Job title	Senior Java Software Engineer - Emerging Epidemics and Drug Resistance (IDDO)
Division	Medical Sciences
Department	Centre for Tropical Medicine and Global Health, Nuffield Department of Clinical Medicine (NDM)
Location	Nuffield Department of Clinical Medicine Research Building, Old Road Campus, Oxford
Grade and salary	Grade 8: £39,324 - £46,924 per annum or Grade 7: £31,076 - £38,183 p.a. depending on experience
Hours	Full time
Contract type	Fixed Term - One year in the first instance
Reporting to	IDDO Head of Informatics
Vacancy reference	129876

The role

IDDO research depends on an innovative team of software engineers who are responsible for developing many of the programme's key software systems, including online data exploration and visualisation tools like WWARN Explorer (www.wwarn.org/explorer), and secure online data submission and repository systems (https://www.wwarn.org/tracking-resistance/informatics). A Senior Software Engineer with extensive experience in web application development and Java programming, and with an interest in scientific applications of computing, is sought to join the existing team of software engineers.

You will have a strong understanding of software and database design principles, and will provide a considerable level of technical expertise to lead and contribute to software development across the programme. The role will primarily involve development of systems for web-based publication and visualisation of scientific data, and systems to support the transformation, curation and analysis of scientific data.

You will be involved in all stages of the software development lifecycle, from requirements analysis, design and implementation, through to testing and maintenance. You may also be required to lead software development projects, to manage the contributions of other developers

in the team, to come up with innovative solutions to complex problems, and to drive concepts through to practical realisation.

Java is the main programming language currently in use, but applicants will require a flexible approach and an ability to learn new languages and techniques.

You will be based at the University of Oxford, Old Road Campus, and will report to the IDDO Head of Informatics. You will act as a project leader working closely with other senior staff to ensure the delivery of agreed activities that support IDDO's strategic, scientific and operational goals. You may be required to give presentations at conferences and other relevant meetings or workshops. The opportunity to be involved with public engagement activities and provide teaching or training will be available.

You will also work closely with data managers and contributors from collaborator organisations, and liaise closely with the IDDO Management, Head of Statistics, Data Management Team, Informatics Group, Head of Communications & Advocacy, and IDDO Senior Scientists.

Responsibilities/duties

- Design and implement multi-tier web applications to support IDDO's scientific needs.
- Software requirements elicitation, analysis and specification.
- Software engineering from database design and data access, through to application logic and user interface.
- Software testing; use of testing strategies at multiple levels, including unit-test-first programming as well as integration testing.
- Software product maintenance, including tracking bugs and issues, managing updates and product releases.
- Monitor the progression of projects, identifying bottlenecks and using your initiative to create workable and sound solutions to allow project success.
- Design of interactive and novel user interfaces for exploration and analysis of complex scientific data.
- Work with scientists and statisticians to understand data analysis algorithms and develop robust implementations that can scale to large numbers of datasets.
- Maintain, employ and implement software and systems (i) thorough knowledge of an area of informatics expertise relevant to IDDO and (ii) awareness of the latest technology pertinent in the field.
- Define software engineering and scientific strategy in collaboration with senior members of IDDO informatics and other teams.
- Provide regular updates and reports to IDDO staff and management team.
- Present IDDO's activities and findings at scientific meetings.

Selection criteria

Essential

- A Bachelor's degree in a related discipline such as computer science or equivalent experience
- Highly competent and experienced in Java programming
- Comfortable programming in several different programming languages and capable of learning new languages
- Highly competent and experienced in web application programming
- Experience of relational database design, competent with SQL
- Proficient in object-oriented programming (OOP) techniques
- Experience with software architecture and design techniques
- Able to demonstrate an ability to communicate ideas, expertise, results and reports to colleagues through effective communication skills.
- Ability to develop innovative solutions to complex problems.
- Ability to work closely with users on a major piece of functionality in all phases of the software development life cycle; completing the analysis, design, implementation and testing in a timely and effective way.
- Experience of agile software development methodologies
- A working knowledge of development tools such as: Git, Jenkins and Maven
- Excellent team-working skills; experience of working in teams on complex problems.
- Excellent interpersonal skills, with the ability work with people at all levels of seniority in the University
- An interest in the life sciences and/or public health.

Desirable

- Experience with Google Web Toolkit (GWT)
- Experience with R
- Experience with relational data access technology and object-relational mapping, e.g., Hibernate
- Experience programming for scientific applications. Experience with complex data analysis and visualisation
- Experience of dealing with heterogeneous data, and aggregating and integrating data from multiple sources
- Experience of test-driven software development
- Experience of working in a team-orientated, collaborative environment.
- Experience of project management or acting as scrum master in an agile software development methodologyExperience of working in a geographically distributed team

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

Medical Sciences

The Medical Sciences Division is an internationally recognized centre of excellence for biomedical and clinical research and teaching. We are the largest academic division in the University of Oxford

World-leading programmes, housed in state-of-the-art facilities, cover the full range of scientific endeavour from the molecule to the population. With our NHS partners we also foster the highest possible standards in patient care.

For more information please visit: www.medsci.ox.ac.uk

Nuffield Department of Clinical Medicine (NDM)

The Nuffield Department of Clinical Medicine (NDM) is one of the largest departments of the University of Oxford and is part of the Medical Sciences Division, with responsibility for a significant part of the teaching of clinical students within the Medical School. The Department also has a substantial research programme which requires high quality administrative management.

NDM has significant financial turnover and complexity, resulting from its diverse research portfolio, its geographical spread and its close links with NHS funding and strategic teams involved in the development and delivery of increasingly integrated clinical research platforms.

For more information please visit: http://www.ndm.ox.ac.uk/home

……..fostering your career in science.

The University of Oxford is a member of the Athena SWAN Charter and holds an institutional Bronze Athena SWAN award. The Nuffield Department of Medicine holds a Silver Athena SWAN 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.

For more information please visit: www.ndm.ox.ac.uk/working-for-ndm/aboutndmatheneswan/

Tropical Medicine and Global Health

The Centre for Tropical Medicine and Global Health is a world leading Centre within the Nuffield Department of Clinical Medicine, University of Oxford, comprised of research groups who are permanently based in Africa and Asia as well as across two sites in Oxford. Our research ranges from clinical studies to behavioral sciences, with capacity building integral to all of our activities.

Our research is conducted at three Wellcome Trust Major Overseas Programmes in Kenya, Thailand and Viet Nam as well as a growing Centre in Oxford. The Centre for Tropical Medicine and Global Health also brings together a number of sister groups in Laos, Tanzania, Indonesia, the Democratic Republic of Congo, Myanmar, Cambodia and Nepal, as well as multiple collaborators around the world.

Tackling infectious diseases, which kill many millions of people every year, is one of the greatest challenges of the 21st century. We are researching solutions to the increasingly urgent problems these diseases cause.

The Centre's annual turnover is in excess of £48m per annum with over 100 externally funded research grants and donations.

For more information please visit: http://www.tropicalmedicine.ox.ac.uk/home

Infectious Diseases Data Observatory (IDDO)

Centre for Tropical Medicine and Global Health

The Infectious Diseases Data Observatory (IDDO) hosts a collection of data-sharing platforms, bringing together clinical, pharmacology, molecular, *in vitro* and medicine quality data for a range of infectious diseases. The aim of IDDO is to facilitate the sharing of data and research protocols at the earliest opportunity to bolster collaboration among the public health and research communities, and ensure that researchers are prepared to implement research to advance science expeditiously in the context of neglected tropical diseases and the next infectious disease outbreak.

The IDDO platforms build upon the success of the WorldWide Antimalarial Resistance Network (WWARN). WWARN has had considerable success, both in establishing ethical data sharing systems that conform to international rules on patient privacy and protection, and in engaging the malaria research community; IDDO is adapting and developing these systems and processes for other infectious diseases, using WWARN as a prototype.

IDDO is building upon the current WWARN structure and programmes to:
- Establish an accessible and trusted infectious disease observatory which acts as the central repository for data that contributes to the evidence base of understanding selected infectious diseases and their treatment, allowing inter- and cross-disciplinary analysis of global data;
- Ensure the long-term security and accessibility of data so that data can be productively used in a collaborative platform for modelling and analysis by the larger scientific community;
- Gather and share best methodological clinical research practices, to improve data capture, management and integration of clinical, pharmacological/pharmacometric and laboratory-based studies;
- Develop tools to facilitate the use of these standards in prospective clinical trials in infectious diseases;
- Engage with the scientific community to implement and evolve these tools as the gold standard within and across infectious disease fields;
- Develop policies to establish fair conditions of use, and mechanisms to ensure that the contributions of those generating the data are properly recognised, so that data are made available for effective and responsible data sharing.

The IDDO group, based in the Centre for Tropical Medicine and Global Health, works collaboratively with researchers based in endemic countries to support the equitable data sharing that is key to this engagement, and to draw upon the expertise of specific disease experts to support scientific enquiry. IDDO also acts as a centralised coordinating body for data-sharing within the Centre for Tropical Medicine and Global Health, and works with other relevant groups at the University of Oxford.

IDDO platforms currently include the Worldwide Antimalarial Resistance Network (WWARN), and the Ebola Data Sharing Platform, as well as tools and resources on non-malarial febrile illnesses and medicine quality. Additional platforms are in development, and it is expected that other neglected tropical diseases, viral haemorrhagic fevers, and severe acute respiratory infections will follow.

For more information please visit: www.iddo.org

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
https://www.ox.ac.uk/about/jobs/professionalandmanagement/

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. Please provide details of two referees and indicate whether we can contact them now.

You will also be asked to upload a CV and a supporting statement. The supporting statement should explain how you meet 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).

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

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. Further help and support is available from
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.

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/.

The University's policy on retirement

The University operates an employer justified retirement age for all academic and academic-related posts (grade 6 and above), for which the retirement date is the 30 September immediately preceding the 68th birthday. The justification for this is explained at:
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/

There is no normal or fixed age at which **support staff** in posts at **grades 1–5** have to retire. Support staff may retire once they reach the minimum pension age stipulated in the Rules of the pension scheme to which they belong.

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

Training and Development

A range of training and development opportunities are available at the University. Further details can be found at www.ox.ac.uk/staff/working_at_oxford/training_development/index.html.

For research staff only: Support for Research Staff

There is a particularly wide range of support for career development for research staff. Please visit: www.ox.ac.uk/research/support-researchers to find out more.

Pensions

The University offers generous occupational pension schemes for eligible staff members. Further details can be found at www.admin.ox.ac.uk/finance/epp/pensions/pensionspolicy/.

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

A wealth of information is available on the University's International Staff website for staff who are relocating to Oxford from abroad, at www.admin.ox.ac.uk/personnel/staffinfo/international/.

The University of Oxford Newcomers' Club

The Newcomers' Club is aimed at helping partners of newly-arrived visiting scholars, graduate students and academic members of the University to settle in and to meet people in Oxford.

Transport schemes

The University offers a range of travel schemes and public transport travel discounts to staff. Full details are available at www.admin.ox.ac.uk/estates/ourservices/travel/.

University Club and University Sports Facilities

The University Club provides social, sporting and hospitality facilities. It incorporates a Club bar, a cafe and sporting facilities, including a gym. See www.club.ox.ac.uk for all further details.

University staff can use the University Sports Centre at discounted rates, and have the chance to join sports clubs. Please visit www.sport.ox.ac.uk/oxford-university-sports-facilities.

Childcare and Childcare Vouchers

The University offers quality childcare provision services at affordable prices to its employees. For full details about the services offered, please visit www.admin.ox.ac.uk/childcare/. **NB: Due to the high demand for the University's nursery places there is a long waiting list.**

The University also offers nursery fee payment schemes to eligible staff as an opportunity to save tax and national insurance on childcare costs. Please visit www.admin.ox.ac.uk/childcare.

Disabled staff

The University is committed to supporting members of staff with a disability or long-term health condition and has a dedicated Staff Disability Advisor. Please visit www.admin.ox.ac.uk/eop/disab/staff for further details.

BUPA - Eduhealth

Bupa Eduhealth Essentials private medical insurance offers special rates for University of Oxford staff and their families www.eduhealth.co.uk/mini-site/.

All other benefits

For other benefits, such as free entry to colleges, the Botanic Gardens and staff discounts offered by third party companies, please see www.admin.ox.ac.uk/personnel/staffinfo/benefits/.