

Candidate Information

Position: Research Fellow for the Wellcome-Wolfson Inst for Experimental Medicine
School/Department: The Wellcome-Wolfson Institute for Experimental Medicine
Reference: 21/108934
Closing Date: Monday 19 July 2021
Salary: £33,797 - £40,322 per annum.
Anticipated Interview Date: Monday 12 August 2021
Duration: 18 month fixed term contract

JOB PURPOSE:

To join a Vascular Biology research group within the Wellcome-Wolfson Institute for Experimental Medicine working on a project funded by Heart Research. The project will involve using cellular and molecular biological approaches to characterise endothelial cell heterogeneity in order to develop novel therapies aimed at preventing graft failure in coronary artery bypass surgery. This research programme involves close collaboration with clinical colleagues. The post is suited to a highly motivated individual, preferably with relevant previous experience and is available for 18 months.

MAJOR DUTIES:

1. To be actively involved in the existing research programme and to ensure adequate planning and progression of the investigation so that the overall research objectives are met.
2. To investigate the role of endothelial cell specific signalling pathways such as nitric oxide and NOTCH in vascular cells (endothelial and mural cells) using appropriate in vitro and in vivo models.
3. To examine novel signalling interactions using protein and functional analysis, qRT-PCR and immunohistochemistry-based approaches.
4. To examine signalling interactions when cells are exposed to shear stress conditions.
5. To perform gene silencing or overexpression using appropriate technology.
6. To design, develop and refine experimental apparatus or experiments in order to obtain reliable data. This includes careful record keeping of experimental protocols and results.
7. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
8. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
9. Assist grant holder in the preparation of scientific manuscripts, funding proposals and applications to external bodies.
10. Carry out routine administrative tasks associated with the research project to ensure that it is completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
11. Carry out occasional undergraduate supervision and demonstrating duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
12. To keep up-to-date with the scientific literature related to the area (academic papers, journals and textbooks) and use this to inform experimental approaches and study design.

Planning and Organising:

1. Plan for practical and specific aspects of research programmes. Plan own day-to-day activity within framework of the agreed research programme and assist postgraduate students with the planning of their experiments.
2. Plan up to a year in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.
3. Plan for the use of research resources, laboratories and workshops where appropriate.
4. Coordinate and liaise with the supervisor and other members of the research group over work progress.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Routine ordering of research consumables and routine handling of animals.
3. Provide guidance as required to support staff and any students who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with supervisor and other members of the research team.
2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.

ESSENTIAL CRITERIA:

1. Have or about to obtain a PhD in vascular biology, pharmacology, cell biology, molecular biology, biochemistry or a closely related area.
2. At least 3-years recent research experience in cell or molecular biology using appropriate model systems.
3. Recent extensive hands-on experience in molecular cell biology techniques including at least two of the following:
 1. Isolation or culture of mammalian cells
 2. Genetic modification of cells
 3. Appropriate in vitro functional assays
 4. Appropriate in vivo models
4. Experience teaching/supervising /mentoring postgraduate/undergraduate/school students and visiting researchers in the laboratory.
5. Methodical approach to project management and meticulous in regards to experimental procedures and record keeping.
6. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
7. Highly ambitious, motivated, efficient, organised and show a commitment to, and interest in, research topic.
8. Competent in maintaining knowledge of field of expertise and ability to contribute to method improvement where required.
9. Competent in giving effective and informative oral and poster presentations.
10. Competent in communicating stipulated research skills essential to the post in CV/job application.
11. Demonstrable intellectual ability and show a clear interest and commitment to this area of research.
12. Commitment to high quality research.
13. Excellent problem-solving skills.
14. Strong ability to work from own initiative and to work independently within the context of a research team.
15. Ability to assess and organise resources.
16. Excellent team working skills.
17. Must be prepared to work outside normal office hours. Irregular hours including evening, weekend and other out-of-hours working will be a component of the research at times.
18. Must be prepared to work with experimental in vivo models.
19. Must be willing to travel to national and international meetings.

DESIRABLE CRITERIA:

1. Home Office personal licence.
2. Recent relevant hands-on and extensive research experience in:
 - Isolation and culture of primary cells, in particular endothelial cells.
 - Appropriate in vitro and in vivo models relevant to vascular biology such as proliferation, cell death, tube formation.
 - Assessing nitric oxide, NOTCH, and/or related signalling pathways.
 - Molecular and cellular biological techniques such as, qRT-PCR; manipulation of gene expression; cloning; western blotting; immunohistochemistry and microscopy.
 - Exposing cells to fluid shear stress conditions.
 - Analysis of protein function by determination of post-translational modification (for example ubiquitination or nitrosylation).
 - Working with laboratory animals and relevant in vivo models.
 - Computing skills in particular, specialised scientific software such as Image J, Imaris, Prism or RNA-seq analysis
3. High quality manuscript, report and abstract writing experience.
4. Productive previous experience as evidenced by a strong publication record commensurate with career stage.
5. Experience teaching lab members as well as undergraduate lectures/tutorials/practicals.
6. Research project management.

7. Up-to-date knowledge of vascular biology and/ or relevant signalling and disease related pathways.
8. Evidence of having presented at conferences (poster and/or oral presentations).
9. Long term goals in research.
10. Already have a Home Office personal licence or be prepared to work with animals and pass an animal licence training course.