**Fully funded 3-year PhD studentship (School Funded) -**

**School of Human and Behavioural Sciences, Bangor University, UK**

**Closing date: 4 July 2022**

**Mapping the brain changes that follow injury to the nerves of the hand and their functional significance**

**Dr Ken Valyear**

Applications are invited for a three-year PhD studentship within the School of Human and Behavioural Sciences, Bangor University. The studentship is funded by the School and covers the full cost of tuition fees for PhD students, plus a maintenance stipend (approx. £16,062 per annum for 3 years) as well as a generous research allowance of up to £750. The studentship can commence any time between October 2022 and January 2023, but with a preferred start date of October 1st.

**Project**

Our hands are the primary instruments by which we manually interact with the world, empowered by the nerves that bring to life our experience of touch, temperature, and pain. Injuries to the nerves of the hand are extremely common, with significant and longstanding personal and societal costs. Hand-nerve injuries also change the brain, yet our understanding of these changes and their significance for patient recovery is poor.

This project will involve functional MRI and behavioural testing of patients who have experienced traumatic lacerations and undergone surgical repairs of one or more of the major nerves of the hand. The tests comprise both established and novel methods, with ample opportunities for the appointee to help further develop. Parallel investigations with patients suffering from chronic nerve compression, and with healthy participants following anaesthetic nerve blocks will be encouraged. And, bringing in complementary brain stimulation and/or motion capture methods will also be possible, depending on the appointee’s interests.

The project’s purpose is to yield new understanding of the mechanisms that drive brain changes after functional disruption of the nerves of the hand and their behavioural significance. This fits with [our lab](https://sites.google.com/site/kfvalyear/) mission to make fundamental-level advancements in neuroscience that will help to solve problems of clinical significance.

The project is made possible by our established partnerships with hand surgeons [Prof. Vivien Lees](https://www.google.com/url?q=https%3A%2F%2Fwww.research.manchester.ac.uk%2Fportal%2Fvivien.lees.html&sa=D&sntz=1&usg=AOvVaw3ywgvKp8JAXe0l92mSM873) and [Edwin Jesudason](https://www.google.com/url?q=https%3A%2F%2Fwww.northwaleshandsurgery.co.uk%2F%23%3A~%3Atext%3DEdwin%2520Prashanth%2520Jesudason%2520is%2520a%2Cat%2520Abergele%2520and%2520Wrexham%2520Spire.&sa=D&sntz=1&usg=AOvVaw2STAMsdndLehBP-F79TjK2), and the NHS centres [MFT](https://www.google.com/url?q=https%3A%2F%2Fmft.nhs.uk%2F&sa=D&sntz=1&usg=AOvVaw0laALBbou4uEmzEAjfzxaQ) and [BCUHB](https://bcuhb.nhs.wales/), and there will be opportunities for the appointee to gain experience with clinical practice in this area.

**Person specification**

Requirements:

The successful applicant will have a master’s degree in a relevant discipline (e.g., neuroscience, psychology, biology, medical sciences, engineering, bioengineering, human factors).

Strong work ethic and genuine enthusiasm for research are essential, as is the ability to work both independently and cooperatively.

Significant experience and skill in programming is highly desirable.

Prior experience with functional MRI and/or motion capture is beneficial, but not required, as training will be provided.

Physiology and medical backgrounds are considered valuable, but non-essential.

**Research Environment**

Bangor University School of Human and Behavioural Sciences ranks among the very best in the UK in both research and teaching excellence. Latest Research Excellence Framework assessment rankings indicate Bangor research outputs at 89% ‘world leading’ or ‘internationally excellent’, with an overall ranking of 17th (out of 82 universities). Bangor University has also achieved the highest possible Gold Award in the Teaching Excellence Framework, and our School performs exceptionally well in the UK’s annual National Student Survey (6th in NSS 2020).

Our lab provides a rich and vibrant research community and culture. We meet weekly with the Bangor brain imaging community, led by 8 Principal Investigators (including myself) with extensive brain imaging experience. These meetings focus on supporting new and ongoing projects, and career development. Our team also benefits from regular meetings and fluid knowledge exchange with Simon Watt’s group. Our respective groups share research interests and have complementary expertise, with several ongoing collaborative projects.

The appointee will have full access to a wide-range of state-of-the-art research facilities, including the Bangor Imaging Unit, complete with a fully research-dedicated MRI scanner. Our new (Philips Elition) 3T MRI scanner was purchased in 2019 and represents a major upgrade from our previous scanner in terms of signal-to-noise, improved spatial and temporal resolution, and a full suite of functional, structural and metabolic mapping tools.

The appointee will also have full access to our brand-new state-of-the-art 12-camera motion capture system and laboratory, and the Brain Stimulation Laboratory, complete with multiple TMS systems including high frequency repetitive and paired-pulse specialised systems, a Brainsight neuronavigation system for functional and anatomical MRI-guided TMS, and multiple tDCS systems and eye-trackers.

As a wonderful natural backdrop to professional life, Bangor is situated in a beautiful region of North Wales, on the Irish Sea and near to Snowdonia National Park. Bangor is a friendly and affordable university city, and our campus community is highly international and multicultural, with staff and students from over 20 different countries. There is easy access to beautiful mountains, lakes, rivers and beaches, while maintaining good transport links to some of the UK’s larger cities, including Manchester and London.

**Residency requirements**

This studentship covers in full the tuition fees for British citizens and other nationals who do not require a visa (e.g., Europeans with settled status, Irish). International candidates are very welcome to apply; however, they need to contact Dr Ken Valyear (k.valyear@bangor.ac.uk) to discuss the issue of fees.

**General information**

PhD students are expected to contribute to teaching. The School provides excellent training in teaching, and many students achieve HEA (Higher Education Academy) qualifications while completing their PhDs. The initial appointment for the position will be for one year, with an extension of two years after a positive evaluation of capabilities and compatibility. The appointment must lead to the completion of a PhD thesis.

**Further information**

Informal enquiries about the studentship should be directed to Ken Valyear ([k.valyear@bangor.ac.uk](mailto:k.valyear@bangor.ac.uk)). Please include your CV and brief summary of your research interests.

**How to apply**

All applications must be received by 4 July 2022 through our online application system: <https://apps.bangor.ac.uk/applicant/>

Applications must contain the following documents:

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.

References: All applications require two academic references to be submitted in support. Candidates must approach referees themselves and include the references with their application.

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).

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 visit the Bangor Doctoral School Website (<https://www.bangor.ac.uk/doctoral-school/>)