



Dr. Laurel Kuxhaus

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Sept 29 (Fri)

11:30am - 1:00pm

CKB 217

Adventures in Multiscale Multi-kingdom Biomechanics

Abstract:

Engineering biomechanics as a discipline provides tools that can be used to investigate a plethora of interesting questions about the form and function of biological materials, their failure, and their repair. This seminar will reflect on a diverse array of challenging projects in orthopaedic biomechanics, from nanoscale changes in cancellous bone specimens during freezing and thawing to fatigue loading of vertebra that imply that certain vertebral fractures can indeed occur during activities of daily living. Additional adventures include evaluating an ex-vivo knee model straight out of the backyard, the development of an FDA-cleared fracture fixation device, and whether a citrus fruit could prevent a hip fracture.

About the Speaker

Dr. Laurel Kuxhaus is a Professor of Mechanical and Aerospace Engineering and an affiliate of the Institute for STEM Education at Clarkson University. She holds undergraduate degrees in Engineering Mechanics and Music from Michigan State University, a Master's degree in Mechanical Engineering from Cornell University, and a PhD in Bioengineering from the University of Pittsburgh. After a brief post-doc at Allegheny General Hospital, she joined the faculty at Clarkson University. Her research is primarily based in orthopaedic and orthopaedic-inspired biomechanics. From 2018-19, she served as the inaugural ASME Congressional Fellow in Bioengineering, working in the office of Congressman Lipinski and drafting the Growing Artificial Intelligence Through Research Act. From 2019-2023, she was a Program Director of the Biomechanics & Mechanobiology program at the National Science Foundation. During that time, she also served on Detail to NSF's Research Security Strategy and Policy office. When not studying fundamental orthopaedic biomechanics, Dr. Kuxhaus enjoys playing classical music, especially chamber music.