Job Profile
Job Description

Job Details		
Job Title:	**Bioinformatician**	
School/Dept/Institute & Centre:	Barts Cancer Institute, Centre for Molecular Oncology	
Reports to:	Dr Jun Wang	
Grade:	5	**Full Time**
Career Family:	Academic & Education	
Appointment period:	36 months	
Current Location:	Charterhouse Square	

Job Context

The Barts Cancer Institute (BCI) is a Cancer Research UK Centre of Excellence whose work aims to transform the lives of those with and at risk of cancer through innovative research in the laboratory, in patients and in populations. BCI is internationally renowned in many areas of cancer research and it combines ground-breaking basic research with the expertise of clinicians and clinician scientists from the Centre for Experimental Cancer Medicine and the Barts NHS Trust to achieve improvements in cancer patient care. BCI is also a partner in the CRUK City of London Major Centre (together with UCL, Kings and the Francis Crick Institute) which is a Centre of Excellence in Biotherapeutics. BCI is committed in supporting and developing future cancer researchers through its extensive postgraduate training. It is one of six institutes within The School of Medicine and Dentistry (SMD).

This project funds a dedicated Bioinformatician to work within Dr Jun Wang's bioinformatics team at Barts Cancer Institute, in close collaboration with Prof Catherine Harwood's (Centre for Cell Biology and Cutaneous Research) and Prof Daniel Pennington's (Centre for Immunobiology) teams from Blizard Institute, QMUL.

Job Purpose

- To lead the bioinformatics components and provide bioinformatics support towards the analysis of investigating the immune environment of keratinocyte skin cancer progression, using RNA-seq, targeted transcriptomics, single-cell RNA-seq and data integration.
- To apply our existing in-house tools and develop novel analytical pipelines / algorithms to analyse multi-omits data sets and perform data integration.
- To identify and validate key immune makers relevant to disease progression and risk prediction
- To work together with other bioinformaticians to strengthen our informatics / computational expertise
- To work as part of a multidisciplinary team, delivering the programme of research.
- To work as part of the Institute's research team, being mutually supportive and covering duties as necessary during colleagues' absences and at times of additional pressure, as directed.
- To contribute to the overall scientific endeavour of the Centre, and possibly to take responsibility for areas of other projects, as demand requires.

Main Duties & Responsibilities

Specific Duties:

The principal duty of the post will be to undertake research and provide bioinformatics support towards the analysis in "investigating the immune environment of keratinocyte skin cancer progression with the aims to

develop risk prediction and targeted prevention", in a timely and resource efficient manner, as appropriate for the research area. This includes:

- To contribute to the development and improvement of our existing analytical pipelines for next-generation sequencing (NGS) data analysis, including RNA-seq, targeted gene expression and single-cell RNA-seq protocols, as well as data integration.
- To analyse existing transcriptomic datasets and newly generated single-cell data to identify novel immune markers and major immune cell subtypes associated with AK progression.
- To validate and derive a robust immune panel/score to predict AK progression in extended cohort using targeted gene expression (e.g., using TempO-Seq).
- To perform data integration of immune signatures and genomic alteration derived from matched exom-seq data.
- To work towards a publication record of the kind that will enhance the Centre's research reputation at national and international level and that will clearly demonstrate originality and scholarship.
- To attend and participate in the Centre's academic activities, e.g. laboratory and journal club meetings, research group meetings and weekly seminars.
- To make research initiatives and original contributions to the research programme wherever possible, and to contribute freely to the team research environment in a manner conducive to the success of the research project as a whole.

General Duties:

- To collect and analyse data.
- To maintain appropriate databases, keeping accurate written and computerised records and to ensure that these records are stored in a secure place, and to maintain confidentially of all electronically stored personal data in line with the provisions of the Data Protection Act.
- To prepare reports and scientific publications to disseminate results from the programme of research.
- To keep up to date with scientific, clinical and professional issues, in particular developments in the specific subject area.
- To undertake literature searches to explore potential research projects, and to be able to interpret and present the findings of the literature searches and advise the research teams appropriately regarding potential projects.
- To supervise and train where necessary new members of the research team.
- To assist in drafting budgets and applications for potential research projects and grants.
- To show a professional attitude to matters of laboratory hygiene, organisation and safety, and to observe and to take an active role in fulfilling all statutory health and safety regulations.
- To be aware of own limitations and refer problems to the appropriate person.

The above list of responsibilities is not exhaustive and the jobholder may be required to undertake other duties commensurate with the level of the role, as reasonable requested by their line manager.

This job description sets out the duties of the post at the time it was drawn up. Such duties may vary from time to time without changing the general character of the duties or level of the responsibility entailed. Such variations are a common occurrence and cannot in themselves justify a reconsideration of the grading of the post.

Job Profile
Person Specification

This table lists the essential and desirable requirements needed in order to perform the job effectively. Candidates will be shortlisted based on the extent to which they meet these requirements.

	Requirements	Essential / Desirable
Qualifications	PhD in Bioinformatics/Computational Biology/ Genomics/Genetics or a relevant discipline	E
	Degree in a relevant discipline	E
Knowledge, **Experience**	Proven track record in a relevant subject (e.g. Bioinformatics/ computational biology/Genomics)	E
	Expert in scripting language such as R, Perl or Python in a Linux environment	E
	Experience of additional programming languages such as Java or C/C++	D
	Experience in large-scale data analysis, especially NGS	E
	Experience in data integration and modelling	D
	Experience in single-cell RNA-seq analysis	D
	Relevant record of publications	D
	Working knowledge of bioinformatics tools	E
	Good communication and presentation skills	E
	Evidence of good team working, in particular the ability to interact positively with project co-workers	E
	Ability to work independently	E
	Ability to maintain good laboratory records	E
	To provide advice, training and support for researchers	D
Attitude and Disposition	Flexible approach to work	E
	Self-motivated and hardworking	E
	Willingness to learn new skills	E
Other	Committed to meeting project deadlines as required	E

E – Essential: Requirements without which the job could not be done.

D – Desirable: Requirements that would enable the candidate to perform the job well.