

# Research Assistant/Research Associate (Fixed Term)

Department of Physiology, Development & Neuroscience

**Closing Date: 20 September 2024**  
**Job reference: PM43060**



# Research Assistant/Research Associate

**Salary:**

£29,605-£33,966  
(Research Assistant) or  
£36,024- £44,263  
(Research Associate)

**Contract:**

12 months Fixed term

**Location:**

Central Cambridge

**Department:**

Physiology, Development  
& Neuroscience

**Responsible to:**

Dr. Elena Scarpa

**Working pattern:**

Full-time

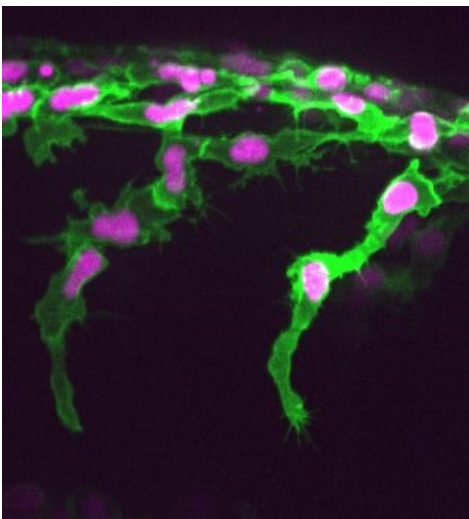
**Purpose of the role**

We are pleased to advertise a ResearchAssistant/Associate position in Dr Elena Scarpa's group to investigate the role of tissue-scale confinement during *in vivo* and *in vitro* Zebrafish neural crest cell migration.

*In vivo*, cells migrate through tight spaces and may undergo division in crowded environments, both in physiological and pathological contexts, for example during immune cells diapedesis or cancer cell dissemination. These phenomena are difficult to observe *in vivo*, especially in mammalian models. Key studies in the field have largely exploited *in vitro* systems, for example culturing cells in 3D collagen matrices or microfabrication of PDMS microchannels, to mimic interstitial confining environments. From this wealth of work, it has become clear that cells experiencing physical confinement during cell migration suffer mechanical stress. This causes deformation of the largest organelle, the nucleus, and loss of nuclear integrity, thus inducing DNA damage. Physical compression can even promote genetic diversity in cancer cells. In addition, when cells in culture undergo mitosis under mechanical compression, they show extensive cortical blebbing and suffer division defects. Together, these findings show that mechanical stress negatively impacts the integrity of the genome and this has been proposed to underlie cancer initiation and progression. However, the consequences of mechanical compression on cells during *in vivo* cell migration remain so far unexplored.

**Key responsibilities**

- To design, set up and carry out experiments in consultation with the Principal Investigator;
- To design and adapt appropriate methods for data acquisition and analysis;
- To record, analyse and write up the results of experiments, maintaining a permanent record of the methodologies and the experimental data;
- To prepare and present findings of research activity to colleagues and to the wider scientific community;
- To contribute to the writing, submission and revision of papers to be submitted to appropriate peer reviewed journals, collaborating with others as appropriate;
- To contribute to the overall activities of the research group (maintenance of fish stocks, procurements/orders) ;
- To contribute to the induction and direction of other research staff and students when required by the PI;
- To continually update knowledge and understanding of the field of research;
- To assist in the supervision of undergraduate and graduate student projects as appropriate.



# Person specification

	Essential	Desirable
<b>Education</b>		
BSc/PhD in a biological subject, with knowledge of Zebrafish trunk neural crest embryology, cell biology, genetics	✓	
<b>Skills and Experience</b>		
Genetics, cell and molecular biology methods (molecular cloning, DNA and RNA preparation, immunostaining, in situ hybridization)	✓	
Ability to plan, execute and record scientific studies	✓	
Ability to make independent decisions and solve routine problems encountered in research projects	✓	
<i>Expertise in one or more of the following are desirable:</i> <ul style="list-style-type: none"> <li>• Zebrafish embryology and microinjection techniques</li> <li>• Live imaging of Zebrafish embryos</li> <li>• Previous experience in organising/managing a research lab</li> <li>• Methods of image analysis (Fiji, ImageJ/ R, Python)</li> </ul>		✓
<b>Additional Requirements</b>		
Organised, keeps excellent experimental records and is able to manage databases	✓	
Motivated, proactive with a keen and enthusiastic approach to science that is collaborative	✓	
Can work effectively in a team, communicate and interact well with other lab members	✓	
Ability to clearly present research ideas and data with experience of giving presentations and writing reports	✓	



# The Department of Physiology Development and Neuroscience

**The Department of Physiology, Development and Neuroscience (PDN) is engaged in teaching and research across a wide range of biological sciences - from cell and developmental biology, through cellular and animal physiology to systems neurosciences and human anatomy.**

Currently there are 46 academic staff, involved in teaching and leading active research groups, 12 independent research fellows (funded by the Wellcome Trust, the Royal Society and others), over 70 post-doctoral researchers and circa 50 professional support staff. Research grant income amounts to around £10M annually, and flows from a variety of sources, including UKRI Research Councils, The Wellcome Trust, The Royal Society, European Research Council, Leverhulme Trust, British Heart Foundation. Our PhD students go on to prestigious fellowships and influential scientific positions worldwide.

The Department occupies two buildings in the Downing Site, which include Teaching Facilities, research laboratories equipped for diverse research programmes, and facilities such as the Cambridge Advanced Imaging Centre. It participates in a range of University Interdisciplinary Research Initiatives including Cambridge Neuroscience, Cambridge Reproduction, Cambridge Cardiovascular Disease, Metabolism, Stem Cells. Members of the Department contribute to several of the School of Biological Sciences Research Themes, including leadership roles in Neuroscience and in Reproduction, Development and Lifelong Health (<https://www.bio.cam.ac.uk/research/research-themes>). PDN also has affiliates in Cambridge Stem Cell Institute and the Gurdon Institute and is located close to other major biological departments including Psychology, Genetics, Biochemistry and Pathology. There are strong collaborative links with the Clinical School, the Veterinary School, and the MRC Centre for Brain Repair and the MRC Laboratory of Molecular Biology.

**Research Activities:** PDN sets itself the goal of sustaining a research enterprise of the highest international standard. Our central aim is to understand the relationship between Biological Structure and Function. The Department has the breadth of expertise, specialised research facilities and operative structures to conduct this research at all levels of biological organisation, ranging from gene expression through cell and tissue biology, ultimately to the analysis of the whole organism and its physiology and behaviour. The main research interests are set out on our web site (<http://www.pdn.cam.ac.uk/research/>).

**Undergraduate teaching activities:** The Department's extensive undergraduate teaching programme provides courses for medical, veterinary and science students. All academic staff are required to deliver lectures, teach practical classes and examine. The expectation is that new Lecturers would contribute to teaching across a broad range of Development, Reproduction and Physiology in 1st and 2nd-year undergraduate courses, as well as at more specialist level.

**Life in PDN:** A friendly and welcoming Department, PDN strives to create a workplace where everyone feels included and has a sense of belonging. It seeks to give staff and students support in making their work and studies as fulfilling as possible whilst respecting a healthy work-life balance. PDN recognises that its strength lies in the staff and students who work and study here and that the greater our diversity, the stronger we will be. We currently hold an Athena SWAN Bronze award and have a good gender balance (for example, of 19 Professors in PDN, 10 are women) and wish to improve our racial diversity. We encourage applications from all sections of society. <https://www.pdn.cam.ac.uk/intranet/equality-diversity-and-inclusion>.

# The School of Biological Sciences



**The School of Biological Sciences encompasses the Faculty Board of Biology and the Faculty Board of Veterinary Medicine and is represented on the Faculty Board of Clinical Medicine. It has responsibilities across four Triposes (the Natural Sciences Tripos, the Medical Sciences Tripos, the Veterinary Sciences Tripos and the Psychological and Behavioural Sciences Tripos).**

## About the school

The School of Biological Sciences shares the Graduate School of Life Sciences, Graduate Committee and Medical Education Committee with the Clinical School. It has its own Degree Committee. It includes nine Departments and the Centre for Family Studies, plus five major research Institutes and an animal hospital. The School is a key player in the Cambridge Conservation Initiative as well as the majority of Cambridge Strategic Initiatives. The School is associated with the Museum of Zoology and the Botanic Garden. Key officers of the School plus details of relevant Research Ethics Committees (Human Biology, Psychology) can be found on the [School's website](#). Various subcommittees report to the Council, as required.

Formal representation on the Council of the School (its most senior decision-making body) is outlined in Chapter 8 of the University's Statutes and Ordinances. Heads of School Institutes, as well as Heads of Departments, are currently co-opted on to the Council, together with representatives of the three Faculty Boards. In addition, the Head of the Botanic Garden and a representative from the School of Technology attend as observers.

Most of the detailed information about research and teaching in the School is to be found on the departments' web sites. The members of the Gurdon Institute, the Sainsbury Laboratory and the Systems Biology Centre have affiliations with departments in the School. The Stem Cell Institute and Milner Institute also have affiliations within the School of Clinical Medicine.

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# Terms of appointment

## Tenure and probation

Appointments will be made on a fixed-term basis for a period of 12 months (reason for the limit of tenure: limited funding). Appointments will be subject to satisfactory completion of a six month probationary period.

## Hours of Work and Working Pattern

The hours of work for the position are full time, 37 hours per week.

## Pension

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

## Annual leave

Full time employees are entitled to annual paid leave of 41 days inclusive of public holidays.

## 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.

**Screening Checks:** This role requires a security check. Any offer of employment we make to you will be conditional upon the satisfactory completion of this check; whether an outcome is satisfactory will be determined by the University.

### 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, Tracey Flack, [pdnhr@pdn.cam.ac.uk](mailto:pdnhr@pdn.cam.ac.uk), who is responsible for recruitment to this position.

# The University

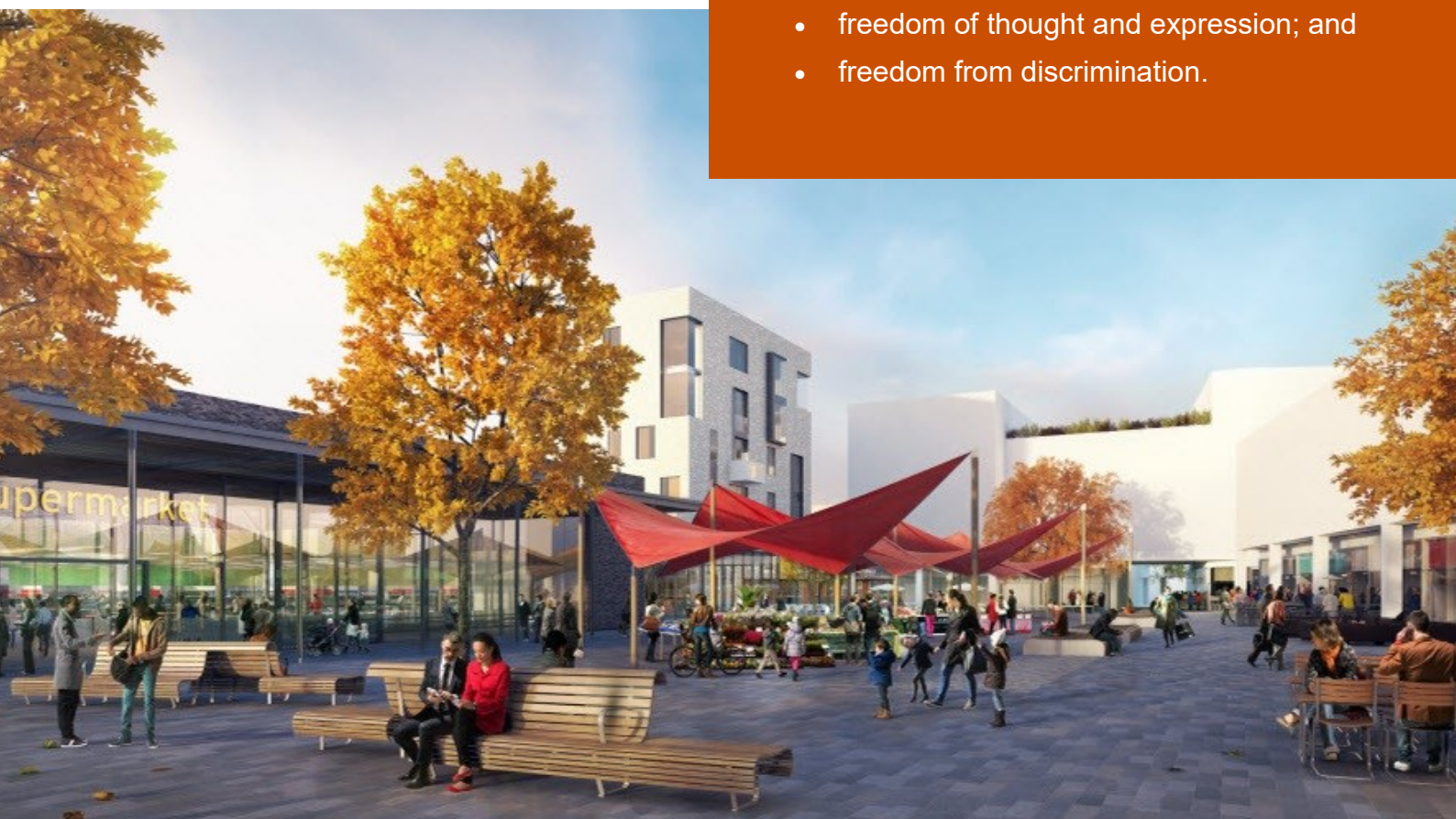
**The University of Cambridge is one of the world's oldest and most successful universities. We are a renowned centre for research, education, and scholarship that makes a significant contribution to society. The University is consistently ranked amongst the top universities in the world. Our affiliates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

Our sustained pursuit of academic excellence is built on a long history of world-leading 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 academic and commercial growth at both the West Cambridge Innovation District, and the Biomedical Campus in the south of the city. Eddington, in North West Cambridge, is a mixed-use development including key worker housing for staff, a community centre and a new primary school, managed by the University. Through these projects, the University is 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 £2 billion. Research income, won competitively from the UK Research Councils, the European Union (EU), major charities and industry, exceeds £500 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 undergraduate students, provide student accommodation and pastoral support and deliver small group teaching for undergraduates.

The University awards degrees and its faculties and departments provide lectures and seminars for students and determine the syllabi for teaching.

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.

“Cambridge graduates and researchers have made – and continue to make – a colossal contribution to human knowledge and the understanding of the world around us. Their work touches on the lives and livelihoods of everyone from patients diagnosed with life-threatening diseases, to residents of areas critically affected by climate change, to children growing up in conflict zones. It has a lasting impact on our society, our economy and our culture: the world is truly a better place thanks to their efforts.”

*Stephen Toope, Vice Chancellor 2019*





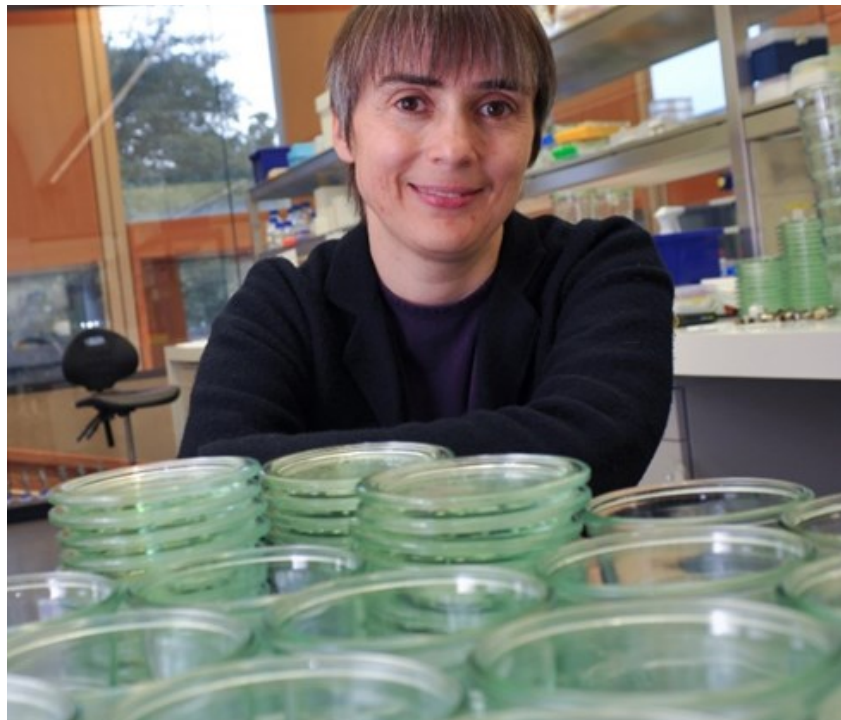
# Working at the University

**Working at Cambridge you will join a diverse, talented and innovative community, with more than 23,000 students and over 16,000 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.

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'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.



## **Equality & diversity**

The University has built its excellence on the diversity of its staff and student community. We aim to be a leader in fostering equality and inclusion, and in promoting respect and a sense of belonging for all. We encourage applications from all sections of society. All appointments are made on the basis of merit. We have an Equal Opportunities Policy, along with a range of diversity groups, including the Women's Staff Network, Race Equality Network and LGBT+ Staff Network. More details are available here: <http://www.equality.admin.cam.ac.uk/>

The University has a bronze Race Equality Charter award, with a framework for improving the representation, progression and success of minority ethnic staff and students within higher education. Furthermore, the University's silver Athena swan award recognises and celebrates good practice in recruiting, retaining and promoting gender equality.

# 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.**

You can find a wide-range of high street shops and 3 shopping centres, with independent alternatives at the historic market and nestled within the passageways in the city centre. You will find a cinema, bowling alley, a nightclub and various live performances at the Cambridge Leisure Park, with further entertainment options at the Corn Exchange, Arts Theatre and the ADC Theatre. Further information can be found on the [Visit Cambridge](#) website.

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.



## Relocation Support

The University recognises the importance of helping individuals to move and settle into a new area. We provide support and guidance to those relocating internationally or domestically to take up a post at the University of Cambridge, liaising with other University offices and selected partners to ensure comprehensive relocation support is available. This includes: accommodation, childcare, schools, banking, immigration and transport. If you would like further information, please visit <https://www.accommodation.cam.ac.uk/RelocationService/>. The Shared Equity Scheme and the Reimbursement of Relocation Expenses Scheme provide financial assistance to qualifying new members of staff with the costs of relocating to Cambridge. For staff who require a Skilled Worker Visa, Global Talent Visa or Settlement (known as indefinite leave to remain) to take up employment with the University, we offer an interest free [visa loan scheme](#) for current and prospective staff (and their dependants), to help meeting the cost of obtaining a visa.

## Accommodation Service

The University Accommodation Service helps staff, students and visiting scholars who are affiliated to the University in their search for suitable accommodation in Cambridge. The dedicated accommodation team can provide access to a wide range of University-owned furnished and unfurnished properties, and has a database of private sector accommodation available for short and long-term lets. For further information and to register with this free service please visit <https://www.accommodation.cam.ac.uk/>

# 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.

## 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.



## CAMbens employee benefits

The University offers employees a wide range of competitive benefits, known as CAMbens. CAMbens offers something for everyone across a range of categories, including:

- Financial Benefits, including shopping discounts (both local and national) and a Payroll Giving scheme;
- Relocation and Accommodation Benefits, including relocation assistance and interest-free Rental Deposit Loans;
- Travel Benefits, including Cycle to Work, discounts on train season tickets and interest-free Travel to Work loans;
- Family Friendly and Lifestyle Benefits, including support with childcare and family friendly policies;
- Health and Wellbeing Benefits, including a University Staff Counselling Service, discounts at the University Sports Centre, and other local gyms, and healthcare schemes.



# What Cambridge can offer

## 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 paid emergency leave for parents and carers.

Other family-friendly support includes:

Our highly regarded workplace nurseries, a childcare salary exchange scheme and a high quality holiday Playscheme may be available to help support University employees with caring responsibilities (subject to demand and qualifying criteria). Further childcare information can be found here: <https://www.childcare.admin.cam.ac.uk/>

The [Newcomers and Visiting Scholars Group](https://www.postdocacademy.cam.ac.uk/) 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. The Postdoc Academy supports the postdoctoral community within Cambridge. Further details are available here: <https://www.postdocacademy.cam.ac.uk/>

## 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. The University delivers The Festival of Wellbeing annually, which is a programme of stimulating talks and activities, which aim to promote wellbeing and good mental and physical health. The University also hosts the [Cambridge Festival](#), which is a great opportunity to get your first taste of public engagement, through volunteering, supporting hands-on activities or proposing a talk.

## Development opportunities

We support new employees to settle in through various activities as well as supporting their professional and career development on an ongoing basis. Our Personal and Professional Development (PPD) team provide development opportunities for all University employees, including face-to-face sessions, online learning modules and webinars. All employees also have unlimited access to LinkedIn Learning to support their development. Both new and existing employees can undertake funded Apprenticeships, which lead to a range of vocational and professional qualifications. 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. A range of University training providers also offer specialist learning and development in their own areas e.g. teaching and learning, digital literacy, finance, health and wellbeing, safety.



# How to apply

Applications should be submitted online via the University of Cambridge jobs page [www.jobs.cam.ac.uk](http://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.

Informal enquiries are welcomed and should be directed to: Dr Elena Scarpa  
[es697@cam.ac.uk](mailto:es697@cam.ac.uk).

If you have any queries regarding the application process, please contact Tracey Flack  
[pdnhr@pdn.cam.ac.uk](mailto:pdnhr@pdn.cam.ac.uk).

The closing date for applications is midnight on 20 September 2024.