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**Superintendent**  
UK Biobank  
Candidate Brief  
**November 2022**

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## Introduction from UK Biobank's Principal Investigator/Chief Executive Professor Sir Rory Collins



UK Biobank is scientifically unparalleled and arguably the UK's most significant scientific asset. With its unique combination of scale, depth, maturity and accessibility, more than 1,700 peer reviewed publications based on UK Biobank in 2021 alone, and an exponential increase in citations and patents, UK Biobank has become the world's most important health resource.

Its great success is testament to a visionary collaboration between successive UK Governments and scientific research funders – most notably the MRC and Wellcome – who understood the significance of advances in genomics and that information from such a database could ultimately lead to improved diagnosis, treatment and prevention strategies for the most devastating diseases, benefiting millions of people in the UK and around the world.

Since inception, UK Biobank has also leveraged £227m of industry funding with increasing levels of interest in, and use of, UK Biobank by industry. UK Biobank is a major contributor to the advancement of modern medicine and treatment and has enabled many scientific discoveries that improve human health.

UK Biobank has a unique role to play in the Government's UK Life Sciences Vision, in both its Preconditions for Success and its Healthcare Missions, set out in June 2021. UK Biobank's role can be best understood both in terms of its ability to attract vital industry investment in UK Life Sciences and in enabling major scientific discoveries that improve public health.

The key focus of UK Biobank over the last five years has been on generating increasingly detailed genetic information on all 500,000 participants and making those data available to the international research community. The unprecedented scale, detail and quality of these data has enabled researchers to make unique discoveries about the relevance of genetics for disease.

For the next five years, our focus will shift to measuring the products of the genes. In particular, the levels of different proteins and metabolites in the blood, urine and saliva collected from participants more than ten years earlier. Completion of the initial whole body imaging of 100,000 participants, followed by repeat imaging of 60,000 of them, will add to the richness of the data available for studying biological changes that lead to the development of disease, or provide protection against it.

None of this would be possible without the altruism of the 500,000 British citizens who agreed to join the study some decades ago and the many tens of thousands of scientists around the world ensuring that their contributions deliver on the long-term vision of the funders to make improvements in human health and wellbeing that are of global significance.

## Company Overview

UK Biobank is a uniquely detailed large-scale prospective study, containing genomic, lifestyle, imaging and health information from 500,000 UK participants. The resource is globally accessible to approved researchers to enable novel and important scientific discoveries that improve human health.

UK Biobank's database is unique, combining several powerful differentiators, including:

- scale (500,000 people);
- depth (detailed lifestyle information, genetic and other assay data, imaging data);
- maturity (large numbers of different health outcomes available for study, 15 years ahead of any comparable cohort study); and
- accessibility (with over 30,000 researchers worldwide already using the data).

Increasing awareness of UK Biobank is more important than ever as the database grows in value.

With over 75% of all new researcher registrations coming from outside the UK, it truly is a global resource accessible to approved researchers undertaking health-related research.

UK Biobank is a distributed organisation, currently headquartered in Stockport, Greater Manchester, with four imaging centres delivering the world's largest multi-modal imaging study located in Stockport, Reading, Bristol and Newcastle. UK Biobank's epidemiological, health data teams and many of our systems are hosted at the Oxford Population Health (the Nuffield Department of Population Health, University of Oxford).

UK Research and Innovation have announced that subject to final approval, UK Biobank will receive an additional £128m of funding to support the next phase of our development. This transformative award will replace and enhance UK Biobank's infrastructure, creating a state-of-the-art facility in Manchester that will become the UK Biobank's headquarters from 2026.

## UK Biobank's impact on research

With the addition of genetic sequencing data on a scale never seen before in health research, UK Biobank is one of the most significant resources for identifying target genes for drug discovery.

Large scale genetic sequencing on the whole exome and whole genome of 500,000 participants is accelerating scientific discovery for human health. For example, scientists have identified rare protein-coding variants that have a large impact on complex traits, such as obesity. Individuals with a variant that suppresses protein production by the GPR75 gene expressed in the brain were observed to have significantly lower rates of BMI. The finding may lead to development of a drug that can inhibit GPR75 to offer a therapeutic strategy for treating obesity.

UK Biobank is also becoming increasingly important for the NHS and the public purse. Implementation of outputs derived from UK Biobank will result in significant savings of public expenditure, by improving prevention, early diagnosis and treatment, thereby improving population health and lowering NHS costs. For instance, the UK Biobank-derived polygenic risk score concept, allows a low-cost genotyping test to identify a substantial proportion of the population at high risk of one or more common conditions, such as heart disease, who could benefit from more effectively targeted prevention and screening strategies.

The unprecedented scale, detail and quality of UK Biobank's imaging project has enabled researchers to make unique discoveries about the development of many diseases in older age. These images are allowing scientists to study the impact of dementia risk factors on the brain and define early brain "signatures" of dementia that are providing clues to how cognitive decline and dementia start. When combined with the wealth of health data in UK Biobank, such as cognitive function tests, and genetics, this is allowing researchers the opportunity to spot dementia before symptoms appear.

A high degree of participant engagement within the cohort has enabled UK Biobank to play a vital role in helping to manage the global coronavirus pandemic. Surveillance studies during the COVID19 pandemic have increased researchers' understanding of the longer-term health impacts of coronavirus infection with over 237 COVID- related publications produced based on the UK Biobank resource.

Given the current pace of UK Biobank's development, coupled with the large increase in the number of researchers accessing the resource, there is likely to be an exponential growth in the impact of the discoveries that emerge that will be of global significance.

## Overview of the Role

- Location: Newcastle
- Salary: £41,554-£43,100 per annum depending upon experience
- Working hours: 36 hours per week (3 x 12 hours shifts over Mon - Sun)
- Contract type: Permanent

We are a leading life sciences 'not for profit' organisation who provide data to researchers across the world to enable scientific discoveries that improve human health. Having recently renewed our funding for the next 5 years, this is an exciting opportunity for you to join us in shaping the future of modern medicine.

The Superintendent Radiographer is responsible for the smooth running of the Imaging Centre within the Imaging Enhancement Study, deputising for the Centre Manager when required. They must provide support and advice to their team as required and ensure that the centre operates safely and efficiently. The Superintendent Radiographer is responsible for quality control and assurance, safety screening, and participant handling and reassurance whilst in the care of UK Biobank.

The Superintendent Radiographer will also be responsible for ensuring any 'incidental findings' of a potentially serious nature, observed during routine scanning, are reported in accordance with UK Biobank's policy.

The post holder will be expected to have specialist knowledge, experience and skills in MRI and will be able to demonstrate sound knowledge of MRI physics and safety. Able to perform, and train / monitor staff in, all aspects of the UK Biobank imaging protocols for neuro, cardiac and abdomen MR, Carotid Ultrasound and DEXA imaging. They will ensure that all scans are performed to the agreed protocols and schedule.

## Principal Duties & Responsibilities

### Operational Duties

- Responsible for the day to day running of the imaging enhancement centre in the absence of the Centre Lead Radiographer
- Perform appraisals and work to achieve agreed set objectives with staff
- Work with the Centre Manager to ensure operational spend is kept in line with the budget
- Supervise radiographers and other clinic staff within the centres, advising less experienced members of staff
- When required, undertake routine scanning of participants based on standardised protocols on UK Biobank's scanners, producing images and data of the highest quality.
- Act on any reports of untoward occurrences, incidents and/or non-conformances, ensuring appropriate forms are completed and processes are followed
- Perform other duties as appropriate to the grade and as requested by the Centre Manager or Lead Radiographer



### **Training and Development**

- Help train new personnel in the UK Biobank imaging protocols, essential for integrating new team members to deliver the proposed imaging techniques and complex post-processing methods
- Identify any known limitations within your, or your team's, professional competence
- Support a safe and professional working environment, dealing professionally with colleagues and participants alike

### **Incidental Findings**

- Review flagged studies and ensure potentially serious incidental findings are fed into the incidental findings process

### **Quality and data audit**

- Help the Centre Manager to monitor data acquisition to maintain high quality information, gathered in accordance with the UK Biobank protocol. Work with the team to solve any issues which arise during data collection
- Help the Centre Manager to monitor the data analysis process within the centre for quality assurance. Act upon any issues identified with the analysis of data
- Responsible for the primary archive of all data acquired and associated record keeping. Ensures no data is lost from capture to storage
- Help the Centre Manager to conduct QA tests for both routine maintenance and general imaging requirements

### **Participant safety and welfare**

- Ultimately responsible for volunteer safety and well-being within the Imaging Centre whilst the Centre Manager is not on-site
- Be up-to-date with the current safety guidelines with respect to the DEXA and MR environment and the specific problems associated with radiation, implants and devices associated with our imaging. Work with the Centre Manager and Lead Radiographer to monitor the 'pre-screening' process
- Actively monitor participant feedback within the centre and work with the Centre Manager and Lead Radiographer to resolve any issues that are highlighted in a timely manner
- Comply with statutory requirements and with the UK Biobank's employment policies whilst at work (e.g. Ionising Radiations Regulations 1999, IR(ME)R 2000, Health and Safety Regulations, COSHH and Risk Assessments)
- Ensure participant's details are correctly identified prior to the examination and ensure that such details/unique ID are present and correct on the imaging modality and any associated records
- Maintain the confidentiality of volunteers and staff and follow the requirements of the data protection act (1998) at all times (i.e. ensuring it is clear to staff that they do not enter any identifying information into any text fields/notes during the visit).

### **Maintenance**

- Help ensure that all apparatus and equipment is working satisfactorily and safely and that any malfunction is reported immediately, in line with departmental policy. Making certain that any fault occurring on equipment is entered into the relevant logbook

## Person Specification

### Essential

1. BSc or Diploma in Radiography
2. State Registration with the Health Care Professions Council (HPC)
3. Participate in and provide support for CPD (Continual professional development) and CME (Continuing medical education).
4. Detailed knowledge of MRI safety aspects
5. Extensive MRI experience in a wide range of MRI examinations
6. Demonstrable expert knowledge and a high level of competence in MRI scanning to ensure unsupervised work can be safely undertaken
7. Experience of quality assurance for imaging
8. Experience of training and mentoring students/radiographers
9. Safety awareness of oneself and others
10. Good communication skills
11. Willing to develop supervision/organisational skills
12. Ability to work without supervision
13. Knowledge of IR(ME)R
14. Knowledge of Health and Safety issues
15. Willingness and ability to adopt new knowledge and research procedures
16. Flexible attitude to duties
17. Excellent interpersonal skills
18. High professional standards
19. Remain calm under pressure
20. Ability and willingness to foster good working relationships
21. Highly motivated and able to motivate others
22. Committed to quality improvement
23. Ability to identify personal development needs
24. Flexible attitude with respect to hours of work
25. Willingness to travel to other sites as required

### Desirable

1. Post graduate qualification in MRI is desirable
2. Computer literate
3. Manual handling knowledge
4. It is highly desirable to have experience in a research environment
5. It is highly desirable to have specialist technical knowledge of neuro imaging and fMRI
6. It is highly desirable to have specialist technical knowledge of cardiac MRI
7. It is highly desirable to have knowledge and experience of DEXA and Ultrasound
8. It is desirable to be an active member of a relevant scientific society (e.g. Society for Cardiovascular Magnetic Resonance and/or International Society for Magnetic Resonance in Medicine Section for Magnetic Resonance Technologists)

## Salary and Employee Benefits

- Salary: £41,554-£43,100 per annum depending upon experience
- Uplift for weekend working (15% Saturday and 30% Sunday)
- Fantastic work-life balance, no night shifts
- 6.8 weeks of annual leave per year, inclusive of Christmas & Easter shutdowns
- Generous 'hybrid' defined benefit/defined contribution Pension Scheme (9.8 % Employee Contribution, 21.6% Employer Contribution)
- Life Assurance Cover
- Day one entitlement to enhanced maternity, paternity, adoption and parental leave
- Full and comprehensive training in all of our modalities which includes MRI, DEXA and ultrasound protocols.
- Enhanced compassionate leave
- Enhanced Reserve Forces leave
- Enhanced company sick pay scheme
- Cycle to work scheme
- Health and wellbeing initiatives, including Employee Assistance Programme (EAP)
- Eye-care scheme
- Annual flu vaccination
- Employee discount platform scheme
- Active social committee
- Free onsite car parking
- Free fruit and refreshments

## How to Apply

Applications are welcome by sending CV to [jobs@ukbiobank.ac.uk](mailto:jobs@ukbiobank.ac.uk) (detailing how you meet the role specifications) by 5pm on 30<sup>th</sup> November 2022 (subject to early closure upon receipt of suitable applications).

If you require assistance in applying for the role, or attending interviews, please contact our HR department via [hr@ukbiobank.ac.uk](mailto:hr@ukbiobank.ac.uk) so that we can make suitable arrangements.

Please click on these links for further information on [Working for UK Biobank](#) and [Recruitment guidance for candidates](#)

Our passion for diversity and equality means creating a work environment for all employees that is welcoming, respectful, engaging, and enriched with opportunities for personal and professional development.

For detailed information on how we process your personal data, please review our [privacy policy](#).

In line with GDPR, we ask that you do NOT send us any information that can identify children or any of your Sensitive Personal Data (racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, data concerning health or sex life and sexual orientation, genetic and/or biometric data) in your CV and application documentation. Following this notice, any inclusion of your Sensitive Personal Data in your CV/application documentation will be understood by us as our express consent to process this information going forward. Please also remember to not mention anyone's information or details (e.g. referees) who have not previously agreed to their inclusion.