The Biomechanical Basis for Ergonomics in High Exertion Tasks

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Date: November 13, 2013  Time: 4:00 – 5:00 pm
Location: E040 Scott Laboratory, 201 W. 19th Ave.

*** A reception immediately following the seminar***

Abstract: Manual work is still very prevalent in many occupational endeavors today. Often extremely high levels of physical exertion are required. The preponderance of epidemiological evidence indicates that such exertions cause and/or precipitate low back pain and other musculoskeletal disorders for millions of workers annually, resulting in excessive medical and related workers’ compensation costs. High exertion tasks in jobs also restrict the employment of otherwise qualified employees; effectively reducing employment opportunities, especially for women, older workers and physically impaired individuals.

The study of maximum exertion capabilities in various populations has provided the scientific basis to improve the design of manual tasks performed in a large variety of workplaces. Biomechanical models and related software are slowly changing how ergonomics is practiced in many companies. This presentation will explore the historic role that biomechanics has played in understanding the adverse effects of high exertion tasks in various occupations, and how contemporary software apps are being used to improve the design of future workplaces.

Biography: Dr. Chaffin, University of Michigan, is the R.G. Snyder Distinguished University Professor Emeritus. He was elected to the National Academy of Engineering in 1994. He is a fellow in a number of professional societies, including Society of Automotive Engineers, Human Factors and Ergonomics Society, American Association for the Advancement of Science, and American Institute of Medical and Biological Engineering. He is a co-author of Occupational Biomechanics (Chaffin, Andersson, and Martin), now in its 4th edition, as well as author or co-author of over 100 peer-reviewed journal publications. Dr. Chaffin's current research interests are in the area of human movement modeling and simulation.