



UNIVERSITY OF  
BIRMINGHAM

## Birmingham Fellowships 2015

**At Birmingham we are committed to investing in and developing academic talent.**

Our pioneering Birmingham Fellowship programme, introduced in 2011, offers a unique route into a challenging academic career for individuals with the ambition and capability to be the research leaders of tomorrow. The Birmingham Fellowship offer is unparalleled: a permanent academic post; 5 years of protected time to pursue your research within a supportive and ambitious academic environment; and individualised start-up, development and mentoring support.

You will have evidence of outstanding academic achievement in your discipline, an accelerating research trajectory, and a commitment to the academic endeavour of the University.

The deadline for applications is 20 March 2015. However, applicants with significant external funding will be considered at any time under a fast track process. If you think that you may be eligible under this process, please contact us.

### **Learn more**

[birminghamfellows@contacts.bham.ac.uk](mailto:birminghamfellows@contacts.bham.ac.uk)

[www.birmingham.ac.uk/birminghamfellows](http://www.birmingham.ac.uk/birminghamfellows)

[www.hr.bham.ac.uk/jobs](http://www.hr.bham.ac.uk/jobs)

*Promoting* **EQUALITY** *Celebrating* **DIVERSITY**



# Environmental Genomics, Metabolomics and Health

**Job Ref: 36468**

**Priority Area Lead: Professor Mark Viant**

Our society depends on a healthy environment. Yet too little is understood about how biological systems cope with the many sources of stress (both natural and human induced) that increasingly threaten ecosystems and natural resources. Furthermore the direct effects of environmental pollutants and their mixtures on human health are also largely unknown. This necessitates a data revolution at evaluating hazards and their modes of action so to inform new policies for both environmental and public health management that is based on scientific knowledge. A similar data revolution is required to characterise the environmentally induced molecular changes that can impact on human health. Considering the scale of this problem, a timely shift to a new approach for both regulatory and diagnostic science is proposed – one which is based on a mechanistic understanding of how environmental stressors including chemicals and nanomaterials disrupt biological processes.

The University of Birmingham is a world leader in the development and application of omics and Systems Biology approaches to study the impacts of chemicals, nanomaterials and other environmental stressors on the environment and on human health. This builds upon our expertise in environmental genomics, molecular and cellular toxicology as well as evolutionary biology. It also aligns closely with the scientific goals of the new Birmingham Institute of Forest Research. Our aims include understanding and ultimately predicting how individual organisms, including humans, and populations in the natural environment respond to stressors associated particularly with pollution. We are identifying molecular pathways predictive of adverse outcome and are driving innovation for future novel strategies for environmental regulation worldwide. To that end we are increasingly engaging with regulators and seeking to translate this basic research into environmental policy, both for chemical risk assessment and environmental monitoring. We seek outstanding Fellows who will utilise our exceptional research capabilities, including a new £5m MRC funded Regional Phenome Centre, NERC funded Biomolecular Analysis Facility for environmental metabolomics and the UoB-BGI Joint Centre for Environmental Omics, to work in the following themes:

- Novel strategies for cost-effective and robust high-throughput toxicity screening and high-content 'omics technologies to gain a deeper understanding of the impacts of toxicity and other environmental stressors;
- Pioneering applications of epigenetics, genomics or metabolomics in chemical toxicology, nanotoxicology, environmental stress biology or environmental impacts on human health.
- Discovering the functioning and interacting elements of genomes that are responsive to environmental conditions with effects on the fitness of organisms.



STOCK IMAGE  
COST APPROX £6



## Birmingham Fellowships 2015

### The University

With more than 7,000 staff and 30,000 students, we were the first – and are now one of the largest – civic universities in the UK. Our heritage as the original 'redbrick', is combined with one of the most compelling and ambitious agendas in higher education. Quite simply, at Birmingham we make things happen. Home to world-class researchers – whose work in everything from developing next generation engine technologies to harnessing quantum technology to solve everyday problems makes a real difference to people's lives – we provide innovative solutions to big problems. We think, recruit and compete worldwide.

Being named the Times and Sunday Times University of the Year 2013-14 recognised a transformative time in our history characterised by our bold, ambitious strategy and innovative approach to the challenges facing the sector. The University is a pioneer in sector-leading initiatives, including our 'Birmingham Fellows' programme, which has so far seen around 70 of the world's best early career academics join us; and the much-emulated unconditional offers strategy for exceptional students. We have a clear vision for the future, ambitious leadership, world-leading academic strengths and a secure financial base. With an annual turnover of more than £520 million, we use our financial strength to invest in the intellectual and physical future of the University. Judicious planning has enabled us to embark on a £500 million capital development programme. Over the past three years, some £250 million has been invested in the Birmingham campus including a new library, a major sports centre, outstanding new student accommodation and a state-of-the-art student services hub. We have been encouraging bold, independent thinking and providing exceptional academic programmes that stretch and challenge for more than a century, and the new University of Birmingham School will continue this tradition; providing an outstanding academic education for the city's young people and serving as a centre of teacher education in the region.

Birmingham is a leading member of the Russell Group and a founder member of the Universitas 21 global network of research universities (<http://www.universitas21.com>) and our Vice-Chancellor is the current Chair of both groups.

### Exceptional Research

The University is one of the UK's most successful institutions in terms of attracting research funding. We have a portfolio of over 2600 live projects with an award value to the University of £594 million.

Our research record speaks for itself. More than 80 per cent of all research carried out at Birmingham is rated as internationally excellent or world-leading, according to the latest UK-wide research quality survey (REF

# Birmingham Fellowships 2015

Exceptional Research continued...

2014). The results also showed that 87 per cent of our research activity has a global impact, confirming our position among the world's top universities for research in a broad range of areas, from History and Education to Chemical Engineering and Psychology.

Long established as a pioneer in the field of medicine, Birmingham scientists were the brains behind the first heart pacemaker, the use of aspirin and the synthesis of Vitamin C. 'Great minds, in the right location' sums up our unique combination of cutting-edge laboratory work, clinical expertise and first-class surgical facilities all housed on one vast life sciences campus. The Institute of Translational Medicine (ITM), which is scheduled to open later this year, will build on Birmingham's excellent track record in clinical trials and help to 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. Bringing together the University, the University Hospitals Birmingham NHS Foundation Trust, and Birmingham Children's Hospital, it will increase capacity and enable more patients to be co-located alongside clinicians and researchers. It will also make it easier for firms to engage with clinicians and academics, bringing additional investment into the city. This vision is reflected in Birmingham's ambitious project to create a four hectare science park specifically for the life sciences adjacent to the University and Hospital to attract cutting edge health and pharmaceutical research firms into the city, driving economic growth alongside medical and scientific innovation.

These investments reinforce the University's position today as a world leader in, for example, the development of new treatments for cancer, heart, and liver disease, as well as innovative transplant technologies and new drugs to combat antibiotic resistance.

This strength in life sciences is reflected throughout our College of Life and Environmental Sciences which is home to one of the best stand-alone Psychology schools in the country as well as one of the top three centres for research into Sport, Exercise and Rehabilitation Science. Supported by a major gift from a philanthropist, the University is developing a unique institute for forest research which will investigate the effect of rapid climate change on tree canopy development and pathogens.

The University's arts and humanities researchers are among the very best in the UK, highlighting our world-class research programme. Philosophy, History, Classics, Theology and Religion, and West African Studies are amongst the top ranked departments in the country and recognised for bringing significant benefits to society.

In the Physical Sciences we boast outstanding academic and research credentials, including in Chemical Engineering, in which we were recognised with a Queen's Anniversary Prize in the Jubilee year, and in Physics, where we have just received investment of £80 million to develop Quantum Technologies. Our substantive links with industry include receiving a £60 million investment from Rolls-Royce and the Higher Education Funding Council for England (HEFCE) for the world-leading High Temperature Research Centre.

In the Social Sciences we have developed a broad range of initiatives, focused on enhancing, supporting and developing public sector services across the city and nationally. The Public Service Academy (PSA) brings together the University's teaching, research, consultancy and knowledge transfer expertise in public services. Working with a range of key public service partners, including Birmingham City Council, our work is focused on key themes including cohesion, health and wellbeing and localisation. Our Health Services Management Centre provides a combination of research, teaching, professional development and consultancy to health and social care agencies and has established a unique reputation as a 'critical friend' of the healthcare community. The Institute of Local Government Studies (INLOGOV) is the leading UK centre for the study of local public service management, policy and governance. With more than 40 years of experience working within local government and the public sector, it shapes the very latest thinking for public servants.

Our research helps to shape the national political agenda too. The ground-breaking Birmingham Policy Commissions bring together key figures from the public, private and third sectors with our academics to generate new thinking on contemporary issues of global, national and civic concern. Commissions to date have included reports on the shape and nature of local public services in a 'big society', the future of nuclear energy in the UK and the security impact of drones.

# Birmingham Fellowships 2015

## Global Outlook

Rated 64th in the QS World University Rankings 2014–15, the University has a significant international presence. The breadth of our research in China, and particularly in the Guangzhou region, is testament to the success of our collaboration with the local government and universities there. In Brazil, the Universities of Birmingham and Nottingham are working together in a unique collaboration to develop a network of strategic partnerships with Brazilian universities, as well as the oil and gas industry. In North America, the University has a major collaboration with the University of Illinois at Urbana Champaign underpinned by a flourishing network of faculty-faculty relationships. Our partnerships in India continue to develop and have been strengthened by our Chancellor, Indian-born entrepreneur and Cross-Bench Peer Lord Bilimoria of Chelsea. We also have partnership agreements with many of the world's leading universities; an office in New Delhi and a presence in Brussels. More information about our strategic global engagements and international research focus can be found on our website ([www.birmingham.ac.uk/International/global-engagement/index.aspx](http://www.birmingham.ac.uk/International/global-engagement/index.aspx))

## Cultural Assets

The University's many cultural assets take in the Shakespeare Institute at Stratford-upon-Avon, which has direct working links with the Royal Shakespeare Company; the Ironbridge Institute in Shropshire, and the Barber Institute of Fine Arts – our own art gallery that houses works by many of the greatest artists in the western tradition. The Edgbaston campus also includes Winterbourne House and Garden, a unique Edwardian heritage attraction that is home to more than 6,000 plant species from around the world. Our cultural profile was significantly enhanced with the opening of the Bramall Music Building in 2013. This houses the Elgar Concert Hall, named after our first Professor of Music, Sir Edward Elgar, and is a striking venue that complements our global reputation in music, attracting some of the most talented musicians from across the world to study here.

## Sport

Sport is integral to life at Birmingham and we are ranked third in the UK for the quality of student sport. Our new sports development, also due to open early next year, will include the city of Birmingham's first 50-metre swimming pool – an asset not only for our students and staff but for the wider community.

## Future Investment

Our plans for the future are underpinned by long-established financial probity. We contribute £1 billion a year to our region's economy. Our surpluses and substantial philanthropic support are re-invested into the intellectual and physical fabric of the institution, enabling us to plan with confidence for the future and to continue to invest in the facilities and services that are required for high-quality research, and an outstanding student learning experience.

Led by our Vice-Chancellor, Professor Sir David Eastwood, the University is structured for swift decision-making, enabling us to capitalise on our academic range and financial strength as well as the opportunities that emerge in the fast-changing global HE environment.

## The City of Birmingham

Birmingham is the UK's second city and a major European centre as well as being the only place in the UK listed in the Rough Guide's Top 10 places in the world to visit in 2015. It is a city of historical interest and contemporary vision and has a rich and diverse community that creates a vibrant, multicultural and exciting place to live and work.

It is home to the internationally renowned Birmingham Royal Ballet and one of the world's greatest concert venues, the Symphony Hall. 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, while the iconic Bullring is one of the largest dedicated shopping facilities in Europe. Sports and recreation are also

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The City of Birmingham continued...

well served; the city offers international Test cricket, top-flight football, international championship golf and top-class rugby. As a multicultural city, Birmingham is also renowned for the breadth of its cuisine and has more Michelin starred restaurants than any other English city outside London.

Birmingham is within an hour's drive of Stratford-upon-Avon and the Cotswolds. From Birmingham International Airport, more than 50 different airlines operate scheduled services to 100 destinations worldwide. The University has its own dedicated 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 80 minutes away by shuttle service, with trains every 20 minutes.

## Birmingham Fellowships

The University of Birmingham is committed to attracting the brightest and the best to develop their academic careers at Birmingham as Birmingham Fellows.

We are seeking to recruit a fourth cohort of the same world-leading calibre Birmingham Fellows.

Birmingham Fellows will be appointed to a permanent academic post, normally at Lecturer grade (entry level academic career grade); although in exceptional cases appointments may be made at a higher grade.

The Birmingham Fellows will have 5 years with protected time for high-quality research. This will allow outstanding, high potential, early-career researchers of any age to establish themselves as rounded academics who will go on to make a full and excellent contribution to research, teaching and academic citizenship. Birmingham Fellows will also develop their teaching experience, including PhD supervision, although the balance of these responsibilities within the role will vary within each college and discipline. Fellows will not be expected to contribute substantively to academic administration during the term of their Fellowship, although they will be expected to engage as part of the academic community. Humanities led disciplines will incorporate a phased programme of study leave with protected research time built-in alongside administrative and teaching duties.

Fellows will receive a start-up package to support the development of their research, an academic mentor, and development support in both research and teaching. Fellows will be part of the Birmingham Fellows cohort, which will provide them a University-wide network and an additional source of support and mentoring.

It is intended that Birmingham Fellows will enhance the University's existing academic strengths and contribute to the growing culture of collaboration and interdisciplinarity that exists at the University. We have identified 25 priority areas representing clusters of existing excellence at Birmingham and we welcome applications from candidates who feel their research fits within these areas.

Applications are welcome from candidates from the UK and abroad. Candidates must have been awarded a PhD (or equivalent terminal degree) by 13 March 2015. Candidates should be on a trajectory to become principal investigators and research leaders. Their publication record must be such that there is already clear evidence of outputs that are at least internationally excellent, if not world-leading, in terms of originality, significance and rigour.

Applications from candidates who have won funded external fellowships which they would bring to Birmingham are particularly welcome. Such candidates will be fast-tracked for interview. If offered a Birmingham Fellowship, they would be eligible for the full package of support during the term of their fellowship. Candidates who believe they might be eligible for fast-track consideration should contact us directly on [birminghamfellows@contacts.bham.ac.uk](mailto:birminghamfellows@contacts.bham.ac.uk) so we can assess their suitability for this process.

Candidates will be asked to complete our online application form, to submit a 3 page research proposal outlining key achievements so far, what research they will undertake and what the outcomes will be, as well as upload a CV, highlighting their top 5 publications.

Applications must be received by midnight on 20 March 2015. Short-listed candidates will be invited to interview during the week commencing 18 May 2015. Start dates will be subject to negotiation but in principle could be at any date subsequent from interview.



# Birmingham Fellowships 2015

## Priority Areas

- International Security
- Superdiversity
- Race and Ethnicity in Education
- Regional Economic Development
- Sustainability and Resilience of Future Cities
- Healthcare Technologies
- Energy Business, Economics and Policy
- Quantum Matter/Metamaterials
- Robotics
- Cognitive Neuroscience and Mental Health
- Environmental Genomics, Metabolomics and Health
- Microbiology and Infection
- Exercise as Medicine
- Water Sciences
- Plant Genetics and Cell Biology
- Cancer
- Applied Health Research
- Molecular Endocrinology
- Immunology and Inflammation
- Global Ethics
- 18th Century or 19th/20th Century European History
- English Literature – Long 19th Century
- Socio-Legal Studies or Law and Globalisation
- British Art after 1800
- Philosophical Theology

## Job outline

- Permanent.
- The Birmingham Fellowship term will be five years, with protected time for research and a graduated teaching load.
- Post is open to internal and external candidates.
- Salary range – £38,511 to £71,509 (Grades 8 and 9), although in exceptional cases appointments may be made at a higher grade.
- Informal enquiries – Detailed information is available at [www.birmingham.ac.uk/birminghamfellows](http://www.birmingham.ac.uk/birminghamfellows). General questions about the scheme, process and procedures can be directed to [birminghamfellows@contacts.bham.ac.uk](mailto:birminghamfellows@contacts.bham.ac.uk)
- Academic questions should be addressed to the named contact in the relevant area as identified on the website or to [birminghamfellows@contacts.bham.ac.uk](mailto:birminghamfellows@contacts.bham.ac.uk) to be redirected to the appropriate academic contact.

## How to apply

Applicants are invited to apply online at [www.birmingham.ac.uk/birminghamfellows](http://www.birmingham.ac.uk/birminghamfellows) by completing the online application form. Candidates are also asked to upload a CV with their top 5 publications highlighted, along with a 3 page research proposal outlining major achievements, what they will achieve in their first 3 years as a Birmingham Research Fellow and what their successes will be.