

Conference Summary & Remarks

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First, I would like to extend my thanks to several people. A special thanks to President Steger for his support for and interest in the conference. Your continued presence at the sessions has not gone unnoticed by participants. Thanks also to the staff of Swiss Re for attending so efficiently and graciously to our needs. Everything was excellent. To those involved in organizing the event, many thanks; particularly to Denise Orden who was responsible for the logistics and for making certain everyone's needs were met. Finally, thanks to all of the conference participants for their energy, ideas, and support for the individual panels. The discussions were lively and fruitful.

In reflecting on the panels, I believe a number of themes or consistent threads concerning resiliency are apparent. My reflections, of course, are only mine, and my comments do not represent a comprehensive summary, nor do I wish to slight anyone's contribution. To me, four themes emerged that provide the gist for future research discussions and collaboration. I present these not in any order of importance but rather as a slate of topics that I believe warrant future exploration.

1. Linking global system changes to local security and resiliency

Security and resiliency typically have been analyzed in the context of low risk events that have high impacts (LRHIs). Most of our natural disasters and terrorist events generally fall into this category. The attention given to LRHIs is certainly warranted given their destructive consequences on individuals' lives and social and environmental systems. Understanding the coupling of social and environmental systems impacted by LRHIs must continue as a priority moving forward in research on security and resiliency.

Chris Barrett's grand challenge on population growth and its spatial footprint, however, calls us to expand our view of resiliency to consider long term incremental changes in social/environmental systems whose accumulative effect over time may be equally as catastrophic as those caused by LRHIs. Clearly, population growth represents one such system change, but others include climate change, rapid urbanization, and depilation of critical resources and are equally critical. Reinforcing this focus on long-term incremental system change is Ralph Dum's articulation of a science of global systems that includes increased interaction between scientific modelers and stakeholders/practitioners so as to coordinate better policies and policy action across different regions and socio-technical domains in a global world. Eric Johnson notes, however, that these long-term incremental disruptions create difficulties for policy makers concerned with increasing resiliency because of the uncertainty about the science by policy makers and the lack of urgency about the risks. These two conditions make policy makers risk averse to formulating meaning policies. So a major challenge becomes changing the dynamics of our policy deliberative bodies to enhance their understanding of these longer terms changes and their consequences on resiliency.

2. Increasing knowledge exchanges between the scientific, practitioner, policy makers and citizens

The maxim — knowledge is a treasure, but practice is the key to it — speaks to the need to make our science and technologies useful to practitioners and policy-makers responsible for developing better resiliency planning and policies. Ilan Chabay's presentation stresses that creating effective communication about science to practitioners has two critical components: 1) the interplay of knowledge, learning and societal change and 2) the communication and use of science between and within communities of practice. The need to integrate scientific knowledge and new technologies into everyday use is critical as Bob Griffin tells us.

The need to have productive dialogues between practitioners and the science communities on resiliency issues is highlighted in a number of presentations; yet we also know that engagement of citizens is important to that dialogue. Citizens are viewed too frequently as simply the end users of knowledge that has flowed linearly from “experts” to practitioners to community leaders. A number of presentations show the coping knowledge of citizens exceeds that of the “experts.” Shirley Laska highlights how the citizens of New Orleans use their understanding of their environment to reconstruct housing in ways to mitigate future flooding — all of this without expert opinions. Experienced practitioners, such as Jim Schwartz, acknowledged the need, indeed the requirement, to engage citizens in dialogues that will enhance their ability to cope with the consequences of crisis events. The engagement of citizens within a community is best accomplished through the informal networks of relationships of friends, neighbors and work associates; formal networks between agencies and organizations and citizens; and voluntary and obligatory relationships according to Jay Mancini's presentation on the community dimension of resiliency.

3. Resiliency organizations and leadership

An important direction for future studies is forwarded by several participants. The focus of resiliency generally is on the ability of communities to “bounce back” from severe events, but we also need to examine the resiliency of organizations and individuals responsible for managing catastrophic events. The ability of organizations and leaders to be effective during long periods of high stress is critical, yet research on their resiliency and effectiveness are limited.

Bartel Van de Walle's introduction of the concept of high reliability organizations (HROs) can provide an interesting framework for understanding organizational resiliency under stress. HROs have some common traits, for example, they face complexity and tight-coupling in the majority of processes they run; they are not error-free, errors don't disable them; and they are forced to learn from even the smallest of errors. How best to achieve those attributes represents an important focus for research for crisis organizations. Perhaps one important element for success can be drawn from the research on cascading effects in power grids presented by Lamine Mille where well integrated distributed systems provide greater resiliency than do centralized systems of management. Distributed organizations connected through trusted networks may be the appropriate approach for ensuring organizational resiliency during times of stress.

Jack Harrald's presentation on leadership under crisis was a thoughtful and appropriate ending for the conference. He too stressed the idea of distributed systems of management, but additionally called to attention the importance of individual leaders. Based on experience and analysis of different situations, six important elements of leadership under crisis were presented:

- Achieve awareness. Have a reasonably accurate understanding of reality.
- Demonstrate competence. Understand what can and should be done.
- Be honest. Public can separate spin from fact.
- Be empathic. Be human.
- Communicate clearly and frequently.
- Be able to deal with failure. Denial and deflection don't work.

Moving forward we need to further expand our understanding of organizational structures and personal leadership determinants of resiliency management.

4. Living labs as an approach to the study and translation of resiliency research

The Center for Community Security and Resiliency was created to expedite the translation of science and technological advancements to professionals and policy makers responsible for preventing and responding to crisis events. Coupling Virginia Tech, IBM and the County of Arlington into what is termed a "living lab" (LL), we believe there is a methodology that can effectively allow the translation to science for use by professionals. Joze Gricar reminds us that the concept of living lab is widespread throughout Europe though not in the area of community security and resiliency research. He considers the application of the LL methodology to security research as a new and important advancement in the European use of the LL concept.

The living lab concept and its appropriateness to security and resiliency research is intriguing. Certain cities such as New Orleans, nations like the Netherlands, and regions like ALADIN, provide a rich environment for advancing research in resiliency planning. The test now is to articulate how an LL should be structured to be effective; how to ensure an effective translation between science and practice; what metrics can be used to assess success; and whether the concept is scalable both vertically (linking systems within a community) and horizontally (ability to diffuse geographically). These are the issues we need to address if we are to move the LL concept forward.

Looking to the Future

This workshop was an initial effort by the Center for Community Security and Resilience – a Virginia Tech, IBM Research, and Arlington County joint partnership — to begin a dialogue on important issues pertaining to community security and resiliency. As a beginning effort some success was achieved. However, much remains to be researched and further dialogue is needed. To that end, the Center will continue to offer venues for presentations, discussion and debate on the critical issues within this research domain. We would be pleased to have all of you as part of that engagement in future years.

Selections from the Conference are included in a special edition of:

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James R Bohland, Editorial, pg. 1

John Harrald, "The Case for Resilience: A Comparative Analysis", pp 3-21

Theresa Jefferson and Jack Harrald, "Linking Infrastructure Resilience to Response Requirements: The New Madrid Seismic Zone Case", pp 22 -46.

Shirley Laska, "Dimensions of Resiliency: Essential Resiliency, Exceptional Recovery and Scale", pp. 47-62.