Candidate Information

Position: Research Fellow in Modelling and Analysis of Cancer Invasion
School/Department: Mathematical Sciences Research Centre
Reference: 21/108644
Closing Date: Monday 10 May 2021
Salary: £33,797 per annum
Anticipated Interview Date: Friday 21 or Tuesday 25 May 2021
Duration: 2 years or until 30 June 2023, whichever is soonest.

JOB PURPOSE:

The post-holder will be an active member of the research project team assisting in the delivery of the research into modelling and analysis of cancer invasion, with the Principle Investigator, Dr Anna Zhigun. The post-holder is expected to make independent contributions to the project and to meet regularly with Dr Zhigun to discuss the work.

MAJOR DUTIES:

1. Construct new models for cancer invasion and study them. This will require modelling with kinetic transport equations, scaling these equations, and performing some rigorous mathematical analysis in this context.
2. Develop and plan an area of personal research and expertise, and/or undertake research under supervision within a specific research project or as a member of a research team.
3. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
4. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
5. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
6. Assist grant holder in the preparation of funding proposals and applications to external bodies.
7. 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.
8. 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.
9. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

Planning and Organising:

1. Coordinate and liaise with Dr Zhigun and any other members of the research group over work progress.
2. Plan for specific aspects of research programmes. Timescales range from 1-6 months in advance and contribute to research group planning.
3. Plan for the use of research resources, laboratories and workshops where appropriate.
4. Plan own day-to day activity within framework of the agreed research programme.
5. Plan up to a year in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with colleagues and students.
2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration such as research meetings.
3. Join external networks to share information and ideas.
4. Contribute to the School's outreach programme by leading and/or supporting in the delivering of occasional events focused towards school students, etc

ESSENTIAL CRITERIA:
1. Have or be about to obtain a relevant PhD such as in applied mathematics.
2. Relevant Degree or Postgraduate Qualification to include modules in mathematical biology and mathematical analysis.
3. At least 3 years relevant research experience.
4. Extensive breadth and depth of experience in modelling with kinetic transport equations.
5. Demonstrable experience in rigorous analysis of PDEs.
6. Evidence of a strong publication record commensurate with career stage and experience.
7. Ability to contribute to broader management and administrative processes.
8. Willingness to contribute to the School's outreach programme by leading and/or supporting in the delivering of occasional events focused towards school students, etc.
9. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
10. Ability to communicate complex information clearly.
11. Ability to build contacts and participate in internal and external networks.
12. Demonstrable intellectual ability.
13. Ability to assess and organise resources.
14. Ability to work independently.

DESIRABLE CRITERIA:
1. Demonstrable experience in modelling with kinetic transport equations and various scaling techniques in a biological context.
2. Demonstrable experience in rigorous analysis of partial differential equation, such as proving existence of solutions and/or verifying convergence to a scaling limit.