UNIVERSITY OF SURREY

Research Role Profile

Job Title:	**Dean's Research Fellowship (B) in Bioinformatics, Systems Immunology and Metabolism**

Responsible to:	Head of Section, **Immunology/ Dean of Faculty**

Responsible for:	Not applicable

Job Summary and Purpose:
To undertake research in project(s) of own direction in consultation with Senior Colleagues.

Main Responsibilities/Activities
Introduction: This position will sit within the Faculty of Health and Medicine Science at the University of Surrey. In addition to driving their own research interests, the successful applicant will work with research academics and bioinformaticians across the different schools to develop analytical tools of multi-omic, single-cell and spatial data. In particular in the development of AI methodologies to integrate analysis of large datasets from different technologies. These data will include high/dimensional spectral-flow cytometry, single cell multi-omic (RNA-seq, CITE-seq, EpitoFF, DNA-seq, but also metabolic data from new mass-spectrometry based analytical tools) and spatial single-cell multi-omic data (transcriptomic, proteomic and metabolic) as well as data from confocal ImmunoFluorescence. The applicant will benefit from access to all these technologies, producing complex and high-dimensional datasets; which also renders their analysis and interpretation a complex and technical challenge. These new methodologies will ultimately help to strengthen analytical tools in Systems Biology, namely Systems Immunology and drive our ambition in Systems Metabolism. The applicant will benefit from, and contribute to, expertise available in the newly formed People-centred AI institute. Responsibilities: To undertake research and innovation activities and assume responsibility for the direction of projects by making use of new research techniques and methods, in consultation with the Section Lead, oncology researchers within the Section of Immunology (Department of Biochemical Sciences) and Department of Clinical and Experimental Medicine, and colleagues across the Faculty of Health and Medical Sciences and beyond. To use initiative and creativity to identify areas for research, develop new research methods and extend the research portfolio. Analyse, interpret and build on results of own research. Write up results and prepare manuscripts for submission to appropriate journals and conferences, and deliver other relevant outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results, networking and

own personal development. The post holder will write proposals for research grants and will contribute to collaborative decision making with colleagues in areas of research.

To continually update knowledge, develop skills and translate knowledge of advances in the area into research activity.

To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings, documentation and archiving of data. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.

To (co-)develop innovation projects generating original research with high impact factor, IP and patent application outcomes, which will shed light onto the University for the Research Excellence Framework (REF) exercises and patent applications, is also expected

To contribute to teaching in the Faculty by carrying out lecturing, personal tutoring, student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of School academic staff, as appropriate.

The post holder will be required to supervise junior research staff.

Person Specification

The post holder must have:

A doctoral degree in computer science/engineering, mathematics, health data science, computational biology, bioinformatics, immunology or molecular cell biology with a clear track record of Systems Immunology analysis. Knowledge of Immunobiology and metabolism is an advantage.

The post holder will have authority over their project work. Prior success of achieving major research grant funding from national research funding agencies and from industry is a strong advantage.

The incumbent must have demonstrated capability of providing academic judgement, offering original and creative thoughts, taking initiatives and being able to interpret and analyse results.

UNIVERSITY OF SURREY

Research Role Profile

Relationships and Contacts
Direct responsibility to Head of Section and the Dean on a regular basis. The post holder may be asked to serve on relevant Faculty committees. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder will be expected to work on original research tasks with colleagues within the University of Surrey and from other institutions.

Special Requirements
To be available to participate in research and innovation as required to deliver own specified research programme

All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

Addendum This document provides additional information relating to both specific aspects of the post/faculty and any post specific person specification criteria. The information contained within this document should always be read in conjunction with the accompanying generic Job Purpose.	
Job Title:	Dean's Research Fellowship (Bioinformatics and Systems Immunology & Metabolism)

UNIVERSITY OF SURREY

Research Role Profile

Background Information/Relationships

The Dean's research fellowship is designed to be a springboard to a Faculty position. Whilst delivering significant research impact and taking the lead on grant applications is core to this role, the Research Fellow is strongly encouraged to develop partnerships and networks locally, nationally and internationally, with a view to building successful relationships which will continue to drive research and innovation funding. The person appointed will contribute to the portfolio of research activities to be undertaken across precision medicine and wellness, Systems Immunology and newly developed spatial multi 'omic analyses. The Research Fellow will undertake data collection and analysis, writing of reports, preparing manuscripts for publication and writing bids; while assisting present researchers in developing new ways of exploring multi 'omic datasets alongside existing bioinformatic groups and Research Academics. Development of innovation projects for societal benefit, such as Impact Case Studies for the Research Excellence Framework (REF) exercises and patent applications, is also expected. It is expected that a large proportion of the Fellow's work will be based on stratification of health, wellness and disease from a biomarker discovery, validation and testing perspective. The post holder will sit within the School of Biosciences and Medicine and will contribute to the life of the School including some limited teaching in an area of expertise, supporting students as a personal tutor and supervising student projects/dissertations where appropriate. You will also be encouraged to complete our Graduate Certificate in Learning and Teaching to support you to deliver excellence in learning and teaching at Surrey and to enable membership of the HEA. Teaching is a core development opportunity and Fellows are therefore encouraged to get substantive experience of such activities.

Person Specification

This section describes the sum total of knowledge, experience & competence required by the post holder that is necessary for standard acceptable performance in carrying out this role. This is in addition to the criteria contained within the accompanying generic Job Purpose.

Qualifications and Professional Memberships	**Essential/ Desirable**
Relevant PhD	Essential
Technical Competencies (Experience and Knowledge)	Essential
Some teaching experience at foundation level or above	Recommended
Experience of primary data collection and subsequent analysis through to publication	Essential
Strong background in AI, machine learning, data mining and statistical analysis in biology, health or medicine.	Essential
Experience of working and securing funding with industry in Bioinformatics, Systems Biology/Immunology or Metabolism	Desirable

UNIVERSITY OF SURREY

Research Role Profile

Programming skills using R/python/perl/C++/Matlab/Java or similar. Strong expertise in R is a recommended.	Essential
Experience in analysis of NGS, mass/Flow Cytometry, or single cell data is strongly recommended. Knowledge of current single cell /spatial data analytical tools (eg. Seurat, etc.) is a significant advantage.	Recommended
Experience in the analysis of Metabolic, Immunobiology Data. Alternatively, knowledge to apply this biology, Immunology, metabolism; and work closely with Research academics in these fields	Essential
High quality publications and publication track record consistent with research excellence	Essential
Evidence of writing and winning substantial research bids as main or Co-I applicants.	Desirable
Proven ability to work independently with accountability	Essential

Key Responsibilities

This document is not designed to be a list of all tasks undertaken but an outline record of any faculty/post specific responsibilities. This should be read in conjunction with those contained within the accompanying generic Job Purpose.

1. Collection and analyses of data for research projects within the portfolio of research activities the incumbent will be expected to develop and with strategic alignment to the University's research priorities.
2. Development of new analytical tools to allow for cutting-edge analysis of complex high-dimension and spatial multiple 'omic data.
3. Writing reports and high-quality papers to enable publication in agreed journals.
4. Supervision of students, research staff (inc. students, Unitemps etc.) where appropriate.
5. Develop own research agenda, taking the lead in applications for external funding.
6. Provide input to undergraduate and postgraduate biosciences teaching, along with supervision of dissertation projects and PhD supervision where appropriate.
7. Pastoral care of students through personal tutoring.