



**Job Title:** LokoLab Research Assistant

**Position Classification:** Researcher/Professional

**Job Description:**

**POSITION SUMMARY:**

The individual will work under direct supervision with the faculty member and senior laboratory staff to assist with mechanistic and clinical research projects on the neural control of walking in individuals with spinal cord injury (SCI) and able-bodied individuals. Staff will contribute to ongoing projects in the laboratory. Current projects include:

- the effect of sensory tongue stimulation combined with gait rehabilitation on balance and walking function following SCI
- developing a novel robotic-based assessment tool for measuring lower limb proprioception in people with SCI
- the contribution of short-term sensory and motor plasticity to locomotor adaptations in people with SCI
- the sensory and motor determinants of skilled walking function following SCI
- Staff will have the opportunity to develop skills in biomechanical gait analysis, measures of neural activity, and robotic devices, as well as gain experience in clinical rehabilitation research with people with spinal cord injury. A consistent weekly schedule will be required.

**DESCRIPTION OF DUTIES:**

- Set-up data acquisition systems and experimental equipment according to prescribed protocols
- Assist with physical and clinical assessments of research participants
- Assist with the set-up of research participants in the Lokomat robotic gait device
- Assist with weekly Lokomat training sessions with research participants
- Assist with the data collection during experiments; techniques will include measurement of muscle activity (electromyography), 3-dimensional motion capture, and neurophysiological techniques (e.g. transcranial magnetic stimulation, peripheral nerve stimulation)
- Conduct data analysis (data entry, running data through existing data analysis software routines, generating data graphs and plots). Opportunity to develop skills in Matlab programming for data analysis, as appropriate.
- Assist supervisor in performing literature searches and reviews

**SUPERVISION RECEIVED:** These positions will report directly to the faculty member and senior laboratory staff (post-doctoral fellows) of the Human Locomotion Laboratory at ICORD. Work involves both independent work and within a team environment. The employee will maintain regular contact with the supervisor through weekly meetings, as well as email and telephone, as necessary. The employee works under established laboratory procedures and protocols, and should defer to the supervisor in the event of any extraordinary circumstances regarding research participants.

**APPLICATION SUBMISSION:** All applicants must submit a cover letter, resume, and class schedule. Applicants not completing this will not be considered.

**Qualifications:**

**EDUCATION AND EXPERIENCE:**

- Current or returning UBC Student
- Minimum of senior-level coursework in Science, Kinesiology/Neuroscience
- Strong computer and quantitative skills
- Previous research experience in human-based research preferred



- Previous experience and/or strong desire to work with individuals with physical disabilities

**KNOWLEDGE, SKILLS AND ABILITIES:**

- Excellent inter-personal skills required
- Excellent verbal and written communication skills required
- Ability to exercise tact and discretion required
- Able to work in a team environment and independently
- Ability to initiate, learn quickly, exercise sound judgment and solve problems based on training provided
- Must be detail-oriented
- Enthusiastic, organized, and responsible

**Student Learning Components:**

**TRAINING AND ORIENTATION:** The staff will receive an initial orientation that will include an orientation to the physical working space, introduction to various key personnel within the International Collaboration on Repair Discoveries (ICORD), overview of key tasks and responsibilities of the position with supervisors. Staff will then receive training on the use of the specialized equipment within the laboratory as well as experimental set-up and laboratory protocols/procedures, and safety/emergency procedures. Training on disability awareness and how to interact with individuals with disabilities, and special considerations regarding health complications in persons with spinal cord injury will also be provided. Current scientific literature relevant to the project will be provided and discussed with the staff.

**FEEDBACK, ONGOING SUPPORT & REFLECTION:** The staff will attend weekly meetings to ensure effective communication and to ensure optimal challenge and professional growth is being developed. These meetings are designed to assess job performance, identify areas of professional/personal development and engage in discussions around staff and supervisor's reflections on progress and growth. The supervisor will outline specific goals at the beginning of the work term. Regular interaction with supervisor and senior laboratory staff will provide ongoing evaluation and formative feedback regarding performance and progress

**MENTORSHIP & NETWORKING OPPORTUNITIES:** The staff position involves working closely with various faculty members (including faculty from the School of Kinesiology, ICORD, and the Brain Research Centre), post-doctoral fellows, graduate students and university staff; as a result effective relationships can be formed and nurtured through collaborative environments that can greatly benefit the individual's connection to ICORD and its community. Because our laboratory is located in the Blusson Spinal Cord Centre, the staff will likely have opportunities to interact with ICORD clinicians and scientists. ICORD hosts a monthly lecture series, an Annual Research Meeting, and an Annual Trainee Meeting where the staff can learn about current SCI research across the spectrum of care.

**WORKPLACE SKILL AND PERSONAL DEVELOPMENT:**

- Enhanced knowledge about current issues in neuroscience and the neural control of human movement, including that pertaining to spinal cord injury rehabilitation research
- Enhanced communication skills with patient population
- Enhanced knowledge and experience with advanced technology (robotics, 3D motion capture) for assessment and treatment in rehabilitation
- Experience in laboratory-based techniques for human studies
- Enhanced computer skills
- Experience using verbal and written communication styles in a professional setting and for a scientific audience