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| **Job title** | Research Software & Knowledge Engineer (2 posts) |
| **Division** | Mathematical, Physical and Life Sciences Division |
| **Department** | Oxford e-Research Centre, Engineering Science, 7 Keble Road, Oxford. |
| **Location** | Central Oxford |
| **Grade and salary** | Grade 7: £31,604 - £38,833 per annum with a discretionary range to £42,418.00 |
| **Hours** | Full time |
| **Contract type** | Fixed year term: 2 years with a view to extend it |
| **Reporting to** | Prof. Susanna-Assunta Sansone |
| **Vacancy reference** | 132545 |
| **Additional information** |  |

### The role

In this varied, engaging and challenging role the two successful candidates will provide technical knowledge, software and knowledge engineering, as well as leadership ability to a growing portfolio of data and knowledge management projects funded by the UK Research Councils, The Wellcome Trust, EU, USA National Institute of Health (NIH) and related pharma-funded projects. The successful candidates will have the opportunity to work in multi-partners projects with and for researchers, service providers, pre-competitive informatics initiatives and data journals in the life and biomedical sciences to support and promote the data reproducibility agenda.

Based in a team of eight members, led by Prof. Sansone, the successful candidates will work closely with other research software and knowledge engineers and external collaborators, contributing towards several infrastructure projects set to deliver Findable, Accessible, Interoperable and Reusable (FAIR) data and digital assets.

The two positions require skills that will complement each other, encompassing software development and/or knowledge engineering. The posts require also both technical and social ability, along with the experience and skills to work on more than one project, plan and monitor project deadlines, communicate and work with geographically distributed end-users and other developers at collaborator sites, and assist in writing reports.

List of the current team’s projects is available at: <http://www.oerc.ox.ac.uk/people/susanna-assunta-sansone>).

### Responsibilities

* Contribute to collaborative software development using agile practices to meet project requirements, coordinate multiple aspects of work to meet deadlines.
* Develop methods, strategies and software which support projects, and incorporate ‘smart’ decision-making.
* Undertake the research necessary to identify, develop or customise software applications appropriate to the project.
* Coordinate with external contractors who are contributing to the various projects.
* Act as a source of information and advice to other members of the project on techniques and capabilities.
* Represent the project, team, and the University in collaboration meetings, conferences and at external meetings, either with other members of the group or alone.
* Work collaboratively with colleagues in other research groups, other departments, and partner institutions around the world as required by the projects.
* Actively participate in group meetings and teleconferences as required.
* Take advantage of appropriate training opportunities as they arise, in order to keep up to date with relevant skills and developments.
* Carry out other appropriate duties as may be assigned from time to time as required.
* Develop ideas for generating research income, and present detailed research proposals to senior researchers
* Collaborate in the preparation of scientific reports and journal articles and occasionally present papers and posters

## Selection criteria

The two successful candidates will have complementary skills in the broad spectrum of software development and knowledge engineering.

### Essential

* Hold a degree in information engineering, computer science, informatics, bioinformatics, related fields or equivalent experience.
* Have demonstrable experience with programming languages and research data management, preferably in the area of open science and research infrastructures.
  + Example of relevant languages are: Java, RESTful services, Python/Django/Jupyter, XML, XSD, HTML, JSON, JSON schema, Elastic-search, relational and NoSQL databases (e.g. Neo4J), OWL/RDFS, RDF, Linked Data, React, JavaScript, CSS, and AJAX.
* Ability to advise and influence the work of others.
* Strong written and verbal communications skills.
* Good organisational skills and the ability to work on multiple projects.

### Desirable

One or more of the following:

* Have experience with text mining and/or machine learning.
* Have demonstrable experience with web application frameworks and/or backend development.
* Have experience of working in multiple environments (e.g. Unix/Linux, Windows, Mac OS) and developing cross-browser applications.
* Be knowledgeable of software development lifecycle, agile programming methodologies and tools (e.g. Git, Unit/Acceptance tests, Continuous Integration).
* Have some competence with design packages such as Adobe Photoshop or Illustrator.
* Have some experience of handling data transformation, integration and synthesis from a variety of sources.
* Ability to formulate and apply strict criteria for data pipelines and curation.

As well as technical and design ability, it is essential that the individuals are able to effectively communicate ideas and concepts between different groups. The successful candidates must be able to demonstrate the ability to work well with colleagues and to collaborate with external partners, including other developers. The successful candidates must have excellent communication and interpersonal skills and enjoy working in a stimulating and international culture.

**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, and in providing all of our staff with a welcoming and inclusive workplace that supports everyone to develop and do their best work. Recognising that diversity is a great strength, and 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. Income from external research contracts in 2014/15 exceeded £522.9m and ranked first in the UK for university spin-outs, with more than 130 spin-off companies created to date. 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)

### Engineering Science Department

Engineering teaching and research takes place at Oxford in a unified Department of Engineering Science whose academic staff are committed to a common engineering foundation as well as to advanced work in their own specialities, which include most branches of the subject. We have especially strong links with computing, materials science and medicine. The Department employs about 90 academic staff (this number includes 13 statutory Professors appointed in the main branches of the discipline, and 25 other professors in the Department); in addition there are 9 Visiting Professors. There is an experienced team of teaching support staff, clerical staff and technicians. The Department has well-equipped laboratories and workshops, which together with offices, lecture theatres, library and other facilities have a net floor area of about 22,000 square metres. The Department is ranked third in the world in the latest *Times Higher Education World University Rankings*, behind Caltech and Stanford, but ahead of MIT (4th), Cambridge (5th), Princeton (6th) and Imperial (7th).

*Teaching*

We aim to admit 160-170 undergraduates per year, all of whom take a 4-year Engineering Science course leading to the MEng degree. The course is accredited at MEng level by the major engineering institutions. The syllabus has a common core extending through the first two years. Specialist options are introduced in the third year, and the fourth year includes further specialist material and a major project.

*Research*

The Department was ranked the top engineering department in the UK, as measured by overall GPA, in the Research Excellence Framework 2014 exercise. We have approximately 350 research students and about 130 Research Fellows and Postdoctoral researchers. Direct funding of research grants and contracts, from a variety of sources, amounts to an annual turnover of approximately £19m in addition to general turnover of about £18m. The research activities of the department fall into seven broad headings, though there is much overlapping in practice: Thermofluids; Materials and Mechanics; Civil and Offshore; Information, Control and Vision; Electrical and Optoelectronic; Chemical and Process; Biomedical Engineering.

For more information please visit:

<http://www.eng.ox.ac.uk/>

## The University of Oxford is a member of the [Athena SWAN Charter](http://www.athenaswan.org.uk/) and holds an institutional Bronze Athena SWAN award. The Department of Engineering Science holds a Departmental Bronze Athena award in recognition of its efforts to introduce organisational and cultural practices that promote gender equality in SET and create a better working environment for both men and women.

## Oxford e-Research Centre

## The OERC was established in 2006 within the context of the UK e-Science Programme, which ran from 2001-2008. It built on the traditional e-Science base to embrace the changing research landscape. It currently has approximately 50 staff members including roughly 40 researchers, delivering a £11m portfolio of research and development projects funded from a broad range of sources, including UK research councils, Innovate UK, industry, European Commission, and charitable foundations. Expertise in digital methods enables the Centre to work across traditional disciplinary boundaries and bring together research capabilities. The research activities cut across the sciences, social sciences, arts and humanities, and medicine. To achieve this the Centre has established successful partnerships and collaborations across the University, as well as national and international links although the centre is now based within the Department of Engineering Science. The Centre’s core research expertise is in scientific computing, energy & environmental ICT, volunteer computing, advanced e-Infrastructure, cloud computing, Internet of Things, cybersecurity, life science data management & publication, digital humanities, digital social research, citizen science, language modelling, and visualisation.

**The Mathematical, Physical, and Life Sciences Division**

The Mathematical, Physical, and Life Sciences (MPLS) Division is one of the four academic divisions of the University. In the results of the six-yearly UK-wide assessment of university research, REF2014, the MPLS division received the highest overall grade point average (GPA) and the highest GPA for outputs. We received the highest proportion of 4\* outputs, and the highest proportion of 4\* activity overall. More than 50 per cent of MPLS activity was assessed as world leading.

The MPLS Division's 10 departments and 3 interdisciplinary units span the full spectrum of the mathematical, computational, physical, engineering and life sciences, and undertake both fundamental research and cutting-edge applied work. Our research addresses major societal and technological challenges and is increasingly focused on key interdisciplinary issues. MPLS is proud to be the home of some of the most creative and innovative scientific thinkers and leaders working in academe.  We have a strong tradition of attracting and nurturing the very best early career researchers who regularly secure prestigious fellowships

We have around 6,000 students and play a major role in training the next generation of leading scientists. Oxford's international reputation for excellence in teaching is reflected in its position at the top of the major league tables and subject assessments.

MPLS is dedicated to bringing the wonder and potential of science to the attention of audiences far beyond the world of academia. We have a strong commitment to supporting public engagement in science through initiatives including the Oxford Sparks portal (<http://www.oxfordsparks.net/>) and a large variety of outreach activities. We also endeavour to bring the potential of our scientific efforts forward for practical and beneficial application to the real world and our desire is to link our best scientific minds with industry and public policy makers.

For more information about the MPLS division, please visit: <http://www.mpls.ox.ac.uk/>

## How to apply

Before submitting an application, you may find it helpful to read the ‘Tips on applying for a job at the University of Oxford’ document, at [www.ox.ac.uk/about/jobs/supportandtechnical/](http://www.ox.ac.uk/about/jobs/supportandtechnical/).

If you would like to apply, click on the **Apply Now** button on the ‘Job Details’ page and follow the on-screen instructions to register as a new user or log-in if you have applied previously. You will then be required to complete a number of screens with your application details, relating to your skills and experience. When prompted, please provide details of **two** referees (one of which must be your current or most recent employer/supervisor) and indicate whether we can contact them at this stage. You will also be required to upload a supporting statement which explains how you meet the selection criteria for the post.

**Supporting Statement**

The supporting statement should describe your skills and experience relevant to the post. These may have been gained through employment, education/training, voluntary/community work or you may have taken time away from these activities in order to raise a family, care for a dependent, or travel for example. Your application will be judged solely on the basis of how you demonstrate that that you meet the selection criteria outlined above and we are happy to consider evidence of transferable skills or experience which you may have gained outside the context of paid employment or education. *We will short list for interview those whose applications best demonstrate that the applicant meets the selection criteria, so it is important that you use your supporting statement to explain clearly, point by point, how you match them.* Please note that a copy of a CV will not be accepted as substitute for a supporting statement and that inclusion of the statement is a mandatory step in the online application process.

**References**

Please give the details of people who can provide a reference for you. If you have previously been employed, your referees should be people who have managed you, and at least one of them should be your formal line manager in your most recent or current job. Otherwise they may be people who have supervised you in a recent college, school, or voluntary experience. It is helpful if you can tell us briefly how each referee knows you (e.g. ‘line manager’, ‘college tutor’). Your referees should not be related to you.

We will assume that we may approach them at any stage unless you tell us otherwise. If you wish us to ask for your permission before approaching a particular referee, or to contact them only under certain circumstances (for example, if you are called to interview) you must state this explicitly alongside the details of the relevant referee(s).

If you currently work, or have previously worked, for the University of Oxford, we will also take up a reference from the head or administrator of the previous employing department. This will be in addition to taking references from the referees you have provided.

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

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

**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 departments.*

*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)*

Should you experience any difficulties using the online application system, please email [recruitment.support@admin.ox.ac.uk](mailto:recruitment.support@admin.ox.ac.uk). Further help and support is available from [www.ox.ac.uk/about\_the\_university/jobs/support/](http://www.ox.ac.uk/about_the_university/jobs/support/). 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 be notified of the progress of your application by automatic emails from our e-recruitment system. **Please check your spam/junk mail** regularly to ensure that you receive all emails.

**Important information for candidates**

**Pre-employment screening**

Please note that the appointment of the successful candidate will be subject to standard pre-employment screening, as applicable to the post. This will include right-to-work, proof of identity and references. We advise all applicants to read the candidate notes on the University’s pre-employment screening procedures, found at:

[www.ox.ac.uk/about/jobs/preemploymentscreening/](http://www.ox.ac.uk/about/jobs/preemploymentscreening/).

**The University’s policy on retirement**

The University operates an Employer Justified Retirement Age (EJRA) for all academic posts and some academic-related posts. From 1 October 2017, the University has adopted an EJRA of 30 September before the 69th birthday for all academic and academic-related staff in posts at grade 8 and above. The justification for this is explained at: [www.admin.ox.ac.uk/personnel/end/retirement/revisedejra/revaim/](http://www.admin.ox.ac.uk/personnel/end/retirement/revisedejra/revaim/).

For **existing** employees, any employment beyond the retirement age is subject to approval through the procedures: [www.admin.ox.ac.uk/personnel/end/retirement/revisedejra/revproc/](http://www.admin.ox.ac.uk/personnel/end/retirement/revisedejra/revproc/)

Form 1 October 2017, there is no normal or fixed age at which staff in posts at **grades 1–7** 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**

**University Club and sports facilities**

The University Club provides social, sporting and hospitality facilities. It incorporates a bar, café and sporting facilities, including a gym. 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 [www.sport.ox.ac.uk/oxford-university-sports-facilities](http://www.sport.ox.ac.uk/oxford-university-sports-facilities).

**Information for international staff (or those relocating from another part of the UK)**

If you are relocating to Oxfordshire from overseas, or elsewhere in the UK, the University's International Staff website includes practical information related to moving to and settling in Oxford such as advice on immigration, relocation, accommodation, or registering with a doctor.

See: [www.internationalstaffwelcome.admin.ox.ac.uk/](http://www.internationalstaffwelcome.admin.ox.ac.uk/)

**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 to settle into Oxford and to provide them with an opportunity to meet people in the area. See [www.newcomers.ox.ac.uk/](http://www.newcomers.ox.ac.uk/)

**Childcare**

The University has excellent childcare services with 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 [www.admin.ox.ac.uk/childcare](http://www.admin.ox.ac.uk/childcare/).

**Family-friendly benefits**

The University subscribes to My Family Care ([www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/](http://www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/mfc/)) and staff are eligible to register for emergency back-up childcare and adultcare services, a 'speak to an expert' phone line and a wide range of guides and webinars through a website called the Work + Family space.

**Disabled staff**

We are committed to supporting members of staff with disabilities or long-term health conditions. Please visit [www.admin.ox.ac.uk/eop/disab/staff](http://www.admin.ox.ac.uk/eop/disab/staff) for further details including information about how to make contact, in confidence, with the University’s Staff Disability Advisor.

**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 [www.admin.ox.ac.uk/eop/inpractice/networks/](http://www.admin.ox.ac.uk/eop/inpractice/networks/)

**Other benefits**

Staff can enjoy a range of other benefits such as free visitor access to the University’s colleges and the Botanic Gardens as well as a range of discounts.

See [www.admin.ox.ac.uk/personnel/staffinfo/benefits](http://www.admin.ox.ac.uk/personnel/staffinfo/benefits)