

## Job Description

<b>Post Title and Post Number</b>	Biostatistician- 46209
<b>Organisation Advertising Description</b>	Institute of Cancer and Genomic Sciences College of Medical and Dental Sciences
<b>Post Number</b>	46209
<b>Full Time/Part Time</b>	Full Time
<b>Duration of post</b>	12 months
<b>Post is open to:</b>	Internal and External Candidates
<b>Grade</b>	7
<b>Salary</b>	Starting salary is normally in the range £28,982 to £37,768. With potential progression once in post to £40,082 a year.
<b>Terms and Conditions</b>	<a href="#">Research and Analogous Staff</a>

## Job Summary

The post holder will provide statistical expertise and advice on the design, conduct and analysis of Cancer Research UK Clinical Trials Unit's (CRCTU) clinical trials and allied research. Biostatisticians play a central role in the Unit, actively liaising with clinical investigators, contributing to the design and conduct of clinical trials, being responsible for interim and final analysis of clinical trial data and having a key role in the presentation and publication of results. As academic members of the University, Biostatisticians contribute to teaching at undergraduate and postgraduate level.

## Main Duties

- Provide statistical advice for the design of clinical trials and related studies, and contribute to protocols and grant applications, under the mentorship of a Senior Biostatistician.
- Determine appropriate analysis of clinical trial data and write statistical analysis plans for trials, under the mentorship of a Senior Biostatistician.
- Undertake appropriate analysis of clinical trial data and prepare reports for Data Monitoring and Steering Committees and contribute to presentations and publications of clinical trial results.
- Collaborate on relevant trial-related projects with researchers in other departments within the University of Birmingham in terms of the provision of statistical advice and/or analysis of data.
- Liaise with Programmers and Trial Coordinators in the setting up of a randomisation process and development of data collections forms and databases for trials.

- Provide statistical analysis to assist Trial Coordinators in the running of trials and monitor data quality of on-going trials.
- Contribute to the writing of the Standard Operating Procedures for the CRCTU.
- Lecture on basic statistics and clinical trial methodology and provide in-house staff training.
- Carry out statistical methodological research relevant to cancer clinical trials and associated translational research in collaboration with senior members of the Biostatistics Team and contribute to presentations and publications of such research.
- Support the delivery of clinical research in accordance with Good Clinical Practice (GCP), the Declaration of Helsinki, applicable legislation (including, but not limited to, the Medicines for Human Use Clinical Trials Regulations, Data Protection Act 1998, Human Tissue Act), the Research Governance Framework for Health and Social Care, Caldicott principals, and applicable NHS Trust and University policies and procedures, (including, but not limited to the University's Data Protection Policy, Information Security Policy and Code of Practice for Research) in order to protect the research subject and the quality of each study.

Pursuit of post-graduate qualifications or personal research interests is encouraged, providing the work is agreed in advance, is of sufficient merit and time is available such that trial work would not suffer.

### **Knowledge, Skills, Qualifications and Experience Required**

The individual suitable for this post would have some experience or specific qualifications in medical statistics and would be capable of working with minimal supervision as a statistician on trials relating to a number of the key disease areas covered by the Cancer Research UK Clinical Trials Unit within a fairly short time of appointment.

- MSc or PhD in Statistics OR a relevant higher degree with experience (at least 2 years) of working as an applied medical statistician.
- Knowledge of survival analysis and statistical modelling.
- Knowledge of statistical packages.
- Knowledge of clinical trials.
- An ability to impart statistical concepts to non-statisticians.
- An ability to work well both on own initiative and within a team.
- Evidence of good inter-personal, verbal and written communication skills.
- A flexible attitude and an ability to organise work to meet deadlines while handling more than one task at a time.

## **[The College of Medical and Dental Sciences](#)**

### **College Overview and Structure**

The College of Medical and Dental Sciences (MDS) is the largest of the University's Colleges with over 1500 members of staff ensuring teaching and research excellence across a wide range of pre-clinical and clinical disciplines.

The College is structured into 8 Institutes:

- [Institute of Applied Health Research](#)
- [Institute of Cancer and Genomic Sciences](#)
- [Institute of Cardiovascular Sciences](#)
- [Institute of Clinical Sciences](#)
- [Institute of Immunology and Immunotherapy](#)
- [Institute of Inflammation and Ageing](#)
- [Institute of Metabolism and Systems Research](#)
- [Institute of Microbiology and Infection](#)

Our Institutes are focused academic units in identified areas of high-performing research and teaching excellence, each with an ambitious strategy and empowered leadership. Drawing together outstanding academic, clinical and professional services staff around coherent and highly collaborative themes. The Institutes are responsible for driving the further development and delivery of priority themes identified in the institutional Life Sciences Strategy (see below). They are championing interdisciplinary collaboration across the University's Colleges and in partnership with our regional NHS Trusts. Each Institute contributes to our translational pipeline, supporting fundamental research excellence through to clinical and applied health programmes. This strategy ensures that our research delivers real impact in health and wealth generation and that our educational programmes are informed by our research strengths. Co-location and core focal points for each of the Institutes ensure cohesion, whilst at the same time promoting cross-Institute working and collaboration. This is further enabled through access to key College-managed facilities and resources and the provision of high quality professional services support including core academic administration in support of teaching and research delivery.

### **Professional Services**

A diverse range of committed and high-performing Professional Services staff, managed through integrated College-wide teams, underpin and provide support to the establishment, development and delivery of all aspects of the College's activity. They support academic staff and student activity, provide core functions and support services, and deliver more specialist and technical services. The model of central management with localised focus and delivery provides high-quality support both understanding of, and directed according to, academic need. The teams operate in close and effective partnership with colleagues across campus and in the NHS.

### **University of Birmingham Life Sciences Strategy**

***The Life Sciences Strategy (LSS)*** has been developed following detailed engagement both internally and externally. The LSS identifies the priorities for the

University as an outstanding, distinctive centre for [Life Sciences research](#) and education focused on areas relevant to human health including clinical and biomedical sciences and human biology.

The LSS is focused on building our research and teaching activities in this area across the whole campus. It will help to deliver the region's ambition to establish Birmingham as one of the UK's pre-eminent locations for the Life Sciences sector delivering improved healthcare, economic growth and making the UK the best place to invest in life sciences research.

### **College Location**

The principal base of the College lies immediately between the main campus of the University in Edgbaston and the new Queen Elizabeth Hospital Birmingham (QEHB), University Hospitals Birmingham NHS Foundation Trust (UHBFT), with a number of other key buildings both on and off campus, including the new Birmingham Dental Hospital and School of Dentistry at Pebble Mill just a mile from the central campus. Other NHS Trust partners are also on the same campus including Birmingham Women's Hospital and the Barberry (Psychiatric) Hospital.

### **Research**

With over 1000 academic staff and around £60M new research funding per year, MDS 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.

Our research is supported by peer-reviewed multi-million-pound funding from Research Councils UK, medical research charities such as Wellcome Trust, Cancer Research UK (CRUK), Bloodwise, the British Heart Foundation (BHF), the National Institute for Health Research (NIHR) and Department of Health, as well as the European Union, together with strategically important support from other government bodies (Health Protection Agency (HPA), Defence Science and Technology Laboratory (DSTL)) and industrial partners including large pharmaceutical companies (e.g. GSK, Novartis) and SMEs (e.g. Oxford Immuntotec, Inhibtix).

The University of Birmingham was ranked in the top 100 universities worldwide for Clinical Medicine and Pharmacy in 2015 by the [Academic Ranking of World Universities \(ARWU\)](#), also known as the Shanghai Ranking.

Clinical Medicine at the University of Birmingham has also been ranked 82nd in the Performance Ranking of Scientific Papers for World Universities 2015, (also known as the National Taiwan University Ranking).

## Our Institutes

Our Institutes focus on our scientific strengths and are targeted to areas of major clinical significance.

The [\*\*Institute of Applied Health Research\*\*](#) is focused in two broad areas: (i) primary care & population health research; (ii) healthcare evaluation & methodology. There is expertise in the main community focused clinical disciplines public health, primary care and occupational medicine. Methodological expertise encompasses biostatistics, health economics, clinical trials, evidence synthesis, medical ethics, health psychology and qualitative research. The Birmingham Clinical Trials Unit (BCTU) which includes the Primary Care Clinical Research and Trials Unit (PC-CRTU) is internationally renowned and delivers both specific discipline related research and provides an exceptional collaborative framework for developing and delivering translational outputs from the University of Birmingham's wider research portfolio.

The [\*\*Institute of Cancer and Genomic Sciences\*\*](#) represents our major academic strengths in fundamental cancer research, particularly around cell biology, haematology, genetics and genomics, bioinformatics and cancer clinical trials. The latter of these is driven through our [\*\*CRUK Cancer Clinical Trials Unit\*\*](#), which is the national lead for paediatric cancer trials. Additional key infrastructure includes an Experimental Cancer Medicine Centre, and the success of academic Haematology has provided a model for the development of a Bloodwise-funded Trials Acceleration Programme (TAP) via Birmingham that links research nurses in 13 UK leukaemia centres, part of our wider status as a national Bloodwise Centre of Excellence. A key driver for our future development will be the West Midlands Genomic Medicine Centre, the largest in the UK and linking all 18 regional NHS Trusts, with academic leadership based within this Institute.

Our [\*\*Institute of Cardiovascular Sciences\*\*](#) is a developing area of strength, focused around two key themes: Vascular Inflammation, Thrombosis and Angiogenesis; and Clinical and Integrative Cardiovascular Sciences. Major awards centre on the regulation of platelet and leukocyte responses in vascular diseases, and the pathogenesis of cardiac diseases particularly atrial fibrillation. With a BHF Chair and a number of senior BHF Fellows, this is a highly collaborative cluster of activity, particularly championing interdisciplinary strengths through partnerships such as the EPSRC Physical Sciences for Health integrated Centre for Doctoral Training and the NIHR Surgical Reconstruction & Microbiology Research Centre (SRMRC).

The [\*\*Institute of Clinical Sciences\*\*](#) consists of a number of Schools dedicated to the delivery of research and education including:

- [Medical School](#)
- [School of Pharmacy](#)
- [School of Nursing](#)
- [School of Biomedical Sciences](#)

- [School of Dentistry](#)
- [Graduate School](#)

Benefitting from a highly interdisciplinary approach, it works closely with all other College Institutes to ensure delivery of teaching excellence and high quality research outputs. Some of the main focusses of research within the Institute include:

- Dentistry - The School of Dentistry had an outstanding performance in REF2014 in its unit of assessment, ranked first in the country for research recognised as internationally excellent (4\*/3\*). Research in the School of Dentistry is focussed into two overarching themes, clinical and experimental oral sciences and regenerative and rehabilitative science.
- Nursing - Research from our School of Nursing specifically looks at end of life care, child, maternal and family health, and organisation and delivery of services.
- Pharmacy - The main research themes stem between two complementary research areas namely, pharmaceutical science, discovery and delivery, and clinical pharmacy practice.

The [Institute of Immunology and Immunotherapy](#) builds on the longstanding tradition of immunology research at the University of Birmingham. This was reflected in the 15 year tenure of the Medical Research Council (MRC) Centre for Immune Regulation which is now driving translational outputs through closer integration with leading clinical expertise. The NIHR Liver Biomedical Research Unit (BRU) forms another key focus around which we are leading both nationally and internationally, with the establishment of our Advanced Therapies Facility providing state of the art cell and gene therapy suites with pharmacy facilities designed for gene, cell and biological therapies. Our Clinical Immunology Service supports a range of national cancer trials, and led our recent £7.3M MRC Clinical Infrastructure award to provide 'deep' immunophenotyping of patients with a wide range of clinical problems.

Our [Institute of Inflammation and Ageing](#) benefits from a highly collaborative leadership team focused on translational outputs, based within a dedicated wing of the QEHB. The strength of their vision is represented by a number of major national awards, including the MRC-Arthritis Research UK Centre for Musculoskeletal Ageing Research (with Nottingham University); Arthritis Research UK Centre of Excellence in the Pathogenesis of RA (The Universities of Glasgow and Newcastle); Arthritis Research UK Experimental Arthritis Treatment Centre; NIHR SRMRC; NIHR Healthcare Technology Cooperative (Trauma); and the Healing Foundation Burns Centre, as well as our key role in the NIHR Translational Research Partnership on Joint & Related Inflammatory Disease.

The [Institute of Metabolism and Systems Research](#) (IMSR) offers a highly multi-disciplinary collaborative environment that combines leading excellence in metabolic, endocrine and reproductive research with mass spectrometry-based and computational systems science approaches. The IMSR drives strategic leadership for the University of Birmingham Metabolomics Core, which comprises unique expertise and technological approaches delivered by the Phenome Centre Birmingham (recent

£7.3M MRC Clinical Infrastructure award), the Steroid Metabolomics Core, the Metabolic Tracer Analysis Core, the NERC Metabolomics Node, and the Advanced Mass Spectrometry Facility. Our researchers employ a combination of *in vitro* and *in vivo* models, human *in vivo* physiology, innovative metabolome and imaging approaches, experimental medicine studies and clinical trials. Our science is translated into health via the Birmingham Health Partners Centre of Endocrinology, Diabetes and Metabolism (CEDAM), the Centre for Women's and New born Health (CNWH) and the recently established National Tommy's Centre for Miscarriage Care and Research.

The [\*\*Institute of Metabolism and Systems Research\*\*](#) is another rapidly-developing area, drawing on longstanding strengths in endocrinology and reproductive health as well as metabolomics to create an integrated translational environment. As well as a key role in the MRC-ARUK Centre for Musculoskeletal Ageing Research, excellence in rare disease is recognised through our leadership of the UK paediatrics theme in the NIHR Office for Clinical Research Infrastructure (NOCRI) Translational Research Collaboration 'Rare Diseases'. This Institute also provides much of the academic drive for our NIHR-Wellcome Trust Clinical Research Facility, with facilities both at University Hospitals Birmingham and Birmingham Children's Hospital, and recipient of the largest national NIHR award in the last round of funding.

The [\*\*Institute of Microbiology and Infection\*\*](#) draws together one of the largest groups of academic expertise in this area nationally, expert microbiologists, immunologists, biochemists and chemists, with technical expertise in next generation sequencing, genomics, proteomics, molecular and structural biology, biotechnology and modelling. Diverse research programmes encompass fundamental science of model organisms to the biochemical and biophysical analysis of microbial components to translational research on key pathogens of medical and veterinary importance. Major interests include pathogenomics, chromosome architecture and gene regulation, plasmids and mobile DNA, physiology and adaptive response, cell wall structure and membrane proteins, pathogenesis and host-pathogen interactions, infection and host-immune response, antibiotic and antimicrobial resistance and environmental biotechnology.

## **Education**

Each year the College trains approximately 370 medical students including the Graduate Entry course (around 120 medical students are able to intercalate on a choice of programmes after the second, third or fourth year of their course), 70 dental students, 20 biomedical materials science students, 150 biomedical science students, 125 nursing students, 70 pharmacy students and 60 physician associate students. Teaching takes place at all hospitals in Birmingham and many of the hospitals across the region.

There are also approximately 450 postgraduate taught students and 400 research students in the College, managed by a cross-College Graduate School. The College has excellent library and reference facilities including the Barnes library and Doug Ellis Learning Hub, which complement the wider facilities available to students on campus.



The Institute of Clinical Sciences provides a clear focus for integrating our education and training programmes, co-ordinating all teaching, student engagement and related activity across the College to deliver a high quality student experience. The Institute also supports increased recognition of the value of education and teaching contribution through an enhanced emphasis on pedagogy.

*The Complete University Guide 2016 ranked Birmingham for Dentistry in 7<sup>th</sup> position and Nursing in 3<sup>rd</sup> position in the UK.*

*The Guardian University League Tables 2016 also ranked Dentistry at Birmingham at 8<sup>th</sup>, in the UK.*

Our employability rates within the College are excellent, with some notable alumni in influential positions all around the world. The University is also proud to have been awarded the University of the Year for Graduate Employment in *The Times* and *The Sunday Times* Good University Guide 2015-16.

Highlights from the 2015 National Student Survey included:

- 98% of our BDS (Hons) Dentistry students were satisfied with the overall quality of the course
- 91% of our Medicine and Surgery MBChB students were satisfied with the overall quality of this programme and 94% said they were satisfied with the teaching on the course.
- 94% of our Pharmacy MPharm students were satisfied with the overall quality of the programme.

### **Partnerships**

Our partnerships with regional NHS Trusts are exemplified through [Birmingham Health Partners \(BHP\)](#), an exciting collaborative platform between the University, University Hospitals Birmingham NHS Foundation Trust (UHBFT), Birmingham Children's Hospital NHS Foundation Trust (BCH) and Birmingham Women's Hospital Foundation Trust. BHP enables the rapid translation of laboratory discovery to patient benefit, fostering new therapeutic and healthcare innovations by creating an integrated environment for researchers and clinicians. This University-NHS strategic alliance led to the largest single renewal grant from NIHR of £12.8m for the Birmingham NIHR Wellcome Trust Clinical Research Facility (NIHR-WT CRF), which supports a paediatric facility at BCH, a satellite facility in the Centre for Translational Inflammation Research (CTIR; located within the QEHB) and gene and cell therapy programmes within our Advanced Therapies Facility (ATF).

The ATF incorporates the [Human Biomaterials Resource Centre \(HBRC\)](#) which works with a large number of NHS Trusts in the region and acts as the hub for a number of collaborative initiatives such as the 100,000 Genomes Project (West Midlands Genomic Medicine Centre [GMC]). The West Midlands GMC draws upon our unique population demographic through a collaboration of 18 NHS Trusts co-



ordinated by our partnership with the West Midlands Academic Health Science Network (WM AHSN). The WM AHSN brings together NHS commissioners, providers of NHS services, industry, academia and representatives of the people of the West Midlands to support the spread and adoption of innovation across the region.

We have a growing portfolio of projects with international partners including a large number of Horizon 2020 awards and more specialist strategic collaborations such as Universitas 21 and Sun Yat Sen University, China. We also partner with many other Universities both in the UK and overseas on collaborative research projects and more recently, split site PhD opportunities. These partnerships maximise our research outputs, and provide PhD students with opportunities to broaden their knowledge and skills across multiple world leading institutions.

In addition to the NHS Trusts in our immediate vicinity, the College works closely with many of the [teaching hospitals](#), clinical commissioning groups (CCGs), and training practices across the West Midlands. Students are encouraged to broaden their knowledge and experience by working across a wide range of organisations and experiencing the varied cultures and demographics of the West Midlands.

Our cross campus collaborations within the University are vital, to share expertise and knowledge across disciplines, as well as facilities, equipment and resources. We have strong relationships with all other University Colleges, most notably with the College of Life and Environmental Sciences in connection with the Life Sciences Strategy as outlined above. Other strong links are with the Business School, within the College of Social Sciences for education delivery, and with the College of Engineering and Physical Sciences for both teaching and research activity.

## **Facilities**

The College has an impressive range of facilities and continues to develop, expand and improve them to support education delivery and research activity.

This includes the £35m Institute of Biomedical Research, the £11.8m Wolfson Centre for Medical Education, and a prosectorium facility for anatomy teaching incorporating 10 ventilated tables and high tech AV teaching aids.

Other investments include the refurbishment of the Medical School building foyer and Barnes library and more recently the Med Café, providing impressive visitor and student services facilities. Research technology developments include the state-of-the-art ATF which includes a purpose built HTA-compliant biorepository (HBRC) and a Cell and Gene Therapy Pharmacy, which is directly connected to our [NIHR/Wellcome Trust Clinical Research Facility \(CRF\)](#). The College also has a 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 £24m [Institute of Translational Medicine](#) (ITM) opened in 2015 adjacent to the University and QEHB. This investment (co-funded by the Department for Business,

Innovation & Skills (BIS) and BHP) is an innovative development bringing together world class clinicians, scientists and clinical trials teams to accelerate access to new diagnostics, drugs and medical devices and enable patients to benefit more rapidly from breakthrough therapies and technologies. It incorporates our Centre for Rare Diseases, a Bioengineering Centre, an early-phase trial unit and commercial hub to host pharmaceutical companies and SMEs. It is expected to generate 600 new jobs in the first five years.

The [Biomedical Innovation Hub](#) opened in early 2015 on campus within the Birmingham Research Park. This new £6.8m facility, offers fully serviced laboratory and office space for growing Life Sciences businesses. Just 500 metres from the ITM, it will support a growing portfolio of medical spin-out companies from the University; deliver a further 35 new businesses and more than 500 new technology jobs.

Early 2016 will also see the opening of a new £50m [Birmingham Dental Hospital and School of Dentistry](#). The hospital and school, at Pebble Mill, is the first integrated, stand-alone dental hospital and dental school to be built in the UK for almost 40 years and will be fantastic opportunity for our Dentistry staff and students to learn and practice.

Finally, we look forward to the opening of the Birmingham City Council's Life Science Campus adjacent to the University in 2017. The Life Sciences Campus will become the principal location nationally for parts of the Life Sciences sector providing a basis for growth bringing high value jobs to the city. It will provide a world class environment for business to start up and grow, as well as those which are expanding or wishing to relocate. The space will be suitable for research and development, clinical trials, pharmaceutical manufacturing, and regional headquarters, providing opportunities for export rich growth and employment.

These outstanding facilities and partnership working, combined with multi-disciplinary academic excellence across the University and a diverse regional population of over five million provide Birmingham with an outstanding opportunity to occupy a world-leading position in the rapidly evolving Life Sciences sector.

To find out more about our research, education and outstanding facilities, please visit our website: [www.birmingham.ac.uk/mds](http://www.birmingham.ac.uk/mds)