Job title	BMS Oxford Research Fellow
Division	Medical Sciences Division
Department	Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences
Location	Kennedy Institute of Rheumatology, Old Road Campus, Oxford, OX3 7FY
Grade and salary	Grade 7: £32,817 - £40,322 per annum
Hours	Full time
Contract type	Fixed term for three years
Reporting to	Prof Kim Midwood
Vacancy reference	150016

Research topic	Matrix Biology/Translational Medicine
Principal Investigator / supervisor	Profs Kim Midwood and Chris Buckley
Project team	https://www.kennedy.ox.ac.uk/research/matrix-immunology
Project web site	www.ox.ac.uk/ https://www.medsci.ox.ac.uk/research/internal/funding-directory/oxford-BMS-fellowship/oxford-celgene-fellows
Funding partner	The funds supporting this research project are provided by the BMS Fellowship Scheme
Recent publications	Matrix-Targeting Immunotherapy Controls Tumor Growth and Spread by Switching Macrophage Phenotype. Deligne C, Murdamoothoo D, Gammage AN, Gschwandtner M, Erne W, Loustau T, Marzeda AM, Carapito R, Paul N, Velazquez-Quesada I, Mazzier I, Sun Z, Orend G, Midwood KS. Cancer Immunol Res. 2020 Mar;8(3):368-382. doi: 10.1158/2326-6066.CIR-19-0276. Epub 2020 Jan 15. PMID: 31941671 Identification of TNFR2 and IL-33 as therapeutic targets in localized fibrosis. Izadi D, Layton TB, Williams L, McCann F, Cabrita M, Espirito Santo AI, Xie W, Fritzsche M, Colin-York H, Feldmann M, Midwood KS, Nanchahal J. Sci Adv. 2019 Dec 4;5(12):eaay0370. doi: 10.1126/sciadv.aay0370.

	eCollection 2019 Dec. PMID: 31840071 Targeting early changes in the synovial microenvironment: a new class of immunomodulatory therapy? Aungier SR, Cartwright AJ, Schwenzer A, Marshall JL, Dyson MR, Slavny P, Parthiban K, Karatt-Vellatt A, Sahbudin I, Culbert E, Hextall P, Clanchy FI, Williams R, Marsden BD, Raza K, Filer A, Buckley CD, McCafferty J, Midwood KS. Ann Rheum Dis. 2019 Feb;78(2):186-191. doi: 10.1136/annrheumdis-2018-214294. Epub 2018 Dec 14. PMID: 30552174 Notch signalling drives synovial fibroblast identity and arthritis pathology. Wei K, Korsunsky I, Marshall JL, Gao A, Watts GFM, Major T, Croft AP, Watts J, Blazar PE, Lange JK, Thornhill TS, Filer A, Raza K, Donlin LT; Accelerating Medicines Partnership Rheumatoid Arthritis & Systemic Lupus Erythematosus (AMP RA/SLE) Consortium, Siebel CW, Buckley CD, Raychaudhuri S, Brenner MB. Nature. 2020 Jun;582(7811):259-264. doi: 10.1038/s41586-020-2222-z. Epub 2020 Apr 22. PMID: 32499639 Distinct fibroblast subsets drive inflammation and damage in arthritis. Croft AP, Campos J, Jansen K, Turner JD, Marshall J, Attar M, Savary L, Wehmeyer C, Naylor AJ, Kemble S, Begum J, Dürholz K, Perlman H, Barone F, McGettrick HM, Fearon DT, Wei K, Raychaudhuri S, Korsunsky I, Brenner MB, Coles M, Sansom SN, Filer A, Buckley CD. Nature. 2019 Jun;570(7760):246-251. doi: 10.1038/s41586-019-1263-7. Epub 2019 May 29. PMID: 31142839

The role

The successful applicant for this role will become a member of a dynamic research group with responsibility for working on an exciting collaborative, and translational, project between the Matrix Immunology lab at the Kennedy Institute and Bristol Myers Squibb (BMS). During this fellowship the post holder will manage their own research and provide guidance to less experienced members of the research group, including postdocs, research assistants, technicians, and PhD and project students, as well as working closely with the industrial sponsor.

The Human Cell Atlas will provide an encyclopedic inventory of the different cell populations comprising each tissue of the body based on single cell RNA Seq clusters. However, a navigable atlas requires geographical context. Mapping the anatomic location, and the interaction networks, of newly discovered cell subsets will be the next essential step towards understanding tissue structure and function. Moreover, cells do not exist in a vacuum. Tissues, and local niches within tissues, comprise site-specific combinations of up to 1027 secreted molecules (the matrisome), encompassing extracellular matrix molecules, matrix-associated proteins, soluble growth factors, chemokines and cytokines, and enzymes including proteases and kinases. These molecules dictate the spatial organization of cells within tissues, and provide environmental cues that programme positional memory, enabling cells to perform distinct roles determined by their anatomic location. However, for most human tissues we lack a detailed understanding of the molecular and topological organization of these extracellular

networks, and how they relate to the cells that occupy such niches in health and disease. In this BMS Fellowship we will develop a blueprint for translating transcriptomic data sets into a precise human atlas in fibrotic disease. We will also explore the hypothesis that examining cell behaviour in the tissue is the most accurate means of assessing tissue status in health and disease. We will focus on defining how changes in the “matrisome” during fibrosis of the lung and skin instruct pathogenic cell behaviour and provide effective biomarkers of disease as well as tractable targets to treat disease.

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 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
- 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, as well as with the industrial sponsor
- Coordinate data and skills exchange between Oxford and BMS, keeping lab records of a high quality consistent with industrial standards, and presenting at BMS sponsored meetings

Pre-employment screening

All offers of employment are made subject to standard pre-employment screening, as applicable to the post.

If you are offered the post, you will be asked to provide proof of your right-to-work, your identity, and 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 so that we can discuss appropriate adjustments with you), and a declaration of any unspent criminal convictions.

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/.

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 (OHS), 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 with blood, human products and human tissues
- Work with any substance which has any of the following pictograms on their MSDS:

Additional security pre-employment checks

Due to the nature of the research at the Kennedy Institute of Rheumatology, this role will require additional security pre-employment checks:

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

Selection criteria

Essential selection criteria

- Hold a PhD/DPhil, or near completion, in the biomedical sciences, together with relevant research experience
- Possess sufficient specialist knowledge in the discipline to work within established research programmes
- Ability to manage own academic research and associated activities
- Experience of bioinformatic analysis of patient cohort data sets, including bulk and single cell RNA seq and/or spatial transcriptomics.
- Expertise in multiplex imaging panel design and tissue biopsy staining using GE Cell Dive, or comparable technology
- Experience in high resolution tissue imaging, such as multiphoton confocal and/or light sheet microscopy
- Experience with analysis of inflammatory signalling pathways in situ or in vitro
- Experience of isolation and culture of primary human cells, including synovial fibroblasts, and/or tissue explant cultures
- Experience in recombinant matrix protein expression and purification, and mutagenesis

- Experience in serum biomarker analysis of large patient cohorts
- A comprehensive understanding of extracellular matrix biology
- Previous experience of contributing to publications/presentations evidenced by authorship of more than one high quality publication, at least one of which as first author
- Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group

Desirable selection criteria

- Experience of working within, or in collaboration with, pharmaceutical drug discovery programmes
- Willingness to travel to US to partner industrial labs for BMS-led training opportunities, as required and contingent on US and UK government guidelines at the time of travel

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. Income from external research contracts in 2016/17 exceeded £564m 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 Division

The Medical Sciences Division is an internationally recognised 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 Orthopaedics, Rheumatology and Musculoskeletal Sciences

The Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences (NDORMS) is part of the Medical Sciences Division and is the largest European academic department in its field, running a globally competitive programme of research and teaching.

Our mission is to discover the causes of musculoskeletal and inflammatory conditions to deliver excellent and innovative care that improves people's quality of life. Our highly skilled teams have expertise in a broad range of areas, including orthopaedic surgery, inflammation, immunology, rheumatology, medical statistics, epidemiology, and clinical trials.

We currently have 460 staff, 100 students and have a grants portfolio worth £148 million, and an annual turnover in excess of £38 million.

The **Botnar Research Centre** enables and encourages research and education into the causes of musculoskeletal disease and their treatment.

The Centre provides world-class facilities for scientists in the field of musculoskeletal research. It takes a multidisciplinary approach, encompassing orthopaedic, rehabilitation and rheumatology clinical scientists, bone oncologists, laboratory scientists, epidemiologists, engineers and statisticians. The Botnar also hosts the Oxford Clinical Trials Research Unit (OCTRU) and the Centre of Statistics in Medicine (CSM), providing excellent statistical support to all aspects of clinical research.

The Botnar opened in 2002, with a large annex completed in 2013. The Botnar is now home to around 300 staff and postgraduate students enjoying the international and friendly atmosphere of this workplace and benefits from the vast knowledge of leading experts in the field of musculoskeletal research.

To accommodate its rapid growth, the Centre will open another wing in 2021. This will provide research space for the new Professor of Biomaterials. The new space will include 1000m^2 of office and 1000m^2 of laboratory space. The laboratory space includes a GMP clean room facility suitable for the manufacturing of biomaterials for human implantation.

Sharing the site of the Nuffield Orthopaedic Centre, the largest specialist academic musculoskeletal hospital in the UK, puts the Botnar in a unique position to foster the collaboration between basic scientists and clinicians, which is essential to success in medical research.

The **Kennedy Institute of Rheumatology** is world famous for its discovery of anti-TNF therapy for the treatment of chronic inflammatory diseases like rheumatoid arthritis, which has established the current standard of care and heralded the wider use of biologic drugs to treat chronic disease. The Institute carries out fundamental research in the areas of immunity and microbiome, inflammation biology and tissue remodelling and regeneration, with the long-term objective of

‘translating’ this research into clinical application. The major diseases of interest are rheumatoid arthritis, osteoarthritis, inflammatory bowel disease and cancer. The Institute provides space to house close to 200 researchers and support staff.

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

Athena Swan

The Athena SWAN Awards specifically recognise success in developing employment practices to further and support the careers of women in science, technology, engineering, maths and medicine (STEMM) departments in academia. In May 2015 the charter was expanded to recognise work undertaken in arts, humanities, social sciences, business and law (AHSSBL), and in professional and support roles. Within NDORMS, we feel that we have an established culture of equality but are using the process to spur on-going improvement that benefits everyone involved in the Department. Our on-going progress was rewarded in May 2014 with an Athena Swan Bronze Award and in October 2015 with a Silver Award. Our development in this area has resulted in a number of commitments to our staff, central to which are:

- establishing an open, supportive and family-friendly research environment
- supporting career progression through teaching programmes, personal development reviews and mentoring
- proactive communication of support policies such as flexible working, provision of leave, promotion and career support schemes

NDORMS aims to actively promote the implementation of the University's **family-friendly policies** to help foster a family friendly working environment, including provision of family leave (such as policies for maternity, paternity, parental, carers and adoption leave), flexible/part-time working and scheduling inclusive meetings.

The University's **childcare services** support staff with a Childcare Voucher Scheme to help staff save tax and national insurance on childcare costs, offer information on nursery providers and a nursery fee Salary Sacrifice Scheme, work in partnership with playscheme providers to help support families during school holidays and signpost staff to parenting, local authority and other organisations that help support families and parents.

The Department is also committed to ensuring that staff undertaking **part-time or flexible working** receive the same access to benefits and entitlements as full-time staff, including the same opportunities for training and promotion, a pro-rata entitlement to leave including bank holidays and careful consideration of requests to work part-time (particularly for those by staff returning from maternity leave).

For more information please visit: http://www.admin.ox.ac.uk/personnel/staffinfo/benefits/family/ and http://www.admin.ox.ac.uk/personnel/during/flexible/

We are also actively working to uphold the University's aim of providing an **inclusive environment and equal career opportunities** by promoting equality, valuing diversity and maintaining a working, learning and social environment in which the rights and dignity of all staff are respected. Separate University policies are also in place to ensure **race, disability and gender equality**.

For more information, please visit: http://www.admin.ox.ac.uk/eop/

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/.

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.

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 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).

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

Important information for candidates

Data Privacy

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

The University's policy on retirement

The University operates an Employer Justified Retirement Age (EJRA) for all academic posts and some academic-related posts. 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/acrelretire8+/.

For **existing** employees, any employment beyond the retirement age is subject to approval through the procedures: www.admin.ox.ac.uk/personnel/end/retirement/acrelretire8+/.

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

Employee benefits

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

University Club and sports facilities

Membership of the University Club is free for all University staff. The University Club offers social, sporting, and hospitality facilities. Staff can also use the University Sports Centre on Iffley Road at discounted rates, including a fitness centre, powerlifting room, and swimming pool. See www.club.ox.ac.uk and www.sport.ox.ac.uk/oxford-university-sports-facilities.

Information for staff new to Oxford

If you are relocating to Oxfordshire from overseas or elsewhere in the UK, the University's Welcome Service website includes practical information about settling in the area, including advice on relocation, accommodation, and local schools. See www.welcome.ox.ac.uk.
There is also a visa loan scheme to cover the costs of UK visa applications for staff and their dependents. See www.admin.ox.ac.uk/personnel/permits/reimburse&loanscheme/.

Family-friendly benefits

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

Childcare

The University has excellent childcare services, including five University nurseries as well as University-supported places at many other private nurseries.
For full details, including how to apply and the costs, see www.admin.ox.ac.uk/childcare/.

Disabled staff

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

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/.

The University of Oxford Newcomers' Club

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