

Job Title:	Lead Bioinformatician
Department/Division/Faculty:	Epidemiology and Biostatistics/ Public Health/Medicine
Campus location:	St Mary's
Job Family/Level:	Professional Services, Level 5
Responsible to:	HDR UK Imperial site Director
Line Management responsibility for:	Junior bioinformatician
Key Working Relationships (internal):	Non-academia, academia and industrial partners within the HDR UK site, including HDR UK Fellows; Research Computing Services team, BRC ITMAT Data Science Group, Data Science Institute.
Key Working Relationships (external):	HDR UK sites (including London sites – UCL, Kings College London, London School of Hygiene and Tropical Medicine and Queen Mary University of London)
Contract type:	Full Time and Fixed term until 31 May 2023

Purpose of the Post

HDR UK

Health Data Research (HDR) UK is the new national institute for data science for health, which is being established in 2018 with long term funding support from research councils, UKRI, charitable and governmental research funders. The HDR UK seeks to drive improvements in the health of patients and populations through research at regional and national scale. The triple mission of HDR UK spans discovery of disease mechanisms in science through

- Precision medicine and trials to public health;
- Establishing platforms and underlying infrastructure to enable research at national scale;
- Developing training and capacity opportunities.

To deliver this mission, the five major London universities – UCL (coordinating), Imperial College London, King's College London, London School of Hygiene and Tropical Medicine and Queen Mary University of London – came together as a pan London Site. The terms of this partnership are set out in the Site Agreement. The six HDR UK Sites include London, Cambridge University (the Sanger and European Bioinformatics Institute), Oxford, the Midlands, Scotland and Wales/ Northern Ireland.

The University

Imperial College London provides world-class scholarship, education and research in science, engineering, management and medicine. It is consistently rated among the United Kingdom's top three universities and have been ranked 8th in the world by the Times Higher Education World University Rankings in 2016-17. The College has over 8,000 staff and approximately 15,000 students from over 125 different countries. Our reputation for excellence in teaching and research in science, engineering, medicine and business attracts students and staff of the highest international calibre. Staff at Imperial are frequently consulted by governments and also act as members of professional bodies, advise industry and offer informed comment to the media.

Imperial College is distributed over six major campuses, of which the South Kensington site is the largest. There are some 25,000+ systems on the College network, and the ICT Division provides the technical, administrative and management support.

The role

Senior bioinformatician:

- Experienced in planning, problem analysis, managing and delivering complex data analysis tasks
- The technical and managerial ability to acquire, structure, store and design and implement bioinformatics pipelines for complex multi-omics datasets
- To initiate/participate in devising new research topics in collaboration with the PI.
- Ability to manage and coordinate the day to day running, data analysis and computational infrastructure aspects of a large multi-partner project.
- The initiative to manage a junior bioinformatician and co-supervise the bioinformatics-related activity of systems administrators.
- To participate in defining user requirements, planning, acquisition and implementation of large infrastructure projects in collaboration with ICT.
- Create an environment that delivers efficient code development/testing/verification including version control, unit tests, module tests and re-usability. Work towards creating a sustainable environment for the production of high-quality, verifiable and maintainable software using agreed development standards.
- Document software, algorithms and maintain instruction manuals.
- Maintain software over the life-cycle of use.
- Creation of database architectures for diverse, heterogeneous data types on a wide range of architectures.
- Creation/curation/integration of databases for interaction by scientists and potentially a wider community.
- Work closely with PIs to develop grants and provide work package and cost estimates for inclusion in grant applications.
- Design/run appropriate courses in Bioinformatics across the Division in collaboration with other data scientists and domain experts.

This is a senior role that will require the post holder to take operational responsibility for the Design, running and coordination of the analyses, and infrastructure management aspects of HDR UK London site projects, reporting to the Imperial site Director. The post holder will design, supervise and personally undertake/participate in bioinformatics and statistical analyses for the project, take an active role in developing and implementing the data management plan, as well as overseeing and coordinating the overall computational infrastructure and data management. The postholder will represent Imperial as an expert in Bioinformatics at HDR-UK meetings to advise, coordinate and implement bioinformatics data analysis across institutions in London and as part of the wider UK network. The postholder will also assist the Imperial site Director as required with the day to day running of the project (approx. 20% of post time) - including assisting with grant proposals and publications, promoting inter-Departmental research opportunities, seeking links with colleagues in other Departments and Faculties at Imperial College, with other HDR UK sites and other national and international institutions, also facilitating cross-centre working arrangements, meetings and other inter-disciplinary activities.

He/she will liaise with Research Fellows and postdoctoral staff within Department of Epidemiology and Biostatistics, other personnel in the HDR UK project itself including members of partner institutions.

Key Responsibilities

HDR UK

The primary purpose of this job is to contribute to the delivery of the HDR UK mission by:

- Manage the provision of Bioinformatics expertise delivered by Imperial to HDR-UK while maintaining high quality, efficient delivery and advising on strategy.
- providing motivation and commitment on agreed HDR priorities in specific areas
- supporting collaborative activities across London and the UK
- providing monthly reports of progress to the HDR UK London Executive team
- being an ambassador for HDR UK London including acknowledging HDR UK in author affiliations and funder acknowledgements.

This post is funded (in whole or part) by HDR UK and is expected to deliver collaborations across multiple sites in the UK to advance nationally prioritised projects. You are required to list HDR UK author affiliation and acknowledge HDR UK as a funder in all publications and presentations.

Imperial College London

- Leadership and management of a wide range of bioinformatics and statistical analyses, as well as standard pipelines, as required to maximise the impact of research within the HDR UK portfolio, ensuring that they adhere to good practice, are consistent, reproducible and well-documented.
- Lead on production and coordination of high-quality publications in peer-reviewed journals.
- Actively engage with HDR UK researchers to interpret and assess their key data management requirements and generate innovative solutions to meet these.
- Regularly assess established procedures and software for utility against user requirements, emerging publications and best practice, and make recommendations to the HDR UK operations committee to improve and update software holdings.
- Manage the HDR UK data systems administrators to support user-based data management, the implementation of standard procedures and data cataloguing using the tiered storage and archive systems.
- Take primary responsibility for operational bioinformatics requirements for the HDR UK Imperial site, working with the HDR UK team and integrating/coordinating with different parts of the College/faculty/division/department to deliver:
 - data collection, data entry/management, and compliance with the General Data Protection Regulation (GDPR)
 - installation, maintenance, configuration, testing and documentation of bio-software and computing infrastructure
 - SOPs for all analysis and data management procedures, user guides and help-desk email user support (this will be co-manned by other contributing personnel).
- Coordinate the formatting and transfer of large datasets – including submission of bulk data to public repositories (e.g. European Nucleotide Archive SRA, MetaboLights, European Genome-phenome Archive (EGA)).
- Oversee the design and implementation of scripts and interfaces to provide a seamless user environment across the Imperial College HPC computer systems and the data storage tiers.

Other Responsibilities

- Together with other key personnel, write and maintain the Research Data Management (RDM) policy for HDR UK site compliant with funder and College RDM and Information Governance policies.
- Monitoring performance and preparing progress and scientific reports as required by the Imperial site Director, Committee or the Funder.
- Identify potential risks and/or problems in a timely manner, propose and implement risk mitigation strategies to ensure effect on project deliverables is minimal.
- Identify additional resource requirements for the development of the research team.
- Act as the first point of contact for liaison with academics/industry to ensure the timely and secure transfer of data in accordance with contractual obligations.

- Overall management of the project in the areas of:
 - Bioinformatics strategy, support, implementation, data quality and security.
 - Organising meetings to start up and disseminate the progress of HDR UK project, and periodic HDR UK committee meetings.
 - Oversee training and placements for research fellows.
 - Assist with supervising and mentoring post-graduate students of HDR UK programme as appropriate.
 - Assist in liaison, communication and the building of relationships and scientific collaborations with the academic community both within Imperial and externally, at all levels from post-graduate students to professors, seeking to strengthen participation in the HDR UK project.

Person Specification

Requirements

Candidates/post holders will be expected to demonstrate the following:

**Essential (E)/
Desirable (D)**

Education	
Post-graduate qualification (in bioinformatics, computational biology, statistics, epidemiology, or other relevant quantitative sciences)	E
PhD (in bioinformatics, computational biology, statistics, epidemiology, or other relevant quantitative sciences) or equivalent postgraduate research experience	D
Experience	
An ability to personally tackle a wide range of bioinformatics analyses, including e.g. sequence-based analyses, proteomics, transcriptomics, genomics, metagenomics	E
Experience of working in a multidisciplinary research environment	E
Track record of publications and collaborative work commensurate with the level of appointment	E
Demonstrated project management skills and experience, with success in executing research projects at an international and high-profile level	E
Experience of using/coding analytics and statistics methods/software.	E
Experience of identifying and applying for funding opportunities successfully	D
Experience of training Undergraduate and Postgraduate students	D
Knowledge	
Excellent understanding of the quantitative methodology and computational aspects of bioinformatics	E
Strong Knowledge of scripting languages (e.g. <i>Bash, Python, Perl</i>) and comfortable working in a Linux environment, preferably with experience of job-scheduling middleware	D
Strong understanding and familiarity with key bio-data formats and data standards	D
Understanding of relational databases, <i>SQL</i>	D
Bioinformatics software in a multi-user environment	D
Skills & Abilities	
Ability to plan, strategize and manage complex interdisciplinary tasks in Bioinformatics across multiple groups/sites	
Ability to supervise a wide range of bioinformatics analyses, including sequence-based analyses	E
A high level of analytical capability and ability to take the initiative to develop solutions to complex data problems	E
Ability to perform effectively under pressure and multitask to reach multiple tight deadlines	E

Ability to assess priorities, working with a minimum of supervision and initiate action, resolving problems where appropriate	E
Outstanding interpersonal, communication and presentation skills	E
Strong experience in working effectively with a wide range of staff including an ability to build effective working relationships across the College and across Institutions	E
Ability to handle confidential information with tact and discretion	E
Understanding of the needs of an academic environment and the issues which affect Universities	E
Willingness to travel nationally and internationally for meetings, conferences etc.	E
Ability to regularly review own training needs and attend training as necessary	E
Prepared to work flexibly outside of office hours on occasion	D

Please note that job descriptions cannot be exhaustive, and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Imperial College is committed to equality of opportunity and to eliminating discrimination. All employees are expected to follow the [7 Imperial Expectations](#) detailed below:

- 1) Champion a positive approach to change and opportunity
- 2) Encourage inclusive participation and eliminate discrimination
- 3) Communicate regularly and effectively within and across teams
- 4) Consider the thoughts and expectations of others
- 5) Deliver positive outcomes
- 6) Develop and grow skills and expertise
- 7) Work in a planned and managed way

Employees are required to comply with all College policies and regulations paying special attention to:

- Confidentiality
- Conflict of Interest
- Data Protection
- Equal Opportunities
- Financial Regulations
- Health and Safety
- Information Technology
- Smoking
- Private Engagements and Register of Interests

They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the [College Website Health and Safety Structure and Responsibilities](#) page.

The College is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see <https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/>

The College believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes where their use is shown to be necessary for developing new treatments and making medical advances. Imperial is committed to ensuring that, in cases where this research is deemed essential, all animals in the College's care are treated with full respect, and that all staff involved with this work show due consideration at every level.

<http://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-integrity/animal-research/>

Committed to equality and valuing diversity, we are an Athena SWAN Silver Award winner, a Stonewall

Diversity Champion, a Disability Confident Leader and work in partnership with GIRES to promote respect for trans people.