Candidate Information

Position: Research Fellow in Bioinformatics
School/Department: Institute for Global Food Security
Reference: 23/110863
Closing Date: Monday 22 May 2023
Salary: £36,333 per annum.
Anticipated Interview Date: Tuesday 6 June 2023
Duration: Fixed Term 12 months, or available until 30/06/2023, whichever is sooner.
Must be available to start by 1 July 2023.

JOB PURPOSE:

The School of Biological Sciences and Institute for Global Food Security at Queen's University Belfast is currently seeking to appoint an exceptional bioinformatician to the post of Research Fellow. The appointee will join the AMR & One Health Lab, a team of interdisciplinary researchers working in veterinary and human microbiology, animal science, and bioinformatics.

The successful candidate will primarily work within a multidisciplinary team undertaking research focused on the impact of alternative nutrition management on AMR burden, transmission and trends in dairy cattle, as part of a BBSRC Canada IPAP funded project. The post holder will work with Dr. Renée Petri and project partners based at the Sherbrooke Research and Development Centre, Quebec, Agriculture and Agri-Food Canada, to understand dynamics in animal health, gut microbiome changes and antimicrobial resistance burden and transmission following a milk permeate feed intervention study of dairy cows in the transition period. They will also provide additional assistance in project work, developing a core outcome set related to assessing the impact of milk permeate supplementation on ruminal, faecal and milk microbiomes and immunity and evaluating the impact of permeate feeding on ARG burden and transmission in transition dairy cows. In general, the post holder will be an active member of the research project/team assisting in the planning and delivery of research activity within a BBSRC Funded UK-Canada International Partnering Award Plus Scheme. Priority will be given to candidates with research interests and expertise in bioinformatics, animal science and microbiology.

MAJOR DUTIES:

1. To undertake research under supervision of the principal investigator and co-investigator within the specific research project.
2. To implement and run the computational workflows necessary for understanding the microbial community profiles of rumen microbiome samples associated with strategies for understanding antimicrobial resistance in dairy cattle.
3. Design, develop and refine computation and analytical methodologies to obtain reliable data and data interpretation.
4. Carry out statistical analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
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6. Communicate orally and through e-mail effectively to line manager and other partners involved in the project.
7. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
8. Prepare, in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
9. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
10. Carry out occasional undergraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
11. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

12. Prepare, in consultation with supervisors, material for publication in national and international journals and presentations at international conferences.
13. Assist grant holder in the preparation of funding proposals and applications to external bodies.
14. Aid effective team working within the group led by the principal investigator.

ESSENTIAL CRITERIA:
1. Hold or is about to be awarded a PhD in a relevant area (biological sciences, microbiology, animal science veterinary science).
2. At least 3 years demonstrable research experience in computational approaches for the analysis of high-throughput DNA sequencing data from microbial communities including shotgun metagenomic and 16S rDNA microbiome analysis.
3. Experience in antimicrobial resistance surveillance and quantification research using genomic data.
4. Demonstratable experience in the use of Linux command-line systems for bioinformatics analyses.
5. Experience of using programming skills in appropriate languages and software e.g. R.
6. Some experience of peer-reviewed publication in a relevant area of research.
7. Some experience of supervising undergraduates and/or postgraduate students.
8. Ability to contribute to broader management and administrative processes.
9. Methodical approach to project management and meticulous in regard to analytical procedures and record keeping.
10. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
11. Experience of presenting to the scientific community i.e., conference talks.
12. Ability to communicate complex information clearly.
13. Demonstrable intellectual ability.
14. Ability to assess and organise resources.
15. Experience of working in a team.
16. Irregular hours including evening, weekend and other out-of-hours work may be a component of the research at times.
17. Must be willing to travel to national and international meetings and collaborative laboratories as required on an ad-hoc basis.

DESIRABLE CRITERIA:
1. Experience in the analysis of high-throughput DNA sequencing data for the purpose of identifying microbiome changes post intervention/treatment.
2. Experience in the analysis of rumen microbial communities.
3. Some experience of supervising undergraduates and/or postgraduate students.
4. Experience of presenting to the scientific community i.e. conference talks.
5. Peer reviewed publications or preprints in the area of AMR or livestock microbiome research.
6. Knowledge of the challenges and approaches towards mitigating AMR burden and transmission in livestock.