



Studentship Advertisement

Closing Date	Friday 22 nd May 2026
Title	Fully Funded PhD Opportunity within mental health research
Department	School of Medicine
<p>Start date: 1 October 2026</p> <p>Funding duration: 36 months</p> <p>Application deadline: midday Friday 22nd May 2026</p> <p>Interviews: Week commencing 8th June 2026</p> <p>Number of awards: Two fully funded studentships</p> <p>Overview</p> <p>The University of Nottingham invites applications for two fully funded PhD studentships within the fields of mental health and neurosciences, commencing 1st October 2026.</p> <p>These studentships form an institutionally funded commitment to the Midlands Mental Health and Neurosciences Doctoral Training Partnership (Midlands MHN DTP). The DTP's vision is to improve mental health across the Midlands through outstanding research, collaboration, and innovation. Learn more about our research themes and approaches at midlandsmhndtp.ac.uk</p> <p>We welcome applications for:</p> <p>Self-proposed projects within the remit of our highlighted research themes and approaches (see midlandsmhndtp.ac.uk) OR</p> <p>Defined projects supervised by University of Nottingham, School of Medicine academics (details below)</p> <p>Projects should align with the DTP's mission and demonstrate potential to deliver meaningful benefits to mental health in the Midlands.</p> <p>Funding</p> <p>This studentship is fully funded by the University of Nottingham for a fixed period of three years, subject to satisfactory academic progress and continued registration.</p>	

The funding package comprises:

- Home-rate tuition fees for the full duration of the PhD (three years)
- A research training and support grant, contributing towards project-related research costs and approved personal and professional development activities
- A full-time salaried studentship, paid over three years

The University's intention is to align the studentship salary as closely as possible with the applicant's current healthcare professional role, recognising existing skills, training and clinical experience. However, this alignment is subject to the limits of the available funding, and salary levels are capped accordingly.

As this studentship is supported from a fixed funding allocation, the salary is set at appointment and will remain constant for the duration of the award. The funding does not include incremental pay progression or enhanced employment benefits beyond statutory entitlements.

Two funded positions are available under the same funding arrangement at salary level appointed at up to University of Nottingham R&T spine point 35 or Clinical Doctor in Training spine point 02.

Please note that the salary level is non-incremental and funding cannot be extended beyond the three-year period. Additional benefits such as enhanced family leave pay or discretionary allowances are not included within this funding package.

Eligibility

To be eligible to apply, candidates must:

- Meet the University's standard PhD entry requirements:
- <https://www.nottingham.ac.uk/pgstudy/how-to-apply/research.aspx#check>
- Be a practising healthcare professional, registered with a recognised professional regulatory body (for example, NMC, HCPC, GMC, or GPhC).
- Be classed as a Home student for tuition fee purposes.

How to Apply

Applicants may propose their own research project within the broad areas of mental health and neurosciences or apply to one of the predefined projects listed below.

Self-proposed projects:

Identify and contact a potential supervisor within the [School of Medicine](#) at the University of Nottingham to discuss your research interests and project ideas.

Develop your research proposal in collaboration with your supervisor.

Guidance on preparing a research proposal can be found here:

<https://www.nottingham.ac.uk/pgstudy/how-to-apply/research-proposal.aspx>

Once the supervisor agrees to support your self-proposed project you will be directed to complete the full application form. Supervisors must agree to support your proposal prior to submission.

Pre-defined projects:

Once you have confirmed your academic eligibility, contact the supervisor by email as linked under your chosen project to discuss your interest and suitability for the project. Please ensure you include the following information for an informed discussion: title of project as listed, your academic qualifications, brief outline of your interest and why you wish to undertake this PhD. If the supervisor supports your application, they will direct you to complete the full application form.

Available Pre-Defined Projects:

Leveraging population-level data for precision image-derived phenotyping in mental health

[Stamatios Sotiropoulos, Professor of Computational Neuroimaging](#)

Despite the emergence of sophisticated tools over the last decade, from genomic profiling and high-resolution neuroimaging to AI models, the search for objective diagnostic tests and personalised treatments has so far come short for nearly every psychiatric disorder. These efforts have been fundamentally limited by a lack of understanding of how symptoms in mental illnesses map onto disrupted brain circuits. Magnetic Resonance Imaging (MRI) allows unique opportunities to provide insight into this question.

However, a key limitation in these explorations is rooted in the indirect nature of MRI measurements. In particular, MRI-derived features reflect a range of nuisance factors that are not

linked to biological variability. Hardware/software differences between MRI scanners can yield between-scanner variability for the same individual, which can be as large as, or in some cases exceed, between-subject variability and biological effects of interest. This lack of harmonisation between MRI scanners limits robustness and reproducibility of imaging-derived findings.

In this project we will develop a novel solution to this challenge, using unique pre-existing data that our team has built from a leading travelling-heads study. This will allow us to link population-level epidemiological data from the UK Biobank (comprising of 100,000 participants, recruited over ten years and each scanned with 5 imaging modalities), with targeted studies (that are smaller in cohort size, e.g. less than 100 participants, but likely considerably richer with respect to clinical phenotyping). We will subsequently leverage these capabilities to explore brain-symptom associations at scale in mental health cohorts by linking multiple imaging studies.

The project will provide hands-on experience and interdisciplinary, transferable skills relevant to a wide range of research topics, including: acquisition/processing of multi-modal neuroimaging data, handling large datasets, harmonising MRI data obtained from different clinical/research scanners, scripting/programming for scientific computing, data science and analytics for biomarker discovery, neuroimaging in mental illness. Healthcare professionals will be ultimately empowered to apply such research and analysis skills in practice and translate data into patient benefit.

Mechanisms of action of combination neuromodulation treatments for depression

[Prof. Richard Morriss](#) & [Dr Paul Briley](#)

Transcranial magnetic stimulation (TMS) is a “neuromodulation” technique that uses magnetic pulses to re-balance brain activity non-invasively. It is recommended by NICE for treating depression but is not yet in widespread use, partly due to variability in treatment response. Several ways to boost (augment) response to TMS have been identified, including approaches that combine TMS with other neuromodulation techniques (such as transcranial electrical stimulation, tES, and temporal interference stimulation, TIS), cognitive tasks, medications, and alternative therapies. However, none are yet in widespread use and we do not have effective ways of choosing between or personalising augmentation approaches for a given individual.

This PhD will build a mechanistic understanding of how different augmentation strategies modify the effects of TMS, across multiple levels of explanation. It will do this through probing changes in

brain reactivity and connectivity, as well as blood markers, measures of autonomic nervous system function, emotion processing and threat reactivity. As well as neuromodulation modalities (TMS, tES, TIS), methodologies will include: computer-based tasks and eye tracking, measures of brain activity using electroencephalography (EEG), functional near infrared spectroscopy (fNIRS), and functional magnetic resonance imaging (fMRI). Experiments will be conducted with healthy volunteers and people with depression.

Through building a mechanistic understanding of TMS augmentation strategies, the candidate will develop a framework to improve and personalise neuromodulation across the spectrum of conditions in which TMS is used (including psychiatry, neurology, and chronic pain). Throughout, the candidate will benefit from synergies with a newly funded project running a feasibility trial of a TMS augmentation strategy with people with treatment-resistant depression. The candidate will receive regular input from our dedicated patient and public involvement group, and will conduct co-production activities with people with lived experience of depression to prepare the patient studies.

Ultrasound Vagus Nerve Stimulation (U-VNS) for Depression and Anxiety in people with tinnitus

[Magdalena Sereda, PhD](#)

Tinnitus is the sensation of sound when there is no external source of sound, that is, it is a noise inside the ear or head often described as 'ringing in the ears'. Around 15% of people in the UK report chronic tinnitus, and many of those report co-morbid mental health problems such as anxiety and depression.

Neuromodulation techniques - a group of experimental treatments for neurological conditions which involve stimulating the brain or nervous system- represent a potential future treatment option for tinnitus with co-morbid depression and anxiety. Ultrasound Vagus Nerve Stimulation (U-VNS) is a novel non-invasive neuromodulation technique which may be able to target the overlapping neural mechanisms behind tinnitus and co-occurring depression and anxiety.

This project will investigate the effects of U-VNS in people with co-morbid tinnitus, depression, and anxiety and attempt to disentangle the effects of the stimulation for depression, anxiety and tinnitus severity. Active U-VNS will be compared to sham U-VNS stimulation, delivered using the ZenBud device, specifically designed to apply ultrasound stimulation to the auricular branch of the vagus

nerve. Effects of U-VNS on depression, anxiety, tinnitus severity and tinnitus loudness, will be investigated, including a longer term follow up. Physiological effects of the stimulation will be measured using EEG and correlated with changes in depression, anxiety and tinnitus severity. This will be the first study looking at the effects of U-VNS in this population.

Successful candidate will receive training in cutting edge neurostimulation and brain imaging techniques and analysis. They will benefit from mentoring from multidisciplinary team of supervisors with expertise in neuroscience, neuroinformatics, imaging, and translational research. They will gain access to state of the art brain imaging, non-invasive brain stimulation and audiological equipment and facilities.

A holistic multi-mechanistic brain health approach to precision dementia diagnosis

[Professor Dorothee Auer](#) & Dr. Akram Hosseini

Dementia is one of the major global health challenges linked to multiple underlying primary and comorbid pathologies with emerging disease-modifying and risk-reducing interventions for some. Diagnostic challenges include the long time to diagnosis (> 3.5 years), high rate of underdiagnosis (half of those living with dementia have no formal diagnosis) and poor predictability of functional and cognitive decline. The common co-occurrence of multiple brain pathologies and brain health affecting physical health conditions adds substantial complexity to identify the individual drivers of symptoms. Also, the causality of the 14 identified risk factors remains uncertain.

To address the current diagnostic dilemma, a new precision diagnostic framework is required that is person-centred, holistic and integrates diagnostic modalities to capture the complexities of multiple interacting mechanisms that underpin brain health. Diagnostic tools and models are needed to (i) enable timely, inclusive and cost-effective diagnosis that allows meaningful prognostication and to (ii) offer mechanistic biomarker-informed outcome prediction that will support decision making for current and emerging interventions.

The PhD project has three interlinked objectives / work packages that will be further refined, co-created with the PhD fellow, PPI/E and stakeholders:

1. to improve the quality of prognostic models that can be informed by scalable clinical routine tests (blood tests, cognitive and clinical assessments, and widely available imaging) using real-world clinical data with longitudinal follow-up.

2. to identify mechanistic biomarkers (beyond amyloid and Tau) indexing key modifiable moderator variables of brain health (e.g. vascular injury, hypometabolism or dysfunctional g-lymphatic system) and explore causation using large population data.
3. to mechanistically explore non-invasive (blood and MRI) biomarkers that can predict and track efficacy of current and emerging treatments (e.g. cholinesterase inhibitors or neuromodulation).

The project is well suited for a candidate wishing to develop a clinical academic career in dementia. They will benefit from outstanding interdisciplinary training in brain imaging techniques, access to world-class imaging facilities, curated clinical datasets and a national/international network of dementia researchers.

Exploring imaging markers of physical frailty, brain frailty and cerebral small vessel disease, and their associations with physical and mental health outcomes.

[Prof Timothy England](#) & [Dr Jason Appleton](#)

Cerebral small vessel disease (SVD) is a common cause of stroke, cognitive problems, dementia and mood disturbance, particularly in an ageing population. Brain imaging can detect features of SVD as well as more general features visible on CT termed 'brain frailty'. Baseline imaging features of 'brain frailty' and SVD are common in stroke patients and associated with worse clinical outcomes, both individually and when pooled as scores. Although these scores measure similar imaging markers, they may provide different ways of assessing brain health. Frailty – impaired physiological reserve – is associated with worse outcome after stroke. In addition to 'brain frailty', other imaging findings may indicate frailty, such as muscle thickness, but it is unclear whether these are synonymous or measure different aspects of the frailty syndrome. This is important to patients following stroke and in SVD, where frailty often co-exists. This project aims to explore imaging markers of physical frailty, brain frailty and SVD, and their associations with physical and mental health outcomes after stroke. A variety of methodological techniques will be utilised across 3 strands: 1) a systematic review assessing the associations between imaging markers of frailty and SVD with physical and mental health outcomes; 2) secondary analysis of brain imaging from a large clinical trial in patients with stroke or transient ischaemic attack (TIA) to assess the associations between SVD, 'brain frailty' and physical and mental health outcomes; 3) secondary analysis of brain imaging from several large acute stroke and TIA trials, to develop, test and validate automated measures of physical frailty and assess the associations between imaging markers of physical

frailty, 'brain frailty' and SVD, and physical and mental health outcomes. The successful applicant will benefit from support and training from the Stroke Trials Unit and Radiological Sciences, providing a wide-ranging skillset to develop their own research interests.

Equality, Diversity and Inclusion

The University of Nottingham is committed to equality of opportunity, valuing diversity, and promoting a culture of inclusion.

We warmly welcome applications from candidates of all backgrounds, particularly those from groups currently underrepresented in postgraduate research or mental health disciplines. We recognise and value non-traditional career paths.

If you have specific accessibility or support requirements, please contact us early in the process so we can ensure appropriate adjustments are in place.

Further Information

For administrative enquiries please contact:

midlandsmhndtp@nottingham.ac.uk