



Job Title: Research Associate
Salary: £38,205 - £44,263 per annum
Grade: 7
Department: Genetics and Genome Biology
Hours/Contract: Full-time, fixed term contract until March 2025
Job Family: Teaching and Research
Job Reference: 10446

Role Purpose

To determine the mechanisms involved in air pollution mediated induction of microbial-host interaction. Our interdisciplinary research shows that air-borne particulate pollutants and metal pollutants directly impact bacteria, potentiating infection. However, there is little understanding of the mechanisms involved in the effect of air pollutants on bacterial gene expression, and the subsequent altered antibiotic resistance and interaction with the human respiratory tract.

The aim of this project is to identify the biological mechanisms involved in the interaction between air pollutants, bacterial pathogens and respiratory tract health and validate clinical associations that can lead to novel therapeutic strategies for COPD, asthma and other infectious diseases. This is an interdisciplinary post that involves close collaboration with microbiologists, data analysts, environmental scientists, respiratory clinicians and clinical microbiologists.

The candidate will have specific responsibilities with an established research programme. To work collaboratively and independently as part of a research team to achieve defined milestones and produce high quality research as part of a wider programme of the NIHR funded Biomedical Research Centre (BRC).

Main Duties and Responsibilities

Research

- To undertake an active role in day-to-day management of a research project or projects
- To take a leading role in performance, experimental design, statistical and data analysis.
- Responsible for the advancement of the multi-disciplinary research, resulting in significant contributions to journal papers and conference presentations.
- To lead in writing up research findings for dissemination amongst the research team and broader national and international community and develop ideas and contributions for future grants.
- To contribute as a team member to the development of a broader programme within the BRC, this may include contributing to the writing of research bids/grants
- To actively seek opportunities to carry out multi-disciplinary research with other research groups at the University or stakeholders external to the University, with the approval of the line manager.
- To participate in general laboratory activities to ensure the efficient functioning of the lab.
- To adhere to health and safety procedures at all times, and to help the Lab Safety Officer, enforcing good safety practice in the lab.





- To train and supervise new members of the lab, including undergraduate students, PhD students and work experience trainees.

Professional Development

- Duties and opportunities to engage in work that support your own professional development

Impact and Knowledge Exchange

- Network and contribute to the maintaining and furthering of the wider research programme and research area
- To contribute to industry collaborations
- To consult effectively on own specialism directly with people external to the University
- To engage positively and pro-actively in research impact

Leadership and Citizenship

- Guidance to other team members both research staff and students
- Pro-actively build networks and collaborations.
- Providing mentoring and coaching to Early Career Researchers and research students.

Internal and External Relationships

- Regular meetings with members of the programme research group
- Meeting members of the department for critical discussion of the research and exchange of new ideas and approaches that might benefit the research
- Liaison with external collaborators

Planning and Organising

You will be required to effectively manage your time to plan your research activity and to deliver on the priorities of the project:

- Prioritise tasks within agreed work schedules;
- Plan for specific aspects of research incorporating issues such as deadlines, project milestones and overall research aims;
- Adapt daily and weekly plans to accommodate new developments and be flexible to the changing priorities of the research project;
- Prepare reports, manuscripts, grants applications and a project final report

Qualifications, Knowledge and Experience

Essential





- PhD, or PhD near completion, in Microbial Genetics*
- Extensive bacterial- human tissue culture to study bacterial response*
- Extensive experience working with bacteria, and specialist knowledge of bacterial physiology specifically adaptative responses to environmental pollutants and antimicrobial resistance*
- Extensive experience of transcriptomics and next generation data analysis including functional analysis*.
- Ability to develop and optimise transcriptomic data analysis pipeline*
- Proven ability of training and supervision of new members of the lab, including undergraduate students, PhD students and work experience trainees*
- Evidence of research productivity (e.g. papers, national/international conference seminars, grant applications etc) *
- Proven ability of training and supervision of new members of the lab, including undergraduate students, PhD students and work experience trainees*

Desirable

- Molecular experience of microbial immunology
- Proven ability to contribute to and work well in an interdisciplinary team

Skills, Abilities and Competencies

Essential

- Evidence of working effectively as part of a team and the ability to work independently *
- Extensive experience working with bacterial adaptation to environmental pollutants*
- Extensive experience in next generation sequencing data analysis and transcriptional functional analysis, pipeline development *
- Extensive molecular microbiology experience*
- Experience of human-bacterial interaction in host tissue culture with a focus on the bacterial response*

Desirable

- Experience in 'omics analysis (e.g. metabolomics, mutagenesis)*

****Criteria to be used in shortlisting candidates for interview***

Reason for Fixed Term Contract

The reason for the fixed term contract is stated in section 1.9 in the summary of contractual terms in your contract of employment





Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

Supporting University Activities

As a University of Leicester citizen, you are expected to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We expect all staff as citizens to work flexibly across the University if required.

University Values

Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger.

Inspiring - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas.

Impactful - As Citizens of Change we will generate new ideas which deliver impact and empower our community

Equity and Diversity

We believe that equity, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equity support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equity, diversity and inclusion.

