Musculo-Skeletal Health

John Challis  
Associate Professor  
Kinesiology  
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Research Interests  
Measurement and simulation modeling of the human musculo-skeletal system, with the aim of examining the role, function, and coordination of muscle in vivo. Development of improved biomechanical measurement protocols.

Mark Latash  
Distinguished Professor  
Kinesiology  
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Research Interests  
Control and coordination of multi-element systems participating in the production of voluntary movements. Equilibrium-point hypothesis of motor control. Control of posture, multi-joint reaching, finger coordination, and other motor tasks; the neurophysiological mechanisms of the production of voluntary movements. Changes in motor control and coordination with age, neurological disorder, and rehabilitation.

Philip Martin  
Professor and Department Head  
Kinesiology  
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Research Interests  
Biomechanics and energetics of locomotion; factors affecting preferred rates of movement in cyclic activities, with particular emphasis on the biomechanics and economy of walking, running, and cycling; kinematic and kinetic determinants of walking and running patterns in below knee amputees.

Nicole McBrier  
Assistant Professor  
Kinesiology  
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Research Interests  
Skeletal muscle regeneration following injury and the influence of therapeutic modalities and rehabilitation on the regenerative processes. Currently, Dr. McBrier is investigating the influence of therapeutic ultrasound on skeletal muscle regeneration following contusion injury.

Roger McCarter  
Professor  
Biobehavioral Health  
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Research Interests  
Mechanisms of aging, calorie restriction and aging, involvement of energy metabolism, muscle function and body temperature in the aging process.

Karl Newell  
Professor and Associate Dean  
Deans Office  
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Research Interests  
Coordination, control and skill of normal and abnormal human movement across the life-span; development of coordination, acquisition of skill, information and movement dynamics, mental retardation and motor skills, drug exercise influences on movement control.

Stephen Piazza  
Associate Professor  
Kinesiology  
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Research Interests  
Kinematic and dynamic computer simulation applied to the study of normal and pathological human gait; effects of design and surgical variation on the mechanics of total knee replacements; modeling of articular contact.

Robert Sainburg  
Associate Professor  
Kinesiology  
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Research Interests  
Neural mechanisms underlying control of multijoint arm movements in humans. We combine both psychophysical experiments and biomechanical simulations to determine the neural processes responsible for coordinating the complex mechanics of the musculoskeletal system. Studies in patients with neurological lesions are conducted to determine the contributions of specific neural structures to control.
Neil Sharkey  
Professor  
Kinesiology  
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Research Interests  
Functional aspects of the musculoskeletal system viewed from an orthopaedic perspective; normal, pathologic, and reconstructed function of bones and joints; mechanisms of injury to bone, ligament, and tendon and associated healing responses; laboratory modeling of skeletal and diarthroidal joint loading; internal biomechanical behavior of the foot and ankle, knee, hip and

Vladimir Zatsiorsky  
Professor  
Kinesiology  
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Research Interests  
Sport biomechanics and conditioning of athletes. Biomechanical basis of motor control, in particular biomechanics of standing posture and force sharing between individual muscle groups, maximal muscular power in burst-like activities, RI study of lumbar vertebrae under mechanical load, application of wavelets in human biomechanics, science of training athletes, especially strength training.