FIU Biomedical Engineering
FLORIDA INTERNATIONAL UNIVERSITY

Biomedical Engineering
Wallace H. Coulter Foundation
Lecture Series

WALLACE H. COULTER Foundation

"Musculoskeletal adaptation to in vivo mechanical loading"

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Lecture: 9:00 AM-10:00 AM
ENGINEERING CENTER
ROOM EC 2300
10555 WEST FLAGLER STREET
MIAMI, FL 33174

Abstract: Mechanical loading is important to the growth, development and repair of musculoskeletal tissues, particularly bone. While this role for mechanical stimuli is recognized, the mechanisms of musculoskeletal adaptation to mechanical stimuli are not well understood. We have developed in vivo models of controlled mechanical loading as tools to examine mechanotransduction in bone and other musculoskeletal tissues that allow us to characterize the mechanics and examine signaling. I will summarize our recent work examining in vivo musculoskeletal adaptation, focusing on increasing bone mass and the concomitant development of osteoarthritis in the joint.

Biography: Marjolein van der Meulen is the James M. and Marsha McCormick Chair of Biomedical Engineering and Swanson Professor of Biomedical Engineering in the Meinig School of Biomedical Engineering and Sibley School of Mechanical and Aerospace Engineering, Cornell University. She is also appointed as a Senior Scientist at Hospital for Special Surgery Her research in orthopaedic biomechanics focuses on musculoskeletal mechanobiology and bone biomechanics. Marjolein received her S.B. from MIT and M.S. and Ph.D. from Stanford University, all in mechanical engineering. Before joining the faculty at Cornell, she worked for three years as a biomedical engineer at the Rehabilitation R&D Center of the Department of Veterans Affairs, in Palo Alto, California. She joined the Cornell faculty as an assistant professor in 1996. She previously served as Associate Dean for Research and Graduate Studies in the College of Engineering at Cornell. She is a member-at-large on the Board of Directors of the Biomedical Engineering Society. She is also a member of the Program Committee and Poster Chair for the 2017 Annual Meeting of the Orthopaedic Research Society. Marjolein is a fellow of AAAS, AIMBE and ASME.