NRICH Roadshow Co-ordinator/ MMP Schools Liaison
Department of Applied Mathematics and Theoretical Physics

Job Reference: LE15943
Closing Date: 15th July 2018
The Role

Purpose of the role

The Millennium Mathematics Project (maths.org) is seeking an exceptional teacher and mathematics communicator, with a passion for inspiring others and sharing their love of mathematics, to deliver and further develop our Hands-On Maths Roadshow and problem-solving workshops for school students, working in collaboration with our NRICH project team.

The Hands-On Maths Roadshow (maths.org/roadshow) has been running since 1999. The Roadshow presents hands-on problem-solving activities as a means of engaging both primary and secondary school students with maths and promoting the online resources developed by our NRICH project. The hands-on activities are principally based on resources originally created for the NRICH website (nrich.maths.org). The Roadshow provides face-to-face reinforcement and extension of the rich mathematical tasks available online. The resources are designed to develop students’ problem-solving skills, mathematical thinking, perseverance, resilience, and to promote creative approaches to mathematics.

In addition to continuing the highly successful existing activities, there is considerable scope for development of new workshop ideas, mirroring new developments on the NRICH website. The post will involve working alongside the NRICH team to develop such ideas for workshops, with responsibility for delivering these in schools. The post holder also regularly delivers problem-solving workshops and activities at MMP school events in Cambridge, and contributes to regular public and family mathematical activities organised by the MMP (e.g. during the annual Cambridge Science Festival). The post holder will also have the opportunity to contribute to the development of online resources for the NRICH.
website, working in collaboration with other members of the NRICH team.

The Hands-On Maths Roadshow is currently adaptable for, and offered to, a very wide range of ages in primary and secondary schools, from KS1 to KS4, and occasionally KS5. The school events we hold in Cambridge are mostly aimed at secondary students, covering the age range from Y9 to Y12, with a strong focus on support for potential university applicants in Y12. Family events in Cambridge tend to attract parents with younger children. There is some flexibility in the age ranges for which new resources can be developed, but it is important that successful candidates should feel comfortable working with students across a wide range of ages and levels of attainment.

The post involves considerable and frequent travel throughout the UK and occasionally overseas to work with schools (recently the Roadshow has visited South Korea, Italy, Ireland, Gibraltar and Norway, with other student workshops run in Switzerland and Austria, as well as visits to schools throughout the UK).

The successful applicant will be a graduate in maths or a related subject with substantial teaching experience in UK primary or secondary schools. The post-holder must be able to engage and inspire audiences of varying ages and attainment levels from 5 to 19, and adapt content and presentation style for a range of audiences of different ages. Excellent organisational skills are essential as the post-holder is responsible for planning and managing this extensive programme of school visits, and keeping up-to-date and accurate records and passing these on to the administrative office. A willingness to travel is also essential.

Because the post involves working with children, appointment will be conditional on a satisfactory Enhanced Disclosure and Barring Service (DBS) check.
## Key Duties & Responsibilities

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<tr>
<td>1</td>
<td>Teaching mathematics across a range of ages (between 5 – 18) and attainment levels by presenting and delivering the Hands-On Maths Roadshow and student problem-solving workshops.</td>
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<td>2</td>
<td>Adapting teaching and learning material as appropriate for different ages and ability levels.</td>
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<td>3</td>
<td>Planning and developing hands-on and online mathematics teaching and learning workshops, activities and resources for a wide range of ages and attainment levels appropriate for the pedagogical aims of the project, working in collaboration with other staff within the NRICH team.</td>
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<td>4</td>
<td>Providing associated continuing professional development training for mathematics teachers and PGCE students, for example through demonstrating and discussing the use of NRICH mathematics activities and materials in teaching primary and secondary maths.</td>
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<td>5</td>
<td>Promoting and disseminating information on the online resources developed by NRICH and the wider MMP in schools during visits.</td>
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<td>6</td>
<td>Administering and organising the busy and varied student workshop programme – handling enquiries and bookings from schools; contacting and liaising with schools to plan details of visits; organising calendar of visits to make efficient use of time; planning and booking accommodation and travel arrangements; keeping up to date and accurate records and collating and passing on information as required for reporting and evaluation.</td>
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<td>7</td>
<td>Financial administration related to school visits – where applicable, confirming details of fee with schools in advance; handling queries over costings; maintaining accurate and up-to-date records of fees and expenses and passing on details required for invoices to the MMP Administrative and Events office in a clear and timely manner.</td>
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# Person specification

The following list of selection criteria will be used by the selection panel at every stage of the selection process. Candidates are asked to indicate how they meet the below criteria, including relevant examples, in their covering letter.

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<th>Education &amp; Qualifications</th>
<th>Essential</th>
<th>Desirable</th>
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<tbody>
<tr>
<td>A degree in mathematics or a related subject</td>
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<td>✓</td>
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<td>A teaching qualification in mathematics</td>
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<td>✓</td>
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## Specialist Knowledge & Skills

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<td>Substantial teaching experience within the UK school system at primary or secondary level</td>
<td>✓</td>
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<td>The ability to communicate and inspire enthusiasm for, and enjoyment of, mathematics is vital</td>
<td>✓</td>
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<tr>
<td>The ability to develop and deliver mathematics teaching and learning activities and resources for a wide range of ages and attainment levels appropriate for the pedagogical aims of the project</td>
<td>✓</td>
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## Interpersonal & Communication Skills

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<td>Excellent communication skills: the post holder must be able to communicate with a wide range of contacts, including school pupils of many ages, teachers, head teachers, university researchers and other professionals within the field of education, in a clear, friendly, engaging and professional manner—the post holder is an ambassador for the Millennium Mathematics Project in general and NRICH in particular.</td>
<td>✓</td>
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<tr>
<td>Excellent IT skills: records are kept and shared using online systems (training is available) and the post holder must be comfortable working with the NRICH website.</td>
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## Relevant Experience

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<td>A demonstrable interest in using and developing teaching resources with a focus on problem-solving and creative ways of engaging with mathematics</td>
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<tr>
<td>Experience of using and developing hands-on teaching resources</td>
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<td>✓</td>
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<td>Experience of leading CPD training in mathematics for teachers</td>
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<td>✓</td>
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## Additional Requirements

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<td>Excellent organisational skills and accurate record keeping: the post holder is responsible for the administration of a complex, substantial and varied programme of school visits and interactions.</td>
<td>✓</td>
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The Department of Applied Mathematics and Theoretical Physics (DAMTP)

The Department of Applied Mathematics and Theoretical Physics is one of the largest and strongest departments of its kind in Europe. DAMTP is a large Department with around 50 academics (professors, readers and lecturers) and almost 100 contract research staff. There are also 20 – 30 visiting academics, 130 postgraduate research students and 100 graduate students. Over 800 undergraduate and postgraduate students are enrolled in Parts I to III (years 1 to 4) of the Mathematical Tripos. Part III is not only the 4th year of the undergraduate course, but attracts more than 100 students each year from outside Cambridge, who take it as a one-year postgraduate course, leading to a Masters degree.

DAMTP shares responsibility for teaching in the Mathematical Tripos with its sister Department, the Department of Pure Mathematics and Mathematical Statistics (DPMMS). DAMTP also has responsibility for teaching mathematics to undergraduates taking Natural Sciences. DAMTP and DPMMS are accommodated, along with the Isaac Newton Institute for Mathematical Sciences and the Betty and Gordon Moore Library (covering mathematics, physical sciences and technology) at the Centre for Mathematical Sciences, a purpose-built complex in Wilberforce Road.

The Faculty of Mathematics is a supporter of the Good Practice Scheme developed by the London Mathematical Society’s Women in Mathematics Committee (http://www.lms.ac.uk/women/good-practice-scheme). The Faculty is actively engaged with the Athena SWAN Award Scheme (holding a Bronze Award from 2013). The Department would particularly welcome applications from women, since women are, and have historically been, underrepresented on our academic staff. The Department is also keen to attract applications from candidates who have a genuine interest in, and commitment to, developing the role of women in Mathematics and who can demonstrate the potential to be strong role models to female mathematicians.

Millennium Mathematics Project (MMP)

The Millennium Mathematics Project is one of the largest subject-specific outreach programmes in the University, reaching an audience of more than 7.5 million users a year through free online mathematics resources, and working with thousands of teachers and students face-to-face. The project is a collaboration between the Faculties of Mathematics and Education, involving both staff employed through the Department of Applied Mathematics and Theoretical Physics and others through the Faculty of Education, but all the project team are housed within the Centre for Mathematical Sciences. There are currently 15 members of staff employed within the MMP, several of whom are part-time.

The project consists of a family of complementary programmes, including our very successful NRICH project. Our resources and activities cover all stages of school education, from early years (ages 3 - 5) through primary and secondary education right through to the transition from school to university at age 18, and include support and professional development for teachers. We encourage lifelong learning with hands-on maths events and resources for families and the wider public.

NRICH resources focus on problem-solving and embody a ‘low-threshold/high-ceiling’ philosophy: the problems are accessible but encourage rich mathematical thinking, exploration and extension. The activities are designed to encourage discussion and discovery, and to build students’ perseverance, mathematical reasoning, ability to apply knowledge creatively in unfamiliar contexts, and confidence in tackling new challenges.

More information can be found at maths.org and nrich.maths.org
The School

The School of the Physical Sciences is one of six Schools making up the academic work of the University. It covers Astronomy, Chemistry, Earth Science, Geography, Materials Science and Metallurgy, Mathematics and Physics.

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

About the school

The School of the Physical Sciences comprises the following Departments:

Applied Mathematics and Theoretical Physics (DAMTP)
Chemistry
Earth Sciences
Geography (including the Scott Polar Research Institute)
Institute of Astronomy
Issac Newton Institute of Mathematical Sciences
Materials Science and Metallurgy
Physics (Cavendish Laboratory)
Pure Mathematics and Mathematical Statistics (DPMMS)

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

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

**Tenure and probation**
Appointment will be made on a fixed-term basis of 1 year in the first instance, *(reason for the limit of tenure: limited funding)* to start in September 2018 or as soon as possible thereafter. Appointments will be subject to satisfactory completion of a probationary period of 3 months.

**Hours of Work and Working Pattern**
This position is a full-time post but a part-time appointment would be considered (minimum 0.6 FTE) for an exceptional candidate. The usual working week is Monday-Friday, but some public events are held at weekends (e.g. the annual Cambridge Science Festival, occasional family events) – time off in lieu is given.

**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.

**Screening Checks:** This role requires an enhanced Disclosure and Barring Service (DBS) 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/](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, Ms Julie Bazin, who is responsible for recruitment to this position, on 01223 764289 or by email on hr-office@maths.cam.ac.uk. Alternatively, you may contact the HR Business Manager responsible for the department you are applying to via hrenquiries@admin.cam.ac.uk.
The University

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

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

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

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

About us

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.
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 of Cambridge.

Family-friendly policies
The University recognises the importance of supporting its staff. We have a range of family-friendly policies to aid employees’ work-life balance including a generous maternity, adoption and shared parental leave entitlement of 18 weeks full pay and emergency family care support via My Family Care. In addition, our 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/

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

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

Relocating to Cambridge
The University Accommodation Service exists to help employees in their search for a rental home in Cambridge. A new University development at North West Cambridge called Eddington offers subsidised rented accommodation to University staff. The development consists of high quality furnished one and two bedroom apartments. For more information about the development and how to apply please visit the website www.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. The University has introduced a Rental Deposit Loan Scheme to support new starters and existing employees with the set up costs of renting privately in the Cambridge area: https://www.hr.admin.cam.ac.uk/pay-benefits/cambens-employee-benefits/relocation-housing/rental-deposit-loan-scheme

Equality & diversity
The University has a vibrant and varied community. We support and encourage under-represented groups and we value diversity. We welcome applications from individuals with disabilities. Our recruitment and selection procedures follow best practice. We have an Equal Opportunities Policy, along with a range of diversity networks for women, black and minority ethnic and lesbian, gay, bisexual and transgender staff. More details are available here: http://www.equality.admin.cam.ac.uk/

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

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

Vice Chancellor Emeritus, Professor Sir Leszek Borysiewicz, 2016
How to apply

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.

You will need to upload a CV and a covering letter outlining your suitability for the post from the person specification in the Further Particulars. The full contact details for two referees should be included.

Informal enquiries are welcomed and should be directed to:

Ems Lord, NRICH Director, email: ell35@cam.ac.uk

Please quote reference LE15943 on your application and in any correspondence about this vacancy.

The deadline for applications is 15th July 2018 and interviews are expected to be held on Wednesday 25th July 2018.