



FELLOW PROFILE

Name: Daryle Gardner-Bonneau

Degrees, certifications, etc.: Ph.D., The Ohio State University, 1983 (human performance – psychology); MSISE, The Ohio State University, 1989 (industrial and systems engineering); MA, The Ohio State University, 1980 (brass pedagogy – music) MA, The Ohio State University, 1976 (experimental psychology) BA, Morehead State University (KY), 1974 (music/psychology)



Current status: Principal, Bonneau and Associates

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

The genesis of my involvement in human factors was a single paragraph description of the field in my Psychology 101 undergraduate textbook. I was a double major in music and psychology and decided to pursue human factors in graduate school, though I never truly abandoned any of my other interests! Thus, I did a doctoral dissertation in auditory pattern perception, while doing work on a human factors and driver behavior contract in the ISE department, and playing enough musical “gigs” to earn a master’s degree in brass pedagogy (I’m a trombonist) on the side. My first positions were in academia, where I served for nine years. After that I went to industry, working for a contractor to the Federal Aviation Administration, doing work on the National Plan for Aviation Human Factors and user interface requirements development for airway facilities maintainers. On the side, I was doing consulting on interactive voice response user interfaces, and serving as the editor of *Ergonomics in Design*. I left the aviation field in 1993 to move into health care, becoming the Director of the Office of Research at Michigan State University/Kalamazoo Center for Medical Studies, where I was also 25% FTE with the Center for Applied Medical Informatics there. When the Center closed in 1999, I started my own consulting business, specializing in health care human factors, user interfaces for voice interactive systems, and accessibility of products and services for older adults and people with disabilities. Much of my work these days revolves around technical standards development for ergonomics. I serve as a technical expert in several ISO working groups, and have been the Chair of the U.S. TAG to ISO TC159 – Ergonomics for several years. I also sit on several committees of the Association for the Advancement of Medical Instrumentation (AAMI) – Human Engineering, Home Health Care, and Medical Device

Alarms. For the past two years, I have been honored to serve on a special committee of the National Academy of Sciences/National Research Council on "the role of human factors in home health care

Employment History (List top 5 positions):

Principal, Bonneau and Associates, Portage, MI – 1999-present

Director, Office of Research, Michigan State University/Kalamazoo Center for Medical Studies, Kalamazoo, MI – 1993-1999

Senior Scientist, CTA INCORPORATED, Pleasantville, NJ – 1989-1993

Assistant Professor, Industrial and Systems Engineering, Ohio University – 1986-1989

Assistant Professor of Psychology, Kearney State College, Kearney, NE – 1983-1986 (tenured and promoted to Associate Professor, 1986)

What were your significant contributions to the field?

Well.....I'm not dead yet, so I hope there will be more to come! Much of my early research was on the user interface design and evaluation of voice interactive systems, and I believe I made numerous contributions through that research, as well as through my book *Human Factors and Voice Interactive Systems*, my consulting efforts, and the work I did on the HFES 200.2 (IVR and Telephony) standard, and ISO 9241-154, the international version of HFES 200.2, which is now at the level of a draft international standard for IVR user interfaces. I also put together a lot of voice technology conferences, as a member of the Board of the Applied Voice Input/Output Society for many years, and reviewed and edited many human factors papers on speech technology, as the editor of the *International Journal of Speech Technology* for six years.

I was one of the small core group of people who initiated what would become the Health Care TG of the Human Factors and Ergonomics Society, and have made contributions to health care human factors as researcher and as a consultant to the industry, as well as being involved in a number of standards activities related medical device user interface design. The *Handbook of Human Factors in Medical Device Design*, which I co-edited with Matt Weinger and Michael Wiklund, is one of the products of a very intense standards development effort that occurred over several years. Technical standards are a very important part of the human factors field in many countries, and I have contributed to this work by serving on a number of ISO working groups, and Chairing the U.S. TAG to ISO TC159 – Ergonomics, as well as the U. S. TAG to TC159 SC5 – Ergonomics of the Physical Environments.

Finally, over the past 10 years or so, I have focused to a great extent on designing for older adults and people with disabilities, and advocating for inclusive design. This is especially critical in the area of home health care, and I have been pleased to make contributions to our field as a member of the Advisory Board of the NIDRR-funded Rehabilitation Engineering Research Center on Accessible Medical Instrumentation, and to have made the presentation that ultimately resulted in the establishment of the NAS/NRC committee noted above and subsequently to serve on that committee.

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

Becoming an HFES fellow and being appointed to the NAS/NRC committee. I also received several corporate awards when I worked for CTA INCORPORATED, and was pleased, this past summer, to be recognized by the Association for the Advancement of Medical Instrumentation, along with my fellow Human Engineering Committee members, with an

award for technical standards excellence for the publication of the voluminous ANSI/AAMI HE 75 standard on human factors in the design of medical devices.

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

This is a tough question because, as a practitioner, I've perhaps been impacted more by articles in *Ergonomics in Design* than by articles in *Human Factors* – and especially a 2003 article by Wendy Rogers and her colleagues (Do You Know How Old Your Participants Are?) on the importance of gathering and reporting data about the performance of older adults when doing human factors research. From *Human Factors*, specifically, I would have to say that articles about telecommunications services, and interactive voice response systems particularly, were the most influential for me – in particular, a 2008 article by Commarford, et al. on breadth vs. depth in IVR menus – best synthesis of the research on this issue I have ever seen.

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

Just Google my name. Daryle Gardner-Bonneau is a unique name, and if you Google it hundreds of thousands of entries will come up, and as varied as they are...they pretty much all relate to me. (I have some pretty eclectic "extracurricular interests" (e.g., Chairman of SAI Philanthropies, Inc. – a charitable music organization; *Miami Vice* fan) so you will see some non-ergonomic things, as well as my professional stuff.

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

Get a broad education. Although I probably took a certain amount of heat for it in my graduate school days, the fact that I didn't stick myself in a little niche and took the opportunity to get an engineering perspective, a psychology perspective, and even an arts perspective during my education really served me well as a practitioner. Human factors can be applied to almost anything, and the more you can appreciate the perspectives of the people you are working with, the better the working relationship is apt to be. I've never regretted being a generalist in the field.