



HFES FELLOWS PROFILE



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Short biography:

As an undergrad Psychology major at the University of California Santa Barbara in the early 1970s I had taken all manner of classes on personality disorders, abnormal psychology and the like, but I couldn't quite see myself in the future as a clinical psychologist. Early in my senior year I happened to take a class called "Fundamentals of Skill" by Dr. Robert Gottsdanker, an early pioneer in the study of human reaction time. The primary text was "Principles of Skill Acquisition" by Bilodeau and Bilodeau. I was soon learning about motor skill development, tracking, sustained performance, transfer of training, information feedback, and related topics. I found all of this quite intriguing and, during an office visit with Professor Gottsdanker I asked, in so many words, who is it that studies these sorts of things and puts this knowledge to practical use? He replied that it was all encompassed by the field of Human Factors, which I had not heard of at the time. He literally opened up the local telephone book and there, in the yellow pages, were six local R&D firms listed under the heading "Human Factors". Eureka!

I finished my senior year, applied to graduate school programs in human factors, and started knocking on the doors of those six companies in the phone book. I was hired as a Research Assistant at Anacapa Sciences where I worked for Jim McGrath collecting data on car control location expectancies from over 2,000 test subjects. Many months later, with all the data collected, I headed off to the graduate program in Human Factors at North Carolina State University under Richard Pearson. Pearson had established a eclectic yet comprehensive program that drew on classes in Psychology (most notably on Don Merzhon for visual and auditory perception), Industrial Engineering, Mechanical Engineering (noise and vibration), Agricultural Engineering, Toxicology, and the School of Design. In route to completing my PhD I did an internship as an Engineering Psychologist in the Crew Systems group at the Naval Air Development Center outside Philadelphia. There my work involved research on a sonar workstation on the S3-B anti-submarine warfare aircraft and a study of fighter cockpit display locations. I spent any spare moments at NADC watching volunteer sailors put through test runs on the human centrifuge, which at the time was evaluating seating configurations to combat the deleterious effects of g forces. There was also an occasional ejection seat test on a vertical test rail next door, again with a very brave volunteer "passenger".

In 1978 Doug Harris offered me a position as Senior Scientist at Anacapa Sciences, and I happily moved back to Santa Barbara. After numerous projects involving job analyses and employment systems and selection test development for AT&T and various Bell System companies, I moved on to work I could really sink my teeth into: namely, car controls and displays; oil field systems and equipment; nuclear waste handling systems and nuclear power plant displays; computer aided design systems; and agricultural and construction vehicles. After nine great years but with some regrets about leaving, I resigned from Anacapa Sciences as Principal Scientist in 1987 and started my own company, Ergonomic



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Systems Design.

Since that time I have worked for clients in 38 U.S. states, Canada, England, Scotland, Belgium, Denmark, Finland, France, Germany, Australia, Japan, and India. This work has addressed human factors in the design and operation of a surprisingly wide variety of products, systems, and settings, including automobiles and trucks; navigation systems; aircraft cabins, galleys, and seats; surface mining machines; personal electronics and consumer appliances; tractors, combines, and other agricultural vehicles; large medical devices and imagers; a dozen different forklifts and materials handling machines; architectural door hardware; floor care machines; electricity transmission and distribution systems; construction vehicles of many kinds; exercise equipment; and even fast food restaurants. These projects have involved analysis, design, and test/evaluation of user interfaces (individually or in combination). The objective of all of this work has been to make things that are easier to use, safer to use, more comfortable to use, and more productive and desirable. Perhaps the greatest satisfaction of my job is seeing a product which I have helped develop go into production and be used effectively by the people for whom it was designed.

While serving the first of my two terms on HFES Executive Council I became good friends with the late Dieter Jahns. Dieter was passionate about recognizing the field of Human Factors and Ergonomics as a stand-alone profession - - and not an offshoot of psychology, engineering, or design. Dieter assembled a group of a dozen or so HFES members, myself included, and, after much deliberation, we formed the Board of Certification in Professional Ergonomics.

With the encouragement of others on the Board, most notably Hal Hendrick, Dieter Jahns, and Jerry Duncan, I wrote the book "Set Phasers on Stun and Other True Tales of Design, Technology, and Human Error", a collection of 20 short stories about design-induced human error in aviation, medicine, transportation, and everyday life. "Set Phasers on Stun" and a follow-on book "The Atomic Chef and Other True Tales of Design, Technology, and Human Error" led to some interesting stints in radio and television, most notably Modern Marvels - Engineering Disasters, as well as many talks and appearances. Now, 25 years later, the books continue to be popular reading for college courses in human factors, engineering, and management, something I find very gratifying. Writing the books had many unforeseen personal benefits as well: I was fortunate enough to meet and know many admirable individuals, the most recognizable being Gene Cernan, Apollo XVII commander and "the last man on the moon."

My publishing success resulted in Al Chapanis, a friend and fellow member of the BCPE Board, asking me to publish his autobiography: "The Chapanis Chronicles - 50 years of Human Factors Research, Education, and Design." Dave Meister, also on the BCPE Board, then donated a manuscript for his book Ergonomics: Reflections on a Profession to the BCPE, which I published as a fundraiser and early source of income for the fledging organization.

Advice for students: First, Nothing ventured, nothing gained. Second, get into the best educational program you can. Third, put down your phone and computer and go to an HFES meeting and meet real people. Fourth, seek and do work that will truly improve the human condition.



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Geographic Location: Santa Barbara, California

Willingness to communicate with students/availability for face-to-face or virtual meetings: No, I am not available

Fellow status: Active

HFES Technical Group Affiliation(s): Communications Technical Group; Internet Technical Group; Perception and Performance Technical Group; Product Design Technical Group; Usability and System Evaluation Technical Group

Awards/Honors: 1987 HFES Williams Design Award, 1997 ID Magazine Award for Product Design, 1998 Hanover Messe. 10-Best Products World-Wide, 1998 HFES Williams Design Award, 1999 ID Magazine "Best in Class" Design Award, 1999 Business Week IDEA Gold Medal for Design, 2006 Business Week IDEA Gold Medal for Design, 2009 Chicago Athenaeum and Museum's "GOOD DESIGN" award for co-design of the Manned Mars Exploration Rover (MMER)

Links to publications /Lab website/Research Gate or similar profile:

www.ErgonomicSystemsDesign.com

[CV/Resume](#)