

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

“Enterprise and Institutional Risk”

Government-University-Industry Research Roundtable Meeting

February 16, 2005

Lecture Room, The National Academies

2101 Constitution Ave, NW

Washington, D.C.

NOTE: This meeting has closed and open sessions. All sessions are closed (GUIRR members and invited speakers/guests only) except the open session from 4:30-6:00. The latter session is open to the public at large.

8:00–8:15 Welcome: Lydia Thomas, President and CEO, Mitretek

CURRENT AND PROPOSED GUIRR ACTIVITIES

8:15-8:35 **GUIRR “Coalition of the Concerned” Activities on Deemed Exports**

GUIRR volunteers: Sam Armstrong, Artie Bienenstock, Jim Bloedel, Claude Canizares, Ed Furtek, John Hunt, Wayne Johnson, Eva Pell, Frank Pita, Kelly Sullivan

Collaborators: Todd Willis (Commerce), Greg Doerrer and Jim Short (DOD), Stephanie Tennyson (DHS), Deborah Wilson (NIH), Antoinette Betschart (USDA), Pete Cseke (AFOSR)

- Sam Armstrong, NASA, retired.

Gen. Armstrong will report on Commerce Dept. and Defense Dept. proposed rules, which should be published as of this update.

8:35-9:05 **GUIRR-IRI-NCURA “University-Industry Partnership” Intellectual Property Project**

GUIRR volunteers: Larry Rhoades, Wayne Johnson, Roberto Peccei

Collaborators: Bob Killoren (NCURA); Susan Butts (IRI), Ken Lynn (Kauffman)

- Larry Rhoades, Chief Executive Officer, The Ex One Company

Mr. Rhoades will give an updated progress report on this project – specifically, plans for the April 25 Summit, the launching of the University-Industry Demonstration Partnership, and the design of TurboNegotiator.

9:05-9:30 **New Proposed Project: Partnerships for Emerging Research Institutions**

GUIRR volunteer: Nancy Wray

- Nancy Wray, Chair, Federal Demonstration Partnership

Faculty at Emerging Research Institutions (ERI's) – those schools having less than \$15M in sponsored research – face a number of “administrational” issues that prevent motivated faculty from easily conducting research. These hurdles could be overcome by infrastructure and human resource-sharing partnerships between and among emerging and large research institutions. This project seeks to conduct a National Academies workshop that will articulate the problem set, delineate potential solutions in both the policy and implementation realm, then follow up with inter-institutional experiments within the Federal Demonstration Partnership.

9:30-9:45 **Federal Demonstration Partnership**

- Nancy Wray, Chair, Federal Demonstration Partnership

Ms. Wray will give an update on the recent activities of the FDP, now celebrating its 20th year after launching as a GUIRR-hosted project in 1986.

9:45-10:05 **Data Overload** (joint activity between GUIRR and the Board on Mathematical Sciences and their Applications)

GUIRR volunteers: Robert Morris, Richard Spinrad

Collaborators: Amy Braveman (JPL); Robert Bouzon (HP); Robert Chadduk (National Archives); Alan Laub (UCLA); Chung-Sheng LI (IBM); Martha Maiden (NASA); Michael Marron (NIH); Dan Reed (UNC); Sylvia Spengler (NSF); Michael Strayer (DOE), Lee Zia (NSF).

- Robert Morris, Vice President, Assets Innovation, IBM Global Services
- Rick Spinrad, Assistant Administrator for Oceanic and Atmospheric Research at NOAA and Thomas Karl, Director, NOAA National Climate Data Center

Dr. Morris will be giving an update on the on the topical focus this working group has decided upon – the challenges of cross-disciplinary data fusion – and the group's progress towards a workshop.

10:05-10:20 BREAK

10:20-10:50 **Brainstorming Session for Potential S&E Education /Workforce Initiatives for GUIRR**

GUIRR volunteers: Patrick Antony, George Reynolds

- Patrick Antony, Director, Enterprise University Relations, the Boeing Company
- George Reynolds, Director of University Relations, Northrup Grumman

Drs. Antony and Reynolds will be presenting approximately three concepts for a new science and engineering workforce initiative within GUIRR. The membership is asked to join in with critiques, comments, and alternative ideas. An idea that gains critical mass will go forward for consideration as a new project by the GUIRR Executive Committee.

ENTERPRISE AND INSTITUTIONAL RISK

10:50-11:50 Risk Everywhere: Assessing, Prioritizing, and Managing the Bottomless Pit of Risks (Panel)

- Dr. Jeffrey Tew, Technical Fellow and Group Manager, Manufacturing Enterprise Modeling and Debra Elkins, Technical Lead, Enterprise Risk Modeling; General Motors

Dr. Tew and Dr. Elkins will discuss enterprise risk management in global automotive manufacturing operations at General Motors. In a tag-team style, they will share insights on GM's adoption of risk management concepts into manufacturing and supply chain operations, the ongoing challenge to identify and prioritize the dynamic portfolio of enterprise risks, and grassroots efforts to socialize adoption of advanced risk modeling and measurement approaches. They will conclude with a brief overview of GM's ongoing research agenda in enterprise risk management.

- Mr. Charles M. Taylor, Director of Operational Risk, Risk Management Association

While credit and financial risk management have well-accepted practices, operational risk management is still emerging as a field. Mr. Taylor will briefly review the tools and approaches now being used for identification, assessment, measurement, management, and mitigation of operational risks. While process failures, human errors, and technology faults all play a role in operational risk, perhaps the least understood aspect of operational risk is the organizational psychology issues of how people behave and why they do or do not act with integrity and care in different organizational settings.

11:50-1:30 LUNCH (Members Room)

“Hurricane Katrina and New Orleans: Analysis of a Tragedy”

- Laura J. Steinberg, Associate Professor, Department of Civil and Environmental Engineering, Tulane University

1:30-2:00 Engineering Risk Analysis and the Influence of Organizational Structures

- Elisabeth Pate-Cornell, Burt and Deedee McMurtry Professor and Chair, Department of Management Science and Engineering, Stanford University (by teleconference).

In her presentation to GUIRR, Prof. Pate-Cornell will illustrate how organizational structure and policies increase (or minimize) risk. Her models have been applied to a wide variety of topics, ranging from the risk management of the NASA shuttle tiles, to risk in regulatory policies, to risks in offshore oil platforms, military command-and-control systems, anesthesiology, terrorist attacks, intelligence information, and the countermeasure effectiveness.

2:00-2:30

Influence of Organizational Design and Management on Risk

- Karlene Roberts, Professor, Haas School of Business, UC Berkeley

Dr. Roberts will speak on the design and management of organizations and systems of organizations in which errors can have catastrophic consequences. The results of her research have been applied to U.S. Navy aircraft carrier operations, the U.S. Coast Guard, The Society for Worldwide Interbank Financial Telecommunication (SWIFT), The Federal Aviation's Air Traffic Control System, Gard Services, British Petroleum, NASA, and the medical industry.

2:30-2:45

BREAK

2:45-3:15

Grantmaking Risk

- Diana Leat, Visiting Professor, Cass Business School, London

One of the few – perhaps the only – researcher to delve into problems of grantmaking risk, Prof. Leat has examined the grantmaker's dilemma in detail: the delicate balance between funding innovation and funding failure; between requiring sound applications and minimizing bureaucracy; between low cost delivery and easy access to funding by small local groups; between choosing causes that engender high public support and choosing those that, because of high public support, are already well-funded. Her analysis of constructive risk-taking in grantmaking motivated the Big Lottery Fund (in the U.K.) to commission a paper on the topic; many of the lessons it contains on philanthropic grantmaking can just as easily be applied to federal granting agencies.

3:15-3:45

Bad Weather, Drowning Cities, Social Unrest, and Corporate Chaos: How Should Corporations Plan for Global Climate Change?

- Stephan Harrison, Senior Lecturer in Physical Geography, Oxford University and Director of Climate Change Risk Management

Prof. Harrison will first address the geologist's view of global climate change by stressing the rapidity and unpredictable nature of change. Commonly appreciated climate risks (e.g. flooding and drought) may have largely underappreciated impacts upon future business risks. These risks include the potential for conflict and terrorism in certain regions and changes in supply networks, employment, and financial indices. Variations in water supply have the potential to create inward and outward migration, social unrest, and other forms of social instability that will affect the ways in which companies can trade, and consequently their corporate net worth. Finally, the likely severity of future climate change will force governments to impose severe regulatory costs and legal punishments on all businesses which are deemed to be contributing to the problem. These risks will need to be factored into due diligence procedures and profit and loss accounting.

3:45-4:15 **Security and Risk: From Gangs and Guns to Supply Chains**

- Edmund McGarrell, Director and Professor, School of Criminal Justice, Michigan State University

Prof. McGarrell has made a career out of strategies to reduce gang activity and firearms violence. Recent collaborations, however, have also introduced him to supply chain risk, environmental risk, food risk and terrorism risk. Prof. McGarrell will explain how the methodologies of assessing, analyzing, and managing risk bear similarities across these different sectors.

4:15-4:30 **BREAK**

*OPEN LECTURE & RECEPTION – PUBLIC INVITED
(Lecture Room Will be Opened to the Public)*

4:30-5:15 **Corporate Investment in R&D: A Question of Here or There?**

Introductory Remarks by General Sam Armstrong, GUIRR member

- Jerry Thursby, Professor and Dept. Chair, Dept. of Economics, Emory University; and Marie Thursby, Hal and John Smith Chair in Entrepreneurship, Georgia Institute of Technology

In a globally competitive environment, each country will strive to maximize its attractiveness to high tech investment by the private sector. This survey looks at the different reasons companies choose to locate their research and development facilities in Europe vs. the U.S. vs. emerging nations. Significant quantitative data point to the skill of the R&D workforce as a key driver for locating in developed nations; emerging nations' attractiveness is largely in their proximity to new customers and, to a much lesser extent, in cost savings.

5:15-6:00 pm **PUBLIC RECEPTION (Rotunda)**

6:00 **DINNER – GUIRR members and invited speakers only (Members Room)**

- Charles Fishkin, Director, Office of Risk Assessment, Securities and Exchange Commission

“Reflections on Risk Management”

UPCOMING GUIRR MEETINGS: June 21 and October 11, 2006