

Title:**Biomechanics and Motor Control in the Search of Mechanism Underlying Low Back Disorders.****Description:**

This lecture presents a summary of three clinically motivated experiments conducted at the Musculoskeletal Biomechanics Research Laboratory of the University of Southern California. First, explores the intervertebral kinematics during a common clinical procedure testing mobility and reproduction of symptoms. Second, describes movement strategies and muscle activation in persons with diminished hip muscle performance and the third, explores the paraspinal muscle activation during a controlled anticipatory and un-anticipatory perturbations.

About the Presenter:

Kornelia Kulig, PhD, PT, FAPTA is an Associate Professor of Clinical Physical Therapy and Orthopedic Surgery and a Co-Director of the Musculoskeletal Biomechanics Research Laboratory at the University of Southern California. Her laboratory's research explores tissue morphology, biomechanics, physiology, and pathology in relation to degenerative processes in connective tissues (tendon, disc) and accompanying muscle activation, kinematic and kinetic movement strategies and related signs, symptoms, and loss of function.

Her published research spans from pre-clinical laboratory experimentation to clinical trials. The laboratory research involves muscle and tendon morphology via magnetic resonance and ultrasound imaging as well as locomotive strategies in the presence of tendinopathy. In addition to her research and teaching in the PhD and DPT programs, she is a clinical mentor in the Orthopedic Physical Therapy Residency program.

Dr. Kulig is a recipient of several distinguished teaching and research awards. She is an honorary member of the American Academy of Orthopedic Manual Physical Therapists, a member of the American Physical Therapy Association, American College of Sports Medicine and the American and International Societies of Biomechanics. Dr. Kulig serves as a reviewer for several biomechanical and clinical journals and serves as an Editorial Board Member of the *Journal of Orthopaedic and Sports Physical Therapy*.