

University of Houston - Biomedical Engineering Seminar

Friday, February 25, 2022, 12 noon

Via Zoom:

<https://uh-edu-cougarnet.zoom.us/j/97219977403?pwd=V0IRTGhJMTdDQ1dwUjRjcGhYNTVFZz09>

Promoting Patient Engagement in Upper Limb Robotic Rehabilitation Therapy



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Abstract:

Neurological injuries including stroke and spinal cord injury result in long-term disability, yet intensive and engaging rehabilitation can restore motor coordination and independence for many individuals. In particular, robotic rehabilitation has received significant attention for upper-limb therapy due to its ability to provide high-intensity repetitive movement therapy. Research in my lab has focused on increasing patient engagement in robotic therapy, which has been shown to be important for inducing neural plasticity to facilitate recovery. This talk will survey our recent advances, including the design of novel exoskeleton-type robotic devices, adaptive control architectures for upper extremity rehabilitation, and integrating sensing of user intent via non-invasive sensing techniques.

Biosketch

Prof. O'Malley has appointments in M.E., C.S., and E.C.E at Rice; and she is the Associate Dean for Research and Innovation. She is also an Adjunct Associate Professor in the Departments of Physical Medicine and Rehabilitation at both Baylor College of Medicine and the University of Texas Medical School at Houston. She received her BS in Mechanical Engineering from Purdue University, and her MS and PhD in Mechanical Engineering from Vanderbilt University. Her research is in the areas of haptics and robotic rehabilitation, with a focus on the design and control of wearable robotic devices for training and rehabilitation. She has twice received the George R. Brown Award for Superior Teaching at Rice University. O'Malley was a recipient of both the ONR Young Investigator award and the NSF CAREER Award. She is a Fellow of the ASME, the IEEE, and AIMBE.