

Job description

Post title and post number	Research Technician - 54449
Organisation advertising Description	School of Immunity and Infection College of Medical and Dental Sciences
Post number	54449
Full-time/Part-time	Full time
Duration of post	Fixed term for 18 months
Post is open to:	Internal and external candidates
Grade	500
Salary	Starting salary is normally in the range £21,452 to £23,045. With potential progression once in post to £26,679 a year. New staff are eligible to join the University's new defined contribution pension scheme. Existing staff may continue to receive their current benefits
Terms and conditions	Support
Closing date	9 February 2015

Job summary

The post holder will carry out duties to deliver the programme of science that underpin an 18 month grant from Pfizer awarded to Dr Helen McGettrick (Defining the therapeutic potential of a novel peptide regulator of T-cell recruitment in rheumatoid arthritis). The post holder will be working on mouse models of inflammation with members of the Rheumatology Research Group, as well as cell culture based migration experiments with members of the Leukocyte Trafficking Group.

Main duties

- **Animal husbandry.** Collation of animal numbers and liaison with BMSU for all mouse strains used in the project. Maintenance of animal database/inventory (ARMIS).
- **Animal models of arthritis.** Setting-up experiments and collection of tissues from animals. Ensuring the samples are processed and stored correctly and accurate records are kept in order to comply with legislation and research Ethics committee standards. Failure to comply with the regulations could have serious consequences for both the on-going research and the university as a whole.

- **Processing tissue sample.** This involves running through a panel of procedures as follows: Tissue sectioning, Extraction of various cell types, Setting up experiments, Flow Cytometry for characterisation assays.
- **In vitro migration assays.** This involves running through a panel of procedures as follows: cell culture, processing clinical samples, setting-up experiments, microscopy.
- **Data Handling and analysis**
(Scoring of animal models of arthritis and in vitro models of inflammation). In consultation to analyse and to discuss results and actively to participate in and contribute to weekly group discussions. To demonstrate and discuss procedures, techniques and results with supervisor and team members, identifying problems, issues, and areas of interest.
- To attend journal clubs and lab meetings.
- **Laboratory administration and organisation.**
The post holder is responsible for ensuring all the laboratory areas under their control are maintained to the highest levels in line with good laboratory practice on a daily basis. To order and track purchases of stocks and equipment and to contribute to the smooth running of the project. To bring equipment faults and deficiencies to attention in order that timely repairs are affected.
- **Health and Safety.**
To follow all pertinent Health and Safety guidelines and procedures. To prepare and complete COSHH (Control of Substances Hazardous to Health Regulations) and risk assessment forms. To maintain H&S records both paper and computer based and ensure their accuracy. To engage and work proactively in support of all Health and Safety guidelines and procedures. To ensure timely clearance of laboratory waste and to maintain the laboratory housekeeping to a high standard. Work will involve human tissues and must adhere to Human Tissue Act regulations.
- **Receive and processing biological/clinical samples.** Maintenance and management of local sample database/inventory.
- **Oversee the laboratory work of PhD students** within the group and where necessary provide the technical expertise, training, and instruction in a variety of laboratory techniques/ procedures.
- **To provide support and undertake other duties** as directed by the School Technical manager which are commensurate with the grade of the post.

Person specification

- Good honours degree in a biological subject or equivalent.
- Experience of animal husbandry and holds a personal animal licence.
- Experience in a processing tissues, including immunohistochemistry and immunofluorescence.
- Experience in handling of biological samples and cell culture.

- At least 12 months experience in a similar role.
- Experience in a range of molecular biology techniques
- Ability to learn techniques quickly and accurately
- Experience of IT systems, including data entry and retrieval onto computerised databases.
- Knowledge of Home Office Regulations.
- Knowledge of University safety policies to include COSHH
- Must be thoroughly up to date with current safety legislation
- Must be trained in the use and disposal of chemicals, biohazardous and radioactive materials.
- Familiar with Health and Safety aspects of the equipment and processes within the lab and be able to carry out appropriate risk assessments.
- Excellent organisation skills to plan and prioritise work to meet research obligations.
- Excellent communication skills, as this post requires dealing with different types of people from patients to professors.
- Team orientated

Problem solving/Decision Making

- Prioritise, plan and perform day to day laboratory experiments and analyse the data.
- Choose suitable control samples to validate the protocols.
- Keep an up to date inventory of animal husbandry (numbers, treatments, severity) as required by the Home Office, to include interactions with various collaborators.
- Routine operation and maintenance of laboratory equipment.
- Replace consumables and reagents.
- Contribute to internal laboratory meetings by presenting results.
- Select appropriate experimental protocols to achieve objectives.
- Undertake a change in the course of experiments.
- Plan his/her working week in consultation with the supervisor.
- Resolve problems that may have not been encountered previously.
- Suggest improvements to the existing protocols.
- Analyse data
- Undertake a change in research direction.
- Set long term priorities
- Make decisions on major purchases

Internal and external Relationships

- Dr Helen McGettrick - To plan experiments, problem solve, undertake analysis, monitor progress. Discuss research strategy
- Research Nurses – to arrange sample collection and processing
- Other staff and students - Supervision of staff and students in experimental techniques involved in the project and other laboratory procedures
- Technical Managers - Routine problems, equipment failure, health and safety, ordering of stock and minor equipment; follow-up outstanding orders

The organisation

The University of Birmingham is a thriving and dynamic institution that combines over a century of heritage with one of the most compelling and ambitious agendas in higher education. Ranked amongst the world's top 100 institutions, the University is structured to promote faster decision making and to enable it to capitalise on its academic range and financial strength. The University is organised into five academic colleges, with a University Executive Board, led by our Vice-Chancellor, Professor David Eastwood.

Central to our agenda is the development of the University's five-year strategic plan 'Shaping Our Future: Birmingham 2015', that builds upon an existing and ambitious programme of change, 'Sustainable Excellence', developed to establish Birmingham as a leading global university.

The strategic plan is based around five mutually supportive goals: enhancing research power; providing students with a distinctive, high-quality experience; sustaining and utilising financial strength; enhancing performance as an engaged university; and becoming the destination of choice amongst our peers. The confidence of the University's ambition is, in part, underpinned by one of the strongest financial positions in the UK HE sector. The University is currently forecasting a turnover of £460 million for the financial year 2011/2012 and carries significant cash surpluses with no borrowings. This is enabling it to invest in high-quality research and to enhance still further the educational experience for its students, as well as to continue to improve its estate and infrastructure, despite the prevailing economic conditions.

Over 90% of Birmingham's research was rated as world leading or of international quality in the 2008 UK Research Assessment Exercise (RAE). With world-leading activity across a range of subjects, it remains one of the UK's most broadly-based research-led universities.

The University's cultural and intellectual assets include the Shakespeare Institute at Stratford-upon-Avon, the Barber Institute of Fine Arts on campus and the Ironbridge Institute in Shropshire. The University also boasts the internationally renowned Lapworth Museum of Geology and Winterbourne House and Garden, a unique Edwardian heritage attraction that is home to over 6,000 plant species from around the world. In total the University's economic value to its region is £780 million.

Founded in 1900 and believed to be the UK's first redbrick university, Birmingham established a new model for higher education, breaking away from the Oxbridge tradition. Through the foresight of our founders we have inherited one of our greatest assets – our beautiful parkland campus, which is currently undergoing a £175 million enhancement programme that includes the new Bramall Music Building, a new sports centre containing the city's first 50m swimming pool and a proposed library

development to provide outstanding facilities for students and researchers alongside an open access cultural hub with facilities available to the public.

The University was founded through philanthropy and fundraising. This is just as important today. Birmingham's 'Circles of Influence' campaign has raised over £60 million since its launch in 2009 and continues to provide funding for five priority areas – Health and Lifestyle; Children and Young People; Heritage, Culture and Sport; Student Support; and Innovation and Immediate Impact.

With 28,000 students from 150 countries, the quality of the student experience offered at the University of Birmingham remains of paramount importance. The University is one of the leading members of the Russell Group in terms of the size of its graduate school and the quality of its student experience as shown by the National Student Survey. As well as high-quality teaching, students also enjoy an enriched experience through other activities such as sport, for which Birmingham is ranked second in the UK.

As Birmingham seeks to extend its global footprint further it is investing in its international strategy, having established overseas offices in India, China and Brussels. These new offices are developing existing contacts and forging new partnerships with academic colleagues and businesses across the Asia Pacific Region and into Australasia. Birmingham is also building strategic partnerships in North America (notably Chicago) and through its membership of Universitas 21.

The city of Birmingham

Birmingham is a major European centre and the second city of the United Kingdom. It is a city of business and ballet, canals and world-class concerts, jewellery and jazz, historical interest and cosmopolitan atmosphere. Birmingham is also the ideal base for exploring one of Britain's most fascinating regions for tourism, being within an hour's drive of Stratford-upon-Avon, Warwick, the Potteries, and the Cotswolds.

The new heart of Birmingham is symbolised by Symphony Hall, considered one of the greatest concert venues in the world. Symphony Hall forms part of the impressive International Convention Centre, which overlooks attractive canals at the hub of the UK's canal network. This setting is a very suitable venue for the CBSO, the globally respected symphony orchestra. At the magnificent Hippodrome Theatre is the internationally renowned Birmingham Royal Ballet, adding further cultural depth to the city. Apart from London's West End, Birmingham boasts the highest concentration of live theatre in the UK, including regular tours by the major opera companies.

The City Museum and Art Gallery houses the world's finest collection of Pre-Raphaelite paintings, alongside a major collection of Old Masters, Modern and Contemporary pictures. The Barber Institute of Fine Arts houses one of the best UK university collections of Impressionist and Renaissance art. The restored Gas Hall

Gallery has international touring exhibitions, while the Halcyon and Ikon galleries feature innovative contemporary works. National landmark sites abound, including the National Indoor Arena, the National Exhibition Centre, National Motorcycle Museum, National Car Heritage Museum and the National Sealife Centre.

The iconic Bullring Centre is the largest dedicated shopping facility in Europe. Sports and recreation are well served; the city offers international Test cricket, top-flight football, International Championship golf and top-class rugby. The International Convention Centre and National Indoor Arena have spawned a whole new Downtown area at the centre of the city. The National Exhibition Centre, on the outskirts to the city, remains one of the largest exhibition facilities in Europe.

Birmingham is at the crossroads of the UK's motorways. From Birmingham International Airport, more than a dozen different airlines operate scheduled services to 60 destinations worldwide. The University is the only mainland UK university to have its own railway station, while 50 million passengers a year use Birmingham New Street Station, which will be at the centre of the proposed high speed rail network. London is 90 minutes away by shuttle service, with trains every 20 minutes until the evening. There is a high standard of all types of private accommodation, with high-quality affordable family housing in several attractive residential suburbs. Public parks and large domestic gardens are a special feature of this greenest of European cities. Quality public and private schools are widely available, with several consistently rated in the top 10 on examination performance in annual league tables of England and Wales.

The College of Medical and Dental Sciences

The University's structure is one of Colleges and Schools, and the College of Medical and Dental Sciences contains five Schools that cover the whole range of pre-clinical and clinical disciplines:

- School of Cancer Sciences
- School of Clinical and Experimental Medicine
- School of Dentistry
- School of Health and Population Sciences
- School of Immunity and Infection

The principal base of the College lies immediately between the main campus of the University and the new Queen Elizabeth Hospital, University Hospitals Birmingham NHS Foundation Trust. Other key NHS Trust buildings on the same campus include Birmingham Women's NHS Foundation Trust and the Birmingham and Solihull Mental Health NHS Foundation Trust's Barberry Hospital which is part of the National Centre for Mental Health – Birmingham.

Research

The College of Medical and Dental Sciences is the largest of the University's five Colleges and, with over 800 researchers and in excess of £66M research funding per year, it represents a major international centre for biomedical research.

Our overall research objective is to develop and promote excellence in basic and clinical science with an ultimate goal of delivering improvements in human health. We take pride in a truly translational pipeline, delivering cutting edge clinical trials and patient studies, underpinned by cell and molecular biology research on both model organisms and humans.

Strategically, our research encompasses seven major internationally-renowned research domains:

- Cancer
- Genetics and Development
- Health and Population Sciences
- Cardiovascular, Respiratory and Neurological Sciences
- Endocrinology and Metabolism
- Dentistry
- Immunity and Infection

Importantly, each domain is allied to a range of clinical specialties through which the College links its basic research to translational endpoints.

We have great pride in our interactions with local NHS environment, most obviously exemplified through '[Birmingham Health Partners](#)', an exciting collaborative platform between the University, Birmingham Children's Hospital and University Hospitals Birmingham NHS Foundation Trust (UHBFT) that will enable rapid movement from laboratory discovery to patient benefit, fostering new therapeutic and healthcare innovations by creating a truly integrated environment for researchers and clinicians.

Education

Each year the College trains 374 medical students including the Graduate Entry course (105 medical students are able to intercalate on a choice of programmes after the second, third or fourth year of their course), 75 dental students, 21 biomedical materials science students, 96 medical science students and 104 nursing students.

2013 also sees the introduction of a new undergraduate Pharmacy programme that will initially recruit 70 students per year. Medical student teaching takes place at all hospitals in Birmingham, but has recently expanded into many of the hospitals in the Black Country.

There are also approximately 475 postgraduate taught students and 382 research students in the College, managed by a cross-College Graduate School. The College

has excellent library and reference facilities including the newly refurbished Barnes library and Doug Ellis Learning Hub.

Programmes and Facilities

The College has encompassed some major developments, expansion and improvement to its facilities, education delivery and research activity in recent years.

This includes a £35m Institute of Biomedical Research, a state-of-the-art £11.8m [Wolfson Centre for Medical Education](#) and a prosectorium facility for anatomy teaching incorporating 10 ventilated tables and high tech AV teaching aids. The College has also created a new £1m phantom head teaching laboratory facility within the School of Dentistry.

Among the most recent investments is refurbishment of the Medical School building foyer and Barnes library providing impressive visitor and student services facilities. To further our research strengths the College developed the state-of-the-art Advanced Therapies Facility which includes a new purpose built HTA-compliant biorepository (Human Biomaterials Resource Centre), Cell and Gene Therapy Pharmacy, and commercial spin out laboratory. Alongside these developments, the [NIHR/Wellcome Trust Clinical Research Facility \(CRF\)](#) received the largest award renewal in the UK of £12.8 million from the National Institute for Health Research (NIHR) to support its activity and to strengthen its current expansion. The College also launched the Health Research Bus, a mobile clinical research facility funded via Birmingham Science City. This was the first of its kind and a great development for clinical research in the College.

The collaboratively-funded [NIHR Institute for Health Research Surgical Reconstruction and Microbiology Research Centre](#) was developed in 2011, which combines clinical practice in the battlefield and innovation in medical research to benefit all trauma patients.

In 2012, the College secured high quality laboratory and clinical research facilities within the new University Hospitals Birmingham NHS Foundation Trust (UHBFT) Queen Elizabeth Hospital, through our **Centre for Translational Inflammation**. It houses a number of national and international centres including the [MRC-ARUK Centre for Musculoskeletal Ageing](#), **ARUK Centre for Experimental Medicine** (BEAT RA), the **NIHR Translational Research Partnership** in Joint and Related Inflammatory Diseases and the **Healing Foundation Burns Research Centre**.

In 2012 government funding was also announced for the development of a £24m Institute of Translational Medicine in Birmingham in collaboration with UHBFT, bringing Birmingham into the forefront of international translational medicine research. The institute will help progress the very latest scientific research findings

from the University into enhanced treatments for patients across a range of major health issues including cancer and liver disease.