

## **MSc Rehabilitation Science Student – Exploring the lived experience of using Brain-Computer Interface (BCI) enabled powered mobility**

This is a funded position with a term length of two years and offers a benefits package found at [Graduate Students' Association Health & Dental Plan](#).

**Location** – Work primarily takes place at the University of Alberta – North Campus and at the Glenrose Rehabilitation Hospital in Edmonton.

### **About Dr. Lesley Pritchard's research program and the Imagination Centre Brain-Computer Interface (BCI) Program**

As a pediatric physical therapist, Dr. Pritchard's research focusses on evaluating rehabilitation interventions for children with motor disabilities such as cerebral palsy. She is interested in how lived experiences of children and families informs pediatric rehabilitation service delivery. The successful applicant will work with Dr. Pritchard and the team at the Glenrose Imagination Centre on two qualitative research projects that aim to elucidate the perceptions and experiences of individuals with childhood-onset disability and their families related to BCI-enabled powered mobility use and using BCI to engage in play. Use of BCI as an innovative access method for functional mobility and play is an emerging field. The ultimate aim is to ensure that people with motor disabilities who experience challenges with moving independently have access to functional movement and have the same opportunities for play as their peers without disabilities. Understanding the role of BCI in facilitating functional mobility, engaged play and BCI-related goals of parents and children will inform its practical application and research.

The *Imagination Centre BCI Program* is a clinical and research program directed by Dr. John Andersen and based out of the Glenrose Rehabilitation Hospital. The BCI Program explores solutions to help patients across the lifespan achieve functional goals, increase independence, and enhance participation using BCI technology. The BCI Program is one of very few programs exploring pediatric BCI use globally and is a founding member of BCI-CAN, a coalition of research facilities committed to driving forward pediatric BCI research and innovation.

### **About the MSc Student Position**

Qualified applicants are invited to apply for a MSc position focused on qualitative research methods with children with disabilities and their families. The successful candidate will be working on a large research team with expertise in mechatronics, control engineering, signal processing, deep learning, pediatric BCI and qualitative research methods. This is an interdisciplinary and intersectoral research program, involving engineering, medicine, and rehabilitation medicine faculties. The successful candidate will have strong collaboration and coordination skills to work directly with both research teams at multiple levels, rehabilitation centres, and industry partners to contribute to this research project successfully.

In addition to program-related coursework as per the [MSc requirements in the Faculty of Rehabilitation Medicine](#), the student will receive formal training in the following practical areas:

- i) Patient-oriented research strategies
- ii) Qualitative research methods
- iii) Interviewing children for research
- iv) Equity, Diversity, and Inclusion

The successful candidate will also have access to opportunities for learning and collaboration with interdisciplinary BCI experts through the BCI-CAN Network.

#### **Duties**

- Co-design data collection protocols and collect administrative approvals (research ethics and operational approval)
- Conduct data collection (interviews) and analysis of research data
- Participate on writing research grants, scholarship applications, reports, presentations, and manuscripts for publication
- Present at conferences and team meetings
- Foster collaboration and knowledge sharing with partners

#### **Minimum Qualifications**

- Completion of a BSc degree in Rehabilitation Sciences, Neuroscience, Kinesiology, or other, health-related discipline
- Minimum GPA of 3.6/4, or equivalent
- Keen interest and/or experience with: brain-computer interfaces, assistive technologies, clinical research and methodologies, pediatric rehabilitation, qualitative research
- Proven ability to work independently
- Strong communication skills and fluency in spoken and written English

#### **Preferred Qualifications**

- Experience working with children with disabilities
- Experience with user-centred design or patient-oriented research methodologies (e.g., qualitative interviewing and data analysis)
- Interest and experience in interdisciplinary and translational research in collaboration with health scientists, engineers, and the healthcare system
- Experience with writing manuscripts for publication

#### **Application Instructions**

Please note that this position will commence in January 2025. The application deadline is **July 15, 2024**. The successful applicant will be notified by August 15, 2024, well in advance of the Graduate student September 15 application deadline for the MSc Rehabilitation Science program at the University of Alberta. Please submit the following documents to [lwiart@ualberta.ca](mailto:lwiart@ualberta.ca).

- Cover Letter
- Curriculum Vitae, including a List of Publications, if any

References will be requested for those candidates who participate in an interview. Please quote “BCI MSc Position” in the subject line of your email. Documents must be submitted in a .pdf format and named “FirstName LastName – Document Type” (e.g., “Jane Doe – Cover Letter”).

The University of Alberta is committed to an equitable, diverse, and inclusive workforce. We welcome applications from all qualified persons. We encourage women; First Nations, Métis and Inuit persons; members of visible minority groups; persons with disabilities; persons of any sexual orientation or gender identity and expression; and all those who may contribute to the further diversification of ideas and the University to apply. All qualified candidates, including international candidates, are encouraged to apply; however, Canadians and permanent residents will be given priority.