

Postgraduate Scholarship Information Sheet (Advert)

Scholarship Project Title	Wearable EMG smart garment supporting personalised training programs for autistic children
Advert Reference number	SETU_2024_203
Supervisor(s)	<i>Prof. Martina Gooney (SETU, Waterford, Ireland)</i> <i>Dr. Frances Cleary (Walton Institute, SETU, Waterford, Ireland)</i> <i>Dr. Sharon Kinsella (SETU, Carlow, Ireland)</i>
Research Group	<i>Nursing and Healthcare</i>
Department /School/Faculty	Department of Nursing and Healthcare, School of Health Sciences
Duration	4 Years/48 Months
Status: Full-time / part-time	Full Time
Funding information	SETU 2024 Presidents Scholarship Programme
Value of the scholarship per year for four years	Stipend: €18,500 per annum Fees of €5,750 per annum Research costs- €2,000/€3,000 per annum
Closing date and time	August 14th @ 4PM Irish Time
Interview date	To be confirmed
PhD commencement date	To be confirmed
<p>Project Key Words: <i>Autism, Electromyograph, Smart garment</i></p> <p>Post summary</p> <p>Designing clothing for children with autism requires careful consideration of their unique sensory, comfort, and functional needs. Typically, children with autism tend to be less physically active than neurotypical children (NT). By designing and creating a smart garment considering such unique needs has the potential to help increase the physical activity (PA) for such children's motor skills and physical fitness. Smart wearable garments are evolving, adopting modular design methods as well as interchangeable technology capabilities allowing for the use of varied devices such as, electromyography (EMG) technologies to support activity analysis and muscle data analysis. This is an area that has not been exploited to date to support exercise programs for autistic children. The PhD Scholarship will focus on identifying the most suitable clothing design methodology for a smart wearable garment capable of housing EMG miniature devices to provide meaningful activity and muscle data analysis when worn by autistic children during their exercise activities. Embroidered textile electrodes will be utilized allowing for a more seamless embedded monitoring approach in the garment, abiding with the need for more sensory-friendly, soft and non-irritation requirements from a wearability perspective.</p>	
<p>Knowledge & Experience</p> <p>Essential</p> <ul style="list-style-type: none"> Applicants should have a good primary degree (First or 2.1 Honours) or M.Sc. in an appropriate discipline (Textile Design & Fashion, Sport related Science Degree or Electronic Engineering). 	

- The successful candidate should be highly self-motivated and will require excellent communication skills and will have an interest to upskill and be creative in designing and creating sports garment prototypes with embedded electromyography (EMG) technologies.

Desirable

- MSc in a related degree.
- Experience of working with autistic individuals.
- Experience of working with electromyography (EMG) technologies to support activity analysis and muscle data analysis.
- Practical research experience engaging with hard to reach populations or patient groups.

Skills & Competencies

Essential

- Applicants whose first language is not English must demonstrate on application that they meet [SETU's English language requirements](#) and provide all necessary documentation. See Page 7 of the Code of Practice
- In order to be **shortlisted for interview**, you must meet the SETU English speaking requirements so please provide evidence in your application.
- Excellent communication skills (written and verbal).
- Comprehensive analytical and problem solving skills.
- Proficient computer skills including Microsoft Office, Excel, Access, Word, PowerPoint.
- Highly motivated and self-directed with good time and project management skills.
- Be willing to travel for research purposes.

Desirable

- Experience communicating with health professionals and/or patient populations.
- Display a track record in scholarly publishing.
- Aptitude for project planning and management.
- Ability to work both as a team member and as an independent researcher.
- Experience collecting and managing large data sets.

Further information

For any informal queries, please contact Prof. Martina Gooney on email Martina.Gooney@setu.ie and Dr Frances Cleary Frances.Cleary@waltoninstitute.ie

For queries relating to the application and admission process, please contact the Postgraduate Admissions Office researchadmissions@setu.ie or telephone +353 (0)51 302883.

For queries relating to the funding programme, please email scholarships2024@setu.ie

University Website <https://www.setu.ie/>

Application procedure

Download the **Research PhD/MSc Application Form** from the SETU website and return the completed application to researchadmissions@setu.ie quoting SETU_2024_203 in the email subject line.

Please note that paper submissions will not be accepted.

The University may decide to interview only those applicants who appear from the information they provided, to be the most suitable in terms of experience, qualifications and other requirements of the post.

The University will short-list and interview those applicants who provide the most suitable information in terms of experience, qualifications and other requirements relevant to the scholarship.

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