

Candidate Information

Position: Research Fellow
School/Department: School of Medicine, Dentistry and Biomedical Sciences
Reference: 25/112692
Closing Date: Monday 28 July 2025
Salary: £41,519 per annum
Anticipated Interview Date: Thursday 14 August 2025
Duration: 34 months or until 31 October 2028, whichever is soonest

JOB PURPOSE:

To deliver the exciting project funded by UK Medical Research Council in the research group led by Dr Anna D Krasnodembskaya at the Wellcome Wolfson Institute for Experimental Medicine, Queen's University Belfast. The project will study the link between pre-mature lung epithelial cell senescence and regulation of lung recovery, dysregulated immune response and maladaptive remodelling in Acute Respiratory Distress Syndrome (ARDS).

The successful candidate will investigate the cross-talk between premature senescence and alveolar epithelial function in ARDS using experimentation with primary human pulmonary epithelial cells and lung organoids. The main purpose of this project is to characterise senescence associated secretory phenotype (SASP) in primary lung epithelial cells in ARDS, identify novel therapeutic targets to counteract the onset of senescence and test novel therapeutic strategies based on siRNA or engineered MSC EVs and isolated MSC mitochondria.

This project is milestones-driven so strict adherence to deadlines is essential. The successful applicant is expected to lead this ambitious cutting-edge research project and will be involved with supervision, planning, day-to-day lab management, collaborations and outreach. Applications are invited from enthusiastic, highly motivated, efficient and organised individuals with a strong commitment to a career in research and development.

This is a 34th months post funded by UK Medical Research Council.

Further information:

[https://pure.qub.ac.uk/portal/en/persons/anna-krasnodembskaya\(96497a43-4100-4999-8e0c-4d01217b83fc\).html](https://pure.qub.ac.uk/portal/en/persons/anna-krasnodembskaya(96497a43-4100-4999-8e0c-4d01217b83fc).html)

MAJOR DUTIES:

1. Develop, plan and deliver an area of personal research and expertise, and undertake research under supervision within a research project aimed at investigating the cross-talk between premature senescence and alveolar epithelial function in ARDS using experimentation with primary human pulmonary epithelial cells and lung organoids. This project is milestones-driven so strict adherence to deadlines is essential.
2. Maintain up-to-date knowledge of the field of interest at the cutting edge (including: mechanisms of cell senescence and aging, lung epithelial biology, lung regeneration, ARDS pathophysiology, siRNA therapeutics, recent advances in EV therapy development, immunomodulation, new models and techniques) and communicate the same to the group.
3. Design, develop and refine experimental apparatus, models, field research or experiments in order to obtain reliable and reproducible data.
4. Carry out analyses, critical evaluations and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research.
5. Present regular progress reports on research to members of the research group, other groups within the Centre/University, to external audiences nationally and internationally to disseminate and publicise research findings.

6. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
7. Assist grant holder in the preparation of funding proposals and applications as well as project progress reports to external bodies.
8. Actively drive own career development, e.g. through Postdoctoral Development Committee activities, fellowship applications etc.
9. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project/group meetings and documentation, financial control, 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 lab setting.
10. Carry out undergraduate/post-graduate student and visiting researcher training and supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
11. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines and engage in technical training as needed.

ESSENTIAL CRITERIA:

1. Have or be about to obtain* a relevant PhD in a biomedical field of laboratory-based research e.g respiratory biology, immunology, biochemistry, or cell biology
(*must be obtained within 3 months of commencement of employment)
2. Significant recent research experience in respiratory biology, lung organoids, cell aging and senescence, lung epithelial regeneration.
3. Extensive previous hands-on experience in at least 3 of the following:
 - Primary human pulmonary epithelial, endothelial and immune cell (monocyte derived macrophages, T-cells, neutrophils) culture and their evaluation by modern molecular biology techniques.
 - Lung organoid cultures and their evaluation by bioimaging.
 - Assays to evaluate cellular senescence and SASP.
 - Manipulation of gene expression in primary cells (SiRNA, shRNA, plasmids and AAV or lentivirus-based technologies.
 - Experience with siRNA (or shRNA) therapeutics, MSC extracellular vesicles and their modifications.
 - Confocal and fluorescence microscopy.
4. Reports, manuscript and abstract writing experience.
5. Recent high-quality original research publications in reputable peer-reviewed journals, commensurate with career stage.
6. Willingness to supervise postgraduate/undergraduate students and visiting researchers in the laboratory.
7. Must be methodical in project management and meticulous in terms of experimental procedures, strict adherence to deadlines and record keeping.
8. Must be highly ambitious, motivated, efficient, organised and show a commitment to, and an interest in research topic (demonstrate in depth understanding of the mechanisms of pre-mature senescence, ARDS pathophysiology, alveolar regeneration, what evidence is required for the development of new therapy for a clinical trial stage, excellent knowledge of Dr Krasnodembskaya's research).
9. Competent in maintaining and communicating knowledge of cutting-edge of field of expertise.
10. Excellent oral and written communication skills.
11. Competent in giving effective and informative oral and poster presentations.
12. Evidence of having presented at national and international conferences (poster and oral).
13. Able to demonstrate strong initiative and independence in thought and work but also to work within a highly collaborative team to support/train other team members as appropriate.
14. Must demonstrate good team working skills in multiple team settings as well as leadership qualities.
15. Must demonstrate excellent problem-solving skills and able to use own initiative.
16. Irregular hours including weekend working will be a component of the research at times.
17. Must be willing to travel to national and international meetings and collaborative laboratories.

DESIRABLE CRITERIA:

1. Experience with bioinformatic analysis of large data sets.
2. Experience with cell therapy manufacturing, process development.
3. High quality grant, manuscript, ethics application, report, and abstract writing experience.
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.