Candidate Information

Position:	Research Assistant
School/Department:	Patrick G Johnston Centre for Cancer Research
Reference:	21/109330
Closing Date:	Monday 15 November 2021
Salary:	£28,756 - £30,497 per annum
Anticipated Interview Date:	Friday 26 November 2021
Duration:	Available until 30 June 2023

JOB PURPOSE:

Provide scientific support to the ORIGIN project (European Union's Horizon 2020 Research and Innovation Programme (Grant Agreement n° 871324) - part of the Photonics Public Private Partnership (www.photonics21.org)). This project is developing the next generation of real-time radiation dose-imaging and source localisation for Brachytherapy.

Attend ORIGIN consortium meetings, visit and undertake experimental measurements at consortium member sites as required.

Communicate research results orally and in writing to own and other professions.

Be based within the radiotherapy physics service in the NI Cancer Centre participating in scientific research activities in radiation oncology physics and working in close collaboration with physics, clinical and radiographic staff at the Northern Ireland Cancer Centre and the Patrick G Johnston Centre for Cancer Research, Queen's University Belfast.

MAJOR DUTIES:

1. To provide scientific support to the ORIGIN project with particular focus on:
   • Development of phantoms and techniques for dosimetric calibration of optical fibres.
   • Testing of optical fibre dosimetry systems using brachytherapy equipment.
   • Development of 3D printed semi-anatomical phantoms.
2. To provide scientific support to clinical fellows developing clinical protocols for use of optical fibres in real time dosimetrically delivered brachytherapy treatments, facilitating treatment planning studies and methodologies to assess efficacy of procedures.
3. To assist in analysis of research data requiring the ability to process data, interpret and present in report/presentation format. To develop, if required, software packages using a range of high level scientific and imaging computer languages (for example: MatLab, IDL, Python, C++ etc) for data analysis or for investigational purposes.
4. To scientifically support designated research staff and to supervise and provide specialist training to multi-disciplinary staff groups allocated to projects being undertaken by the post holder.
5. To support the development of R&D projects and programmes and grant applications.
6. To communicate research and development outcomes by means of internal reports, publications in peer reviewed journals and presentations at local, national and international conferences to multi-disciplinary groups.
7. To undertake precise measurements on radiotherapy imaging and treatment equipment requiring a high degree of accuracy using sensitive dosimetric equipment when collecting or verifying data as part of research and development activities.

Planning and Organising:

1. Planning of various aspects of the research project(s) including: Independent day-to day planning of experiments and 1-3 months (short term) planning of research. 6-12 months (long term) organisation of the research direction/targets as well as contingency planning.
2. Prioritise and reprioritisation of research/experiments in order to meet deadlines and targets. Organisation of informal meetings.

Resource Management Responsibilities:

1. Support the development and training of support staff and students by making available their research experience and expertise.
2. Take shared responsibility for the upkeep of laboratory and clinical equipment and exercise due diligence when using equipment.

Internal and External Relationships:

1. To help to establish and maintain collaborations with scientific and clinical departments in healthcare organisations nationally and internationally, including Universities and commercial companies.
2. To maintain awareness of current and future developments within radiation oncology by detailed study and review of scientific and clinical literature and attendance at scientific conferences.
3. Communicate openly with lab colleagues' latest research findings and exciting results.
4. Participate in events associated with the ORIGIN project.

ESSENTIAL CRITERIA:

1. A minimum of a 1st class Honours degree, or equivalent, in Physics or other appropriate science subject from a UK or equivalent university, or a 2nd class Honours degree with MSc in Physics or other appropriate science subject from a UK or equivalent university.
2. 1-3 years relevant research experience. This will include 1-2 years research experience in an area of physics related to radiation science or in area requiring advance computational skills.
3. Evidence of R&D experience having a record of dissemination and publication of scientific work.
4. Experience of multi-disciplinary team working.
5. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
6. Ability to programme in advanced scientific languages eg MatLab, IDL, Python, C++ etc.
7. Advanced skills in data analysis and presentation.
8. Ability to communicate complex information clearly.
9. Ability to build contacts and participate in internal and external networks.
10. Ability to interact effectively with the team.
11. Ability to assess and organise resources.
12. Must be available and willing to undertake R&D activities outside normal hours.
13. Must be willing and able to travel to national and international meetings and potentially spend short periods at collaborating Centres.

DESIRABLE CRITERIA:

1. MSc in Medical Physics or related subject.
2. Have or be about to obtain a PhD in physical science, mathematics or computer science.
3. Experience in radiotherapy physics.
4. Experience in working in a clinical radiotherapy physics environment.
5. Experience in dosimetry and brachytherapy.
6. Experience in 3D printing technologies.
7. Good negotiation skills.