DEPARTMENT of INDUSTRIAL ENGINEERING
UNIVERSITY of HOUSTON

FRIDAY SEMINAR SERIES
BROADEN HORIZONS | EXTEND MINDS

DR. VICKI BIER
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Date: Friday, Feb 10, 2017
Time: 1 - 1:50 pm
Location: D3 W122

Game-Theoretic and Reliability Methods in Counter-Terrorism and Security

Abstract: The routine application of reliability and risk analysis by itself is not adequate in the security domain. Protecting against intentional attacks is fundamentally different from protecting against accidents or acts of nature. In particular, an intelligent and adaptable adversary may adopt a different offensive strategy to circumvent or disable protective security measures. Game theory provides a way of taking this into account. Thus, security and counter-terrorism can benefit from a combination of risk analysis and game theory. I will discuss the use of risk and reliability analysis and game theory for defending complex systems against attacks by knowledgeable and adaptable adversaries. The results of such work yield insights into the nature of optimal defensive investments in networked systems to obtain the best trade-off between the cost of the investments and the security of the resulting systems.

Biography: Dr. Bier is a professor in the Department of Industrial and Systems Engineering at the University of Wisconsin-Madison, where she has directed the Center for Human Performance and Risk Analysis (formerly the Center for Human Performance in Complex Systems) since 1995. She received a Ph.D. in Operations Research from the Massachusetts Institute of Technology in 1983, and a B.S. in Mathematical Sciences from Stanford University in 1976. Dr. Bier's current research interests focus on problems of security and critical infrastructure protection. Dr. Bier has been a member of the Homeland Security Advisory Committee of the U.S. Environmental Protection Agency's Science Advisory Board. Her areas of expertise are in risk analysis, decision analysis, and operations research (mathematical modeling).