

Evidence-based Healthcare and Clinical Decision Making

Fred Wolf, Ph.D.

Professor & Chair, Dept of Medical Education & Biomedical Informatics, School of Medicine

Adjunct Professor, Departments of Health Services & Epidemiology, School of Public Health

E-mail: wolf@uw.edu

Department web site: <http://www.mebi.washington.edu/>

Background & Research Areas of Interest

My own research has focused on the study of

- Clinical reasoning, decision making, and judgment under uncertainty,
- Dissemination and evaluation of new technology, including decision support systems,
- Evidence-based medicine, systematic reviews and meta-analysis of educational and healthcare interventions, including comparative effectiveness research and training, and
- Evaluation of clinical and translational research interventions and training.

This work dates back to the mid-1980s with the publication in the *Journal of the American Medical Association (JAMA)* of my research on diagnostic reasoning and heuristics and biases, and the publication of *Meta-analysis: Quantitative Methods for Research Synthesis* in the Sage Series on Quantitative Applications in the Social Sciences (Vol. 59). The *JAMA* article is cited in Jerome Groopman's best-selling book on *How Doctors Think* as one of two articles to read "For those interested in the Bayesian approach" to decision making, and led to my first NIH R01-supported research program; My work in meta-analysis led to a Fogarty International Fellowship as a Visiting Scholar at the UK Cochrane Centre and Green College, University of Oxford and my collaboration and co-authorship of many systematic evidence reviews as part of the International Cochrane Collaboration. I was formerly professor of postgraduate medicine and director of the Laboratory for Computing and Cognition at the University of Michigan Medical School. I currently am Co-Principal Investigator and Program Director for a new NIH Administrative Supplement for Comparative Effectiveness Research (CER) Workforce Development: The Institute for CER Training and Web-based Toolkit, which is part of NIH's Clinical and Translational Sciences Award (CTSA) program.

Current Research Projects

- Updating Cochrane Collaboration systematic review & meta-analysis of self-management interventions for children & adolescents with asthma (published in the *British Medical Journal (BMJ)* in 2003), including evaluation of comparative effectiveness of alternative intervention and design strategies (Student rotation opportunities)
- Initiating project to pilot test CPOE (Computerized Patient Order Entry) & patient-centered care intervention to reduce medication error in complex Cancer chemotherapy treatment regimens with Tom Payne, MD & Paul Sutton, MD UWMedicine IT Services (Student rotation opportunities)
- Examining aspects of potential publication bias and other sources of biases in the medical literature and peer review process with colleagues in the Department of Orthopaedic Surgery and Sports Medicine (Student rotation opportunities)
- Evaluating the effectiveness of simulation training with colleagues (Drs. Brian Ross and Brenda Zierler) in the Institute for Simulation and Interprofessional Studies (ISIS) (Student rotation opportunities)

Projects of Current BHI Students/Post-docs Working with Dr. Wolf

- Alan Au, BHI PhD student: Dissertation proposal “Technology-Assisted Documentation System for Medical Emergency Events”
- Francisco Saavedra, BHI Post-doc and PhD student: Research proposal “Development & Evaluation of an Electronic Medical Records System (EMR) Without Borders”
- Karl Jablonowski, BHI PhD student: Research focus “Exploring Machine Learning Algorithms, Frameworks & Processes for Simulating Automated Reasoning in Biomedicine”

Selected Projects of BHI Alumni Who Worked with Dr. Wolf

- Dr. Silvia Pessah-Eljay, graduated 2002: BHI Post-doc Masters thesis: Development and formative evaluation of an on-line course for Evidence-Based Public Health in Peru
- Dr. Franz Calvo, graduated 2004: BHI Post-doc Masters thesis: Evaluation of the Diagnostic Accuracy of a Clinical Decision Support System (DXplain)
- Dr. Jeff Wedgwood, graduated 2005: BHI Post-doc Masters thesis: MQAF: A Generalizable Medical Question-Answering Framework
- Dr. Jonathan Deshazo, graduated 2009: BHI PhD Dissertation: Online Behavior Automated Analysis and Surveillance Tool for STI/HIV. Currently faculty at Virginia Commonwealth University

Selected BHI Student/Post-doc Publications Authored with Dr. Wolf

- Calvo, F., Karras, B. T., Phillips, R., Kimball, A. M., & Wolf, F. (2003). Diagnoses, syndromes, and diseases: a knowledge representation problem. *AMIA Annual Symposium Proceedings*, 2003:802.
- Castro, J., Wolf, F., Karras, B., Tolentino, H., Marcelo, A., & Maramba, I. (2003). Critically Appraised Topics (CAT) peer-to-peer network. *AMIA Annual Symposium Proceedings*, 2003:806. PMID: 14728311
- Kempainen, R. R., Migeon, M. B., & Wolf, F. M. (2003). Understanding our mistakes: A primer on errors in clinical reasoning. *Medical Teacher*, 22 (2), 177-181.
- Civan, A., Doctor, J., & Wolf, F. M. (2005). What Makes a Good Format: Frameworks for Evaluating the Effect of Visual Risk Formats on Consumers' Risk-Related Behavior. *AMIA Annual Symposium Proceedings*, 2005:927.
- Curioso, W. H. , Hansen, J. R., Centurion-Lara, A., Garcia, P. J., Wolf, F. M., Fuller, S., Holmes, K. K., & Kimball, A. M. (2008). Evaluation of a joint bioinformatics and medical informatics international course in Peru. *BMC Medical Education*, 2008; 8:1. [<http://www.biomedcentral.com/1472-6920/8/1>]
- LaVallie, D. L., Wolf, F. M., Jacobsen, C., & Buchwald, D. (2008). Barriers to cancer clinical trials participation among Native Elders. *Ethnicity & Disease*, 18: 210-217.
- DeShazo, J. P., LaVallie, D. L., & Wolf, F. M. (2009). Publication trends in the medical informatics literature: 20 Years of “Medical Informatics” in MeSH. *BMC Medical Informatics and Decision Making*, 2009 Jan 21;9(1):7.
- Sprague, D., Lavallie, D. L., Wolf, F. M., Jacobsen, C., Sayson, K., & Buchwald, D. (2010). Influence of Graphic Format on Comprehension of Risk Information among American Indians. *Medical Decision Making*, 32: Dec 29. [Epub ahead of print]