

## Candidate Information

<b>Position:</b>	Research Fellow
<b>School/Department:</b>	School of Medicine, Dentistry and Biomedical Sciences
<b>Reference:</b>	24/111572
<b>Closing Date:</b>	Monday 4 March 2024
<b>Salary:</b>	£37,841 - £41,331 per annum
<b>Anticipated Interview Date:</b>	Wednesday 20 March 2024
<b>Duration:</b>	Fixed term for 36 months or until 30 April 2027, whichever is soonest

### JOB PURPOSE:

To join the Inflammasome Biology research team led by Dr Rebecca Coll at the Wellcome-Wolfson institute for Experimental Medicine. The position will involve working as part of an MRC-funded research programme that will investigate the molecular mechanisms underlying the inflammatory response to ferritin, and how inflammasome activation and ferritin contribute to the pathogenesis of acute respiratory distress syndrome (ARDS).

This project will investigate the ferritin-inflammasome axis in a range of human cell types and patient samples using biochemical, genetic, and immunological approaches. The post is a senior role in the team and as such, successful applicants will have responsibilities in independent research, supervision, planning, day-to-day lab management, collaborations, and outreach.

The post is suited to a highly ambitious and collaborative individual and is available for 3 years.

### MAJOR DUTIES:

1. Develop, plan, and deliver an area of personal research and expertise, and/or undertake research under supervision within a research programme aimed at understanding the interaction between ferritin and the innate immune system. Techniques include cell culture of primary human cells (myeloid, epithelial) and human iPSCs, cell signalling assays, and inflammasome activity assays.
2. Develop and implement, with support, a highly ambitious personal career development plan during the post.
3. Maintain up-to-date knowledge of the field of interest at the cutting edge and communicate same to the group.
4. Design, develop and refine experimental models to obtain reliable and reproducible data in models of inflammasome activity.
5. Carry out analyses, critical evaluations and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research.
6. Present regular progress reports on research to members of the research group, other groups within the Institute/University, to external audiences nationally and internationally to disseminate and publicise research findings.
7. Prepare material for publication in national and international journals, and presentations at national and international conferences.
8. Assist grant holder in the preparation of funding proposals by generating preliminary data and applications as well as project progress reports to external bodies.
9. Carry out routine administrative tasks associated with the research projects/group to ensure that projects are completed on time and within budget and that the group functions efficiently. These might include organisation of project/group meetings and documentation, financial control, stock management/procurement, risk assessment of research activities and development of SOPs. Carry out routine administrative tasks associated with the day-to-day running of the research group in a communal laboratory setting.
10. Carry out school/undergraduate/post-graduate student and visiting researcher training and supervision, demonstrating, tutoring, or lecturing duties within the post holder's area of expertise and under the guidance of a member of academic staff.
11. Participate in local research-related activities such as journal clubs, training sessions, Institute seminar series etc.
12. Assist in assessment of research communications and data, particularly within the group.

13. Additional research and/or laboratory related duties including outreach activities, within the general range of the post and competence of post holder.

**ESSENTIAL CRITERIA:**

1. \*Have or about to obtain a PhD in Immunology, Respiratory Biology, Biochemistry, Cell Biology, or a closely related area. \*must have obtained PhD within 3 months of start date.
2. Substantial research experience in immunology, respiratory biology, biochemistry, or cell biology.
3. Extensive hands-on experience in at least three of the following:
  1. Isolation and culture of primary human cell types such as macrophages, monocytes, neutrophils, lung epithelial cells, endothelial cells, and culture of cell lines.
  2. Assays for cell signalling/innate immune responses including ELISAs, Western blotting and cell death.
  3. Gene editing with CRISPR/Cas9 and knockdown approaches such as siRNA.
  4. Flow cytometry.
  5. Immunofluorescence microscopy and confocal microscopy.
4. Recent high-quality original research publications in reputable peer-reviewed journals, commensurate with career stage.
5. Methodical approach to project management and meticulous regarding experimental procedures and record keeping.
6. Highly ambitious, motivated, efficient, organised and show a commitment to, and interest in, research topic.
7. Competent in maintaining knowledge of cutting-edge in field of expertise.
8. Competent in giving effective and informative oral and poster presentations.
9. Competent in communicating stipulated research skills essential to the post in CV/job application.
10. Strong ability to work from own initiative.
11. Excellent team working skills in multiple internal and external team settings.
12. Excellent problem-solving skills.
13. Irregular hours including evening, weekend and other out-of-hours working will be a component of the research at times.
14. Must be willing to travel to national and international meetings and collaborative laboratories.
15. Human blood and samples handling is required.

**DESIRABLE CRITERIA:**

1. Experience in iPSC culture, working with patient samples, or RNA sequencing and qRT-PCR.
2. High quality grant, manuscript, ethics application, report, and abstract writing experience.
3. Knowledge of and training in the Human Tissue Act.
4. Productive PhD/postdoctoral experience as evidenced by a strong publication record commensurate with career stage
5. Experience supervising /mentoring postgraduate/undergraduate/school students and visiting researchers in the laboratory.
6. Research project management.
7. Computing skills especially for software commonly used in biomedical research such as FlowJo, R, and GraphPad Prism.
8. Experience working in outreach settings.