Technician

Department: Department of Biology
Hours of work: Full time – 37 hours per week
Contract type: Fixed term – 1 year 3 months
Salary: Grade 5, £25,941 - £31,866 a year
Introduction

Professor Mottram has been awarded a Wellcome Trust Investigator Award to carry out a kinome-wide functional analysis of Leishmania growth and differentiation. Leishmania species are trypanosomatid parasitic protozoa that are the causative agents of a spectrum of diseases, the leishmaniases. Whilst significant progress has been made in understanding the unique cell biology of Leishmania and its interaction with the mammalian host, little is known about the signalling pathways that regulate key events in the parasites’ life cycle and which protein kinases are essential and therefore potentially amenable to chemotherapeutic modulation. To address this we have carried out a loss-of-function genetic screen in Leishmania mexicana and identified protein kinases involved in signalling pathways regulating parasite differentiation during transition between animal and sand fly hosts. We have also identified protein kinases essential for proliferation and survival of Leishmania in the mammalian host. We are using CRISPR-Cas9 genome engineering and rapamycin induced diCre recombinase to study the function of Leishmania genes in using culture and animal models of infection. The expected output of the project will be novel insights into protein kinase function in Leishmania and a holistic overview of cell signalling pathways that will integrate into ongoing “omics” analyses within the Leishmania community.

Main purpose of the role

To conduct research and provide technical support for the Wellcome Trust grant

To provide general laboratory support and assist in housekeeping and operational management within the Mottram Group.

Key responsibilities

(Role holders will be required to undertake some or all of the duties below)

- To conduct parasitology research on murine experimental leishmaniasis, collecting and analysing research data from genetic manipulation experiment and animal infections, under the supervision of others
- To maintain records of experimental data and for laboratory management purposes
- To work independently and as part of a team
- To be compliant with all regulations pertaining to work with pathogens
- To be compliant with all regulations pertaining to work with animals
- To support University research staff in their research; through the independent application of specialist scientific techniques
- To provide technical advice in relation to the research and the techniques used to other staff members within the wider research team
- Prepare written summaries of the research activities undertaken; communicate and make presentations within the research group, at meetings, and other recognised avenues as appropriate
- To be responsible for the maintenance, repair and operation of laboratory facilities, equipment and contribute to the organisation, housekeeping and operational management of the laboratory; maintain stocks of consumables
- To provide laboratory induction and ongoing training and supervision and technical support for undergraduate and postgraduate students, members of staff and visitors using the laboratory facilities and equipment
To develop laboratory protocols, standard operating procedures and maintenance schedules for laboratory equipment and be responsible for laboratory operational health and safety processes and procedures.

To be responsible for keeping knowledge and understanding up to date in the field of specialism; translating knowledge of advances in the subject area into research activity.

Work on own initiative to help solve problems which achieve the objectives of the work area, raising any issues with more senior staff.

Plan and perform experiments or other tasks using a range of scientific techniques, sometimes working from a limited brief.

Liaise with appropriate staff and external service providers to ensure the work area and equipment are kept operational.

Be responsible for the maintenance, modification, repair and operation of equipment in the work area.

As required solve faults, and maintain and repair technical equipment.

Work effectively with others, providing technical advice in relation to the work area activities and the techniques used, to staff and students, as required.

Pro-actively update and improve processes, contribute to and support change in the work area.

Understand, promote and apply COSHH/Risk Assessment and departmental health and safety protocols ensuring procedures are followed at all times.

Maintain accurate records of work undertaken, including reports, using appropriate (bespoke) software.

Contribute to the development of protocols, standard operating procedures and maintenance schedules for the work area.

Assist with purchasing including ordering and distributing goods.

Manage a small budget, monitor resource usage and maintain supplies of key items.

Communicate and, if required, make presentations of own work activities to others in the team.

Provide inductions, training and demonstrations of specialist techniques ensuring compliance with safety and regulatory guidelines to staff, students and external stakeholders.

To contribute to and support change in the work area.

When required, to manage team resources, coordinating and plan the day to day activities of a group of staff.

To actively demonstrate a commitment to professional development by continuing to advance knowledge, understanding and competencies.
## Person specification

<table>
<thead>
<tr>
<th>Qualifications</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>Degree or equivalent in Microbiology or appropriate science discipline or appropriate experience</td>
<td>Essential</td>
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### Knowledge

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>Relevant theoretical knowledge in microbiology</td>
<td>Essential</td>
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<tr>
<td>In depth knowledge of relevant safety regulations and procedures for example, COSHH and risk assessment</td>
<td>Essential</td>
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<tr>
<td>Knowledge and ability to implement practical techniques used in relevant work area</td>
<td>Essential</td>
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<tr>
<td>Knowledge in Microbiology to assist with high quality research</td>
<td>Essential</td>
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<td>Knowledge of a range of modern analytical techniques and methodologies</td>
<td>Essential</td>
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<td>Knowledge of genetic manipulation of parasites</td>
<td>Desirable</td>
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<td>Knowledge of Molecular Biology</td>
<td>Essential</td>
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<td>Knowledge of general laboratory practice</td>
<td>Essential</td>
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<tr>
<td>Knowledge of Home Office regulations and experimental design in animal studies</td>
<td>Essential</td>
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### Skills, abilities and competencies

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<tr>
<th>Skills, abilities and competencies</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>Ability to coordinate and monitor members of the team, allocating work as appropriate</td>
<td>Desirable</td>
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<td>Ability to perform complex technical tasks to a consistently high standard with attention to detail</td>
<td>Essential</td>
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<td>Competency in the use of advanced equipment and techniques</td>
<td>Essential</td>
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<td>Ability to plan and take responsibility for own work using initiative, seeking advice where necessary</td>
<td>Essential</td>
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<td>Ability to analyse and interpret data, and explain complex information to others</td>
<td>Essential</td>
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<td>IT skills for a wide range of applications, including Google Apps, Microsoft Word and Excel and specialist software where appropriate</td>
<td>Essential</td>
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<td>Ability to assess non-routine problems and implement solutions within own expertise</td>
<td>Essential</td>
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<td>Highly developed communication skills to engage effectively with a wide ranging audience, both orally and in writing, using a wide range of media</td>
<td>Essential</td>
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<td>Competency to conduct individual and collaborative research projects</td>
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<td>Excellent approach to record keeping and organisation</td>
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<td>Good technical skills (e.g. experimental design, troubleshooting)</td>
<td>Essential</td>
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<td>Ability to follow complex protocols with accuracy</td>
<td>Essential</td>
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<tr>
<td>Excellent organisational skills</td>
<td>Essential</td>
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**Experience**

| Evidence of having contributed to activities using a variety of sometimes specialist technical skills | Essential |
| Experience of working on own initiative and as part of a team | Essential |
| Experience of carrying out collaborative research | Essential |
| Ability to work as part of a team and also work independently using own initiative | Essential |
| Experience of writing up research work | Desirable |
| Experience of working with HG 2/3 pathogens | Desirable |
| Previous experience in a laboratory support role | Essential |
| Experience in parasitology | Desirable |
| Current Home Office personal licence holder (or equivalent) or willingness to hold such | Essential |

**Personal attributes**

| Good interpersonal skills and the ability to communicate effectively with staff and students | Essential |
| Actively demonstrates a commitment to professional development by continuing to advance knowledge understanding and competencies | Essential |
| Dependable, reliable and self-motivated | Essential |
| Able to maintain a positive, open attitude toward others, to value and support colleagues, to adapt to change quickly and easily and demonstrate personal resilience | Essential |
| Responsible, reliable and highly motivated | Essential |
| Willingness to learn new techniques and keep up to date with developments in own field of expertise | Essential |
| Willingness to, on occasion and as required by experiments, work flexible hours, including outside standard working hours | Essential |
| Excellent interpersonal skills | Essential |