



**Human
Factors
and
Ergonomics
Society**

FELLOW PROFILE

Name: Don B. Chaffin

**Degrees, certifications,
etc.:** BS IE (Kettering University,
MS IE (University of Toledo),
PhD IE (University of
Michigan)

Current status: Distinguished University of
Michigan Professor Emeritus

Home page: [http://www-
personal.umich.edu/~dchaffin/](http://www-personal.umich.edu/~dchaffin/)



Biography (How you got involved in the field, your major career activities and milestones):

I started my professional career as a co-op student, which allowed me to work along side production line workers while studying for my BS degree in industrial engineering. I continued working after my degree as a quality control engineer for three years. These work experiences taught me that quality and productivity suffer when workers are not provided with ergonomically designed tools and working conditions. This led to my PhD research at the University of Michigan on a model to predict the metabolic energy required to perform various manual jobs. To gain a greater appreciation for the human consequences of manual labor, I served as Assistant Professor of Physical Medicine and Rehabilitation at the University of Kansas Medical Center during 1967-1968, returning to the University of Michigan as Assistant Professor of Industrial Engineering, rising to Professor of Industrial Engineering in 1973, and Professor of Occupational Health in the School of Public Health in 1982. I also served as Chair of the Department of Industrial and Operations Engineering from 1977 to 1981, and Director of the Center for Ergonomics from 1981 to 1998. I have Chaired or been a Co-chair of 40 PhD Dissertation Committees. During my career my research has resulted in six books, over 140 peer reviewed journal articles, and over 300 Proceedings, book chapters and reports. While working with several graduate students and staff, I have led the development of a set of widely used software programs to assist engineers who are involved in designing workplaces and vehicles to physically 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 I founded and directed the Human Motion Simulation Laboratory in the Center for Ergonomics until my retirement in 2007. I currently hold the lifetime title: "R.G. Snyder Distinguished University Professor (Emeritus) in both Industrial and Operations Engineering, and in Biomedical Engineering at the University of Michigan.

Employment History (List top 5 positions):

Co-op student, General Motors: 1957-1961
Quality Control Engineer, General Motors: 1961-1964
Product engineer, Bendix Metrology Division: 1964-1965.

Assist. Professor of Physical Medicine and Rehabilitation, University of Kansas: 1968-1969
Various professorships, Industrial and Operations Engineering, Biomedical Engineering,
and Environmental Health Sciences at the University of Michigan: 1969-2007.

What were your significant contributions to the field?

The following are three major accomplishments: First, during the late 1970's I was part of small group of researchers who wrote the 1980 NIOSH document: "Work Practices Guide to Manual Lifting", which has influenced the design and specification of safer lifting jobs throughout all industrialized countries. Secondly, Gunnar Andersson and I (later joined by Bernard Martin) wrote a textbook entitled: "Occupational Biomechanics" in 1984, with subsequent editions in 1993, 1998 and 2006. This book has been adopted by over 200 Universities as part of their ergonomics programs. Lastly, I'm particularly proud of the software that my students and I have developed, with a great deal of assistance from Charles Woolley. This software allows job designers to simulate the exertion requirements of various jobs, and thus configure the job to minimize hazardous physical stresses, and accommodate a variety of people. It is widely used today in many different industries.

Did you receive any notable awards or recognition during your career?

My work has resulted in election to Fellow status in seven different international, professional and scientific organizations, including the Society for Automotive Engineering, American Institute of Medical and Biological Engineering, Human Factors and Ergonomics Society, Ergonomics Society (Great Britain), American Society of Biomechanics, American Industrial Hygiene Association, and the American Association for the Advancement of Science. He has received many national and international awards for his teaching, research and service, including the HFES Paul M. Fitts Outstanding Educator Award and the HFES Arnold M. Small Presidents Award for Distinguished Service. I was elected to membership in the prestigious US National Academy of Engineering in 1994, and in 2008 I received the "National Engineering Award" from the American Association of Engineering Societies, "...for lifetime achievements and leadership in the field of ergonomics."

Please provide any links to your online articles, essays, blogs, Wikipedia pages, etc., that pertain to your research, publications or practice.

<http://www-personal.umich.edu/~dchaffin/>

What advice would you give someone considering HF/E as a profession?

Get some experience in industry and use what you personally observe to form your own goals about how jobs and products can be designed. Then take university based courses that focus on various aspects of human factors and ergonomics so that you understand the complexity of human operating systems, and how people become overstressed, fatigued and injured by poorly designed systems.