UNIVERSITY OF BIRMINGHAM

Job description

Post title and post number	Lecturer/Senior Lecturer in Environmental Nanoscience - 57617
Organisation advertising Description	School of Geography, Earth and Environmental Sciences

The University of Birmingham is continuing to make strategic investments across its research base in the School of Geography, Earth and Environmental Sciences. As part of a significant investment in Environmental Sciences / Geography staffing, we are now seeking to appoint a **Lecturer or Senior Lecturer in Environmental Nanoscience**.

Our current activity spans analytical and experimental nanoscience, with a range of environmental and biological applications; an important focus for this research is to underpin the safety assessment of engineered nanomaterials. Our internationally leading environmental nanoscience research group exploits a range of cutting edge analytical facilities, including through the Facility for Environmental Nanoscience Analysis and Characterisation, FENAC (based at Birmingham); staff also collaborate closely with researchers in Biosciences, Chemistry and Materials Science. Support for the group has recently been strengthened through additional technical staffing appointments, and will further benefit from a major University capital investment in a new Molecular Sciences research laboratory building in the near future. For further details, please see: http://www.birmingham.ac.uk/research/activity/environmental-health/index.aspx

We seek to grow our Nanoscience research strength and encourage applications which will complement our strengths in experimental measurements through an appointment in one of the following areas:

(a) **Computational nanoscience**. We seek to encourage applicants able to deploy approaches to develop predictive capacity in assessing nanomaterial toxicity and the environmental behaviour and fate of nanomaterials. The successful candidate should have worked on techniques such as quantitative structure–activity relationships for nanomaterials, ab initio simulations, machine learning and/or development and analysis of large scale datasets.

(b) **Environmental applications of nanomaterials**. These might include areas such as nanoscale processes in waste treatment and management, water treatment, metal cycling in natural and/or engineered systems, circular economy and nano-waste recovery, or applications of informatics for materials modelling, pilot lines or other industrially relevant processes, where there is potential for industrial / business application.

Applicants for this post must demonstrate (or show potential for) international excellence in their research area. Evidence of a track record in publishing work of the highest academic quality and impact is essential, alongside track record of / potential for obtaining external research funding. Willingness to collaborate across disciplinary boundaries within the School and College is strongly encouraged, and

applicants must have a commitment to delivering excellent research-informed teaching and learning, at undergraduate and postgraduate levels, and communicating the relevance and impact of their research to stakeholders.

Candidates are encouraged to address informal enquiries to Professor William Bloss (Head of School; w.j.bloss@bham.ac.uk), Professor Roy Harrison (Research Theme Lead; r.m.harrison@bham.ac.uk), or Professor Eva Valsami-Jones (Nanoscience group lead; e.valsamijones@bham.ac.uk) ahead of formal application.

Ranked in the top 100 world universities by QS World University Rankings, the **University of Birmingham** is one of the most ambitious and forward looking universities in the sector and was named University of the Year 2013-14 by The Times and The Sunday Times. The University of Birmingham's research and education reflects its civic roots, offering one of the broadest ranges of any UK university. It is one of the UK's most successful institutions in terms of attracting research funding, exceeding £150 million each year, with this figure continuing to grow year-on-year. Applications from both undergraduate and postgraduate students are at record levels and the University's commitment to students is reflected in the current investment of £175 million in a range of new and enhanced buildings across the campus.

The **College of Life and Environmental Sciences** (LES) comprises four Schools, namely Biosciences; Geography, Earth& Environmental Sciences; Sport, Exercise & Rehabilitation Sciences; and Psychology and is home to over 200 academics and around 4,000 students. In recent years, the College has placed significant investment into key interdisciplinary initiatives including a Centre for Computational Biology – building on the College's outstanding infrastructure and reputation for enabling technologies – and, most recently, the Centre for Human Brain Health. The College has extensive engagement with partners across academia and industry in the USA (University of Illinois Urbana-Champaign), India (Delhi), China (Guangzhou), Australia (Melbourne) and Brazil (Sao Paulo region) to deliver increasing impact on the local, national and global stage.

The **School of Geography, Earth and Environmental Sciences** (GEES) is a large interdisciplinary school, which centres on four research groupings whose multidisciplinary nature responds to the current international research agendas: Human Geography; Geosystems; Environmental Health Sciences; and Physical Geography. Both research and teaching address the key challenges of the 21st Century such as climate change, environmental stress, air and water pollution, urbanisation, resilience and sustainability science. 90 % of our research in Earth & Environmental Sciences was rated as world-leading or internationally excellent in REF2014, on the basis of a near-100% staff return rate.

Environmental Nanoscience at the University of Birmingham sits within the Environmental Health Sciences (EHS) research theme within GEES. Staff within EHS address a range of research issues requiring the application of chemical and physical principles to the study of environmental processes. Ultimately, such processes are relevant to understanding global change and environmental impacts upon ecosystems, the environment and human health.

Research in the group is loosely gathered into four principal areas:

- Environmental Nanoscience
- Atmospheric Chemistry and Air Pollution
- Meteorology and Climate

- Persistent Organic Pollutants (POPs)

There are very strong inter-linkages between these areas with much collaborative working, and most members of the group contribute to more than one of the research areas.

The Environmental Nanoscience group are international leaders in the field of nanotoxicology and play a leading role in the translation of scientific advances towards the regulation of nano-enabled products. We coordinate or participate in a number of NERC, GCRF, Industry and EU funded projects including: NanoMILE, FutureNanoNeeds, NanoFASE, ACEnano, and NanoCommons, and are actively involved in the provision of nanosafety policy advice to UK and European governments. Research areas include engineered nanomaterial synthesis and characterization, covering a very wide range of metals and metal oxides, as well as polymers and coatings and the development of reliable and reproducible synthesis protocols; behaviour in aqueous media, particularly in terms of the effects on solubility and agglomeration of media; formation of 'environmental coronas' and ageing of nanoparticles; assessment of the impacts of nanomaterials on keystone species such as Daphnia magna, biofilms as well as in cells; nanoparticles in atmospheric depositions (dust, rainwater) and their role in controlling the bioavailability of biogeochemically important nutrients and trace metals; applications of nanomaterials and biomaterials (e.g. biochar) in environmental remediation.

Our laboratory capability at Birmingham, in part within the Facility for Environmental Nanoscience Analysis and Characterisation, is diverse and includes optical (scanning, transmission, confocal and atomic force microscopy), chemical (plasma-based, gas chromatography), physical (scattering, spectroscopic, diffraction and fractionation) and biological (cell & Daphnia culturing, PCR, omics) methods. We are also developing novel characterisation techniques: we have, for example, a prototype single-cell ICP-MS instrument, currently one of a few around the world.

For further details, please see:
http://www.birmingham.ac.uk/research/activity/environmental-health/index.aspx

Further information on the School, its research and courses is available at:
http://www.birmingham.ac.uk/schools/gees/index.aspx

A full Job Description is available on the University of Birmingham webpages.

Equal Opportunities
The School of Geography, Earth and Environmental Sciences is an equal opportunities employer and holds an Athena Swan Bronze award. Female and BME staff are under-represented in the School and so we particularly value applications from such candidates. The School is happy to consider applications from candidates looking for flexible part time/job share arrangements as part of the appointment.

The School's Equality & Diversity / Athena SWAN lead, Sara Fregonese (s.fregonese@bham.ac.uk; 0121 414 3635) is available to discuss equal opportunities policies and initiatives, also outlined at:
http://www.birmingham.ac.uk/schools/gees/about/athena-swan.aspx

The School is keen to improve its understanding of the perception of its equality opportunities policies, as a component of Athena Swan Silver status (application currently under review); we would be grateful if applicants would fill out a short (and

completely anonymous) questionnaire regarding this specific issue, which can be found at: https://www.surveymonkey.co.uk/r/KY9LH6P

The University

For more than a century the University of Birmingham has thrived by being purposeful, pragmatic and pioneering; qualities which reinforce one another to strengthen our position as a leading global university.

With more than 7,000 staff and 32,000 students, we are the first – and today the largest – civic university 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 new cancer treatments to harnessing the power of atoms for future energy sources makes a real difference to people's lives – we provide innovative solutions to big problems. We think, recruit and compete worldwide.

Being named University of the Year for Graduate Employment in The Times and The Sunday Times Good University Guide 2015-2016 places Birmingham as the UK's number one university for securing a graduate-level job and comes just two years after being named University of the Year in 2013-14. These coveted accolades recognise a transformative time in our history and recognised 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 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, including a new library, a major sports centre, outstanding new student accommodation and a state-of-the-art student services hub.

The spirit of innovation which is a key feature of the University's history continues today, exemplified by the new University of Birmingham School; 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 (www.universitas21.com) of which our Vice-Chancellor is the current Chair.

The University's Strategic Framework – Making Important Things Happen builds on the aims and achievements of the last five years and sets out our ambition to 2020 (www.birmingham.ac.uk/ strategy2020).

Exceptional Research

At the University of Birmingham we have created a research environment in which academic rigour, innovation and delivery are made possible by brilliant people, outstanding facilities and strong collaborative networks. The University is one of the UK's most successful institutions in terms of attracting research funding. We have a portfolio of over 2,600 live projects with an award value to the University of £594 million. More than 81% 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 2014). The results also showed that 87% 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.

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 Life Sciences, the University has a long established record in pioneering work, combining discovery science with translational imperatives supported by cutting edge enabling technologies. This is combined with, clinical expertise and first-class surgical facilities all housed in one integrated life sciences campus. This continues today in

the form investments into the Institute of Translational Medicine, due to open later this year, and the Centre for Human Brain Health opening in 2017.

Environmental research at Birmingham cross-cuts the Natural Sciences, Social Sciences and Humanities. It is aligned with major environmental and societal challenges such as living with environmental change; urban resilience and living; water and energy security; transitions and cultural economies; sustainable use of natural resources; biodiversity; and data acquisition technologies. We are home to the Birmingham Institute of Forest Research (BIFoR) focusing on the impact of environmental change on woodlands, and the ECOLAB, a new experimental outdoor facility designed to understand the influence of global change (climate, pollutants etc.) on freshwater ecosystems.

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 with a focus on key themes including cohesion, health and well-being and localisation.

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, the security impact of drones and an investigation into doing cold energy smarter.

Our research strength is founded on an established and developing network of collaborations including a signature collaboration with the University of Nottingham, important relationships with partners in the university, health and public sectors, close links with companies such as Rolls-Royce and a global network of partnerships in Europe, Brazil, China, India and the USA.

The University of Birmingham's award winning reputation campaign Birmingham Heroes: Research That Matters communicates our areas of excellence and highlights our leading academics(www.birmingham.ac.uk/heroes).

Over the past five years we have delivered a programme of major academic investments and established signature collaborations at home and overseas. Our goal now is to do more and better research, tackling the great challenges facing the world.

Outstanding Students

At Birmingham we support our exceptional and ambitious students to become independent problem solvers and natural leaders, enthusiastic about knowledge and learning and able to get things done. Our graduates are in demand across the world. As a result we attract students with the finest academic credentials and year-on-year applications for our undergraduate places are growing rapidly and more impressively than they are nationally or for comparable universities. This year we will welcome approximately 8,000 undergraduate and postgraduate students. We are committed to delivering a first-class experience for our students in every aspect of their university life. This is also why the University was ranked in the Top 20 of the Times Higher Education Student Experience Survey 2015 and 18th out of 123 UK universities in The Complete University Guide for 2016 and in The Guardian University Guide 2016. These latest league table results further strengthen Birmingham's position as a Top 20 university and reflect our recent performance in other highly-regarded league tables, such as The Times and Sunday Times Good University Guide 2016, which ranked the University in 17th place overall.

Global Outlook

Rated 76th in the QS World University Rankings 2015-16, 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 engagement and international research focus can be found on our website (www.birmingham.ac.uk/International/global-engagement/index.aspx).

Cultural Assets

The University's many cultural assets take in the Lapworth Museum of Geology which has the finest and most extensive collections of fossils, minerals and rocks in the region. The Museum dates back to 1880, and is one of the oldest specialist geological museums in the UK. A £2.7 million refurbishment has just been completed of the museum and is due to re-open in June 2016.

The University also encompasses the Shakespeare Institute at Stratford-upon- Avon, 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 in summer 2016, 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 fastchanging global HE environment.

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 contemporary vision. Birmingham has a diverse community that creates a vibrant, multicultural and exciting place to live and work.

The heart of Birmingham is symbolised by Symphony Hall, considered one of the greatest concert venues in the world and a fitting home for the globally respected City of Birmingham Symphony Orchestra. Symphony Hall forms part of the impressive International Convention Centre, which overlooks attractive canals at the hub of the UK's canal network. 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 major opera companies.

The brand new £189 million Library of Birmingham has recently opened, housing a collection of one million books, the library also has more than 200 public access computers, theatres, an exhibition gallery and music rooms making this the largest library in Europe.

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 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, Cadbury World, and the National Sealife Centre.

The iconic Bullring is one of the largest dedicated shopping facilities in Europe. Sports and recreation are also well served; the city offers international Test cricket, Premiership football, International Championship golf and top-class rugby. The International Convention Centre and National Indoor Arena have spawned a whole new development at the centre of the city. The National Exhibition Centre, on the outskirts of the city, remains one of the largest exhibition facilities in Europe. Birmingham is also home to over 200 restaurants serving up 27 different kinds of cuisine and has more Michelin starred restaurants than any other English city outside London.

Birmingham is at the crossroads of the UK's motorways. From Birmingham International Airport, more than 50 different airlines operate scheduled services to 100 destinations worldwide. The University has 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.

There is a high standard of all types of private accommodation, with high-quality affordable family housing in several attractive residential suburbs and excellent transport connections to smaller local towns. Public parks and large domestic gardens are an integral part of this green city.

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, Wales, the Potteries, and the Cotswolds. Quality public and private schools are widely available, with several consistently rated in the top 10 on examination performance in annual league tables for England and Wales.

The College of Life and Environmental Sciences

The College of Life and Environmental Sciences id dedicated to exploring the diversity and evolutionary challenges of life in all its forms. Across the breadth of Life and Environmental Sciences we discover, apply and translate science, forging major advances in human and environmental health.

Comprised of four Schools: Biosciences; Geography, Earth & Environmental Sciences; Sport, Exercise & Rehabilitation Sciences; and Psychology, we combine our discipline expertise with those across the wider University to address the most significant human and environmental questions of the past present and future.

The College has benefited from significant investment in key interdisciplinary initiatives, including a Centre for Computational Biology, which builds on our outstanding infrastructure and reputation for enabling technologies. This supports our Institute of Microbiology and Infection, and our most recent investment; the Centre for Human Brain Health.

We cannot address the grand challenges facing human health through biomedicine alone. By taking a holistic approach, we engage across the broadest spectrum of the life and environmental sciences. This includes investing in exploring and understanding environmental change and its impact on life through the development of the Birmingham Institute of Forest Research (BIFoR) and the ECOLAB, a new experimental outdoor facility for understanding the influence of global change (climate, pollutants etc.) on freshwater ecosystems.

We have a faculty of more than 200 academics, each with their own research group, and a total staff complement of approximately 670. In the most recent Research Excellence Framework (REF 2014) the majority of our research was rated as world leading (4*) or internationally excellent (3*). Our extensive engagement with partners across academia, industry and communities deliver growing impact on the local, national and global stage. These include initiatives with partners in the USA (UIUC), India (Delhi), Australia (Melbourne), China (Guangzhou) and Brazil (Sao Paulo region).

The College is home to around 4,000 students studying a diverse range of undergraduate, postgraduate taught and research programmes. The combination of outstanding research, training, fieldwork and facilities enables our students to engage with the most exciting and pioneering research through to its impact and application to real world societal challenges. As a result, they learn both transferable and discipline-specific skills giving them the confidence and experience to succeed in a wide range of careers across the globe. This is evidenced by our 84% graduate employability rate contributing to the University of Birmingham being named University of the Year for Graduate Employment 2015-16 by *The Times* and *The Sunday Times*.

For more details about the College of Life and Environmental Sciences visit: www.birmingham.ac.uk/les

Job summary – Lecturer

Contribute to the whole range of research, teaching and administration.

Research is likely to involve initiating, conducting and disseminating original research. The research has measurable outcomes and is reflected in a growing national reputation and often an incipient international reputation.

Teaching is likely to include a substantial contribution to: (a) the management, development (including programme/module review) and delivery of teaching and assessment; and (b) enhancement of the student experience or employability. The role will typically also involve developing and advising others, including: (a) providing expert advice to staff and students, (b) supervising and examining PhD students, and (c) developing and advising others on learning and teaching tasks and methods.

Management and administration is likely to involve contributions at Departmental and School level, and/or making an important contribution to some managerial/leadership activities (e.g. working groups) within the University. This may include developing and making substantial contributions to knowledge transfer, enterprise, business engagement, public engagement, widening participation, schools outreach, or similar activities at Department/School level or further within the University.

Job summary – Senior Lecturer

Contribute at a senior level on a sustained basis to the whole range of research, teaching leadership and administration.

Research is likely to involve an established national and developing international reputation through significant original research work and a clear record of impact, and/or designing and developing significant innovative underpinning technologies.

Teaching is likely to include: (a) development and leadership of major teaching programmes or equivalent; and (b) enhancement off the student experience or employability that is of manifest benefit to the College and University.

Management and administration is likely to include Departmental/School leadership and management activity with University wide involvement that may include sustained high value impact knowledge transfer, enterprise, business engagement, public engagement and similar activities that are of manifest benefit to the College and University.

Main duties – Lecturer

Research

To plan and carry out research, using appropriate methodology and techniques. This may include, where appropriate to the discipline:

- Pursue personal research including developing research ideas and winning support, including financial support.
- Plan, publish and/or execute high quality research
- Project manage research activities, and/or supervise other research staff

- Present findings in high quality publications and conference proceedings
- Develop novel methodologies and techniques appropriate to the type of research being pursued
- Supervise and examine PhD students, both within the institution and externally
- Provide expert advice to staff and students within the discipline
- Apply knowledge in a way which develops new intellectual understanding
- Develop and make substantial contributions to knowledge transfer, and enterprise (including business engagement, public engagement) and similar activity that is of manifest benefit to the College and the University.

Learning and Teaching

To use a variety of methods in teaching and advising individuals and groups of undergraduates, postgraduates, or CPD students. Where appropriate to the discipline this may include:

- Teach and examine courses at a range of levels
- Plan and review own teaching approaches and act as a mentor to encourage others to do the same
- Develop programme proposals and make substantial contributions to the design of teaching programmes more widely in the Department or School, as appropriate
- Where appropriate, undertake and develop the full range of responsibilities in relation to supervision, marking and examining (including summative assessment, assessed work, contributing to the final award – as a mark or as credit – such as unseen examinations, essays, dissertations or presentations.
- Use appropriate approaches to learning and teaching in their field
- Disseminate appropriate practices through suitable media
- Develop and advise others on learning and teaching tasks and methods
- Develop and make substantial contributions to knowledge transfer, enterprise, business engagement, public engagement activities or similar on own specialism that enhances the student experience or employability and is of manifest benefit to the College and University
- Devise and supervise projects, student dissertations and practical work

Management/Administration

To contribute to Departmental/School administration or have a high level of responsibility for others. This may include:

- Contribute to the administration/management of research and/or teaching across the Department/School
- Lead and manage a team to devise and implement a new and/or revised process (e.g. new programme or a recruitment drive)
- Advise on personal development of colleagues and students
- Make a major contribution to some administrative activities within the University (e.g. appeals panels, working groups)
- Manage enterprise, business development, and public engagement activities of manifest benefit to the College and University
- Develop and make substantial contributions to knowledge transfer, enterprise, business engagement, public engagement, widening participation, schools outreach.

Main duties – Senior Lecturer

Research

To pursue sustained research activity through original research and scholarship, including other research-related contributions through conference papers and presentations and/or consultancy projects and advice. Where appropriate for the discipline, this may include some but not all of the responsibilities listed below:

- Make a major contribution to the management of research activities
- Lead successful funding bids which develop and sustain research support for the specialist area (in disciplines where this is possible)
- Publish leading research that results in a sustained, highly respected reputation of international quality in the subject area and/or designing and developing innovative underpinning technologies
- Provide expert advice internally and externally
- Provide leadership of research that contributes to the progression of the discipline (in disciplines where this is possible)
- Referee and peer review articles for peer reviewed academic journals and grant applications by research councils and/or other major funding bodies
- Lead sustained high value impact activity in knowledge transfer and enterprise (including business engagement, public engagement) that is of manifest benefit to the College and University, and: a) makes a significant contribution to policy development at a national and international level; and/or b) involves development of industrial links and comparable networks and initiatives.

In addition, research responsibilities will include some but not necessarily all the indicative responsibilities from grade 8 listed below:

- Supervise and examine PhD students, both within the institution and externally
- Manage research activities and/or supervise other research staff
- Develop novel methodologies and techniques appropriate to the type of research being pursued

Learning and Teaching

To contribute at a senior level on a sustained basis in learning and teaching. Where appropriate for the discipline, this may include some but not all of the responsibilities listed below:

- Lead the development of new and appropriate approaches to learning and teaching. This may be underpinned by research and evaluation of teaching methods and systems.
- Act as adviser for teaching and learning methods through excellent practice and mentoring other colleagues
- Lead the design and/or co-ordination of programmes or equivalent activities across the School or Department
- Contribute to the development of teaching and learning policy, methods and standards, more widely than the School
- Contribute to debate nationally about policy, methods and practices through publications, conference activity and roles that advance quality in the discipline
- Lead the development and management of assessment strategies within the School/Department
- Lead substantial and sustained high value impact activity in knowledge transfer and enterprise (including business engagement, public engagement) that enhances the student experience and/or employability and is of manifest benefit to learning and teaching in the College and the University. This may include the development of industrial links and comparable networks and initiatives.

In addition, the learning and teaching responsibilities will include some but not necessarily all the indicative responsibilities from grade 8 level listed below:

- Teach and examine courses at a range of levels
- Plan and review own teaching approaches and act as a mentor to encourage others to do the same
- Develop programme proposals and make substantial contributions to the design of teaching programmes more widely in the Department or School, as appropriate
- Undertake and develop the full range of responsibilities in relation to supervision, marking and examining
- Use appropriate approaches to learning and teaching in their field
- Disseminate appropriate practices through suitable media

- Develop and advise others on learning and teaching tasks and methods

Management/administration

To chair and/or lead activities in the Department/ School and representation on University committees or working groups. Where appropriate to the discipline, this is likely to include some but not all of the responsibilities listed below.

- Make an important contribution to the development and running of the Department or School, for example, leading activity on teaching assessment and/or on research
- Develop and manage staff and resources in support of major research and/or teaching activities
- Make important contributions to the development of the Department/School/PAU's research strategy and/or learning and teaching strategy
- Contribute significantly to the development and delivery of knowledge transfer, enterprise, business engagement and public engagement activities with a sustained high value impact of manifest benefit to the College and the University

In addition, the management/administration responsibilities will include some but but not necessarily all the indicative responsibilities from grade 8 listed below:

- Contribute to the administration/management of research and/or teaching across the Department/School
- Lead/project manage a team to devise and implement a new and/or revised process (e.g. new programme or a recruitment drive)
- Advise on personal development of staff and students
- Make a sustained contribution to widening participation, schools outreach and/or public understanding of the discipline
- Contribute to administrative activities within the University (e.g. appeals panels, working groups)
- Develop and manage staff and resources in support of major research and/or teaching activities

Skills and Experience – Lecturer

- Normally, a higher degree relevant to the research/teaching area (usually PhD) or equivalent qualifications
- Extensive research/teaching experience and scholarship within subject specialism
- Proven ability to devise, advise on and manage learning/ research
- Skills in managing, motivating and mentoring others successfully at all levels

Research

- Experience and achievement reflected in a growing reputation
- Extensive experience and demonstrated success in planning, undertaking and project managing research to deliver high quality results
- Extensive experience of applying and/or developing and devising successful models, techniques and methods
- Experience and achievement in knowledge transfer, enterprise and similar activity

Teaching

- Ability to design, deliver, assess and revise teaching programmes
- Extensive experience and demonstrated success in developing appropriate approaches to learning and teaching, and advising colleagues
- Experience and success in knowledge transfer, enterprise and similar activity that enhances the student experience or employability

Management Administration

- Ability to contribute to School/Departmental management processes
- Ability to assess and organise resources effectively
- Understanding of and ability to contribute to broader management/administration processes

Skills and Experience – Senior Lecturer

Demonstrated competence in Research; Learning and Teaching; and Management and Administration; and excellence in at least two of these areas.

Research requirements

An excellent national reputation and a developing international profile through significant original research work and a clear record of impact. Evidence of success under the following headings, as appropriate to the discipline:

- High level peer esteem as evidenced by
    - Excellent reputation in the UK and often internationally, reflected in sustained high quality output, level of innovation, impact on subject and recognition
    - An excellent and sustained record of peer reviewed research publications
- Successful and sustained supervision of doctoral students to completion
- Substantial and sustained research income generation, e.g. through research grants, contracts, research consultancy or other external funding
- Sustained high value impact knowledge transfer and enterprise that is of manifest benefit to the College and University

Learning and teaching requirements

An excellent teaching profile and performance in terms of both impact and quality. The teaching quality demonstrated to be informed by an appropriate level of scholarship. Evidence of success under the following headings:

- High national reputation for the development of teaching and learning excellence within the discipline
- Successful and sustained use of a range of appropriate teaching methods, and assessment strategies that promote high quality learning, including learning that is flexible, distinctive and current and stimulates learners' natural curiosity
- Significant and sustained contribution to one or more of the following: strategic development of new programmes; approaches to learning; the development of learning resources
- High quality and sustained contributions to fostering excellence in teaching activities more widely, i.e. in the Department/School or College and/or externally
- Track record of substantial and sustained high value impact on the enhancement of the student experience, and/or employability
- Mentoring and expert advice which develops the skills of colleagues in teaching and in fostering learning

Management and administration-related requirements

Demonstrated significant achievement in management and administration-related activities, which may include leadership of activities/initiatives. Evidence of success under the following headings

- Successful and sustained performance in significant administrative/managerial role (s) (e.g. exams officer)
- Significant and sustained high quality innovative contributions to the management/administration of the Department/School/College or University
- Successful and sustained contribution to the corporate life of the School/College/University, displaying willingness to contribute actively to committees, collaborative teaching and administrative tasks