

**Job Description: Leverhulme Trust Postdoctoral Research Officer**

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| **Faculty:** | **Medicine, Health and Life Science** |
| **Department/Subject:** | **Biological Chemistry and Molecular Microbiology**  |
| **Salary:** | **Grade 8: £38,205 per annum together with USS pension benefits** |
| **Hours of work:** | **35 per week (1.0 FTE)** |
| **Number of positions:** | **1** |
| **Contract:** | **This is a fixed term position for 3 years** |
| **Location:** | **This position will be based at the Singleton Campus** |

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| **Introduction** | **Understanding the functional importance of primary metabolism in giant viruses**This Leverhulme Trust funded research project between Swansea University, University of Liverpool and University of Exeter will use powerful model systems for studying extended manipulation of host-giant virus metabolic interactions and provide a unique view into the molecular aspects of the giant viruses, an extremely understudied portion of the Earth’s ecosystems. Giant viruses occur in freshwater, terrestrial, and shallow- and deep-marine systems. Scientific evidence has shown that giant viruses can “circulate the planet”, emphasising our need for greater understanding of these viruses and how they affect the Earth’s ecosystems. For example, giant viruses impact on the fitness of algae, cyanobacteria and plankton which produce more than 70% of the oxygen we breathe and absorb 50% of the carbon dioxide and methane from the atmosphere (major contributors to climate change). How giant viruses manipulate their hosts is not understood, and this is perhaps not surprising as these are relatively newly detected viruses (discovered only in 2003). The detection of the viral primary metabolic genes is unique in biology and runs contrary to our traditional view of virus biology. The successful candidate will discern how giant viruses parasitise and reprogram the metabolism of the host cell and how their enzymes contribute to viral biology including energetic metabolic system(s). This project will completely transform our understanding of viruses in biology and their evolution and expand further knowledge regarding the Earths’ ecosystem processes e.g. nutrient recycling and driving species biodiversity. This will impact our understanding of the dynamics of wider ecological systems and processes within which such viruses exist – e.g. photosynthesis and oxygen production – on which life on our planet depends.  |
| **Background Information** | Applications are invited for a postdoctoral research assistant to deliver a Leverhulme Project Grant based at Swansea University with Professors David Lamb and Steven Kelly and working with Professor Roy Goodacre, University of Liverpool and Professor Mike Allen, University of Exeter. The successful candidate will benefit from collaborations with project partner Professor Bernard La Scola, Head of Microbes Evolution Phylogeny and Infection (MEPHI) research group, Aix-Marseille University, France. The post-holder will be experienced in biological chemistry and molecular microbiology with broad skill range in bioanalytical assays including microbial culturing, mass spectrometry-based metabolomics and data interpretation.The successful candidate will be encouraged and supported to pursue career development opportunities. From the outset the postholder will set a culture that is inclusive and demonstrably aligns to the University’s culture, behaviours, and values. |
| **Main Duties**  | (Please list the Faculty / department specific responsibilities)1. Prepare maintain and analyse microbial and giant virus cultures.
2. To develop and apply your laboratory skills in metabolite extractions and mass spectrometry.
3. Assist in the gathering and analysing of metabolomic data from microbial cells and giant viruses with a focus on primary metabolism.
4. To undertake molecular biological research e.g. DNA analysis, PCR, genetic complementation and recombinant protein production and enzymatic assays.
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|  | 1. Pro-actively contribute to and conduct research, including gather, prepare and analyse data, generate original ideas and present results.
2. Prepare reports, draft patents and papers describing the results of the research, both confidential and for publication.
3. Be self-motivated, apply and use their initiative, aiming to determine suitable ways to tackle challenges and seeking guidance when needed
4. Interact positively and professionally with other collaborators and partners within the Faculty and elsewhere in the University to support the goals of the project.
5. Contribute to Faculty organisational matters in order to help it run smoothly and to help raise its external research profile.
6. Keep informed of developments in the field in technical, specific and general terms and their wider implication for the discipline area, commercial applications and the knowledge economy.
7. Demonstrate and evidence own professional development, identifying development needs with reference to the Vitae Researcher Development Framework, particularly with regard to probation, PDR and participation in training events.
8. Maintain and enhance links with the professional institutions and other related bodies.
9. Observe best-practice protocols in maintenance and retention of research records as indicated by HEI and Research Councils records management guidance.  This includes ensuring project log-book records are deposited with the University/Principal Investigator on completion of the work.
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| **General Duties** | 1. To promote equality and diversity in working practices and maintain positive working relationships
2. To conduct the job role and all activities in accordance with safety, health and sustainability policies and management systems, in order to reduce risks and impacts arising from the work activity
3. To ensure that risk management is an integral part of any decision making process, by ensuring compliance with the University’s Risk Management Policy.
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| **Person Specification** | **Essential criteria:** 1. A PhD in Biochemistry/Molecular Microbiology
2. Evidence of the ability to actively engage in and contribute to writing and publishing research papers, particularly for refereed journals.
3. A demonstrable ability to conduct research in line with the objectives of the project
4. Evidence of planning skills to contribute to the successful delivery of this collaborative research project
5. Demonstrate experience in biological chemistry and molecular microbiology: experience in bioanalytical assays including metabolite extraction for mass spectrometry-based metabolomics and data interpretation.
6. A commitment to continuous professional development

**Welsh Language:** *(Delete as applicable)*Level 1 – ‘a little’ (you do not need to be able to speak any welsh to apply for this role)For more information about the Welsh Language Levels please refer to the Welsh Language Skills Assessment web page, which is available [here](https://www.swansea.ac.uk/welsh-language-standards/compliance/recruitment/).**Desirable Criteria**1. A PhD in Biochemistry/Molecular Microbiology.
2. The ability to work as part of a team.
3. Flexibility to adapt quickly and efficiently to changing working practices.
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| **Additional Information** | Informal enquiries: Professor David Lamb (d.c.lamb@swansea.ac.uk) or Professor Steven Kelly (s.l.kelly@swansea.ac.uk). |

  