

Applications Of Social Network Analysis For Building Community Disaster Resilience Workshop Summarythe Resilient Enterprise Overcoming Vulnerability For Competitive Advantage

[#Social Network Analysis](#) [#Disaster Resilience](#) [#Community Resilience](#) [#Resilient Enterprise](#) [#Competitive Advantage](#)

Explore the applications of Social Network Analysis (SNA) in building community disaster resilience and how resilient enterprises can overcome vulnerability to gain a competitive advantage. This workshop summary highlights key insights into leveraging social networks to strengthen community bonds and foster resilience in the face of adversity, ultimately contributing to a more robust and adaptable enterprise.

We collaborate with academic communities to expand our research paper archive.

We would like to thank you for your visit.

This website provides the document Social Network Analysis Disaster Resilience you have been searching for.

All visitors are welcome to download it completely free.

The authenticity of the document is guaranteed.

We only provide original content that can be trusted.

This is our way of ensuring visitor satisfaction.

Use this document to support your needs.

We are always ready to offer more useful resources in the future.

Thank you for making our website your choice.

This document is widely searched in online digital libraries.

You are privileged to discover it on our website.

We deliver the complete version Social Network Analysis Disaster Resilience to you for free.

Building Community Resilience to Disasters

Community resilience, or the sustained ability of a community to withstand and recover from adversity has become a key policy issue at federal, state, and local levels, including in the National Health Security Strategy. Because resources are limited in the wake of an emergency, it is increasingly recognized that resilience is critical to a community's ability to reduce long recovery periods after an emergency. This report provides a roadmap for federal, state, and local leaders who are developing plans to enhance community resilience for health security threats and describes options for building community resilience in key areas. Based on findings from a literature review and a series of community and regional focus groups, the authors provide a definition of community resilience in the context of national health security and a set of eight levers and five core components for building resilience. They then describe suggested activities that communities are pursuing and may want to strengthen for community resilience, and they identify challenges to implementation.

The State of Resilience

Over the past decade, resilience has gained significant traction across the nation and innovative programs are showing exciting progress in building resilient communities. For communities to be prepared for future extreme weather and climate events, as well as the chronic daily stressors, the momentum of implementing and taking action to build community resilience should continue to be fostered and expanded. Building on its many efforts dedicated to increasing and enhancing resilience,

the Resilient America Roundtable hosted the State of Resilience Leadership Forum and Community Workshop on June 28 and 29, 2016. This activity brought together diverse decision makers, experts, practitioners, and community stakeholders, including representatives from academia, government, the private sector, foundations, and nonprofit organizations, to consider the results of years of investment, experimentation, and research in building resilience, take stock of these many initiatives and efforts, and share their experiences in building more resilient communities. This publication summarizes the presentations and discussions from the workshop.

Applications of Social Network Analysis for Building Community Disaster Resilience

Social Network Analysis (SNA) is the identification of the relationships and attributes of members, key actors, and groups that social networks comprise. The National Research Council, at the request of the Department of Homeland Security, held a two-day workshop on the use of SNA for the purpose of building community disaster resilience. The workshop, summarized in this volume, was designed to provide guidance to the DHS on a potential research agenda that would increase the effectiveness of SNA for improving community disaster resilience. The workshop explored the state of the art in SNA and its applications in the identification, construction, and strengthening of networks within U.S. communities. Workshop participants discussed current work in SNA focused on characterizing networks; the theories, principles and research applicable to the design or strengthening of networks; the gaps in knowledge that prevent the application of SNA to the construction of networks; and research areas that could fill those gaps. Elements of a research agenda to support the design, development, and implementation of social networks for the specific purpose of strengthening community resilience against natural and human-made disasters were discussed.

Resilien-Tech

The digital networks that characterise today's world, together with the demographic change occurring in Germany and the growing frequency of extreme events are resulting in the emergence of the new threats that are increasing the vulnerability of our modern industrialised society. Combined with the continual diversification of safety and security risks, this means that disasters are capable of causing ever more serious harm. In order to continue protecting people and infrastructure against future environmental, economic and social damage, it will be necessary to firmly embed preventive measures in our society and ensure that the right lessons are learned from the past. The concept of resilience provides a holistic approach to this problem that attaches equal importance to the technological and social dimensions and helps to minimise the threats to our safety and security. Accordingly, acatech – National Academie of Science and Engineering launched the “Resilien-Tech” project with the aim of improving our understanding of this concept and enabling security researchers to put it to practical use. The authors of this STUDY analyse the concept of resilience from a civil security research perspective, with particular emphasis on the issue of critical infrastructure protection. They also identify concrete approaches to developing resilient technological and socioeconomic systems.

Urban Disaster Resilience and Security

This edited book investigates the interrelations of disaster impacts, resilience and security in an urban context. Urban as a term captures megacities, cities, and generally, human settlements, that are characterised by concentration of quantifiable and non-quantifiable subjects, objects and value attributions to them. The scope is to narrow down resilience from an all-encompassing concept to applied ways of scientifically attempting to ‘measure’ this type of disaster related resilience. 28 chapters in this book reflect opportunities and doubts of the disaster risk science community regarding this ‘measurability’. Therefore, examples utilising both quantitative and qualitative approaches are juxtaposed. This book concentrates on features that are distinct characteristics of resilience, how they can be measured and in what sense they are different to vulnerability and risk parameters. Case studies in 11 countries either use a hypothetical pre-event estimation of resilience or are addressing a ‘revealed resilience’ evident and documented after an event. Such information can be helpful to identify benchmarks or margins of impact magnitudes and related recovery times, volumes and qualities of affected populations and infrastructure.

Governing for Resilience in Vulnerable Places

Cover -- Half Title -- Title Page -- Copyright Page -- Contents -- List of figures and tables -- Information on contributing authors -- Acknowledgements -- 1 Self-reliant resiliency and neoliberal mentality: a

critical reflection -- 2 Governing for resilience in vulnerable places: an introduction -- 3 Resilient energy landscapes: a spatial quest? -- 4 Resilience to what and for whom in landscape management -- 5 Resilience thinking - is vagueness a blessing or a curse in transdisciplinary projects? experiences from a regional climate change adaptation project -- 6 Flood resilience and legitimacy - an exploration of Dutch flood risk management -- 7 Flood groups in England: governance arrangements and contribution to flood resilience -- 8 Meta-decision-making and the speed and quality of disaster resilience and recovery -- 9 The Resiliency Web - a bottom-linked governance model for resilience and environmental justice in the context of disasters -- 10 Changing stakes: resilience, reconstruction, and participatory practices after the 2011 Japan tsunami -- 11 The value of participatory community arts for community resilience -- 12 "If we are not united, our lives will be very difficult": resilience from the perspective of slum dwellers in Pedda Jalaripeta (India) -- 13 Riding the tide: socially-engaged art and resilience in an uncertain future -- 14 Resilience in practice - a transformative approach? a conversation with Henk Ovink, first Dutch special envoy for international water affairs -- Index

Guide to Disaster-Resilient Communication Networks

This authoritative volume presents a comprehensive guide to the evaluation and design of networked systems with improved disaster resilience. The text offers enlightening perspectives on issues relating to all major failure scenarios, including natural disasters, disruptions caused by adverse weather conditions, massive technology-related failures, and malicious human activities. Topics and features: describes methods and models for the analysis and evaluation of disaster-resilient communication networks; examines techniques for the design and enhancement of disaster-resilient systems; provides a range of schemes and algorithms for resilient systems; reviews various advanced topics relating to resilient communication systems; presents insights from an international selection of more than 100 expert researchers working across the academic, industrial, and governmental sectors. This practically-focused monograph, providing invaluable support on topics of resilient networking equipment and software, is an essential reference for network professionals including network and networked systems operators, networking equipment vendors, providers of essential services, and regulators. The work can also serve as a supplementary textbook for graduate and PhD courses on networked systems resilience.

Disaster Resilience from a Sociological Perspective

Natural disasters traumatize individuals, disrupt families, and destabilize communities. Surviving these harrowing events calls for courage, tenacity, and resilience. Professional planning requires specific types of knowledge of how people meet and cope with extreme challenges. Disaster Resilience from a Sociological Perspective examines three major earthquakes occurring in Italy over a fourteen - year period for a well-documented analysis of populations' responses to and recovery from disaster, the social variables involved, and the participation of public agencies. This timely volume reviews sociological definitions and models of disaster, identifying core features of vulnerability and multiple levels of individual and social resilience. The analysis contrasts the structural and supportive roles of Italy's civil protection and civil defense services in emergency planning and management as examples of what the author terms professional resilience. And testimony from earthquake survivors and volunteers gives voice to the social processes characteristic of disaster. Among the areas covered: Social context for concepts of disaster, vulnerability, risk, and resilience Types of resilience: a multidimensional analysis, focused on a physical, ecological, and ecosystem perspective Findings from three earthquakes: loss, hope, and community. Two systems of organizational response to emergencies Toward a relational approach to disaster resilience planning Plus helpful tables, methodological notes, and appendices For researchers in disaster preparedness, psychology, and sociology, Disaster Resilience from a Sociological Perspective raises--and addresses--salient questions about people and communities in crisis, and how studying them can improve preparedness in an uncertain future.

Defining and Measuring Economic Resilience from a Societal, Environmental and Security Perspective

This volume presents an economic framework for the analysis of resilience in relation to societal, environmental, and personal security perspectives. It offers a rigorous definition of economic resilience and an operational metric, and it shows how they can be applied to measuring and applying the concept to private and public decision making. Major dimensions of resilience and their implications for human development are explored. Resilience is emphasized as a coping mechanism for dealing

with short-term crises, such as natural disasters and acts of terrorism. As well, the author shows how lessons learned in the short-run out of necessity and through the application of human ingenuity can be incorporated into long-run sustainability practices. In part, this opportunity stems from viewing resilience as a process, one that enhances individual and societal competencies. The book links economic resilience to several other disciplines and examines the relationship between resilience and various other key concepts such as vulnerability, adaptation, and sustainability. It scrutinizes the measurement of economic resilience in terms of temporal, spatial, and scale dimensions. It examines the time-path of resilience and relates it to the recovery process. This work also looks closely at progress on the formulation of resilience indices and stresses the importance of actionable variables. It presents a risk-management framework, including aspects of cost-effectiveness and cost-benefit analysis. Additionally, it explores the role of resilience in relation to the co-benefits of disaster risk management.

Disaster Management: Enabling Resilience

The present work will discuss relevant theoretical frameworks and applications pertaining to enabling resilience within the risk, crisis and disaster management domain. The contributions to this book focus on resilience thinking along 4 broad themes: Urban Domain; Cyber Domain; Organizational/Social domain; and Socio-ecological domain. This book would serve as a valuable reference for courses on risk, crisis and disaster management, international development, social innovation and resilience. This will be of particular interest to those working in the risk, crisis and disaster management domain as it will provide valuable insights into enabling resilience. This book will be well positioned to inform disaster management professionals, policy makers and academics on strategies and perspectives regarding disaster resilience.

Service-Learning for Disaster Resilience

This book is the first to discuss, in practical and theoretical terms, the pedagogical approach of service-learning to establish partnerships for social good that build disaster resilience. Across 12 chapters a collection of academics and practitioners provide insights on the benefits of utilizing service-learning to address existing needs, build community capacity, and strengthen social networks while enhancing student learning. Key features: Discuss how sustainable service-learning partnerships can contribute to building disaster-resilient communities; Provide practical tools to cultivate and manage collaborative partnerships, and engage in reflective practices; Integrate disciplines to create innovative approaches to complex problems; Share best practices, lessons learned, and case examples that identify strategies for integrating service-learning and research into course design; Offer considerations for ethical decision-making and for the development of equitable solutions when engaging with stakeholders; Identify strategies to bridge the gap between academia and practice while highlighting resources that institutions of higher education can contribute toward disaster preparedness, response, recovery, and mitigation. Service-Learning for Disaster Resilience will serve as a user-friendly guide for universities, local government agencies, emergency management professionals, community leaders, and grassroots initiatives in affected communities.

Responses to Disasters and Climate Change

As the global climate shifts, communities are faced with a myriad of mitigation and adaptation challenges. These highlight the political, cultural, economic, social, and physical vulnerability of social groups, communities, families, and individuals. They also foster resilience and creative responses. Research in hazard management, humanitarian response, food security programming, and other areas seeks to identify and understand factors that create vulnerability and strategies that enhance resilience at all levels of social organization. This book uses case studies from around the globe to demonstrate ways that communities have fostered resilience to mitigate the impacts of climate change.

Dynamic Social Network Modeling and Analysis

In the summer of 2002, the Office of Naval Research asked the Committee on Human Factors to hold a workshop on dynamic social network and analysis. The primary purpose of the workshop was to bring together scientists who represent a diversity of views and approaches to share their insights, commentary, and critiques on the developing body of social network analysis research and application. The secondary purpose was to provide sound models and applications for current problems of national importance, with a particular focus on national security. This workshop is one of several activities

undertaken by the National Research Council that bears on the contributions of various scientific disciplines to understanding and defending against terrorism. The presentations were grouped in four sessions – "Social Network Theory Perspectives, Dynamic Social Networks, Metrics and Models, and Networked Worlds" – each of which concluded with a discussant-led roundtable discussion among the presenters and workshop attendees on the themes and issues raised in the session.

Resilience and Recovery in Asian Disasters

This book establishes a new, holistic framework for disaster recovery and mitigation, providing a multidisciplinary perspective on the field of risk management strategies and societal and communal resilience. Going beyond narrow approaches that are all too prevalent in the field, this work builds on an optimum combination of community-level networks, private market mechanisms and state-based assistance strategies. Its chapters describe best practices in the field and elucidate cutting-edge research on recovery, highlighting the interaction between government, industry and civil society. The book uses new data from a number of recent disasters across southeast and east Asia to understand the interactions among residents, the state, and catastrophe, drawing on events in Malaysia, Vietnam, Cambodia, Japan, China and Thailand. Grounded in theories of risk mitigation and empirical research, the book provides practical guidance for decision makers along with future research directions for scholars. The Asian region is highly prone to natural disasters which devastate large and mostly poor populations. This book deals with some of the root issues underlying the continued vulnerability of these societies to catastrophic shocks. The book is unusual in that it comprehensively covers resilience and fragilities from community levels to market mechanisms and governance and it analyses these issues in very different economic and structural settings. Recommended for development and disaster risk managers—without question. Professor Debarati Guha-Sapir Director, Centre for Research on the Epidemiology of Disasters (CRED); Professor, University of Louvain, Research Institute Health and Society.

Disasters and Social Resilience

The interconnectedness of communities, organisations, governing bodies, policy and individuals in the field of disaster studies has never been accurately examined or comprehensively modelled. This kind of study is vital for planning policy and emergency responses and assessing individual and community vulnerability, resilience and sustainability as well as mitigation and adaptation to climate change impacts; it therefore deserves attention. *Disasters and Social Resilience* fills this gap by introducing to the field of disaster studies a fresh methodology and a model for examining and measuring impacts and responses to disasters. Urie Bronfenbrenner's bioecological systems theory, which is used to look at communities holistically, is outlined and illustrated through a series of chapters, guiding the reader from the theory's underpinnings through research illustrations and applications focused on each level of Bronfenbrenner's ecosystems, culminating in an integration chapter. The final chapter provides policy recommendations for local and national government bodies and emergency providers to help individuals and communities prepare and withstand the effects of a range of disasters. This book will be of great interest to scholars and students of disaster and emergency management, disaster readiness and risk reduction (DRR), and to scholars and students of more general climate change and sustainability studies.

RESILIENCE PROGRAMMING AMONG NONGOVERNMENTAL ORGANIZATIONS

This food policy report reviews resilience processes, activities, and outcomes by examining a number of case studies of initiatives by nongovernmental organizations (NGOs) to enhance resilience capacity, and draws implications for policymakers and other stakeholders looking to strengthen resilience.

The Sociotechnical Constitution of Resilience

This book considers the concept of resilience in a global society where coping with the consequence and long term impact of crisis and disaster challenges the capacity of communities to bounce back in the event of severe disruption. Catastrophic events such as the 9.11 terrorist attack, the Fukushima nuclear disaster, and the volcano eruption in Central Java entailed massive devastation on physical infrastructures, and caused significant social and economic damage. This book considers how the modern sociotechnological system facilitating human activity defines how societies survive and whether a crisis will be short-lived or prolonged. Drawing on the concept of sociotechnical resilience, this book closely examines a range of events North America, Asia, Australia, and Europe. By presenting the

successes and failures of sociotechnical resilience, it offers important insights and practical lessons to build better and comprehensive understandings of resilience in a real-world setting, significantly contributing to the study of disaster resilience.

A Research Agenda for Social Networks and Social Resilience

This cutting-edge Research Agenda demonstrates how social network analysis can be used to address problems of social resilience and advance knowledge and policy intervention in the face of the existential crises that threaten our contemporary societies. Highlighting the role of social networks in supporting social resilience, contributions from experienced and innovative thinkers across the social sciences encourage readers to think in network terms about issues of social change and survival in situations of vulnerability. Chapters apply innovative social network thinking and analyses to a diverse range of existential societal challenges, including marginalized communities, emerging labour markets, governments, food systems, educational establishments, online social media, and the environment. The book further advances critical research frontiers that will inform the building of more resilient societies and ecosystems and ultimately strengthen our capacity to project ourselves into the future. Combining network-based critical analysis with in-depth knowledge of policy design and intervention, this dynamic Research Agenda will be an essential tool for postgraduate students carrying out research in the social sciences. Its provision of state-of-the-art research agendas in eighteen vital domains of social life will benefit analysts and consultants designing, implementing, and evaluating policy in these areas.

Emergency Preparedness through Community Cohesion

This book is a revision of the author's original doctoral thesis on emergency preparedness through community radio in North Indian villages into a widening array of possible reapplications in other community development fields. The author expands on the process of transforming emergency preparedness education through community media in rural North India and applies this to the development of community-prosperity, defined simply as human and planetary well-being, anywhere in the world. A new theoretical framework is presented which combines the pivotal Integral Worlds Approach developed by Lessem and Schieffer with Critical Theory, thus exploring a new way to envision and implement social change, leading to innovation and social transformation. This book introduces the term "constructive resilience," which is a type of community-building that occurs alongside dominant societal structures that are either oppressive or ineffective. An evolving field of study and practice, it is emerging from the work of academics and community-builders who are members of the Bahá'í Faith. Bahá'í "consultation," a process of inquiry and decision-making, is offered as a systematic and effective method of defining problems and enacting solutions and is examined in the context of emergency preparedness education and local capacity-building. With its integral development approach, its unique combination of themes and theoretical components, and integration with the Bahá'í Faith, as well as its interdisciplinary nature, this book will be invaluable reading for researchers in many fields. It will be of particular interest in university-based training programs in disaster management and the various disciplines of international community development, as well as practitioners in the areas of micro enterprise, disaster management, community development, rural communications, rural economics and emergency preparedness education.

Psychosocial Capacity Building in Response to Disasters

This book integrates Western mental health approaches and international models of psychosocial capacity building within a social ecology framework, providing practitioners and volunteers with a blueprint for individual, family, group, and community interventions. Joshua L. Miller focuses on a range of disasters at local, regional, national, and international levels. Global case studies explore the social, psychological, economic, political, and cultural issues affecting various reactions to disaster and illustrate the importance of drawing on local cultural practices to promote empowerment and resiliency. Miller encourages developing people's capacity to direct their own recovery, using a social ecology framework to conceptualize disasters and their consequences. He also considers sources of vulnerability and how to support individual, family, and community resiliency; adapt and implement traditional disaster mental health interventions in different contexts; use groups and activities to facilitate recovery as part of a larger strategy of psychosocial capacity building; and foster collective grieving and memorializing. Miller's text examines the unique dynamics of intergroup conflict and the relationship between psychosocial healing, social justice, and peace and reconciliation.

Building Community and Family Resilience

This interdisciplinary volume examines the relationship between community resilience and family resilience, identifying contributing factors on the micro-, meso-, and macro-level. Scholars and practitioners focus on how community-level policies and programs facilitate the distribution of resources, assets, and opportunities that provide valuable assistance to families who are struggling or in crisis due to economic hardship, mental illness, and the effects of natural and human made disasters. Additionally, representatives of local government and community agencies on the “front lines” of developing policies and programs to assist families provide valuable context for understanding the ways communities provide environments that encourage and nurture family resilience. Among the topics covered: How cities promote resilience from a public health perspective Family resilience following the Deepwater Horizon oil spill Resilience in women from trauma and addiction Trauma-sensitive schooling for elementary-age students Developing family resilience through community based missions Resilience and the Community will be of interest to policy-makers, researchers, and practitioners seeking to facilitate the development of evidence-based resilience practices, programs, and/or policies for those working with families at risk.

Building Community Disaster Resilience Through Private-Public Collaboration

Natural disasters-including hurricanes, earthquakes, volcanic eruptions, and floods-caused more than 220,000 deaths worldwide in the first half of 2010 and wreaked havoc on homes, buildings, and the environment. To withstand and recover from natural and human-caused disasters, it is essential that citizens and communities work together to anticipate threats, limit their effects, and rapidly restore functionality after a crisis. Increasing evidence indicates that collaboration between the private and public sectors could improve the ability of a community to prepare for, respond to, and recover from disasters. Several previous National Research Council reports have identified specific examples of the private and public sectors working cooperatively to reduce the effects of a disaster by implementing building codes, retrofitting buildings, improving community education, or issuing extreme-weather warnings. State and federal governments have acknowledged the importance of collaboration between private and public organizations to develop planning for disaster preparedness and response. Despite growing ad hoc experience across the country, there is currently no comprehensive framework to guide private-public collaboration focused on disaster preparedness, response, and recovery. Building Community Disaster Resilience through Private-Public Collaboration assesses the current state of private-public sector collaboration dedicated to strengthening community resilience, identifies gaps in knowledge and practice, and recommends research that could be targeted for investment. Specifically, the book finds that local-level private-public collaboration is essential to the development of community resilience. Sustainable and effective resilience-focused private-public collaboration is dependent on several basic principles that increase communication among all sectors of the community, incorporate flexibility into collaborative networks, and encourage regular reassessment of collaborative missions, goals, and practices.

Disaster Resilience

No person or place is immune from disasters or disaster-related losses. Infectious disease outbreaks, acts of terrorism, social unrest, or financial disasters in addition to natural hazards can all lead to large-scale consequences for the nation and its communities. Communities and the nation thus face difficult fiscal, social, cultural, and environmental choices about the best ways to ensure basic security and quality of life against hazards, deliberate attacks, and disasters. Beyond the unquantifiable costs of injury and loss of life from disasters, statistics for 2011 alone indicate economic damages from natural disasters in the United States exceeded \$55 billion, with 14 events costing more than a billion dollars in damages each. One way to reduce the impacts of disasters on the nation and its communities is to invest in enhancing resilience-the ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events. Disaster Resilience: A National Imperative addresses the broad issue of increasing the nation's resilience to disasters. This book defines "national resilience"

Adaptation to Climate Change

The impacts of climate change are already being felt. Learning how to live with these impacts is a priority for human development. In this context, it is too easy to see adaptation as a narrowly defensive task – protecting core assets or functions from the risks of climate change. A more profound engagement, which sees climate change risks as a product and driver of social as well as natural systems, and their interaction, is called for. Adaptation to Climate Change argues that, without care, adaptive actions

can deny the deeper political and cultural roots that call for significant change in social and political relations if human vulnerability to climate change associated risk is to be reduced. This book presents a framework for making sense of the range of choices facing humanity, structured around resilience (stability), transition (incremental social change and the exercising of existing rights) and transformation (new rights claims and changes in political regimes). The resilience-transition-transformation framework is supported by three detailed case study chapters. These also illustrate the diversity of contexts where adaption is unfolding, from organizations to urban governance and the national polity. This text is the first comprehensive analysis of the social dimensions to climate change adaptation. Clearly written in an engaging style, it provides detailed theoretical and empirical chapters and serves as an invaluable reference for undergraduate and postgraduate students interested in climate change, geography and development studies.

Building and Measuring Community Resilience

The frequency and severity of disasters over the last few decades have presented unprecedented challenges for communities across the United States. In 2005, Hurricane Katrina exposed the complexity and breadth of a deadly combination of existing community stressors, aging infrastructure, and a powerful natural hazard. In many ways, the devastation of Hurricane Katrina was a turning point for understanding and managing disasters, as well as related plan making and policy formulation. It brought the phrase "community resilience" into the lexicon of disaster management. Building and Measuring Community Resilience: Actions for Communities and the Gulf Research Program summarizes the existing portfolio of relevant or related resilience measurement efforts and notes gaps and challenges associated with them. It describes how some communities build and measure resilience and offers four key actions that communities could take to build and measure their resilience in order to address gaps identified in current community resilience measurement efforts. This report also provides recommendations to the Gulf Research Program to build and measure resilience in the Gulf of Mexico region.

Resilience in the Digital Age

The growth of a global digital economy has enabled rapid communication, instantaneous movement of funds, and availability of vast amounts of information. With this come challenges such as the vulnerability of digitalized sociotechnological systems (STSs) to destructive events (earthquakes, disease events, terrorist attacks). Similar issues arise for disruptions to complex linked natural and social systems (from changing climates, evolving urban environments, etc.). This book explores new approaches to the resilience of sociotechnological and natural-social systems in a digital world of big data, extraordinary computing capacity, and rapidly developing methods of Artificial Intelligence. Most of the book's papers were presented at the Workshop on Big Data and Systems Analysis held at the International Institute for Applied Systems Analysis in Laxenburg, Austria in February, 2020. Their authors are associated with the Task Group "Advanced mathematical tools for data-driven applied systems analysis" created and sponsored by CODATA in November, 2018. The world-wide COVID-19 pandemic illustrates the vulnerability of our healthcare systems, supply chains, and social infrastructure, and confronts our notions of what makes a system resilient. We have found that use of AI tools can lead to problems when unexpected events occur. On the other hand, the vast amounts of data available from sensors, satellite images, social media, etc. can also be used to make modern systems more resilient. Papers in the book explore disruptions of complex networks and algorithms that minimize departure from a previous state after a disruption; introduce a multigrammatical framework for the technological and resource bases of today's large-scale industrial systems and the transformations resulting from disruptive events; and explain how robotics can enhance pre-emptive measures or post-disaster responses to increase resiliency. Other papers explore current directions in data processing and handling and principles of FAIRness in data; how the availability of large amounts of data can aid in the development of resilient STSs and challenges to overcome in doing so. The book also addresses interactions between humans and built environments, focusing on how AI can inform today's smart and connected buildings and make them resilient, and how AI tools can increase resilience to misinformation and its dissemination.

The Vulnerability of Cities

When disaster strikes in cities the effects can be catastrophic compared to other environments. But what factors actually determine the vulnerability or resilience of cities? The Vulnerability of Cities fills a vital gap in disaster studies by examining the too-often overlooked impact of disasters on

cities, the conditions leading to high losses from urban disasters and why some households and communities withstand disaster more effectively than others. Mark Pelling takes a fresh look at the literature on disasters and urbanization in light of recent catastrophes. He presents three detailed studies of cities in the global South, drawn from countries with contrasting political and developmental contexts: Bridgetown, Barbados - a liberal democracy; Georgetown, Guyana - a post socialist-state; and Santo Domingo, Dominican Republic - an authoritarian state in democratic transition. This book demonstrates that strengthening local capacity - through appropriate housing, disaster-preparedness, infrastructure and livelihoods - is crucial to improving civic resilience to disasters. Equally important are strong partnerships between local community-based organizations, external non-governmental and governmental organizations, public and private sectors and between city and national government. The author highlights and discusses these best practices for handling urban disasters. With rapid urbanization across the globe, this book is a must-read for professionals, policy-makers, students and researchers in disaster management, urban development and planning, transport planning, architecture, social studies and earth sciences.

At Risk

The term 'natural disaster' is often used to refer to natural events such as earthquakes, hurricanes or floods. However, the phrase 'natural disaster' suggests an uncritical acceptance of a deeply engrained ideological and cultural myth. At Risk questions this myth and argues that extreme natural events are not disasters until a vulnerable group of people is exposed. The updated new edition confronts a further ten years of ever more expensive and deadly disasters and discusses disaster not as an aberration, but as a signal failure of mainstream 'development'. Two analytical models are provided as tools for understanding vulnerability. One links remote and distant 'root causes' to 'unsafe conditions' in a 'progression of vulnerability'. The other uses the concepts of 'access' and 'livelihood' to understand why some households are more vulnerable than others. Examining key natural events and incorporating strategies to create a safer world, this revised edition is an important resource for those involved in the fields of environment and development studies.

Strengthening the Disaster Resilience of the Academic Biomedical Research Community

The academic biomedical research community is a hub of employment, economic productivity, and scientific progress. Academic research institutions are drivers of economic development in their local and state economies and, by extension, the national economy. Beyond the economic input that the academic biomedical research community both receives and provides, it generates knowledge that in turn affects society in myriad ways. The United States has experienced and continues to face the threat of disasters, and, like all entities, the academic biomedical research community can be affected. Recent disasters, from hurricanes to cyber-attacks, and their consequences have shown that the investments of the federal government and of the many other entities that sponsor academic research are not uniformly secure. First and foremost, events that damage biomedical laboratories and the institutions that house them can have impacts on the safety and well-being of humans and research animals. Furthermore, disasters can affect career trajectories, scientific progress, and financial stability at the individual and institutional levels. Strengthening the Disaster Resilience of the Academic Biomedical Research Community offers recommendations and guidance to enhance the disaster resilience of the academic biomedical research community, with a special focus on the potential actions researchers, academic research institutions, and research sponsors can take to mitigate the impact of future disasters.

Prevent strategy

The Prevent strategy, launched in 2007 seeks to stop people becoming terrorists or supporting terrorism both in the UK and overseas. It is the preventative strand of the government's counter-terrorism strategy, CONTEST. Over the past few years Prevent has not been fully effective and it needs to change. This review evaluates work to date and sets out how Prevent will be implemented in the future. Specifically Prevent will aim to: respond to the ideological challenge of terrorism and the threat we face from those who promote it; prevent people from being drawn into terrorism and ensure that they are given appropriate advice and support; and work with sectors and institutions where there are risks of radicalization which need to be addressed

Resilience and Risk

This volume addresses the challenges associated with methodology and application of risk and resilience science and practice to address emerging threats in environmental, cyber, infrastructure and other domains. The book utilizes the collective expertise of scholars and experts in industry, government and academia in the new and emerging field of resilience in order to provide a more comprehensive and universal understanding of how resilience methodology can be applied in various disciplines and applications. This book advocates for a systems-driven view of resilience in applications ranging from cyber security to ecology to social action, and addresses resilience-based management in infrastructure, cyber, social domains and methodology and tools. Risk and Resilience has been written to open up a transparent dialog on resilience management for scientists and practitioners in all relevant academic disciplines and can be used as supplement in teaching risk assessment and management courses.

Investing in Resilience

Investing in Resilience: Ensuring a Disaster-Resistant Future focuses on the steps required to ensure that investment in disaster resilience happens and that it occurs as an integral, systematic part of development. At-risk communities in Asia and the Pacific can apply a wide range of policy, capacity, and investment instruments and mechanisms to ensure that disaster risk is properly assessed, disaster risk is reduced, and residual risk is well managed. Yet, real progress in strengthening resilience has been slow to date and natural hazards continue to cause significant loss of life, damage, and disruption in the region, undermining inclusive, sustainable development. Investing in Resilience offers an approach and ideas for reflection on how to achieve disaster resilience. It does not prescribe specific courses of action but rather establishes a vision of a resilient future. It stresses the interconnectedness and complementarity of possible actions to achieve disaster resilience across a wide range of development policies, plans, legislation, sectors, and themes. The vision shows how resilience can be accomplished through the coordinated action of governments and their development partners in the private sector, civil society, and the international community. The vision encourages "investors" to identify and prioritize bundles of actions that collectively can realize that vision of resilience, breaking away from the current tendency to pursue disparate and fragmented disaster risk management measures that frequently trip and fall at unforeseen hurdles. Investing in Resilience aims to move the disaster risk reduction debate beyond rhetoric and to help channel commitments into investment, incentives, funding, and practical action

Creating Resilient Supply Chains

As geological threats become more imminent, society must make a major commitment to increase the resilience of its communities, infrastructure, and citizens. Recent earthquakes in Japan, New Zealand, Haiti, and Chile provide stark reminders of the devastating impact major earthquakes have on the lives and economic stability of millions of people worldwide. The events in Haiti continue to show that poor planning and governance lead to long-term chaos, while nations like Chile demonstrate steady recovery due to modern earthquake planning and proper construction and mitigation activities. At the request of the National Science Foundation, the National Research Council hosted a two-day workshop to give members of the community an opportunity to identify "Grand Challenges" for earthquake engineering research that are needed to achieve an earthquake resilient society, as well as to describe networks of earthquake engineering experimental capabilities and cyberinfrastructure tools that could continue to address ongoing areas of concern. Grand Challenges in Earthquake Engineering Research: A Community Workshop Report explores the priorities and problems regions face in reducing consequent damage and spurring technological preparedness advances. Over the course of the Grand Challenges in Earthquake Engineering Research workshop, 13 grand challenge problems emerged and were summarized in terms of five overarching themes including: community resilience framework, decision making, simulation, mitigation, and design tools. Participants suggested 14 experimental facilities and cyberinfrastructure tools that would be needed to carry out testing, observations, and simulations, and to analyze the results. The report also reviews progressive steps that have been made in research and development, and considers what factors will accelerate transformative solutions.

Grand Challenges in Earthquake Engineering Research

This Intergovernmental Panel on Climate Change Special Report (IPCC-SREX) explores the challenge of understanding and managing the risks of climate extremes to advance climate change adaptation. Extreme weather and climate events, interacting with exposed and vulnerable human and natural sys-

tems, can lead to disasters. Changes in the frequency and severity of the physical events affect disaster risk, but so do the spatially diverse and temporally dynamic patterns of exposure and vulnerability. Some types of extreme weather and climate events have increased in frequency or magnitude, but populations and assets at risk have also increased, with consequences for disaster risk. Opportunities for managing risks of weather- and climate-related disasters exist or can be developed at any scale, local to international. Prepared following strict IPCC procedures, SREX is an invaluable assessment for anyone interested in climate extremes, environmental disasters and adaptation to climate change, including policymakers, the private sector and academic researchers.

Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation

The United States will certainly be subject to damaging earthquakes in the future. Some of these earthquakes will occur in highly populated and vulnerable areas. Coping with moderate earthquakes is not a reliable indicator of preparedness for a major earthquake in a populated area. The recent, disastrous, magnitude-9 earthquake that struck northern Japan demonstrates the threat that earthquakes pose. Moreover, the cascading nature of impacts-the earthquake causing a tsunami, cutting electrical power supplies, and stopping the pumps needed to cool nuclear reactors-demonstrates the potential complexity of an earthquake disaster. Such compound disasters can strike any earthquake-prone populated area. National Earthquake Resilience presents a roadmap for increasing our national resilience to earthquakes. The National Earthquake Hazards Reduction Program (NEHRP) is the multi-agency program mandated by Congress to undertake activities to reduce the effects of future earthquakes in the United States. The National Institute of Standards and Technology (NIST)-the lead NEHRP agency-commissioned the National Research Council (NRC) to develop a roadmap for earthquake hazard and risk reduction in the United States that would be based on the goals and objectives for achieving national earthquake resilience described in the 2008 NEHRP Strategic Plan. National Earthquake Resilience does this by assessing the activities and costs that would be required for the nation to achieve earthquake resilience in 20 years. National Earthquake Resilience interprets resilience broadly to incorporate engineering/science (physical), social/economic (behavioral), and institutional (governing) dimensions. Resilience encompasses both pre-disaster preparedness activities and post-disaster response. In combination, these will enhance the robustness of communities in all earthquake-vulnerable regions of our nation so that they can function adequately following damaging earthquakes. While National Earthquake Resilience is written primarily for the NEHRP, it also speaks to a broader audience of policy makers, earth scientists, and emergency managers.

National Earthquake Resilience

The Government recognises that many lifestyle-driven health problems are at alarming levels: obesity; high rates of sexually transmitted infections; a relatively large population of drug users; rising levels of harm from alcohol; 80,000 deaths a year from smoking; poor mental health; health inequalities between rich and poor. This white paper outlines the Government's proposals to protect the population from serious health threats; help people live longer, healthier and more fulfilling lives; and improve the health of the poorest. It aims to empower individuals to make healthy choices and give communities and local government the freedom, responsibility and funding to innovate and develop ways of improving public health in their area. The paper responds to Sir Michael Marmot's strategic review of health inequalities in England post 2010 - "Fair society, healthy lives" (available at <http://www.marmotreview.org/AssetLibrary/pdfs/Reports/FairSocietyHealthyLives.pdf>) and adopts its life course framework for tackling the wider social determinants of health. A new dedicated public health service - Public Health England - will be created to ensure excellence, expertise and responsiveness, particularly on health protection where a national response is vital. The paper gives a timetable showing how the proposals will be implemented and an annex sets out a vision of the role of the Director of Public Health. The Department is also publishing a fuller story on the health of England in "Our health and well-being today" (http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_122238.pdf), detailing the challenges and opportunities, and in 2011 will issue documents on major public health issues.

Healthy lives, healthy people

As U.S. service members deploy for extended periods on a repeated basis, their ability to cope with the stress of deployment may be challenged. Many programs are available to encourage and support psychological resilience among service members and families. However, little is known about these

programs' effectiveness. This report reviews resilience literature and programs to identify evidence-informed factors for promoting resilience.

Promoting Psychological Resilience in the U.S. Military

Ce document analyse la persistance de la fragilité dans certains pays d'Afrique subsaharienne et la coexistence de multiples dimensions de la faiblesse de l'État. L'étude passe également en revue les caractéristiques de la fragilité, et ses liens avec les conflits et l'action internationale en faveur des états fragiles, avant de dresser un état des lieux de la situation et des domaines dans lesquels la résilience a progressé. Elle s'intéresse également au rôle des politiques et institutions budgétaires, et analyse les phases d'accélération et de ralentissement de la croissance. Une analyse du cas de sept pays précise certain des principaux facteurs en jeu et illustre la diversité des voies suivies, en soulignant l'importance de l'échelonnement des réformes. Enfin, l'étude se termine par une synthèse des principaux résultats et conséquences pratiques.

Accroître la résilience dans les États fragiles d'Afrique subsaharienne

In developing countries, disasters can cause major setbacks to economic and social development, inflict massive casualties, and cause the diversion of funds from development to emergency relief and recovery.

Building Safer Cities