

**Faculty of Biological Sciences
School of Biomedical Sciences**

Summer Research Placement

8 weeks, between 15th June 2025 – 2nd August 2025 (subject to flexibility)

Job Summary

Stipend is £270 per week.

Informal enquiries may be made to Dr Silvia Caggiari (s.caggiari@leeds.ac.uk)

To apply, please send your CV and a covering letter (200-300 words maximum)

Closing Date: 5pm on 6th February 2025

Interviews: 17th February 2025

Job Description

Project title: Evaluating modulations in biomechanical and viscoelastic muscle properties following leg cycling: can these inform onset of fatigue?

A spinal cord injury (SCI) is a damage to the spinal cord, resulting in partial or complete loss of movements and sensation. Spasticity is a common symptom after a SCI, causing increase in muscle tone and stiffness, pain, muscle spasms and fatigue (chronic tiredness), which can affect participation in rehabilitation.

Rehabilitation is an important part of the recovery after a SCI, with leg cycling representing one of the common interventions. This has been demonstrated to reduce spastic muscle tone when combined with electrical stimulation (ES), with the latter representing a common adjunct therapy for people with SCI.

Measuring modulation in muscle properties such as stiffness and tone is difficult and often impractical. To date, little is known about the onset of induced fatigue following leg cycling and its relationship with changes in muscle characteristics.

With this project, we want to investigate whether muscle properties measurements can represent early predictors of induced fatigue, following combination of leg cycling and ES. This has the potential to inform rehabilitation interventions for people with SCI.

Healthy volunteers will be recruited from the local University community. They will attend the 'Motor Control Neurorehabilitation Lab' on two separate occasions, where they will undergo to a 30-min incremental test with a cycle-ergometer, without and with transcutaneous electrical stimulation, respectively. Muscle properties will be recorded pre, during and post each session.

Reports to: Dr Silvia Caggiari (s.caggiari@leeds.ac.uk)

Main Duties and Responsibilities

The successful student will be responsible for the recruitment of participants, data collection and analysis. In particular they will be required to:

- i. Familiarise with the research protocol, participant information sheet, risk assessment.
- ii. Use specialist equipment
- iii. Lead participants recruitment and testing sessions. This will involve:
 - Ensure participants meet the eligibility criteria.
 - Schedule the testing sessions and prepare the lab before and after each session.
 - Collect, store consent forms and anthropometric data.
 - Data collection.
- iv. Analyse the data.
- v. Discuss and present the findings to the research group.

Person Specification

Essential

The candidate should be a highly motivated individual, with an interest in sport sciences, human physiology or allied discipline.

Desirable (optional to include this)

Experience in coding with Matlab/Python

Additional Information

Details of the terms and conditions of employment for all staff at the university, including information on pensions and benefits, are available on the Human Resources web pages accessible via the links on the right hand side, or at <http://www.leeds.ac.uk/hr/index.htm>

Criminal Record Disclosures

A Criminal Records Disclosure is not required for this position. However, applicants who have unspent convictions must indicate this in the 'other personal details' section of the application.

Disabled Applicants

The post is located in the Faculty of Biological Sciences. Disabled applicants wishing to review access to the building are invited to contact the department direct. Additional information may be sought from the Recruitment Officer, email disclosure@leeds.ac.uk or tel + 44 (0)113 343 1723.

Disabled applicants are not obliged to inform employers of their disability but will still be covered by the Disability Discrimination Act once their disability becomes known.

Further information for applicants with disabilities, impairments or health conditions is available in the applicant guidance.

University Values

All staff are expected to operate in line with the university's values and standards, which work as an integral part of our strategy and set out the principles of how we work together. More information about the university's strategy and values is available at <http://www.leeds.ac.uk/comms/strategy/>