Fully funded 3 year PhD studentship

School of Human and Behavioural Sciences, Bangor University

Closing date: **Friday 28th April**

**Investigating speech motor control: From the brain to the vocal tract**

Dr Charlotte Wiltshire

Applications are invited for a three-year fully funded PhD studentship within the School of Human and Behavioural Sciences, Bangor University. The studentship covers the full cost of tuition fees for PhD students, plus a maintenance stipend (approx. £17,668 per annum for 3 years) as well as a generous research allowance. The studentship can commence any time between August 2023 and January 2024, but with a preference for an October 1st start date.

**Project:**

Speech production is one of the most complex processes that humans perform. In just one second of speech, we can produce approximately ten speech sounds that require the precise coordination of over 100 muscles. However, producing fluent speech is not always easy. Dr Wiltshire’s research aims to understand how the brain controls speech production in typical and diverse speaker populations. Her research addresses the entire speech production system, from the brain to the vocal tract. To do this, she takes an interdisciplinary approach, often combining tools from cognitive neuroscience (brain MRI, brain stimulation) and phonetics (vocal tract MRI, electromagnetic articulography, acoustics). For example, a recent project combined Transcranial Magnetic Stimulation (TMS) with techniques that record the movement of the articulators (lips, tongue, velum) to understand the role of the Supplementary Motor Area in rhythmic speech production in people who stutter and people who do not stutter (Wiltshire & Hoole, 2022; preprint available here: <https://osf.io/umcnb/>).

The exact PhD project will be developed by the post holder under the guidance of Dr. Wiltshire. Candidates are encouraged to contact Dr. Wiltshire prior to applying to discuss research topics and ideas. The candidate should have an interest in pursuing questions relating to speech production including (but not limited to):

* What physical properties of speech movements characterise disruptions to speech (for example, moments of disruption in developmental or neurologic stuttering and Parkinson’s disease)?
  + What can this tell us about why a disruption starts, continues and ends?
* How does the brain coordinate the actions involved in speech production?
  + How does the brain signal to “start” and “stop” speech movements?
* What is the role of rhythm and timing in speech production?
* What skills are associated with developmental stuttering (e.g. flexible use of vocabulary, skills in monitoring and adapting speech production)?

**Supervision:**

Dr Charlotte (Charlie) Wiltshire received her doctoral degree in cognitive neuroscience from the University of Oxford in 2020. She then went on to complete a postdoctoral fellowship at the Institute for Phonetics and Speech Processing at Ludwig-Maximilians-University in Munich. Her research combines ideas from cognitive neuroscience, phonetics and engineering to understand how the brain controls speech production. For more information and to access recent publications, see www.charlottewiltshire.com

**Requirements:**

Essential requirements:

* First or upper second class in psychology, neuroscience, phonetics or a cognate subject.

Desirable qualities:

* A masters level qualification in psychology, neuroscience, phonetics or a cognate subject and/or extended experience working in a research laboratory (i.e. a placement year or research assistant post).
* Experience of running research studies with adults.
* An interest in working with the public and participant groups (e.g. people who stutter, persons with Parkinson’s Disease, people who have had a stroke) to develop, conduct, and report on research activities.

**Research Environment:**

The School was established in 1963 and now has a large student cohort and a cosmopolitan feel due to the presence of staff and students from over 20 countries. More widely, the School offers postgraduate researchers an excellent research environment, with a large community of PhD students and research-active faculty, regular lab meetings, seminars, and visiting speakers, and events targeted at broader professional development. There are extensive facilities for behavioural, physiological and neuroscientific studies, including a brand-new research-dedicated 3T MRI centre, associated TMS suite and EEG laboratory.

Bangor University is situated among the breathtaking landscape of North Wales. Bangor is a friendly and affordable university city, perched on the Irish Sea and with its back against Snowdonia National Park. There is easy access to beautiful mountains, lakes, rivers and beaches, while maintaining good transport links to some of the U.K.’s larger cities, including Manchester and London.

**Residency requirements:** This studentship is primarily aimed at UK students. However, those who are interested, but are from outside of the UK, should contact Dr Wiltshire to discuss the conditions for the funding of international students.

**General information:** PhD students are expected to contribute to teaching in the school. The school provides excellent training in teaching and many students achieve a nationally recognised professional teaching qualification whilst completing their PhDs. The initial appointment for the position will be for a period of one year, with an extension of 2 years after positive evaluation of capabilities and compatibility. The appointment must lead to the completion of a PhD thesis.

**Further information:** Informal enquiries about the studentship and more guidance should you want to prepare a more detailed proposal should be directed to c.wiltshire@bangor.ac.uk

**How to apply:**

All application must be received through our online application system: <https://apps.bangor.ac.uk/applicant/>

Applications must contain the following documents:

1. Covering letter: Include your motivation for applying for this studentship, aspirations beyond conducting a PhD, and any reasons that you feel you are particularly suited to undertaking this project.
2. References: All applications require two academic references to be submitted in support. Candidates must approach referees themselves and include the references with their application.
3. Curriculum Vitae: This should be no longer than two pages. Where appropriate, this should also include proof of English Language Competency (7.0 IELTS minimum).
4. Research Proposal: 3-4 pages including a clear description of the research questions, hypotheses, the approach to collecting and analysing data, and a proposed timeline for all elements of the research and writing up.

**General enquiries:** For general advice about how to apply and eligibility please visit the Bangor Doctoral School Website (<https://www.bangor.ac.uk/doctoral-school/>)