DANIEL J. EPSTEIN DEPARTMENT OF
INDUSTRIAL AND SYSTEMS ENGINEERING

EPSTEIN INSTITUTE SEMINAR • ISE 651 SEMINAR

Meta-Information Visualization: A Human Factors Approach

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ABSTRACT

In many domains, users are confronted with large volumes of information from a variety of sources. In addition to understanding the content of the information, they need to understand and reason about potential qualifiers of the information. These qualifiers, or meta-information, include characteristics such as the uncertainty associated with the data, the age of the data, and the source of the data. There is a long history of research in scientific visualization and geospatial information systems which has considered visual techniques for representing complex information, in both spatial and non-spatial frames of reference. Our own research has considered how visual techniques such as pixilation, transparency, saturation, and texture can be used to represent a variety of meta-information categories. This talk will survey results from a number of empirical studies which have examined how people interpret meta-information visualization regarding geospatial regions and objects, how different visualizations impact decision-making and task performance, and how these measure are affected by type of meta-information, task demands, and visual context.

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ELECTRICAL ENGINEERING BLDG (EEB) ROOM 248
3:30 - 4:50 PM

SPEAKER BIO

Dr. Ann Bisantz performs research in areas of cognitive engineering, human-computer interface design, complex work system analysis. She is currently Professor and Chair of Industrial and Systems Engineering at the University at Buffalo, State University of New York. Dr. Bisantz received a PhD in Industrial and Systems Engineering from the Georgia Institute of Technology and an MS and BS in Industrial Engineering from the University at Buffalo. Her research includes developing novel information displays for complex systems, advancing methods in cognitive engineering, and modeling human decision-making; she has worked extensively in domains of health care and defense. She has an active research program regarding visualization of information qualifiers such as uncertainty, trust in information, and decision making which has been funded through a number of defense organizations as well as through a CAREER award from the National Science Foundation. She has collaborated with the University at Buffalo's Center for Multi-Source Information Fusion and is currently a co-investigator on a MURI program funded by the Army Research Office regarding Hard-Soft Information Fusion. She is also collaborating with health informatics researchers and clinicians on research regarding health IT usability, workflow impacts and human factors of electronic health records and has conducted patient safety studies including risk analysis studies; and simulation and field studies of emergency department patient tracking systems. She co-edited the book "Applications of Cognitive Work Analysis" (2008, CRC Press). She is a Fellow of the Human Factors and Ergonomics Society and Associate Editor of both the Journal of Cognitive Engineering and Decision Making, and IIE Transactions on Occupational Ergonomics. Dr. Bisantz was appointed ISE department chair in 2012.