



Job title	Research Fellow in Placenta and Maternal Health Data Science. (Title will be 'Research Associate' where an appointment is made before PhD is completed)	Job family and level	Research and Teaching Level 4 (Appointment will be Level 4 career training grade where an appointment is made before PhD has been completed)
School/ Department	School of Medicine Academic Unit of Lifespan Population and Health	Location	The East Midlands Campuses of the University of Nottingham (Biodiscovery Institute I)

Purpose of role

The purpose of this role will be to have specific responsibility for research, for developing research objectives and proposals for a research project in data science for maternal and placenta biomedical data. You will be expected to plan and conduct work using approaches or methodologies and techniques appropriate to the research and will be responsible for writing up your work for publication.

You will join an established team, led by Graziela Figueredo, whose main areas of research interest include data science and machine learning in medical data.

You will have the opportunity to use your initiative and creativity to identify areas for research, develop research methods and extend your research portfolio.

The School of Medicine recognise the importance of continuous professional development and therefore the importance of providing opportunities, structured support and encouragement to engage in professional development each year.

To find out more about the School of Medicine, its values, vision, teaching and research, please see our [further information leaflet](#).

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	Research Responsibilities: - To manage, plan and conduct research activity around data science and data produced in the project using recognised approaches, methodologies, and techniques within the research area. - To resolve problems, in meeting research objectives and deadlines in collaboration with others. - To identify opportunities and assist in writing bids for research grant applications. Prepare proposals and applications to both external	70%



	and/or internal bodies for funding, contractual or accreditation purposes.	
2	Engagement, Communication and Continuation Responsibilities: - To write up research work for publication and/or contribute to the dissemination at national/international conferences, resulting in successful research outputs. - To collaborate with academic colleagues on areas of shared interest, for example, course development, collaborative or joint research projects.	20%
3	Teach, supervise, examine and personal tutoring: You are expected to make a contribution to teaching that is in balance with wider contributions to research and other activities.	10%
4	Other Any other duties appropriate to the grade and level of the role	N/A

Person specification

	Essential	Desirable
Skills	- Excellent oral and written communication skills, including the ability to communicate complex scientific, imaging and computational information clearly to specialist and non-specialist audiences. - Skills in machine learning/deep learning frameworks and their application to medical imaging. - Ability to creatively apply relevant research approaches, models, techniques and methods to biomedical imaging research. Strong programming and computational skills, preferably using Python, with the ability to develop robust, documented and reproducible image-processing and data-analysis workflows. - Ability to analyse and interpret complex MRI and associated	- Experience with relevant medical image-analysis tools/libraries, workflow management, version control, containers and/or high-performance computing. - Skills in database design, querying and/or automated data ingestion and validation.



	clinical/research data, applying appropriate quantitative, statistical and/or computational approaches. • Ability to build effective working relationships and collaborate with multidisciplinary colleagues and external/international research partners. • Ability to organise research activities and data resources effectively, work independently, manage competing priorities and deliver work to agreed timescales. • Strong attention to detail and ability to identify, investigate and resolve technical and data-quality issues.	
Knowledge and experience	• Practical research experience in MRI, medical imaging, biomedical image analysis or a closely related area. • Experience of relevant medical image-analysis methods, which may include image preprocessing, registration, segmentation, quantitative analysis and/or reconstruction. • Knowledge and practical experience of applying machine learning and/or computational methods to medical imaging or biomedical data. • Experience of managing, processing and quality-assuring complex research datasets, with an understanding of reproducibility, metadata, provenance and research data management. • Knowledge and understanding of FAIR data principles (Findable, Accessible, Interoperable and	• Experience of fetal, placental, uterine, pregnancy or abdominal MRI. • Experience of quantitative MRI and/or development of novel MRI/image-analysis methods. • Experience of working with large-scale or multi-site medical imaging datasets, including data harmonisation and QA/QC across scanners, acquisition protocols or research sites. • Experience designing, implementing or maintaining research databases linking imaging with clinical, demographic or other metadata. • Experience of interdisciplinary research involving imaging scientists, clinicians, engineers, computer scientists and/or data scientists. • Experience of working within international research collaborations.



	Reusable) and their application to research data. • Understanding of appropriate handling of sensitive human research data, including data security, de-identification/pseudonymisation and controlled access. • Experience of research methodologies and techniques relevant to the area and evidence of contributing to high-quality research outputs.	
Qualifications, certification and training (relevant to role)	• PhD, or near to completion of a PhD, or equivalent professional qualifications and research experience in a relevant discipline, including one or more of the following: ○ Medical imaging / biomedical imaging. ○ MRI / MR physics. ○ Biomedical engineering / bioengineering. ○ Computer science. ○ Data science / artificial intelligence. ○ Physics. ○ Mathematics / applied mathematics. ○ Computational science. ○ or another closely related quantitative discipline.	
Other	• Willingness to adopt the vision and values of the School of Medicine.	





Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

Valuing people	Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
Taking ownership	Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
Forward thinking	Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
Professional pride	Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
Always inclusive	Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others

