GEORGE MASON UNIVERSITY | Institute for Biohealth Innovation

Center for the Study of Chronic Illness and Disability (CCID)

Director: Ali A. Weinstein, PhD

Key Interests

Fatigue | Rehabilitation | Cancer | Clinical Research | Arthritis | Spinal Cord Injury | Traumatic Brain Injury | Policy | Exercise | Consumer Choice | Quality of Care | Secondary Disabilities

CONTACT

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FACILITIES & EQUIPMENT

- Surface electromyography
- Haptic devices
- Holter electrocardiography monitors
- Ambulatory actigraphy devices

SELECT PUBLICATIONS

- L. H. Gerber, Cancer-Related Fatigue, Persistent, Pervasive, and Problematic. *Phys Med Rehabil Clin N Am.* 28(1), 65-88 (2017).
- G. Shuman *et al.,* Improving the recognition of grips and movements of the hand using myoelectric signals. *BMC Med Inform Decis Mak.* 16, 78 (2016).
- A. A. Weinstein *et al.*, Mental Health Consequences of Exercise Withdrawal: A Systematic Review. *Gen Hosp Psychiatry.* 49, 11-18 (2017).

Research Focus

The mission of the Center for the Study of Chronic Illness and Disability (CCID) is to use state-of-the-art research methodologies to study factors that lead to chronic illness and disability, as well as to provide research opportunities to the next leaders in clinical research. The research is used to discover treatments that prevent or reduce disability and restore function, improving the patient's quality of life. They are using a multidimensional approach by combining molecular, imaging, and physiological data to eluciate the biology of disability and its relationships with chronic illnesses. They are currently conducting research projects study the chronic symptoms associated with Chronic Liver Disease (Hepatitis C and Non-Alcoholic Fatty Liver Disease), traumatic brain injury, spinal cord injury, burn injury, and surviving breast cancer.

CCID is developing new strategies to combat chronic illnesses.

- Exploration of the possible molecular basis of disability pertinent to the neuromusculoskeletal system, and characterization of genetic and physiological factors that might predict the likelihood of becoming disabled (e.g., mitochondrial oxidative phosphorylation, amount of lean mass, anaerobic thresholds, pain thresholds).
- Exploration of neurohormonal and metabolic processes using microanalytic imaging technologies, such as ultrasound and Doppler technologies. Assessment of the usefulness of patient self-reported measures and their relationship with the biological markers, to better understand issues of motivation and behavior as it relates to disability and restoration of function.
- Investigation of myofascial trigger points with chronic soft tissue neck pain syndromes utilizing ultrasound imaging methods to develop objective methods for identification, in addition to monitoring the potential changes that occur after dry needle therapy has been introduced.
- In collaboration with Inova's Beatty Liver and Obesity Research program, development of methods to substantially reduce the prevalence and impact of mental, emotional and cognitive dysfunction in chronic liver disease (CLD) poplulations (i.e., chronic hepatitis C and non-alcoholic liver fatty liver diseases). The mission of this line of research is to improve the quality of life, reduce morbidity, and increase function in patients with CLD.
- Design of treatments that may reduce or prevent disability, maintain and restore function and explore interactions between chronic disease and disability. Assessment of rehabilitative strategy effectiveness at the level of an individual's functioning within their unique environment.