Candidate Information

Position: Research Fellow
School/Department: Patrick G Johnston Centre for Cancer Research
Reference: 23/111263
Closing Date: Monday 16 October 2023
Salary: £37,841 per annum
Anticipated Interview Date: Tuesday 31 October 2023
Duration: Fixed Term available until 31 August 2024

JOB PURPOSE:

To develop new computational models of the sensitivity of different cell types to radiation, based on radiation quality and the cells' underlying genetic and physiological characteristics. This research fellow will work as part of an interdisciplinary team funded through Dr McMahon's UKRI Future Leaders Fellowship to develop novel predictive models of intrinsic sensitivity to radiation therapy.

This project will seek to link models of genetic pathways involved in radiation response to biophysical models of radiation damage, to enable the prediction of key factors governing radiation sensitivity from genetic and phenotypic data about cell lines. These model predictions will be benchmarked both as independent tools and as part of integrated biophysical models, using both locally-generated in vitro datasets as well as relevant clinical cohorts.

The research fellow will work in collaboration with other members of the team involved in acquisition of new radiation response data to support the interpretation of results and the identification of key experimental studies needed to further refine models. They will also be expected to contribute to the supervision of junior members of the team, including undergraduate and postgraduate students as appropriate.

MAJOR DUTIES:

1. Develop new computational models of radiation response as part of the wider research programme under the supervision of Dr McMahon (PI), Dr Ian Overton (Co-I) and other senior investigators. Work with team members involved in experimental studies to design experiments to effectively refine model predictions.
2. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
3. Work as part of a collaborative team of cell biologists, physicists and bioinformaticians to ensure progression of the project and contribute to the achievement of project milestones.
4. Write up results in a timely manner and take a leadership role in writing research manuscripts for publication in high quality journals. To maintain data files appropriate for Institutional Data Repository.
5. Assist grant holder in the preparation of funding proposals and applications to external bodies, as well as potentially develop their own applications for grant funding.
6. Assist with supervision of postgraduate, undergraduate or summer students, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
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. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

ESSENTIAL CRITERIA:

1. Normally have or be about to obtain a relevant PhD.
2. Specific, relevant research experience.
3. Demonstrated ability to learn and apply new computational tools and techniques.

4. Experience in at least one of Perl, Python, Java, Matlab, R or C/C++.
5. Experience in modelling radiation-induced biological damage and repair.
6. Evidence of proactive organisational capabilities.
7. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
8. Ability to communicate complex information clearly.
9. Ability to build contacts and participate in internal and external networks.
10. Demonstrable intellectual ability.
11. Ability to assess and organise resources.

DESIRABLE CRITERIA:
1. 1st Class undergraduate degree.
2. Track record of high quality research in the field of cancer research and/or radiation biology.
3. Expertise in one or more of: Monte Carlo models, machine learning, network biology, cancer biology, survival analysis, analysis of large biological datasets, systems medicine.
4. Evidence of scientific writing skills.
5. Evidence of experience working in interdisciplinary team.
6. Publication of paper(s) in quality journals to a level commensurate with research experience.
7. Evidence of participation in training/mentoring of students or junior staff.
8. Commitment to professional development, as evidenced by Scientific memberships.