Scientific/Educational Workshop

Workshop title
Neurorehabilitation after cognitive and motor impairment

Workshop responsible
Michelle J Johnson (University of Pennsylvania)

Speakers
Michelle J Johnson, Phd;
Rochelle Mendoca, PhD, OTR;
Loredana Zollo, PhD;
Stefano Mazzoleni, PhD
Beatriz Coto-Solano, MD
Kevin Bui, PhD Candidate

Workshop goals

1. Understand how cognitive and motor function influence ADL function
2. Understand cognitive neurorehabilitation and its impact on motor function
3. Explore current treatment neurorehabilitation strategies for patients with Both motor and cognitive impairment
4. Understand metrics to quantify both cognition and motor impairment
5. Explore how technology-assisted robot therapy can be applied to patients with Both motor and cognitive impairment

Abstract

According to the World Health Organization, 15 million people suffer from stroke worldwide each year. Approximately a third of those affected will suffer from lifelong functional disabilities including problems with performing activities of daily living and regaining independence. While stroke is already the third leading cause of death in the United States, it is also the leading cause of worldwide disability. Up to 75% of stroke survivors suffer specifically from paresis and up to 43.9% of stroke survivors experience mild to moderate cognitive impairments within 3 months post stroke with deficits in both domains persisting more than 3 years post-event. Although motor and cognitive function are often integral to basic and instrumental activities of daily living, in the field of neurorehabilitation, traditional and robot assisted rehabilitation strategies often assess and treat motor and cognitive deficits as separate domains. This has led to inconsistent transfer of motor function gains to the practice of activities of daily living in real environments. This workshop seeks to better understand the dependence of motor performance on cognitive impairment and explore how traditional and robot-based neurorehabilitation can better assess and treat patients with both motor and cognitive impairments leading to better overall functional recovery after stroke.