

Senior Research Fellow – Memory and Neuromorphic Materials and Devices

Department of Materials Science and Metallurgy

Closing date: Saturday 31 May 2025

Job Reference: LJ45674



The role

Salary:

£46,735 - £59,139

Contract:

Five years

Location:

West Cambridge

Departments:

Department of Materials
Science and Metallurgy

Responsible to:

Professor Judith Driscoll

Working pattern:

Full-time

Purpose of the role

The purpose of the role is to support and maintain the University's national and international reputation for excellence in teaching and research. The focus of the research activity will be on Development of Advanced Memory/Neuromorphic Devices. Contribution to excellence in research will be at the level of an experienced and skilled researcher demonstrating a high level of competence and an independent standing in research. The role holder will take full operational responsibility for research projects and will apply for research grants as a Principle or Co-Investigator.

Contribution to teaching will include delivering lectures in Materials Science, acting as Head of Class for undergraduate practical work, engaging in the preparation of examinations, the marking of examinations, participation in the research group's teaching programme and the supervision of students. The role holder will participate in the overall contribution of the department/faculty as appropriate.

Key Responsibilities

Research and Scholarship

- Support Prof. Judith Driscoll's RAENG Chair in Emerging Technologies Project on memory materials/neuromorphic computing devices;
- Develop research objectives, projects and proposals;
- Act as principal investigator on research projects;
- Supervise research students and postdoctoral fellows where needed;
- Conduct individual or collaborative research projects; Identify sources of funding and contribute to the process of securing funds;
- Extend, transform and apply knowledge acquired from scholarship to research and appropriate external activities;
- Write or contribute to publications or disseminate research findings using other appropriate media; Assess, interpret and evaluate outcomes of research; Make presentations at conferences or exhibit work in other appropriate events;
- Routinely communicate complex and conceptual ideas to those with limited knowledge and understanding as well as to peers using high level skills and a range of media;



- Be responsible for the delivery of own research programmes

Teaching and Learning Support

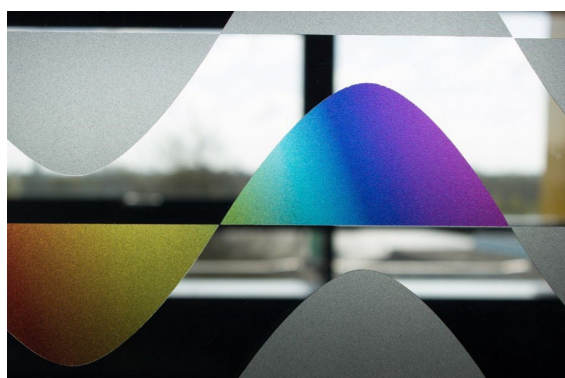
- Contribute to the teaching and learning programmes in the department;
- Plan, prepare and deliver lectures, seminars and classes for students on the relevant programmes, including lecture material and handouts,
- Provide innovative course development in relevant subject area(s)
- Set and mark of Tripos exams; Assess of project work
- Supervise undergraduate and postgraduate research students.

Liaison and Networking

- Collaborate actively within and outside the Institution to complete research projects and advance thinking;
- Develop links with external contacts such as other educational and research bodies; Originate and develop external networks, for example to identify sources of funding, generate income, obtain consultancy projects, or build relationships for future activities.

Planning and Organising

- Plan, co-ordinate and implement research programme/s;
- Manage the use of research resources and ensure that effective use is made of them; Manage/monitor research budgets;
- Help to plan and implement commercial and consultancy activities.



Application Process

- Applications will be via our online system:
<https://hrsystems.admin.cam.ac.uk/recruitment/pages/auth/login.xhtml> You will need to register an account within the system.
- Please ensure that in the Upload section of the online application you provide:
 - a) A document containing your Curriculum Vitae (CV), research publications list, and a brief narrative (300 words maximum per output) on each of the three outputs you consider most significant.
 - b) A statement of research of no more than two pages, outlining your current and future research plans, with an emphasis on how these fit within the remit of the position and the current research profile of the Department.
 - c) A one page statement focusing on (i) your teaching experience and interests, and (ii) your contributions to and/or vision for increasing equality, diversity and inclusion and improving research culture.

Shortlisted applicants will be expected to attend an in person interview.



Person specification

Education, qualifications and Suitability	Essential	Desirable
Holds a PhD in a relevant specialist subject.	X	
Has at least two years of postdoctoral research experience at the level of Research Associate, or equivalent experience.	X	
Specialist knowledge and skills		
Possesses sufficient breadth/depth of specialist knowledge in the field of memory/ neuromorphic materials and devices and in related research methods and techniques to develop research objectives, projects and proposals.	X	
Demonstrates a willingness to continually update knowledge in the specialist area and engage in continuing professional development.	X	
Experience of managing own workload.	X	
Experience working in a team and supporting the management of broader research projects, including staff, financial management and day to day running of laboratories	X	
Compatibility of research interests with existing research activities within the Driscoll group.	X	
Demonstrates a willingness to assist or deputise for Prof. Driscoll in the management of the wider research goals of the group.	X	X
Evidence of high-quality research outputs	X	
Evidence of academic or industrial collaboration	X	
Evidence of funding or potential to obtain funding if an Early Career Researcher	X	
Interpersonal and communication skills		
Evidence of high quality talks and presentations (invited and conference)	X	
Evidence of teaching capability in a wide range of contexts	X	
Relevant experience		
Teaching experience in a wide range of contexts at undergraduate and graduate level (at a level appropriate for career stage)	X	
Graduate student supervision and assessment (at a level appropriate for career stage)	X	



The Department has over 30 academic staff, (including staff extended beyond retirement age, established academic staff and early-career research fellows), approximately 50 administrative, technical and other support staff, and around 80 postdoctoral researchers, 150 postgraduate students and 20 visiting scientists at any time. Our research falls into six themes: structural materials, device materials, materials chemistry, clean energy and sustainability, medical and pharmaceutical materials and materials characterisation (particularly electron microscopy).

In 2013 the Department moved to a new purpose-built building on the West Cambridge Site. This is the first time all academic groups have been housed together in a single building.

In the last UK Research Excellence Framework (REF 2021), for the first time, our Department was included within the Engineering Unit of Assessment (UoA), together with the Department of Chemical Engineering and Biotechnology, and the Department of Engineering. 99% of the submission as a whole was rated 'world leading' or 'internationally excellent'.

Research funding totals around £12M per annum, and come from a variety of sources: about 40% from the UK research councils and government, 40% from the EU (including a large number of European Research Council grants), 20% for industry, overseas governments and charities.

The Department offers a 3 or 4 year BA/MSci degree within the Natural Sciences Tripos (NST), with the majority of students completing the 4-year course. In year 1 the students read four subjects, in year 2 three subjects, before specialising in one subject only. Over 280 take Materials Science in year 1, over 85 in year 2, and over 35 in years 3 and 4. Year 4 includes students who have transferred from other universities to read for the Master of Advanced Studies (MASt) degree. In addition, 10 to 20 students are admitted each year to the one-year MPhil in Micro- and Nanotechnology Enterprise administered by the Department. Further details of the teaching programme can be found on the teaching pages of the departmental website: <http://www.msm.cam.ac.uk/teaching>

We have a thriving Graduate School.

Almost all postgraduate research students are working for the PhD, which they complete on average in 3.5 years. We play a prominent role in a number of centres for doctoral training centre, including the NanoDTC and the CDT in Computational Methods for Materials Science (in collaboration with the Department of Physics at Cambridge), and the DTC in Structural Metallics linking Materials at Cambridge with sister departments at Birmingham and Swansea.

For more information: <https://www.msm.cam.ac.uk/>

The School of the Physical Sciences

The School of the Physical Sciences is one of the six Schools making up the academic work of the University. It comprises the following Departments: Applied Mathematics and Theoretical Physics (DAMTP), Chemistry, Earth Sciences, Geography (including the Scott Polar Research Institute), Institute of Astronomy, Isaac Newton Institute of Mathematical Sciences, Materials Sciences and Metallurgy, Physics (Cavendish Laboratory), Pure Mathematics and Mathematical Statistics (DPMMS).

The School's aim is to contribute to our understanding of the physical world through excellence in observational, theoretical and experimental science and to extend quantitative, qualitative and combined methodologies to address problems in the fields of biology, technology, medicine, social science and the humanities. In pursuit of these goals, the School coordinates objectives in research, teaching and infrastructure.

The School is responsible for allocating core funds to departments and provides broad strategic focus across its constituent departments in a number of areas including: research activity, undergraduate and graduate education, estate needs, fundraising and human resources. As part of the University's planning process, the School prepares a financial and academic plan which sets out strategic objectives, determines budgets as well as the flow of resources to departments. The School manages a wide range of administrative activities and

projects across its departments and works alongside other Schools to further interdisciplinary research.

The School has over 1500 members of staff, over 3000 students and an annual budget of over £100 million.

The Office of the School of Physical Sciences is a small team led by the Head of Schools, currently Professor Nigel Peake, the School Secretary, the Director of Education and the Finance Manager. As well as the Deputy Secretary, there are currently six other staff, as well as those in the Degree Committee office. The wider School team supporting our Departments also include representatives from HR, Fundraising, and Research Operations who are assigned to the School.

The Office of the School currently occupies a suite of offices in 17 Mill Lane.

More information about the School Office and links to the websites of the School's constituent Department can be found at the SPS website:
<https://www.physsci.cam.ac.uk>



Terms of appointment

Tenure and probation

Appointment will be made on a fixed-term basis for a period of five years' Appointments will be subject to satisfactory completion of a 9 month probationary period.

Hours of Work and Working Pattern

Your employment is full-time There are no formal conditions relating to hours and times or work but you are expected to work such hours and days as are reasonably necessary for the proper performance of your duties. Your times of work should be agreed between you and your head of institution.

Pension

You will automatically be enrolled to become a member of USS (Universities Superannuation Scheme) – a defined benefit pension scheme For further information please visit:
www.pensions.admin.cam.ac.uk/.

Annual leave

Full time employees are entitled to annual paid leave 41 days inclusive of plus public holidays. For part time employees, annual leave will be pro rata'd based on the days worked. The leave year runs from 1st October to 30th September.

General information

Pre-employment checks

Right to work in the UK

We have a legal responsibility to

ensure that you have the right to work in the UK before you can start working for us. If you do not have the right to work in the UK already, any offer of employment we make to you will be conditional upon you gaining it.

Health declaration

Once an offer of employment has been made the successful candidate will be required to complete a work health declaration form.

Qualifications

The person specification for this position lists qualifications that are essential and/or desirable. Please note that if you are offered the post you will be asked to provide your relevant original certificates of these qualifications.

References - offers of appointment will be subject to the receipt of satisfactory references.

Information if you have a disability

The University welcomes applications from individuals with disabilities.

We are committed to ensuring fair treatment throughout the recruitment process. We will make adjustments to enable applicants to compete to the best of their ability wherever it is reasonable to do so and, if successful, to assist them during their employment. Information for disabled applicants is available at:
<http://www.admin.cam.ac.uk/offices/hr/staff/disabled/>

We encourage you to declare any disability that you may have, and any reasonable adjustments that you may require, in the section provided for this purpose in the application form. This will enable us to accommodate your needs throughout the process as required.

However, applicants and employees may declare a disability at any time.

If you prefer to discuss any special arrangements connected with a disability, please contact, the Department Administrator, who is responsible for recruitment to this position. Alternatively, you may contact the HR Business Manager responsible for the department you are applying to via
hrenquiries@admin.cam.ac.uk.

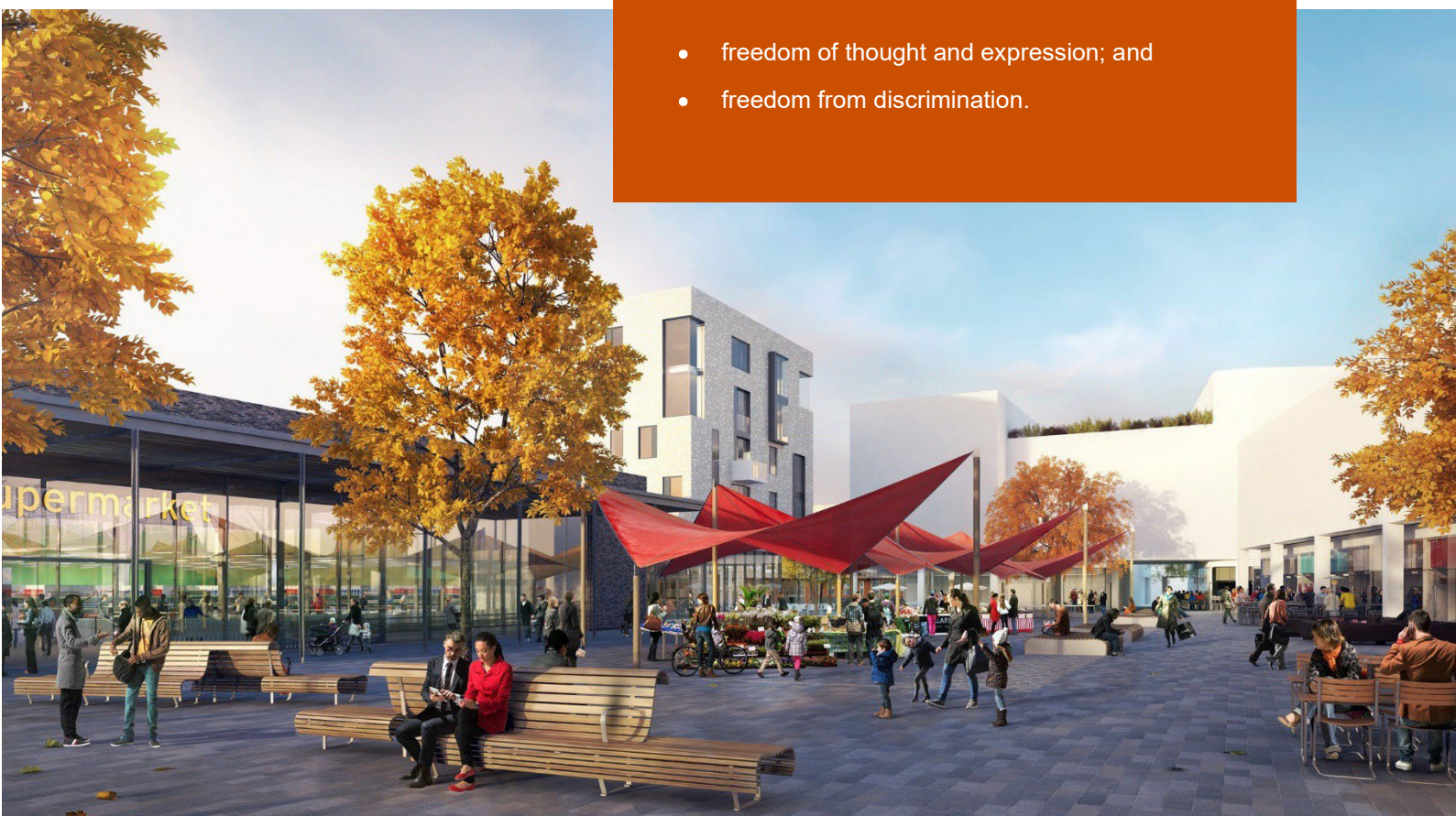
The University

The University of Cambridge is one of the world's oldest and most successful universities. We are a renowned centre for research, education, and scholarship that makes a significant contribution to society. The University is consistently ranked amongst the top universities in the world. Our affiliates have won more Nobel Prizes than any other University.

Our sustained pursuit of academic excellence is built on a long history of first-class teaching and research within a distinctive collegiate system. For eight centuries our ideas and innovations have shaped the world. Our principal goal is to remain one of the world's leading universities in an increasingly competitive global higher education sector. Today the University of Cambridge is at the centre of a cluster of over 4,300 businesses employing 58,000 people. Our capital investment projects include the West Cambridge site, the North West Cambridge development and the growth of the Biomedical Campus in the south of the city. The North West Cambridge development includes the opening of a primary school – the first in the UK to be managed by a University. So we are deeply embedded in, and committed to serving, our local community. These are all conspicuous signs of a University that is not only adapting to new needs, but also anticipating the future.

Our mission is to contribute to society through the pursuit of education, learning, and research at the highest international levels of excellence. Our core values are:

- freedom of thought and expression; and
- freedom from discrimination.





About us

The University is one of the world's leading academic centres. It comprises 150 faculties and departments, together with a central administration and other institutions. Our institutions, museums and collections are a world-class resource for researchers, students and members of the public representing one of the country's highest concentrations of internationally important collections.

The University has an annual income of £1.66 billion. Research income, won competitively from the UK Research Councils, the European Union (EU), major charities and industry, exceeds £400 million per annum and continues to grow.

The Colleges and the University remain committed to admitting the best students regardless of their background and to investing considerable resources both in widening access and financial support.

The 31 Colleges are self-governing, separate legal entities which appoint their own staff. Many academic staff are invited to join a College as a Teaching Fellow, which provides a further social and intellectual dimension. The Colleges admit students, provide

Our ideas and innovations have shaped the world. Our campaign, 'Dear World... Yours, Cambridge', will raise £2 billion to help us shape all our futures.

student accommodation and deliver small group teaching. The University awards degrees and its faculties and departments provide lectures and seminars for students and determine the syllabi for teaching and conducting research.

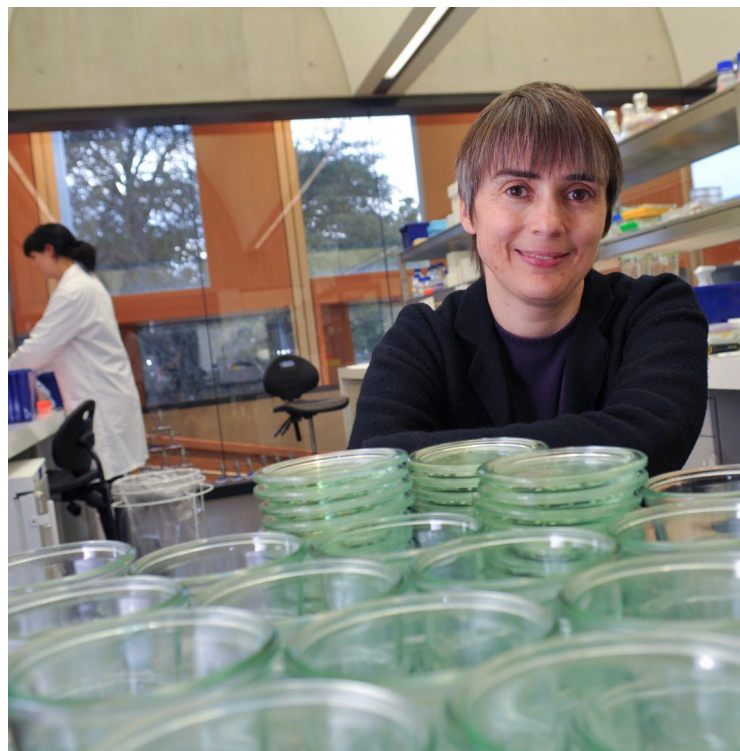
The University's estate is undergoing the most significant transformation in its history. Cambridge has been able to create a new science and technology campus to the west of the city centre, and is now expanding further to the north west of Cambridge including investing in affordable homes for University key workers and community facilities. Even with our continued development, the University remains within walking or cycling distance across the campus. The University is a major partner on the Cambridge Biomedical Campus and we continue to redevelop our historic city centre sites demonstrating our determination to ensure that we can offer the best facilities and opportunities for our staff and students.

Our instinct for seeking out excellence and setting up enduring and mutually beneficial collaborations has led us to establish strategic partnerships across the globe. Whether it is the successful Cambridge-Africa Programme involving universities in Ghana, Uganda and elsewhere on the African continent; or the close association with the government of India to pursue new research in crop science; or the creation, with Germany's Max Planck Institutes, of a Cambridge-based centre for the study of ethics, human economy and social change – international partnerships are now an inextricable part of the University's make-up.

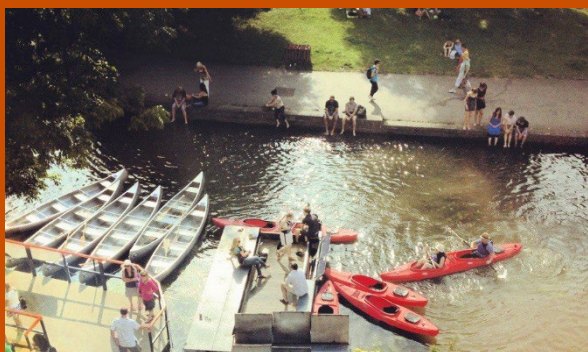
Working at the University

Working at Cambridge you will join a diverse, talented and innovative community, with more than 18,000 students and over 11,000 staff from all walks of life and corners of the world.

The University continually explores strategies to attract and retain the best people. It is committed to supporting its staff to achieve their best. We are a fair, diverse and inclusive society and we believe our staff are our greatest asset. There is strong commitment to developing institutional leadership and supporting and encouraging staff development at all levels. Furthermore, the University's Athena SWAN award recognises and celebrates good practice in recruiting, retaining and promoting women. We offer a variety of roles including academic, research, professional, managerial and support roles. We also offer extensive benefits and excellent learning opportunities within a stimulating working environment. The University has signed up to the Race Equality Charter, a notional framework for improving the representation, progression and success of minority ethnic staff and students within higher education.

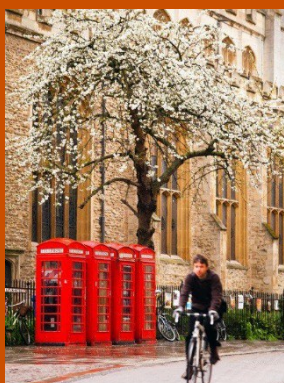


Living in Cambridge



Cambridge is rich in cultural diversity. From beautiful University and College buildings, museums and art galleries, quaint gardens and punts on the River Cam, to a vibrant restaurant and café scene, our employees are surrounded by the wonderful features of this unique city.

If you prefer the faster pace of life, London is a 45 minute train journey away. For those travelling from overseas, Stansted Airport is just 45 minutes away and Heathrow Airport under 2 hours away.



The University is a short distance from a host of other attractions such as Ely Cathedral, Newmarket Races and various wildlife parks and stately homes.

Cambridge is also within easy reach of the beautiful Broads and coastlines of Norfolk and Suffolk.

Further information about attractions in and around Cambridge can be found at [Visit Cambridge](https://www.visitcambridge.org/), the official tourism website for the city.

What Cambridge can offer

We offer a comprehensive reward package to attract, motivate and retain high performing staff at all levels and in all areas of work. The University offers a wide range of competitive benefits, from family leave entitlement, to shopping and travel discount schemes. Our generous annual leave package contributes to the positive wellbeing of our University employees. Sabbatical leave enables academics to focus on research and scholarship, whilst still maintaining their full salary. The University also has a career break scheme for academic and academic-related staff, with additional flexible working policies for all other staff.

CAMbens employee benefits

We offer a CAMbens scheme for University employees, providing access to online and in-store shopping discounts and cashback. With more than 2,000 participating retailers, employees can save money on a wide range of household expenses, from groceries and clothes, to holidays and insurance and much more. A range of local discounts are also available, helping employees to save money whilst also supporting local Cambridge businesses. CAMbens Cars and CAMbens Cycle to Work salary sacrifice schemes are also available, which enable employees to save money on transport costs. A 10% discount rate on the purchase of train season tickets, bulk buy tickets and an interest free travel to work loan are also available for staff of the University of Cambridge.

Family-friendly policies

The University recognises the importance of supporting its staff. We have a range of family-friendly policies to aid employees' work-life balance including a

generous maternity, adoption and shared parental leave entitlement of 18 weeks full pay and emergency family care support via My Family Care.

In addition, our Ofsted rated 'outstanding' workplace nurseries, childcare vouchers, a childcare salary sacrifice scheme and a high quality holiday play scheme are available to help support University employees with caring responsibilities. The Newcomers and Visiting Scholars Group is an organisation within the University run by volunteers whose aim is to help newly arrived wives, husbands, partners and families of Visiting Scholars and members of the University to settle in Cambridge and give them an opportunity to meet local people.

Your wellbeing

The University's Sport Centre, Counselling Services and Occupational Health are just some of the support services available to University employees to promote their physical and mental wellbeing. There are many societies in Cambridge catering for almost every taste and interest. Whether you want to take part in a sport, participate in music or drama, pursue a hobby, or join a political group, you will almost certainly find that a society exists for this purpose. The University also hosts the [Cambridge Science Festival](#) and [Cambridge Festival of Ideas](#), as well as [Open Cambridge](#) weekend, which together attract over 50,000 visitors per year. The festivals are a great opportunity to get your first taste of public engagement, through volunteering, supporting hands-on activities or proposing a talk.



What Cambridge can offer

Pay and benefits

The University salary structure includes automatic service-related pay progression in many of its grades and an annual cost of living increase. In addition to this, employees are rewarded for outstanding contribution through a number of regular pay progression schemes. The University offers attractive pensions schemes for employees, with an additional benefit of a salary exchange arrangement providing tax and national insurance savings. Payroll giving is also a simple, tax-efficient way for employees to make monthly donations to charity.

Relocating to Cambridge

The University Accommodation Service exists to help employees in their search for a rental home in Cambridge. A new University development at North West Cambridge called Eddington offers subsidised rented accommodation to University staff. The development consists of high quality furnished one and two bedroom apartments. For more information about the development and how to apply please visit the website www.nwc.cambridge.co.uk

The importance of helping individuals settle into a new



area is also recognised by the University. The Shared Equity Scheme <https://www.hr.admin.cam.ac.uk/pay-benefits/cambens-employee-benefits/financial/shared-equity-scheme> provides financial assistance to qualifying new members of staff with the purchase of living accommodation, where they have to relocate to take up their appointment. Removal expenses are also available for qualifying new members of staff.

Equality & diversity

The University has a vibrant and varied community. We support and encourage under-represented groups and we value diversity. We welcome applications from individuals with disabilities. Our recruitment and



selection procedures follow best practice. We have an Equal Opportunities Policy, along with a range of diversity networks for women, black and minority ethnic and lesbian, gay, bisexual and transgender staff. More details are available here: <http://www.equality.admin.cam.ac.uk/>

Development opportunities

We support new employees to settle in through various activities. The encouragement of career development for all staff is one of the University's values and we put this into practice through various services and initiatives. Our Personal and Professional Development Department provides development opportunities and courses for all University employees. These include face-to-face sessions, online learning modules and webinars. Employees may also apply for financial support to undertake training that will lead to a qualification. We offer reduced staff fees for University of Cambridge graduate courses and the opportunity to attend lectures and seminars held by University departments and institutions. The CareerStart@Cam programme also supports employees in assistant staff roles who do not hold higher education qualifications to develop their skills, experience and qualifications.

Whether it is understanding the molecular basis of neurodegenerative diseases, or helping farmers in India increase their yield, or discovering better ways to live in large cities – I know that what we do in Cambridge affects lives, and livelihoods, the world over.

Vice Chancellor Emeritus, Professor Sir Leszek Borysiewicz, 2016

How to apply

Submitting an application

Applications should be submitted online via the University of Cambridge jobs page www.jobs.cam.ac.uk by clicking “Apply online” in the job advert. You will need an email address to register for our online system.

The University of Cambridge is a signatory of the San Francisco Declaration on Research Assessment (DORA). DORA recognises the need to improve the ways in which the outputs of scholarly research are evaluated. The University expects candidates to apply the principles of DORA when preparing their applications. We do not use journal-level metrics when assessing the quality of research outputs. Applicants should not include journal-level metrics, such as the Journal Impact Factor, anywhere in their application materials. More information about DORA, its principles and aims can be found at: <https://sfdora.org/> and <https://www.research-strategy.admin.cam.ac.uk/research-policy/DORA>.

Informal enquiries are welcomed and should be directed to:

Professor Judith Driscoll

Email: jld35@cam.ac.uk

The closing date for applications is **Saturday 31st May 2025**