UNIVERSITY OF DELAWARE
ENGINEERING

DEPARTMENT OF BIOMEDICAL ENGINEERING

2021 SEMINAR SERIES

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Zoom link HERE

Passcode: 2010

10:30 AM EST

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ABSTRACT:

DECEPTION, EXONETS, SMUSHWARE, & ORGANIC DATA: TECH-FACILITATED NEUROREHABILITATION & HUMAN-MACHINE TRAINING

Making use of visual display technology and human-robotic interfaces, many researchers have illustrated various opportunities to distort visual and physical realities. We have had success with interventions such as error augmentation, sensory crossover, and negative viscosity. Judicial application of these techniques leads to training situations that enhance the learning process and can restore movement ability after neural injury. I will trace out clinical studies that have employed such technologies to improve the health and function, as well as share some leading-edge insights that include deceiving the patient, moving the "smarts" of software into the hardware, and examining clinical effectiveness.

BIOGRAPHY:

James L. Patton received his BS in mechanical engineering & engineering science from University of Michigan (1989), MS in theoretical mechanics from Michigan State (1993), and PhD in biomedical engineering from Northwestern University (1998). He is Professor of Bioengineering at University of Illinois Chicago, and a research scientist at the Shirley Ryan AbilityLab. He worked in automotive manufacturing and nuclear medicine before discovering control of human movement. His interests include robotic teaching, controls, haptics, modeling, human-machine interfaces, and technology-facilitated recovery from a brain injury. Patton is vice president of conferences for the IEEE-EMB society, and Associate Editor of IEEE Transactions on Biomedical Engineering, and Medical Robotics and Bionics.

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