

Postdoctoral Research Associate Ancient Antibodies

Closing date: 31 October 2024 Job Reference: PF43458











Post-doctoral Research Associate – Ancient Antibodies

Salary: £36,024-£44,263

Contract: Fixed Term: The funds for this post are available for 18 months.

Location: Cambridge

Department: Zoology

Responsible to: Dr Christiana Scheib – Senior Research Associate

Working Pattern: Full Time

Purpose of the role

You will contribute to analytical, computational, and laboratory methods to understand the fundamental processes that govern preservation and retrievability of ancient viruses from ancient human skeletal remains and other archaeological materials. The aim is to translate this understanding into methods for retrieving and studying ancient viral infections in past populations.

Key responsibilities

- To use bioinformatic tools to determine *in silico* peptide digestion using multiple enzymes of common human pathogenic viruses.
- To validate bioinformatic predictions in a dedicated palaeo proteomic clean lab environment using established and experimental protocols for ancient protein analysis via LC-MS/MS.
- To work collaboratively with the PI and external team members and collaborators.
- To participate in the dissemination of research through publications and oral presentations both within the department and at conferences.
- To take a lead role in the data analysis and writing of manuscripts.
- With increased experience, to train and mentor junior group members and contribute to the general running of the group as required.

Person Specification

Criteria	Essential	Desirable
Education		
Relevant PhD in palaeo proteomics, with strong background in bioinformatics.	✓	
Skills and knowledge		
Experience in a clean lab environment for ancient proteins and/or DNA	✓	
Proven experience in metaproteomic extraction for LC-MS/MS (FASP, SP3, enamel acid etch) specifically for archaeological materials	✓	
Proven ability to analyse large palaeo proteomic datasets using python or R	✓	
Experience with non-trypsin enzymes for peptide preparation for LC-MS/MS and non-tryptic peptide analysis	✓	
The ability to organise time and work effectively, independently and responsibly in a research team setting	✓	
Experience working with human remains and managing ethical considerations in both British and international contexts.		✓
The ability to engage with the general public to disseminate archaeological research.		✓
Proven ability to analyse and write scientific results	~	
Strong desire to understand the mechanisms underlying preservation of ancient proteins in archaeological human remains and other archaeological materials (e.g. pots)		✓
Excellent communication skills (written and oral)	✓	
Ambition, drive, strong work ethic, and good interpersonal skills and ability to work in a team	✓	
Attention to detail	\checkmark	
Proven experience training others in ancient metaproteomic workflows	✓	

The project: background and aims

We invite applications for a postdoctoral Research Associate position to join the Ancient Antibodies project in the Department of Zoology, located in central Cambridge. The appointment will be for a period of 18 months, starting in January 2025.

The research focus is to design and develop laboratory methods to retrieve ancient human viral proteins from ancient human skeletal remains and archaeological materials (e.g. pots). This position will focus on *in silico* digestion predictions of common human viruses using multiple enzymes followed by validation of predictions in the lab using established and experimental palaeo proteomic techniques. The project position is funded by the UKRI EPSRC with a preferred start date of 1 January 2025, or as soon as possible thereafter.

You will work directly with the PI of the project and occasionally with visiting students and remote team members from other projects. As this position is time limited and in the first three months of the project, the PI will be away from the project, you will need to be highly motivated and independent to quickly develop a good understanding of the nature of the data and the project's scientific aims. There will be opportunities to contribute to training new team members and to general project management, as well as to participate in public engagement activities.

Department of Zoology

The <u>Department of Zoology</u> provides an exciting research and teaching environment with a strong sense of cooperation and community. The Department has about 250 members who share a fascination with animal biology. Our community includes 23 University faculty, a further 16 principal investigators, around 80 postgraduate students, a lively post-doc community and a committed team of professional service staff.

Research

Our mission is to define and answer the most important and exciting questions in animal biology thus delivering an outstanding contribution to knowledge and real-world benefits. Our research ranges from cell biology to conservation policy. It is organized into six themes, but in practice often thrives at the boundaries between disciplines. We have strengths in a wide range of areas including evolutionary biology, ecology, behavioral ecology, developmental biology, evolutionary genetics and conservation science. Our research often has a distinctive approach within a field reflecting our particular interests in the functioning of whole organisms, and in questions relating to evolution, adaptation and biodiversity. Members of the Department belong to a range of the School's research themes including "Organisms, Evolution and Ecology", "Functional and Evolutionary Genomics", "Reproduction, Development and Lifelong Health" and "Neuroscience, Psychology and Behaviour". The Department contributes to five cross school Interdisciplinary Research Centres; Conservation, Global Food Security, Cancer, Infectious Diseases and Neuroscience and an exciting new Collections-Connections-Communities strategic research initiative.

We pride ourselves on the outstanding quality of our research and its impact. In the last Research Excellence Framework exercise the Department of Zoology returned some 38 academics to the REF 2021 within the Biological Sciences unit of assessment. 66% of Cambridge's submissions in Biological Sciences were awarded the highest rating of 4* overall, meaning they are 'worldleading'. This is an increase from 52% in 2014. A further 30% of submissions were rated 3* overall (internationally excellent).

The Department has an outstanding <u>Museum of</u> <u>Zoology</u> that holds internationally renowned collections that provide excellent research and teaching resources. The Museum attracts over 150,000 visitors per year. It has a lively and innovative science outreach programme and hosts hundreds of visits by educational groups each year.

Teaching

We teach a range of courses in the Natural Sciences Tripos, working closely with other Departments in the School. These include first and second year courses in "Evolution and Behavior", "Evolution and Animal Diversity", "Ecology Evolution and Conservation", "Cell and Developmental Biology" and "Neurobiology".

Our final year "Part II Zoology" course is a modular course that reflects the interests of the department and is delivered in close cooperation with other Departments. This allows our students to combine the study of evolutionary biology, ecology, conservation, behaviour, genomics, cell and developmental biology and a range of other options. Students can focus on specific areas of Zoology or explore the diversity of the subject and the interface between disciplines and levels of analysis. Our teaching is rated very highly, by both external assessors and undergraduates.

Location and Facilities

The Department is based in the historic city centre of Cambridge, with a field station in the nearby village of Madingley. The Department has very close links with the Cambridge Conservation Initiative in which some members of the Department are based.

The Museum of Zoology

The <u>Museum of Zoology</u> provides a relatively small home for a spectacular global collection, encompassing more than two million zoological specimens amassed over the course of more than two centuries. Just over 250,000 specimens are in the non-insect invertebrate collections, including the Robert McAndrew collection of molluscs and the John Stanley Gardiner collection of crustacea, each of which are rich in type specimens.

With substantial funding from National Lottery Heritage Fund, the Museum's building recently underwent a complete refurbishment - including the construction of a new glass-walled whale hall. During the refurbishment, the public galleries had a facelift, with vibrant new displays assembled and installed; staff offices and labs were upgraded; and the museum stores were completely emptied, rebuilt, and refilled. The Museum re-opened in 2018, attracting over 150,000 visitors and won plaudits for its work in public engagement that year through two awards, regionally and nationally. It received further national recognition for the programme of digital engagement it put on during 2020 and 2021.

Staff of the Museum includes the Director and five academic curators, all of whom combine research, teaching and curatorial responsibilities. The academic staff works with the Collections team, the Public Engagement team, and the Operation and Visitor Services team, which includes a large and active team of volunteers. The Museum is embedded in the Zoology Department and shares a building with the Cambridge Conservation Initiative (CCI). It is also part of the wider University consortium of Cambridge museums, the UCM. The consortium works together in delivering a programme of public engagement and learning activities, including the hugely popular 'Twilight' events.

The consortium is also part of the new Universityfunded Strategic Research Initiative 'Collections -Connections - Communities'. It will use the University's collections, and their audiences. to convene new research addressing key societal issues of our time, relating to Environment and Sustainability; Public Health and Wellbeing; and Society and Identity. Ongoing work within the Museum of Zoology already falls within each of these themes. As well as projects on evolution, that explain how life on earth evolved and how it functions today, and conservation, which use the collections to document the decline in the natural world, to deduce new techniques for conserving and rebuilding biodiversity, there is work targeted towards improving the health and wellbeing of our audiences and uncovering the hidden histories behind the collections.

The Museum has associated molecular laboratories, and a high-resolution micro-tomography centre.



Working in the Department of Zoology

The Department of Zoology offers a stimulating, supportive and friendly work environment in a successful academic community.

We have exceptional strengths in both field and laboratory based experimental work in addition to theoretical approaches. The Department and School have excellent research facilities.

The Department provides a lively and successful research environment. We have a range of regular seminar series (e.g. Behavioural Ecology and Evolution, Evo Devo and Museum Research Talks) and an Annual Departmental Seminar Day. There is a wide range of seminars in the School and in Cambridge.

The Department has a proactive mentoring programme and provides annual staff development reviews. Probation includes regular meetings with a mentor and the Head of Department. We have an active induction programme and ongoing training in a wide range of topics.

Social life in the Department includes, when possible, various get-togethers throughout the year, happy hour, sporting and other well-being activities.

The Department values interactions with the wider community and there are opportunities to contribute to outreach through, for example, Museum activities, the Cambridge Festival, interactions with local schools and many others.

Equality Diversity and Inclusion

We embrace the immense benefits of a diverse and inclusive community. We

are committed to fostering equality and inclusion, valuing diversity and promoting wellbeing all built on a foundation of mutual respect in our community.

We expect all members of our community to be actively involved in providing a stimulating, inclusive, respectful, and supportive work and study environment.

We fully and actively subscribe to both the University's Equal Opportunities Policy, the University's <u>Dignity@Work Policy</u>, as well as promoting a wide range of diversity networks for women, black, Asian and minority ethnic, and lesbian, gay, bisexual, and transgender (LGBT+) staff and students.

We have an enthusiastic and effective Equalities and Wellbeing Committee and Race Equality sub-group, with members drawn from all sections of the department's staff and students.

The committee works hard to lead the department in implementing best practices in equality, diversity, inclusion, and wellbeing. This includes:

- Actively promoted and encouraged current staff to undertake equality and diversity training throughout their time in the department.
- Introduction and active promotion of Wellbeing Advocates in the Department.

The Department is pleased to hold a silver Athena Swan awarded in 2016.



CambridgeConservationInitiative



The Cambridge Conservation Initiative (CCI) is a unique collaboration between the University of Cambridge and nine leading internationallyfocused biodiversity conservation organisations based in and around Cambridge.

The CCI partners together combine and integrate research, education, policy and practice to create innovative solutions for society and to foster conservation learning and leadership. Our work spans disciplines, organisations ad continents, with a core mission of conserving and restoring life on Earth.

This position will be based in CCI's hub in the David Attenborough Building – right at the centre of the largest cluster of conservation organisations in the world, and a place where leaders in academia, business, government and nongovernmental organisations interact and work together on a daily basis.

Our city-centre location and strong convening power allow us to directly engage with a wide audience globally, from leaders in government, business, academic and NGO communities to the general public.





The School of the Biological Sciences

The Department of Zoology is part of the School of the Biological Sciences. The goal of the School of the Biological Sciences is to deliver education, learning and research at the highest international levels of excellence. Building on our record as a world class University for Biological Sciences we aim to work in innovative ways to achieve ongoing excellence in a supportive and collaborative research and teaching environment.

The research and teaching carried out in the School is diverse and covers animal, human, plant and microbial science from the atomic, molecular and cellular levels through to tissues, organs, whole organisms, populations, ecosystems, biodiversity, and human behaviour. This research has impacts on health and disease across species, agriculture, conservation and the environment as well as on the pharmaceutical and biotechnology industries, with direct translational relevance to the clinic, public services and social policy, and the bio-economy.

The School of the Biological Sciences employs around 2000 staff teaching over 4000 students (split roughly evenly between undergraduates and postgraduates). It consists of nine Departments (Biochemistry; Genetics; Pathology; Pharmacology; Physiology, Development and Neuroscience; Plant Sciences; Psychology; Veterinary Medicine; Zoology) and four research institutes (Gurdon Institute, Cambridge Stem Cell Institute, Sainsbury Laboratory and the MRC Toxicology Unit) all of which are involved in fundamental biological research alongside undergraduate and postgraduate teaching.



Research in the School is organised in six major Themes, designed to provide integration across the School, encourage new conversations and enhance interdisciplinary networking critical for major innovation: •Organisms, Evolution and Ecology •Functional and Evolutionary Genomics •Infection and Immunity •Neuroscience, Psychology and Behaviour •Reproduction, Development and Lifelong Health •Molecules and Cells: The Building Blocks of Life.

The School has teaching responsibilities in four undergraduates triposes: Natural Sciences, Medical Sciences, Veterinary Sciences and Psychological and Behavioural Sciences. It is part of the Graduate School of Life Sciences, which organizes and manages the graduate training and monitoring for Masters and PhD students, along with the Degree Committee.

Terms of Appointment

Tenure and probation: The funds for this post are available for 18 months.

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 100% of fulltime, working Monday – Friday. The postholder will be expected to work on site at least two days 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 the <u>pensions website</u>.

Annual leave: Full time employees are entitled to annual paid leave of 41 days inclusive of public holidays. For new part-time employees, annual leave will be on a pro rata basis.

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.

candidates from a Black, Asian and Minority Ethnic background to apply for this vacancy as they are currently under-represented at this level within our 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 on the <u>support services section on</u> the HR website.

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, <u>Mrs</u> <u>Anastasia Nezhentseva</u>, HR and Grants Administrator, who is responsible for recruitment to this position.

Alternatively, you may contact the <u>HR Business</u> <u>Manager</u> responsible for the department you are applying to.

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 firstclass 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 £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 students, provide 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.

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 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 science and technology campus to the west of the city centre, and is 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 networks for women, black and minority ethnic and lesbian, gay, bisexual and transgender staff. More details are available on Equality and Diversity webpages.

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

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 Accommodation/Relocation Service. 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.

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 the Accommodation Service website.

BARYON

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 <u>career break scheme</u> 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. Payroll giving is also a simple, tax-efficient way for employees to make monthly donations to charity.





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 interestfree 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 familyfriendly 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.

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 on the <u>Childcare Office</u> website

The <u>Newcomers and Visiting Scholars Group</u> 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. <u>The Postdoc</u> <u>Academy</u> supports the postdoctoral community within Cambridge.



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 interdisciplinary Cambridge Festival, 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.

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-toface 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 postgraduate 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 gualifications to develop their skills, experience and qualifications.

How to apply

Applications should be submitted online via the <u>University of</u> <u>Cambridge jobs page</u> by clicking "Apply online" in the job advert. You will need an email address to register for our online system. Please upload your CV (2 sides of A4 maximum) and a covering letter (2 sides of A4 maximum).

Flexible working requests will be considered.

Informal enquiries are welcomed and should be directed to: Dr Christiana Scheib Email: cls83@cam.ac.uk

If you have any queries regarding the application process please contact **Anastasia Nezhentseva** Email: an286@cam.ac.uk.

The closing date for applications is: 31 October 2024. Interviews will be held between 11th and 15th November 2024 and may be conducted remotely.

