

Introduction to the Government and Disaster Resilience Minitrack 2017

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The 21st Century has been termed “the century of disasters.” Worldwide there were twice as many disasters and catastrophes in the first decade of this century as there were in the last decade of the 20th Century. The trend continues, fueled by climate change, demographic changes and social dynamics. The serious challenges facing government in cities, regions and nations of the world relate to acute shocks (such as forest fires, floods, earthquakes, tsunamis, pandemics and terrorist attacks) and chronic stresses (such as high unemployment, inefficient public transport systems, endemic violence, chronic shortages of food and water).

We are now in the era where we need to consider how to deal with the consequences of disaster events; not only during the aftermath, but also by protecting against and preventing long-term consequences before events occur. This minitrack features government (national, regional and municipal) entities and the roles they serve in developing disaster resilience since they are responsible for saving lives of citizens, coordinating relief operations with different organizations. Information systems and technologies to enhance disaster resilience and capability of the government are also essential to discuss.

Five papers were accepted to this minitrack. Each paper tries to understand how to deal with “complexity” in unexpected situations. Methodological approaches to answer this question are varied, but we have three papers employing a case study approach and two developing a simulation model.

“Informational Challenges in Early Disaster Response: The Massive Oso/SR530 Landslide 2014 as Case in Point,” by Hans J Scholl, Stephanie Ballard, Sarah Carnes, Andy Herman, and Neal Parker reports how situational awareness has been structured in the case of the 2014 massive landslide in Oso, Washington, USA. The study perceives situational awareness from three conceptual lens: information need, information behaviors and information flows. As a result of case analysis, the authors found the lack of hazard-related planning hampered systematic information collection

and sharing. They identified the absence of a unified information architecture and information system platform as a major problem area.

In “Resilience in the Gaze of Ebola: Analysis from a Developing Country,” Matthew Waritay Guah discusses resilience especially in developing countries based on the case of the Ebola outbreak in Liberia. Attention is paid to both the local response and the central leadership during Ebola Disease in the 2014 and 2015. The study demonstrates that achieving resilience is influenced by culture. It also discusses the difficulties of applying the concept of resilience to developing countries. The paper “Exploring Effective Ecosystems in Disaster Management: Case studies of Japan and Nepal,” by Mihoko Sakurai and Devinder Thapa challenges the problem of resilience using an information ecology framework to analyze disaster responses each in the 2011 Great East Japan Earthquake and the 2015 Nepal Earthquakes cases. The study notes the importance of government initiatives involving local stakeholders and local knowledge to realize effective collaboration.

The last two papers, on the other hand, develop simulation models to understand complexity. In “Promoting Resiliency in Emergency Communication Networks: A Network Interdiction Modeling Approach,” Michael R. Bartolacci, Stanko Dimitrov and Larry J. LeBlanc propose a network interdiction modeling approach. This model can be utilized for planning purposes in order to identify and protect critical parts of the network infrastructure, i.e., to estimate security budgets for emergency responders.

In “Group Decision Support Systems for Emergency Management and Resilience: CoastalProtectSIM,” Xiaoyi Zhao, Yumei Chen, Mingyoung Ku, Eliot Rich, Michael Deegan and Luis F. Luna-Reyes show possibilities of GDSS to develop capabilities of data use and data models to tackle complex problems. The proposed model contributes to practice as well as conceptual understanding of resilience, thus it is nominated as a best paper of the minitrack.