Oxford Anatomy & Physiology ranked #1 in QS World Rankings by subject 2017, 2018, 2020, 2021, 2022, 2023, 2024 and 2025

Job description and Selection Criteria

Job title	**Postdoctoral Research Scientist- Mitochondrial Cardiovascular Biology**
Division	**Medical Sciences Division**
Department	**Physiology, Anatomy & Genetics**
Location	**Sherrington Building, Parks Road, Oxford, OX1 3PT**
Grade and salary	**Grade 7: £38, 674- £46, 913 per annum**
Hours	**Full time**
Contract type	**Fixed-term for four years**
Reporting to	**Liron Boyman**
Vacancy reference	**AV25014 HRIS: 179774**

Research topic	**Mitochondrial Cardiovascular Biology**
Principal Investigator / supervisor	**Liron Boyman**
Project team	Boyman Group
Project web site	https://www.dpag.ox.ac.uk/research/boyman-group
Funding partner	The funds supporting this research project are provided by British Heart Foundation.
Recent publications	https://www.ncbi.nlm.nih.gov/myncbi/liron.boyman.1/bibliography/public/

The role

The Boyman Group is seeking a highly motivated Postdoctoral Research Scientist to take a central role in pioneering research on the role of mitochondria in the development of heart disease. This position is

funded by the British Heart Foundation and offers an exciting opportunity to explore new strategies to augment mitochondrial energy supply in the failing heart.

You will play a central role in advancing our understanding of mitochondrial energy regulation in the failing heart. Building on recent publications from our group—such as novel subcellular Ca^{2+} and cAMP signaling pathways that control mitochondrial energy production—you will help extend this research by:

- Investigating molecular mechanisms of mitochondrial signaling in cardiomyocytes.
- Identifying and validating potential drug targets within these pathways.
- Evaluating therapeutic strategies using genetically modified mouse models of heart disease.

Our team has developed state-of-the-art tools for high spatiotemporal imaging of electrically active cardiomyocytes and their mitochondria, high-throughput metabolic assays, and unique molecular biology applications, providing a solid foundation for this research.

This position provides a unique platform to develop expertise within a vibrant, collaborative environment at the Department of Physiology, Anatomy and Genetics (DPAG), Oxford University. You will work alongside leading experts in mitochondrial metabolism, and engaging with postdoctoral scientists, PhD candidates, and research staff.

You will gain experience across multiple scales of cardiac research, from in vivo phenotyping of genetically modified animal models to molecular and super-resolution imaging techniques at the cellular and subcellular levels.

Responsibilities

- Manage own academic research and administrative activities. This involves small scale project management, to co-ordinate multiple aspects of work to meet deadlines
- Adapt existing and develop new scientific techniques and experimental protocols
- Test hypotheses and analyse scientific data from a variety of sources, reviewing and refining working hypotheses as appropriate
- Contribute ideas for new research projects
- 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.
- Use specialist scientific equipment in a laboratory environment
- Act as a source of information and advice to other members of the group on scientific protocols and experimental techniques.
- Working with lab animals, tissues, and cells.
- Represent the research group at external meetings/seminars, either with other members of the group or alone.
- Carry out collaborative projects with colleagues in partner institutions, and research groups.

Other Duties

- Participate in a regular Annual Review.
- Undertake any necessary training identified and continuing professional development in order to stay up-to-date professionally including annual Information Governance training.
- Comply with Health and safety regulations.
- Comply with the policies and procedures set out in the Handbook for University Support staff (or) Academic-Related staff.
- Any other duties that may be required from time to time commensurate with the grade of the job.

This job description should be regarded only as a guide to the duties required and is not intended to be definitive. It may be reviewed in the light of a change in circumstances following consultation with the post holder. The Job Description does not form part of the contract.
Please note that the appointment of the successful candidate will be subject to standard compulsory pre-employment screening, such as right to work checks.

Selection criteria

Essential selection criteria

- Hold, or be close to completion of, a PhD/DPhil in a relevant field (e.g., Molecular Biology, Biochemistry, Physiology, Biophysics, Cardiology, or related areas), together with relevant experience
- Possess sufficient specialist knowledge in the discipline to work within established research programmes
- Ability to manage own academic research and associated activities
- Previous experience of contributing to publications/presentations
- Ability to contribute ideas for new research projects and research income generation
- Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings.
- Working with lab animals, tissues, and cells
- Commitment to engaging with, and promoting awareness of, equality, diversity and inclusion and embedding these into your work.

Desirable selection criteria

- Experience of independently managing a discrete area of a research project
- Experience of actively collaborating in the development of research articles for publication
- Demonstrated experience in designing and executing experiments, with a strong background in cell or molecular biology techniques
- Experience or demonstrated interest in mitochondrial research, heart disease, or related biomedical fields is desirable but not essential
- Proficiency in core laboratory techniques relevant to molecular and cellular biology

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:

- Working at heights
- Lone Working

- Regular manual handling
- Open food handling
- Working with category 3b or 4 lasers (laser safety class)
- 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:

Additional security pre-employment checks

This job includes duties that will require additional security pre-employment checks:

- A satisfactory basic Disclosure and Barring Service check
- University security screening (eg identity checks)

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.

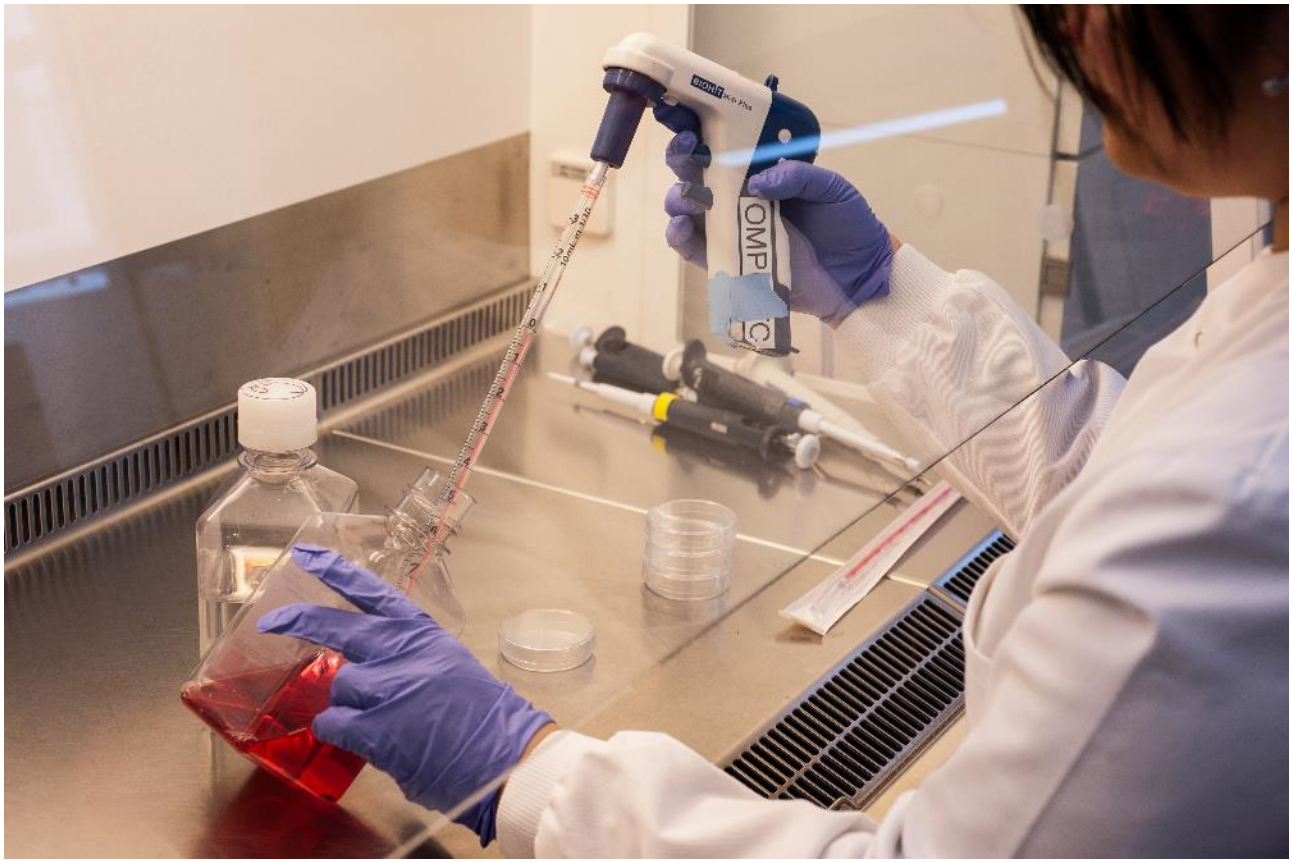
While we have long traditions of scholarship, we are also forward-looking, creative and cutting-edge. Oxford is one of Europe's most entrepreneurial universities and we rank first in the UK for university spin-outs, and in recent years we have spun out 15-20 new companies every year. We are also recognised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

The Department of Physiology, Anatomy and Genetics

Oxford Anatomy and Physiology ranked #1 in the QS World University Rankings by subject 2017, 2018, 2020 2021, 2022, 2023, 2024 and 2025

Our mission is empowering discovery in the physiological sciences to improve health and educate the next generation of doctors and biomedical scientists. For more information, please visit www.dpag.ox.ac.uk



The Department of Physiology, Anatomy and Genetics holds a silver Athena Swan award to recognise advancement of gender equality: representation, progression and success for all.

The Department is a large pre-clinical department within the Medical Sciences Division, with ca. 500 staff and students. It has a world-class reputation in both its research and teaching. The Department was part of the University of Oxford's Biological Sciences submission to the Research Excellence Framework 2021 that was rated top for its world-leading research. Moreover, Oxford's Anatomy and Physiology has been ranked number one in the QS World University Rankings for the past six years. Please see the 2023/2024 annual report: Annual Report 2023-24 published — Department of Physiology, Anatomy and Genetics (DPAG) (ox.ac.uk)

Information about faculty in the Department

Professor David Paterson FRSNZ is the Head of Department. There are five named Professors: the Dr Lee's Professor of Anatomy (vacant) the Waynflete Professor of Physiology (Professor Gero Miesenböck, FRS FMedSci), the BHF Professor of Regenerative Medicine, Development and Reproduction (Professor Paul Riley, FMedSci), the Krebs Chair in Physiological Metabolism (vacant) and the John Black Professor of Bionanoscience (Professor Dame Molly Stevens, FREng, FRS). Other appointments include four Research Professors (Professor Dame Frances Ashcroft, FRS; Emeritus Professor Dame Kay Davies CBE, FRS FMedSci; Professor Scott Waddell FMedSci; Professor Anant Parekh FMedSc FRS), one Wellcome Trust Principal Research Fellow (Professor Andrew King, FMedSci FRS), 13 further full professors and 15 associate professors. There are approximately 175 academic-related research staff supported by external grants and over 100 graduate students registered for higher degrees in the Department. The teaching and the research activities of the department are supported by teams of professional services and technical staff.

Research Centres/Institutes and research themes

The Department has a distinctive, forward-looking, and integrative biomedical research programme organised into four research Centres with a presence in two research institutes https://www.dpag.ox.ac.uk/. We also have strong cross-cutting themes in cardiac sciences, cell physiology, development and cell biology, functional genomics, metabolism and endocrinology, and neuroscience, which map on to the research centres. These include the Centre for Integrative Neuroscience (Director: Professor A King FRS), Centre for Neural Circuits and Behaviour (Director: Professor G Miesenboeck FRS), Centre for Cellular & Molecular Neurobiology (Emeritus Professor Dame Kay Davies FRS and Professor Dame Frances Ashcroft FRS), Centre for Integrative Physiology (Professor A Parekh FRS)/the Burdon Sanderson Cardiac Science Centre (Director: Professor Manuela Zaccolo FRSB). The Institute for Developmental and Regenerative Medicine (IDRM: Director Professor Paul Riley FMedsci) and the new Kavli Institute for Nanoscience Discovery, which is directly opposite the Sherrington building (Deputy Director: Professor Dame Molly Stevens DBE FRS FREng).

https://kavlifoundation.org/news/meet-new-kavli-institute-nanoscience-discovery-university-oxford

The Research Centres and thematic areas bring together researchers who address a range of fundamental issues in the biosciences at molecular, cellular, tissue and systems levels of organisation. https://www.dpag.ox.ac.uk/centres

For more information, please visit www.dpag.ox.ac.uk

DPAG and Sustainability

The University of Oxford's Environmental Sustainability Strategy sets two ambitious targets: to achieve net zero carbon and to achieve biodiversity net gain, both by 2035. In DPAG, we actively implement and encourage eco-friendly practices that reduce waste, promote energy efficiency, and promote bio-diversity.

DPAG has signed up to both The Laboratory Efficiency Assessment Framework (LEAF) and Green Impact. We encourage all staff and students to get involved.

For more information, please go to:

https://sustainability.admin.ox.ac.uk/green-impact

https://sustainability.admin.ox.ac.uk/leaf

The Kavli Institute for Nanoscience Discovery (Kavli INsD)

"Where the physical sciences are brought into the cell"

Leading scientific discovery into the most basic unit of life - the cell - the Kavli Institute for Nanoscience Discovery (Kavli INsD) is located at the heart of Oxford University's science area and was inaugurated in March 2021.

With over 30 faculty and 450 research staff and graduate students, world leading teams collaborate from multiple departments (biochemistry, cell biology, chemistry, physics, physiology, psychiatry, clinical neurosciences and engineering) to contribute to global health.

By bringing multiple disciplines together under the same roof to advance scientific research the Kavli INsD creates an environment that encourages the cross-pollination of ideas and inter-disciplinary cooperation. The Institute comes together to work on global health challenges and benefits from the close proximity of the scientific departments as well as advanced imaging facilities and state-of-the-art-instrumentation. As the first Director of Kavli INsD Professor Dame Carol Robinson and the research teams are creating a culture that is both bold and respectful.

The University of Oxford's, Kavli Institute for Nanoscience Discovery is the U.S based Kavli Foundation's 20th institute. The foundation, established in the year 2000 by Fred Kavli, has a mission "to advance science for the benefit of humanity". Research institutes in the fields of nanoscience, astrophysics, neuroscience, and theoretical physics have been endowed by the foundation which also supports programs that strengthen the connection between science and society. Learn more at kavlifoundation.org

The Institute of Developmental and Regenerative Medicine (IDRM)

The IDRM is a unique flagship institution, at the University of Oxford, dedicated to meeting an ambitious challenge: two thirds of all deaths world-wide are due to non-communicable diseases, many of which are cardiovascular, neurological or immune system disorders that have a developmental origin, representing an urgent unmet clinical need. The mission of the IDRM is the development of new drugs and therapeutic strategies to tackle these chronic illnesses.

At its core is a formal merger of developmental biology and regenerative medicine in the form of 15-20 world leading research groups comprising 240 cardiovascular, neuroscience and immunology scientists integrating their expertise to foster multidisciplinary collaborations.

The IDRM has **four key goals**:

- To further our understanding of the cellular and molecular processes that control normal development of the heart, brain and immune system
- To determine what causes congenital disease and increased susceptibility for disease acquired in adulthood
- To identify therapeutic targets to reactivate resident cells for repair of the injured adult heart, brain and immune system
- To establish new treatment strategies designed to replace and restore damaged tissues arising from birth defects or acquired adult disease.

To achieve these goals the IDRM will combine experimental and computational biology with machine learning, artificial intelligence platforms and mathematical modelling; working across disciplines with University colleagues in **Big Data**, **Target Discovery**, **Maths** and **Biomedical Engineering** and with clinicians at the John Radcliffe and Churchill Hospitals in Oxford. The IDRM is housed in the IMS-Tetsuya Nakamura Building in the Old Road campus site. To find out more visit: https://www.idrm.ox.ac.uk/

Research support facilities

The Department has shared state-of-the-art facilities for a wide range of applications, such as a histology service, DNA/RNA services (rapid and supportive access to microRNA,RNASeq, CHIPSeq, etc.), confocal and other high resolution imaging equipment as well as a Transmission Electron Microscope. Proteomics facilities include MALDI-TOF/TOF and Ion Trap LC-MS/MS systems, and there are extensive magnetic resonance spectroscopy (MRS) and imaging (MRI) facilities for in vivo rodent and clinical investigations, including hyperpolarised technologies. The Department also provides central support in photography, digital imaging, and poster printing as well as a high-quality mechanical workshop. A dedicated research support team helps with grant applications and awards, and data storage and computation facilities. The department is supported by a dedicated IT team.

Teaching

The main teaching responsibility of the Department is for pre-clinical Medicine students and those reading Biomedical Sciences. There are also contributions to teaching in Biochemistry, Biological Sciences, Human Sciences, Physics, and a graduate Neuroscience MSc programme.

In Oxford, Medicine students take a three-year pre-clinical course before proceeding to clinical training (a further three years). The first five terms of the three-year pre-clinical course provide broad training in all aspects of medical science (leading to the 1st BM qualification). Both pre-clinical Medicine and Biomedical Sciences students spend the last four terms of their course studying for a BA degree, selecting two Advanced Options from a choice of ten, ranging from systems physiology and neuroscience to cellular and molecular science. Both cohorts also undertake an experimental project, which forms one paper in their final examination; these projects are supervised by members of the academic staff. The Department also contributes some preclinical teaching to the first part of the Graduate entry Medicine course.

Equality, Diversity and Inclusion in DPAG

The Department of Physiology, Anatomy and Genetics (DPAG) is committed to promoting a diverse and inclusive community. We have an active Equality, Diversity, and Inclusion (EDI) committee and are pro-active in promoting race equality. We hold an Athena SWAN silver award in recognition of our efforts to introduce organisational and cultural practices, which promote gender equality and create a better working environment for all. The Department promotes family-friendly policies and supports flexible working arrangements where possible. The University offers 450 nursery places for staff and students at five dedicated University nurseries and a network of local community nurseries. We will be happy to provide you with information about nurseries and schools in Oxford upon request.

We encourage applications from suitably qualified, experienced, and eligible candidates regardless of sex, race, disability, age, sexual orientation, transgender status, religion or belief, marital status, or pregnancy and maternity. We embrace our differences, and you are very welcome at DPAG, without the need to hide any part of who you are.

Applications are particularly welcome from women and black and minority ethnic heritage candidates, who are under-represented in academic posts in Oxford.

To learn more about EDI in DPAG, visit our website: https://www.dpag.ox.ac.uk/work-with-us/equality-diversity-inclusion

For more information about the University's family friendly benefits, please also see https://hr.admin.ox.ac.uk/information-for-parents-and-carers

Potential applicants may email heidi.de-wet@dpag.ox.ac.uk and/or sally.vine@dpag.ox.ac.uk to discuss any aspect of EDI in DPAG.

The Medical Sciences Division

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

How to apply

Applications are made through our online recruitment portal. Information about how to apply is available 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. If you currently work for the University please note that:

- as part of the referencing process, we will contact your current department to confirm basic employment details including reason for leaving
- although employee may hold multiple part-time posts, they may not hold more than the equivalent of a full-time post. If you are offered this post, and accepting it would take you over the equivalent of full-time hours, you will be expected to resign from, or reduce hours in, your other posts(s) before starting work in the new post.

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).

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 at hr@dpag.ox.ac.uk.

To return to the online application at any stage, please go to: www.recruit.ox.ac.uk.

Please note that you will receive an automated email from our online recruitment portal 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 70th 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, flexible working options, travel discounts including salary sacrifice schemes for bicycles and electric cars and other discounts. Staff can access a huge range of personal and professional development opportunities. See https://hr.admin.ox.ac.uk/staff-benefits

Employee Assistance Programme

As part of our wellbeing offering staff get free access to Health Assured, a confidential employee assistance programme, available 24/7 for 365 days a year. Find out more https://staff.admin.ox.ac.uk/health-assured-eap

University Club and Sports facilities

Membership of the University Club is free for University staff. It 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 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 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 dependants. See https://staffimmigration.admin.ox.ac.uk/visa-loan-scheme

Family-friendly benefits

We are a family-friendly employer with one of the most generous family leave schemes in the Higher Education sector (see https://hr.web.ox.ac.uk/family-leave). Our Childcare Services team provides guidance and support on childcare provision, and offers a range of high-quality childcare options at affordable prices for staff. In addition to 5 University nurseries, we partner with a number of local providers to offer in excess of 450 full time nursery places to our staff. Eligible parents are able to pay for childcare through salary sacrifice, further reducing costs. See https://childcare.admin.ox.ac.uk/.

Supporting disability and health-related issues (inc menopause)

We are committed to supporting members of staff with disabilities or long-term health conditions, including those experiencing negative effects of menopause. Information about the University's Staff Disability Advisor, is at https://edu.admin.ox.ac.uk/disability-support . For information about how we support those going through menopause see https://hr.admin.ox.ac.uk/menopause-guidance

Staff Networks

The University has a number of staff networks including for research staff, BME staff, LGBT+ staff, disabled staff network and those going through menopause. Find out more at https://edu.admin.ox.ac.uk/networks

The university of Oxford Newcomers' Club

The University of Oxford Newcomers' Club is 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.

Research Staff

The Researcher Hub supports all researchers on fixed-term contracts. They aim to help you settle in comfortably, make connections, grow as a person, extend your research expertise and approach your next career step with confidence. Find out more https://www.ox.ac.uk/research/support-researchers/researcher-hub

Oxford's Research Staff Society is a collective voice for our researchers. They also organise social and professional networking activities for researchers. Find out more https://www.ox.ac.uk/research/support-researchers/connecting-other-researchers/oxford-research-staff-society