

Candidate Information

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| Position: | Research Fellow |
| School/Department: | Patrick G Johnston Centre for Cancer Research |
| Reference: | 21/108658 |
| Closing Date: | Monday 29 March 2021 |
| Salary: | £33,797 per annum |
| Anticipated Interview Date: | Wednesday 28 April 2021 |
| Duration: | Available until 31 May 2023 or for 2 years (whichever is soonest) |

JOB PURPOSE:

To work with the Upper Gastrointestinal Cancer Translational Research Group led by Dr Richard Turkington at the Patrick G Johnston Centre for Cancer Research. The aim of this work will be to develop a biomarker capable of predicting progression of Barrett's Oesophagus (BO) to Oesophageal Adenocarcinoma (OAC). Using the Northern Ireland Barrett's Register (NIBR), one of the largest BO population-based data and tissue resources available worldwide, the proposed project will develop a molecular signature that may be applied in clinical practice to stratify BO patients according to cancer risk. This project will use a nested case-control design with BO patients who developed High Grade Dysplasia (HGD) or OAC more than 12 months after initial BO diagnosis matched (on age, sex, year of BO diagnosis) to a BO control who has not developed HGD/OAC. Following profiling using the Illumina TruSeq™ RNAexome panel, clustering-based analysis of the RNAseq data will be carried out to identify transcriptional changes associated with progression of BO to HGD/OAC. The project involves identification of relevant molecular subgroups and signature generation to identify a gene signature capable of predicting progression to HGD/OAC in cases of non-dysplastic BO. Transcriptomic clonal diversity of BO will also be assessed using interim biopsies to assess its interaction with any biomarker. This project will provide new knowledge relating to the molecular biology involved in BO progression to cancer. It has the potential to identify novel tissue markers that may be used in clinical practice to identify BO patients at highest cancer risk, thereby enabling targeting of interventions to maximise benefit for, and reduce harm to, BO patients.

MAJOR DUTIES:

1. To design, develop and execute experiments related to the above titled project under the supervision of Dr Jaine Blayney and Dr Richard Turkington in order to obtain reliable data and to evaluate and interpret the results using methodologies and other techniques appropriate to the area of the research.
2. To present regular progress reports on research to members of the research project team and, as appropriate, to other internal or external audiences to disseminate and publicise research findings.
3. Initiate and maintain collaborative links with various project partners.
4. To work as part of a collaborative team of biologists, bioinformaticians and clinicians, including external partners, to ensure optimal progression of the project at all times and to contribute to the achievement of project milestones.
5. To write up results in a timely manner and take a leadership role in writing research manuscripts for publication in high quality journals.
6. The appointed individual will be encouraged to formulate, write and submit grants for fellowship awards, project and travel support.
7. To attend and present new data at national and international meetings as appropriate.
8. To assist with the supervision of postgraduate students, honours or summer students on mini-projects, which will help develop their own supervisory skills.
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. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines and to maintain awareness of the context of the research project.
11. Any other reasonable duties within the general ambit of the post and competence of post holder.

Planning and Organising:

1. Plan own day-to-day activity within framework of the agreed research programme.
2. Plan up to a year in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.
3. Coordinate and liaise with other members of the research group over work progress.

Resource Management Responsibilities:

1. Support the development and training of support staff and students by making available their research experience and expertise.

Internal and External Relationships:

1. Communicate appropriately with lab colleagues the latest research findings/results.
2. Develop contacts with other labs within the research community at Queen's and look to identify potential cross-discipline collaborations.
3. Work collaboratively with external academic/industrial partners.
4. Join national and international scientifically relevant societies.

ESSENTIAL CRITERIA:

1. Have or be about to obtain a PhD in either Bioinformatics, Maths, Stats or Computing or PhD in Natural Sciences with a significant bioinformatics component.
2. At least three years relevant experience to include experience of:
 - a) Processing and analysing high-dimensional omics datasets;
 - b) Curating and analysing clinico-pathological data;
 - c) Presenting statistical results to multi-disciplinary audiences;
 - d) Statistical programming eg R or Matlab
3. Previous track record of high quality research in the field of cancer biology.
4. Must have published paper(s) in quality journals to a level commensurate with their research experience.
5. Evidence of proactive organisational capabilities.
6. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
7. Ability to communicate complex information clearly.
8. Team worker, highly motivated, supportive of junior colleagues within the group.

DESIRABLE CRITERIA:

1. MSc or BSc/BA in either Bioinformatics, Maths, Stats or Computing.
2. Commitment to professional development, as evidenced by Scientific memberships eg. AACR.
3. Experience of key statistical methods and approaches eg clustering, classification and survival analysis.
4. Experience of identifying and adapting for batch/technical effects.
5. Previous experience in oesophageal cancer biology.
6. Ability to build contacts and participate in internal and external networks and research presentations