UNIVERSITY OF BIRMINGHAM

College of Medical and Dental Sciences
School of Immunity and Infection

Closing date: Friday 6 September 2013
Job reference: 49909

Chair in Ageing Biology

MRC-ARUK Centre for Musculoskeletal Ageing Research and the Centre for Healthy Ageing Research (CHAR)

The University has a longstanding interest in ageing that began when Peter Medawar was the Mason Professor of Zoology in the late 1940s. Medawar is probably best known for his work on immune tolerance, but he also developed one of the key theories relating to the evolution of ageing – *the Mutation Accumulation Theory of Ageing*. In the last decade ageing has become a growing research interest at the University. This is a timely development as the current government has listed the Ageing Population as one of its grand challenges and *Ageing, Lifelong Health and Wellbeing* is a priority theme in the strategic plans of all members of RCUK. To reflect the importance of ageing research at Birmingham and recognise it as a research priority across campus, the University has set up the Centre for Healthy Ageing Research (CHAR; http://www.medicine.bham.ac.uk/healthy-ageing). The University, in partnership with the University of Nottingham, was also recently awarded the MRC-ARUK Centre for Musculoskeletal Ageing Research, which focuses upon the impact of ageing on physical frailty and how this can be overcome by lifestyle and pharmacological interventions. The hub of both Centres is located in 2250 m2 of new laboratory and clinical research facility space in the Queen Elizabeth 'super hospital' which opened in 2010. The Centre's director is Professor Janet Lord, whose main research focus is ageing of the immune system (Immunesenescence) and the impact of age-relate changes to the endocrine and immune system on physical frailty and the development of arthritis. Professor Lord's research was featured as a scientific highlight in the BBSRC Strategic Plan 2009–2013 document.

Ageing research is therefore a strategic priority across the whole university and draws on existing research excellence across many schools with a fundamental collaborative, multidisciplinary ethos reflecting the complex nature of ageing. The aim of such research is improved understanding of the age-related processes that contribute to increased frailty and pathology in older adults, with the ultimate aim of developing and validating interventions to delay the ageing process and improve health and quality of life in old age. Put succinctly the mission of the Centre is to carry out research to **ensure that old age is enjoyed rather than endured.**

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Major current research projects and initiatives within ageing research at the University include a portfolio of Immune Senescence funding valued at around £5m, with Immune Ageing included as a new theme within the MRC Centre for Immune Regulation (www.mrc-immune.bham.ac.uk). Other areas of major research activity include Endocrine Changes with Age and Brain Ageing valued at £4.5m and £2.5m respectively, and around £8m funding of research into Musculoskeletal Ageing, Exercise and Motivation to Exercise in older adults through the new MRC-ARUK centre. The university was also recently awarded a Healing Foundation Centre of excellence in Burns Research and the £10m NIHR Surgical Reconstruction and Microbiology Research Centre, both of which has a significant ageing and regenerative medicine component. There are also extensive postgraduate training schemes including two BBSRC PhD programmes and an EU FP7 Marie Curie Initial Training Network.

Although ageing is studied in a range of model systems, including mice and nematodes, the majority of research is based upon human ageing. This is facilitated by a large cohort of healthy older adults, the Birmingham 1000 Elders, who volunteer to help with research into ageing at the University. Human studies are carried out within three Wellcome Trust Clinical Research facilities (www.crf.bham.ac.uk), one located within the hospital labs and a second is located in the School of Sport and Exercise Sciences. The latter is fully equipped for studies involving exercise interventions. In 2010, these facilities were extended to include a mobile research unit, the 'Health Bus' that will allow researchers to carry out research in the community, giving access to populations often difficult to recruit to biomedical research.

Examples of principle investigators involved in ageing research at Birmingham and some of their areas of interest include:

Graham Anderson	Thymic development and involution
Wiebke Arlt	HPA axis changes and health
Doug Carroll	Psychoneuroimmunology
Iain Chapple	Periodontitis and health in old age
KK Cheng	Studying ageing and health at a population level
Joan Duda	Motivation to exercise
Chris Miall	Motor control and Recovery from stroke
Zoe Kourtzi	Brain ageing
Janet Lord	Stress and Immune senescence
Robin May	Gender and ageing
Paul Moss	Persistent viral infection and immune senescence
Anna Phillips	Stress and immunity
Gareth Lavery	Sarcopaenia and endocrine system ageing
Shahrad Taheri	Sleep disruption
Jeremy Tomlinson	Obesity and ageing
Janice Thompson	Nutrition and physical activity in elderly minority populations
Alan Wing	Motor control and balance
Michael Grey	Neuromuscular function
Janice Marshall	Cardiovascular ageing
Ben Scheven	Dental pup stem cells and regeneration
Ann Logan	Neurodegeneration and neurotrauma
Kai Toellner	Improving Vaccination responses in the aged

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The School of Immunity and Infection

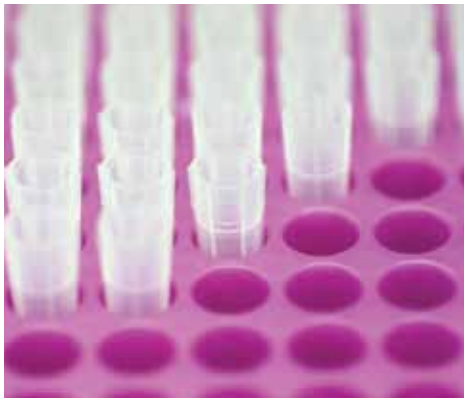
The School of Immunity and Infection is one of five administrative school units in the College of Medical and Dental Sciences. It has over 300 staff and students and undertakes teaching and research in both basic and clinical disciplines. It has major research themes in Immune Regulation (The MRC Centre for Immune Regulation and MRC-ARUK Centre are embedded in the School), Inflammation and Inflammatory Disease, Stem Cell Biology and Gene Regulation and Bacterial Infections, Immunesenescence, Pathogenesis and Antibiotic Resistance. These research themes are linked to the clinical disciplines of Clinical Immunology, Infection, Virology, Hepatology, Nephrology, Rheumatology and Ophthalmology.

Staff in Immunity and Infection contribute to MBChB, BMedSc, GEC and BDS degree courses and are responsible for the teaching discipline of Anatomy. The School offers numerous opportunities for clinical and non clinical scientists to study for postgraduate research degrees in its research specialties, and currently hosts 95 PhD students.

Head of School is Professor Janet Lord. Director of MRC Centre for Immune Regulation is Professor Eric Jenkinson. The Centre reflects the international profile of both basic and clinical immunology within the University of Birmingham College of Medical and Dental Sciences. The global aim of research focused in the Centre is to gain a better understanding of immune factors in autoimmunity, immune mediated inflammatory disease and selected bacterial and virus mediated diseases through insights into the microenvironmental control of immune responses. In addition to researchers based in the School of Immunity and Infection, the Centre incorporates researchers from the Schools of Cancer Sciences and Clinical and Experimental Medicine.

Research in the School of Immunity and Infection and the MRC Centre for Immune Regulation is predominantly based in the Institute of Biomedical Research (IBR) which provides state of the art laboratory accommodation and access to fully supported key technologies including flow cytometry, cell sorting, confocal microscopy and advanced facilities for molecular biology and sequencing. Researchers in the School have access to both the NIHR funded Biomedical Research Unit and the Wellcome Trust Clinical Research Facility which provide excellent support for translational and experimental studies. Groups investigating disease-specific processes benefit from the clinical strength and infrastructure from associated Trusts.

The IBR building is located adjacent to the new Queen Elizabeth Hospital. The hospital is the largest single-site development of its kind in Europe and forms part of the University Hospital Birmingham (UHBT) NHS Foundation Trust. The College of Medical and Dental Sciences has close working relationships with this and other Trusts in the West Midlands and with the Health Protection Agency at the West Midlands Public Health Laboratory within which there is a large joint research group. There are also good clinical collaborations with the Royal Centre for Defense Medicine and the Dental School.



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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.

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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.

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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

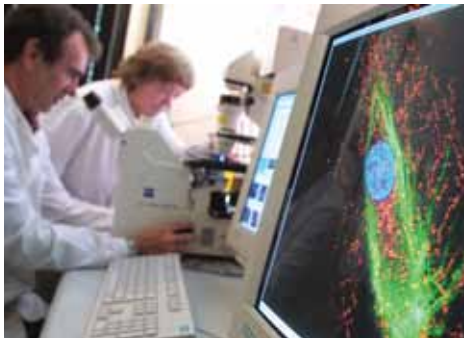
The College of Medical and Dental Sciences is the largest of the University's five Colleges and, with over 800 researchers and in excess of £66M research funding per year, it represents a major international centre for biomedical research.

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.

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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.

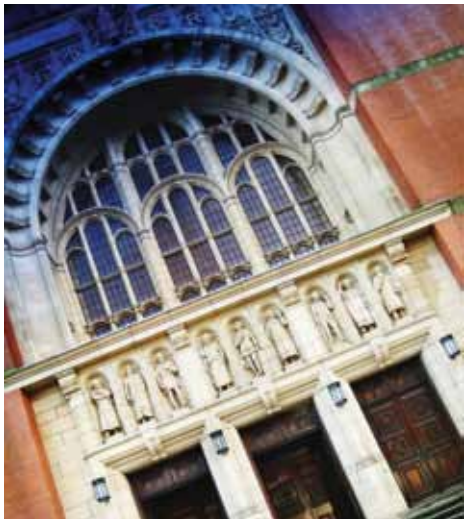
2013 also sees the introduction of a new undergraduate Pharmacy programme that will initially recruit 70 students per year. Medical student teaching takes place at all hospitals in Birmingham, but has recently expanded into many of the hospitals in the Black Country.

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.

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Job outline

Full-time
Duration of post – Permanent
Post is open to internal and external candidates
Grade – Professorial Grade 10
Salary – Competitive package for an outstanding candidate
Informal Enquiries – Professor Janet Lord, Head of School: j.m.lord@bham.ac.uk
Closing date – Friday 6 September 2013

Role Purpose

This post has arisen because of significant new investment by the University and will ensure that Birmingham, uniquely, is recognised internationally as a leading centre for the understanding of the links between stem cells, cancer and ageing and for the translation of new knowledge into novel treatments towards the goal of increasing the health span of the ageing population. The focus of the investment is within the College of Medical and Dental Sciences but it has relevance and potential impact across the University and will present new opportunities for cross-College collaboration.

The Appointment

The successful applicant will join a vibrant, well-resourced, multidisciplinary biomedical research environment consisting of highly complementary fundamental and translational activities. The appointee, who must have a demonstrated ability as a research leader in an aspect of human ageing and an excellent publication output, will work with colleagues in the College of Medical and Dental Sciences and in the wider University and surrounding NHS departments to develop new research programmes. Depending on the area of expertise, the appointee will be associated with the most appropriate School of the College. This is a crucial strategic post for which a competitive salary and start up and relocation package will be offered.

The successful candidate will work in the Centre for Healthy Ageing Research complex within the hospital, which is itself part of the College of Medical and Dental Sciences, and under the umbrella of the 'Stem Cell and Ageing Research' theme. The University is particularly keen to complement its existing activity by increasing the research on campus into basic mechanisms of cellular ageing within major tissue systems and we are especially interested in applications from candidates with a background in immunity. Recruiting researchers in these areas with a focus upon translation of their findings into interventions to reduce the impact of ageing upon health is a secondary objective that will complement the current emphasis of the University on Translational Medicine.

Research

The primary responsibility of the appointee will be to develop a programme of research.
The post holder will:

- Conduct a programme of research that is aligned with the strategic priorities of the University, the College of Medical and Dental Sciences and the Centre for Healthy Ageing Research
- Develop the programme of research through acquisition of major national and international funding
- Foster collaborations with researchers within CHAR and the wider biomedical research environment in Birmingham
- Foster collaborations with research groups external to the University that will both enhance and promote its strategic goals and will establish networks to provide strong platforms for research applications
- Lead major funding bids that develop and sustain research support for the specialist area and advance the reputation of the College and University
- Secure the publication of key results in leading journals and books that further develop reputation in the subject area
- Provide expert advice to colleagues, students and external bodies (eg, Government)
- Promote and market the work of the College in the subject area both nationally and internationally

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Teaching

The College of Medical and Dental Sciences offers a range of Undergraduate programmes including five-year MBChB programme, a Graduate entry four-year medical degree, a three-year Medical Science degree (BMedSc) as well as Intercalating degrees for medical students. It also provides undergraduate degrees in Dentistry and related subjects, Nursing and Physiotherapy. Each year we produce over 400 qualified doctors and 75 qualified dentists, and 89 Biomedical Scientists.

The BMedSc course benefits greatly from being taught by staff from different Schools of the College who are active research scientists engaged in a wide range of high quality research projects. Currently in the third year, students can specialise in areas such as Cardiovascular Science, Neuroscience, Pharmacology, Immunology and Infectious disease, Cancer Science, Endocrinology and Biology of Ageing. This enables a broad range of options to be taught that are integral to the College's research strengths and culminate in a laboratory-based research project throughout the Spring term of the final year. The course therefore equips students with substantial experience and training in practical laboratory skills and many of the students go on to undertake further qualifications including PhD studentships.

The teaching focus of senior academic staff is typically within graduate teaching both on Masters courses (eg, MSc and MRes) and through supervision of graduate research students. Contributions to teaching both undergraduate students (MBChB and BMedSc) and appropriate courses across the University will also be expected.

The successful candidate will be expected to:

- Contribute to the development of undergraduate teaching including potential expansion of existing activity (eg, new modules on the BMedSc programme, CPD etc)
- Deliver teaching to MBChB and BMedSc students through lectures, small group teaching sessions, practical classes and associated marking and assessment
- If required, take on module co-ordination and development of programme curricula, ensuring these meet the standards within the University and external institutions
- Develop and review approaches to teaching which advance techniques and standards locally, contribute to institutional policy and serve as a contribution to the wider debate
- Plan and review own teaching load and approach to teaching, and coach others in doing the same
- Contribute to the determination of the academic standards framework throughout the University
- Ensure that the teaching activity achieves the educational standards of the College

Enabling and Management

The post-holder will be expected to:

- Contribute to the management and development of stem cell and ageing research within the University, the College of Medical and Dental Sciences and in the context of CHAR

Person specification

Applicants should have an established research profile with recent papers in high impact journals. They will need to demonstrate a clear vision of the direction of their academic work together with the leadership qualities required to sustain and enhance internationally competitive research programmes. A track record of research funding from national or international agencies is expected, however the quality of research plans will be the over-riding criterion in determining the choice of appointee, an important factor being the potential for the applicant to enhance the University's strengths in Ageing research. To this end, applicants should have a clear understanding of how they might interact and work with colleagues to sustain current research areas and develop new research programmes. The selection panel will therefore be looking for:

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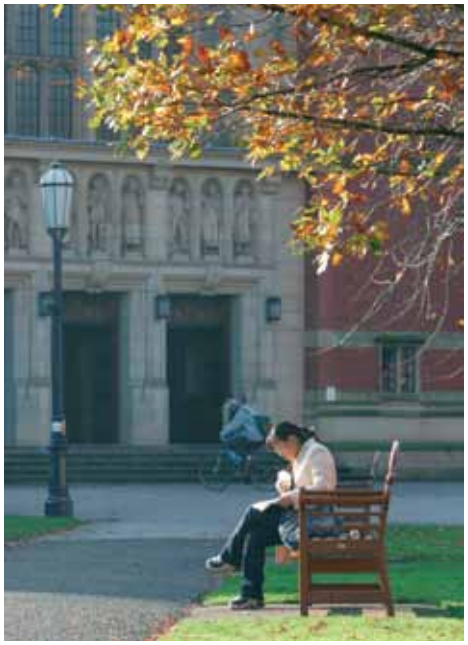
- An international reputation in ageing research, evidenced by publications in high quality journals and research income
- An ongoing commitment to producing high quality research outputs
- Excellent communication skills
- An ability to motivate and provide research leadership
- Significant experience in leading research projects and programmes
- Academic leadership qualities



Detailed Job Specification

	ESSENTIAL
Education	■ Postgraduate degree in Biology or a subject related to ageing research
Research Experience	■ International reputation in ageing research ■ Experience in collaborative research projects ■ Proven success in research leadership ■ Success in raising research funding ■ Successful supervision of research students, particularly PhD students, through to completion
Teaching Experience	■ Experience of postgraduate research training ■ Experience of undergraduate or postgraduate teaching of biology or related topics
Skills and Knowledge	■ Specialist knowledge of appropriate research area ■ Excellent communication skills
Personal Attributes	■ An academic leader ■ Excellent interpersonal skills ■ Ability to work in a multidisciplinary team

How to apply

Applicants are invited to submit their application on-line to us, via www.hr.bham.ac.uk/jobs
You will be asked to provide basic personal information and contact details and give the details of 3 referees. You will then be asked to attach a covering letter and up-to-date curriculum vitae. These documents should be in Word format and should address how you would be able to fulfil the requirements of the post. Any applicants who would prefer to submit this information by hard copy should be sent to: HR Shared Service, Human Resources, University of Birmingham, Edgbaston, Birmingham, B15 2TT.