

Don B. Chaffin, PhD

Dr. Chaffin is the R.G. Snyder Distinguished University Professor (Emeritus) in Industrial and Operations Engineering and Biomedical Engineering at the University of Michigan. Before completing his PhD degree in Industrial Engineering he held engineering positions at GM and Bendix Corporations. He began his academic career as Assistant Professor of Physical Medicine and Rehabilitation at the University of Kansas Medical Center. He joined the University of Michigan faculty in 1968, rising to Professor of Industrial and Operations Engineering and Professor of Bioengineering in 1973. Dr. Chaffin served as Chair of the Department of Industrial and Operations Engineering from 1977 to 1981, and as Director of the Center for Ergonomics from 1982 to 1998. In 1982 he also was appointed Professor of Occupational Health in the School of Public Health.

He has Chaired or been a Co-chair of 42 PhD Dissertation Committees. His research has resulted in seven books, over 140 peer reviewed journal articles, and over 300 Proceedings, book chapters and reports. He and his graduate students and staff have developed a set of widely used software programs to assist engineers and health and safety professionals who are involved in designing workplaces and vehicles to accommodate various groups of people, and to assure that people do not suffer overexertion injuries during the performance of manual tasks of all kinds. In 1998 he founded and directed the Human Motion Simulation Laboratory in the Center for Ergonomics until his retirement.

His work has resulted in his election to Fellow status in eight different international, professional and scientific organizations. He has received many national and international awards for his teaching, research and service, including being elected to membership in the US National Academy of Engineering in 1994. In 2009 he received the National Engineering Award from the American Association of Engineering Societies, for his lifetime achievements and leadership in the field of ergonomics.

Title of Lecture: The Biomechanical Basis for Ergonomics in high Exertion Tasks

Manual work still is 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, as well as adding to excessive medical and related worker's compensation costs. His studies of maximum exertion capabilities in various populations have provided the means to improve the design of manual tasks performed in a large variety of workplaces. It has also influenced the design of vehicles and consumer products. The first part of this presentation will explore the historic role that biomechanics has played in achieving these positive outcomes. This will be followed by some observations by Professor Chaffin regarding how scientific knowledge is acquired from a variety of historical, experiential and multi-disciplinary sources.