



**PhD Studentship:
Remote monitoring of sleep, respiration and swallowing in
neurodegenerative diseases**

**School of Electrical and Electronic Engineering
University College Dublin**

Background

Applications are invited for a 4 year, fully funded PhD studentship on the topic of remote monitoring of sleep, respiration and swallowing in neurodegenerative diseases, with the Neuromuscular Systems Group (<https://www.ucd.ie/neuro/>) at University College Dublin. The PhD project will be supervised by Dr. Emer Doheny (<https://people.ucd.ie/emerg.doheny>).

This aim of this project is to develop a non-invasive system and method to measure swallowing, and respiratory-swallow coordination, during sleep and wakefulness, suitable for long term remote monitoring. The PhD student will explore the capability of different sensors to detect and characterise swallowing, through experimental studies in healthy participants and in patients. Advanced signal processing techniques together with machine learning methods may be used to develop methods to detect and characterise swallowing, and to monitor aspiration risk in individuals with neurodegenerative disease, such as Parkinson's Disease. The project will involve working with a multi-disciplinary team of experts in biomedical signals and sensors, collaborating with clinical experts in respiratory medicine and sleep, neurology and speech and language therapy. The project will commence in September 2023.

Who Should Apply

Applicants should have, or expect to obtain, a first or upper second class honours Bachelors or Masters degree in Electrical/Electronic/Computer or Biomedical Engineering (or a related discipline). Suitable candidates will have a strong interest in biomedical engineering, and in clinical applications of wearable sensors. Excellent analytical, computational and communications skills are essential. Experience working with patients, recording biomedical signals, biomedical signal processing and machine learning are also advantages.

Funding

The PhD studentship covers tuition fees for EU applicants and a tax-free stipend of €18,000 per year. An annual allowance is provided for research consumables and for international conference attendance.

How to Apply

Please send a cover letter describing your experience and interest in this project (1 page max), CV, and academic transcripts to:

Dr Emer Doheny
School of Electrical & Electronic Engineering
University College Dublin
Belfield
Dublin 4
Ireland
Email: emer.doheny@ucd.ie