Disaster Research Center

2002 Annual Report

University of Delaware
Newark, Delaware
TABLE OF CONTENTS

Page

DRC Personnel................................................................. 3
2002 Publications.......................................................... 5
Thesis............................................................................... 7
Academic Presentations....................................................... 8
Presentations to Governmental Bodies and
Professional Organizations...............................................11
Disaster-Related Academic Activities.................................12
Other Disaster-Related Professional Activities....................14
Current Research Projects..................................................15
DRC Field Studies............................................................18
Visitors to DRC...............................................................19
New Preliminary Papers....................................................21
Disaster Research Center Personnel

Research Staff

Kathleen J. Tierney, Director
Benigno Aguirre, Senior Faculty Associate
Joanne M. Nigg, Faculty Affiliate
Russell R. Dynes, Professor Emeritus
E. L. Quarantelli, Professor Emeritus
James M. Kendra, Research Coordinator
Tricia Wachtendorf, Research Field Director

* * * * *
Administrative Assistant

Natalie Lamoreau

* * * *
Postdoctoral Research Fellow

James M. Kendra

* * * *
Graduate Research Assistants

Victor Argothy
Rory Connell
William Donner
Heather Griffiths
Milton Melendez
Brian Monahan
Gabriel Santos
Xuewen Sheng
Christopher W. Steinbrecher
Joseph Trainor
Tricia Wachtendorf
Undergraduate Research Aides

Carl D. Bernard III         Jill Cope
Elizabeth Curtis         Tina Diablo
Wendy Garcia             Brynn Girten
Franz Henggeler         Alayna Jehle
Robert Justiniano      Carla MacKenzie
Sean Marsula            Liana Mechali
Carla Russell           Evan Shows
Annie Tanverdi

****

Resource Collection Staff

Christine Bush

****
2002 Publications

Articles and Book Chapters

Aguirre, Benigno


Bruneau, Michel and Kathleen J. Tierney


Connell, Rory


Kendra, James. M, Tricia Wachtendorf, and E.L. Quarantelli


Quarantelli, E. L.


Tierney, Kathleen J.

“Strength of a City: A Disaster Research Perspective on the World Trade Center Attack.” Published on the Web by the Social Science Research Council at http://www.ssrc.org/sept11


Technical Reports

Wachtendorf, Tricia, Rory Connell, Brian Monahan, and Kathleen J. Tierney

Disaster Resistant Communities Initiative: Assessment of Ten Non-Pilot Communities. Newark, DE: University of Delaware Disaster Research Center.
Connell, Rory

“Disaster Mitigation in Hospitals: Factors Influencing Organizational Disaster-Making on Hazard Loss Reduction.” Department of Sociology, University of Delaware, Newark, DE.
**Academic Presentations**

**Aguirre, Benigno**

“Can Sustainable Development Sustain Us?” Presidential Address at IRCD meetings, July, Brisbane, Australia.


**Connell, Rory**

“Preparing for Y2K and JCAHO: Incentives for Hospital Rehabilitation and Preparedness.” Presentation at the Multidisciplinary Center for Earthquake Engineering Research Annual Meeting, March 6-9, Buffalo, NY.

“The Impact of the Y2K Threat on Hospital Emergency Preparedness.” Presentation at Multidisciplinary Center for Earthquake Engineering Research Annual Student Leadership Council Retreat, August 2-4, Buffalo, NY.


**Dynes, Russell R.**

Discussant, “Responding to the Unexpected.” Research Issues, National Science Foundation Workshop, February 27-March 1, New York, NY.

“Finding Order in Disorder.” Plenary Address, Mid South Sociological Association, October 18, Memphis, TN.

**Dynes, Russell R., Gary Webb and John Paul**

Kendra, James M. and Tricia Wachtendorf


“Rebel Food…Renegade Supplies: Convergence after the World Trade Center Attack.” Paper presented at the annual meeting of the American Sociological Association, August 17, Chicago, IL.

Monahan, Brian

“From Ground Zero to Ground Hero: Status Appropriation and FDNY” Paper presented at the annual meeting of the American Sociological Association, August 16-19, Chicago, IL.

Quarantelli, E. L.

“Role of the Mass Media.” Presentation at Natural Academy of Sciences Forum on “Countering Terrorism: Lessons Learned From Natural and Technological Disasters.” February 28 – March 1, Washington, D.C.


“Disaster Associated Anti-Social and Criminal Behavior: The Research Evidence.” Presentation at Hazard 2002, the 9th International Symposium on Natural and Human-Made Hazards, October 3-6, Antalya, Turkey.

Tierney, Kathleen J.

“Lessons Learned from Research on Group and Organizational Response to Disasters.” Invited presentation at National Academy of Sciences Forum on “Countering Terrorism: Lessons Learned from Natural and Technological Disasters.” February 28-March 1, Washington, D.C.


“Businesses and Disasters: Lessons Learned from Andrew and Other Disasters in the U.S.” Presentation at the Andrew +10 Summit, Florida International University, May 30, Miami, FL.


“Community Response to the World Trade Center Attack: Lessons Learned and Parallels with Research on Group and Organizational Responses to Disasters.” Plenary presentation at the annual Natural Hazards Workshop, July 15, Boulder, CO.
“Community Response to the World Trade Center Attack: Achieving Resilience in the Face of Near-Catastrophic Events.” Plenary presentation at the 7th National Conference on Earthquake Engineering, July 24, Boston, MA.


**Wachtendorf, Tricia**

“Influences of Social Demographic Factors and Past Earthquake Experience on Earthquake Risk Perception.” Paper presented at the Annual Workshop for the Comparative Study on Urban Earthquake Disaster Management Sponsored by Kyoto University and Tokyo University, February 15, Kobe, Japan.

“The Future of Disaster Research: An American Perspective.” Invited Panelist for the Panel on Young Scholars in the Field of Disaster Research, Annual Workshop for the Comparative Study on Urban Earthquake Disaster Management Sponsored by Kyoto University and Tokyo University, February 15, Kobe, Japan.

“Building Capacities and Confronting Constraints in Community-Based Disaster Mitigation.” Presentation at the Annual Meeting of the Southwestern Social Science Association, March 29, New Orleans, LA.

“Rising from the Ashes: Organizational Adaptation Following the September 11th, 2001 World Trade Center Attack.” Presentation at the International Research Committee on Disasters Meeting at the Meeting of the International Sociological Association's World Congress of Sociology, July 11, Brisbane, Australia.
Presentations to Governmental Bodies
And
Professional Organizations

Quarantelli, E.L.


Tierney, Kathleen J.

“Social Science and Disaster Research Perspectives on the September 11 Attacks,” Presentation at Congressional briefing on “Human Response to Disaster.” April 24, Washington, DC.

“The Crisis Management Planning Process.” Invited presentation at the annual meeting of the Maryland College Health Nurses Association, University of Delaware, June 12, Newark, DE.

Wachtendorf, Tricia


Disaster-Related Academic Activities

Aguirre, Benigno


Organizer and Chair. Session on Disasters and the Environment, SAAEI 2001, Matanzas, Cuba, 17-19 September.

Book Review Editor. *Natural Hazards Review*.

Connell, Rory


Dynes, Russell R.

Presenter. E.L. Quarantelli Award for “Notable and Significant Theoretical Work by a Social Scientist,” International Committee on Research on Disaster, World Congress of Sociology, Brisbane, Australia, July 1.


Kendra, James M.


Quarantelli, E. L.


Electronic Manuscript Reviewer. National Science Foundation.


Appointed Editorial Board. Palgrave Publisher Series on Disasters and Crisis Management.

Member of Recommending Committee for the 2003 International Symposium on Crisis Management in Times of Flood Disasters to be held in Middlebig, The Netherlands, May 8-10.

Organizer for the ISA Research Committee on Disasters two sessions on 9/11 studies at the ASA Annual Meeting, Chicago, Illinois, August 16 and August 18.

Tierney, Kathleen J.

Member. Steering Committee, Center for Disaster Management and Humanitarian Assistance.

Editorial Board. Natural Hazards Review.

Other Disaster-Related Professional Activities

Kendra, James M.


Quarantelli, E. L.

Member. GAO Electronic Expert Panel on Mitigating Terrorist and Other Risks to Water Supplies and Systems.

Member. Scientific Advisory Board for the International Institute for Applied Systems Analysis Meeting on Integrated Disaster Risk Management: Megacity Vulnerability and Resilience, Laxenburg, Austria.


Tierney, Kathleen J.

Member. Advisory Committee, Federal Emergency Management Agency/National Institute of Building Sciences study on costs and benefits of pre-disaster mitigation programs.


Co-author. Plan to coordinate post-earthquake investigations conducted under the National Earthquake Hazards Reduction Program (NEHRP) 2001-2002.

Wachtendorf, Tricia

Interview. Discussed findings from research activities following the World Trade Center attack, on five radio stations throughout Australia. July 3-7.
Current and Recent Research Projects

Organizational and Community Resilience in the World Trade Center Disaster. This project focuses on the manner in which emergency management and crisis-relevant organizations in the City of New York coordinated with other responding organizations and jurisdictions to develop multi-organizational strategies for managing the World Trade Center Disaster. The project uses the World Trade Center attack and its aftermath as a case study to address longstanding issues in the disaster research literature, such as the relationship between planning, emergence, and improvisation in disaster response activities; how multi-organizational response networks develop and function, and how resilience is achieved in complex response networks. Research activities for this study consist of field work and direct observation in settings in which response and recovery activities are coordinated; interviewing; and document collection and analysis. This study is being conducted with support from the National Science Foundation and the Multidisciplinary Center for Earthquake Engineering Research.

Anticipating Emergency Management Needs in Large Scale Community Crisis: Lessons Learned from the World Trade Center Attack and Other Major Disasters. This study is designed to address the need for improved management of large-scale and near-catastrophic disasters, including both natural disasters and those originating from intentional acts, such as terrorist attacks. This study, which complements the World Trade Center project described above, involves the collection and analysis of data on the World Trade Center attack in New York City as well as a review of findings from research on other near-catastrophic disaster events. The study, which is being conducted under the sponsorship of the Public Entity Risk Institute (PERI), is designed to produce guidance that can be used by jurisdictions throughout the U.S. as they develop and modify their plans for coping with community wide crises.

Evacuation and Vulnerability in Mexico. In 1999, major floods impacted the Mexican states of Veracruz and Puebla. In collaboration with investigators from Mexico City’s Centro de Investigacion y Estudios de Anthropologia Social (CIESAS), the Disaster Research Center is conducting research in communities affected by the flooding in order to: (1) obtain data on the services at-risk populations received from public agencies charged with disaster mitigation and reduction responsibilities; (2) document the ethno-knowledge and customs used by these populations to minimize flood risks and impacts; and (3) explore the extent to which existing social science knowledge on disaster-related evacuation behavior—most of which is based on studies conducted in the United States—can be replicated in a Third-World context. Funding for this project has been provided by the National Science Foundation and the Federal Government of Mexico.

Mobilizing Support for Earthquake Loss Reduction: Lessons and Guidance for Seismic Safety Advocates. The objective of this project, which is being carried out in collaboration with social science investigators from the Mid-America Earthquake Center and the Pacific Earthquake Engineering Research Center, is to analyze findings from social science research in order to develop guidance for advocates of earthquake safety at state and local levels. DRC’s research activities for this study consist of analyzing research findings on risk communication and on collective action strategies that can be applied to enhance earthquake loss-reduction efforts. This project is supported by the Federal Emergency Management Agency.

Perceptions of Earthquake Impacts and Loss-Reduction Policy Preferences Among Community Residents and Opinion Leaders. This study, which is being conducted under the National Science Foundation’s US/Japan “Common Agenda” collaborative research program on urban earthquake hazards, focuses on public and stakeholder views of the potential consequences of major earthquakes, their support for loss-reduction policies, and their attitudes with respect to acceptable levels of risk. The study site for this project is Alameda County, in the eastern San Francisco Bay Area. In 1999, in the first phase of the study, DRC
conducted a mail survey with a representative sample of over 700 households in Alameda County, Oakland, California. In the second phase of the project, eight focus group discussions were carried out to obtain information on the risks perceptions and seismic policy views of members of four East Bay stakeholder groups: public officials, community residents, business owners, and practicing engineers. DRC is collaborating on this project with investigators from the Center for Disaster Reduction Systems at Kyoto University’s Disaster Prevention Research Institute.

**Trinet Policy Studies and Planning Activities in Real-Time Earthquake Warning.** Beginning in 1999, in collaboration with researchers from the UCLA School of Public Health and EQE, a private research and consulting firm, DRC carried out a study to assess the feasibility of implementing a rapid, real-time earthquake alert system for the Greater Los Angeles area. DRC’s activities on this project consisted primarily of analyzing findings from the research literature on risk communication, warning response, and warning systems to determine the extent to which organizations and individuals would be able to take meaningful protective actions during earthquake shaking, given the very short warning periods that would be possible for most earthquakes that could occur in the study region. Funds for this study were provided by the Trinet Program, which is administered by the California Institute of Technology and funded by the State of California, Governor’s Office of Emergency Services and the Federal Emergency Management Agency.

**Multidisciplinary Center for Earthquake Engineering Research (MCEER).** DRC is a core member of MCEER, a multi-university consortium that conducts research on earthquake loss reduction issues and strategies from a range of disciplinary perspectives. The MCEER consortium, based at the State University of New York at Buffalo, is funded by a 5-year, $10 million grant from the National Science Foundation. In addition to the World Trade Center study outlined above, other MCEER-sponsored projects conducted by DRC include the following:

1) **Use of New Technologies in Emergency Management.** It is commonly assumed that advances in information technology have revolutionized operations in both public and private sector emergency management organizations. However, in the disaster field, little is known about the extent to which promising technologies are actually being employed to manage hazards and disasters, and to what effect. This study, which was carried out from 1999 to 2002, attempted to learn more about how local emergency management agencies use technology for hazard assessment, planning and training, and emergency response management. Data for the project were being collected through focus group discussions with emergency personnel in six communities around the US.

2) **Measures of Community Resilience.** Over approximately the last ten years, recognition has grown that rather than responding and recovering when disasters strike, communities should be paying much more attention to pre-event mitigation—that is, to activities designed to lessen the impact of disasters. While the concept of “disaster resistant community” is gaining widespread acceptance, more research is needed to better define and operationalize that concept. The “Measures of Resilience” project attempts to develop measures or indicators of disaster resistance that span engineering and societal definitions of resilience as well as all phases in the disaster cycle. When developed, this comprehensive set of measures will make it possible to assess the extent to which communities are moving toward higher levels of disaster resilience.

**Disaster Resistant Communities Initiative: Process Evaluation of FEMA’s Project Impact.** In 1997, the Federal Emergency Management Agency began the pilot stage of Project Impact, a program designed to encourage local communities to step up their efforts to contain future disaster losses. The goals of the program were to mobilize resources, stimulate the development of partnerships, spur mitigation activities, and enable communities to cope more effectively when disasters occur, so as to reduce long-term losses. Using face-to-face and telephone interviews, focus group discussions, and other data collection methods, DRC has been charting the progress of Project Impact, first in the seven pilot communities in which the program was initiated, and later in an additional ten communities that joined Project Impact in subsequent years. In 2002, DRC conducted field work in ten communities (matched on hazards and sociodemographic characteristics) that do not have Project Impact programs, to determine whether federal assistance has had a discernable effect on community loss-reduction activities. This study is being carried out under the sponsorship of the Federal
Emergency Management Agency.

*Businesses and Disasters: Consequences of Disaster Victimization for Businesses and Business Districts.* This study, which was initiated in 1996 with funding from the National Science Foundation, addressed three related research questions: (1) Years after their occurrence, what longer-term consequences do disasters have for businesses in disaster-stricken areas? (2) What factors are associated with business recovery in the aftermath of disasters? and (3) What consequences does heavy and concentrated damage to business and commercial districts have for those commercial areas and their communities? This project focused on Santa Cruz County, California, which was heavily affected by the 1989 Loma Prieta earthquake, and South Dade County, Florida, which experienced severe damage from Hurricane Andrew in 1992. Data for the study consist of business survey data from both communities as well as qualitative interview and case study material on recovery processes in heavily-damaged business centers.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 11</td>
<td>New York, New York</td>
</tr>
<tr>
<td>May 8</td>
<td>Community field work, New Technologies Study (Name of Community Confidential)</td>
</tr>
<tr>
<td>June 3</td>
<td>New York, New York</td>
</tr>
<tr>
<td>August 27-29</td>
<td>Community field work, New Technologies Study (Name of Community Confidential)</td>
</tr>
<tr>
<td>September 10 – 12</td>
<td>New York, New York</td>
</tr>
<tr>
<td>October 1 – November 15</td>
<td>New York, New York</td>
</tr>
<tr>
<td>October 6 – November 22</td>
<td>Field work in Nine Communities FEMA Project Impact Study (Names of Communities Confidential)</td>
</tr>
</tbody>
</table>
## Visitors to DRC

<table>
<thead>
<tr>
<th>Country</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>Regional Centre for Urban &amp; Environmental Studies</td>
</tr>
<tr>
<td>Italy</td>
<td>Universita Cattolica del Sacro Cuore Dipartimento di Sociologia</td>
</tr>
<tr>
<td>Japan</td>
<td>Crisis Management &amp; Preparedness Organization</td>
</tr>
<tr>
<td>Kuwait</td>
<td>Kuwait University</td>
</tr>
<tr>
<td>Russia</td>
<td>Institute for System Analysis-Russian Academy of Sciences</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Sun Yat-Sen Institute for Social Sciences &amp; Philosophy, Academia Scinia</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>National Institute of Standards &amp; Technology</td>
</tr>
<tr>
<td></td>
<td>McKinsey &amp; Company Inc.</td>
</tr>
<tr>
<td></td>
<td>Millersville University</td>
</tr>
<tr>
<td></td>
<td>Human Factors &amp; Usability Consulting</td>
</tr>
<tr>
<td></td>
<td>Carleton University</td>
</tr>
<tr>
<td></td>
<td>New Jersey Institute of Technology</td>
</tr>
<tr>
<td>U.S.A. cont.</td>
<td>National Institute of Justice</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>The Thorton-Tomasetti Group Inc.</td>
</tr>
<tr>
<td></td>
<td>National Science Foundation</td>
</tr>
<tr>
<td></td>
<td>New York Fire Department</td>
</tr>
<tr>
<td></td>
<td>Federal Emergency Management Agency</td>
</tr>
<tr>
<td></td>
<td>College of William &amp; Mary</td>
</tr>
<tr>
<td></td>
<td>ICF Consulting</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Fundacion Venezolana de Investigaciones Sismologicas</td>
</tr>
</tbody>
</table>
New Preliminary Papers

Aguirre, Benigno


Dynes, Russell R.

“Disaster and Development, Again.”

“Finding Order in Disorder: Continuities in the 9/11 Response.”

Kendra, James M. and Tricia Wachtendorf

“Creativity in Emergency Response and the World Trade Center Attack.”

Quarantelli, E.L.

“The Protection of Cultural Properties: The Neglected Social Science Perspective and Other Questions and Issues That Ought To Be Considered.”

Tierney, Kathleen

“Disaster Beliefs and Institutional Interests: Recycling Disaster Myths in the Aftermath of 9-11.”

Wachtendorf, Tricia and Xuewen Sheng

“Demographics and Experiences as Factors of Earthquake Risk Perceptions.”