

Healthcare / Medical Device Capabilities & Expertise

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Overview

Benchmark Research & Safety, Inc. is a human factors and ergonomics consulting firm that specializes in usability, user-centered design, product safety, warnings, expert witnessing, research (design, ethnographic, perceptual) and training.

One of Benchmark's strengths is that we seamlessly bridge the gap between academia, business, and technology by integrating the latest research about people's capabilities and limitations to the solutions we provide clients. Our focus is on helping clients achieve their goals by providing innovative and cost-effective results that enhance safety, performance, and satisfaction.

Relevant Experience

Benchmark staff has extensive experience applying human factors and ergonomics principles and methods to the healthcare field. Some examples of our experiences include:

- Contributed to the design of a full featured ultrasound system interface implemented on a handheld device. Developed prototypes and form factor mockups to address compatibility with handheld operations, weight distribution and usability. These development activities were performed within a multi-disciplined design team.
- Investigated the medical (office and hospital settings) applications of a full PC-featured palm top computer. The goal was to assess in what ways such a device might be attractive to doctors, nurses, and administrative staff in these settings. Most of the usages were captured as scenarios, depicted in static graphic story-boards, and discussed during in-person interviews.
- Conducted usability evaluations of competing products (cardiogram and fetal heart rate + sonogram instruments) for the medical instruments division of an Oregon-based technology company.

- Evaluated the practicality of using hospital mobile information devices (i.e., “smart phones”) for various uses in hospitals, as part of a device + services solution investigation.
- Assisted with the design and perception testing of a set-top box type appliance that enabled PCs in the home (via high bandwidth connection) to collect medical and behavioral data from in-home patients and send to health care providers and mediate weekly sessions between them (video/audio conferencing).
- Helped a manufacturer investigate whether a prototype medical device and (its instructions for use) could be used safely and satisfactorily. We conducted validation testing with representative end users in accordance with FDA guidelines, covering simulated use, timed wear testing, and human factors analysis. We collected user opinions in addition to the safety data. The company used this information both to submit FDA validation records as well as to refine their documentation and messaging.
- Drs. Shaver and Braun published a paper in the September 2008 issue of *Materials Management in Healthcare* that discussed the importance of using human factors and ergonomics methods when procuring medical technology. The article can be downloaded here:

<http://www.benchmarkrs.com/uploads/Assessing-devices-from-the-users-perspective-2008.pdf>

Staff

Curt C. Braun, Ph.D. is the president, CEO, and founder of Benchmark Research & Safety, Inc. Dr. Braun has brought psychological and human factors principles to a variety of industries, including aviation, software development, public administration and research, and wildland fire management. In each field, Dr. Braun has worked to identify and shape the psychological and system design factors that promote human performance. Dr. Braun was a professor of psychology at the University of Idaho between 1994 and 2007, where he taught courses in the design of complex systems, research methods, statistics, and ergonomics. He maintains his connections at the University of Idaho as an affiliate faculty member. Dr. Braun holds a Ph.D. in Applied Experimental and Human Factors Psychology from the University of Central Florida.

Eric F. Shaver, Ph.D. is a senior consultant with Benchmark Research & Safety, Inc. Dr. Shaver specializes in human factors and ergonomics, usability, applied decision making, and safety. Dr. Shaver's work has emphasized achieving a good fit between people and technology to facilitate their safety, performance, and satisfaction. Dr. Shaver is an affiliate assistant professor of psychology at the University of Idaho. Dr. Shaver holds a Ph.D. in Ergonomics Psychology

from North Carolina State University and a M.S. in Human Factors Psychology and a B.S. in Psychology from the University of Idaho.

Elise M. Lind, M.S. is a senior human factors engineer with Benchmark Research & Safety, Inc. Ms. Lind specializes in user-centered design and has over 15 years of experience using multiple techniques to understand users' needs, design a positive user experience, and validate it through testing. Ms. Lind holds a M.S. in Human Factors Psychology from the University of Idaho, and a B.S. in Mechanical Engineering from the University of Wisconsin.

Josh M. McDaniel, Ph.D. is an ethnographer and science editor who specializes in technology development and adoption, as well as natural resource management. Dr. McDaniel has over 13 years of field experience in social science research using an array of qualitative and quantitative methods, including: ethnography, participant observation, structured and semi-structured interviewing, surveys/questionnaires, and stakeholder analysis. Dr. McDaniel holds a Ph.D. in anthropology from the University of Florida.

Contact Us for Your Next Project

Whether you are planning your next project or looking for assistance with an existing project, we can help. Benchmark's unique combination of perspectives contributes to a solution that you can apply with confidence. Contact us at 877-641-4468 or info@benchmarkrs.com.