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

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

**Closing date: July 4th 2022**

**3D Perception in Aging**

**Dr Ayelet Sapir**

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. £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 August 2022 and January 2023, but with a preferred start date of October 1st.

**Project**

When we look at an object, its image on our retina is two dimensional. Therefore, we must use various cues in order to recover its three-dimensional shape. Shading is one such cue, which provides information about the depth of surfaces. When the position of the light source illuminating the object is unknown, we interpret the 3D shape of the object as if shading is due to a light source placed at the above left part of the scene. It is not yet clear why the assumed light source is biased to the left, and a couple of proposals have been put forward. The bias may reflect a learnt statistical regularity in the environment, or may be a result of an internal constraint, such as hemispheric asymmetry for lateralized attentional processes.

The left bias in the assumed light source direction is a robust effect, however we previously found that aging and the direction of reading alter processing of 3D shape from shading (Andrews et al. 2013; Andrews, d’Avossa & Sapir, 2017), so that older participants and people who read from right to left, do not show this left bias. In addition, in aging, the within group variability was very high; some older adults show a “young like” left bias and some show the opposite effect. Finally, a surprising finding was that about 30% of old adults could not see this 3D illusion. These findings are interesting, as a reduction in the ability to perceive 3D information may be related to mobility in aging.

The PhD project aims to assess the reason 3D shape from shading is compromised in aging and whether it is correlated with any other cognitive or physical decline. We will use behavioural measures such as response time and accuracy; eye movements and pupil responses to 3D images; and neuroimaging methods such as ERP and fMRI.

**Supervision**

Dr Ayelet Sapir is a lecturer at the School of Human and Behavioural Sciences, a course director of the MSc in Psychological Science, and a member of the PGR management committee.

Research in Dr Sapir’s lab focuses on several issues in visual perception and spatial attention.

1. The effect of light position on 3D perception. Dr Sapir investigates the neural correlates and individual and cultural differences of the effect of light in 3D perception, using methods such as psychophysics, imaging, pupillometry, and brain stimulation, in different populations such as aging, children and brain lesion patients.

2.The cognitive and neural mechanisms that allow us to explore the environment efficiently. Dr Sapir examined the neural signals associated with attentional shifts and the effect of spatial cues on stimulus detection.

**Requirements**

**Person specification**

Essential requirements:

A good Master level degree (preferably a Distinction) in psychology, neuroscience, or a cognate subject. Studying for this degree can be in-progress at the time of application.

Desirable qualities:

Good understanding of research methods and statistics.

Research experience in the area of experimental psychology, neuroscience, or a cognate subject.

Experience with either neuroimaging, ERP or eye tracking.

Coding skills (in languages such as Python, MATLAB, or R)

**Research Environment**

Our School offers postgraduate researchers an excellent research environment, with a large community of PhD students and research-active faculty, seminars, student conferences, visiting speakers, and events targeted at broader professional development.

There are extensive facilities and dedicated technical staff for conducting behavioural and psychophysiological research. Facilities include a cutting-edge research-dedicated 3T MRI system, high-density EEG systems, eye-trackers and an open-access TMS/tDCS suite.

The School of Human and Behavioural Sciences is an exciting new School that is the product of a recent merger between two exceptional Schools: the School of Psychology and the School of Sport, Health & Exercise Sciences. The School has a large student cohort and a cosmopolitan feel due to the presence of staff and students from over 20 countries. It is consistently ranked among the top 10 in the UK’s annual National Student Survey and is currently ranked top in Wales, and within the leading schools in the UK for research activity in the most recent Research Excellence Framework assessment (REF 2021). Bangor University has achieved the highest possible Gold award in the Teaching Excellence

Framework.

Bangor University is situated among the breath-taking 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. Bangor University is an equal opportunity employer and welcomes applications from populations who are underrepresented.

**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 Sapir to discuss the conditions for the funding of international students.

**General information**

PhD students are expected to contribute to teaching in the department. The school provides excellent training in teaching and many students achieve HEA qualifications 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 Dr Sapir (a.sapir@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:

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