



FELLOW PROFILE

Name: **Matthew B. Weinger**

Degrees, certifications, etc.: BSEE, MS, MD

Current status: Professor and Vice Chair,
Director of Center for
Research and Innovation in
Systems Safety, Vanderbilt
University



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

- 1978 BS in Electrical Engineering from Stanford
- 1981 My first publication, "An electrical simulator of moving prey for the study of feeding strategies in sharks, skates, and rays" in *Annals of Biomedical Engineering*.
- 1982 MD from the University of California San Diego
- 1985 Anesthesiology residency from the University of California San Francisco
- 1987 Research fellowship with Ty Smith, MD
- 1990 Publication in *Anesthesiology* of "Ergonomic and human factors affecting anesthetic vigilance and monitoring performance in the operating room environment"
- 1992 First medical device industry grant (to study visual display data presentation)
- 1996 Sabbatical at Stanford in which I studied simulation research, organizational behavior, and health services research
- 1997 First private foundation grant (to develop techniques to measure clinician performance)
- 2001 First federal grant (to develop the methods to collect and analyze non-routine events)
- 2007 Vanderbilt's Center for Experiential Learning and Assessment opens.
- 2010 Publication in *JAMIA* of "Health Information Technology: Fallacies and sober realities."

Employment History (List top 5 positions):

- Assistant Professor of Anesthesiology, University of California, San Diego, La Jolla, CA (1987-1993)
- Associate Professor of Anesthesiology, University of California, San Diego, La Jolla, CA (1993-1998)

Professor of Anesthesiology, University of California, San Diego, La Jolla, CA (1998-2004)
Professor of Anesthesiology, Biomedical informatics and Medical Education, Vanderbilt
University, Nashville, Tennessee (2004-present)

What were your significant contributions to the field?

More than 140 publications that cover a range of topics including human factors, simulation, use error, technology design and evaluation, measures of clinician performance, workload, alarms and vigilance, clinical expertise, automation, clinician fatigue, and decision support.

Shepherded the development of major consensus standards on medical device user interface design (ANSI/AAMI HE-74, ANSI/AAMI HE-75, and IEC 60601-1-6).

The Handbook of Human Factors in Medical Device Design, the seminal 850-page textbook on which I was lead editor, was published in 2011 by CRC Press/Taylor & Francis.

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

- 1992 Elected to the Association of University Anesthetists.
- 1998 James S. Todd Memorial Award for Patient Safety Research, National Patient Safety Foundation.
- 2004 One of the top 100 notable people in the medical device industry, Medical Device and Diagnostic Industry magazine.
- 2006 Norman Ty Smith Chair in Medical Simulation and Patient Safety, Vanderbilt University (Nashville, TN).
- 2009 B. E. Smith Mentorship Award, Department of Anesthesiology, Vanderbilt University, (Nashville, TN).
- 2011 Standards Developer Award, Association for the Advancement of Medical Instrumentation (AAMI) for my role as Co-Chair of the AAMI Human Factors Committee.

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

How in the World Did We Ever Get Into That Mode? Mode Error and Awareness in Supervisory Control (1995) by *Nadine B. Sarter & David D. Woods*

The Proximity Compatibility Principle: Its Psychological Foundation and Relevance to Display Design (1995) by *Christopher D. Wickens & C. Melody Carswell*

Measurement of Situation Awareness in Dynamic Systems (1995) by *Mica R. Endsley*

A number of papers by Salas and colleagues on teamwork skills

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

<http://www.mc.vanderbilt.edu/criss>

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

You've got to be a human advocate (people first over technology or process). Then, get rigorous and practical training from high quality professionals.