



**Faculty of Science**

**School of Pharmacy & Biomedical Sciences**

**SENIOR RESEARCH ASSOCIATE**

**(3 year fixed term contract)**

**ZZ004121**

**Information for Candidates**

**THE POST**

Please see the attached job description and person specification.

**TERMS OF APPOINTMENT**

Salary is in the range from £29,301 to £32,958 and progress to the top of the scale is by annual increments payable on 1 September each year. Salary is paid into a bank or building society monthly in arrears.

Working hours are 37 per week and are usually worked between 8.30 am and 5.15 pm Monday to Thursday and between 8.30 am and 4.15 pm on Friday with one hour and ten minutes for lunch. As this post is research based, working hours will vary depending on the needs of the project so a flexible approach is required. Specific working hours will be agreed once an appointment has been made. Overtime is not normally payable but time off in lieu may be given.

Annual leave entitlement is 35 working days in a full leave year. The leave year commences on 1 October and staff starting and leaving during that period accrue leave on a pro-rata basis. In addition, the University is normally closed from Christmas Eve until New Year’s Day inclusive and on bank holidays.

The Appointee will be entitled to join the Local Government Pension Scheme. The scheme's provisions include a final salary based, index-linked pension with an option to exchange some pension for a lump sum on retirement together with dependants’ benefits. Contributions by the employee are subject to tax relief.

There is a probationary period of six months during which new staff are expected to demonstrate their suitability for the post.

There is a comprehensive sickness and maternity benefits scheme.

**All interview applicants will be required to bring their passport or full birth certificate and any other 'Right to Work' information to interview where it will be copied and verified.** The successful applicant will not be able to start work until their right to work documentation has been verified.

Under the University’s Insurance Policy we will take up references for candidates called for interview. Your current employer reference must be your current line manager. It is also a requirement of this policy that we take up references to cover the previous three years of your employment or study.

The successful candidate will need to bring documentary evidence of their qualifications to Human Resources on taking up their appointment.

To comply with UKVI legislation, non-EEA candidates are only eligible to apply for this post if it has been advertised for a total of 28 days.

If the position has a requirement for Disclosure and Barring Service check (DBS), this will be stated in the advert. The DBS Application Form will be provided once the selection process has been completed.

All applications must be submitted by Midnight (GMT) on the closing date published.

**UNIVERSITY OF PORTSMOUTH – RECRUITMENT PAPERWORK**

1. **JOB DESCRIPTION**

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| **Job Title:** | Senior Research Associate |
| **Grade:** | 6 |
| **Faculty/Centre:** | Science/Pharmacy & Biomed Sciences/IBBS |
| **Department/Service:**  **Location:** | Brain Tumour Research Centre |
| **Position Reference No:** | ZZ004121 |
| **Cost Centre:** | 17091 |
| **Responsible to:** | *Professor of Cellular & Molecular Neuro-oncology, Head of BTR Centre* |
| **Responsible for:** | *None* |
| **Effective date of job description:** | 20 June 2017 |

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| **Purpose of Job**: |
| Working autonomously with instruction from the research leader ultimately responsible for the project, (or group of studies), to carry out research analysing data, developing new evaluation methods and determining how best to apply them. Responsible for regularly managing elements of the project in line with the project terms of reference.  *The research project:* **Developing a high throughput 3D all-human *in vitro* model of in the brain microenvironment for screening re-purposed and re-formulated drugs for the treatment of glioblastoma** *involves:*  *Growing a range of different human brain cells under defined media conditions with human serum supplementation and in different cellular combinations along with neoplastic cells derived from patient brain tumour biopsies in order to generate models for therapeutics testing. Subsequent testing of newly developed, repurposed and reformulated drugs or nano-formulations will be carried out.*  *Background:*  Glioblastoma (GBM) encompasses a range of highly malignant, invasive primary brain tumours arising in both children and adults where it is the most common primary brain tumour and carries a mean survival period of some 15 months. The current approach of treating these tumours through a combination of surgery, radiotherapy and DNA alkylating cytotoxic drug therapy has brought only a modest increment in survival and quality of life. The major biological obstacles to successful treatment which have to be overcome are; the propensity of GBM cells to diffusely invade the normal brain, the cellular heterogeneity of GBM reflecting a mixed population of both drug/radiation sensitive and resistant tumour cells and the passage of suitable therapeutics into the brain via the blood brain barrier (BBB) which protects the brain from possible toxic insults but constitutes a barrier to many effective anti-cancer agents. In addition to these factors, the brain, and indeed, the tumour itself have regions which differ markedly in oxygen concentration, a factor which can influence tumour metabolism and the response of tumour cells to various therapeutic agents. Moreover, GBM cells have been shown to communicate with non-neoplastic cells such as microglia (which incredibly can compose up to 50% of the tumour cell population) and astrocytes and these cells can exert a major effect on the tumour’s response to therapy.  We have recently developed a series of dynamic 3D all human *in vitro* models of the BBB which reflect the properties of the barrier *in situ* within the brain and can be used for live cell imaging of blood flow reflecting the different diameter blood vessels within the brain. These models, which are constructed of human endothelial cells, human astrocytes, human pericytes, human serum and human proteins, are currently being used in our laboratories to investigate breast and lung cancer metastasis to the brain as well as delivery of therapeutic agents into the tumour but, more importantly, into areas away from the main tumour mass where rogue, invasive GBM cells are protected by the regions of intact BBB in which they are invested.  Over the past few years, we have put together a list of re-purposed drugs (previously used to treat conditions other than brain tumour) and re-formulated drugs (altered so as to enable them to become more ‘bioavailable’ i.e. permit a greater, or therapeutically appropriate, level of the agent into the brain) which show considerable promise in the treatment of GBM. We are evaluating these using current monolayer and colony/spheroid based assays of GBM cells alone which are tested against non-tumour cells.  Although we can test the delivery of such agents through our state of the art human BBB cellular models we now wish to produce some all human multicellular 3D all human models composed of GBM cells, microglia and non-neoplastic astrocytes for testing our panel of re-purposed and re-formulated drugs under more realistic ‘brain micro-environment’ conditions. In addition, we are able to grow these living 3D systems under different oxygen conditions to reflect he possibility of regional differences in drug response.  The new postdoctoral researcher will join a small team within the University of Portsmouth Brain Tumour Research Centre led by the Head of the Centre who has vast experience in brain tumour invasion studies and with two existing Research Fellows who have experience in 3D human modelling and drug treatment of GBM respectively. The new postdoctoral researcher will be responsible for intellectual molecular/genetic input to the project and will learn/undertake a wide age of techniques from within the Centre’s very well-equipped histology, cellular, molecular, and metabolic laboratories and microscope imaging suite. The project also builds upon an established research collaboration with the University of Cardiff where two joint PhD students are currently working on related projects. Through the research programme we hope to establish new models for pre-clinical testing which will enable us to fast track re-purposed and re-formulated agents into clinical trials for GBM as well as provide a more accurate means to establish drug sensitivity in GBM to both nuclear and mitochondrial targeted therapies.  *Funding:*  The Senior Research Associate, postdoctoral researcher will be funded by a grant from the *Jake McCarthy Foundation* for a period of three years. |

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| **Key Responsibilities:** |
| 1. To present research project findings to a variety of stakeholders and to write reports for research papers to be submitted for publication 2. To carry out day to day cellular and molecular studies on human biopsy-derived cells 3. To present poster and talks at local, national and international conferences.   **Additional expectations of the role holder**   1. In line with the research project aims and objectives, the role holder is required to plan, prioritise and organise their own workload, regularly managing the progress of elements of the research project 2. To communicate with team members and liaise and network with relevant others, ensuring effective working relations 3. To attend team meetings when required providing relevant and timely information, in order to aid decision making 4. To solve problems that may occur during the length of the research project using guidelines or a set of procedures 5. To analyse research data and develop new evaluation methods. On occasions may select existing methodologies determining when they should be applied 6. Can assist with supervising a research student 7. Can deliver introductory workshops to students on topics such as research methods 8. To participate in and contribute to a performance & development review (PDR), ensuring that work produced is in line with the Department/Faculty/University aims 9. To comply with the University's Health and Safety Policy and pay due care to own safety and the safety of others. Report all accidents, near misses and unsafe circumstances to line management 10. Any other duties as required by the Principal Investigator, Professor Pilkington |

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| **Working Relationships:** |
| 1. Managed by the Principal Investigator, Professor Pilkington 2. Networking with other researchers in the team and with research collaborators (Dr Samantha Higgins and Dr Samantha Murray) possibly external to the university (eg staff at the University of Cardiff) 3. Liaising with research colleagues and support/technical staff on day-to-day issues 4. Working with and sometime supervising research student operating in the same laboratories |

**PERSON SPECIFICATION**

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| **No** |  | **Rating** | **Source** |
| **1.** | **Specific Knowledge & Experience** |  |  |
|  | Research experience of collecting qualitative data | E | S |
|  | Cell culture | E | S |
|  | Ongoing research experience in Neuro-oncology or related field | E | AF |
|  | Cellular and molecular biology | E | AF |
|  | Published works | E | AF |
| **2.** | **Skills & Abilities** |  |  |
|  | Ability to predict and solve problems when they occur | E | S |
|  | Ability to plan, organise and prioritise workloads | E | S |
|  | Good Communication and Interpersonal skills | E | S |
|  | Good report writing skills | E | AF |
|  | Statistical data analysis skills | E | S |
|  | Presentation skills | E | S |
|  | Project Management skills | D | AF |
| **3.** | **Qualifications, Education & Training** |  |  |
|  | Postgraduate qualification in Oncology/Neuroscience or relevant experience | E | AF |
|  | Completed PhD in relevant subject | E | AF |
| **4.** | **Other Requirements** |  |  |
|  | Ability to work with minimum supervision | E | S |
|  | Ability to work on own initiative and as part of a team | E | S |
|  | Creative, highly motivated and committed to undertaking research | E | S |
|  | Ability to work to tight deadlines | E | S |

**Legend**

Rating of attribute: E = essential; D = desirable

Source of evidence: AF = Application Form; S = Selection Programme (including Test, Presentation, References)

**JOB HAZARD IDENTIFICATION FORM**

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| **Please tick box(s) if any of the below are likely to be encountered in this role. This is in order to identify potential job related hazards and minimise associated health effects as far as possible. Please use the** [**Job Hazard Information**](http://www.port.ac.uk/departments/services/humanresources/recruitmentandselection/informationforrecruiters/essentialinformationandformsforrecruiters/) **document in order to do this.** | | | |
| 1. International travel/Fieldwork | X | 13. Substances to which COSHH regulations apply (including microorganisms, animal allergens, wood dust, chemicals, skin sensitizers and irritants) | X |
| 1. Manual Handling (of loads/people) |  | 14. Working at height |  |
| 1. Human tissue/body fluids (e.g. Healthcare workers, First Aiders, Nursery workers, Laboratory workers) | X | 15. Working with sewage, drains, river or canal water |  |
| 1. Genetically modified Organisms |  | 16. Confined spaces |  |
| 1. Noise > 80 DbA |  | 17. Vibrating tools |  |
| 1. Night Working   (between 2200 hrs and 0600 hrs) |  | 18. Diving |  |
| 1. Display screen equipment (including lone working) |  | 19. Compressed gases | X |
| 1. Repetitive tasks (e.g. pipette use, book sensitization etc) | X | 20. Small print/colour coding |  |
| 1. Ionising radiation/ non-ionising radiation/lasers/UV radiation | | 21. Contaminated soil/bioaerosols |  |
| 10. Asbestos and lead | | 22. Nanomaterials | |
| 11. Driving on University business (mini-bus, van, bus, forklift truck etc) | | 23. Stress | |
| 12. Food handling | | 24. Other (please specify) | |

**Completed by Line Manager/Supervisor:**

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| **Name (block capitals)** | Professor Geoff Pilkington |
| **Date** | 20 June 2017 |
| **Extension number** | 2116 |

Managers should use this form and the information contained in it during induction of new staff to identify any training needs or requirement for referral to Occupational Health (OH).

Should any of this associated information be unavailable please contact OH (Tel: 023 9284 3187) so that appropriate advice can be given.