

Research Assistant: Data analysis

Closing date: 29 June 2025

Job Reference: PF46340



Research Assistant – Data analysis**Salary:**

£32,546-£35,116

Contract:

Fixed Term: 12 months

Preferred start date: July 2025 or as soon as possible thereafter

Location:

Cambridge

Department:

Zoology

Responsible to:

Dr Ana Mosterin (Zoology)

Working Pattern:

Full Time

Purpose of the role

The Centre for Pathogen Evolution (CPE) at the Department of Zoology, University of Cambridge invites applications for a Research Assistant to a project on evolutionarily smart SARS-CoV-2 vaccines. It is an exciting opportunity for an experienced scientist to support and maintain the national and international reputation for excellence in research of the CPE.

The research focus of the group is to design and develop analytical, computational, and mathematical methods to understand the fundamental processes that govern the evolution of antigenically variable viruses. Our research is highly interdisciplinary, involving global collaboration with experimental virologists and clinicians to quantify the selection pressures on influenza viruses to better understand their evolutionary dynamics, and to inform control strategies.

The appointment, which is funded by UKRI, is for a period of 18 months starting in July 2025 or as soon as possible thereafter.

Key responsibilities

- Data management and analysis of pre-clinical and experimental medicine results
- Design and interpretation of experimental virological assays, including high-throughput neutralisation assays and deep mutational scanning experiments
- Performing computational analyses to check for consistency of titrations, generating antigenic maps using Racmacs with wildtype and mutant viruses and integrating sequence data, including comparisons with existing datasets

Compare the antigenic results from using pseudotypes and wild type SARS-CoV-2, and hamster sera generated by inoculation with saRNA and infection with live virus and human sera

Person Specification

Criteria	Essential	Desirable
Education and experience		
Masters degree in natural science, medicine, or another related subject	✓	
Experience of sequence analysis, structural analysis and modelling	✓	
Familiarity with GCLP	✓	
Skills and knowledge		
Experience of software development and mathematical modelling	✓	
Experience with management and analysis of clinical trials or experimental medicine		
Experience programming in R and Python	✓	
Good organisation and time management skills	✓	
Interpersonal and Communication Skills		
A proactive approach to seeking guidance	✓	
Enthusiasm to interact with colleagues	✓	
Ability to communicate research findings clearly in oral and written formats to other members of the group and collaborators.	✓	

Behavioural Attributes

This section summarises the behavioural attributes (or competencies) that we expect the role holder to be able to demonstrate, at what level and whether this is an essential or desirable requirement.

Full definitions are at: <https://www.hr.admin.cam.ac.uk/policies-procedures/behavioural-attributes>.

Please review these and provide specific examples in your application of how you have demonstrated these attributes in your work, education or other experience. It will assist your application if you explain the situation, what you did and what the outcomes were.

Attribute	Level
Valuing Diversity	A
Achieving Results	C
Communication	D
Innovation and Change	D
Negotiating and Influencing	D
People Development	D
Relationship Building	C
Strategic Focus	D

The project: background and aims

The continued antigenic evolution of SARS-CoV-2 necessitates evaluating vaccine strain updates with the goal of building immunity that will protect against existing, foreseeable future, variants. We propose to do so using the methodology we proposed in our SAGE paper¹, that became known as proactive vaccinology. We will generate, and keep current throughout the project, high resolution antigenic maps to determine the antigenic relationships among SARS-CoV-2 variants. Further, we will horizon-scan and proactively explore antigenic space ahead of the current evolution using a combination of three methods.

1. Surveillance of UK and global variation in collaboration with our UKHSA project partner and colleagues world-wide involved in surveillance, including ECDC, the US CDC, and US NIH SAVE consortium.
2. Identifying substitutions showing early signs of selective advantage by detecting patterns of parallel evolution in the global sequence data.
3. Deep mutational scanning to experimentally test antigenic and other phenotypes of amino acid substitutions ahead of the current evolution. In combination with this virological surveillance we will do serological surveillance in the Legacy cohort of 800 individuals for which we have highly reliable vaccination and infection history from the start of the pandemic. This serological surveillance will allow us to both sample the selection pressure on the virus to escape immunity, and population immunity to variants evolving into different parts of antigenic space. We will then test alternate vaccine strain selection choices to identify those that best build immunity in the part of antigenic space that most needs it. We will select and test vaccine strains using a combination of computation, animal models, and in experimental medicine in humans. This work will be tightly integrated with, and contribute substantially to, the related European, US, and WHO global vaccine strain selection processes.

Our overarching objective is to develop a methodology for vaccine strain updates that provides substantially increased vaccine effectiveness compared to the current vaccine update methodology. Within this our core objectives are to:

1. accurately characterise the antigenic relationships among SARS-CoV-2 variants;
2. scan for future variants by a combination of analyses of surveillance data and by deep mutational scanning to anticipate the evolution of circulating variants;
3. assess population immunity to identify the regions of antigenic space for which it is most important to increase immunity;
4. determine vaccine antigens that could increase immunity in this at-risk part of antigenic space (accounting for the additional difficulty of vaccinating in the presence of related immunity against earlier variants);
5. test said vaccine antigen updates in pre-clinical and in small-scale serological readout experimental medicine in humans in partnership with Moderna. We will also be open to collaborations with other vaccine manufacturing partners and experimental vaccine design approaches such as any that might also be funded by this MRC call.

Working in the Department of Zoology

Working Environment

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 wellbeing 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 [Dignity@Work Policy](#), 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.

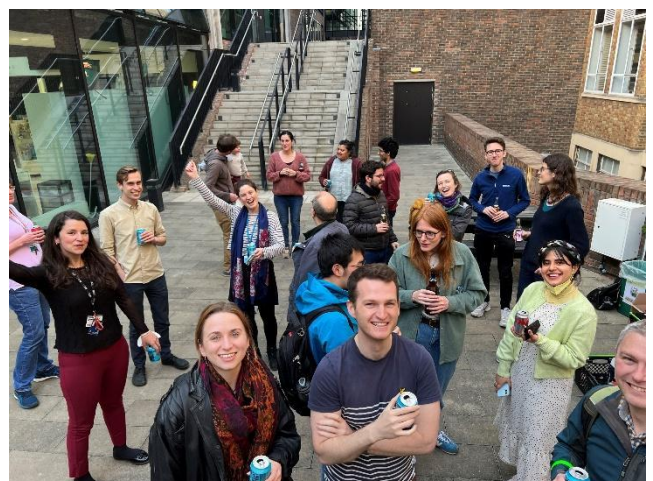
We have an enthusiastic and effective Equalities and Wellbeing Committee and Race Equality sub-group, with members drawn from all sections of the department's staff and students.

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.



Cambridge Conservation Initiative



The Cambridge Conservation Initiative (CCI) is a unique collaboration between the University of Cambridge and nine leading internationally-focused 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 and 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 non-governmental 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 for up to 18 months. The start date is July 2025 or as soon as possible thereafter. Appointments will be subject to satisfactory completion of a 6-month probationary period.

Hours of Work and Working Pattern: The hours of work for the position are 100% of full-time, working Monday – Friday. The postholder will be based in the Department of Zoology and will be expected to work on site at least three 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 [pensions website](#).

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.

Equality, diversity and inclusion: We particularly encourage women and/or 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.^[1]^[SEP] 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 [support services section on 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, [Mrs Anastasia Nezhentseva](#), HR and Grants 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.

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 £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 18,000 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 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.



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. Payroll giving is also a simple, tax-efficient way for employees to make monthly donations to charity.



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 and a CAMbens Cycle to Work salary sacrifice scheme is also available, which enables 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.



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 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 [Childcare Office](#) website

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 Postdoc Academy](#) 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 [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-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.



How to apply

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.

Flexible working requests will be considered.

Please upload a copy of your CV (2 sides of A4 maximum) and a covering letter (2 sides of A4 maximum, please give details and examples to show that you meet the personal specification).

Informal enquiries are welcomed and should be directed to:

Dr Ana Mosterin Hopping

Email: am688@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: 29th June 2025

Interview dates: in the week commencing 30 June 2025 - may be conducted remotely.



UNIVERSITY OF
CAMBRIDGE