NDM Research Building

Job description and selection criteria

Job title	**Postdoctoral Research Scientist in Cell Based High Throughput Screening for Neurodegeneration**
Division	**Medical Sciences**
Department	**Nuffield Department of Medicine (NDM)**
Location	**Target Discovery Institute, Alzheimer's Research UK Oxford Drug Discovery Institute, NDM Research Building, Old Rd Campus, Headington, Oxford**
Grade and salary	**Grade 7: £30,738 - £37,768 per annum**
Hours	**Full time**
Contract type	**Fixed-Term for 2 years with the possibility of extension**
Reporting to	**Daniel Ebner, Head of Cellular Screening Facility and Elena Di Daniel, Head of Biology, Oxford Drug Discovery Institute**
Vacancy reference	**128765**

Introduction

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.

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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. Income from external research contracts in 2014/15 exceeded £522.9m and we rank first in the UK for university spin-outs, with more than 130 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)… fostering your career in science

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.

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

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The Nuffield Department of Clinical Medicine has been presented with a Departmental Athena SWAN Silver award in recognition of the commitment made to promote gender equality through our organisational and cultural practices and our efforts to improve the working environment for both men and women. For more information please see our Departmental Athena SWAN pages: http://www.ndm.ox.ac.uk/athena-swan.

The NDM Research Building

Situated on the Old Road Campus this new building represents the latest phase in continued development of the Medical Research Campus. This £22M new building allows the development of the Target Discovery Institute and expansion of existing research groups of NDM with research synergies. The building is 5,300 sq m (GIA) laboratory and office space housing some 160 research and support staff.

The NDM Research Building constructed for the Nuffield Department of Medicine includes many academic partners including the Department of Cardiovascular Medicine and BHF Centre of Research Excellence (BHF Centre for Cardiovascular Target Discovery), Department of Radiation Oncology and Biology, Ludwig Cancer Institute, Kennedy Institute of Rheumatology, Structural Genomics Consortium and the Department of Chemistry. 3

Research facilities include high-throughput cell-based screening facility, cell-based assay development program, proteomics facility, medicinal chemistry and chemical biology programs and containment level three laboratories. There is support space for the scientists including a 90 seat seminar room, advanced IT and AV infrastructure and additional meeting rooms and break out spaces.

Target Discovery Institute (TDI)

This is a new initiative (a >£20M program) by the University of Oxford dedicated to the accurate ascertainment and initial validation of drug targets, and is directed by Professor Sir Peter Ratcliffe FRS, Head Nuffield Department of Medicine.
Partners in the Target Discovery Institute include;

- Nuffield Department of Medicine
- Department of Cardiovascular Medicine and BHF Centre of Research Excellence (BHF Centre for Cardiovascular Target Discovery)
- Department of Radiation Oncology and Biology
- Ludwig Cancer Institute
- Kennedy Institute of Rheumatology

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- Structural Genomics Consortium
- Department of Chemistry.

The Target Discovery Institute is based in the Nuffield Department of Medicine Research Building (NDMRB). The components include the following:

- High-throughput cell-based screening facility (managed by Daniel Ebner, making available liquid handling robotics, multimodal plate readers, high-content screening microscopy, core siRNA, shRNA and small molecule libraries)
- Proteomics facility (Benedikt Kessler)
- Chemical Biology (Kilian Huber)
- Medicinal Chemistry (Paul Brennan)
- Computational Imaging (Jens Rittscher)

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

Alzheimer's Research UK Oxford Drug Discovery Institute

The Alzheimer's Research UK Oxford Drug Discovery Institute (Oxford DDI) is part of a newly formed, world-class, network of three drug discovery units sponsored by Alzheimer's Research UK. This initiative is based on juxtaposing high quality drug discovery expertise alongside academic scientists possessing deep understanding of patients, disease mechanisms and model systems. The intent is to translate the cutting edge academic science into drug discovery and prosecute projects from target to lead status, and beyond. The focus will be on novel targets in the dementia therapeutic area.

Located in the Nuffield Department of Medicine Research Building on the Old Road Campus, Headington, Oxford, the Oxford DDI is ideally placed. It is co-located within the Target Discovery Institute alongside the Oxford branch of the UK-National Phenotypic Screening Centre and is in close proximity to the Structural Genomics Consortium, other Oxford University research departments and major hospitals. A wide range of collaborative interactions have been initiated, upon which the Oxford DDI's activities will be built and expanded. http://aruk-oddi.medsci.ox.ac.uk/home

The Oxford DDI is led by the CSO, Dr John Davis and Prof. Simon Lovestone, the Lead Academic Scientist. The unit will contain up to thirty scientists, including both biologists and medicinal chemists, reporting to a Head of Biology and Head of Chemistry, respectively.

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About the National Phenotypic Screening Centre

NPSC is a world-class facility for automated, high content, phenotypic screening. The goal of the NPSC is to bring advances in industrial drug screening capabilities to academic investigators. NPSC is a partnership between the Universities of Dundee, Edinburgh and Oxford. The project was established with an £8M infrastructure award from the Scottish Funding Council to the Scottish Universities Life Science Alliance (SULSA). NPSC operates as an open centre and aims to collaborate globally to develop the physiologically-relevant assays from biologists who are keen to achieve impact by seeing their best research ideas translated from the lab into the drug discovery pipeline. www.npsc.ac.uk

About Phenotypic Screening

A phenotype is one or more observable features or traits that report changes in a biological system or its reaction its environment. Simply-put, phenotypic screening is the systematic identification of agents (such as small molecules, biological molecules or genetic mutations) that alter a phenotype.
Phenotypic changes underlay most diseases, whether this is a cancer cell undergoing uncontrolled cell division, a motor neuron that fails to connect to muscle tissue, or the complex defects seen in the brain of a patient with Alzheimer's disease
Phenotypic screening uses a range of techniques to measure changes in biological systems, the backbone of phenotypic screening relies on exploiting automated, high-content microscopy. High-content screening technologies are used to identify molecules with a particular biological effect in cell-based or tissue-based assays. High content phenotypic profiling allows a systems level approach to drug discovery that embraces the complexity of disease biological. Phenotypic screening approaches show promise in potentially improving success rates of drug development.

Job description

Overview of the role

We are seeking a Research Scientist who will be responsible for developing cellular assays relevant to neurodegeneration, scaling them down to microtiter format and run phenotypic screenings using CRISPR, si/shRNA or small molecule compound libraries. You will be a highly organized and productive member of a growing high throughput screening team aiming to manage and deliver multiple projects per year as well as of the ODDI aiming to develop novel therapeutics for the treatment of dementia. We actively encourage scientists

from all disease backgrounds, but with the necessary assay development and phenotypic screening experience to apply.

Responsibilities/duties

- The candidate will report to the Head of Cellular Screening, TDI as well as to the Head of Biology of the ODDI Institute, which are co-located in the TDI. She/he will work closely with other principal investigators in the TDI, NPSC and in the ODDI as well as with academic collaborators..
- Responsible for developing and running various assays for high content target validation and compound screening using a GE InCell6000 or equivalent. Various cell lines, iPSC, animal or patient derived cells will be used.
- Responsible for developing and running various assays on additional instrumentation including plate readers, qPCR and FACS if necessary.
- Lead projects, taking responsibility for suggesting, constructing and executing a project plan in conjunction with other members of the Cell Screening Facility/ODDI or collaborators.
- Actively investigate and implement novel assay design relevant to cell biology across neurodegeneration, high content screening technologies, and methodologies to advance drug discovery.
- Share laboratory duties to support communal equipment/areas in shared laboratories and to adhere and improve the safe working practices in the laboratories.
- Analysis of data, deposition into databases and record keeping in laboratory lab notebooks.
- Reporting of findings, interpretations and conclusions at team meetings and larger project meetings.
- Present the work of the TDI/ODDI to both internal and external audiences through conferences and manuscripts, provide facility tours and provide educational outreach in collaboration with the NDM Outreach programs.

Hazard-specific / Safety-critical duties:

This job includes the following hazards or safety-critical activities which will require successful pre-employment health screening through our Occupational Health Service before the successful candidate will be allowed to start work:

- Working with blood, human products and human tissues
- Work with allergens, Eg laboratory animals, pollen, dust, fish or insects etc.

- Work with any substance which has any of the following pictograms on their MSDS:

Selection criteria

Essential

- Possess a PhD or equivalent expertise, with considerable practical laboratory training and technical expertise in all aspects of high content imaging cellular techniques with particular emphasis on developing and validating cell based assays.
- Expertise in cell culture of cell lines and primary neuronal/glial cells
- Knowledge of high content imaging (Perkin Elmer Operetta and GE InCell 6000 or equivalent) to obtain and analyse image based high throughput imaging data.
- Experience using microscopy/high content image analysis software including, GE, Perkin Elmer, CellProfiler and ImageJ.
- Experience developing or using additional high throughput readouts including qPCR, FACS and plate readers for cell based assays.
- Proficient in data analysis, interpretation and presentation of large data sets.
- Proven record of initiating or contributing to a variety of high content imaging projects with demonstrable outcomes.
- Strong interpersonal skills and ability to communicate technical information, both written and orally, in a readily understood manner, with colleagues at all levels.
- Experience in managing several complex projects simultaneously and meticulous record keeping skill.
- A track record of relevant scientific collaboration with research scientists and operations colleagues.
- Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings.
- Established record of authorship and some experience of securing grant awards for research projects as a primary applicant / co-applicant or with academic partners through project directed pilot data production.

Desirable

- Experience with human induced pluripotent stem cells
- Experience with high throughput liquid handlers
- Experience with siRNA, shRNA, cDNA and CRISPR techniques
- Knowledge of biochemical compound screening

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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/research/

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 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).

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

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.

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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.

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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.**

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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/.