Hello, we are Barts Health

#TeamBartsHealth

bartshealth.nhs.uk

Recruitment information pack

POSITIVE ABOUT DISABLED PEOPLE

WeCare

OurVision To be a high-performing group of NHS hospitals, renowned for excellence and innovation, providing safe and compassionate care to our patients in east London and beyond.

NHS Barts Health NHS Trust

WeCare about our ambition for excellence

Our WeCare values shape everything that we do, every single day. They are visible in every interaction we have with each other, our patients, their families and our partners.

WeCare about everything from the appointment letters our patients receive, to the state of our facilities when they walk through the door, to the care and compassion they receive when they are discharged. WeCare that the people who join our trust will hold the same values as we do, so our values are embedded within our recruitment and selection processes. WeCare that you feel valued working here, so our values also guide our training and development and performance and talent management. WeCare about working with suppliers that live and breathe our values too.

We have come a long way on our journey to delivering safe and compassionate care. By embracing these values as the way we behave around here, we will achieve our ambition for excellence.

Value	Key behaviours	
W WELCOMING	• Introduce yourself by saying "Hello, my name is …" • Smile and acknowledge the other person(s) presence • Treat others as you would wish others to treat you	• Ensure the environment is safe and pleasant for our patients, our colleagues and our visitors
E ENGAGING	• Get involved in making improvements and bring others with you • Encourage feedback from patients and colleagues and respond to it • Acknowledge efforts and successes; say thank you	• Use feedback to make improvements, and empower colleagues to do this without needing to seek permission • Appreciate that this may be a new experience for patients and colleagues; help them to become comfortable
C COLLABORATIVE	• Give time and energy to developing relationships within and outside own team • Demonstrate pride in Team Barts Health	• Respect and utilise the expertise of colleagues • Know your own and others' part in the plan
A ACCOUNTABLE	• Always strive for the highest possible standard • Fulfil all commitments made to colleagues, supervisors, patients and customers • Take personal responsibility for tough decisions and see efforts through to completion	• Admit mistakes, misjudgements, or errors; immediately inform others when unable to meet a commitment; don't be afraid to speak up to do the right thing • Do not pretend to have all the answers; actively seek out those who can help
R RESPECTFUL	• Be helpful, courteous and patient • Remain calm, measured and balanced in challenging situations	• Show sensitivity to others' needs and be aware of your own impact • Encourage others to talk openly and share their concerns
E EQUITABLE	• Value the perspectives and contributions of all and ensure that all backgrounds are respected • Recognise that individuals may have different strengths and needs, and that different cultures may impact on how people think and behave. Be curious to find out • Work to enact policies, procedures and processes fairly	• Be open to change and encourage open, honest conversation that helps foster an inclusive work and learning environment • Remember that we all have conscious and unconscious bias; get to know what yours are, and work to mitigate them

1. Job Particulars

Job Title	Data Scientist
Pay Band	8A
Location	St Barts Hospital /Canary Wharf/ Remote
Reports to	Lead Data Scientist
Responsible to	Consultant Cardiologist
Accountable to	Consultant Cardiologist

2. Job Purpose

The primary aim of this role is to develop Barts Health's PREDICT, a combined data and clinical project aimed at leveraging the Barts Health EHR to directly address healthcare inequalities in cardiovascular medicine within a 3-year timeframe.

This role is for a talented senior data scientist to join a growing team focussed on developing reproducible applications of healthcare data. Our aim is to deliver innovative health care products and services with a focus on cardiology. The post will involve using open source and commercial Natural Language Processing tools to extract clinical and lifestyle information from real-world, free-text medical data using. The postholder will collaborate closely with clinicians, other data scientists and academics in a multi-disciplinary team to develop a predictive model of heart disease in East London.
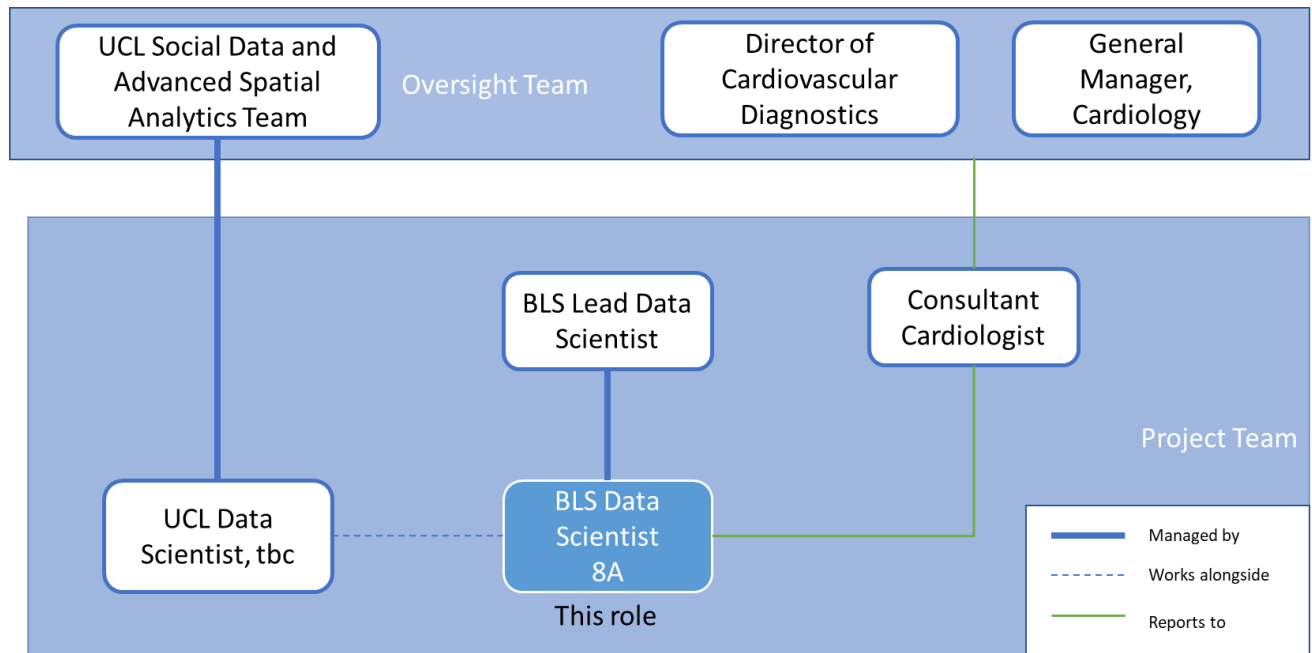
As part of Barts Life Sciences, the postholder will have access to data and computation power, knowledge and innovation to lead the project's development and genuinely and immediately impact patient care. We have a close network of clinical teams across the Trust, research groups at Queen Mary University of London and University College London and engaged patient groups to priorities and spread project outputs.

3. Key Working Relationships

Internal	External
Project nominated supervisor and project team (senior clinicians, clinical-academics)	Project collaborators at University College London
Life sciences team	Commercial organisation, including pharma, medtech and digital health SMEs and large companies
	Those involved in business development opportunities in the UK and internationally
Informatics team	Other NHS or private hospitals
Trust clinicians and academics	Queen Mary University of London and other universities
	Grant awarding bodies, including Barts Charity, NIHR, UKRI

Structure Chart

Oversight Team

- UCL Social Data and Advanced Spatial Analytics Team
- Director of Cardiovascular Diagnostics
- General Manager, Cardiology

Project Team

- BLS Lead Data Scientist
- Consultant Cardiologist
- UCL Data Scientist, tbc
- BLS Data Scientist 8A

This role

	Managed by
- - - -	Works alongside
	Reports to

4. Main duties, responsibilities and results areas

1. Using Natural Language approaches, including proprietary software, to analyse free-text data from the Barts Health electronic health record.
2. To develop statistical models or algorithms to learn from clinical cardiovascular data sets.
3. To validate new methods, developed through internal projects or externally, on local data sets and to evaluate sources and impact of bias.
4. To undertake research and development in structured project templates according to the agile work-plan of collaborative projects, using an evolving range of data analysis tools and techniques, including open source, some of which must be learnt quickly, as and when required
5. To explore and visualise data to present the 'story' of data in a meaningful way to a range of technical and non-technical collaborators including patient panels, and among the wider scientific community via github, publications in peer-reviewed, high-impact scientific journals and presentations at national and international scientific conferences.
6. To collaborate effectively with clinical and other team members, for instance, by identifying and communicating opportunities for sharing research resources, by sharing research findings, by organising visits, and by preparing reports and presentations for internal review and external review.
7. To liaise with informatics, equipment/systems engineers regarding data support and any technical issues.
8. To actively contribute to the generation and regular update of the project work-plan in devOps, closely monitoring project progress, and manage actions required to meet conflicting/changing requirements.

9. To provide professional advice and training in data analysis for colleagues.
10. To actively promote the research and raise the public profile of Barts Life Sciences.
11. To ensure that work is carried out in line with Trust SOPs and policies.

Key result areas

- Developing new statistical models and algorithms to improve local cardiovascular health outcomes and target diagnostic efforts.
- Producing cutting edge research in applied AI/machine learning – focused on NLP and modelling clinical datasets
- Developing relationships with SME, academic and clinical partners to further develop and commercialise projects
- Champion ethical use of clinical datasets in research to support the local patient population needs
- Becoming a key member of the Life Sciences team and expand the Trust's capacity in this field.

The job description is not intended to be exhaustive and it is likely that duties may be altered from time to time in the light of changing circumstances and after consultation with the post holder.

5. Working conditions

Criteria	Description
Physical	The role may require frequent travel between Trust sites and sitting at a computer station for prolonged lengths of time.
Emotional	Working under pressure to tight deadlines. Exposure to medical healthcare records, including documentation of illnesses and deprivation.
Working Conditions	The role is undertaken in an office environment with frequent PC use.
Mental	Concentration responding to unpredictable work patterns, interruptions and the need to meet deadlines.

Safeguarding adults and children

Employees must be aware of the responsibilities placed on them to maintain the wellbeing and protection of vulnerable children and adults. If employees have reason for concern that a patient is 'at risk' they should escalate this to an appropriate person i.e. line manager, safeguarding children's lead, matron, ward sister/change nurse, site manager, consultant. (October 2002). www.nmc-uk.org/

Trust policies/national guidelines

The post holder will be expected to understand and ensure compliance by themselves and other staff with Departmental Policies (including "Local Rules"), Trust Policies and national guidelines.

General Data Protection Regulation
You will familiarise yourself with the Trust's data protection policy which sets out its obligations under the General Data Protection Regulation and all other data protection legislation. You must comply with the Trust's data protection policy at all times and you agree that you will only access the systems, databases or networks to which you have been given authorisation. The Trust will consider a breach of its data protection policy by you to be a disciplinary matter which may lead to disciplinary action up to and including summary dismissal. You should also be aware that you could be criminally liable if you disclose personal data outside the Trust's policies and procedures. If you have any queries about your responsibilities in respect of data protection you should contact the Trust's Information Governance Manager.

Person Specification

Domain	Essential Criteria	Desirable Criteria
Experience	A PhD or masters with equivalent professional experience in a field with relevance to health data science / epidemiology Experience in natural language processing and AI Expertise building statistical models, use of machine learning using Python libraries, and MLOps tools for optimisation Experience mining and analysing electronic health records (EHR) and knowledge of clinical terminologies i.e. SNOMED-CT Experience with one or more data management tools (SQL etc.) Demonstrable use of programming in collaborative and reproducible analysis pipelines Experience using data visualisation for understanding and communicating large or complex data to non-technical audiences Demonstrated ability to assimilate new ideas and work with problem owners to turn ideas into practical, applied techniques, and willingness to continue to learn new techniques Demonstrable experience of leading one's own work, including planning and execution	Knowledge of appropriate procedures for information governance, especially when using patient data Experience with platforms for distributed computation and use of GPUs Familiarity with multiple paradigms for mathematical representation of complex systems (such as agent based modelling, differential equation modelling, and mathematical programming and optimisation)

Skills	Excellent verbal and written communication skills, including technical documentation	Ability to play a collaborative role in applying for grant funding for research as appropriate to discipline
	Able to work and communicate effectively with Senior staff, senior Consultants and other senior Executive/Non-executive staff within and outside the NHS, including the ability to present complex or technical information clearly and the ability to work with others to understand the problems they face	
	Ability to bring together teams comprised of different job roles and organisations. Experience managing groups within a project	
	Ability to rapidly develop strong working relationships and gain the confidence of others	
	Flexible and co-operative	
	Self-motivated and hardworking.	
	Presentation of specialist material in a logical, coherent and interesting manner to a range of audiences – including use of standard project templates, ie Cookiecutter	
	Willingness to learn new skills	
	Willingness to work flexibly in order to achieve project demands	
Knowledge	Demonstrable experience in health data science or statistics or epidemiology	
	Knowledge of management procedures	
	Understanding of digital health innovations	
Qualifications	PhD or masters qualification with equivalent expertise/experience in a quantitative scientific discipline (eg mathematics, statistics, engineering, physics, computational biology, computer science or a relevant discipline).	
	Undergraduate degree in relevant subject or equivalent qualification.	

| Other | Willingness to work occasionally outside normal hours (but within conditioned hours) to meet deadlines | |