

Candidate Information

Position:	Research Fellow, Bioinformatics (Future Medicines Institute)
School/Department:	Faculty Office MHLS
Reference:	25/112496
Closing Date:	Monday 12 May 2025
Salary:	£39,222 - £43,605 per annum.
Anticipated Interview Date:	Thursday 22 May 2025
Duration:	12 months

JOB PURPOSE:

The Future Medicines Institute (FMI) is a new industry-led research hub for Life and Health Sciences in Northern Ireland, hosted by Queen's University Belfast (QUB). Life and Health Sciences have been identified as one of the priority commercial sectors by the NI Executive, as well as the broader UK and Irish governments. A consortium of companies, along with both QUB and Ulster University, have developed a model to create this new translational research unit. The FMI will drive collaboration, cluster development and engagement, enhancing research and development opportunities for commercial and academic partners. This multi-million-pound investment in new research infrastructure and research personnel is the first of its kind in NI. The FMI will house over 50 QUB and partner staff and be located adjacent to the Patrick J Johnston Centre for Cancer Research, the Wellcome Wolfson Institute for Experimental Medicine and the School of Pharmacy at QUB. The FMI will be funded by the Department of Economy, Northern Ireland, for an initial 5 years, and managed as a UKRI Strengths in Places Fund project as part of the existing UKRI Strength in Places Fund programme. The ambition is to grow and develop the FMI to achieve long term sustainability. It will work collaboratively with other regional investments such as our new clinical research facility iREACH, data science hub Momentum 1.0, the Centre for Digital Healthcare Technologies (CDHT) and the Artificial Intelligence Collaboration Centre (AICC). Collectively, these investments will transform the capabilities and competitiveness of the NI Life and Health Sciences sector here in NI, mapping and collaborating with other clusters in UK and Ireland.

The post holder will develop bioinformatics tools, workflows, and cloud-based infrastructure to support genomics and multi-omics data analysis across FMI projects. Working closely with biologists, bioinformaticians, and software developers, this role focuses on integrating advanced computational methods with scalable cloud platforms to streamline data processing, analysis, and sharing. The successful candidate will have a strong foundation in software engineering, data engineering, and cloud computing, with a proactive attitude and eagerness to collaborate in a multidisciplinary team environment.

MAJOR DUTIES:

1. Design and implement scalable cloud-based infrastructure for genomics data processing and storage.
2. Develop bioinformatics pipelines and workflows for genomics and proteomics datasets (e.g., RNA-seq, single-cell RNA-seq, exomes, and CRISPR screens) using cloud-native tools.
3. Create and optimise software tools for data integration, analysis, and visualisation in genomics and multi-omics.
4. Automate data workflows for large-scale genomics and proteomics datasets.
5. Deploy containerised applications and tools using technologies such as Docker and Kubernetes.
6. Develop APIs and web-based interfaces for efficient data sharing and collaboration among FMI partners.
7. Maintain up-to-date knowledge of cloud platforms (e.g., AWS, Azure, GCP) and implement cost-effective solutions.
8. Support the FMI team in integrating public domain datasets and creating bespoke cloud-based solutions.
9. Collaborate with FMI partners to develop customised cloud architectures tailored to specific projects.
10. Write technical documentation, contribute to publications, and support grant applications as required.
11. Present regular progress updates to the FMI team and external collaborators.

ESSENTIAL CRITERIA:

1. Degree in computer science, bioinformatics, data engineering, or a related discipline.

2. Have or about to obtain* a relevant PhD. *(must be obtained within 3 months of interview date)
3. Specific, relevant research experience.
4. Demonstrated experience in designing and deploying scalable cloud-based infrastructures (AWS, Azure, GCP).
5. Proficiency in bioinformatics pipeline development (e.g., RNA-seq, single-cell RNA-seq, exomes).
6. An expert level user of HPC infrastructure / Linux systems.
7. Able to implement key R and / or Python packages.
8. Track record of publications commensurate with stage of career.
9. Project supervision.
10. Ability to plan and manage own workload and contribute to requisite administrative tasks.
11. Ability to design and maintain secure cloud architectures.
12. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
13. Ability to work across multidisciplinary teams
14. Ability to communicate complex information clearly.
15. Ability to build contacts and participate in internal and external networks.
16. Ability to assess and organise resources according to adjusting priorities.
17. Team player, proactive, highly motivated and supportive of other team members.
18. Interest in driving research focussed programmes.
19. Willingness to travel to partner sites and collaborate with industry partners.

DESIRABLE CRITERIA:

1. Bioinformatics experience in an academic or industrial setting.
2. Experience in working within industry.
3. Experience working with proteomics datasets.
4. Data handling expertise e.g. cloud storage and SQL.
5. Experience developing and deploying machine learning workflows in cloud environments.
6. Experience developing web applications and APIs for bioinformatics tools.

ADDITIONAL INFORMATION:

Informal enquiries can be directed to: James Mawhinney - j.mawhinney@qub.ac.uk.