Job title	Senior Bioinformatician
Division	Medical Sciences
Department	Nuffield Department of Medicine
Location	Centre for Human Genetics, Building for Genomic Medicine, Old Road Campus, Roosevelt Drive, Headington, Oxford, OX3 7BN
Grade and salary	Grade 8: £45,585 per annum
Hours	Full time
Contract type	Fixed-term contract until 1 August 2027 Funding is provided by Cancer Research UK
Reporting to	Professor Simon Leedham, Principle Investigator
Vacancy reference	173353

Additional information	This role meets the eligibility requirements for a Skilled Worker Certificate of Sponsorship or a Global Talent Visa under UK Visas and Immigration legislation. Therefore, the Nuffield Department of Medicine welcomes applications from international applicants who require a visa.
About us	• University of Oxford - www.ox.ac.uk/about/organisation • Nuffield Department of Medicine (NDM) - https://www.ndm.ox.ac.uk • Unit - https://www.chg.ox.ac.uk/
What we offer	https://hr.admin.ox.ac.uk/staff-benefits • An excellent contributory pension scheme • 38 days annual leave • A comprehensive range of childcare services • Family leave schemes • Cycle loan scheme • Discounted bus travel and Season Ticket travel loans • Membership to a variety of social and sports clubs • A welcoming and diverse community

The role

You will work within Prof Simon Leedham's research group at the Centre for Human Genetics. The groups interests are in the control and regulation of stem cells in intestinal cancers, and the identification and manipulation of molecular cellular phenotype. The group uses a wide range of human and advanced, disease-positioned mouse models of colorectal cancer to generate multi-omic and spatial biology datasets for integrative analysis. This project will be working as part of the CRUK funded programme "Stem cells and adaptive molecular phenotype in colorectal cancer (STAMP-CRC)" which seeks to explore the impact of therapeutic selective pressures on stem cell molecular phenotype and target the pathways that enable the rapid evolution of drug resistance (Gilvasquez et al, Cell Stem Cell, 2022).

You will provide bioinformatics expertise, support and teaching to a multi-disciplinary team of biological, computational and mathematical researchers by curating and processing raw 'omic and spatial biology data and performing hypothesis led and hypothesis generating primary analysis to apply bioinformatics solutions to biomedical problems.

Responsibilities

You will:

- Identify, define and plan new projects which contribute to the overall aims of studies.
- Advise, teach and supervise other members of the group on bio-statistical analysis on a day-to-day basis.
- Conduct detailed analysis of murine and human datasets including single cell RNA seq data.
- Carry out data processing and integration, statistical analysis, presentation and interpretation of bioinformatic data. Specifically:
  - Analyse genomic datasets including: whole-genome, exome and targeted DNA sequencing; RNA-seq; single cell RNA seq.
  - Integrate datasets with those available through public repositories such as ICGC, TCGA and ENCODE.
  - Run existing code and develop new code to analyse 'omics' data.
  - Integrate the analysis of clinical, 'omics' and other data.
  - Opportunity to undertake advanced mathematical analysis of spatial biology datasets (including multiplex immunohistochemistry and spatial transcriptomics).
- Develop novel methodologies for analysis and data collection in collaboration with members of the research team.
- Develop informatics structures to manage large datasets, including the organisation of data storage and repository solutions that meet current publishing standards.
- Identify and troubleshoot technical or scientific problems, working collaboratively with database experts and scientific programmers.
- Contribute to discussions planning the overall aims and objectives of the group.
- Provide bioinformatics input into outline and full grant proposals, as a co-applicant.
- Contribute to the production of scientific reports and publications for high profile journals, including taking leadership in more specialised publications on novel aspects of bioinformatics.
- Attend scientific seminars, meetings and to contribute to presentations or other means of disseminating results as appropriate.
- Maintain a detailed state-of-the-art knowledge of genome analysis of all types, and train as necessary on a continuing basis in methods of genetic and statistical analysis.
- Liaise with a variety of collaborators - including statisticians, clinicians and molecular pathologists - to obtain and provide information, advice and instruction.
- Participate in and support the public engagement and widening access activities of the Department and the University. This is anticipated to be not more than 2 days per year.

- Undertake mandatory training as required by the University, Division and Department. The specific list of training courses may change from time-to-time, in response to both legal and internal University requirements.

Selection criteria

Essential

- Hold a PhD/DPhil in a Biostatistics, Mathematics, Statistics, Computing, Mathematical Biology or a related subject.
- Demonstrable experience, ability and practical success in biostatistics or bioinformatics.
- Research experience and a publication record.
- Ability to supervise staff.
- Proficiency in the use of statistical programming languages such as R/BioConductor.
- Experience of developing scientific techniques.
- Excellent data analysis skills, including experience with analysing RNAseq data and next generation sequencing data.
- Ability to work efficiently and intensively, both independently and as part of a team.
- Demonstrable ability to organise and prioritise work efficiently whilst delivering results to the required standard and to an agreed schedule.

Desirable

- Knowledge of cancer biology/genetics.
- Previous research experience in cancer genomics or related fields.
- Previous experience of dealing with scRNAseq and/or spatial biology data.
- Direct experience of molecular biology in the laboratory.
- Experience of contributing to grant proposals.

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

How to apply

Applications are made through our e-recruitment system and you will find all the information you need about how to apply on our Jobs website https://www.jobs.ox.ac.uk/how-to-apply.

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.

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). 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. Please note using a long file name may prevent you from uploading your documents.

- http://www.ox.ac.uk/about_the_university/jobs/research/

All applications must be received by **midday** UK time 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).

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 recruitment@ndm.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.