The University Of Sheffield.

Department Of Computer Science.

Lecturer/Senior Lecturer/ Reader in Computer Science (Cybersecurity)

March 2017

Our Department: Introduction from Professor Guy Brown

Since it was established in 1982, the Department of Computer Science at the University of Sheffield has attained an international reputation for its research and teaching. In the 2014 Research Excellence Framework (REF) exercise, we were ranked 5th out of 89 departments in the UK for computer science research.

Our vision is to achieve research excellence and impact by translating fundamental knowledge into practice, through collaboration with end users. Research in the Department is organised into a number of groups covering interests in cybersecurity, machine learning, algorithms, complex systems modelling, natural language processing, speech and hearing, verification, testing, visual computing and organisations, information and knowledge. There is substantial cross-group research activity in many areas, ensuring that research is multidisciplinary and collaborative.

The Department attracts a high level of external funding from UK Research Councils, the European Union and industry. Our record for leadership in collaborative research is outstanding, particularly in European programmes. Currently we host two ERC fellows and three EPSRC fellows.

We offer 3-year and 4-year undergraduate degrees in Computer Science and Software Engineering, dual degrees with Mathematics and Physics, and degrees that combine computer science with management and business. We have an enviable reputation for innovative teaching methods based on enterprise, industrial projects and problem-based learning. At Masters level we run programmes in Advanced Computer Science, Advanced Software Engineering, Software Systems and Internet Technology, and a specialised programme in Speech and Language Processing. A new MSc in Data Analytics was introduced 2016 and we will introduce a MSc in Cybersecurity within the next two years.

Computer and information security is a rapidly growing interest at Sheffield. In the Department of Computer Science we have recently established a Security of Advanced Systems group, led by Professor John Clark. There is related expertise in other departments such as Law, Mathematics and Statistics, and Politics. Furthermore, Sheffield's strength in engineering brings many opportunities for collaborative research in cybersecurity, in areas such as robotics and advanced manufacturing. To drive our research agenda in cybersecurity forward, we now seeking to make three appointments at Lecturer, Senior Lecturer or Reader Level.

This is a tremendously exciting time for the Department of Computer Science. I look forward to working with the new members of our cybersecurity group.

Professor Guy Brown
Head of the Department of Computer Science

The Faculty of Engineering

The Faculty of Engineering is one of the biggest and best engineering faculties in the UK and strives for excellence in its teaching and world-class research. Independent assessments of our research excellence confirm more than two thirds of our research to be either internationally excellent or world leading. Our expertise is extensive – our seven academic departments and two interdisciplinary programme areas cover all the engineering disciplines. They are leaders in their fields and outstanding contributors to the development of new knowledge, linking their research to the teaching of the engineers of the future and developing the skills of existing engineers. Our vision is to compete to be the best engineering faculty in the UK, and to be amongst the best in the world. We will aim to work across the full spectrum of engineering activity, from fundamental science to professional practice, and we will contribute fully to ensuring a sustainable future both locally and globally.

The Faculty has close links with the Advanced Manufacturing Institute (AMI), a self-standing centre for research, knowledge exchange, teaching and learning within the academic structure of the University. AMI was created in 2011 in response to the continued success and growth of the University of Sheffield Advanced Manufacturing Research Centre (AMRC). It includes: AMRC with Boeing, Nuclear AMRC, Knowledge Transfer Centre and the AMI Training Centre.

For further details about the Faculty of Engineering please see our website www.sheffield.ac.uk/faculty/engineering
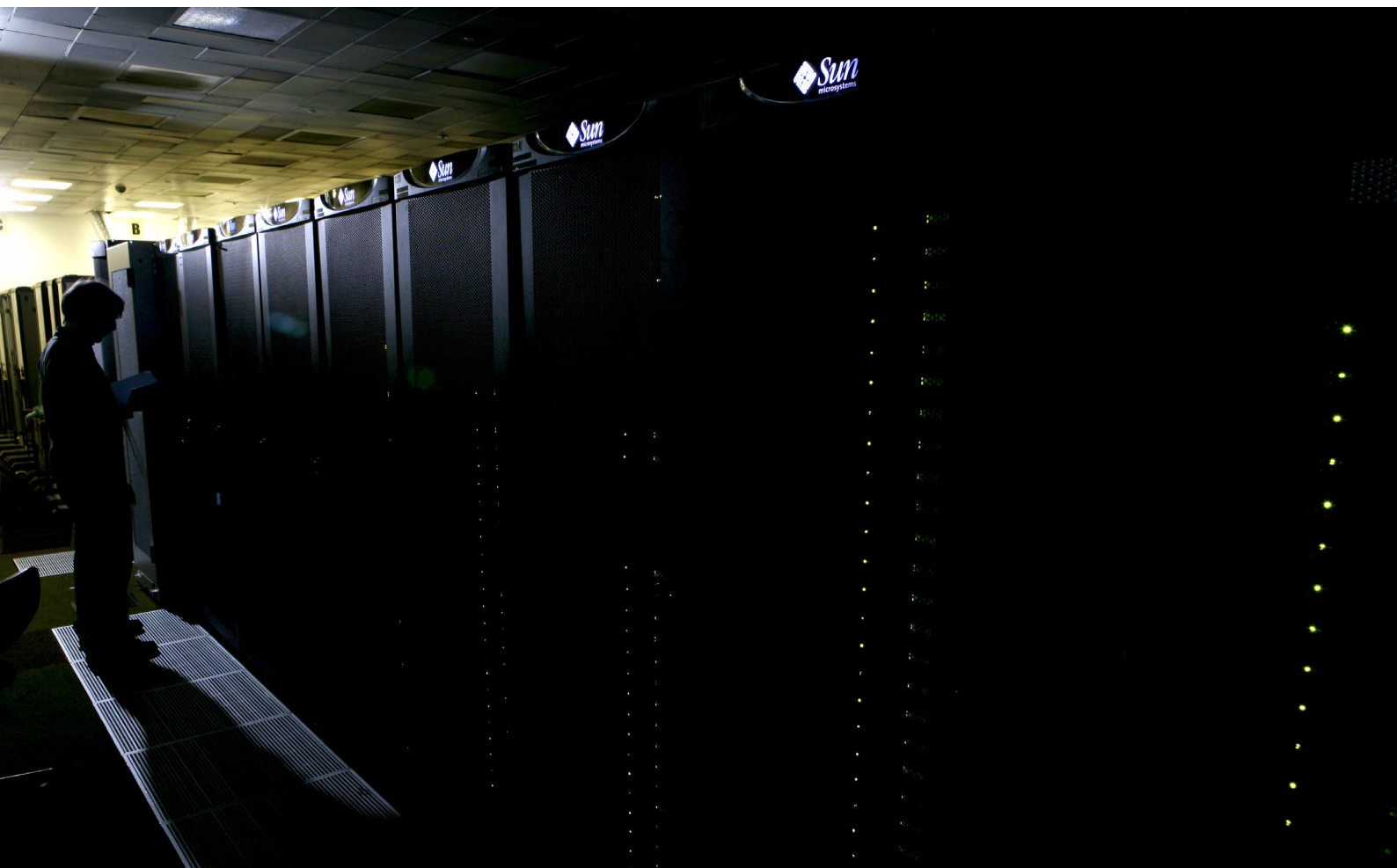
Security of Advanced Systems Research Group

The Security of Advanced Systems Group investigates fundamental theory together with the development of practical tools and techniques for securing advanced systems that will play a critical role in societies worldwide. We carry out fundamental research in cybersecurity and collaborate with leading researchers across the Faculty of Engineering and beyond to bring our cyber expertise to bear in domains of critical importance, for example robotics, autonomous systems, and advanced manufacturing systems.

Our security expertise covers all aspects of systems that are secure by design. These include security policy and requirements, architectural design, security verification, security testing, and formal analysis of security properties. We also research a wide range of methods for security analysis, for example as applied to the detection of covert channels and reverse engineering. This is complemented by leading expertise in artificial intelligence, allowing us to research, for example, intrusion detection and the automated synthesis of cryptographic algorithm building blocks and secure protocols.

There are three posts available, which will establish a critical mass of security expertise in the Department of Computer Science. More broadly, the group will work with colleagues in several departments of the University of Sheffield who have security interests. In addition to robotics and advanced manufacturing, this expertise includes:

- Politics (ethics of cyber warfare, surveillance, health security);

- Law (international law relating to cyber warfare);

- Mathematics and Statistics (number theory);

- Physics and Astronomy (quantum computing);

- Sociological Studies (societal impact of surveillance technologies);

- Electronic and Electrical Engineering (design and implementation of cryptosystems);

- Automatic Control and Systems Engineering (cyber attack detection in infrastructural systems such as smart grids).

About the job

Job role

As Lecturer, Senior Lecturer, or Reader you will expand our internationally leading, multi-disciplinary research portfolio in the Department of Computer Science.

You will demonstrate an excellent research record in cybersecurity. Suitable areas of expertise include (but are not limited to): security policies, threat modelling, authentication, access control, malware and malware detection, network security, secure protocols, intrusion detection, and human factors and security. Candidates who work at the interface of artificial intelligence and cybersecurity are particularly encouraged to apply.
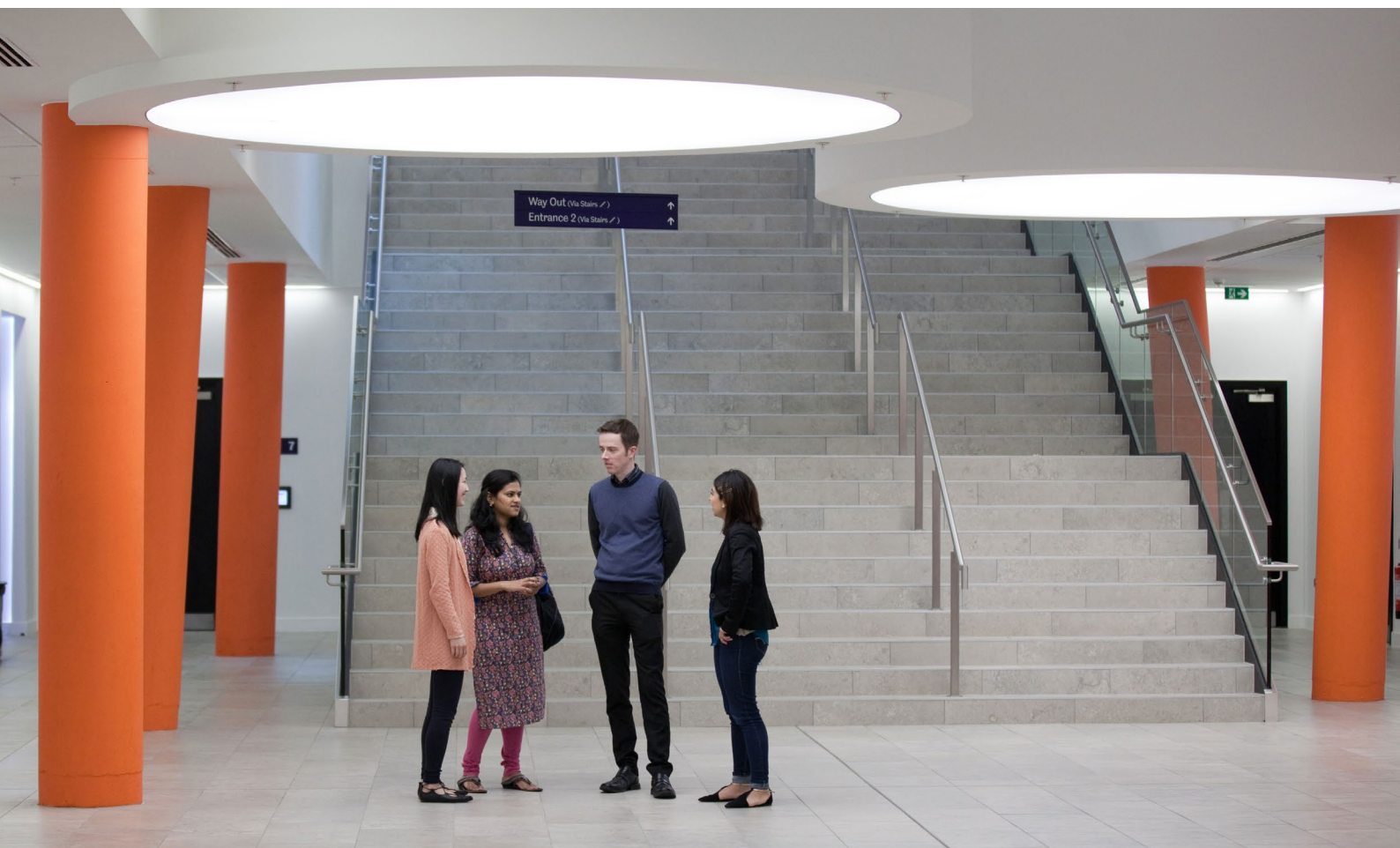
You will conduct research to the highest standards. This will include securing research funding, publishing in high impact journals, supervision of research students and assisting on research project management. You will be able to collaborate on cybersecurity within Computer Science and more broadly within the University.

As a teacher you will play a key role in maintaining our reputation for high quality teaching by designing, delivering and assessing undergraduate and postgraduate level programmes in cybersecurity and other topics in computer science.

The Sheffield Academic

The qualities and responsibilities of the University's academic staff are captured by the concept of the Sheffield Academic. The role of the Sheffield Academic is underpinned by a number of core values and qualities that are essential to the scholarly pursuit and communication of knowledge in this University. Among them is the recognition that the pursuit of research excellence and the pursuit of teaching excellence are closely linked.

Please refer to www.sheffield.ac.uk/hr/sheffieldacademic/statement.html for further information.

Job description

Main duties and responsibilities

- Contribute fully as teacher, researcher and leader, in fulfilment of the ideals of the 'Sheffield Academic'.

- Design, deliver, assess and evaluate high quality research-led teaching programmes, which will include identifying learning objectives and selecting appropriate curricula, selecting teaching methods, resources and reading, and determining, designing and producing study material.

- Supervise undergraduate and postgraduate projects.

- Contribute to the development of teaching policy and strategy as well as contributing to curriculum development.

- Undertake personal tutor/pastoral responsibilities for undergraduate and postgraduate students.

- Conduct an innovative programme of research and scholarship that is recognised nationally/internationally in terms of originality, significance and rigour.

- Develop funding strategies, pursue income generation and manage external research grants.

- Manage or co-manage external research funding over a period of grants.

- Disseminate research findings through conference presentation, publication in recognised, high-quality, peer reviewed journals and produce other appropriate outputs (for example patents).

- Be actively involved in professional activities such as refereeing papers, editing journals, refereeing research grants, external examining, organising conferences, committee membership and involvement with professional bodies.

- Undertake knowledge-transfer activities and collaborative research and consultancy projects.

- Contribute to, and build cross-research group activity.

- Attract, manage and develop a team of research staff and research students, within a supportive culture.

- Develop and deliver high-quality teaching as required.

- Contribute to the development of teaching policy and strategy as well as contributing to curriculum development.

- Supervise undergraduate and postgraduate projects.

- Contribute to the life of the Department, the Faculty and the wider University community through administration responsibilities and committee membership as and when appropriate.

- Plan and prioritise own work, and forward plan up to five years for some tasks. For teaching plan up to one year ahead unless there are significant teaching programme changes or new courses then plan for up to two years ahead of their introduction.

- Any other duties, commensurate with the grade of the post.

Additionally, a Senior Lecturer will:

- Carry out a significant departmental, Faculty and/or University administrative role to a high standard, showing evidence of creativity and innovation, to meet the required objectives.

- Maintain substantial international recognition through an extensive range of professional activities.

- Act in senior roles within the Department/Faculty/University, providing leadership and direction for other University colleagues as appropriate.

- Maintain a successful record of grant capture, ideally from a range of sources.

Person specification

Applicants should provide evidence in their applications that they meet the following criteria. We will use a range of selection methods to measure your abilities in these areas including reviewing your on-line application, seeking references, inviting shortlisted candidates to interview and other forms of assessment action relevant to the post.

Criteria		Essential	Desirable
Qualifications and experience			
1.	A PhD in a relevant discipline (or equivalent experience)	✘	
2.	Ability to demonstrate a strong record of high-quality research in cybersecurity, including publications in peer review journals	✘	
3.	Evidence of potential to generate external research income	✘	
4.	Experience of obtaining externally funded research grants	✘ (SL)	✘ (L)
5.	Experience of supervising postgraduate students	✘ (SL)	✘ (L)
6.	Evidence of academic leadership	✘ (SL)	✘ (L)
Management skills			
7.	Potential to lead and manage a research team	✘	
8.	Evidence of ability to lead and manage research teams	✘ (SL)	✘ (L)
Communication skills			
9.	Excellent interpersonal and communication skills	✘	
10.	Ability to effectively present findings at conferences and conduct effective working relationships	✘	
11.	Ability to communicate complex theories and problems effectively to undergraduate and postgraduate students	✘	
Team working			
12.	Ability to work effectively and collaboratively within departmental teams	✘	
13.	Commitment to working with colleagues towards a common objective	✘	
Supporting staff performance			
14.	Ability to motivate high performance in others	✘	
15.	Experience of reviewing individual and team progress and performance		✘
Personal effectiveness			
16.	Proven ability to work to and meet deadlines	✘	
17.	Excellent organisational skills	✘	
18.	Proven teaching ability	✘	
19.	A strong commitment to excellence in research and teaching and the ability to demonstrate potential to enhance the student's learning experience.	✘	
20.	Ability to plan and prioritise own daily work and forward plan up to five years for some tasks	✘	

Further information

Appointment at the level of Reader

Appointment at the level of Reader will be considered for candidates who meet the criteria for Senior Lecturer but who also demonstrate evidence of:

- Innovative research and scholarship within the discipline, as evidenced by high impact and quality publications of original research with high numbers of citations in peer reviewed high quality journals and/or through influential monographs; and by attested knowledge and excellence in the discipline field.

- External recognition, for example through invitations to deliver keynote lectures at international conferences, positions on/awards from national/international/professional bodies or sustained success at external funding from competitive sources and/or novel knowledge transfer leading to significant impact on external organisations or businesses.

- Success in research leadership

- Sustained success in obtaining research grants at a high level for the discipline area

- Successful supervision of research students

- Knowledge transfer activities as evidenced by external collaboration, consultancy, sponsored students, spin outs etc.

Terms

This post is **open ended** and **full-time**.

Terms and conditions of employment will be those for Grade 8 (Lecturer) or Grade 9 (Senior Lecturer/Reader) staff.

Although this role has been identified as a full-time post, we are committed to exploring flexible working opportunities with our staff which benefit both the individual and the University. Therefore, we would consider flexible delivery of the role subject to meeting the business needs of the post. If you wish to explore flexible working opportunities in relation to this post, please contact us. For more information, see:
www.sheffield.ac.uk/hr/guidance/flexible

Benefits

We offer an excellent reward and benefits package:

- Highly competitive pay, pension, reward and recognition opportunities linked to performance.

- Salary for Grade 8 (Lecturer): £39,324 - £46,924 p.a. with potential to progress to £52,793 p.a. through sustained exceptional contribution, and for Grade 9 (Senior Lecturer/Reader): £49,772-£55,998 with potential to progress to £64,894.

- An extraordinary health and wellbeing offer 'Juice', that promotes happiness and wellbeing amongst our staff through a broad range of inclusive activities.

- A comprehensive selection of benefits to suit your lifestyle needs under the umbrella of The Deal.

- Access to extensive development and training opportunities, including our award-winning Sheffield Leader programme.

- Award-winning equality and diversity action which enhances working life for all. 92% of staff tell us that they are treated with fairness and respect (staff survey 2016).

For more information on any of the above visit:
www.sheffield.ac.uk/jobs/staffbenefits

100 Best Companies

The University of Sheffield has been named as one of the best places to work in the UK by The Sunday Times. We are ranked in 25th place in the Best Not-For-Profit Organisations To Work For 2017. Sheffield is the only university to feature in the list.

Equality and Diversity

The University of Sheffield is committed to achieving excellence through inclusion. The Department of Computer Science has achieved the Silver Athena SWAN award for Women in Science, Engineering and Medicine.

The University of Sheffield is proud to be a Two Ticks employer:
www.sheffield.ac.uk/hr/equality/support/twoticks

How to apply

Closing date

The closing date for applications is 11.30pm on Friday 28th April 2017.

How to apply

Applications should be made online via www.sheffield. ac.uk/jobs quoting job reference number UOS015710

Informal enquiries

If you would like to talk to someone informally about this job and the recruiting department, contact: Professor Guy Brown on g.j.brown@sheffield.ac.uk or on 0114 222 1821.

If you have any administration queries and details on the application process, contact the lead recruiter: Miss Joanna Heery on j.l.heery@sheffield.ac.uk or on 0114 222 1825.

If you need any support with your online application, visit: www.sheffield.ac.uk/jobs/applying

Health assessment

All new employees will undertake a Health Assessment Questionnaire. The questionnaire is to assess the individual's fitness for the job role which they have been offered and ensures appropriate health advice and guidance can be provided. The assessment will be carried out on behalf of the University by Health Management Limited (HML).

Next steps

Following the closing date, we will contact you by email to let you know whether or not you will be invited to participate in the next stage of the selection process. We try our best to get back to applicants within 2-3 weeks.

We anticipate that long-listed candidates will be invited to give presentations on 30th-31st May, and short-listed candidates will be interviewed in the week commencing 26th June. We will provide full details to invited candidates.

An opportunity for collaboration: The Advanced Manufacturing Research Centre

"The AMRC with Boeing, established in 2001, has grown to become a world-leading centre of advanced machining and materials research for aerospace and other high-value sectors. It has over 80 industrial members, from global giants such as Boeing, Rolls-Royce, BAE Systems and Messier-Bugatti-Dowty, to local small businesses."

"The evolution in recent years of digital technologies has the potential to significantly disrupt the sectors where manufacturing is a significant element. Whilst this is an attractive opportunity for those manufacturing sectors likely to be affected, there is a great deal of concern about the security of manufacturing data and as a result the AMRC is enthusiastic about working with the new group to dispel some of these fears for industry."

Dr Aiden Lockwood
Head of Manufacturing Informatics
AMRC

Our Research and its Impact

Sheffield is a leading global university. Our research in the arts and humanities, engineering, medicine, science and social sciences, changes lives for the better and advances our understanding of what it means to be human.

We work with other leading universities, governments and multinational companies to tackle the biggest challenges facing the world today, from sustainable energy and food production to the global economy.

Our partnerships with Boeing and Rolls-Royce set a new standard for industrial research. Our outstanding performance for research, as a member of the Russell Group of 24 leading UK research universities, is consistently confirmed by independent assessment internationally. Bringing together people from diverse research backgrounds, we foster world-leading interdisciplinary research.

As a university we are developing new interdisciplinary strengths in globally significant areas including energy and the environment, healthcare across the disciplines and digital technologies.

Our Education and Student Experience

Excellence in research-led learning is one of our core values. We teach in creative and innovative ways to provide a stimulating and inspiring learning environment for our students. This is reflected by our repeated excellent performance in the National Student Survey and other league tables, showing us to be highly committed to the delivery of excellent teaching.

Our teaching is research-led and our staff are some of the leading researchers in their field. The University was rated in the top 10 in the UK for 'research power'. This gives our students the opportunity to study with top-flight researchers to gain the most up-to-date knowledge and skills.

Sheffield graduates not only have an excellent grounding in their subject area but also in the personal and intellectual qualities needed for rewarding employment and a fulfilling life beyond university. Sheffield graduates are highly regarded by employers and enjoy excellent career prospects.

Our teaching continues to be innovative with the introduction of Achieve More - Breaking Boundaries for all first year students from September 2014. With a focus on research, team working and employability skills, Breaking Boundaries runs over several weeks so students can: engage with academics and their research from the start of their studies; tackle some of the biggest global challenges facing society today; work across disciplines to broaden their horizons and subject knowledge; develop team working and problem solving skills; and communicate their findings in an effective and professional manner.

An opportunity for collaboration: Sheffield Robotics

"The world is standing on the verge of a revolution in robotics. The kind of life-changing innovations we've been dreaming about for decades are now only steps away. Sheffield is taking those steps: through responsible, ethical research, we are pioneering new products and processes that will transform the world by changing manufacturing, healthcare, infrastructure and our understanding of the human condition. We work collaboratively across disciplines to engineer the advanced systems that will lie at the heart of tomorrow's society.   Ensuring the operation of such advanced systems remains free from malicious attack is critical to bringing their benefits to society and we look forward to working with the new Security of Advanced Systems group to achieve this."

Professor Tony Prescott
Director of Sheffield Robotics

A remarkable place to work

Our staff and their collective talent is the first and foremost priority for a university that wishes to change the world for the better through the power and application of ideas and knowledge. Our vision is simple - to create a remarkable place to work. We believe this can be achieved through attracting, growing and engaging a diverse range of staff from many different backgrounds with the ambition to transform people's lives, a desire to take a leading role in research and teaching and a commitment to continually enhance the reputation of the University. In our 2016 staff survey 94% of staff told us they are proud to work here.

The
University
Of
Sheffield.

The University has roots going back to 1828. Today we are one of the UK's leading universities with an international reputation for excellence. Official teaching quality assessments rate us very highly across a wide range of subjects, and excellent research excellence framework results confirm our reputation as a centre for a wide variety of world-class research. Our graduates and former staff include five Nobel Prize winners, an Olympic gold medallist and Britain's first female astronaut.

Our staff work across 49 academic departments in five Faculties: Arts and Humanities, Engineering, Medicine, Dentistry and Health, Science and Social Science. Each Faculty is led by a Vice-President and Head of Faculty, and supported by a senior team including a Faculty Director of Operations. The University is an independent corporation whose governing body is University's Council. The Council are responsible for the strategic development and overall performance of the University's business. The University Executive Board is the President and Vice-Chancellor's executive group and comprises: The President and Vice-Chancellor, Provost and Deputy Vice Chancellor, the five Faculty Vice-Presidents and Heads of Faculty, the Vice Presidents for Education and Research and Innovation, the Chief Operating Officer and the Director of Finance.

We have also confirmed our place as a world-leading university with an international reputation for research excellence across a wide range of disciplines following the results of the 2014 Research Excellence Framework (REF) which place us in the top 10 per cent of all UK universities. The University of Sheffield is in the top three nationally for offering the best student experience, as voted for by students in the 2016 Times Higher Education Student Experience Survey.

When the University was founded over a century ago, the people of the city had a clear vision. They wanted a world-class university that would bring the highest standard of teaching and research to Sheffield, powering the economy, addressing social problems and transforming lives.

The vision is clearer than ever. We want Sheffield to be an international centre of excellence for centuries to come, so we recruit ambitious, creative people from all over the world and we nurture their talent.

The City of Sheffield

This extraordinary city is the perfect setting for ground-breaking collaborations. It's world-famous for precision engineering. Creative and digital industries account for almost two fifths of the region's jobs. Healthcare technology is another growth sector. Sheffield Teaching Hospitals is the UK's largest NHS foundation trust. Our close links with the city make innovation possible.

This is a vibrant, friendly, safe city surrounded by some of the most breathtaking countryside in the UK. It offers an excellent quality of life and proudly has the highest retention of students than any other city – many students and staff come here and never leave.

Sheffield has been called the UK's greenest city; there are 50 public parks and 170 woodlands within the city boundary. England's fourth-largest city, it has the wealth of facilities you'd expect to find in a major city, yet more than a third of the city lies inside the Peak District National Park. It is the UK's only city with a National Park within its boundary, but it offers much more than beautiful countryside.

Sheffield is geographically diverse, nestled in a natural amphitheatre created by seven hills, and fed by five rivers. This diversity has given rise to an exceptional range of activities available, from walking or climbing in the Peak District to taking a boat ride along one of Sheffield's canals.

The city of Sheffield contains an abundance of entertainment and cultural activities including award-winning theatres, museums and galleries, a variety of clubs and live music venues, and a range of spectator and participation sports. With a thriving cultural industries quarter and a range of city-wide events throughout the year, there is something on offer to suit everyone's taste and interests.

Located in the centre of the UK, at the heart of an excellent transport network, the M1 and M62 are within easy reach, there are 6 international airports within 65 miles and a bustling railway station offers access to every corner of the UK, and beyond. The main University campus lies on the western edge of the city centre and is easy to get to by car, bus and tram.

To find out more about how we work with partners and friends in Sheffield to help shape a culturally and economically vibrant city visit: www.sheffield.ac.uk/about/city