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MedTech Provides Functional Movement Therapy for Paralysis

Functional movement and sensory stimulation are critical in recovery programs offered at Pushing Boundaries (located in Redmond, WA) for individuals following stroke, spinal cord injury, traumatic brain injury, multiple sclerosis as well as other neurological diseases and injuries. The concept of “task-specific learning” based on neuroplasticity suggests that activities of daily living (ADL’s) may be improved through numerous repetitions and intensive training. These are the concepts that drive Pushing Boundaries to partner with Hocoma, a medical technology company headquartered in Zurich, Switzerland.

Hocoma was founded in 1996 as a limited liability company by electrical and biomedical engineers Gery Colombo and Matthias Jörg and by the economist Peter Hostettler. Developing innovative solutions is what makes Hocoma – *the global market leader for the development, manufacturing and marketing of robotic and sensor-based devices for functional movement therapy* – tick. For the past 20 years the company has been changing the world for those with limited movement and function due to neurological conditions.

Pushing Boundaries, the Puget Sound’s exercise based paralysis recovery center, entered the MedTech world in 2009 with the acquisition of Hocoma’s first product, the Lokomat. The Lokomat is a driven gait orthosis used for robotic treadmill training for individuals with movement disorders caused by neurological diseases and injuries. It offers the most physiological gait pattern with constant feedback and therapy assessment. It improves patient outcomes by increasing therapy volume and intensity, providing task-specific training and increasing patient engagement. Pushing Boundaries has the only publically available Lokomat on the west coast north of San Francisco.

Hocoma has also developed devices for rehabilitation of the upper extremities. The Armeo® Concept provides tools that allow individuals to increase their current limits of range of motion, strength and endurance to expedite recovery. The Armeo utilizes hand-eye coordination and biofeedback to optimize a person’s potential. The Armeo is not currently available anywhere in the Pacific Northwest. However, Pushing Boundaries is currently raising funds to bring this technology to the community.

There are an estimated 70,000 people in the Puget Sound region alone living with spinal cord injury, stroke, traumatic brain injury or other degenerative illnesses such as Multiple Sclerosis (MS) and Parkinson’s. Until Pushing Boundaries was founded in 2005, there were no opportunities in the Northwest for recovery beyond traditional (and limited) rehabilitative

services. Pushing Boundaries delivers about 6,000 hours of therapy each year at its Redmond facility.

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