THE POST

College:	**CLES**
Post:	**Postdoctoral Research Fellow**
Reference No:	**P68729**
Grade:	**F**
HERA:	**RFEL**
Reporting To:	**Dr Alexandra Brand**
Responsible For:	**N/A**

The above full time post is available from 1st October 2019 to 30th September 2022 in the College of Life & Environmental Sciences.

Job Description

Candida albicans lives as a commensal fungus in most humans but it can cause life-threatening systemic infections in around 200,000 patients a year, with a mortality rate of 40 %. A key virulence trait of this fungus is the formation of invasive filaments called hyphae, which penetrate blood-vessel walls and form inflamed lesions in diverse solid organ tissues underneath, leading to sepsis and death. Our research group focuses on how hyphae respond to their physical environment, which has revealed fungus-specific characteristics that may be important for tissue invasion. To date, we have used 2-D models to study signalling, contact-dependent responses and immune cell interactions. We are now extending this work into a 3-D model that mimics the mechanics of the human body. This novel approach will allow us to study how host-pathogen interactions are influenced by tissue mechanics at diverse infection sites for the first time. The post will be based in the state-of-the-art laboratories of the MRC Centre for Medical Mycology, and the Bio-Imaging Centre, Biosciences building, University of Exeter, with collaborators in Biophysics (Physics Department) and Computational Biology (Living Systems Institute).

Main purpose of the job:

The aim of this post is to establish a new 3-D model system with tuneable mechanical characteristics in which to investigate how the physical environment affects fungal translocation across endothelial cell layers and influences the ability of resident immune cells to phagocytose and kill fungal cells. The post requires an experienced post-doctoral researcher with cross-disciplinary skills in host and microbe cell manipulation and biophysics/physics. Live-cell imaging will be used to characterise how tissue mechanics affects translocation of the fungus across endothelial cells layers into the underlying matrix, and the ability of resident immune cells to detect and kill fungal cells. Experience in fluorescence live-cell imaging, quantitative image analysis and microfluidics would also be an advantage.

(Refer to job advert and adapt short sentence)

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:

- Acting as the lead researcher on the funded Fellowship projects;
- Developing research hypotheses, objectives, and experimental systems;
- Conducting individual or collaborative research projects;
- Contributing to the process of securing funds;

- Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
- Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
- Making presentations at conferences or exhibiting work in other appropriate events;
- Assessing, interpreting and evaluating outcomes of research;
- Developing new concepts and ideas to extend intellectual understanding;
- Resolving problems of meeting research objectives and deadlines;
- Developing ideas for promoting and extending research area;
- Developing ideas for application of research outcomes;
- Deciding on /following research programmes and methodologies, often in collaboration with colleagues.

2. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.

3. To act as a senior member of the research team including:

- Mentoring colleagues with less experience;
- Instructing and supporting colleagues in developing their research techniques;
- Supervising the work of others, for example in research teams or projects;
- Developing productive working relationships with other members of staff;
- Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
- Dealing with standard problems and help colleagues to resolve their concerns about progress in research.

4. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media and to present the results of scientific research to sponsors and at conferences.

5. As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:

- Managing the use of research resources and ensuring that effective use is made of them;
- Awareness of the use of research budgets;
- Helping to plan and implement commercial and consultancy activities, where appropriate;
- .

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification

Competency	**Essential**	**Desirable**
Attainments/Qualifications	PhD or equivalent qualification/experience in a related field of study.	Be a nationally recognised authority in the skills required for this project.
Skills and Understanding	Possess sufficient specialist knowledge in the discipline to develop/follow research programmes and methodologies. Record of research output in high quality publications.	**Be willing to undertake training visits abroad, as appropriate. Evidence of developing experimental systems.**
Prior Experience	Experience of managing research projects and research teams.	Experience of undergraduate /postgraduate teaching and supervision. Experience of assembling resources/expertise and establishing collaborations. .

Behavioural Characteristics	Excellent written and verbal communication skills. Able to communicate complex and conceptual ideas to a range of groups. Evidence of problem-solving. Evidence of the ability to collaborate actively within the Institution and externally to complete research projects and advance thinking. Able to participate in and develop external networks. Able to balance the pressures of research, supervision demands and competing deadlines.	andWillingness to acquire new skills and build relationships for future activities
Circumstances	**Work longer hours as/when experimental work requires. Travel abroad for conferences, training and collaborative meetings.**	

Informal Enquiries
Before submitting an application you are encouraged to discuss the post further by contacting Dr Alex Brand, Wellcome Senior Research Fellow and Associate Professor, MRC Centre for Medical Mycology a.brand@exeter.ac.uk, after 25th August 2019.

Any queries before the 25th of August can be directed to Suzanne Laver at S.Laver@exeter.ac.uk, or alternatively, you can call on 01392 722293

Terms & Conditions
Our Terms and Conditions of Employment can be viewed here.

Further Information
Please see our website for further information on working at the University of Exeter.