

Connecting the Brain and Body for Rehabilitation



James Sulzer
Assistant Professor, Mechanical Engineering

CURRENT RESEARCH

Dr. Sulzer is developing individualized therapy for stroke patients

It's very likely that you or the people in your life have been touched by stroke. In the US alone, about one person experiences a stroke every 40 seconds. For survivors, physical therapy is important, but researchers are still unable to explain why it works for some and not for others. Dr. James Sulzer, of The University of Texas at Austin, works to find radically different approaches towards rehabilitation, using expertise in robotics and engineering together with clinical and neural sciences. He forged his research direction as a graduate student at the Rehabilitation Institute of Chicago, the world's leading rehabilitation hospital, and Northwestern University. There he led engineers, neuroscientists, movement scientists and clinicians and developed wearable robotics for walking assistance in stroke patients. He was then awarded a postdoctoral fellowship at the Swiss Federal Institute of Technology, Zurich (ETHZ), the home of Einstein and 21 Nobel Laureates, to pursue his concept of providing brain activity as biofeedback to patients to restore healthy neural function. Despite the risky nature of this new technology, Dr. Sulzer was the first to show that people can self-control a region of their brain that produces dopamine, a neurotransmitter highly involved in learning and potentially rehabilitation. Simultaneously, Dr. Sulzer founded the first international conference in his field, now in its second iteration.

At UT Austin since 2013, Dr. Sulzer has continued to pursue his unique blend of neuroscience and robotics research that focuses on specific problems, resulting in patient-specific interventions like brain-based rehabilitation or customized wearable robotics. There he has already...

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AFFILIATION



The University of Texas at Austin

EDUCATION

- B.S., in Mechanical Engineering, 2002 , Ohio State University
- M.S., in Mechanical Engineering, 2006 , Northwestern University and Rehabilitation Institute of Chicago
- Ph.D., in Mechanical Engineering, 2009 , Northwestern University and Rehabilitation Institute of Chicago
- Postdoctoral Fellow, in Rehabilitation Engineering, 2013 , Swiss Federal Institute of Technology, Zurich

AWARDS

- K12 Award, 2013
- Postdoctoral Fellowship, ETH, 2009
- Sarah Baskin Award for Excellence in Research, 2008 & 2009
- Cabell Fellowship, 2009
- Predoctoral Award, 2008

RESEARCH AREAS

Life Science, Neurological / Cognitive, Veteran's Causes, Neurological / Cognitive

FUNDING REQUEST

Your contributions will support the continued research of Dr. Sulzer as he seeks to understand the source of the problem for rehabilitation. Donations will support the necessary \$50-60K required to support each student, and the \$400K required for imaging tools. In choosing to support his research, you will play a role leading towards offering transformative therapeutic methods for the millions of people that undergo physical therapy after stroke and spinal cord injury each year.