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Toronto Rehab (Lyndhurst) - Development of a Wheelchair CoG (Centre of Gravity) Evaluation Tool & Prototype

One of North America's leading rehabilitation sciences centres, Toronto Rehab is revolutionizing rehabilitation by helping people overcome the challenges of disabling injury, illness or age related health conditions to live active, healthier, more independent lives. It integrates innovative patient care, groundbreaking research and diverse education to build healthier communities and advance the role of rehabilitation in the health system. They partnered with George Brown to develop a system to provide real-time feedback to occupational therapists involved in wheel chair seating activities. The system will incorporate a platform with load-cells (or similar) and a PC (or similar) terminal which provides results of Centre of Gravity (CoG) calculations.

Advancements in high performance wheelchair seating have provided numerous adjustment options (headrests, footrests, battery location, etc). The therapist faces an increasingly difficult task to adjust the seating for comfort and stability. The planned evaluation tool will allow the seating therapist to adjust the chair based on patient comfort, and use the evaluation to quantitatively assess the stability of the chair. Collecting and storing this data will allow the therapist to determine changes in setting (intentional or unintended) and correct and improve the patient's posture in the chair.

The GBC research team is made up of Jamie McIntyre, B.Sc, Engineering Physics, M.P.D., New Product Development, Professor of Mechanical Engineering Technologies in CCET, Paul O'Brien, Professor in CCET and a team of 4 student researchers. Research is funded by NSERC.

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