



## IMMEDIATE OPENING

### Post-Doctoral Position at Case Western Reserve University

#### Muscle-First Hybrid Neuromechanical Exoskeletons for Standing Balance and Gait Stability after Paralysis

A one- to two-year Post-doctoral Researcher position is available in the **Department of Biomedical Engineering** at **Case Western Reserve University** in Cleveland Ohio in the areas of rehabilitation robotics, machine design, biomechanical modeling and simulation, neural stimulation and control system development for advanced systems to provide standing balance and gait stability to persons paralyzed by spinal cord injuries. Work will take place under the direction of **Dr. Musa L. Audu, Ronald J. Triolo and Roger Quinn** on an NSF-funded Cyber Physical Systems project in the Motion Study Laboratory (<https://www.apcenter.research.va.gov/facilities/motion-study-lab/>) at the Louis Stokes Cleveland VA Medical Center and the Biologically Inspired Robotics Laboratory (<http://biorobots.cwru.edu/>) at Case Western Reserve University.

Areas of focus for the post-doctoral trainee will include refinement and optimization of computational models of user-machine interactions and development of control systems that integrate neural activation of the otherwise paralyzed muscles with small amounts of assistance provided by a powered exoskeleton; design, fabrication and testing of new mechanisms, and experimental verification on human research subjects. Focus will be specifically at the ankle utilizing neural stimulation for motive power and motor assistance for small intensity, high band width adjustments. In addition to the rehabilitation robotics, biomechanics and motor control experts at Case Western Reserve University, additional mentoring opportunities are available from experts at two local VA Rehabilitation R&D Centers (the **Advanced Platform Technology (APT) Center**, and the **Cleveland FES Center**. Training will involve interacting with neuroscientists, engineers, neurologists, surgeons and physical medicine and rehabilitation specialists, as well as research volunteers, students and professional staff.

Strong interpersonal and written/oral communication skills are required. **US Citizenship or Permanent Residency strongly preferred.**

Please send a personal research statement, full CV, and a list of three references to Dr. Brooke Odle:

[Brooke.Odle@case.edu](mailto:Brooke.Odle@case.edu)

Refer to this announcement and citizenship status in your reply.

CWRU is an equal opportunity employer, supporting workplace diversity.

