



**Human
Factors
and
Ergonomics
Society**

FELLOW PROFILE

Name: Dr. Joel S. Warm

**Degrees,
certifications,
etc.:** Ph.D. Experimental
Psychology, University
of Alabama, 1966

MS City College of
the City University of
New York 1958

BS City College of
the City University of
New York, 1956



Current status: Senior Scientist (ST)
Air Force Research
Laboratory, Wright-
Patterson AFB.
Professor Emeritus,
Department of
Psychology,
University of
Cincinnati

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

I first became involved in human factors while serving in the U.S. Army at the Army Medical Research Laboratory, Fort Knox, Ky. I was fortunate to be assigned to work with Drs. Glenn R. Hawkes and Michele Loeb, two magnificent mentors who introduced me to the wonders of sensation/perception and psychophysics and to how knowledge of these basic science areas could help solve technical problems encountered by soldiers in the field. My interest in human factors was extended during my subsequent doctoral training at the University of Alabama under Dr. George E. Passey, a great teacher whose classes also bonded basic science in sensation/perception to applied human performance issues. The final impetus for my choice of a career in human factors was my post-doctoral training at the University of Louisville under the direction of Dr. Earl A. Alluisi, one of the most distinguished figures in our field.

My major career activities have centered in teaching and research. I taught at the University of Cincinnati for 41 years where together with Dr. William N. Dember, I established the psychology department's graduate program in human factors. In my career at the university, I directed 46

doctoral dissertations and 58 master's theses. Many of my students have gone on to distinguished human factors careers in academia, industry, and government service. My research has been in the area of perception with primary specialization in sustained attention or vigilance. This work has been supported by substantial funds from NASA, the Army, the Air force, the Navy, and industrial sources and has led to four books and a large number of articles in major journals. My current appointment as Senior Scientist at the Air Force Research Laboratory WPAFB brings my career back to where it started at a military laboratory and enables me to blend my abilities in mentoring and research.

My major career activities include the following:

- President Division 21 of the American Psychological Association, 2011-2012
- Editorial board, Human Factors, 1990-present
- Associate Editor, Human Factors, 2010-present
- Editorial Board, Theoretical Issues in Ergonomic Science, 2001-present
- Member National Academy National Research Council Committee on Human Factors (now called the Board on Human Systems Integration) 2003-2009
- Member National Academy National Research Council Committee on Soldier Systems, 2007-2009
- Member, Panel on Workload Transition, National Research Council, 1989 – 1990
- Senior Postdoctoral Fellow, National Research Council, National Institute of Occupational Safety and Health W. H. Taft Laboratory, Cincinnati, OH, 1986
- Distinguished Summer Faculty Fellow, Naval Air Warfare Center, Human Factors Technology Branch, Warminster, PA, 1992
- Southern Society for Philosophy and Psychology (Executive Council, 1976-1977, 1987-88; 1988 - 1990; President - elect, 1990; President, 1991)
- Tri State Chapter Human Factors Society (Secretary, 1983-87; President, 1988-1989)

Employment History (List top 5 positions):

- Research Associate, US Army Medical Research Laboratory, Fort Knox, KY, 1958-1960
- Adjunct Assistant Professor of Psychology, University of Louisville, 1964-67
- Assistant Professor to Professor of Psychology, University of Cincinnati, 1967-2008 (Retired, December, 2008)
- Professor Emeritus of Psychology University of Cincinnati 2009-Present

- Senior Scientist (ST) 711th Human Performance Wing, Air Force Research laboratory WPAFB, 2009-Present.

What were your significant contributions to the field?

I consider the students that I mentored to be my most significant contributions to the field. In terms of research, I am best known for (1) my work on the psychophysical determinants of vigilance performance, (2) introducing the measurement of perceived mental workload to the study of vigilance, (3) the identification of brain systems in vigilance through the use of a non-invasive brain imaging technique known as Transcranial Doppler Sonography, and (4) determining the stress associated with performing vigilance tasks. These studies have provided strong support for a resource model of the mechanisms involved in the maintenance of sustained attention.

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

- Fellow, American Association for the Advancement of Science, 1986
- Fellow, American Psychological Association, 1982 (Divisions 1 and 3)
- Fellow, Association for Psychological Science, 1990
- Fellow, Human Factors and Ergonomics Society, 1997
- Fellow of the Graduate School, University of Cincinnati, 1984 (Chair, 1996-1998)
- Award for Excellence in Doctoral Mentoring, University of Cincinnati, 2001
- Paul M. Fitts Award for Outstanding Contributions to the Education and Training of Human Factors Professionals Human Factors and Ergonomics Society, 2005
- Honorary Life Membership for Distinguished Contributions to Psychology, Southern Society for Philosophy and Psychology, 2007
- Jerome H. Ely Best Paper Award *Human Factors* 2007, Human Factors and Ergonomics Society
- Festschrift in Honor of Joel S. Warm, sponsored by the American Psychological Association, The Air Force Research Laboratory, and the Department of Psychology, University of Cincinnati, May, 2008.
- Franklin V. Taylor Award for Outstanding Lifetime Contributions to Applied and Engineering Psychology, Division 21 (Engineering Psychology) American Psychological Association, 2009
- Admiral Leland S. Kollmorgan Spirit of Innovation Award for Outstanding Contributions to the Field of Augmented Cognition, Augmented Cognition Technical Group, Human Factors and Ergonomics Society, September, 2010

Which articles in the journal *Human Factors* would you say were the most influential to you and your research or practice?

Adams, J.A. (1987), Criticisms of vigilance research. *Human Factors*, 29, 737-740.

Broadbent, D.E., & Gregory, M. (1965). Effects of noise and signal rate upon vigilance analyzed by means of decision theory. *Human Factors*, 7, 155-162.

Fisk, A.D., & Scerbo, M.W. (1987) Automatic and control processing approach to interpreting vigilance performance: A review and reevaluation. *Human Factors*, 29,

653-660.

Jerison, H.J., & Pickett, R.M. (1963). Vigilance: A review and reevaluation. *Human Factors*, 7, 107-128.

Parasuraman, R. (1987). Human computer monitoring, *Human Factors*, 29, 695-706.

Parasuraman, R. & Riley, V.A., (1997). Humans and automation: Use, misuse, disuse abuse. *Human Factors*, 39, 230-253.

Wiener, E.L. (1987). Application of vigilance research: Rare, medium, or well done. *Human Factors*, 87, 725-736.

My own papers

Hancock, P.A., & Warm, J.S. (1989). A dynamic model of stress and sustained attention. *Human Factors*, 31, 519-537.

Warm, J.S., & Parasuraman, R. (Eds.). (1987). Vigilance: Basic and applied research (special issue in honor of Dr. Michel Loeb). *Human Factors*, 29.

Warm, J.S., Parasuraman, R., & Matthews, G. (2008). Vigilance requires hard mental work and is stressful. *Human Factors*, 50, 433-441.

Grier, R.A., Warm, J.S., Dember, W.N., Matthews, G., Galinsky, T.L., Szalma, J.L., & Parasuraman, R. (2003). The vigilance decrement reflects limitations in effortful attention not mindlessness. *Human Factors*, 45, 349-359.

Szalma, J. L., Warm, J.S., Matthews, G., Dember, W.N. Weiler, E.M., Meier, A., & Eggemeier, T. (2004). Effects of sensory modality, and task duration on performance workload and stress in sustained attention. *Human Factors*, 46, 219-233.

Szalma, J.A., Hancock, P.A., Warm, J.S., Dember, W.N., & Parsons, K.S. (2006). Training for vigilance: Using predictive power to evaluate feedback effectiveness. *Human Factors*, 48, 682-689.

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

I am afraid that I do not have any online listing of my work.

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

Have passion for the profession. View it not only as a career venue but also as your opportunity to contribute to the advancement of human productivity and safety in the world of advanced technology that will dominate the future of mankind. To make such a contribution, you will need to have a strong educational background, be able to assimilate a great deal of information while thinking imaginatively and innovatively, and be able to work effectively with a broad array of individuals having different interests within the profession.

