QUANTITATIVE ANALYSIS OF INTRA-ARTICULAR FRACTURES, FOOT MECHANICS, AND FOOT THERMOGRAPHY: POTENTIAL FOR IMPROVED TREATMENT?

Featuring Dr. Andrew Kern

University of Nebraska at Omaha

October 12, 2018 | 12:00 - 1:15 pm | H&K112
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ABOUT DR. KERN

Andrew M. Kern received his BS degree in Biomedical Engineering in 2008, MS degree in Biomedical Engineering in 2011, and PhD degree in Biomedical Engineering in 2017 from the University of Iowa. He is currently a Research Associate in the Department of Biomechanics at University of Nebraska at Omaha. He is focused on understanding the mechanical behavior of the foot, and how abnormal mechanics relate to foot pathology. His research involves the use of novel image-based analysis to improve the diagnosis and treatment of disorders including post-traumatic osteoarthritis, intra-articular fractures, diabetes and peripheral artery disease.

LEARNING OBJECTIVES

To review the biomechanical factors leading to the onset and progression of post-traumatic osteoarthritis (PTOA) following intra-articular fractures. Novel image-based strategies for quantifying the effectiveness intra-articular fracture treatment, stratifying risk for PTOA, and improving surgical performance will be discussed. Foot thermoregulation, and how mechanical behavior of the foot may relate to plantar temperature changes will be introduced. Techniques for analyzing foot temperature behavior will be discussed. Finally, the integration of foot modeling, image-based biomechanical modeling, and foot thermography, as a means of diagnosing and improving treatment of foot and ankle pathology will be discussed.

The presenter Carolin Curtze, PhD has disclosed financial conflict of interest with University of Iowa Research Foundation. Members of the planning committee, Nick Stergiou, Ph.D., Jeffrey Kaipust, M.S., Angela Collins, M.A., Laura Campbell, B.S., and Jackie Farley, CPP have no financial conflict of interest to disclose.

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*This seminar was supported by the National Institutes of General Medical Sciences of the National Institutes of Health under Award Number F2GO101090. Center for Research in Human Movement Variability. The University of Nebraska at Omaha shall not discriminate based upon age, race, ethnicity, color, national origin, gender identity, sex, pregnancy, disability, sexual orientation, genetic information, veteran’s status, marital status, religion, or political affiliation.