



**VirginiaTech**  
*Invent the Future*

# First Conference on Community Resiliency

Integrated Risk, Response, and  
Recovery Policy and Management:  
International Perspectives across Multiple Scales

at Swiss Re Centre for Global Dialogue

2010



NATIONAL CAPITAL REGION

## **Community Resiliency Integrated Risk, Response, and Recovery Policy and Management: International Perspectives across Multiple Scales**

### Conference Theme

The purpose of this conference is to engage both academics and practitioners on three key issues related to resiliency:

- How can we bridge the gap between scientists and practitioners to ensure that the best science and technologies are appropriately used to enhance community resiliency?
- What systems must be in place to ensure that policy makers and planners in diverse community resiliency roles share information effectively and create robust management systems that integrate risk, response, and recovery actions?
- How do we create policies and structures that remove barriers to cross-jurisdictional cooperation to ensure regionally integrated approaches to resiliency?

### Background

Community resiliency can be enhanced when policy makers and managers can forecast and manage the consequences of complex interactions that occur when existing systems are disrupted by the occurrence of major catastrophic events. Unfortunately, vulnerability of communities to significant perturbations in their normal functions has increased as the intensity, if not the frequency, of environmental and human induced hazards grows; as threats resulting from asymmetrical conflicts pose potential consequences even beyond those experienced post-September 11, 2001; and as the interdependencies between our critical infrastructures become more complex. Given the increased probability of major disruptive incidents in the future, governments have been striving to increase their ability to prevent such occurrences where possible, and when they do occur, to respond and recover in sufficient time to avoid human and environmental systems reaching catastrophic breakdowns.

The complexity of our systems makes it difficult to completely forecast and model the disruptions in systems as new and unintended permutations are embedded in complex interactions. Still, current science and technologies make it possible to understand at some level how systems behave under conditions of stress. Simulating and modeling of complexity are important tools that can be used to help forecast risk, guide responses during critical periods, and enable public and private officials to chart alternate courses or actions that can assist with recovery. However, success in the use of modeling and simulation to help policy makers and managers assumes four important conditions:

- The science of and technologies for modeling complexity, e.g., high performance computing, are sufficiently advanced and designed to provide “on-time” decision support.
- Policy makers and managers have access to and understand how to incorporate modeling and simulation outputs into their normal decision-support chains.
- Policy makers and managers with responsibilities for assessing risk, managing response, and guiding recovery operations must integrate information from modeling and simulation in a seamless fashion.
- Inter and multi-jurisdictional barriers to information collection and sharing are minimal and do not impose major barriers to integrated action.

Advancements in science and technology are rendering the first of these assumptions attainable. Modeling of complexity and development of synthetic data that help us understand how structures and processes change as systems interact are now available in many scientific fields – atmospheric physics, power networks, and disease transmissions, for example. Future advances in high performance computing will ensure continued advancement of science in this domain.

While scientific and technological challenges remain, it is the policy and management domains where the greatest barriers to achieving resiliency occur. Problems arise because silos, rather than integrated information sharing and decision-making, too frequently characterize those decision-making systems that are critical to resiliency. Practitioners and the scientific community do not readily share insights and jointly develop solutions. Officials with responsibility for planning for risk and recovery rarely share information with responders to those events. Finally, inter-jurisdictional cooperation is uneven within nations and extremely difficult across national borders. Devolving these silos into integrated systems is the challenge we must address if resiliency is to be achieved.

**Agenda**  
**First Conference on**  
**Community Resiliency**  
**Integrated Risk, Response, and Recovery Policy and Management:**  
**International Perspectives across Multiple Scales**

**Swiss Re Centre for Global Dialogue**  
**Rüschlikon, Switzerland**  
**October 25-26, 2010**

**Monday-October 25, 2010**

**11:15-11:45** Registration

**11:45 - 12:30** Lunch

**12:30 - 1:00** Opening Address  
Charles Steger, President, Virginia Tech

**1:00 - 3:00** **Panel I: Resiliency Issues – Integrating Science and Practice**

The rapid and effective translation of research to practice and the communication of best practices across communities are critical to community security and resiliency. Despite the critical importance of this translation, how best to accomplish it has not been successfully resolved. Bridging science and community to share insights and develop solutions is important to the process of securing our communities. The focus of this panel is to identify some of the issues that impede that sharing and to consider strategies that can be used in the future to help translate science that is relevant to both professionals and citizens responsible for the security and resiliency of our communities.

Chair: James Bohland, Vice President and Executive Director, Virginia Tech, National Capital Region Operations

Panelists: Robert Griffin, Director, First Responder Division, Department of Homeland Security  
Ruurd Reitsma, Consultant, A3R2

Erik Johnston, Co-director of the Center for Policy Informatics, School of Public Affairs, Arizona State University

Ilan Chabay, Director, Gothenburg Center for PLUS (gcPLUS) at Chalmers University of Technology

**3:00 - 3:30** Break

**3:30 - 5:30**

**Panel II: Inter-Jurisdictional Challenges**

The major events that pose serious threats to the security and resiliency of our communities transcend political boundaries; yet, prevention, response and recovery efforts must be coordinated across jurisdictions to be effective. Poor communication and coordination across communities will exacerbate conditions and create a climate that may impede future cooperation in increasing community resiliency. This panel provides insight into the nature of inter-jurisdictional conflicts and how these challenges have been addressed at different scales of governance.

Chair: Theresa Jefferson, Research Associate Professor, Center for Technology, Security, and Policy, Virginia Tech

Panelists: James Schwartz, Chief, Arlington County Fire Department, Arlington, Virginia  
Jože Gričar, Distinguished Professor, Faculty of Organizational Sciences, University of Maribor  
Fred Krimgold, Director, Disaster Risk Reduction Program, Advanced Research Institute, Virginia Tech

**6:00 - 7:00**

Reception

**7:00**

Dinner



*Michael Wissing/Swiss Re*

**Tuesday-October 26, 2010**

**8:00 - 10:00**      **Panel III: Technologies and Resiliency**

Advanced developments in a range of technologies including informatics, sensors, and integrated management systems, offer opportunities to prevent some threats, respond more effectively to the consequences of an event, and to speed recovery. This panel will address several of these new technologies and their capacities for helping communities cope with a wide range of threats. The approaches used in Europe and the United States will also be highlighted in these discussions.

Chair:            Nicholas Stone, Professor and Deputy Director, Virginia Tech, National Capital Region Operations

Panelists:      Chris Barrett, Professor and Director, NDSSL and Virginia Bioinformatics Institute, Virginia Tech National Capital Region

Ralph Dum, Future and Emerging Technologies Programme, European Commission

B.A. van de Walle, Associate Professor, Tillberg University

John Smith, Senior Manager, Intelligent Information Management, Thomas J. Watson Research Center

**10:00 - 10:30**      Break

**10:30 - 12:00**      **Panel IV: Dimensions of Resiliency**

Resiliency is a multi-dimensional concept with significant interdependencies between system elements. Not only is it imperative to understand the dimensionality of resiliency but to grasp the complexity of the interdependencies and the potential consequences arising from them. The panel examines several of these dimensions -- infrastructure, community -- and the potential "cascading" effects of interdependencies.

Chair:            Heike Mayer, Professor of Economic Geography, University of Bern

Panelists:      Shirley Laska, Professor Emerita, University of New Orleans and founding director of Center for Hazards Assessment, Response and Technology (CHART)

Lamine Mili, Program Director, Electrical and Computer Engineering, Virginia Tech

Jay Mancini, Anne Montgomery Haltiwanger Distinguished Professor of Child and Family Development, The University of Georgia

**12:00 - 1:00**      Lunch

**1:45 - 3:45**

**Panel V: Mitigating Consequences through Response and Recovery**

The initial and subsequent responses to the consequences of a major disruption caused by unanticipated events are critical to the subsequent ability of a community to resume some normality in the activities of its institutions and population. No single response plan is appropriate to all events, so how best to respond must be understood to ensure minimal negative consequences and to enhance a quicker return to normalcy. A host of issues are critical to response strategies -- severity, available resources, jurisdictional coordination -- to name but a few. This panel will articulate some of these critical issues and provide some "best practice" approaches for communities.

Chair: Walter Ammann, President/CEO, Global Risk Forum, Davos, Switzerland

Panelists: Jack Harrald, Research Professor and Adjunct Professor of Public Policy, Virginia Tech Center for Technology, Security, and Policy

James Kendra, Coordinator, Emergency Administration and Planning Program, Department of Public Administration, University of North Texas

Frank Fiedrich, Professor of Public Safety and Emergency Management, Wuppertal University

**3:45 - 4:45**

Discussion and Closing Remarks  
James Bohland

**6:00 - 8:00**

Buffet Dinner and Networking



*Michael Wissing/Swiss Re*