



Winter 2014

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New Education Sessions in 2014

Opportunities to learn about neurotechnology and related topics are available. True to our mission, Neurotech Network will be hosting and delivering a variety to education sessions in 2014. They are available in webinar, lecture or panel discussion format. Here is a list of a few scheduled in 2014.

- **Rehab is Over, Now What?** - United Spinal Association Webinar, January 16
 - [Link to the video archive](#)
 - [Link to the presentation in pdf format](#)
- **Can I Walk Again?** - United Spinal Association Webinar, April 10
- **Neural Interfaces Conference 2014** - NIH/NINDS, Dallas, TX, June 22-25
- **Introduction to Implanted Neural Prosthesis** - United Spinal Association Webinar, July 9

Learn more about our outreach activities and upcoming events on our [Upcoming Conferences Page](#).

Personal Stories

Personal Stories of people who use neurotechnology on a daily basis brings the technology to life. Meet Cruise Bogle:

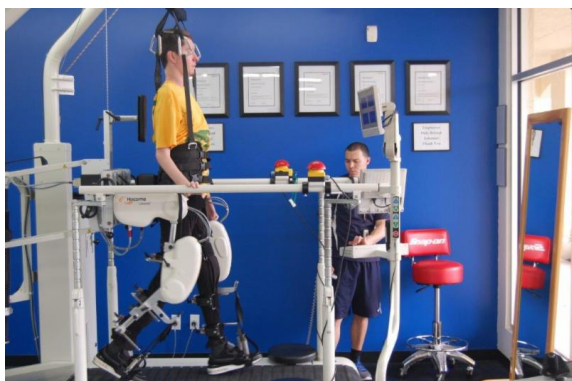
Life drastically changed for this adventurous 19-year-old college student when Cruise

became paralyzed from a spinal cord injury in 2008. Immediately after his accident, he went through the traditional rehabilitation process; two months of inpatient therapy and then several more months of outpatient sessions. The C4 injury left him with little function as a quadriplegic; he had limited movement in his neck, slight shoulder function, drove his wheelchair with a sip-and-puff system, and lost a great amount of weight and muscle mass. After completing the traditional therapy, Cruise was not satisfied with his physical outcome and refused to accept that he was at his physical peak and at his most functional point. He was determined to find something more.

His cousin was doing some research on-line and introduced Cruise to a comprehensive activity-based strength training program at Neuroxcel. Eight months after his injury, Cruise was now entering a program to extend his fitness and continue to further his independence. Upon joining this South Florida program, his team took baseline measurements, set forth short and long-term goals and established a training program specifically for him.

Programs like Neuroxcel provide access to expensive researched-backed equipment in a 'gym-type' setting making access more affordable. They provide specialized training along with the latest in technology such as the Bioness stimulation devices, Hocoma Lokomat Pro, FES Cycling, WAVE Vibration Exercise Machinery, full line of MedX Exercise Machines and much more. They offer a comprehensive program for a wide arrange of neurological conditions such as ataxia, transverse myelitis, spinal cord injury, stroke, to name a few.

More than four years since he joined Neuroxcel, Cruise reaps the rewards like driving his wheelchair with a joystick and extending his arm for a handshake. He is now at a healthy weight with improved posture, core strength and confidence. He has gained a considerable amount of muscle mass onto his entire body and drastically reduced a lot of secondary complications. Cruise also runs his own business, College LYFE Worldwide. To learn more about the Neuroxcel services and other participants, visit www.Neuroxcel.com



Cruise Active in the Neuroxcel Program

Story Update: We introduced you to Robyn Stawski who lives with Cerebral Palsy and Traumatic Brain Injury and was training to climb the 103 flights of stairs to the SkyDeck in the Willis Tower (formerly Sears Tower) in Chicago. On November 3, 2013 after 3

hours and 3 minutes climbing the steep staircase, Robyn made it to the top. She attributes the RECK MotoMed and FES Cycling for helping her build muscle strength and endurance to meet her goal. Congratulations, Robyn!

More stories can be found on our [website](#). Do you have a personal story of the impact of neurotechnology? Let us know.

Rehab is Over, Now What?

As a complement to the webinar featured on January 16, this topic was highlighted in Life in Action Magazine, with the same title. Here is a peak at the article.

Your time in rehab is over. After spending several weeks in intense rehabilitation therapy following a spinal cord injury, brain injury or another acquired disability, it can feel like ending a love-hate relationship. Even for those with degenerative diseases like multiple sclerosis or ALS, where do you go from here? In the booming \$18 billion health and fitness industry, wheelchair users tend to be left behind. The irony is that this is the population that needs more access.

According to the Center for Disease Control, adults with disabilities have a 58 percent higher incidence of obesity than our able-bodied counterparts. Couple that statistic with high incidences of cardiovascular disease, pulmonary disorders, diabetes and the array of secondary conditions like osteoporosis and pressure sores, and this population seems ripe for the health and wellness market. Unfortunately, it is not so easy to access.

Read the remainder of the article at [this link to 'Rehab is Over, Now What?' in Life in Action Magazine](#).

Welcome Sponsor: Neuroxcel

We would like to welcome Neuroxcel to our family of Neurotech Network sponsors. Neuroxcel has joined not only as a corporate sponsor but also as a sponsor of our Fact Sheet '[Exercise Weak or Paralyzed Muscles](#)'. Learn more about Neuroxcel below.



Neuroxcel is the nation's leading functional movement exercise facility with the most state-of-the-art researched-backed equipment to date. Neuroxcel's® Comprehensive Activity-based Strength Training (C.A.S.T.®) program helps individuals reach maximum levels of functionality, independence, and regain as much lost capability as possible through repetitive, activity-based strength training. Neuroxcel's primary client focus are individuals with spinal cord injuries/disorders and other neurological diseases. For more

Thank you for your support and welcome!

Clinical Trial Seeks Participants

Recumbent Cycling Exercise Study for Adolescents with *Cerebral Palsy*

The University of Delaware is looking for individuals aged 10-18 with cerebral palsy to participate in a research study that looks at the effects of assisted cycling exercise on improving fitness, strength, and walking ability.

Shriners Hospital for Children® - Philadelphia is the performance site for this University of Delaware study. This study is funded by: NICHD RO1 HD062588.

For more information, please contact:

Samuel C.K. Lee, PhD, PT at sclee@shrinenet.org

Melissa Torres at 215-430-4020 or MeTorres@shrinenet.org

This information is approved by Temple University for public display and is associated with project 11659



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More information about this study and other neurotechnology devices for Cerebral Palsy is available on our [Cerebral Palsy Education Page](#).

News & Headlines of Interest

RESEARCH

- Pain Treatment is highlighted in a blog with a summary of the recent published research of using **transcranial current stimulation**. The link to the blog is [here](#).
- Researchers in Switzerland are using **deep brain stimulation** to improve gait of paralyzed rats. The research is in early stages. [Read more here](#).
- Stroke rehabilitation combination of stimulation and robotic assisted repetitive motion may help stroke survivors improve upper limb function including range of motion. [The research and protocol is highlighted here](#).
- **Implanted Muscle Controller** allows Staff Sergeant James Sides to control his prosthetic arms after returning from Afghanistan as an amputee. View the video about ground-breaking research [here](#).
- New Tinnitus treatment therapy using **vagus nerve stimulation** was used in a small clinical trial. Showing promising published results, this therapy may help dampen the condition with a constant ringing in the ears. [Read about the study here](#).
- A new **deep brain stimulation** device, the Aleva PC+S, offered by Medtronic is now being implanted by American researchers to both sense and record brain activity while providing therapy for symptoms of Parkinson's Disease, essential tremors and epilepsy. [Read the announcement here](#).
- Brainsway Ltd. announced the U.S. Food and Drug Administration approval to begin a double-blind, multi-center study to assess the efficacy of its **transcranial**

magnetic stimulation (TMS) device in treating people living with obsessive-compulsive disorder (OCD). [Read the announcement here.](#)

- Results of a 42-week follow-up study of stroke survivors reveals clinically significant improvements in gait using the Bioness L300 **Drop Foot Stimulation System**. The study is published in the Journal PM&R. [Read more at this link](#)

AVAILABLE PRODUCTS AND INDUSTRY NEWS

- Vector Gait & Safety System from Bioness is now available at Magee Rehabilitation Hospital in Philadelphia, PA. [Read about the technology](#) to improve walking ability, particularly for those stroke survivors.
- Robotic device for upper extremity takes advantage of the brain's ability to rewire itself, even years after a stroke or brain injury. The device was introduced for the first time in an Australian rehabilitation hospital. [Read more here.](#)
- The Defense Advanced Research Projects Agency (DARPA) announced its Systems-Based Neurotechnology for Emerging Therapies (SUBNETS) initiative with a goal to discover "the characteristics of distributed neural systems and apply therapies that incorporate near real-time recording, analysis and stimulation in next-generation devices inspired by current Deep Brain Stimulation (DBS). [Read the press release here.](#)
- Sharp Brains explains Brain Plasticity and how learning impacts your brain. [Read more here.](#)
- The U.S. Food and Drug Administration (FDA) approved the implanted neurostimulation RNS® System therapy provided by Neuropace for the treatment of seizures related to epilepsy. [Read more here.](#)
- The next generation of implanted devices for the hearing impaired received FDA approval recently. The magnetic bone conduction device available from Cochlear Ltd. offers a new option for people living with hearing loss. [Read the announcement here.](#)
- To kick off the World Cup competition in Brazil, a paralyzed man will use an exoskeleton with an EEG controller. [Read more here.](#)
- ABC News Good Morning America features a couple's story about living with Tourette Syndrome and how a deep brain stimulation system impacted their relationship. [See the story here.](#)

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