Ward Summer Research Student (SOAR position) – Summer 2026

Program: Sparking student Opportunities for Advancing inclusive childhood disability Research program

Institution: Holland Bloorview Kids Rehabilitation Hospital – Bloorview Research Institute
Principal Investigator: Dr. Deryk Beal
Lab: CONNECT
Graduate Department Affiliation: Rehabilitation Sciences Institute

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Project Title

Robotic neuronavigation for motor hotspot localization using transcranial magnetic stimulation (TMS)

Project Overview

This study evaluates the reproducibility of robotic neuronavigation for TMS motor hotspot localization across sessions. Using MRI-guided targeting and a robotic arm for precise coil positioning, we aim to identify the First Dorsal Interosseous (FDI) hotspot and record motor-evoked potentials (MEPs) in two sessions separated by 24–72 hours. Findings will inform best practices for precision TMS protocols and validate robotic systems for longitudinal neuromodulation research.

Position Details

- Start Date: May 4, 2026
- End Date: July 24, 2026
- Type: Hourly
- Wage: $17.60/hour
- Position Types: In-person
- Number of Positions: 1

Responsibilities

- Assist with informed consent and participant safety screening
- Help with EMG electrode placement and signal quality verification
- Support calibration of neuronavigation system and robotic arm setup
- Assist with TMS and EMG data collection
- Organize session data and maintain logs
- Preprocess MEP data and perform Euclidean distance calculations
- Contribute to report drafts and present preliminary data at the BRI Summer Student Symposium

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Qualifications

- Completed at least **2 years of undergraduate study** in neuroscience, neurophysiology, medicine, biomedical engineering, or related field
- Experience with research participants, report writing, presentations, or signal processing is an asset but not required

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Application Requirements

- Cover letter
- CV
- Transcript
- One letter of recommendation (from a professor or employer)