THE UNIVERSITY OF BRITISH COLUMBIA

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POST-DOCTORAL RESEARCH FELLOW
Computational Biology of Esophageal Cancer
Division of Gastroenterology

The Kelleher laboratory is seeking post-doctoral fellows to join a dynamic and newly established research team at the Life Science Institute at the University of British Columbia. The Kelleher laboratory investigates the roles of inflammation in gastrointestinal disease pathogenesis with a specific focus in esophageal cancers. Cancers of the esophagus are associated with one of the poorest overall survival percentages of all cancer types and occurs as either a squamo- or adeno-carcinoma. Pre-cancerous lesions such as Barrett's esophagus, and associated dysplasia, are common precursors in many adenocarcinomas and result from an altered, and genomically unstable, intestine-like differentiation programme (Duggan et al 2015 for example). The Kelleher lab has recently published a number of studies demonstrating the pathways connecting gastro-esophageal reflux disease with GATA family transcription factors supporting differentiation (Duggan, Kelleher et al 2015), inducing pro-proliferative secreted inflammatory cytokines (Duggan, Kelleher 2018) and inducing pro-metastatic cellular transitions (Phipps, Kelleher, Duggan et al 2020) during esophageal oncogenesis. Thus we, and others, suggest a clear role for inflammation in supporting disease states. In this fellowship the candidates will utilise a novel organoid/regenerative medicine-based model of precancerous esophageal lesions, regenerative medicine, pathological and single cell genomic strategies to dissect the relationship between stem cell differentiation, somatic variation and inflammation in the gastro-intestinal tract. This project will be supported by the combined strengths of the division of gastroenterology at UBC, BC cancer and the Michael Smith Genome Sciences Centre.

This computational biology position would suit recent PhD graduates interested in applying their informatic and critical thinking talents to the matching and integration of mulit-omic data of patient specific adult stem cells at the single cell level and clinical tissues from a variety of tissue types also at the single cell level. Prerequisite skills include: Programming experience (Python or R), experience with large scale data sets, NGS sequencing data analysis for RNA and DNA in large scale clinical studies, abilities in dimensionality reduction, visualization and communication of complex data; Advantageous skills:- Experience in droplet or plate based scRNAseq and/or scWGS data, Bioconductor, experience working within the life science environment with gene/protein pathways, or work at the interface between informatics and the clinic.

Please send applications to: kelleherlab.applications@ubc.ca

Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person.

All qualified candidates are encouraged to apply; however Canadians and permanent residents will be given priority.