

SCHOOL OF MEDICINE

**Ph.D. STUDENT
(with graduate teaching assistant responsibilities)
Fixed Term for 3 years**

Job Description

Ph.D. Topic:	
<p>Malaria is a global health problem requiring world-wide action and research effort. This infectious disease, due to Plasmodium parasites, caused ~200 million cases and a daily rate of over 1,000 deaths (mainly <5 years old children). A protective vaccine is still missing and available drugs diminish their impact against infection as resistance is expanding, including resistance against artemisinins (the best currently used drugs). In order to neutralize drug resistance and the high failure rate in valuable compounds reaching the market, multiple NCEs and validated targets are needed.</p> <p>Both the standard approaches for drug discovery, target-based and organism-based screens have showed intrinsic limitations. Anti-malarial drug discovery is additionally hindered by the substantial lack of knowledge about fundamental mechanisms regulating the complex and unusual Plasmodium life cycle. Therefore, this project to redress some of these limitations will apply for the first time a transversal investigation that, spanning both target and drug identification, will investigate specific events of Plasmodium asexual cell cycle and reveal chemical moieties and genes, both related to the events under study. The highly novel methodologies applied in this project will allow to greatly expand the biological understanding of the Plasmodium cell cycle, identifying novel chemicals and essential/critical genes that, with defined phenotypic patterns, affect and are involved in malaria cell progression, respectively.</p> <p>In particular, we have recently developed a novel random mutagenesis system which introduces important innovative solutions to the issues affecting the previous attempts in the field. To better understand the regulation of the cell cycle in Plasmodium falciparum and identify key factors involved in artemisinin resistance, we will setup high-throughput mutant production and phenotypic screening applying forward genomic approaches.</p> <p>The 3-year Ph.D. project will be aimed at mechanistically validating the genes and pathways identified by the random mutagenesis approach, evaluating their potential as drug targets. The experimental plan will include several techniques such as cell culturing procedure advanced molecular biology and genetic modification (DiCre, CRISPR/Cas9, library construction, flow cytometry, microscopy, western blots, and other biochemistry techniques).</p> <p>The Ph.D. research project will take place within the School of Medicine and the School of Pharmacy and Bioengineering.</p>	

Responsible to:	Dr. Ilaria Russo	
Accountable to:	Dr. Ilaria Russo and Prof Rosemary Fricker	
Financial support:	Ph.D. research stipend and University fees (UK level only) for 3 years.	Hours: Full Time

Keele University is the UK's largest campus-based university offering a premium student experience. The University offers a truly international appeal with students from over 120 countries and has one of the largest student residential communities of any university in the UK. . In the 2018 National Student Survey, Keele is 1st in England for overall Satisfaction. We continue to be a top ten University for graduate employment. In the 2017 Teaching Excellence Framework (TEF), Keele is ranked Gold.

Keele University promotes interdisciplinary and multi-disciplinary scholarship making a distinctive contribution to higher education by emphasising the strength of a broader educational programme.

Keele University provides a high quality and effective postgraduate research training environment. The Faculty of Medicine & Health Sciences currently delivers postgraduate research (PGR) training to some 160 Ph.D. students through a college of over 100 trained supervisors. The recent Postgraduate Research Experience Survey 2017 highlights Keele PGR student satisfaction (up on 2015 metrics and above benchmark sector performance) across all domains (supervision, resources, research culture, progression, responsibilities, teaching opportunities, research skills, professional development). Research training within these Faculties is provided within an infrastructure that encompasses 21st century state-of-the-art laboratories, NHS partnerships, the Keele University Science Park, our industrial partners and strategic links to partners such as the Liverpool Technology Directorate.

PGR students receive high quality training encompassing personal development, transferable, employability, scientific, and subject specific skills in accord with the Vitae-Researcher Development Framework.

School and Research Institute	<p>The School of Medicine has a 2019 intake of 154 undergraduate medical students for its highly rated, innovative integrated MBChB five-year course that is committed to “Graduating Excellent Clinicians”. The most recent GMC QABME team visit reported “the Keele curriculum prepares students well for working as a foundation doctor” and “F1 supervisors we met were impressed with the can-do attitude and maturity of Keele graduates”. The Keele MBChB course is ranked 1st in the 2018 National Student Survey, 11th in the Complete University Guide for Medicine 2019, and 13th in the Guardian League for Medicine for 2019.</p> <p>The Medical Science team’s research primarily falls within the School of Medicine and the School of Pharmacy and Bioengineering; our staff also form a strong core grouping within the School of Life Sciences of the University’s Faculty of Natural Sciences. Thus, staff have the opportunity to interact with multiple groups to enable their collaborative research programmes.</p>
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Main Duties and Responsibilities:

Research

- Pursue a piece of original research to PhD standard.
- Manage his/her own academic research and administrative activities and report to Dr Russo, who will provide guidelines as required.
- Responsibility for the day-to-day management of experiments as well as analysing and interpreting the results.
- Carry out standard molecular biology techniques.
- Maintenance of Containment laboratory of level 3.
- Preparation of routine lab reagents.
- Collaborate in the preparation of scientific reports and journal articles and provide material for the presentation of papers and posters at conferences.

- Carry out collaborative projects with lab colleagues and partners.
- Develop skills and attributes required for independent research including experimental design and critical appraisal.
- Ensure that all work in the laboratory is conducted safely and, in particular, that work is undertaken following the appropriate health and safety policies and procedures for the particular area, without compromise to his/her own safety or that of others who may be affected

Teaching

- A commitment to teaching as a graduate teaching assistant at the School of Medicine is required for this post. Teaching activities will be in support of undergraduate learning in the MBChB course and is likely to be in the form of demonstrating in practical classes. This will be remunerated, with an expected commitment of up to 4 hours per week in term time only. Precise activities will be agreed with Dr Russo and Professor Fricker.

This is not intended as an exhaustive list of duties or a restrictive definition of the post but rather should be read as a guide to the main priorities and typical areas of activity of the post-holder. These activities are subject to amendment over time as priorities and requirements evolve and as such it may be amended at any time by the line manager following discussion with the post holder.

This post is unlikely to meet the relevant criteria to allow the University to issue a Certificate of Sponsorship. Applications from candidates who require a Certificate of Sponsorship to work in the UK will be considered against the requirements as stated in the recruitment documentation. Recruitment decisions will be made in accordance with the UK Borders Agency guidance.

Application Requirements

Please provide a cover letter, a CV and the details of two referees.

References

You are asked to provide details of two referees (three if you are applying for an academic or research post) on your application form, one of which must include your current or most recent employer. Referees should be able to comment on your work and/or educational background and may be approached before interview. In providing these details you are giving the University permission to request personal information about you from your referees, which may include confirmation of your previous salary, disciplinary and work history.

Disability Confident



Keele University is committed to taking positive steps to employ, keep and develop the abilities of disabled staff and has been awarded the disability symbol. We undertake to offer all applicants with a disability and **who meet the minimum essential criteria** an interview. If you wish to be considered under this scheme, please indicate this by selecting 'Yes' in the Guaranteed Interview Scheme Section of your application. You can also provide specific information of any requirements/adjustments you may require to assist you during the recruitment process within this section.

The information you provide on your application will be forwarded to the recruiting area so that they may consider whether they can facilitate your requested adjustments. **Please note that if you do not indicate that you wish to be considered under the Disability Confident scheme in your application, you will not be considered under this Scheme.**

Evidence Key	
A	= Application
I	= Interview
R	= References
T	= Test
P	= Presentation (or a combination)

PERSON SPECIFICATION

SCHOOL OF MEDICINE PhD STUDENT

Criteria Headings	Essential	Evidenced by	Desirable	Evidenced by
Qualifications/ Education/ Training	<ul style="list-style-type: none"> Degree in Biology, Biomedical Sciences or relevant field 	A	<ul style="list-style-type: none"> Having a Home Office Personal Licence (PIL) Masters qualification in a related field or equivalent industry experience 	A A
Experience	<ul style="list-style-type: none"> Knowledge of cell culture techniques Knowledge of molecular biology techniques Knowledge of malaria experimental work 	A/I/R A/I/R A/I/R	<ul style="list-style-type: none"> Direct experience in malaria field or in murine malaria 	A/I
Skills/ Aptitudes/ Competences/	<ul style="list-style-type: none"> Effective communication, presentation and interpersonal skills IT literate An ability to initiate work independently An ability and willingness to work as part of a team Ability to carry out administrative duties effectively Strong organisational skills Working knowledge of literature search databases such as PubMed Able to produce reports to strict deadlines and 	A/I/R/P A A/I/R A/I/R A/I/R A/I/R A A/I/R	<ul style="list-style-type: none"> Ability to teach undergraduate students 	A/I/R

	manage the project independently			
Other	<ul style="list-style-type: none"> Ability to be flexible – recognising research commitments may require outside of standard working hours. 	A/I		

Further Information and enquiries

For an informal discussion about the post, please contact Dr. Ilaria Russo by email: i.russo@keele.ac.uk.