



**Human
Factors
and
Ergonomics
Society**

FELLOW PROFILE

Name: William S. Marras

**Degrees, certifications,
etc.:** B.S., M.S., Ph.D., CPE,
Sc.D. (honoris causa), NAE

Current status: Honda Professor, The Ohio
State University

Editor in Chief, *Human
Factors*

Deputy Editor, *Spine*

Chair, Board on Human
Systems Integration,
National Research Council

Home page: <http://biodynamics.osu.edu>



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

As an undergraduate scholar-athlete student, I was one of the only engineering students on the University's basketball team. These experiences made me think about how I could use engineering techniques to improve my basketball performance and minimize injuries. I then took a Human Factors class with Malcolm Richie and decided that this field fit my interests well. Dr. Ritchie encouraged me to consider graduate school and he introduced me to Drs. Julian Christensen and Eb Kroemer at Wayne State University. They offered me a graduate assistantship and I have been doing research related to quantification of musculoskeletal injury risk ever since.

When I graduated, I had several job offers but decided to accept a position at The Ohio State University because they had a great history of human factors, had both an engineering college and medical college on the same campus, didn't have anyone who focused on physical ergonomics (as I did), and I found the faculty there to be great people. Once at OSU, I decided to focus on spine disorders from a causal perspective.

I have found that the most rewarding part of being a University professor was working with graduate students and watching them mature to the point where they become very competent researchers. I have mentored too many students to mention here but most have become very productive members of our society and I am very proud of each of them.

Employment History (List top 5 positions):

1982- present: The Ohio State University (appointments in Departments of Integrated Systems Engineering, Biomedical Engineering, Orthopaedic Surgery, and Physical Medicine and Rehabilitation)

Director: Biodynamics Laboratory

Director: Center for Occupational Health in Automotive Manufacturing

Executive Director: Institute for Ergonomics

What were your significant contributions to the field?

Developed methods to assess role of dynamic activities in low back disorder risk in the workplace (developed lumbar motion monitor or LMM).

Documented how the body responds to (biomechanically) to dynamic motion .

Development of a personalized model of the lumbar spine.

Developed techniques to quantify the extent of a low back disorder.

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

Fellow, Human Factors and Ergonomics Society (1995)

Fellow, Ergonomics Society (1999)

Fellow, American Institute for Medical and Biological Engineering (1999)

Fellow, International Ergonomics Association (IEA), (2007)

Fellow, American Industrial Hygiene Association (AIHA), (2010)

Volvo Award for Low Back Pain Research: Bioengineering, Gothenborg, Sweden (1993 and 2002)

Vienna Award for Physical Medicine (1993)

Liberty Mutual Prize in Occupational Safety and Ergonomics (2003)

Honorary Doctor of Science Degree, Waterloo University, Ontario Canada (2004)

Dr. David F. Baker Distinguished Research Award, Institute of Industrial Engineers (1992)

Jack A. Kraft Innovator Award, HFES, (1999)

Alice Hamilton Science Award, (Outstanding Scientific Publication) National Institute for Occupational Safety and Health (NIOSH) (2003)

Distinguished Engineering Alumni Achievement Award, Wayne State University (2003)

Wayne State University College of Engineering Hall of Fame (inducted 2003)

Bernice Owen Award for Research in Safe Patine Handling and Movement (2004)

National Academy of Engineering (elected 2009)

Paul M. Fitts Education Award, HFES (2009)

Wright State University Outstanding Alumni Award (2010)

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

<http://biodynamics.osu.edu>

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

There are no environments that are not ultimately used or experienced by people. Thus, there are a great number of opportunities to help mankind and reduce the risk of errors, productivity loss, and injuries. While it may seem that much has already been done in this field, we have only scratched the surface of our understanding. There is much more that has yet to be discovered that can help mankind. One of the great things about this field is that you can still be a pioneer and make great advances as well as improve the quality of life for a great number of people.

During my career, I have found that most significant advances are accomplished by looking at old problems in new ways. Thus, look outside the traditional boundaries of your field of expertise and explore how different parts of the system interact. Remember, the action is in the interaction!