RADCLIFFE DEPARTMENT OF MEDICINE

Division of Cardiovascular Medicine

Job Description

Summary

Job title	Senior Bioinformatician
Division	Medical Sciences Division
Department	Division of Cardiovascular Medicine (CV Med), within the Radcliffe Department of Medicine (RDM)
Location	Radcliffe Department of Medicine, Division of Cardiovascular Medicine, Level 6, West Wing, John Radcliffe Hospital
Grade and salary	Grade 8.1: £50,067per annum
Hours	Full-time (37.5 hours per week), with a minimum of 4 days per week on site and may require working flexible hours and days, as required
Contract type	Fixed-term until 31 November 2031
Reporting to	Professor Charalambos Antoniades, BHF Professor of Cardiovascular Medicine, Director of Acute Multidisciplinary Imaging & Interventional Centre, Deputy Head of Division of Cardiovascular Medicine, Radcliffe Department of Medicine
Vacancy reference	**189857**
Additional information	Only application received before midday on 11th December 2026 can be considered Interviews are scheduled to take place on 17th December 2026 For informal enquires please contact: Prof Charalambos Antoniades Charalambos.antoniades@cardiov.ox.ac.uk or Ileana Badi – ileana.badi@cardiov.ox.ac.uk or Olivia Conway – olivia.conway@cardiov.ox.ac.uk We are committed to ensuring that our recruitment processes are inclusive and accessible. If you require the job description or any

	other materials in an alternative format, or if you would like to request any adjustments to support you through the application or interview process, please contact the recruitment team at cvm_personnel@cardiov.ox.ac.uk. The University of Oxford is committed to equal opportunity, and to being an inclusive institution where everyone belongs and is supported to succeed. We recognise how the diversity of our community enriches our ability to deliver on our academic mission. We welcome applications from individuals from all backgrounds, including those under-represented within higher education. No applicant or members of staff shall be unlawfully discriminated against on the basis of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation. Recruitment, progression within employment and retention will be determined according to personal merit and the duties and requirements of the post. In all cases, the primary consideration will be the ability to perform the job. Our commitment to equality and diversity goes hand in hand with our commitment to academic freedom and freedom of speech, as stated in the University's Equality Policy and Equality, Diversity and Inclusion Strategic Plan.

Research topic	Developing radio-multiomic biomarkers of cardiometabolic disease risk.
Principal Investigator / supervisor	Prof Charalambos Antoniades
Project web site	Antoniades Research Group: rdm.ox.ac.uk/about/our-divisions/division-of-cardiovascular-medicine/division-of-cardiovascular-medicine-research/the-oxford-translational-cardiovascular-research-group Oxford Heart Vessels and Fat Cohort: oxhvf.com
Funding partner	The funds supporting this research project are provided by the British Heart Foundation.
Recent publications	1. Oikonomou EK, et al. A novel machine learning-derived radiotranscriptomic signature of perivascular fat improves cardiac risk prediction using coronary CT angiography. *Eur Heart J.* 2019;40:3529–3543. doi: 10.1093/eurheartj/ehz592. 2. Kotanidis CP, et al. Constructing custom-made radiotranscriptomic signatures of vascular inflammation from

routine CT angiograms: a prospective outcomes validation study in COVID-19. *Lancet Digit Health.* 2022;4–e716. doi: 10.1016/S2589-7500(22)00132-7.
3. Chan K, et al. Inflammatory risk and cardiovascular events in patients without obstructive coronary artery disease: the ORFAN multicentre, longitudinal cohort study. *Lancet.* 2024;403:2606–2618. doi: 10.1016/S0140-6736(24)00596-8.
4. Oikonomou EK, et al. Early Prediction of Heart Failure From Routine Cardiac CT Using Radiomic Phenotyping of Epicardial Fat. *J Am Coll Cardiol.* 2026. doi: 10.1016/j.jacc.2026.02.5116.

The role

We are looking to recruit a highly motivated and experienced Bioinformatician to join the Antoniades group within the Division of Cardiovascular Medicine, Radcliffe Department of Medicine, University of Oxford. RDM comprises five academic divisions and the overarching RDM Strategic (RDMS) team. Up to date information on each academic division can be found here: https://www.rdm.ox.ac.uk/about/our-divisions. This role is based in the Division of Cardiovascular Medicine and the role reports to Professor Charalambos Antoniades.

The successful candidate will play a central role in an ambitious, multidisciplinary research programme to develop radio-multiomic biomarkers of cardiometabolic disease risk. This programme aims to integrate multi-omic profiling of human heart, vessels, fat as well as genetic information and plasma multiomics with cardiovascular imaging and AI to develop novel, non-invasive biomarkers of cardiometabolic disease. This approach will enable the development of 'virtual biopsies' of these tissues, providing insight into disease activity and therapeutic response.

This programme is based on the Oxford Heart, Vessels and Fat (OxHVF) cohort, which comprises several studies (ART Vascular, Bypass Grafts, AdipoRedOx and ORFAN) enabling multi-level and multi-omic approaches to understand the mechanisms of cardiometabolic disease. A key strength of the cohort is direct access to human tissue biopsies (myocardium, vessels, adipose tissue), plasma samples and genetic information, in addition to extensive non-invasive cardiac imaging including coronary computed tomography angiography and ultrasound, and long-term outcome data from UK national databases (NHS Digital). The OxHVF is the largest platform with linked radiomic (imaging) and transcriptomic/proteomic/genomic data, offering unique opportunities to apply AI approaches to develop novel imaging biomarkers and identify new therapeutic targets. The oxHVF programme incorporates also the Oxford Risk factors and Non-Invasive Imnaging (ORFAN) study, that includes 250k+ individuals with cardiac CT scans and linked prospective outcomes data and nested multi-omics data. ORFAN is typically used for external validation of new multi-omics biomarkers across different continents and ethnicities.

The postholder will take a leading role in the analysis and integration of large-scale transcriptomic, proteomic and genomic datasets, developing robust, reproducible bioinformatics pipelines and analytical approaches, working closely with basic scientists, AI engineers, biostatisticians and clinical researchers. This position offers an opportunity to lead the bioinformatics component of a major translational research programme, contribute to high-impact scientific publications and advance the development of precision medicine approaches for cardiovascular and metabolic disease.

Responsibilities

- Lead the bioinformatic analysis and integration of multi-omic data from human tissues to support the development of novel imaging-derived biomarkers of cardiometabolic disease.
- Develop, implement and maintain robust, reproducible computational pipelines for the processing, quality control and analysis of high-throughput omics datasets.
- Lead the analysis of transcriptomic, proteomic, lipidomic, metabolomic and genetic data across a range of research projects within the group.
- Collaborate closely with AI engineers, software developers and clinical researchers to integrate multi-omic data with radiomic features derived from cardiovascular imaging.
- Provide expert bioinformatics advice, training and supervision to researchers and students within the group, supporting the design, analysis and interpretation of omics-based studies.
- Liaise with internal and external collaborators, to provide oversight on data generation and analysis, to ensure data quality and facilitate the integration and interpretation of results.
- Lead and contribute to the preparation of high-quality scientific publications, conference presentations and research reports, and contribute to the development of research proposals and grant applications.
- Contribute to the wider scientific activities of the research group, including multidisciplinary research meetings, collaborative projects and the development of new computational approaches to address emerging research questions.

Selection criteria

Essential selection criteria

Criteria		Stage at which criteria assessed:		
		Application	*Test(s)*	*Interview*
E1	Hold, or be close to the completion of, a PhD in Bioinformatics, Computational Biology, Mathematics, Statistics or related discipline	x		
E2	Substantial postdoctoral or equivalent research experience, with demonstrated ability to independently lead complex bioinformatics analyses and multi-omic research projects	x		x
E3	Extensive experience analysing, integrating, and interpreting large-scale transcriptomic and proteomic datasets	x		x
E4	Advanced proficiency in R and/or Python, with demonstrated experience developing, implementing and maintaining robust, reproducible bioinformatics pipelines for large-scale datasets.	x		x
E5	Strong track record of scientific publications or equivalent research outputs demonstrating substantial contributions to bioinformatics analysis, biological interpretation and multi-omic data integration	x		x
E6	Demonstrated ability to manage complex research datasets, apply appropriate statistical and computational methods, and independently plan, prioritise and deliver research objectives	x		x
E7	Fluency in English (should be proficient in medical and academic English and have published academic research in English)	x		x
E8	Communication and interpersonal skills that enable good working relationships with colleagues, students, and collaborators			x
E9	An evidenced commitment to RDM's Respectful Behaviours Framework			x

Desirable selection criteria

Criteria		Stage at which criteria assessed:		
		Application	***Test(s)***	***Interview***
D1	Experience analysing and/or integrating bulk RNA seq, single cell RNA seq, quantitative proteomics, genetic, lipidomic and metabolomic data	x		x
D2	Understanding of cardiometabolic disease biology	x		x
D3	Experience analysing omic data from heart, fat or vascular tissue	x		x
D4	Expertise in utilising large radiomic datasets or data derived from medical imaging	x		x

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. If you have previously worked for the University we will also verify key information such as your dates of employment and reason for leaving your previous role with the department/unit where you worked. 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.ox.ac.uk/about/jobs/explore-our-careers/applications-process/pre-employment-screening

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

Division of Cardiovascular Medicine

CV Med comprises approximately 200 people across a range of staff groups and locations and has a total turnover of approximately £18M per annum of which external grants amount to around £10M, with a total grant portfolio of around £70M. Professor Stefan Neubauer is the Head of the Division of Cardiovascular Medicine.

The Division was returned as part of the Clinical Medicine unit of assessment in the 2021 REF, with 59% of research in this area rated as 4* (the highest quality, defined as 'world-leading') and a further 34% returning a 3* rating ('internationally excellent').

The molecular genetics and model organism programmes are based in laboratories at the Centre for Human Genetics and close links are maintained with the epidemiological work of the Clinical Trials Service Unit (CTSU) in the adjacent building (both on the Old Road Campus site). CV Med's base, together with laboratories for molecular and cellular studies, is housed in the West Wing of the John Radcliffe Hospital. Clinical research is also based at the John Radcliffe, currently largely focused around the Oxford Centre for Clinical Magnetic Resonance Research (OCMR), the Acute Multidisciplinary Imaging and Interventional Centre (AMIIC), and Cardiovascular Clinical Research Facility (CCRF) which are all classified as Small Research facilities (SRFs).

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

Radcliffe Department of Medicine (RDM)

The Radcliffe Department of Medicine (RDM) within the Medical Sciences Division is one of the largest departments in the University of Oxford. RDM has been delivering outstanding and impactful multi-disciplinary research since its formation in 2012. RDM's vision is to support a longer, healthier life for all. Our mission is to improve health through cross-disciplinary

research to understand shared mechanisms of disease and to accelerate the transition from scientific discovery to clinical care. See our website for more details: https://www.rdm.ox.ac.uk/about

Strategy

Over the next five years we will:

- Deliver high impact research that generates new insights into the causes, prevention and treatment of diseases
- Drive interdisciplinary cross-cutting research themes to foster collaboration, shared platforms and capabilities
- Lead clinical trials of new treatments that impact on diagnosis and patient care
- Develop new technologies in experimental and clinical imaging that enable new research insights and clinical translation
- Develop IP leading to new spinouts and licence deals

Culture

We are passionate about supporting the career paths of all staff and students, to drive innovation and boost research capacity. We foster a positive culture that is inclusive and supportive of all staff and students, enabling them to reach their full potential.

We currently hold a Silver Athena Swan award in recognition of our efforts to introduce organisational and cultural practices that promote gender equality and create a better working environment for all. Read more: https://www.rdm.ox.ac.uk/about/our-ethos/equality-diversity-and-inclusion-in-rdm

We are particularly keen to receive applications from women and members of BAME communities who are currently under-represented at this level in the Department.

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.

More information can be found here: 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.ox.ac.uk/about/jobs/explore-our-careers/applications-process/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.

Information for internal candidates

If you currently work at 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 and information about your performance.
- although employees 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://www.ox.ac.uk/about/jobs/explore-our-careers/applications-process/support-with-online-applications

Non-technical questions about this job should be addressed to the recruiting department directly (cvm_personnel@cardiov.ox.ac.uk).

To return to the online application at any stage, please go to: https://www.ox.ac.uk/about/jobs/explore-our-careers/applications-process/how-to-apply

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://www.ox.ac.uk/about/how-we-are-run/policies-and-statements/policy-hub/job-applicant-privacy-policy. The University's Policy on Data Protection is available at: https://www.ox.ac.uk/about/how-we-are-run/policies-and-statements/policy-hub/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** of 30 September before the 70th birthday.

For **existing** employees on these grades, any employment beyond the retirement age is subject to approval through the procedures: https://unioxfordnexus.sharepoint.com/sites/OXINTRANET-working-here/SitePages/the-ejra.aspx

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.

Equal Opportunity

The University of Oxford is committed to equal opportunity, and to being a place where everyone belongs and is supported to succeed. We recognise how the diversity of our community enriches our ability to deliver on our academic mission.

We welcome applications from individuals from all backgrounds, including those under-represented within higher education. No applicant or members of staff shall be unlawfully discriminated against on the basis of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.

Employment with the University and progression within employment will be determined according to personal merit and the application of criteria related to the duties and conditions of the post. In all cases, the primary consideration will be the ability to perform the job.

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Benefits of working at the University

Employee benefits

University employees enjoy 38 days' paid holiday, generous pension schemes, flexible working options, support for sustainable travel and other discounts. Staff can also access a huge range of personal and professional development opportunities. See https://www.ox.ac.uk/about/jobs/working-here .

Employee Assistance Programme

As part of our wellbeing offering staff get free access to a confidential employee assistance programme, available 24/7 for 365 days a year. Find out more at https://www.ox.ac.uk/about/jobs/life-in-oxford/healthcare-and-wellbeing

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

Please see our Life in Oxford webpage for information on relocating to and settling into the Oxford area. The website offers valuable guidance, including information on where to find more details about housing, transportation, finances, healthcare, and other key aspects of living in Oxford and the surrounding region. See https://www.ox.ac.uk/about/jobs/life-in-oxford

There is also a visa loan scheme to cover the costs of UK visa applications for staff and their dependants. See https://www.ox.ac.uk/about/jobs/explore-our-careers/applications-process/visas-and-immigration

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://www.ox.ac.uk/about/jobs/explore-our-careers/applications-process/terms-and-conditions-of-employment 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://www.ox.ac.uk/about/jobs/life-in-oxford/childcare-and-schooling/childcare

Supporting disability and health-related issues

We are committed to supporting members of staff with disabilities or long-term health conditions, including those experiencing negative effects of menopause. The Staff Disability Advisor can be contacted at staffdisability@admin.ox.ac.uk

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/researcher-hub/about