

## Candidate Information

<b>Position:</b>	Research Fellow
<b>School/Department:</b>	School of Biological Sciences
<b>Reference:</b>	23/111457
<b>Closing Date:</b>	Monday 8 January 2024
<b>Salary:</b>	£37,841 per annum
<b>Anticipated Interview Date:</b>	Friday 19 November 2023
<b>Duration:</b>	Fixed Term 12 months, or available until 30/04/2025, whichever is sooner

### JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of a research group led by Professor Eric Morgan in the School of Biological Sciences. The position will involve working as part of a research programme investigating emerging zoonoses in Arctic ungulates.

The purpose of this project is to support a larger investigation into the emergence of the bacterial pathogens *Erysipelothrix rhusopathiae* and *Brucella abortus* in wild musk oxen and caribou in the Arctic archipelago in northern Canada. The project as a whole uses multiple methods to elucidate the causes of pathogen emergence and spread in these species and consequences for population dynamics and food security for the Inuit people. The appointee will work with Prof Morgan and the wider team to develop and apply models of pathogen dynamics to this problem. Methods will involve SIR models of pathogen transmission linking to fitness and population viability (of host and parasite), further integrating concepts of host stress and susceptibility, and the environmental persistence and transmission modality of the pathogen. Outcomes will include projections of future scenarios and framing of testable hypotheses to address key uncertainties. A second approach will use spatial data on disease occurrence in concert with host distribution and movement to test the plausibility of different hypotheses for disease spread, incorporating traditional and elder knowledge of changing animal and plant biology over time and links to climate warming.

The successful applicant will be seeking to lead this element of the collaborative research project and will be involved with planning and delivery of the modelling, collaborations and outreach. Creativity in developing new modelling approaches as well as applying established frameworks will be encouraged.

This is a 12-month position in the first instance, funded by UK Natural Environment Research Council, with potential for extension to 18 months.

Further information:

<https://www.cinuk.org/projects/arcticeid/>

<https://pure.qub.ac.uk/en/persons/eric-morgan>

### MAJOR DUTIES:

1. Develop, plan and deliver an area of personal research and expertise, and undertake research under supervision within a research project aimed at evaluating models of pathogen transmission and spread to support CINUK-ArcticEID project aims.
2. Maintain up-to-date knowledge of the field of interest at the cutting edge (e.g. recent advances in disease ecology, new models and techniques) and communicate the same to the group.
3. Design, develop and refine new model frameworks for use in this project and beyond.
4. Carry out analyses, critical evaluations and interpretations of population and pathogen data and the literature using methodologies and other techniques appropriate to area of research.

5. Present regular progress reports on research to members of the research group, external collaborators and audiences nationally and internationally to disseminate and publicise research findings.
6. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
7. Assist grant holder in the preparation of funding proposals and applications as well as project progress reports to external bodies.
8. Actively drive own career development, e.g. through Postdoctoral Development Committee activities, fellowship applications etc.
9. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget.
10. Carry out undergraduate/post-graduate student and visiting researcher training and 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 and engage in technical training as needed.

**ESSENTIAL CRITERIA:**

1. Have or about to obtain\* a relevant PhD in a biological field such as ecology or epidemiology (\*must be obtained within 3 months of commencement of employment).
2. Significant relevant research experience to include experience in:
  - Mathematical and/or computational modelling
  - Infectious disease dynamics
  - Wildlife ecology
  - Population dynamics
  - Climate change projections
  - Spatial modelling, geospatial data analysis
  - High quality original research publications on these subjects in reputable peer-reviewed journals, commensurate with career stage.
3. Ability to supervise postgraduate/undergraduate students and visiting researchers in the laboratory.
4. Methodical approach to project management and meticulous in terms of modelling and coding.
5. Must be highly ambitious, motivated, efficient, organised and show a commitment to, and an interest in the research topic.
6. Competent in maintaining and communicating knowledge of cutting-edge of field of expertise.
7. Excellent written and verbal communication skills.
8. Competent in giving effective and informative oral and poster presentations.
9. Strong ability to work from own initiative and to work independently.
10. Excellent team working skills in multiple internal and external team settings.
11. Leadership qualities.
12. Excellent problem-solving skills and ability to use own initiative.

**DESIRABLE CRITERIA:**

1. Recent relevant postdoctoral research experience.
2. Recent experience with modelling of infectious diseases in wildlife.
3. Specific knowledge of ungulate and Arctic ecology.
4. Recent high quality original research publications on the musk ox / caribou disease systems in reputable peer-reviewed journals, commensurate with career stage.
5. Research project management experience.
6. Practical experience and knowledge of infectious disease challenges in wildlife systems.
7. Evidence of having presented at national and international conferences (poster and oral).
8. Willing to travel to national and international meetings and collaborative laboratories.