



Cardiff University  
School of Psychology

<b>Studentship Title:</b>	ERC studentship
<b>Research Area/ Project Title:</b>	Computational modelling of memory processing in sleep
<b>Location:</b>	CUBRIC
<b>Expected Start Date:</b>	1 October 2018
<b>Duration:</b>	3 years
<b>Deadline for Application:</b>	23 <sup>rd</sup> February 2018

**Description of Research Opportunity:**

How does the brain store memories? Various computational models exist to explain this, but none of these incorporate sleep. Our experimental work has indicated that processing is quite different in the various stages of sleep, and that this is critical for creating richly complex networks of learned information that are characteristic of human knowledge. This PhD will aim to create a computational model which incorporates not only a learning phase (in wake) but also 'offline' processing of memories in the various stages of sleep. The student will use computational modelling (likely PDP and or Deep nets) to gain a better understanding of how memories are consolidated in sleep, and how memory replay in sleep underpins integration of new memories with old and the recombination of ideas which is involved in creativity. A background in computational modelling or related areas of computer science would be ideal. The Neuroscience and Psychology of Sleep (Naps) lab is a thriving community of computer scientists and sleep researchers studying all aspects of how sleep impacts on cognition (see our nascent web pages: <http://sites.cardiff.ac.uk/cubric/research-2-2/neuroscience-and-psychology-lab-naps/> )

Cardiff University's Brain Research Imaging Centre (CUBRIC) opened in Spring 2016, housing a unique combination of facilities and expertise that will further its world-leading research in Neuroimaging, Cognitive Neuroscience and Biological Psychiatry. Further details of CUBRIC can be found on our web-page: <http://sites.cardiff.ac.uk/cubric/>

**IMPORTANTLY** – while you will have to apply for a specified start date, we are actually flexible about this, as there are actually 4 potential start dates (between 1 January 2018 and 1 October 2018. This can be discussed at the time of award or before.

**Award:**

The studentships will commence in 1 October 2018 and will cover your tuition fees (at UK/EU level) as well as a maintenance grant. In 2017-18 the maintenance grant for full-time students was £14,553 per annum. As well as tuition fees and a maintenance grant, all School of Psychology students receive conference and participant money (approx. £2250 for the

duration of the studentship). They also receive a computer and office space, additional funding for their research, and access to courses offered by the University's Doctoral Academy and become members of the University Doctoral Academy.

### **Eligibility:**

Full awards (fees plus maintenance stipend) are open to UK Nationals, and EU students who can satisfy UK residency requirements. To be eligible for the full award, EU Nationals must have been in the UK for at least 3 years prior to the start of the course for which they are seeking funding, including for the purposes of full-time education.

As only one studentship is available and a very high standard of applications is typically received, the successful applicant is likely to have a very good first degree (a First or Upper Second class BSc Honours or equivalent) and/or be distinguished by having relevant research experience.

### **How to apply:**

You can apply online - consideration is automatic on applying for a PhD in Psychology, with an October 2018 start date (programme code RFPDPSYA).

Please use our online application service at [www.cf.ac.uk/regis/general/applyonline/index.html](http://www.cf.ac.uk/regis/general/applyonline/index.html)

and specify in the funding section that you wish to be considered for School funding.

Please specify that you are applying for this particular project.

**Application deadline:** 23<sup>rd</sup> February 2018 with interviews (either in person or by Skype) being held on or around in early March.

### **General Information:**

The School of Psychology is one of the largest and most successful in the UK (<http://www.cf.ac.uk/psych/>). The School's excellent standard of research and teaching has been recognised in every Research Assessment Exercise. It has its own brain-imaging centre (<http://www.cf.ac.uk/psych/cubric/>), enhancing the international-leading research in behavioural neuroscience, cognitive ergonomics, forensic, social and developmental psychology.

Cardiff is the youngest capital city in Europe and the fastest growing in the UK. It plays host to many national and international sporting events at the Millennium Stadium (<http://www.millenniumstadium.com/>). Culturally, the city is thriving, with the Wales Millennium Centre (<http://www.wmc.org.uk/>) in Cardiff Bay. Cardiff is in very close proximity to the beautiful Welsh countryside (<http://www.breconbeacons.org/>), has a two hour rail link to London and a (cheap) one hour air link to Paris and Amsterdam (<http://www.cardiffairportonline.com/>)

Please address any informal enquiries to:

<b>Name:</b>	Penny Lewis
<b>Email:</b>	LewisP8@Cardiff.ac.uk
<b>Phone:</b>	<i>029 208 70467</i>

**For further information please contact:**

**Postgraduate Research Enquires**

<b>Email:</b>	<a href="mailto:Psych-PhD@cardiff.ac.uk">Psych-PhD@cardiff.ac.uk</a>
<b>Phone:</b>	+44 (0)29 208 75381
<b>Address:</b>	Mrs Clair Southard School of Psychology Cardiff University Tower Building, Park Place Cardiff CF10 3AT