INFORMS Roundtable Fall Meeting Agenda
November 12-13, 2011
Westin Charlotte
601 South College Street
Charlotte, NC 28202
THEME: "The Practice of Risk Analysis and Management"

Except as noted below, all meetings will be held in Westin, Grand A Ballroom *(second floor – see map). Key cards to the Roundtable Suite (Westin #2501/2502) will be made available at the meeting.*

Saturday, November 12, 2011

Noon ***Outing to Victory Lane Karting*** *(www.victorylanekarting.com) – In the theme of the meeting, take some personal risk by testing your racing skills against your Roundtable colleagues and guests on one of the most realistic indoor karting venues in the heart of NASCAR country. Participants are requested to visit Victory Lane's Online Registration Page (http://www.clubspeedtiming.com/vlcharlotte/register.aspx) and pre-register using event code 26709.*

Meet in the Westin lobby at noon for a 12:20pm sharp departure
(return to hotel at approximately 4:30pm)

5:30PM ***Reception*** *– Harris Room, Westin*

6:15PM ***President's Welcome and Agenda Overview***
Jeff Winters, Roundtable Past-President

6:30PM ***Keynote Speaker: Aaron Brown, AQR Capital***
The Politics of Large Numbers

Note: Each pre-registered participant will be provided with a copy of the newly-published book "Red Blooded Risk: The Secret History of Wall Street".

Why do we use the same word "statistics" to describe aggregated numbers published by the government and applied probability theory? The answer is key to the development of modern nation-states. Instead of direct actions affecting individuals, such as a local squire giving food to a hungry person, today nations enact large scale, top down policies to combat abstract aggregations like poverty and unemployment. Those abstractions presuppose statistical measurement, which requires categorizing millions of diverse people in idiosyncratic situations into simple categories like above or below the poverty line, or employed or unemployed. In this sense "large" numbers does not refer to the magnitude of the figures, but the breadth and complexity of the reality they purport to represent. Aggregations can conceal dangers and opportunities in large organizations and create dysfunctional politics—recall the financial institutions that failed in 2008 while showing tens of billions of dollars of cash and equity on their balance sheets, while senior managers denied knowledge of the fatal risks. This talk will discuss the tools Wall Street risk managers developed, or in some important cases borrowed from Las Vegas, to look

through the aggregations and sidestep the politics to find and control the direct real risks facing firms.

Aaron Brown is one of the most calculated and successful risk takers in the world of finance, who was an active participant in the creation of modern risk management and had a front-row seat to the last meltdown. In addition to his day job in risk management at AQR Capital, Aaron is author of several books, including "Red Blooded Risk: Quantitative Strategies for Embracing Risk" and "The Poker Face of Wall Street." He is also a columnist for Wilmott Magazine and writes for a lot of finance and poker periodicals; as well as teaching classes and speaking at conferences. Aaron serves on the Editorial Board of the Global Association of Risk Professionals and is a member of the National Book Critics Circle. In past lives he's been a trader, finance professor, portfolio manager and head of mortgage securities.

7:45PM ***Dinner*** *– Harris Room, Westin*

Sunday, November 13, 2011

7:00AM ***Continental Breakfast*** *– Harris Room, Westin*

8:00AM ***Roundtable Introductions***

8:30AM ***David Robinson, Sandia National Lab***
A New Framework for Complex System Risk Analysis

This presentation provides a summary of the risk analysis framework developed to support the launch of the Mars Science Laboratory (MSL). All missions involving a radioisotope power system are subject to a thorough safety analysis. This presentation focuses on the unique risk analysis framework developed at Sandia National Laboratories for RPS launches. Due to the complex nature of the system, traditional risk analysis methods focusing on epistemic and aleatory uncertainty can possibly lead to an erroneous characterization of the launch risks. An alternative framework with a foundation in hierarchical Bayesian information processing was developed. The presentation will discuss how this approach allows uncertainties from computer modeling, experimental results, and human judgment to be combined across all phases of the launch sequence and integrated with consequences for an objective, tractable characterization of launch risk.

David Robinson is a Distinguished Member of the Technical Staff at Sandia National Laboratories. He has almost 35 years experience in the risk and predictive analysis area. He has a BS in Mechanical Engineering from Colorado State, a MS in Systems Engineering from the Air Force Institute of Technology, and a PhD from Arizona. Dr. Robinson retired from the Air Force in 1995 as a tenured Associate Professor at AFIT where he was responsible for the graduate Systems Engineering degree program as well as the Air Force Reliability Engineering program. He is now at Sandia and is responsible for the development of new statistical methods in support of, for example, the nuclear weapons stockpile reliability, nuclear reactor safety, and site security assessment. His research covers a broad range of topics ranging from statistical analysis of unstructured intelligence data to spatial-temporal prediction of improvised explosive device events in Afghanistan.

9:30AM ***Robert Lempert, RAND Corporation***
Managing Deep Uncertainty with New Methods for Quantitative Policy Analysis

The United States faces many challenges – from health care, to climate change, to preserving its middle class in a global economy – which the operations research literature has sometimes described as "wicked problems," those beset by lack of clear problem definition, differing stakeholder perspectives, and irreducibly deep uncertainty. Paradoxically, the analytic tools that policy analysts often use to help solve problems with well-characterized risks can make it more difficult to effectively manage those with deep uncertainty and the potential for surprises – both good and bad. In particular, these approaches can make it more difficult to plan and justify an adaptive management approach – what we might call incremental steps towards radical change – that might prove the most effective means to addressing many of these challenges. This talk will describe new "robust decision" approaches to decision making under conditions of deep uncertainty that when incorporated into the planning and evaluation activities of government agencies could significantly improve the capabilities and impact of quantitative policy analysis and risk management. The talk will lay out the conceptual, cognitive, and analytic foundations of these new methods, describe the improvements obtained in those organizations where it has already been applied, and present a broader vision of how these ideas might play out in the future, with a focus on the challenge of addressing global climate change.

Robert Lempert is a senior scientist at the RAND Corporation and Director of the Frederick S. Pardee Center for Longer Range Global Policy and the Future Human Condition. His research focuses decision-making under conditions of deep uncertainty, with an emphasis on climate change, energy, and the environment. Currently, Dr. Lempert's research team assists a number of natural resource agencies in their efforts to include climate change in their long-range plans. Dr. Lempert is a Fellow of the American Physical Society, a member of the Council on Foreign Relations, was the Inaugural EADS Distinguished Visitor in Energy and Environment at the American Academy in Berlin, and serves as a lead author for the United Nation's Intergovernmental Panel on Climate Change (IPCC), which was awarded the Nobel Peace Prize in 2007. A Professor of Policy Analysis in the Pardee RAND Graduate School, Dr. Lempert is an author of the book *Shaping the Next One Hundred Years: New Methods for Quantitative, Longer-Term Policy Analysis*. He earned his B.A.S. in physics and political science from Stanford University and his Ph.D. in applied physics from Harvard University.

10:30AM ***30 minute Break***

11:00AM ***Kete Long, GE Capital Treasury***
Advanced Analytical Methods for Risk Management in Financial Institutions

In a modern financial world, advanced quantitative methods are called upon to help risk managers make better decisions. Developing analytical solutions to complex risk management solutions requires a multi-disciplinary approach. At GE, I have a privilege of working with a vast pool of scientific researchers who bring analytical expertise from a number of disciplines to tackle real business problems. Using approaches from finance, statistics, and operations research we have developed analytical models and solutions to manage risk. I will share some of these risk management applications in this talk.

Kete Long is a Director of Model Governance and Validation at GE Capital Treasury. He oversees the governance of modeling process from development to use. Prior to this role,

he has led multiple programs at GE Global Research that developed risk & financial quantitative models for managerial decision support in risk, finance and capital management. He has a M.S from MIT, a MBA from Thammasat University and an Bachelor Degree in engineering from Chulalongkorn University. He is also a CFA charter holder and certified professional risk manager.

Noon ***Lunch*** – *Harris Room, Westin*

1:30PM ***Henry Petroski, Duke University***
Engineering Risk Management

Note: Each pre-registered participant will be provided with a copy of "To Engineer Is Human: The Role of Failure in Successful Design", which has been named one of the "100 Best Business Books of All Time."

Engineering is about making and doing things that have not been done before. To be successful, it is essential that engineers properly anticipate how things can fail, and design accordingly. Case studies of past failures thus provide invaluable information for the design of future successes. Conversely, designs based on the extrapolation of successful experience alone can lead to failure. This paradox will be explored in the context of historical case studies, including the design of ocean liners and also of suspension bridges, which from the 1850s through the 1930s evolved from John Roebling's enormous successes—culminating in the Brooklyn Bridge—to structures that oscillated in the wind and, in the case of the Tacoma Narrows Bridge, twisted itself apart and collapsed in 1940. Lessons learned from these cases and others can be generalized to apply across a broad spectrum of engineering structures and systems. The ideas presented in this lecture are elaborated upon in the books *To Engineer Is Human: The Role of Failure in Successful Design* and in *Success through Failure: The Paradox of Design.*

Henry Petroski is an engineer specializing in failure analysis. A professor both of civil engineering and history at Duke University, he is also a prolific author. Petroski has written over a dozen books – beginning with *To Engineer is Human: The Role of Failure in Successful Design* (1985) and including a number of titles detailing the industrial design history of common, everyday objects, such as pencils, paper clips, and silverware. He is a frequent lecturer and a columnist for the magazines *American Scientist* and *Prism*. His most recently published book is *The Essential Engineer: Why Science Alone Will Not Solve Our Global Problems*.

2:30PM ***David Simchi-Levi, Professor MIT***
Flexibility and Risk Management

Note: Each pre-registered participant will be provided with a copy of "Operations Rules: Delivering Customer Value through Flexible Operations".

Most executives say that they want an organization flexible enough to adjust quickly to changing market conditions. So, if this is true, why then do so many companies fail to meet ever changing customer expectations? Often face great financial loses when there is an even the slightest supply disruption? Or, they outright collapse when faced with operational problems? Unfortunately, for many corporate executives, flexibility is no more than another buzz word, at best used to provide an insight, not to make important business decisions. Those who do understand flexibility, however, have applied it as a powerful tool *to gain competitive advantage, reduce cost, improve responsiveness and manage risk*.

In this discussion, Professor Simchi-Levi of MIT will define flexibility, discuss specific and practical implementation methods and illustrate the impact through a number of case

studies. For example, Professor Simchi-Levi will illustrate how flexibility and supply chain segmentation helped transform Dell business performance in the last few years.

David Simchi-Levi of MIT is considered one of the premier thought leaders in supply chain management. Dr. Simchi-Levi holds a Ph.D. from Tel Aviv University. His research currently focuses on developing and implementing robust and efficient techniques for logistics and manufacturing systems. He has published widely in professional journals on both practical and theoretical aspects of logistics and supply chain management. Simchi-Levi has been the principal investigator for more than five million dollars in funded academic research. He is the editor-in-chief of Operations Research, the flagship journal of Informs, the Institute for Operations Research and the Management Sciences. He was the co-founder of LogicTools which developed supply chain optimization software and was acquired by ILOG in April 2007 and is now part of IBM where he serves as ILOG Chief Scientist.

3:30PM ***Break***

4:30PM ***Roundtable/INFORMS Board Meeting***

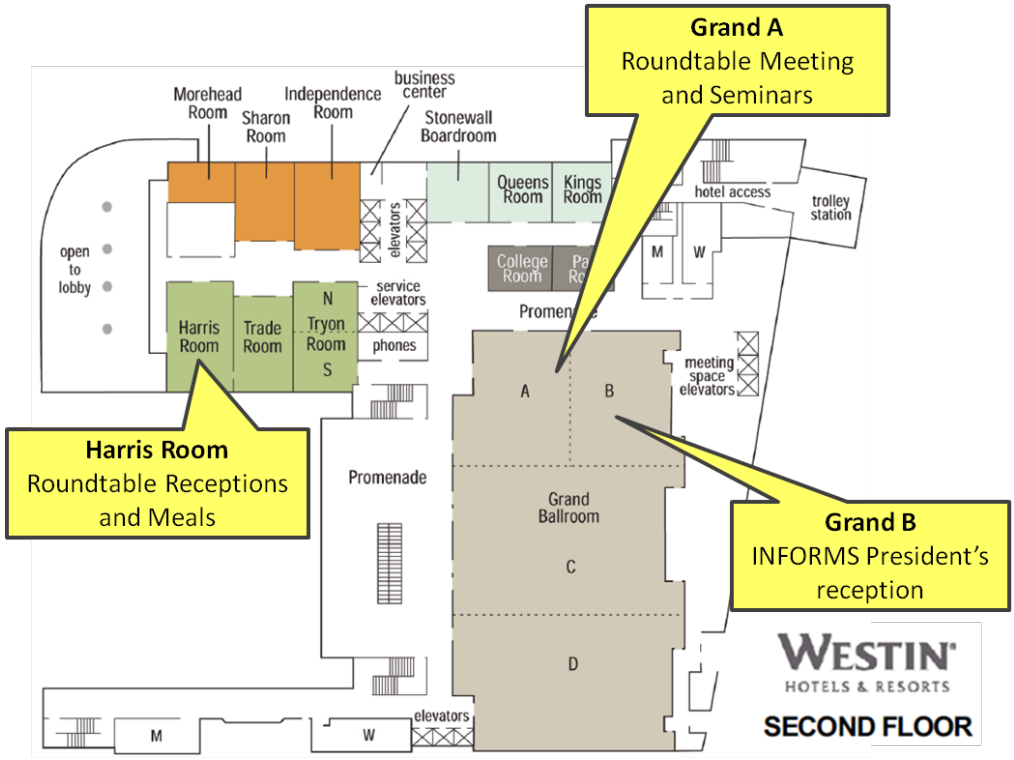
- Overview of Roundtable member activities – Kathy Lange
- Update on the INFORMS Analytics initiative – Terry Harris and/or Jack Levis
- Q&A / Open Discussion

6:00PM ***INFORMS President's Reception for the Roundtable*** *– Westin, Grand B Ballroom*

Monday, November 14, 2011

6:20PM ***Informal Networking Dinner (Dutch Treat)***
Mimosa Grill ▪ 327 South Tryon Street ▪ 704.343.0700 ▪
www.harpersgroup.com/mimosa.asp

Meet in the Westin hotel lobby for 6:30pm departure *(6:45pm reservation)*


Grand A
Roundtable Meeting and Seminars
Morehead Room
Sharon Room
Independence Room
business center
Stonewall Boardroom
Queens Room
Kings Room
hotel access
trolley station
open to lobby
elevators
College Room
M
W
service elevators
Harris Room
Trade Room
N Tryon Room S
phones
meeting space elevators
A
B
Harris Room
Roundtable Receptions and Meals
Promenade
Grand Ballroom
C
D
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INFORMS President's reception
WESTIN
HOTELS & RESORTS
SECOND FLOOR
elevators
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