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| **Job Title:** | Research Fellow A in Molecular Immunology |

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| **Responsible to:** | Professor Clare Mills |

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| **Responsible for:** | Not applicable |

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| Job Summary and Purpose: |
| To investigate the molecular basis of immunological responses to infections and allergic responses to foods using multi’omics approaches, linking molecular profiles to clinical phenotypes under the supervision of the principal investigator. |

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| Main Responsibilities/Activities |
| The post is based in the Food and Molecular Immunology research group led by Professor Clare Mills and forms part of her ongoing collaboration with Waters Corporation and the Respiratory Medicine Group at the University of Manchester and Manchester University NHS Foundation Trust. The focus is to undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.  Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.  Continually to update knowledge and 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 and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.  To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder’s area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate.  The post holder may occasionally be required to supervise more junior research staff. |

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| **Person Specification** |
| The post holder must have:A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results. |

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| **Relationships and Contacts** |
| Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions. |

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| **Special Requirements** |
| To be available to participate in fieldwork as required by the specified research project |

### 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.

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| **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 Role Profile. | | |
| **Job Title:** | Research Fellow A in Molecular Immunology | |
| **Background Information/Relationships**  The post is based in the Food and Molecular Immunology research group led by Professor Clare Mills and forms part of her ongoing collaboration with Waters Corporation and the Respiratory Medicine Group at the University of Manchester and Manchester University NHS Foundation Trust.  The overall focus of the post is to investigate the molecular basis of immunological responses to infections and allergic responses to foods using multi’omics approaches, linking molecular profiles to clinical phenotypes. This makes use of biological and clinical samples from the Manchester Respiratory Medicine team collected through the Manchester Allergy, Respiratory and Thorasic Surgery Biobank and the iFAAM and PAFA projects and the recently funded Horizon Europe project GiantLeaps. These will be used to support the development and refinement of cell based models mimicking the epithelial environments (particularly the gut and the lungs) in inflamed (e.g. allergic) and healthy (e.g. tolerant) states. | | |
| **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 Role Profile. | | |
|  | | **Essential/ Desirable** |
| 1. A PhD in biochemistry, biological chemistry or a related discipline, or equivalent professional experience. | | Essential |
| 1. Experience of using mass spectrometry for multiomics analysis (covering proteins, lipids and metabolites) characterisation and associated informatics analysis, linking data from patient records to support analysis of clinical phenotypes. | | Essential |
| 1. Experience of other molecular analysis (e.g chromatography, gel electrophoresis) and characterisation using biophysical methods (e.g. spectroscopy) and immunochemical methods (e.g. immunoassay, immunoblotting). | | Essential |
| 1. The ability to work flexibly and co-operatively within a team of experimental scientists. | | Essential |
| 1. A high level of numeracy and computer literacy; excellent verbal, written communication and presentation skills. | | Essential |
| 1. Experience of routine management of laboratory work and staff/student supervision and training. | | Essential |
| 1. Excellent organisation skills including record keeping and time management and the ability to manage competing priorities. A high standard of attention to detail. | | Essential |
| 1. The ability to contribute to the development of new proposal ideas by undertaking background research and producing of preliminary/feasibility data. | | Essential |
| 1. Able to produce high quality written material for reports, scientific papers and grant proposals. | | Essential |
| 1. Proficient in core software for general data analysis, report writing and preparation of data in figures and posters, and presentations. | | Essential |
| 1. Knowledge of and evidence of compliance with relevant Health and Safety regulations and the Data Protection Act. | | Essential |
| 1. Evidence of the ability to undertake complex problem solving and interpretation of experimental results. | | Essential |
| 1. Experience of drafting and working to Standard Operating Procedures and risk assessments including COSHH risk assessments and a good understanding of GDPR in relation to working with patient data. | | Essential |
| 1. The willingness to undertake any necessary training. | | Essential |
| **Special Requirements** | | **Essential/ Desirable** |
| 1. Experience of working on allergic and associated respiratory disease (e.g. asthma). | | Desirable |
| 1. Experience of handling biological samples, such as human serum. | | Desirable |
| 1. Experience of protein purification and characterisation | | Desirable |
| **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 (5 to 8 maximum). This should be read in conjunction with those contained within the accompanying generic Role Profile. | | |
| 1. Further develop and refine targeted, untargeted and imaging mass spectrometry methods for quantifying and profiling molecular markers of relating to the allergic status and exacerbations observed during viral infections or on exposure to food allergens. 2. Undertake proteomic data analysis using software packages (e.g. Progenesis, Peaks, Skyline); undertake apply multivariate statistical tools to relate them to clinical and/or cell model phenotypes using on-line tools such as Metaboanalyst and R Studio. 3. Assess the biological activity of the molecules using methods such as immunofluorescence, immunoblotting and immunoassay methods using a combination of patient samples and cell models. 4. Design, plan and implement experiments and other activities in line with the objectives of current project commitments, in-house and with collaborating bodies as required. The latter aspect may require travel to other locations nationally and (on occasion) internationally | | |