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**Job Description: Research Assistant- Chemical Biologist**

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| **Faculty:** | ***Science and Engineering*** |
| **Department/Subject:** | ***Biosciences*** |
| **Salary:** | *Grade 7: £33,882-£37,99 per annum pro rata* |
| **Hours of work:** | **Full time** |
| **Number of positions:** | ***1*** |
| **Contract:** | **This is a fixed term position until 30/09/2028** |
| **Location:** | **This position will be based at the Singleton Campus** |

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| **Main Purpose of Post** | The **Natural Products BioHUB Centre (NPB-Centre)**, a transdisciplinary hub centred in the Biosciences Department at Swansea University (SU), is one of the UKRI Accelerating the Green Economies Centres. Our mission is to harness the industrial potential of eukaryotic microbes fostering interdisciplinary collaboration. The Centre addresses the rapidly growing market for microbial natural products, which includes antimicrobials, organic acids, and agricultural applications.    The NPB-Centre utilizes existing research capabilities and innovative business models to streamline the journey from discovery to commercialization. This includes focusing on developing algal biotechnological application and natural product discovery. The goal is to research natural products, develop innovative processes, overcome regulatory challenges and facilitate the commercial viability of new products, driving green technology innovation and supporting global sustainability. The NPB Centre will leverage the interdisciplinary expertise of SU, the Centre for Agriculture and Biosciences International (CABI) and the Scottish Association for Marine Science (SAMS), along with established industrial collaborations. The NPB Centre is supported by UK Research and Innovation (UKRI) Building a Green Future strategic theme grant number UKRI239.    Operational strategies of the NPB-Centre include collaborative outreach, organism exploitation, research and development of organisms and processes, and advanced testing, analytical and screening platforms. These efforts are supported by significant infrastructure to promote sustainable economic development. The Centre aims to attract private investment, enhance local capabilities, and foster the widespread adoption of green economy solutions. By excelling in green biotechnology R&D, the NPB-Centre is committed to delivering substantial economic and environmental benefits, creating green jobs, and ensuring regional prosperity.  We are seeking a highly motivated and skilled Research Assistant in Chemical Biology to focus on natural product discovery. Genomics experience would be an advantage. The successful candidate will work at the interface of genomics, metabolomics, and bioinformatics to discover and identify novel bioactive compounds from fungi and algae. They will conduct research to cultivate, extract, and analyse natural products. The role also involves application of in silico methods e.g. to study interactions between insect odour-binding proteins and chemical structures for developing insect lures and repellents. The ideal candidate will have expertise in natural product chemistry and bioinformatics, with hands-on experience in culturing microbes, ideally, but not essential fungi and/or algae, chemical extraction, and metabolomics.  The role involves interaction with industrial partners as part of the NPB Centre team to develop funded research programmes. Awareness of working with industrial partners and related funding landscapes or willingness to learn would be an advantage. |
| **Main Duties** | Main duties may include:   * 1. Perform bioinformatic analysis of natural product gene clusters to identify potential bioactive compounds.   2. Use molecular networking and integrative omics analysis tools to link genomic and metabolomic data, facilitating the discovery of novel compounds.   3. Apply state-of-the-art resources, such as NP Atlas and additional bioinformatics tools, to advance natural product research.   4. Cultivate various fungi and microalgae for natural product discovery.   5. Prepare chemical extracts for downstream metabolomic analysis, following standardized protocols to ensure reproducibility and quality.   6. Conduct metabolomic analyses using HPLC and LCMS to profile and quantify chemical extracts.   7. Use advanced tools for metabolomic data analysis, including molecular networking and integrative omics, to identify patterns and link genomic data with metabolomic outcomes.   8. Apply data interpretation skills to elucidate complex interactions between chemical structures and biological targets.   9. Conduct in silico modelling and simulation studies to analyse interactions between insect odour-binding proteins and chemical structures.   10. Identify and predict compounds with potential repellent or lure properties through computational approaches.   11. Maintain and operate key instruments, ensuring calibration and operational readiness for high-precision analytics. |
|  | 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 and beyond as appropriate such as in industry/commerce, public organisations, hospitals and academia. 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. When requested act as a representative or member of committees, using the opportunity to extend their own professional experience. 8. 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. 9. Maintain and enhance links with the professional institutions and other related bodies. 10. 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. |
| **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. 4. Any other duties as agreed by the Faculty / Directorate / Service Area. |
| **Person Specification** | **Essential criteria:**   1. A Degree in chemistry, biochemistry, microbiology, genetics or related Biosciences degree or equivalent 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 research project. 5. Experience working with microbes and/or analysis of their metabolites. 6. Evidence of competence in molecular biology and/or bioinformatics 7. Willingness to work across projects in response to industry need and contribute to project development. 8. A commitment to teamworking to deliver the overarching goals of the Natural Products BioHUB Centre. 9. A commitment to continuous professional development   **Desirable Criteria**   1. A PhD in chemistry, biochemistry, microbiology, genetics or related Biosciences 2. An understanding of working at the academia/industry interface in a research context. 3. Experience working on the discovery and/or development of natural products. 4. Evidence of maintaining and running analytical equipment as part of a team. |
| **Welsh Language Level** | Level 1 – ‘a little’ - pronounce Welsh words. Able to answer the phone in Welsh (good morning / afternoon). Able to use very basic every-day words and phrases (thank you, please etc.). Level 1 can be reached by completing a one-hour training course.  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/). |
| **Additional Information** | Informal enquiries:  Eva Sonnenschein – [e.c.sonnenschein@swansea.ac.uk](mailto:e.c.sonnenschein@swansea.ac.uk) and Dan Eastwood - d.c.eastwood@swansea.ac.uk |

  