Candidate Information

Position:	Research Fellow
School/Department:	Patrick G Johnston Centre for Cancer Research
Reference:	22/110170
Closing Date:	Monday 26 September 2022
Salary:	£35,333 per annum
Anticipated Interview Date:	Wednesday 12 October 2022
Duration:	12 months

JOB PURPOSE:

A post-doctoral researcher post is available immediately to work as part of a new CRUK funded Early Detection project within the colorectal cancer (CRC) Molecular Pathology Research Group (www.dunne-lab.com). In collaboration with our international partners, this project aims to utilise a dataset that include digital histology and transcriptomics data to uncover the molecular signalling that underpins early dissemination in CRC.

The highly motivated and ambitious post-doc will become an integral member of a dynamic, collaborative and well-equipped research group that puts a strong focus on interdisciplinary data-driven research. Our group provides a stimulating research environment where collaboration and development of new ideas is strongly encouraged, alongside support for career development for emerging talents. The overarching goals of this research group are to develop a greater understanding of disease to improve survival rates for patients with CRC, through precise dissection of the transcriptional signalling pathways underpinning histological features of cellular invasion and metastasis.

Our group is primarily focussed on biological discovery, identification of molecular signalling and/or morphological phenotypes that will enable improved understanding of disease and translation of potential therapeutic options. Recent advances by in molecular profiling analysis have identified molecular subtypes in CRC, based on histological features and neoplastic epithelial biology. This molecular subtyping involves a combination of molecular biology, computational analysis and pathological assessment, enabling an integrated evaluation of multiple layers of molecular information. The post-holder will work within an established interdisciplinary team and will be required to have a strong understanding of pathological feature identification in CRC, alongside the biology underpinning signalling cascades in cancer that emerge from data analysis. The successful candidate will utilise the unique data from our human tissue samples and mouse tumour models to develop new, and refine existing, molecular subtypes in CRC through a combination of translational bioinformatics and digital pathology.

Overall, this project aims to unveil the interplay between the epithelial tumour and surrounding immune/stromal cells to ultimately improving our understanding of CRC.

MAJOR DUTIES:

1. To design, develop and execute molecular stratification studies related to the project in order to obtain reliable data, then evaluate and interpret the results using methodologies and techniques appropriate to the area of the research.
2. Carry out analyses using digital pathology software, followed by critical evaluation and interpretation using methodologies and other techniques appropriate to area of research.
3. To interrogate transcriptional signalling, using datasets derived from bulk, multiregional and spatial transcriptomics.
4. Combining histological and molecular data to assess clinical outcomes within patient cohorts.
5. To write up results in a timely manner and take a leadership role in writing research manuscripts.
6. To present regular progress reports on research to members of the research group and to external audiences to disseminate and publicise research findings.
7. To formulate, write and submit grants for fellowship awards, project and travel support.
8. To attend and present new experimental data at national and international meetings.
9. Assist grant holder in the preparation of funding proposals and applications to external bodies.

10. Carry out postgraduate student supervision within the post holder's area of expertise and under the guidance of a member of academic staff.
11. Assist with the supervision of summer students on mini projects, which will help develop their own supervisory skills.
12. 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.
13. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.
14. Any other reasonable duties within the general ambit of the post.

ESSENTIAL CRITERIA:

1. Hold (or about to obtain) a PhD in digital pathology and/or bioinformatics analysis of cancer.
2. At least three years relevant research experience with molecular interrogation of cancer datasets using digital pathology and transcriptomics (including PhD experience).
3. Experience with transcriptional data analysis and molecular subtyping.
4. Experience with spatial transcriptomics.
5. Publication of peer-reviewed papers commensurate with stage of career that include a large component of digital pathology and bioinformatics analysis in cancer.
6. Ability to contribute to broader project management and administrative processes.
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. Demonstrable interdisciplinary skillset related to translational cancer research.
10. Understanding of limitations with methodologies regularly used in molecular data analysis.

DESIRABLE CRITERIA:

1. 1st Class or 2.1 undergraduate degree.
2. Track record of national/international collaboration.
3. Single-cell data analysis.
4. Programming experience.
5. Evidence of student supervision roles.
6. Evidence of involvement in grant applications.
7. Presentations at national/international meetings.