



## Job Description



### Summary

<b>Job title</b>	Chemistry Technician
<b>Division</b>	Social Sciences
<b>Department</b>	The School of Archaeology, Research Laboratory for Archaeology, Oxford Radiocarbon Accelerator Unit (ORAU)
<b>Location</b>	Dyson Perrins Building, South Parks Road, Oxford, OX1 3QY
<b>Grade and salary</b>	Grade 5: £28,759 - £33,966 per annum
<b>Hours</b>	Full time (36.5 hours per week)
<b>Contract type</b>	Fixed-term contract for 3 years
<b>Reporting to</b>	Dr David Chivall, <a href="#">Oxford Radiocarbon Accelerator Unit</a> (ORAU) Laboratory Manager
<b>Vacancy reference</b>	169212
<b>Additional information</b>	The closing date for applications is 12:00 noon on Monday, 27 November, 2023

### The role

The role will mostly involve work on samples submitted to the laboratory as part of collaborations and commercial contracts but may also include some in-house research that we undertake to improve routine measurements. Much of the material you will be working on is extremely valuable in archaeological/environmental terms and so the work needs to be carried out methodically and with a suitable sense of responsibility. The operations involve many different kinds of activity.

In order to obtain a radiocarbon date, a sample must be taken from a suitable material and chemical components extracted and purified. The component of interest is then combusted and the carbon dioxide produced is collected and converted to graphite, on which the radiocarbon measurement is made using an Accelerator Mass Spectrometer (AMS). During sample combustion, to identify any radiocarbon reservoir effects, a small part of the product nitrogen



and carbon dioxide gasses are diverted to an Isotope Ratio Mass Spectrometer (IRMS) to determine the stable nitrogen and carbon isotope composition of the combusted material. The Chemistry Technician is responsible for all of the above operations apart from the final AMS measurement.

The Unit follows the ISO-9001 standard (audited by the BSI) and so an ability to keep accurate and organised records is important. At all stages, there is an important element of record keeping and data manipulation using a computer database. The practice of the laboratory is for one technician to be responsible for a set of samples from the sampling stage up to the final AMS measurement. This gives the job variety and helps to ensure that the entire operation is understood and thought about by the technician involved. Staff should be able to develop skills of observation and expertise in what they are doing. Technicians are encouraged to play a full part in the work of the laboratory, attend seminars and occasional field trips to see the context of their work.

## Responsibilities

The work involves the following main duties and responsibilities:

- Responsible for carrying out sampling, chemical pre-treatment, sample combustion, and target preparation of samples for radiocarbon dating
- Responsible for carrying out specialised non-routine chemical pre-treatment for samples which, in liaison with the ORAU director or chemistry manager, have been identified as requiring unusual treatment
- Responsible for day-to-day operation of the HPLC and associated equipment
- Performing quality control criteria on all chemical products obtained and to re-run experiments, with refinements, where necessary
- Responsible for performing method development and optimisation of standard procedures as directed by the ORAU laboratory manager
- Producing reports on experimental results, including helping draft updates and review standard procedures, and data analysis (e.g. simple statistics)
- Day-to-day supervision and training of students and colleagues, including visiting researchers, within the laboratory
- Providing a point of reference for less experienced team members within the radiocarbon laboratory
- Helping to ensure day-to-day running of the laboratory, e.g. ensuring equipment functions, consumable stock ordering, arranging lab coat washes, cleaning of laboratory space
- Liaising with Laboratory Manager regarding whether samples must be repeated, pre-treated differently or abandoned
- Archiving sample material and their products
- Prioritising the various stages of the total process in relation to the numerous different batches being sampled, in collaboration with the ORAU Laboratory Manager and the capacity of the mass spectrometer system, etc
- Keeping up to date with and advise on matters relating to Good Laboratory Practice (GLP), Health and Safety, COSHH sheets and other regulations relevant to the post

## Selection criteria

### Essential

- A-levels or an equivalent technical qualification or qualification in science
- Experience of working in a chemical or biological laboratory
- Good practical skills developed through working in a chemical or biological research or commercial laboratory
- Good communication skills, including the ability to write up experimental results
- Ability to complete repetitive tasks on a daily/weekly basis in a timely manner
- Ability to troubleshoot problems with experiments and arrive at an appropriate solution
- Strong attention to detail, with the ability to organise samples and record results in a clear and organised fashion
- A flexible, collaborative, and proactive attitude to work
- Ability to organise own workload and take initiative as appropriate
- Knowledge of health and safety regulations in a laboratory environment

### Desirable

- General interest in archaeology, environmental science or chronology
- Experience of analytical chemistry techniques, in particular high-performance liquid chromatography, isotope ratio mass spectrometry or gas chromatography
- Experience in the optimisation and development of scientific protocols
- Experience supervising or training in a laboratory environment

### Pre-employment screening

#### Standard checks

If you are offered the post, the offer will be subject to standard pre-employment checks. You will be asked to provide: proof of your right-to-work in the UK; proof of your identity; and (if we haven't done so already) we will contact the referees you have nominated. You will also be asked to complete a health declaration so that you can tell us about any health conditions or disabilities for which you may need us to make appropriate adjustments.

Please read the candidate notes on the University's pre-employment screening procedures at: <https://www.jobs.ox.ac.uk/pre-employment-checks>

#### Hazard-specific / Safety-critical duties

This job includes hazards or safety-critical activities. If you are offered the post, you will be asked to complete a health questionnaire which will be assessed by our Occupational Health Service, and the offer of employment will be subject a successful outcome of this assessment.

The hazards or safety-critical duties involved are as follows:

- Regular manual handling
- Work with allergens, e.g. laboratory animals, pollen, dust, fish or insects etc.
- Work with any substance which has any of the following pictograms on their MSDS:



- Travel outside of Europe or North America on University Business

## About the University of Oxford

Welcome to the University of Oxford. We aim to lead the world in research and education for the benefit of society both in the UK and globally. Oxford's researchers engage with academic, commercial and cultural partners across the world to stimulate high-quality research and enable innovation through a broad range of social, policy and economic impacts.

We believe our strengths lie both in empowering individuals and teams to address fundamental questions of global significance, while providing all our staff with a welcoming and inclusive workplace that enables everyone to develop and do their best work. Recognising that diversity is our strength, vital for innovation and creativity, we aspire to build a truly diverse community which values and respects every individual's unique contribution.

While we have long traditions of scholarship, we are also forward-looking, creative and cutting-edge. Oxford is one of Europe's most entrepreneurial universities and we rank first in the UK for university spin-outs, and in recent years we have spun out 15-20 new companies every year. We are also recognised as leaders in support for social enterprise.

Join us and you will find a unique, democratic and international community, a great range of staff benefits and access to a vibrant array of cultural activities in the beautiful city of Oxford.

For more information, please visit [www.ox.ac.uk/about/organisation](http://www.ox.ac.uk/about/organisation).

## The School of Archaeology

The School - the main units of which are the Institute of Archaeology and the Research Laboratory for Archaeology - is made up of three main research and teaching groups: prehistoric archaeology, classical and historical archaeology, and science-based archaeology. Oxford is one of few places in the world where these three aspects of archaeology exist within the same School, something that we see as a key strength and distinguishing feature. Research in the School concentrates on the last 10,000 years; we seek, however, to set these developments against a longer-term record of environmental, biological and climatic change. In the study of historic periods -- the Bronze and Iron Age Aegean, classical Greece and Rome, the Byzantine world and early Medieval Europe -- research focuses on combining archaeological and written evidence, as well as on the study of material culture, using approaches which range from the scientific analysis of pottery, glass and metal, to those which relate more closely to art history and anthropology. Recently, the School secured funding from the Wellcome Trust Institutional Strategic Support Fund and the University of Oxford to re-equip the Henry Wellcome Ancient Biomolecules Centre.

The School is based across several buildings in the centre of Oxford, including the Institute of Archaeology in Beaumont Street, 1-2 South Parks Road and the Dyson Perrins building in the Science area.

Further information about the School of Archaeology, its component units, its staff, courses and research activities can be found on its website at [www.arch.ox.ac.uk](http://www.arch.ox.ac.uk).

## **Oxford Radiocarbon Accelerator Unit (ORAU), RLAHA, School of Archaeology**

The ORAU is one of the world's leading radiocarbon laboratories, helping pioneer much of the methodology that lies behind radiocarbon dating. Amongst several significant contributions the Unit has led the application of radiocarbon dating to archaeology, developed calibration and statistical modelling of radiocarbon dates for environmental sequences and archaeological sites (the widely used OxCal software), led novel developments in the chemical pre-treatment of samples for dating, notably bone, including latterly the development of AMS dating single amino acids and a range of other material types (eg insect remains), developed and improved the technique of AMS including the use of gas ion sources for small samples and pioneered GC/AMS for compound specific measurements. The ORAU has an international reputation for the quality of its research projects. Over the last decade projects funded by the NERC, Leverhulme Trust and others, have revolved around projects ranging from construction of older sections of the international calibration curve, dating of the Mid-Upper Palaeolithic transition and deciphering the chronology of Ancient Egypt and the Near East. The Unit is part of the Research Laboratory for Archaeology and the History of Art, which was established in 1955 and has been at the forefront of research into the application of scientific methods to the archaeological record.

For more information please visit: <https://c14.arch.ox.ac.uk>

## **The Social Sciences Division**

The School of Archaeology is a department in the Social Sciences Division, one of four academic divisions in the University, each with considerable devolved budgetary and financial authority; and responsibility for providing a broad strategic focus across its constituent disciplines. Thirteen departments, one faculty, and two cross-divisional research units come under the aegis of the division, which spans the full range of social science disciplines with links into the humanities and physical sciences. There are over 700 academic staff, 2,700 graduate students (postgraduate taught and postgraduate research), and 1,900 undergraduates working and studying in the division.

The division is established as a world-leading centre for research in the social sciences and regularly sits at the highest levels of international league tables of one form or another. It is the largest grouping of social science disciplines in the UK and it is also home to several of Oxford's most widely recognised teaching programmes, such as PPE, the BCL, the MPhils in International Relations, in Economics, and in Development Studies, and the nationally regarded PGCE. We believe that excellence in teaching and research is synergistic and remain committed to sustaining and developing the high quality of our activities in both these areas. Our departments are committed to research which develops a greater understanding of all aspects of society, from the impact of political, legal and economic systems on social and economic welfare to human rights and security. That research is disseminated through innovative graduate programmes and enhances undergraduate courses.

For more information please visit: [www.socsci.ox.ac.uk](http://www.socsci.ox.ac.uk).

## How to apply

Applications are made through our e-recruitment system and you will find all the information you need about how to apply on our Jobs website <https://www.jobs.ox.ac.uk/how-to-apply>.

Your application will be judged solely on the basis of how you demonstrate that you meet the selection criteria stated in the job description.

As part of your application you will be asked to provide details of two referees and indicate whether we can contact them now.

You will be asked to upload a CV and a supporting statement. The supporting statement must explain how you meet each of the selection criteria for the post using examples of your skills and experience. This may include experience gained in employment, education, or during career breaks (such as time out to care for dependants).

Please upload all documents **as PDF files** with your name and the document type in the filename.

All applications must be received by **midday** UK time on the closing date stated in the online advertisement.

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### Information for priority candidates

A priority candidate is a University employee who is seeking redeployment because they have been advised that they are at risk of redundancy, or on grounds of ill-health/disability. Priority candidates are issued with a redeployment letter by their employing department(s).

If you are a priority candidate, please ensure that you attach your redeployment letter to your application (or email it to the contact address on the advert if the application form used for the vacancy does not allow attachments).

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### If you need help

Application FAQs, including technical troubleshooting advice is available at: <https://staff.web.ox.ac.uk/recruitment-support-faqs>

Non-technical questions about this job should be addressed to the recruiting department directly: [hr@arch.ox.ac.uk](mailto:hr@arch.ox.ac.uk)

To return to the online application at any stage, please go to: [www.recruit.ox.ac.uk](http://www.recruit.ox.ac.uk)

Please note that you will receive an automated email from our e-recruitment system to confirm receipt of your application. **Please check your spam/junk mail** if you do not receive this email.

## Important information for candidates

### Data Privacy

Please note that any personal data submitted to the University as part of the job application process will be processed in accordance with the GDPR and related UK data protection legislation. For further information, please see the University's Privacy Notice for Job Applicants at: <https://compliance.admin.ox.ac.uk/job-applicant-privacy-policy>. The University's Policy on Data Protection is available at: <https://compliance.admin.ox.ac.uk/data-protection-policy>.

### The University's policy on retirement

The University operates an Employer Justified Retirement Age (EJRA) for very senior research posts at **grade RSIV/D35 and clinical equivalents E62 and E82**, which with effect from 1 October 2023 will be 30 September before the 70<sup>th</sup> birthday. The justification for this is explained at: <https://hr.admin.ox.ac.uk/the-ejra>.

For **existing** employees on these grades, any employment beyond the retirement age is subject to approval through the procedures: <https://hr.admin.ox.ac.uk/the-ejra>.

There is no normal or fixed age at which staff in posts at other grades have to retire. Staff at these grades may elect to retire in accordance with the rules of the applicable pension scheme, as may be amended from time to time.

### Equality of Opportunity

Entry into employment with the University and progression within employment will be determined only by personal merit and the application of criteria which are related to the duties of each particular post and the relevant salary structure. In all cases, ability to perform the job will be the primary consideration. No applicant or member of staff shall be discriminated against because of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.

## Benefits of working at the University

### Employee benefits

University employees enjoy 38 days' paid holiday, generous pension schemes, travel discounts, and a variety of professional development opportunities. Our range of other employee benefits and discounts also includes free entry to the Botanic Gardens and University colleges, and discounts at University museums. See <https://hr.admin.ox.ac.uk/staff-benefits>

### University Club and sports facilities

Membership of the University Club is free for all University staff. The University Club offers social, sporting, and hospitality facilities. Staff can also use the University Sports Centre on Iffley Road at discounted rates, including a fitness centre, powerlifting room, and swimming pool. See [www.club.ox.ac.uk](http://www.club.ox.ac.uk) and <https://www.sport.ox.ac.uk/>.

### Information for staff new to Oxford

If you are relocating to Oxfordshire from overseas or elsewhere in the UK, the University's Welcome Service website includes practical information about settling in the area, including advice on relocation, accommodation, and local schools. See <https://welcome.ox.ac.uk/>

There is also a visa loan scheme to cover the costs of UK visa applications for staff and their dependents. See <https://staffimmigration.admin.ox.ac.uk/visa-loan-scheme>

### Family-friendly benefits

With one of the most generous family leave schemes in the Higher Education sector, and a range of flexible working options, Oxford aims to be a family-friendly employer. We also subscribe to My Family Care, a service that provides practical advice and support for employees who have caring responsibilities. The service offers a free telephone advice line, and the ability to book emergency back-up care for children, adult dependents and elderly relatives. See <https://hr.admin.ox.ac.uk/my-family-care>

The University has excellent childcare services, including five University nurseries as well as University-supported places at many other private nurseries.

For full details, including how to apply and the costs, see <https://childcare.admin.ox.ac.uk/>

### Disabled staff

We are committed to supporting members of staff with disabilities or long-term health conditions. For further details, including information about how to make contact, in confidence, with the University's Staff Disability Advisor, see <https://edu.admin.ox.ac.uk/disability-support>

### Staff networks

The University has a number of staff networks including the Oxford Research Staff Society, BME staff network, LGBT+ staff network and a disabled staff network. You can find more information at <https://edu.admin.ox.ac.uk/networks>

### The University of Oxford Newcomers' Club

The University of Oxford Newcomers' Club is an organisation run by volunteers that aims to assist the partners of new staff settle into Oxford, and provides them with an opportunity to meet people and make connections in the local area. See [www.newcomers.ox.ac.uk](http://www.newcomers.ox.ac.uk).