

**Research Associate:  
Mapping and measuring soil carbon emissions  
from smoldering peatland fires**

**Department of Plant Sciences**  
Closing date: 3 November 2024

Job Reference: PD42197



# Research Associate

**Salary:**

£36,024-£44,263

**Contract:**

Fixed Term for 2 years

**Location:**

Central Cambridge

**Department:**

Plant Sciences

**Responsible to:**

Dr Adam Pellegrini

**Working pattern:**

Full Time

The postdoctoral researcher will join the Pellegrini lab at the University of Cambridge and be embedded in a larger research team seeking to deploy new thermal detection technology to address a range of global change issues.

The postdoc's project aims to scale field measurements of fire intensity and behavior to predict greenhouse gas emissions arising from soil organic carbon combustion during small smoldering fires in peatlands. This involves prescribed burn experiments in the Scottish Highlands (Cairngorms), where numerous instruments will be used to measure fire behavior (thermal sensor on drone, thermocouples in peat, etc.), and greenhouse gas fluxes (chamber measurements of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O fluxes). Sites will be sampled over the course of several weeks prior to the burn and after the burn, requiring fieldwork for 4-6 weeks. In the lab, the researcher will conduct different biogeochemical analyses to assess soil organic matter composition, stability, and microbial decomposition activity. All the data will be compared with drone thermal measurements of the fire, coordinated with collaborators focusing on the remote sensing aspect of the project, and aim to scale estimates of emissions from smoldering fires. Additional field sampling in Southeast Asia and North America are also possible pending successful deployment in Scotland

The overall team is interdisciplinary, comprising researchers in the Plant Sciences, Architecture, and Astronomy Departments. A company, Super Sharp, is leading the deployment of a satellite with a thermal sensor that will enable us to scale our plot-based measurements to the global scale.

The Pellegrini lab consists of a diverse group of researchers, ranging from undergraduates, permanent research associates, PhD students, and postdoctoral researchers. We work on both original data collection via field sampling and lab analyses as well as data synthesis and model-data comparisons. We are interested in applying ecological and biogeochemical principles to solve global change problems.

The position is located in Cambridge and will be for a period of 24 months.

# Person specification

	Essential	Desirable
<b>Education</b>		
A PhD in a relevant subject.	✓	
<b>Relevant Experience and Skills</b>		
Strong background in fire ecology, biogeochemistry, soil organic matter, greenhouse gas cycling, or similar fields	✓	
Experience conducting field-based measurements of fluxes, fire behavior, and soil sampling	✓	
Experience with wet lab measurements such as of soil organic matter, inorganic nutrients, microbial biomass and extracellular enzymes or fiber digestion	✓	
Experience working with remote sensing data	✓	
Experience using R or another language for geospatial data analysis	✓	
Demonstrated publication record		✓
Atmospheric chemistry		✓
Experience working with teams both providing support for other projects and leading their own project		✓
Thermal sensor data		✓
Free air FTIR characterization of smoke		✓
Peatland ecology		✓

# The Department of Plant Sciences



The Department of Plant Sciences at Cambridge University maintains teaching and research specialisms across a wide range of plant science disciplines (from molecular and developmental biology, through cell-signalling, biochemistry and physiology to epidemiology, ecology and ecosystem modelling) with 20 academic staff leading active research groups, 4 independent research fellows (funded by the Royal Society, EC and NERC), 5 senior research associates, 60 post-doctoral researchers and 46 support staff. Research grant income in 2016/17 was £10.5M, with the Department currently administering a total of 74 grants with a combined value of £41.6M from a variety of sources, including research councils, Royal Society, charities, EU, industry and government agencies. The Department has strong links with both Cambridge University Botanic Garden and the Sainsbury Laboratory Cambridge. The Department occupies two sites, the main building on the Downing Site, which includes a Teaching Laboratory, and the Plant Growth Facility at the Botanic Garden.

Cambridge is one of only a few UK universities where undergraduates can study plant science separately, and often provides over half of all UK graduates in the subject. It is essential to provide

cohorts of skilled and informed plant scientists, if the impact of plant science research is to be translated into agriculture, industry, conservation and policy. There are approximately 95 postgraduate students, based in the Department and at the Sainsbury Laboratory and NIAB. Our PhD students go on to prestigious fellowships and influential scientific positions worldwide.

The Department is committed to providing a friendly, supportive and inclusive environment in which all can reach their potential, regardless of gender, race, nationality, sexual orientation, age, religious belief or disability. The Department has been central to supporting women at Cambridge University. Professor Enid MacRobbie FRS, was the first female science Professor at Cambridge, and the first female Head of Plant Sciences. Alison Smith, Professor of Plant Biochemistry, became the second female Head of Department in October 2017. Department members participate in collaborations on a worldwide basis. We regularly welcome national and international visitors, including academics, researchers, students and interns.

# The School of Biological Sciences

**The School of the Biological Sciences is one of the six Schools that are responsible for delivering teaching and research and the administration of those activities within the University. The School delivers internationally-leading research and teaching on animal, plant and microbial science at scales that range from the atomic, molecular and cellular through whole organisms to populations and communities. The research impacts on the pharmaceutical and biotechnological industries, on human and animal health and the clinic as well as in conservation, agriculture and the environment.**



## About the School

The School of the Biological Sciences employs around 2000 staff teaching over 4000 students (around 2000 undergraduates in the Natural Sciences, Medical Sciences and Veterinary Sciences and Psychological and Behavioural Sciences Triposes plus around 2000 postgraduates).

The School collaborates closely with the School of Clinical Medicine. The joint Graduate School of Life Sciences looks strategically at graduate provision and education across the two Schools and at the undergraduate level the Medical Education Committee oversees medical education.

The School is currently arranged in two Faculty Boards (Biology and Veterinary Medicine) which are divided into nine Departments: Biochemistry, Genetics, Pathology, Pharmacology, Physiology, Development and Neuroscience, Plant Sciences, Psychology and

Zoology are part of the Faculty Board of Biology while Veterinary Medicine is part of the Faculty Board of Veterinary Medicine.

The School also contains five major interdisciplinary Institutes: Wellcome Trust / CRUK Gurdon Institute for Cancer and Development, Wellcome Trust / MRC Stem

Cell Institute, Cambridge Systems Biology Centre, Cambridge Centre for Crop Science and the Sainsbury Laboratory for Plant Development. It has also incorporated the MRC Toxicology Unit, Leicester which will physically relocate to Cambridge in 2020.

The School is involved with several Strategic Research Initiatives including being a major player in the Cambridge Conservation Initiative. The School is associated with the Museum of Zoology and the Botanic Garden. Key officers of the School plus details of relevant Research Ethics Committee (Human Biology and Psychology) can be found on the School's website..

## Athena SWAN

The Athena SWAN Charter was launched in June 2005 to recognise and reward commitment to advancing the careers of women working in higher education in science, technology, engineering, mathematics and medicine (STEMM).

The University of Cambridge was a founder member of Athena SWAN Charter and the University won its first award in the inaugural round of March 2006. Since then, the University has successfully renewed its Bronze Athena SWAN award in 2009 and 2012 and in 2014 achieved a Silver Athena SWAN award.

Many of the Departments in the School of Biological Sciences hold awards at Bronze or Silver level and the School continues to support the Athena SWAN process across all subjects.

# Terms of appointment

## Tenure and probation

Appointment will be made on a fixed-term basis for 2 years.

## Hours of Work and Working Pattern

Full Time. There are no formal conditions relating to hours and times of 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 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 6.6 weeks (or 33 days for those working full time), plus 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.

### 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.

# The University

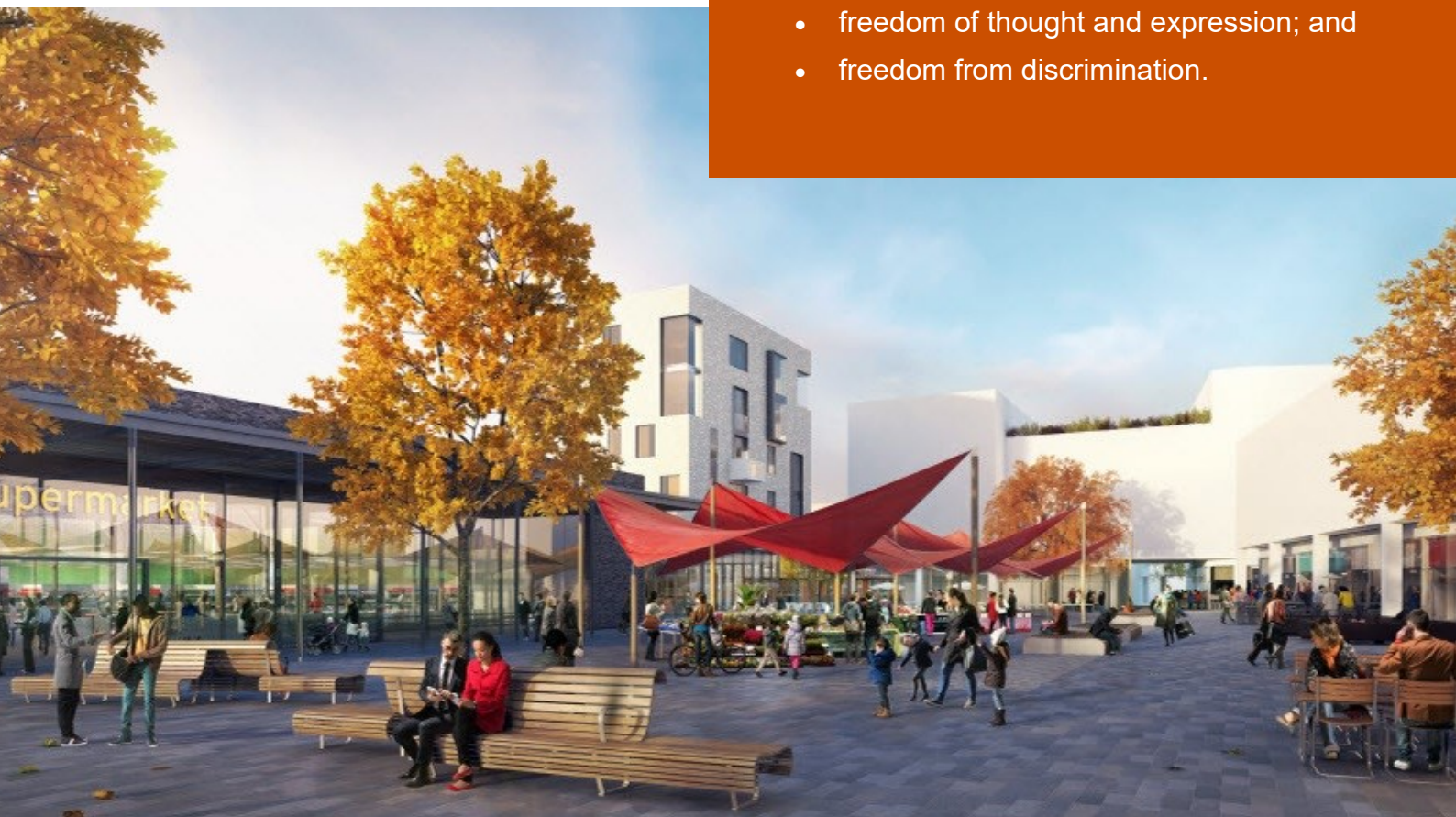
**The University of Cambridge is one of the world's oldest and most successful universities. We are a renowned centre for research, education, and scholarship that makes a significant contribution to society. The University is consistently ranked amongst the top universities in the world. Our affiliates 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 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 student accommodation and deliver small group teaching.

**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.**

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.

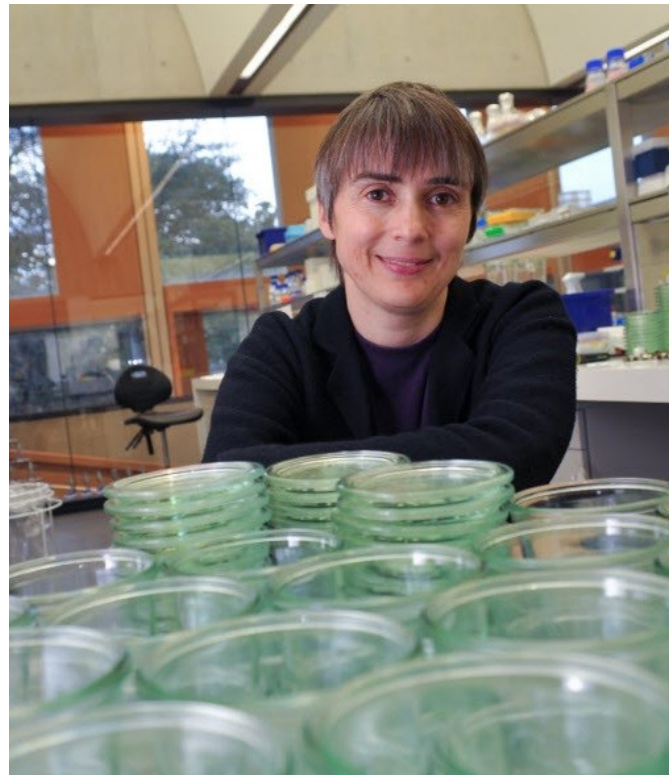
Our instinct for seeking out excellence and setting up enduring and mutually beneficial collaborations has led us to establish strategic partnerships across the globe. Whether it is the successful Cambridge-Africa Programme involving universities in Ghana, Uganda and elsewhere on the African continent; 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](#), 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.

## **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 highly regarded 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. The Office of Postdoctoral Affairs supports the postdoctoral community within Cambridge. Further details are available here: <https://www.opda.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.

# 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.

## 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 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/>

## 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.nwcambridge.co.uk](http://www.nwcambridge.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.

## 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.



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

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.

Please ensure that you upload a covering letter and CV as well as a publications list in the Upload section of the online application. The covering letter should outline why you are interested in the post and how you match the criteria for the post.

Please include details of two referees, including e-mail address and phone number.

Informal enquiries are welcomed and should be directed to:  
Dr Adam Pellegrini [ap2188@cam.ac.uk](mailto:ap2188@cam.ac.uk)

If you have any queries regarding the application process please contact Katrina Wilson on [kjw63@cam.ac.uk](mailto:kjw63@cam.ac.uk)

The closing date for applications is 3 November 2024.