“Minimizing Physical Disability with Robotic Arms, Legs, and Exoskeletons”

Michael Goldfarb, Ph.D

H. Fort Flowers Professor of Mechanical Engineering
Professor of Electrical Engineering
Professor of Physical Medicine and Rehabilitation
Vanderbilt University

Tuesday, April 15th, 2014, 4:00 pm | B11 Kimball Hall
Refreshments at 3:30, Upson Hall Lounge

Abstract

Advances in robotics have brought to the near horizon some new possibilities with respect to the development of assistive devices for purposes of enhancing the mobility and/or functionality of persons with physical disabilities. This talk will focus on the development of three such assistive devices, which are intended to provide enhanced mobility and/or functionality for persons with lower limb loss, upper limb loss, and with paraplegia, respectively. Specifically, the talk will describe the development of powered transfemoral prosthesis for lower extremity amputees, the development of a multigrasp hand for upper extremity amputees, and the development of a lower limb exoskeleton for legged mobility assistance in individuals with paraplegia.

Biographical sketch

Michael Goldfarb, PhD, is the H. Fort Flowers Professor of Mechanical Engineering in the School of Engineering, with secondary appointments as a Professor of Electrical Engineering, and Professor of Physical Medicine and Rehabilitation in the School of Medicine at Vanderbilt University. Dr. Goldfarb is the director of the Center for Intelligent Mechatronics, the mission of which is to develop intelligent assistive devices that improve quality of life for people with physical disabilities. Dr. Goldfarb has published over 170 technical papers on related topics, including papers that were awarded best-paper awards in 1997, 1998, 2003, 2007, 2009, and 2013. Recent work includes the development of robotic limbs for upper and lower extremity amputees, and the development of lower limb exoskeletons for individuals with spinal cord injury and stroke. Recent honors include the Vanderbilt University Chancellor’s Research Award in 2008, the NIH NIBIB Edward Nagy Award in 2011, the IEEE Wyss Institute Translational Award in 2012, and the IEEE Engineering in Medicine and Biology Society Outstanding Paper Award in 2013.

Michael Goldfarb, PhD
H. Fort Flowers Professor of Mechanical Engineering
Professor of Electrical Engineering
Professor of Physical Medicine and Rehabilitation
Vanderbilt University
VU Station B 351592
2301 Vanderbilt Place
Nashville, TN 37235-1592
Tel: (615) 343-6924
Email: michael.goldfarb@vanderbilt.edu