemes to provide real benefits to parents, these can be found at [Family Friendly Policies](#)

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.

*“Please note that this position may be subject to [ATAS clearance](#) if you require visa sponsorship.”*

For full details and how to apply see our [vacancies page](#)

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

**Please note: The University requires that work undertaken for the University is performed from the UK.**

## 2. The School of Life Sciences

The [School of Life Sciences](#) has a mission statement to understand the mechanisms that drive biological and chemical processes; to develop innovative and diverse approaches to enhance human health, technology and the environment. It undertakes research, teaching and engagement across a wide range of the Life Sciences, from Chemistry through a range of biological and medically-related areas to Conservation Biology. The breadth and depth of cutting-edge research and innovative teaching practice requires a diverse community who work across boundaries to deliver excellence. Multidisciplinarity is a key strength at Sussex,

and the School of Life Sciences is part of two collaborative cross-School funded Strategic Research Programmes: Sussex Neuroscience (SN) and the Sussex Sustainability Research Programme (SSRP). Sussex Neuroscience brings together broad-ranging neuroscience approaches from the Schools of Life Sciences, Psychology, Engineering and Informatics, as well as the Brighton and Sussex Medical School. SSRP brings together Life Sciences, Global Studies and the University of Sussex Business School to address the United Nations sustainable development goals.

The School of Life Sciences is the largest in the University in terms of research activity, with an annual research income of around £13 million. The School has a teaching and research faculty of around 90, over 140 research staff, and an administrative team of around 20. The School is structured into five Departments led by a Head of Department. These are Biochemistry & Biomedicine, Genome Damage and Stability Centre, Neuroscience, Evolution, Behaviour & Environment and Chemistry, working closely with the Sussex Drug Discovery Centre. The Head of School Professor Sarah Guthrie leads the Head of School Executive, which includes two Deputy Heads of School (one focussed on research and enterprise, the other on education), the School Administrator and the Director of Technical Services. Wider School organisation and administration is overseen by the School Management Committee, which includes the Heads of Departments and others in Directorship roles.

Our School aims to develop scientists that are able to connect with global issues and develop innovative solutions to the challenges that face the planet. We therefore work to ensure that our research positively impacts our local community, the economy and society as a whole. We have and continue to develop relationships with business, policy and community partners ranging from local SMEs to large scale multinational organisations. Academics, researchers, and students at all levels are encouraged to engage with non-academic partners through activities such as technology and skills sharing, licencing IP, contract research or consultancy, working closely with colleagues in the Sussex Innovations and Business Partnership team.

In the recent Research Excellence Framework (REF2021), 90.6 % of our Biological Sciences outputs and 84.8% of our Chemistry outputs were rated as world-leading or internationally excellent. In both areas, 100% of our [Impact cases](#) were rated as world-leading or internationally excellent. We are proud that our research has diverse impact that includes enabling and enhancing diagnosis of cancer and rare genetic diseases, using novel chemical methods to produce new medicines, saving endangered species, influencing policy and practice in pesticide use to protect bees and establishing conservation, economic and health initiatives in Papua New Guinea and Ecuador.

Our vibrant post-graduate research community is made up of around 130 PhD students who are key to our success, undertaking cutting-edge research across all our areas of interest in the Life Sciences. We are part of a number of cross-School and multi-partner PhD programmes: the Sussex Neuroscience PhD programme, 2 Leverhulme-funded Doctoral Scholarship programmes (*Sensation and Perception to Awareness* and *Biomimetic Embodied AI*), the UKRI funded *UK Food Systems* Centre for Doctoral Training and the BBSRC *South Coast Biosciences (SoCoBio)* Doctoral Training Partnership.

The School's teaching is firmly based on our research excellence and offers students an intellectually stimulating and supportive experience, with opportunities for personal research experience and use of modern technology to enhance learning. The School has a population of around 1500 undergraduates studying a [range of subjects](#) across the School's expertise. For each degree we offer a 3-year BSc and a 4-year integrated Masters (MSci or MChem). We also offer a Life Sciences Foundation Year, which is ideally suited for students whose A-level (or equivalent) qualifications don't meet the requirements for direct entry on to our

BSc/MSci degrees. We have a population of around 85 postgraduate taught students undertaking MSc or MRes courses across our subject expertise. The School is committed to the University's core values of kindness, integrity, inclusion, collaboration and courage. The Equality, Diversity and Inclusion Committee (with representation on the School Management Committee) promotes and encourages our values across the School, championing initiatives that meet the University's goals of being Equal, Diverse, Accessible and Flexible. We currently hold an Athena SWAN Silver Award and have a BAME Awarding Gap Committee who closely liaise with the University's Race Equality Charter committee. The School also hosts a wellbeing room and a multi-faith prayer room within its estate and the University supports the Trans Rights are Human Rights UK initiative. We believe that equality, diversity and inclusion is everyone's business and aim to provide a friendly and supportive environment for all who work, study and visit the School of Life Sciences.

## CORE JOB DESCRIPTION

<b>Job Title:</b>	Research Fellow in <b>Cell Cycle Control/Cancer</b>
<b>Grade:</b>	Research Fellow I, Grade 7
<b>School:</b>	School of Life Sciences
<b>Location:</b>	Genome Damage and stability Centre
<b>Responsible to:</b>	Principal Investigator through to Head of School
<b>Direct reports:</b>	n/a
<b>Key contacts:</b>	Members of research group, members of faculty within the School and University.
<b>Role description:</b>	Research Fellow I is an early career-grade research position. Post-holders will be expected to contribute to the work of the research team, and also to develop their research skills with support from more experienced members of staff.

---

## PRINCIPAL ACCOUNTABILITIES

1. To engage in individual and/or collaborative research activity resulting in high-quality publications; and to develop research funding and knowledge exchange income individually or in collaboration with others, as appropriate, depending on the size and scope of the bid.
2. To contribute to School teaching activities.

## **KEY RESPONSIBILITIES**

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

- 1.1 Develop research objectives and proposals for own or joint research, at acceptable levels, with assistance if required.
- 1.2 Conduct research projects individually and in collaboration with others.
- 1.3 Analyse and interpret research findings and draw conclusions on the outcomes.
- 1.4 Produce high-quality research outputs for publication in monographs or recognised high-quality journals, or performance/exhibition, as appropriate, and contribute to the School's REF submission at acceptable levels of volume and academic excellence.
- 1.5 Contribute to the preparation of proposals and applications to external bodies, for example for funding purposes.
- 1.6 Individually or with colleagues, explore opportunities for enterprise activity, knowledge exchange income and/or consultancy, where permissible.
- 1.7 Build internal contacts and participate in internal networks and relevant external networks in order to form relationships and collaborations.
- 1.8 Continually update knowledge and understanding in field or specialism, and engage in continuous professional development.

### **2. Teaching & Student Support**

- 2.1 Undertake teaching duties, if required.
- 2.2 Assist in the assessment of student knowledge and supervision of student projects if required.
- 2.3 Assist in the development of student research skills, for example as part of a postgraduate supervision team.

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

- 3.1 Attend and contribute to relevant School and project meetings.
- 3.2 Undertake additional duties, as required by the Principal Investigator and/or Head of School.

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

- 4.1 To perform genetic manipulation of human cells using CRISPR/Cas9 genome editing, shRNA and siRNA.
- 4.2 To perform phenotypic analysis using FACS and high throughput single cell assays

- 4.3 To set up and analyse genetic screens and phospho-proteomic experiments
- 4.4 To work with imaging analysis workflows using Python/Matlab scripts
- 4.5 To generate recombinant proteins and set up biochemical assays
- 4.6 To keep up with relevant scientific literature and maintain an accurate and complete record of lab work.
- 4.7 To progress the specific project to a level appropriate for publication in a timely manner.
- 4.8 To present results in lab meetings, internal seminars and, if appropriate, externally at international meetings
- 4.9 To supervise junior lab members as well as final year project and Msc students.
- 4.10 To contribute to annual science outreach activities where appropriate.

This Job Description sets out current duties of the post that may vary from time to time without changing the general character of the post or level of responsibility entailed.

## **INDICATIVE PERFORMANCE CRITERIA**

- A PhD or equivalent scholarly or relevant professional activity
- Pursuing a line of independent research within a research group.
- Publishing research (either from a recently completed PhD or new original research).
- Other forms of externally recognised professional practice of creative output of a standing equivalent to regular publication of original research.
- Initiating, developing or participating in links between the University and external bodies such as business and industry, the professions, community organisations and policy-makers.
- Evidence of successful engagement in teaching or supervision.

## **PERSON SPECIFICATION**

### **ESSENTIAL CRITERIA**

1. Normally 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 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 individually on own initiative and without close supervision, and as part of a team.
5. Ability to exercise a degree of innovation and creative problem-solving.
6. Excellent organisational and administrative skills.
7. Ability to prioritise and meet deadlines.
8. Excellent IT skills.

### **ESSENTIAL ROLE-SPECIFIC CRITERIA**

1. Experience in human tissue culture and genome editing techniques
2. Experience in analysing complex data sets (imaging data, mass spectra, sequencing data) using state of the art data science tools (Python and/or Matlab), as well as commonly used software packages (ImageJ, MS Office, Adobe Illustrator)
3. Significant experience in a broad range of molecular biology skills.
4. Proven ability to develop new skills and set up new techniques.
5. Professional presentation of data.
6. Excellent oral and written communication skills.
7. Ability to drive a research project and prepare high-quality figures, images, and scientific papers.
8. First author paper in a cell cycle control related field published or in press

### **DESIRABLE CRITERIA**

1. Emerging track record of high-quality publications in reputable journals and other appropriate media of similar standing.
2. Experience of generating research or knowledge exchange income.