Currently, joint replacement technologies have limitations. It is difficult for metallic joint replacement devices to accurately recreate the complex biomechanical environment of diarthrodial joints. Limitations in materials and manufacturing processes make it difficult for joint replacement technologies to perform optimally for an aging population that is remaining active later in life.

Novel biodegradable materials coupled with innovative manufacturing processes and biomechanical analysis can make it possible to create patient specific joint replacement devices that when cultured with the patient’s own cells can become a truly “biological” joint replacement. This talk will focus on the biomechanical requirements of such a device. Current research in the area will be discussed.

Dr. Pfeiffer is a Research Associate in the Department of Veterinary Medicine & Surgery and is the head of Biomechanics and Bioengineering at the Comparative Orthopaedic Laboratory. His research primarily centers on clinical orthopaedic biomechanics of human and veterinary patients. Dr. Pfeiffer also employs computational methods, such as finite element analysis (FEA), in order to answer specific complex clinical questions.

DATE • TIME • LOCATION:
Tuesday April 5, 2011, 4:00 PM, 105 Agricultural Engineering Building