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| **JOB DESCRIPTION** |
| **SPECIFIC JOB TITLE** | SCIENTIFIC LITERATURE BIOCURATOR |
| **GENERIC ROLE TITLE** | POSTDOCTORAL RESEARCH SCIENTIST |
| **LEVEL/GRADE** | D |
| **JOB FAMILY** | SCIENCE |
| **CONTRACT TYPE** | Fixed until March 2028 |
| **HOURS** | Part time - 15 hours per week |
| **REPORTS TO** | Discovery leader |
| **DEPARTMENT** | PCE |
| **LOCATION** | Harpenden |
| **DATE**  | 04/11/2024 |
| **OVERVIEW OF ROLE/JOB PURPOSE** |
| The post holder will work as part of a team that maintains the contents of the **Pathogen-Host Interactions Database** (PHI-base) (<http://www.phi-base.org>), a publicly funded database that for over 20 years has catalogued experimentally verified pathogenicity, virulence and effector genes from fungal, bacterial and protist pathogens, which infect animal, plant, fish, insect and/or fungal hosts ( Urban et al. (2022) Nucleic Acids Research, doi 10.1093/nar/gkab1037). This knowledge base is used by research scientists investigating many different aspects of the health of humans, animals, cropped plant species, and ecosystems. The post-holder will work as a biocurator to curate new information into PHI-base from the peer-reviewed literature, and review information submitted to PHI-base by other researchers and professional curators. The main responsibilities of this role are:* **Literature curation:** curate information from publications on pathogen-host interactions and add this to PHI-base by using the PHI-Canto curation tool (<https://demo-canto.phi-base.org>), Cuzick et al., (2023) doi 10.7554/ eLife.84658
* **Ontology development:** define new concepts and improve existing concepts in the [Pathogen-Host Interaction Phenotype Ontology](https://www.ebi.ac.uk/ols4/ontologies/phipo) (PHIPO) and other ontologies developed by the PHI-base team. Also, reuse existing concepts from ontologies and controlled vocabularies developed by other teams (such as the Gene Ontology and the BRENDA Tissue Ontology).
* **Literature triage:** review monthly batches of publications suggested by our long-term subcontractor (Molecular Connections Pvt Ltd.) and select publications that should be curated by the subcontractor.
* **Curation review:** review the curation submitted by other curators from the pathogen-host research community (also using the PHI-Canto curation tool) and ensure quality control on the curation performed by Molecular Connections.
* **Curation training and knowledge exchange:** help to familiarise researchers from other teams in the UK and elsewhere with the PHI-Canto curation tool and the PHI-base curation process more generally. Share your experience with curation with other interested groups.

In addition, the post-holder will be responsible for presenting internally to colleagues and externally at scientific conferences, assisting with the preparation of grant applications and reports for UKRI and writing manuscripts for publication in a range of journals through peer review. The post-holder is expected to carry out the duties listed below, and any other duties reasonably required by the line manager or Institute, commensurate with the grade and level of responsibility for this post. |
| **MAIN DUTIES OF ROLE** |
| **Generic Outputs** | **Weighting** | **Description of Outputs**  | **Description of Job Specific Duties** |
| **UNDERTAKING THE RESEARCH** | 40% | Curation of information from publications, creation of ontology terms, evolution of the curation process and labelling of datasets for use by AI tools | * Curate information from the pathogen-host interaction literature using the PHI-Canto curation tool
* Manage the evolution of the PHI-base curation process in response to new directions in research and the overall priorities of PHI-base.
* Liaise with biocurators at Molecular Connections regarding monthly literature curation into PHI-base.
* Create new ontology terms and improve existing ontology terms in PHIPO and other PHI-base ontologies
* Apply labelling to information to improve its usefulness to AI curation tools.
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| **ANALYSIS, PRESENTATION AND PUBLICATION** | 30% | Publication of high-quality curated information, curation protocols, and manuscripts. Presentation of lessons learned and new developments.  | * Apply validation and cleaning to the information curated by curators from the research community and professional curators at Molecular Connections.
* Ensure that the provenance and curation status of curated data is properly recorded.
* Standardise, document, and publish the PHI-base curation process as a research protocol.
* Share findings from the curation process by participating in relevant conferences, societies, and focus groups.
* Write, or contribute to, manuscripts and publications for high-quality journals, plus annual reports and website content.
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| **FUNDING AND FINANCIAL MANAGEMENT**  | 5% | Contributions to funding proposals and raising awareness of funding opportunities. | * Contribute to funding proposals to the BBSRC and other funding bodies, either by providing information or as a named researcher.
* Be on the lookout for potential funding opportunities, or opportunities to partner with other groups on research grants.
* Where applicable, locate and target appropriate fellowship opportunities.
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| **WORKING WITH OTHERS**  | 10% | Participation in professional networks and collaboration with curators and data management professionals. | * Collaborate with curators in the research community and professional curators at Molecular Connections.
* Participate in a professional network of curators to look for opportunities where PHI-base could collaborate with other groups.
* Connect with data stewards and other professionals responsible for research data management at Rothamsted Research.
* Work closely with members of the PHI-base team to ensure the team’s work is aligned on a common purpose.
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| **LEADERSHIP AND MANAGEMENT** | 5% | Support for the PHI-base curation process and driving its wider adoption. Training of other curators. Recording of data provenance and quality assurance. | * Take the lead of the PHI-base curation process and its adoption by other interested research groups.
* Manage issues on issue trackers for the PHI-base organisation on GitHub, especially issues reported with the curation process and requests for new ontology terms.
* Take responsibility for recording the provenance and ensuring quality and accuracy of the curated information in PHI-base.
* Where applicable, be involved in the day-to-day guidance and training of additional team members, including any temporary assistant biocurators, and the curators at Molecular Connections.
* Comply with relevant legislation and regulation, especially concerning data protection, data licencing, and research integrity.
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| **KNOWLEDGE EXCHANGE, COMMERCIAL-ISATION AND OUTREACH** | 5% | Contributions to policies and procedures, sharing knowledge about the curation process, and informing the public and other external stakeholders about the project. | * Contribute to the development and delivery of policies and standard operating procedures, particularly regarding the curation process.
* Create and maintain a range of training materials for the curation process and act as a trainer to other curators.
* Present findings from the curation process, and the project more generally, to interested stakeholders (e.g. researchers and other curators) at national meetings or international conferences.
* Contribute to pre-selected public engagement activities (e.g. institute open days, science fairs, and school activities).
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| **CONTINUING PROFESSIONAL DEVELOPMENT** | 5% | Development of existing skills and acquisition of new skills. Gaining broader experience outside of your immediate role. | * Develop ideas of how your career can develop. Do appropriate tasks to acquire new skills beyond those of your specialism.
* Seek advice, guidance, coaching or mentoring from appropriate individuals.
* Seek out and maintain professional networks and relationships that may present opportunities for personal development.
* Seek appropriate opportunities to gain broader experience to enhance your employability outside your job family and the institute.
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| **Competencies**  |  | All stage 2  | * See Appendix
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| **PERSON SPECIFICATION AND SHORTLISTING CRITERIA\*** |
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| **LEVEL/GRADE** | D |
| **JOB FAMILY** | SCIENCE  |
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| **DEPARTMENT** | PCE |
| **LOCATION** | Harpenden |
| **EDUCATION/QUALIFICATIONS** | Essential | Desirable | How Tested?\*\* |
| 1. | PhD/doctoral degree in the appropriate field or discipline, or a foreign equivalent. | X |  | AF/Cert |
| 2. | BSc/MSc degree in the appropriate field or discipline, or a foreign equivalent. | X |  | AF/Cert |
| 3. |  |  |  |  |
| **EXPERIENCE/KNOWLEDGE/SKILLS** | Essential | Desirable | How Tested?\*\* |
| 1. | Proven experience of laboratory-based research in pathogen-host interactions including one or more species of relevance to PHI-base. | X |  | AF/IV |
| 2. | A good understanding of molecular genetic experimentation, including genomes, genes, proteins and different types of quantitative phenotyping.  | X |  | AF/IV |
| 3.  | Understanding of the process of biocuration, a proven ability to organise information systematically and methodically and a high attention to fine details. | X |   | AF/IV |
| 4. | Experience using ontology terms in curation processes and creating new ontology terms, and experience using ontology editing tools, such as Protégé. |  | X | AF/IV |
| 5. | Experience in retrieving information from other biological databases, especially UniProtKB, the NCBI Taxonomy database, and Ensembl Genomes. |  | X | AF/IV |
| 6. | Experience in data cleaning and data quality assurance, either manual review using Microsoft Excel (or similar), or using automated data cleaning pipelines. |  | X | AF/IV |
| 7. | Experience in writing manuscript drafts and the entire peer reviewing process. |  | X | AF/IV |
| 8.  | Ability to develop scientific outreach materials that are accessible to a wide range of audiences. Experienced in undertaking an active science role in one or more scientific outreach events. |  | X | AF/IV |
| 9. | Experience with using Git for version control and using issue trackers on GitHub (or their GitLab equivalent), to be able to contribute to the GitHub repositories used for the PHI-base project. |  | X | AF/IV |
| **BEHAVIOURS/COMPETENCIES** | How Tested?\*\* |
| 1. | **Drive for Quality**: Strive to ensure the accuracy and consistency of the information you curate. Have high personal standards for precision and correctness. | IV |
| 2. | **Strategic Thinking**: Seek an understanding of the overall goals of the PHI-base project and its connection to the strategic programmes of Rothamsted Research and the wider research field. Choose actions that align with these goals. | IV |
| 3. | **Creativity and Innovation**: Be open to new approaches and seek ways to improve your own working processes or the processes of the team. Have an ability to model information from the real world in various ways. | IV |
| 4. | **Developing Self and Others**: Maintain awareness of gaps in your knowledge and skills and pursue learning to fill these gaps. Distil and share relevant knowledge with the rest of the team.  | IV |
| 5. | **Professional Conduct**: Treat others with respect and try to understand their perspective. Take accountability for your actions. Understand and comply with existing policies regarding data protection and research integrity. | IV |
| 6. | **Productive Relationships**: Be able to work as part of a team, be open to collaboration and proactively communicate problems and concerns. | IV |
| 7. | **Effective Communication**: Be able to communicate clearly both to fellow researchers and non-scientists; be able to explain and document your thinking process and how it informs your work processes. | IV |
| **GENUINE OCCUPATIONAL REQUIREMENTS** | Essential | Desirable | How Tested?\*\* |
| 1. | UK valid driving licence, so that the driving of an institute pool car can be shared equitably when attending scientific events or scientific outreach events. |  | X | AF/IV |
| 2. |  |  |  |  |