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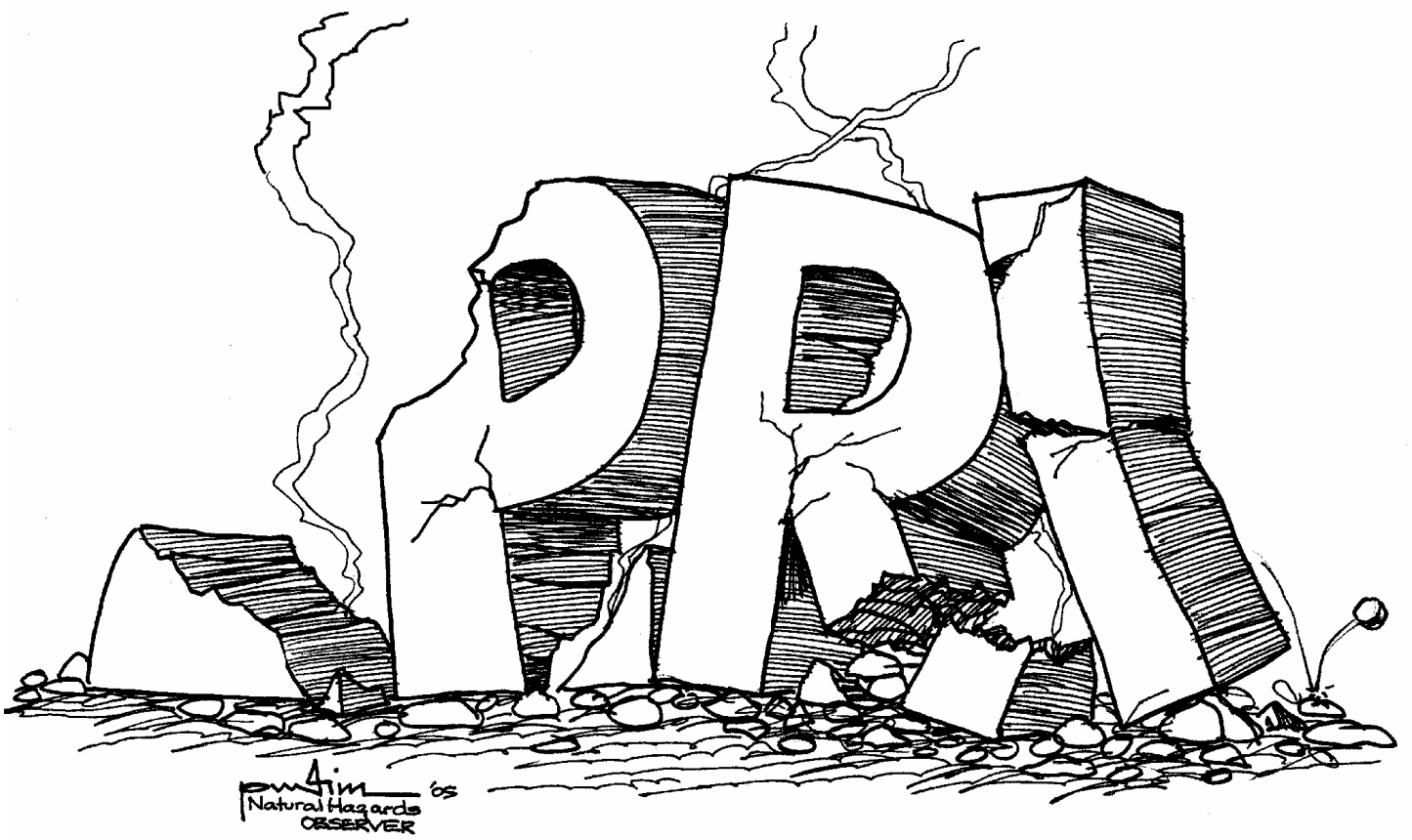

Mexico as a Living Tapestry
The 1985 Disaster in Retrospect

— an invited comment

Yes, 20 years have passed since the twin earthquakes of September 19 (Richter magnitude 8.1) and September 20 (Richter magnitude 7.3) struck Mexico, hitting Mexico City particularly hard, and for many of us who responded to the 1985 events, the memories are still fresh. More poignantly, it is difficult to find a Mexico City resident alive at the time, especially in the downtown zones, who cannot tell you precisely where he or she was at the time of impact, particularly during the first earthquake. The event is a true flashbulb memory for Mexicans, much as the Kennedy assassination remains for many in the United States.

Disaster research is criticized at times for its lack of historical perspective, for its tendency to focus on the events and their immediate impacts rather than on the evolution of the entire society. Metaphorically, if we think of societies as weaving daily tapestries, a disaster is a gash or a sharply discordant thread suddenly introduced into the pattern. Disaster research tends to focus on the gash and its close effects. A 20-year perspective on a disaster, however, literally forces us to see how a society repairs/reweaves itself and moves on. In many cases, the tapestry takes off in a dramatically different direction,

with new colors and designs. Such was the case in Mexico after 1985.

Geotechnical Lessons

It would be unfair and partial, however, to go directly to that societal evolution level without acknowledging several of the major but more technical lessons learned from the 1985 event. The first was not so much a new lesson as a paradigmatic reminder of the importance of understanding the seismic resistance of buildings in terms of soil-foundation-structure interaction. Indeed, it is often forgotten by nonspecialists that the epicenters of the two earthquakes were approximately 400 kilometers southwest of Mexico City, in the offshore Michoacán Gap, yet the most spectacular damage occurred in the capital—much of which sits on an old lakebed that greatly magnified and temporally extended the shaking.

Second, the 1985 event confirmed the importance of microzonation because structural failure was so highly variable. That is, some zones of Mexico City, particularly the older city center, suffered conspicuously more than others. Indeed, while everyone in Mexico City at the time knew that they had experienced an earthquake, many were unaware that it was a catastrophe with national implications until they heard or saw coverage from the city's central zones. In addition, it escaped no one's notice that fairly new government-contracted buildings were much more prone to damage and collapse than they should have been. The resulting corruption charges reverberated through Mexico City for years.

Third, the event demonstrated the importance of nonstructural aspects of seismic safety. While most attention rightly focused on collapsed or partially collapsed major structures (especially hospitals) that killed hundreds at a time, many more buildings were dangerous and/or unusable for weeks if not months because of internal damage to ceilings, partitions, stairways, plumbing, light fixtures, etc. While everyone remembers the spectacular structural failures, few remember the lost functionality of surviving buildings that so greatly slowed response and recovery.

Fourth, and although little has been done to correct the situation, the 1985 earthquakes underscored the national vulnerability of extreme centralization, allowing a single city to utterly dominate the country socially, economically, and politically. It is truly difficult for outsiders to wrap their minds around the importance of greater Mexico City (with perhaps 30 percent of the national population) to Mexico. The best parallel would be to take New York City, Washington, DC, and Chicago and then cram them into the highly seismic Los Angeles basin, along with Los Angeles (and also make that basin a sinking lakebed).

Mexico as an Evolving Tapestry

Turning now to the earthquakes and Mexico's societal tapestry, one of the most stunning new threads was the emergence of a responding and effective civil society, especially given the authoritarian 50-year-old PRI- (Institutional Revolutionary Party) State system that was assumed to still control most of Mexican public life in 1985. The ripple effects of a society that self-organized search and rescue, assisted the suddenly homeless, and made demands on, not requests to, their government literally never stopped. These self-organization effects were then multiplied by preexisting neighborhood and popular organizations that supported, assisted, and coordinated with the new groups. And so, the 1985 catastrophe revealed an emerging social and political space outside of government control that allowed a blossoming of Mexican civil society that continues to this day.

More specifically, the 1985 event demonstrated that the authoritarian PRI-State system, which had been seen as both strong and pervasive (it was often called "the Perfect Dictatorship"), was a shell of its former self. In full retrospect, we understand now that the regime had lost its moral legitimacy, especially in Mexico City, with its massacre of student demonstrators in 1968, and it had lost much of its economic legitimacy with its early 1980s mishandling of national finances (particularly the so-called oil boom, which went bust). The economic mismanagement, traditionally assigned to the loan-crazed José López Portillo administration (1976-1982), saddled Mexico with an enormous foreign debt, a kind of only dimly visible financial cancer that slowly began sapping the strength of the entire nation, but especially the PRI-State system.

The 1985 earthquakes, however, revealed the regime as surprisingly impotent, which was reinforced by the denial-ridden and ineffective emergency response of the Miguel de la Madrid administration (1982-1988). This ineffectiveness then morphed into a reactive rather than a proactive recovery effort. Again in retrospect, while the response to the 1985 catastrophe was Mexican society's finest hour, it was the PRI-State system's worst.

Much flowed from the Mexican nation's 1985 realization that the PRI-State system was no longer completely dominant, that as a people they could organize, demand, and even act without fear of draconian governmental reprisals. Nearly every comprehensive scholarly work on Mexico now notes the political and social ramifications of the 1985 disaster, especially the opening of political space, the rise of popular organizations, and the rapid maturation of a Mexican civil society.

The most direct political legacy of the 1985 disaster was the democratization of Mexico City's municipal government. Prior to the earthquakes, politics in Mexico City had been very top-down and exclusionary. Mexico City residents did not even elect their own mayor. Instead, the president would reward a PRI loyalist with the powerful position of city regent. In addition, the Federal District did not have any elected representation in the Mexican Congress. The 1985 earthquake disaster began to change all that.

While Mexico City had seen growing anti-PRI sentiment since the 1968 student massacre, the post-1985 groundswell in popular mobilization, and self-confidence, forced the PRI-State system to respond to demands for more openness and citizen participation in government at all levels. Indeed, in his 1988 presidential campaign, leftist Cuauhtémoc Cárdenas reflected popular resentment against the old system and won the capital. He may also have won the election nationwide, but we still cannot be

certain of that, despite strong hints in the recent memoirs of Miguel de la Madrid. Regardless, the PRI's Carlos Salinas de Gortari was declared the 1988 winner. To his credit, despite clear evidence of PRI electoral fraud, Cárdenas refrained from calling for street demonstrations that could have turned Mexico City from a reconstruction zone into a combat zone.

Faced with mounting civil society and organizational opposition that the 1985 disaster had accelerated ("loosed" might also be apt), the PRI-State system implemented a series of liberalizing reforms. A 1993 reform law released the Federal Electoral Institute from the fetters of government (and PRI) control, after which Mexican elections became increasingly fair and transparent. In the 1997 midterm elections, for the first time in modern history, Mexico City residents were allowed to elect their own mayor, choosing . . . Cuauhtémoc Cárdenas. Those same 1997 elections saw an opposition majority elected to the national Chamber of Deputies, again a first in modern Mexican history.

Finally, three years later in 2000, the Mexican people bid goodbye to the old PRI-State system and voted into the presidency Vicente Fox of the center-right National Action Party (PAN). In retrospect, the 1985-2000 period was remarkable, history-altering, and Mexicans can and should be extremely proud of turning an authoritarian one-party political system into a functioning democracy—peacefully and in less than a decade.

Were all of these cumulatively monumental changes in Mexico the result of the 1985 disaster? No, of course not. Weaving a national tapestry is much too complicated to allow such a facile interpretation of a single event. Was the 1985 disaster important, even crucial, for everything that followed? That answer is definitely yes. Mexico repaired and rewove itself around the gash and hurt of 1985.

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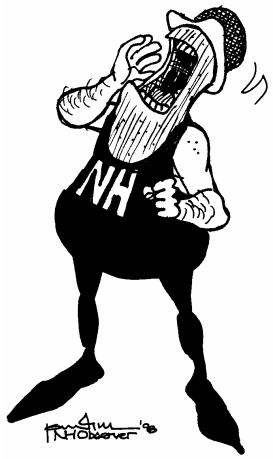
Disaster Research: When the *Observer* Leaves You Craving for More

Every other Friday, the Natural Hazards Center distributes an e-newsletter, ***Disaster Research*** (***DR***), which features timely announcements about new policies and programs, funding opportunities, calls for papers and presentations, upcoming conferences, Internet resources, job openings, and other information useful to researchers, practitioners, policy makers, and students in the field of hazards and disasters. The ***DR*** complements the ***Observer*** and while there is some information overlap between the two publications the ***DR*** often contains time sensitive information that the ***Observer*** cannot. The Center welcomes and encourages the submission of news, announcements, and questions for ***DR*** readers (a readily available network of experts). All contributions and queries for the ***DR*** should be indicated as such and e-mailed to *hazctr@colorado.edu*.

To receive the ***DR***, subscribe for free on the Web at *http://www.colorado.edu/hazards/dr/* or send a message to *listproc@lists.colorado.edu* with this one-line command in the body of the e-mail message (no subject): "SUBSCRIBE HAZARDS <Your Name>" (do not include < >).

Call for Quick Response Proposals

Each September, the Natural Hazards Center solicits proposals for the next round of Quick Response (QR) Grants. These small grants are intended to enable social and behavioral science researchers from the United States to conduct short-term studies immediately following a disaster. Grants average between $1,000 and $3,500 and are intended to cover food, travel, and lodging expenses.



If, during the course of the next year, a disaster matching an applicant's preapproved proposal occurs, the grant is activated and the researcher is able to immediately travel to the site. Grantees are required to submit a report of their findings to be shared with the hazards community. Reports are published by the Natural Hazards Center and are available online.

In recent years, the Center has activated grants studying adaptation to flood impacts in Louisiana, elderly populations in disasters, and providing for pets during extreme events. Proposals for natural, technological, and human-induced events are considered for funding. Physical science- and engineering-based proposals are not eligible. For more information about this program, and to find out how to apply, visit *http://www.colorado.edu/hazards/qr/*, or request a 2006 QR Program Announcement from *Greg Guibert, Natural Hazards Center, University of Colorado, 482 UCB, Boulder, CO 80309-0482; (303) 492-2149; e-mail: greg.guibert@colorado.edu*. The deadline for proposal submission is October 14, 2005.

2005 Mary Fran Myers Award Winner Announced

The Gender and Disaster Network and the Natural Hazards Center are pleased to present the 2005 Mary Fran Myers Award to Elaine Enarson. Enarson is an independent scholar currently teaching in the Department of Sociology at the University of Colorado at Boulder. Her research, courses, and publications have examined women's work in disasters and their housing and evacuation experiences, the uses of feminist theory for disaster sociology, disaster prevention and sustainable development, women's cultural responses to disaster, violence against women in disaster contexts, grassroots women's efforts to mitigate natural hazards, and international trends in the gender and disaster literature.

She has consulted on these issues with the International Labour Organization, the United Nation's Division for the Advancement of Women, and the International Strategy for Disaster Reduction. Additionally, she has served as convener, grant writer, and planner for conferences on Gender Equality and Disaster Risk Reduction, Reaching Women and Children in Disasters, and Women in Disaster: Exploring the Issues. She also cofounded the Gender and Disaster Network in 1997 and is currently project manager for the ***Gender and Disaster Sourcebook*** (*http://online.northumbria.ac.uk/geography_research/gdn/sourcebook.htm*), an online compilation developed by an international writing team.

For more than a decade, Enarson has dedicated her time and efforts to better understanding and reducing the disaster vulnerability of women and girls. Her scholarship and advocacy work have fundamentally changed the way scholars conduct gendered research and the way practitioners respond to extreme events. Moreover, she has served as a mentor and role model to a new generation of students and emergency responders.

The Mary Fran Myers Award was established in 2002 to recognize individuals whose program-related activities, advocacy efforts, or research has had a lasting, positive impact on reducing hazards vulnerability for women and girls. Individuals whose work adds to the body of knowledge on gender and disasters, is significant for the theory and/or practice of gender and disasters, or has furthered opportunities for women to succeed in the hazards fields are eligible to receive the award. For more information about the Mary Fran Myers Award and previous award winners, visit *http://www.colorado.edu/hazards/mfmaward/*.

2005 Workshop Summaries and Abstracts Available Online

In July 2005, hazards researchers and professionals, including federal, state, and local government officials; representatives from nonprofit organizations and private industry; and other interested individuals, convened in Boulder, Colorado, for the Natural Hazards Center's 30th Annual Hazards Research and Applications Workshop. Participants debated, explored, and shared information on a wide range of issues. This year's session topics included the 2004 Asian tsunami, social isolation in disaster planning, the effectiveness of land use zoning as a hazard mitigation tool, climate change and unpredictability, innovations in Earth observations, legal issues regarding quarantine, and many, many others.

To share some of the ideas and discussions presented during the workshop, the Center publishes brief summaries of each session, abstracts of the research presented, and descriptions of the projects and programs discussed. This is a valuable resource for those who were unable to attend, as well as for those who were. Session summaries, abstracts, and other workshop materials are available online at *http://www.colorado.edu/hazards/workshop/2005/*.

Call for Session Topics: 2006 Annual Hazards Research and Applications Workshop

The Natural Hazards Center invites proposals for session topics for the 2006 Annual Hazards Research and Applications Workshop. Proposed session topics will provide guidance to the Center as it plans and prepares next year's program. Session ideas may be modified, combined, or otherwise altered by the Center and submission of a topic does not guarantee inclusion on the program.

The annual workshop is designed to bring members of the research and applications communities together for face-to-face networking and discussion of cutting-edge issues related to hazards and disasters and society's efforts to deal with them. It provides a dynamic, provocative, and challenging forum for the diverse opinions and perspectives of the hazards community.

To submit a session idea, go to *http://www.colorado.edu/hazards/workshop/2006/*. Session topics must be submitted by October 14, 2005, to be considered.

Washington Update

Plans for DHS Reorganization Announced

On July 13, Michael Chertoff, secretary of the U.S. Department of Homeland Security (DHS), announced plans to reorganize DHS, realigning policies, operations, and structures to address potential threats (human-caused and natural). The Homeland Security Act of 2002 provides certain flexibility for the secretary to establish, consolidate, alter, or discontinue organizational units within the department. Some of the proposed changes will require congressional action.

The reorganization is the result of the Second Stage Review, which studied the department's programs, policies, operations, and structure and recommended ways that DHS could better manage risk in terms of threat, vulnerability, and consequence; prioritize policies and operational missions according to this risk-based approach; and establish a series of preventive and protective steps that would increase security at multiple levels.

The plan's six-point agenda aims to:

- Increase overall preparedness, particularly for catastrophic events;
- Create better transportation security systems to move people and cargo more securely and efficiently;
- Strengthen border security and interior enforcement and reform immigration processes;
- Enhance information sharing with partners;
- Improve DHS financial management, human resource development, procurement, and information technology; and
- Realign the DHS organization to maximize mission performance.

Among the changes is the dismantling of the Emergency Preparedness and Response Directorate. The Federal Emergency Management Agency (FEMA) will report directly to the secretary and its mission will be refocused on response and recovery. To enhance coordination and deployment of preparedness assets, a new Directorate for Preparedness will consolidate preparedness assets from across the department, which, in addition to FEMA's preparedness activities, will include the infrastructure half of the Information Analysis and Infrastructure Protection Directorate, elements of the Office of State and Local Government Coordination and Preparedness, and the U.S. Fire Administration. This new directorate will be tasked with facilitating grants and overseeing nationwide preparedness efforts supporting first responder training, citizen awareness, public health, infrastructure, and cyber security.

For more information about these and other proposed changes, read the "Department Six-Point Agenda" at *http://www.dhs.gov/dhspublic/interapp/editorial/editorial_0646.xml*. Links to proposed end-state organizational charts, a press release, remarks from the secretary, and the Homeland Security Act of 2002 are also available at this address. Various committees in the U.S. Senate and the U.S. House of Representatives have held hearings to discuss the proposal. Chertoff's testimonies are available at *http://www.dhs.gov/dhspublic/display?theme=45*. Visit the committee Web sites at *http://www.senate.gov/* and *http://www.house.gov/* to view webcasts of the hearings.

Grand Challenges for Disaster Reduction

Grand Challenges for Disaster Reduction is a ten-year strategy for disaster reduction through science and technology formulated by members of the Subcommittee on Disaster Reduction, part of the National Science and

Technology Council, in collaboration with scientists and engineers around the world. It presents six grand challenges and provides a framework for prioritizing the related federal investments in science and technology to improve America's capacity to prevent and recover from disasters. Find out more about the grand challenges in the November 2005 issue of the ***Observer*** and download a free copy of the 26-page report from *http://sdr.gov/*.

September Is National Preparedness Month

September 2005 marks the second annual National Preparedness Month, the nationwide effort to encourage Americans to prepare for emergencies in their homes, businesses, and schools. Throughout the month, the U.S. Department of Homeland Security and the American Red Cross (cosponsors) will work with a National Preparedness Month Coalition, which consists of a wide variety of public and private sector organizations, to educate the public about the importance of emergency preparedness.

These organizations will provide information, host events, and sponsor activities that disseminate emergency preparedness messages to, and encourage action in, their customers, members, employees, stakeholders, and communities across the country. Specifically, these activities will urge Americans to get emergency kits, make emergency plans, educate themselves about the threats to their communities, and get involved with their communities' preparedness efforts (e.g., the American Red Cross, Citizen Corps).

For more information about National Preparedness Month, including a calendar of events and a list of coalition members, visit *http://www.ready.gov/npm/*.

NOAA's August Update Increases 2005 Hurricane Season Outlook

A very active Atlantic hurricane season is underway and on August 2 the National Oceanic and Atmospheric Administration (NOAA) increased the number of storms predicted in its 2005 hurricane season outlook. NOAA expects an additional 11 to 14 tropical storms from August through November, with 7 to 9 becoming hurricanes, including 3 to 5 major hurricanes. In total, this season is likely to yield 18 to 21 tropical storms, with 9 to 11 becoming hurricanes, including 5 to 7 major hurricanes.

An average Atlantic hurricane season runs from June 1 to November 30. Atmospheric and oceanic conditions that favor an active hurricane season are now in place, as was predicted in the preseason outlook. The 2005 season is likely to become the ninth above-normal Atlantic hurricane season in the last 11 years. For the complete August update to the hurricane outlook, visit the National Weather Service Web site at *http://www.cpc.ncep.noaa.gov/products/outlooks/hurricane.html*.

Preliminary List of Federal Preparedness Grant Programs

The National Incident Management System (NIMS) Integration Center (NIC) has posted a preliminary list of federal preparedness grant programs on its Web page at *http://www.fema.gov/nims/*. The information was provided by federal departments and agencies to the center and includes federal preparedness funding programs with state and local entities, such as cooperative agreements and memorandums of understandings as well as grants and contracts.

The NIC is making this preliminary list available to help state and local entities identify funding streams that may be affected in connection with NIMS implementation requirements. This should not be considered a definitive list of federal preparedness grants and agreements. Disaster assistance funds are not tied to NIMS compliance.

For more information about federal assistance programs for state, local, and tribal governments, the ***Catalog of Federal Domestic Assistance*** may be found at *http://www.cfda.gov/*. For more information about U.S. Department of Homeland Security Office of Domestic Preparedness grants, see *http://www.ojp.usdoj.gov/odp/*. Send questions about NIMS to *NIMS-Integration-Center@dhs.gov* or call *(202) 646-3850*.

New DOT Web Site to Assist Persons with Disabilities for Emergency Preparedness

In response to a 2004 executive order directing federal agencies to support safety and security for individuals with disabilities during disasters, the U.S. Department of Transportation (DOT) has launched a Web site containing information to help ensure safe and secure transportation for persons with disabilities in the event of a disaster or emergency. The new site includes advice on emergency preparedness, transportation accessibility, and evacuation methods for certain modes of transportation, such as rail and transit systems. Disabled individuals can learn how to react in situations ranging from evacuations of mass transit systems to being trapped in a car during a blizzard or hurricane. It also provides information for transportation providers on how to respond to the unique needs of people with disabilities during an emergency. Visit the site at *http://www.dotcr.ost.dot.gov/asp/emergencyprep.asp*.

USFA and the IAFF Initiate Project on Firefighter Safety

The U.S. Fire Administration (USFA) and the International Association of Fire Fighters (IAFF) are working together on a project to enhance risk management capabilities of local fire departments. The goal of this initiative is to enable fire departments to design effective risk management programs based on community hazards and service commitment, enhance firefighter safety, and provide tools for continual evaluation of emergency response systems.

The study will examine critical issues related to the development of effective risk management programs. Geographic information systems computer simulations will be used to develop risk management models that will be recommended for departments of various sizes serving different populations in varying geographic regions. More information about this project, as well as other USFA research studies on firefighter safety and health, are available on the USFA Web site at *http://www.usfa.fema.gov/research/safety/*.

First East Coast TsunamiReady Community Recognized

In early July, the National Weather Service recognized central Florida's Indian Harbour Beach as the first community on the east coast of the United States to become TsunamiReady. TsunamiReady is a voluntary, community-based program that stems from the National Weather Service's StormReady initiative. Both programs foster a well-designed emergency response plan on a community-by-community basis. As of August 1, there were 22 TsunamiReady communities across six states. For more information about the TsunamiReady program, see the November 2004 (pp. 11-12) and July 2005 (pp. 5-6) issues of the ***Observer*** or visit *http://www.tsunamiready.noaa.gov/*.

USDA Provides $104.5 Million for Natural Disaster Recovery

The U.S. Department of Agriculture (USDA) is providing $104.5 million in Emergency Watershed Protection (EWP) program funding for locally sponsored watershed protection projects resulting from floods and other natural disasters. States receiving the emergency funds are Alabama, Arizona, California, Florida, Hawaii, Massachusetts, Mississippi, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Tennessee, Utah, and Washington.

Through the EWP, the USDA's Natural Resources Conservation Service provides technical and financial assistance to protect life and property threatened by excessive erosion and flooding caused by the sudden impairment of a watershed from a natural disaster. EWP funds address public safety and restoration efforts on private lands and are used to remove debris, restore eroded streambanks, reseed burn areas, and take related steps to mitigate threats to people and property from impaired watersheds. Find out more about the EWP on the Web at *http://www.nrcs.usda.gov/programs/ewp/*.

Public Safety Officers' Benefits Program: Request for Comments

The U.S. Department of Justice Office of Justice Programs (OJP) has proposed a rule to amend regulations that implement the Public Safety Officers' Benefits Act. The act provides financial support to certain public safety officers, or their survivors and families, when such officers die or become permanently and totally disabled as a result of line-of-duty injuries. The proposed rule would incorporate recent statutory amendments to the program to provide coverage for chaplains and the addition of certain life insurance beneficiaries and to provide coverage for certain heart attack and stroke cases. The proposed rule would also amend the regulations to incorporate longstanding internal agency policy and practice, court decisions, and certain technical changes to make the regulations more comprehensive and user friendly.

The proposed rule is available at *http://www.regulations.gov/* and in the July 26, 2005, ***Federal Register***, Vol. 70, No. 142, pp. 43078-43093, which can be found in any federal repository library and online at *http://www.access.gpo.gov/*. Comments must be received by no later than 5:00 p.m. E.S.T. on September 26, 2005. Address all comments regarding this proposed rule to *Hope Janke, Office of Justice Programs, 810 7th Street NW, Washington, DC 20531; (202) 514–6278, (888) 744–6513; fax: (202) 305–1367; e-mail: PSOBREGS@usdoj.gov*. To ensure proper handling, reference OJP Docket No. 1333 on all correspondence.

NIAID Calls on Project Bioshield Authorities

The National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, has awarded 10 grants and 2 contracts totaling approximately $27 million to fund development of new therapeutics and vaccines against some of the most deadly agents of bioterrorism, including anthrax, botulinum toxin, Ebola virus, pneumonic plague, smallpox, and tularemia.

These awards are the first made by NIAID using authorities provided by Project Bioshield (see the ***Observer***, September 2004, p. 9), which was signed into law in July 2004. Project Bioshield gives federal agencies new tools to accelerate research on medical countermeasures to safeguard Americans against chemical, biological, radiological, or nuclear attack. These first grants and contracts respond to a key objective of the NIAID biodefense research agenda that emphasizes the development of new and improved medical products against Category A agents—those biological agents considered by the Centers for Disease Control and Prevention to pose the greatest threat to national security.

Specific information about the individual grants and contracts is available at *http://www3.niaid.nih.gov/news/newsreleases/2005/27million_bioshield.htm*. For more information about Project Bioshield, visit *http://www.niaid.nih.gov/Biodefense/Public/projectbioshield.htm*.

FEMA Updates

The Federal Emergency Management Agency (FEMA) and its flood mapping partners have released an update to the Multiyear Flood Hazard Identification Plan (MHIP), a national plan for updating flood hazard maps for all areas at flood risk across the country (see the ***Observer***, January 2005, p. 11). Developed in cooperation with state, local, and regional entities and other partners, MHIP version 1.5 provides an update to the national five-year schedule and anticipated funding for conducting flood studies and providing reliable digital flood hazard data and maps to support the National Flood Insurance Program. The MHIP is available at *http://www.fema.gov/fhm/mh_main.shtm*.

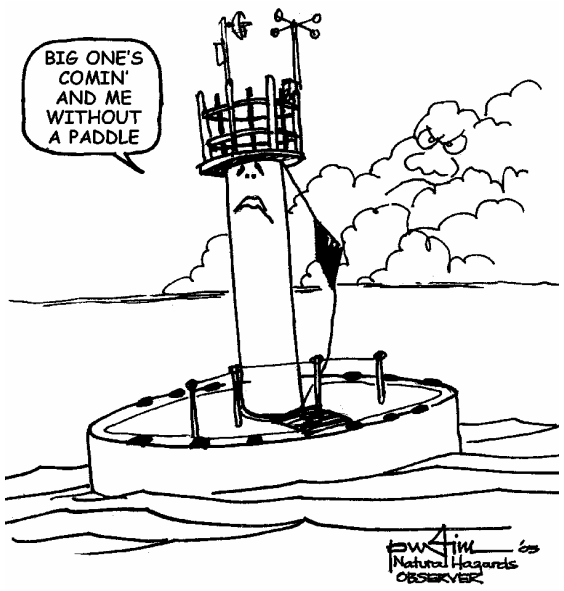
As part of its "Building on Success" initiative (see the ***Observer***, July 2005, pp. 8-9), FEMA has produced two three-page documents: ***FEMA Evolutions in Recovery Programs*** (*http://www.fema.gov/pdf/media/building_on_success_re.pdf*) and ***FEMA Best Practices in Emergency Response—Evolutions for the 2005 Hurricane Season and Beyond*** (*http://www.fema.gov/pdf/media/building_on_success_rp.pdf*).

Seven New Hurricane Buoys Deployed

In June, the National Oceanic and Atmospheric Association (NOAA) National Data Buoy Center (NDBC) launched six new weather data buoy stations designed to enhance hurricane monitoring and forecasting. The buoys have been deployed in key locations in the Caribbean, the Gulf of Mexico, and the Atlantic Ocean. A seventh buoy reestablished a former station off the coast of Pensacola, Florida. Following last year's active hurricane season, the NDBC received $1.8 million in supplemental funding from Congress for the new buoy stations.

Wind, wave, barometric pressure, and temperature data from the new stations will help the NOAA Tropical Prediction Center more accurately determine formation or dissipation, extent of wind circulation, maximum intensity, and center location of the tropical cyclones. In addition, direction, height, and distribution of ocean waves generated by hurricane activity will be measured. Beyond their measurements of tropical cyclones, the buoys are also expected to provide year-round data for analysis and forecasts of other marine disturbances. Data from the buoys will also be used to validate the quality of measurements and estimates obtained from remote-sensing reconnaissance aircraft and satellites and National Weather Service forecasts.

For more information, visit *http://www.noaanews.noaa.gov/stories2005/s2458.htm*. Access data from the new buoys (stations 42039, 42055, 42056, 42057, 42058, 41040, and 41041) at the NDBC's Web site at *http://www.ndbc.noaa.gov/*.



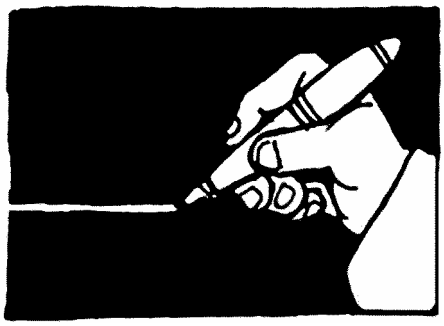
New DHS Postdoctoral Associateship Program

The U.S. Department of Homeland Security's (DHS) Science and Technology directorate has announced it is seeking applications for up to 10 postdoctoral associates to conduct mission-focused research at DHS-affiliated venues, including DHS Centers of Excellence, DHS laboratories, and homeland security activities at U.S. Department of Energy (DOE) national laboratories. Postdoctoral associateship awards will be made to doctoral level scientists and engineers, within five years of their doctorate, in nationally competitive evaluations held four times each year. Awards will be made for one year, renewable for a maximum of three years. The approximate annual stipend for new awardees for the 2005 program year will be $55,000.

Application deadlines are February 1, May 1, August 1, and November 1 for reviews in mid-March, mid-June, mid-September, and mid-January, respectively. For more information about the program, including approved DHS venues, read the press release at *http://www.dhs.gov/dhspublic/display?content=4707* or visit *http://www.dhs.gov/universityprograms/*.

2005 ISDR International Day for Disaster Reduction

This year, the United Nations International Strategy for Disaster Reduction (ISDR) will celebrate the ISDR International Day for Disaster Reduction on October 12, 2005. Using microfinance and safety nets to increase disaster resilience is the primary theme of 2005's campaign. The objective is twofold: to sensitize the social and financial communities and institutions on their potential role in reducing disaster risk and to raise awareness in the disaster and risk management community of the utility of existing financial tools and safety nets to reduce the vulnerability of hazard-prone populations. Find out more from the ISDR Web site at *http://www.unisdr.org/eng/public_aware/world_camp/2005/2005-press-kit.htm.*



On the Line

The Role of Catastrophe Modeling for Estimating Risks

Before Hurricane Hugo swept through Georgia and North and South Carolina in 1989, the insurance industry in the United States had never suffered a loss of more than $1 billion from a single disaster. Since then, numerous catastrophes have exceeded that figure. Hurricane Andrew in 1992 caused $15.5 billion in insured losses in southern Florida and Louisiana. Damage from the Northridge earthquake in California in January 1994 amounted to $12.5 billion. Residential and commercial development along coastlines and areas that are earthquake- and hurricane-prone suggest that future disaster losses will only grow—a trend that emphasizes, as never before, the need to assess and manage risk on both a national and a global scale. People are now asking the question, "How do we scientifically evaluate catastrophic risk?"

Who Needs Catastrophe Modeling and Why?

Businesses are clearly interested in evaluating risk because they need to know more about the nature of the risks they face, their likelihood of occurrence, and the damage that may well result. Insurers are interested because they need to know what premiums to set for different types of risk in the context of their overall risk portfolio. And the government is interested because it needs to know what regulations and standards would be appropriate to lessen risk and reduce losses.

Catastrophe models play a key role in addressing these issues with respect to natural disasters by identifying and quantifying the likelihood of specific events occurring in different parts of the country and estimating the extent of losses likely to be incurred. Such estimates can be based on past data (e.g., loss history in a specific region) coupled with data on what experts know about a particular risk through the use of catastrophe models.

The Structure of Catastrophe Models

The four basic components of a catastrophe model are hazard, inventory, vulnerability, and loss as depicted in Figure 1 and which will be illustrated using a hurricane as an example. First, the model characterizes the risk of the hazard phenomenon, which in the case of a hurricane is characterized by its projected path and wind speed. Next, the model characterizes the inventory (or portfolio) of properties at risk as accurately as possible by first assigning geographic coordinates, such as latitude and longitude, to properties based on street addresses, zip codes, or other location descriptors and determining how many structures in the insurer's portfolio are at risk from hurricanes of different wind speeds and projected paths. In addition to each property's spatial location, other factors that characterize the inventory at risk are the construction type, the number of stories in the structure, and its age.

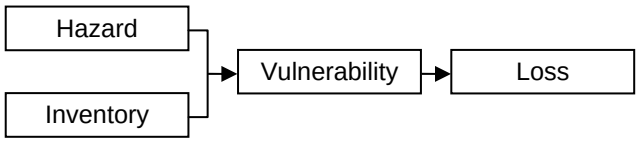


Figure 1: Structure of Catastrophe Models

The hazard and inventory modules enable the calculation of the vulnerability or susceptibility to damage of the structures at risk. In essence, this step in the catastrophe model quantifies the physical impact of the natural hazard phenomenon on the property at risk. How this vulnerability is quantified differs from model to model. Based on this measure of vulnerability, the loss to the property inventory is evaluated. In a catastrophe model, loss is characterized as direct or indirect in nature. Direct losses include the cost to repair and/or replace a structure. Indirect losses include business interruption impacts and relocation costs of residents forced to evacuate their homes.

Exceedance Probability

Catastrophe models were introduced in the mid-1980s but did not gain widespread attention until after Hurricane Andrew hit southern Florida in August 1992. Nine insurers became insolvent as a result of the losses they incurred from Andrew. Insurers and reinsurers realized that in order to reduce the likelihood of a very severe loss relative to their surplus (capital) they needed to estimate and manage their natural hazards risk more precisely. Many companies turned to the modelers of catastrophe risk for decision support.

Based on the outputs of a catastrophe model, one can construct an exceedance probability (EP) curve that specifies the probabilities that a certain level of losses will be

exceeded. The losses can be measured in terms of dollars of damage, fatalities, illness, or some other unit of analysis. To illustrate with a specific example, suppose one were interested in constructing an EP curve for an insurer with a given portfolio of insurance policies covering wind damage from hurricanes in a southeastern U.S. coastal community. Using probabilistic risk assessment, one would combine the set of events that could produce a given dollar loss and then determine the resulting probabilities of exceeding losses of different magnitudes. Based on these estimates, one can construct a mean EP curve, such as the one depicted in Figure 2. The x-axis measures the loss to the insurer in dollars and the y-axis depicts the probability that losses will exceed a particular level. Suppose the insurer focuses on a specific loss L_i. One can see from the figure below that the likelihood that insured losses exceed L_i is given by p_i.

An insurer utilizes its EP curve to determine how many structures to include in its portfolio given that there is some chance that there will be hurricanes causing damage to some subset of its policies during a given year. More specifically, if the insurer wanted to reduce the probability of a loss from hurricanes that exceeds L_i to be less than p_i it will have to determine what strategy to follow. The insurer could reduce the number of policies in force for these hazards, decide not to offer this type of coverage at all (if permitted to do so by law), or increase the capital available for dealing with future catastrophic events.

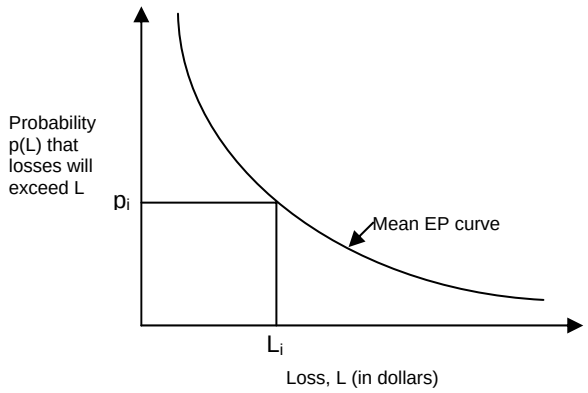


Figure 2: Sample Mean Exceedance Probability (EP) Curve

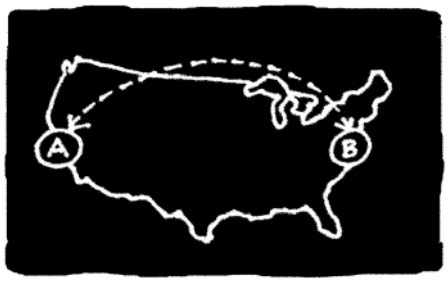
In developing an EP curve it is important to also indicate the uncertainties in estimates of the probability of an event occurring and the magnitude of dollar losses. This uncertainty can be reflected in curves surrounding the mean EP curve. These confidence intervals (e.g., 5 percent and 95 percent) depict the ranges of values that probabilities can take for a specified loss (L_i) and that losses can take for a specified probability (p_i). To construct these EP curves experts are forced to make explicit the assumptions on which they are basing their estimates of the likelihood of certain events occurring and the resulting consequences. This approach thus provides an important link between risk assessment by scientists and engineers and risk management by policy analysts and key decision makers.

Federal and state agencies may want to use EP curves for estimating the likelihood that losses to specific communities or regions of the country from natural disasters in the coming year will exceed certain levels in order to determine the chances that it will have to provide disaster assistance. At the start of the 2004 hurricane season, Florida could have used EP curves to estimate the likelihood of damage exceeding $21 billion that year. This probability would have been extremely low even though we now know that a confluence of events (i.e., Charley, Frances, Ivan, and Jeanne) was able to produce an outcome that exceeded this dollar value.

Recognizing that disasters can wreak enormous havoc, catastrophe modeling has already gained widespread acceptance and is being relied upon to support a wide range of risk management strategies involving both the public and private sectors. The extent of future disaster losses can go either way. Wider use of catastrophe modeling could help steer the course away from the escalating losses that we are experiencing today.

Howard Kunreuther
The Wharton School
University of Pennsylvania

Note: The use of catastrophe modeling for estimating the risks from natural hazards is described in a new book edited by Kunreuther and Patricia Grossi titled *Catastrophe Modeling: A New Approach to Managing Risk* (Springer 2005). The book was written jointly with the three leading modeling firms (AIR Worldwide, EQECAT, and Risk Management Solutions) and researchers from the Wharton School, University of Pennsylvania.



Conferences and Training

Below are the most recent conference announcements received by the Natural Hazards Center. A comprehensive list of hazards/disaster meetings is available at *http://www.colorado.edu/hazards/conf.html*.

Emergency Evacuation Workshop. Organizer: National Fire Protection Association. **Various dates and locations: September-December 2005**. This one-day workshop is designed for professionals concerned with preparedness and protection of facilities, such as property managers, facility managers, engineering managers, safety directors, fire service personnel, loss prevention personnel, risk managers, security managers, safety team members, and other interested individuals. For more information, visit *http://www.nfpa.org/catalog/product.asp?pid=eew*.

International Conference on Lightning and Static Electricity (ICOLSE). Host: The Boeing Company. **Seattle, Washington: September 19-23, 2005**. This conference is concerned with lightning interaction with ground, air, and sea systems. It is one in a series of biannual events that aim to encourage an understanding of atmospheric electricity environmental hazards. A full program of papers will address phenomenology through measurement, design, protection, testing, and computational modeling. For more information, contact *Dianne L. Heidlebaugh, ICOLSE 2005, The Boeing Company, PO Box 3707, MC 45-03, Seattle, WA 98124-2207; (206) 655-6511; e-mail: diane.l.heidlebaugh@boeing.com; http://www.icolse.org/*.

DMHI's Eighth Annual Innovations in Disaster Psychology Conference: Research Strategies and Methodology. Organizer: Disaster Mental Health Institute (DMHI). **Rapid City, South Dakota: September 22-24, 2005**. This year's DMHI conference will celebrate innovations in field research. Breakthrough strategies and methodology will be featured and participants will have an opportunity to question presenters at length. This conference is intended for disaster mental health professionals as well as other health and mental health professionals, both nationally and internationally. The overall objective is for participants to learn more about the development or improvement of research programs in disaster psychology or to learn how to more effectively evaluate research in disaster psychology. For more information, visit *http://www.usd.edu/dmhi/*.

2005 ACHMM National Conference. Host: Academy of Certified Hazardous Materials Managers (ACHMM). **St. Louis, Missouri: September 25-29, 2005**. This conference for environmental, health, and safety professionals will feature technical sessions highlighting the latest developments in hazardous materials management, safety, environmental management systems, emergency response, homeland security, and hazardous materials transportation; the opportunity to see the newest innovations and services; and a chance to network with peers. It will also feature a "how to conduct a drill" exercise, a tabletop exercise, and two on-site exercises. For more information, visit *http://www2.kuce.org/achmm/*.

TIEMS Workshop Croatia 2005. Sponsor: The International Emergency Management Society (TIEMS). **Trogir, Croatia: September 27-28, 2005**. The theme of this workshop is "Development of Protection and Rescue Systems in Transition and Posttransition Countries with Objective of Adjustment to European Standards." Organized by the Regional Center for Assistance and Disaster Relief—Divulje in cooperation with the faculty of Maritime Studies at the University of Split under the auspices of the Republic of Croatia's Ministry of Science and Technology, the workshop will focus on tourism, new challenges and risks; prevention and response to ecosystem disasters; medical emergency services; training in disaster management systems; regional cooperation proposals; and more. For more information, e-mail *info@rcadr.org; http://www.tiems.org/*.

Analyzing Risk: Science, Assessment, and Management. Host: Harvard School of Public Health: Center for Continuing Professional Education, Center for Risk Analysis. **Boston, Massachusetts: September 27-30, 2005**. This program combines lecture, discussion, and case study to cover key areas of the science and analysis of human health risk. Participants will examine complex problems involving chemicals and radiation, discuss emerging analytic approaches, and have an opportunity to review important issues with leaders in the field. Participants will learn how to examine and apply the science behind decision making and prepare for the new analysis tools and techniques needed in the field. For more information, contact *Harvard School of Public Health Center for Continuing Professional Education, CCPE–Department A, 677 Huntington Avenue, Boston, MA 02115; (617) 384-8692; e-mail: contedu@hsph.harvard.edu; http://www.hsph.harvard.edu/ccpe/programs/RISK.shtml*.

Australasian Fire Authorities and Bushfire CRC Conference 2005: Innovation and Technology. Organizers: Australasian Fire Authorities, Bushfire Cooperative Research Centre (CRC). **Auckland, New Zealand: October 5-7, 2005**. The conference will look at how fire and rescue services can use innovation, technology, and people to future proof their organizations. For more information, call *+64 9 360 1240; http://www.afacnz2005.co.nz/*.

7th Plinius Conference on Mediterranean Storms. Host: European Geosciences Union. **Rethymnon, Crete, Greece: October 5-7, 2005**. The objective of this conference is to provide an interdisciplinary forum for the discussion of the present state of knowledge on Mediterranean storms, considering their meteorological, hydrological, and geological aspects and their effects on mountain and hill slopes, river networks, and coastal areas. Topics will include physical processes, monitoring and diagnosis of Mediterranean storms; new methods in monitoring and forecasting; meteorological, hydrological and geological risks, disaster management, and mitigation strategies; and Mediterranean storms in an evolving climate. For more information, contact *Vassiliki Kotroni, National Observatory of Athens, Institute of Environment-al Research, Lofos Koufou, P. Penteli, 15236, Athens, Greece; +30-210-8109126; e-mail: kotroni@meteo.noa.gr; http://www.copernicus.org/EGU/topconf/plc7/*.

2005 Homeland Security Summit: Partnering for Preparedness. Sponsor: Performance Institute. **Arlington, Virginia: October 12-14, 2005**. This summit offers four tracks: Emergency Planning and Preparedness, Critical Infrastructure Protection, Crisis Communications and Systems Integration, and the National Incident Management System (NIMS) and Incident Control. It will also feature a "unity" dialogue that will bring together federal, state, and local emergency response agencies. For more information, contact the *Performance Institute, 1515 North Courthouse Road, Suite 600, Arlington, VA 22201; (703) 894-0481; http://homelandsecurityweb.org/hss/*.

National Disaster Mental Health Conference. Organizer: Rocky Mountain Region Disaster Mental Health Institute. **Estes Park, Colorado: October 20-22, 2005**. The theme of this conference is "Hurricanes, Tsunamis, Wildfires, Avalanches, and Floods: Where Do We Go from Here?" It will feature information, papers, seminars, forums, and discussions on disasters, critical incidents, crises, responses to terrorism, trauma, and related areas. The conference will bring together presenters and discussants who have responded to such events and can offer insights into how best to prepare for and respond to future events. The conference is not just for mental health providers, but also for first responders, emergency planners, and others involved in planning for and responding to these events. For more information, contact the *Disaster Mental Health Conference, Rocky Mountain Region, Disaster Mental Health Institute, Box 786, Laramie, WY 82073; (307) 399-4818; e-mail: rockymountain@mail2emergency.com; http://www.rmrinstitute.org/Estes-Conference.html*.

2005 Mid-Atlantic All Hazards Forum (AHF) Conference and Exhibition. **Baltimore, Maryland: October 25-28, 2005**. The AHF is a public-private partnership of Mid-Atlantic states and private corporations founded to improve regional homeland security and emergency management by facilitating dialogue among state directors and increasing interaction between state and local governments and industry. Participants will discuss best practices, procurement procedures, technological advances, strategic planning and implementation, training and education, and readiness, response, and recovery within the context of all hazards. For more information, contact *Addy Kennedy; (301) 493-5500, x3324; e-mail: kennedy@ejkrause.com; http://www.allhazardsforum.com/*.

7th Annual Technologies for Critical Incident Preparedness. Presenters: U.S. Department of Justice (DOJ), U.S. Department of Homeland Security (DHS). **San Diego, California: October 31-November 2, 2005**. This three-day conference will allow the DHS, DOJ, and the U.S. Department of Defense to highlight the technology and training tools currently available and being developed for the first responder community. With over 1,000 attendees and 100 exhibits expected, this conference enables first responders; representatives from business, industry, and academia; and elected federal, state, and local stakeholders to network, exchange ideas, and address common critical incident technology and preparedness needs and solutions. For more information, contact *Lisa Hecker, Center for Technology Commercialization; (505) 670-6153; e-mail: lhecker@ctc.org; http://www.regonline.com/eventinfo.asp?EventId=21494*.

Accessible Emergency Notification and Communication: State of the Science Conference. Presenter: The RERC on Telecommunications Access. **Washington, DC: November 2-3, 2005**. The objectives of this conference are to identify needs and gather possible solutions for accessible emergency notification and communication; encourage interaction among industry, government, and consumer experts so that accessibility considerations are more likely to be built into notification and communication products and procedures; and create literature on the state of the science in this area. The conference is designed for accessibility experts, government representatives with responsibility for emergency communications, standards group representatives, academicians and consultants with research and technical background in emergency communications, and industry representatives. For more information, e-mail *EmergencyConf@tap.gallaudet.edu; http://tap.gallaudet.edu/emergencycommconf.htm*.

CPM 2005 East Conference and Exhibition: Global Resilience—Would Your Organization Bounce Back? Sponsor: Contingency Planning and Management (CPM). **Orlando, Florida: November 2-4, 2005**. This business continuity, emergency management, and security training event provides a risk management curriculum for business and government professionals. The objective of the event is to provide a better understanding of how to join the

continuity, emergency management, and security aspects in continuity plans. Historically, the event has drawn high-level decision-making business continuity, security, and emergency management professionals from a wide range of industries. For more information, contact *WPC Expositions, 20 Commerce Street, Suite 2013, Flemington, NJ 08822; (908) 788-0343; x135; e-mail: CPM2005@witterpublishing.com; http://www.contingencyplanning.com/events/*.

American Public Health Association (APHA) 133rd Annual Meeting. **New Orleans, Louisiana: November 5-9, 2005**. The APHA Annual Meeting serves as a platform to share successes and failures, discover exceptional best practices, and learn from expert colleagues and the latest research in the field. The event will feature scientific sessions, networking opportunities and events, and a public health exposition. For more information, visit *http://www.apha.org/meetings/*.

FireRescue* Conference and Expo 2005**. Organizers: Elsevier's ***FireRescue Magazine**,** Reed Exhibitions. **Las Vegas, Nevada: November 9-13, 2005**. This educational event duplicates the ***FireRescue Magazine*** philosophy: "Read It Today, Use It Tomorrow." Attendees will have the opportunity to participate in two full days of hands-on training sessions and/or preconference workshops on November 9 and 10. The main conference features the following training academies: Fire Operations and Tactics, Rescue/Extrication, Company Officer Development, Training Instructor/Educator Development, Homeland First Response, Rural Fire Command, Fire Based EMS, and a dedicated wildland fire conference. The expo will showcase new and innovative products and technologies. For more information, call *Diana Press at (800) 363-3631 or Erin McArdle (exhibit sales) at (203) 840-5401*; *http://www.firerescueexpo.com/*.

Symposium in the Sun 2005. Sponsor: International Association of Fire Chiefs (IAFC). **Clearwater Beach, Florida: November 10-13, 2005**. This national symposium is for leaders of volunteer/combination fire departments. It will feature speakers as well as an exhibition. For more information, contact the *IAFC, 4025 Fair Ridge Drive, Fairfax, VA 22033; (703) 273-0911; http://www.iafc.org/conferences/vcos/*.

HazMat Explo 9. **Las Vegas, Nevada: November 14-17, 2005**. This conference and exposition is designed for anyone who works with hazardous materials or may be involved in the planning for or response to a hazardous materials event. First responder, environmental, emergency planning, radiological, medical, and industry tracks are designed to meet specific needs. Preconference workshops and special training sessions are also available. For more information, call *(702) 455-5710; e-mail: kinetix@hazmatexplo.org; http://www.hazmatexplo.org/*.

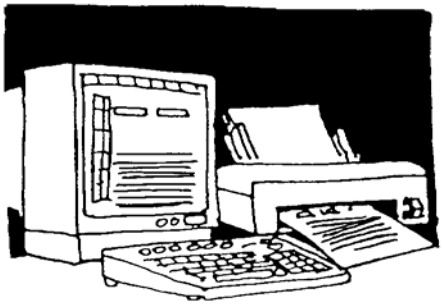
2005 National Conference on Urban Ecosystems. Organizer: American Forests. **Charlotte, North Carolina: November 17-18, 2005**. The 2005 National Conference on Urban Ecosystems will show how to reconnect people to their city's natural resources. The conference is designed for those who want to influence the shape and direction of their community and for those who must meet environmental quality requirements. From local to regional perspectives, the conference will highlight new technologies, emerging public policies, and tools to best utilize the urban forest. For more information, contact *Donna Tschiffely; (703) 904-7508; e-mail: donna@amfor.org; http://www.americanforests.org/conference/*.

TIEMS Workshop Czech Republic 2005/8th International Conference: Present and Future of Crisis Management 2005. Sponsor: The International Emergency Management Society (TIEMS). **Prague, Czech Republic: November 28-29, 2005**. The theme of this workshop is "Crisis Management and Security Globalisation." Abstracts are due by September 30, 2005. For more information, e-mail *conference@tsoft.cz; http://www.emergency.cz/konference/index.php?q=en/2005/index*.

COP 11 and COP/MOP 1. Organizer: United Nations Framework Convention on Climate Change. **Montréal, Canada: November 28-December 9, 2005**. Canada will host the first meeting of the Parties to the Kyoto Protocol (COP/MOP 1) in conjunction with the eleventh session of the Conference of the Parties to the Climate Change Convention (COP 11). Only representatives of parties, the United Nations family, and admitted observer organizations may attend. For more information, visit *http://unfccc.int/meetings/cop_11/items/3394.php*.

CPM Canada 2005: An Alliance for Global Survival. Organizer: Contingency Planning and Management (CPM). **Vancouver, Canada: December 6-8, 2005**. This conference offers education and training in business continuity, continuity of operations, emergency management, and security. Sessions include Strategies for Protecting Global Information Systems, Internal Ramifications of Regulatory Issues for Global Corporations, and Planning for Disaster: Recovering a Global Business When Adversity Strikes. For more information, contact *WPC Expositions, 20 Commerce Street, Suite 2013, Flemington, NJ 08822; (908) 788-0343; x135; e-mail: CPM2005@witterpublishing.com; http://www.contingencyplanning.com/events/canada/*.

42nd Annual Convention and Meeting on Earth System Processes Related to Earthquakes, Tsunamis, and Volcanic Eruptions. Organizer: Indian Geophysical Union. **Bhopal, India: December 7–9, 2005**. In addition to earth system processes, other topics will include solid earth geophysics; atmospheric, space, and planetary sciences; marine geosciences; environmental geophysics; and more. Abstracts are due October 1, 2005. For more information, contact *P.R. Ready, Indian Geophysical Union, NGR. Campus, Pupal Road, Hyderabad 500 007, India; 040-23434662; e-mail: igu123@rediffmail.com; http://www.igu.in/schedule.htm*.



Internet Pages

Below are new or updated Internet resources that Natural Hazards Center staff members have found to be informative and useful. Other valuable resources can be found throughout this newsletter. For a more complete list, visit *http://www.colorado.edu/hazards/resources/sites.html*.

All Hazards

http://commerce.senate.gov/hearings/witnesslist.cfm?id=1530
On June 8, the U.S. Senate Commerce Committee's Disaster Prevention and Prediction Subcommittee held its first hearing, a hearing on research and development to protect America's communities from disaster. Prepared panelist testimonies and a video of the hearing are available here. (Fast forward video about 16 minutes.)

http://www.disasterscharter.org/
The objective of the International Charter "Space and Major Disasters" is to provide a unified system of space data acquisition and delivery to those affected by natural or human-caused disasters through authorized users. Each member agency has committed resources to support the provisions of the charter and thus is helping to mitigate the effects of disasters on human life and property. Visit this Web site to find out more about the charter and its member agencies.

http://benfieldhrc.com/activities/publications.htm
Two new working papers about mainstreaming disaster risk reduction in organizations have been published by the Benfield Hazard Research Centre. ***Social Learning and Adaptation to Climate Change*** (Working Paper 11) and ***Mainstreaming Disaster Risk Reduction: A Tool for Development Organisations*** (Working Paper 12) are available here.

http://www.72hours.org/
Available in English, Spanish, and Chinese, this Web site from the San Francisco, California, Office of Emergency Services instructs residents on how to prepare themselves and their families for emergencies. It also provides information on what to do in response to specific disasters, such as earthquakes and tsunamis.

http://eprepared.org/
This public Web site created by the Los Angeles County Office of Emergency Management encourages and facilitates the training and affiliation of disaster volunteers. Through map-based technology, the site links potential disaster volunteers with agencies that can use their skills. It also enables organizations and Citizen Corps entities to become more effective in their disaster work by helping to build their volunteer base.

http://medschool.slu.edu/agingsuccessfully/newsletters/SLUFall2004_Vol3.pdf
This 2004 issue of ***Aging Successfully***, a newsletter of the Division of Geriatric Medicine at the Saint Louis University School of Medicine, provides information about how elderly persons and health care providers working with them can prepare to minimize the human toll caused by disasters.

http://commerce.senate.gov/hearings/witnesslist.cfm?id=1591
On July 27, the U.S. Senate Commerce Committee's Disaster Prevention and Prediction Subcommittee held a hearing to examine the need for a national all-hazards alert and public warning system. Prepared panelist testimonies and an audio transcript of the hearing are available here.

http://www.icecontact.com/
The ICE (in case of emergency) campaign, which gained widespread coverage in the wake of the London bombings in July, encourages cell phone users to type the acronym ICE followed by an emergency contact name and number into the address book of their phones. This information can aid emergency responders in quickly notifying an individual's ICE contact should the need arise. The background and details of ICE can be found at this Web site.

http://www.benfieldhrc.org/disaster_studies/disability&disasters/d&d_index.htm
The Benfield Hazard Research Centre has launched a new Web page on disability and disasters. The primary aim is to identify publications and unpublished material on the subject (in print or online), field initiatives, and people working in the field. An annotated list of publications, outlines of known research and field projects, and details of key contacts will be updated periodically on this Web page. This work will be ongoing. Details of publications, initiatives, and people working in the field are therefore welcome.

http://www.englink.usace.army.mil/igp/
The U.S. Army Corps of Engineers' Intergovernmental Plans Web site provides state, federal, and local governments with planning and execution guides for commodities distribution, emergency temporary power, debris removal, and more.

Hurricanes

http://hurricanesafety.org/mediakit/masonDixon_poll.pdf
These results from a recent poll indicate that adults who live in states that front the Atlantic Ocean and Gulf of Mexico lack a significant level of knowledge about hurricanes and how to best prepare for them.

http://www.orlandosentinel.com/news/weather/hurricaneguide/
The ***Orlando Sentinel*** has published this hurricane survival guide, which features 10 lessons learned from the 2004 hurricane season and additional information for local residents, including important phone numbers and a list of shelters.

http://www.messageone.com/s113/
MessageOne offers this ***Executive Guide: Hurricane Preparedness 2005; Is Your Organization Ready?*** to help organizations prepare for the upcoming hurricane season. Sections examine what can be done before, during, and after a hurricane as well as lessons learned from 2004.

http://www.hurricanesafety.org/
The National Hurricane Survival Initiative is a public-private partnership that seeks to educate hurricane-vulnerable individuals through this new Web site, a 30-minute television special, and a series of television public service announcements.

http://www.ofcm.gov/nhop/05/nhop05.htm
The Interdepartmental Hurricane Conference meets annually to bring together responsible federal agencies and other stakeholders to review the nation's hurricane forecast and warning program and to discuss recommendations for improving preparedness for the upcoming hurricane season. The updated plan incorporates new procedures, procedural changes, and agreements reached at the 2005 conference and is available free online from the National Oceanic and Atmospheric Administration Office of the Federal Coordinator for Meteorological Services and Supporting Research.

http://www.agiweb.org/workgroup/
On July 11, the Congressional Hazards Caucus sponsored two Capitol Hill briefings titled "Hurricanes: Lessons Learned to Reduce Future Risks." The briefings were organized by the American Geological Institute, the American Geophysical Union, the American Society of Civil Engineers, and the American Red Cross. A summary of the briefings, speaker presentations, and a new fact sheet on hurricanes is available here.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5428a1.htm
The July 22, 2005, issue of the Centers for Disease Control and Prevention's ***Morbidity and Mortality Weekly Report*** features this report, "Epidemiologic Assessment of the Impacts of Four Hurricanes—Florida 2004." It summarizes the results of survey questions designed by the Florida Department of Health to assess the impact of the hurricanes on state residents.

Miscellaneous Weather

http://www.weather.gov/sp/NWS_strategic_plan_01-03-05.pdf
The National Weather Service's (NWS) "NWS Strategic Plan for 2005-2010: Working Together to Save Lives" is available here.

http://www.nws.noaa.gov/om/hazstats.shtml
The final statistics on fatalities, injuries, and damages caused by weather related hazards in the United States for 2004 are available from this National Weather Service Office of Climate, Weather, and Water Services Web page.

http://www.nws.noaa.gov/om/heat/
This heat safety Web page from the National Oceanic and Atmospheric Administration provides information about what actions to take to protect oneself, family, pets, and property against excessive heat and drought.

http://commerce.senate.gov/hearings/witnesslist.cfm?id=1564
On June 29, the U.S. Senate Commerce Committee's Disaster Prevention and Prediction Subcommittee held a hearing on how effective the National Weather Service is at predicting the impact of severe storms and what can be done to increase their accuracy. Testimonies included commentaries on how communities and individuals can improve the resistance of built infrastructure to natural disasters triggered by severe storms. Prepared panelist testimonies and a video of the hearing are available here.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5425a2.htm
The July 1, 2005, issue of the Centers for Disease Control and Prevention's ***Morbidity and Mortality Weekly Report*** features this article, "Heat Related Mortality—Arizona, 1993-2002, and United States, 1972-2003." Findings indicate that during the period from 1993 to 2002 the incidence of heat related deaths was three to seven times greater in Arizona than in the United States overall.

Fire

http://www.fs.fed.us/projects/fote/
This report from the U.S. Forest Service found that some 44.2 million acres (over 11 percent) of private forest across the coterminous United States could experience substantial increases in housing density by 2030. The implications of increased housing density in forested areas and decreased parcel sizes can be associated with, among other things, alterations in forest structure and function, long-term modifications to and reductions in water quality and aquatic diversity, increases in fire risk, and greater loss of life and property.

http://www.iawfonline.org/k2news/example1.php?Action=Full&NewsID=14
The proceedings and poster papers from the International Association of Wildland Fire's Wildland Fire Safety Summit held in Missoula, Montana, April 26-28, 2005, are available here.

http://www.everyonegoeshome.com/
Recognizing the need to do more to prevent line-of-duty deaths and injuries, the National Fallen Firefighters Foundation and PennWell Corporation established this Web site for the nationwide Firefighter Life Safety Initiatives program.

Earthquakes and Tsunamis

http://seattlescenario.eeri.org/
The Seattle Fault Earthquake Scenario, a collaboration between the Earthquake Engineering Research Institute and the Washington Emergency Management Division, drew upon the knowledge and advice of many of the region's experts in the fields of earth and life sciences, earthquake engineering, planning, and emergency management. The multidisciplinary team developed a broad, unbiased look at the vulnerability of the Puget Sound region and Washington State to one of their top earthquake threats—the Seattle Fault. Scenario documents and presentations are available here.

http://dels.nas.edu/dr/f14.shtml
Presentations from the June 21, 2005, Disasters Roundtable of the National Academies, The Indian Ocean Tsunami Disaster: Implications for U.S. and Global Disaster Reduction and Preparedness, are available here.

http://walrus.wr.usgs.gov/tsunami/sumatra05/
This new U.S. Geological Survey Web site, "The 26 December 2004 Indian Ocean Tsunami: Initial Findings from Sumatra," contains information gathered during an international survey conducted January 20-29, 2005, as well as more than 500 photographs.

Climate Change/Environmental Hazards

http://www.climate.org/climate_main.shtml
As part of its ongoing efforts to inform decision makers, the Climate Institute's Climate.org features information about climate change, sea level rise, extreme weather, and more.

http://www.who.int/globalchange/en/
This Web site on global environmental change from the World Health Organization focuses on large-scale and global environmental hazards to human health, including climate change, stratospheric ozone depletion, loss of biodiversity, changes in hydrological systems and the supplies of freshwater, land degradation, and stresses on food-producing systems. The latest addition is a July 2005 fact sheet on climate and health.

Health

http://www.who.int/bulletin/volumes/83/1/71.pdf
The January 2005 issue of the ***Bulletin of the World Health Organization*** featured this article, "Mental and Social Health During and After Acute Emergencies: Emerging Consensus."

Homeland Security and Terrorism

http://www.fas.org/sgp/crs/homesec/RL32941.pdf
State and Local Homeland Security: Unresolved Issues for the 109th Congress, from the Congressional Research Service, addresses emergency responder needs, the proposed reduction in appropriations for federal homeland security assistance, the determination of state and local homeland security risk assessment factors, the absence of emergency responder equipment standards, the development of state and local homeland security strategies, and the limited number of state and local officials with security clearances.

http://www.dhs.gov/interweb/assetlibrary/OIGr_05-22_May05.pdf
Disaster Recovery Planning for DHS Information Systems Needs Improvement (Redacted), a report from the U.S. Department of Homeland Security (DHS) Office of Inspector General, addresses the strengths and weaknesses of the DHS Information Technology disaster recovery program.

http://www.hsdl.org/
The Naval Postgraduate School's Homeland Security Digital Library is a gateway to a wide range of authoritative resources on the subject of homeland security. Sponsored by the U.S. Department of Homeland Security Office of Domestic Preparedness, the password-restricted Web site is for government officials and scholars who require access to information on a wide spectrum of homeland security related topics. Resources include a large collection of authoritative documents and relevant online and locally held resources, the ability to search multiple online databases, homeland security news headlines, and a Weblog announcing new reports, book reviews, and more.

http://www.nae.edu/NAE/pubundcom.nsf/weblinks/CGOZ-642P3W?OpenDocument
The National Academies National Research Council Division on Earth and Life Studies, in cooperation with the U.S. Department of Homeland Security, has prepared these fact sheets on four types of terrorist attacks: biological, chemical, radiological, and nuclear. Designed primarily for reporters as part of the "News and Terrorism: Communicating in a Crisis" project, they should also prove useful to anyone looking for an explanation of the fundamentals of science, engineering, and health as they relate to such attacks.

http://www.intelcenter.com/reports-charts.html
The Intel Center has released ***London Tube Bus Attack*** and ***London Tube Bus Attack Follow-On Strike***, analytic reports that examine the July attacks on the London subway and bus system. They are working documents and are updated as new information becomes available.

Business Continuity

http://www.envoyworldwide.com/pdf/BCSurvey0605.pdf
EnvoyWorldWide's second annual survey, "Trends in Business Continuity and Risk Management," was designed to leverage a regionally diverse group of business continuity professionals to identify business continuity and disaster recovery practices and trends and to compare trends to those uncovered in the May 2004 survey. Read the results here.

http://www.ready.gov/business/espanol/ (http://www.listo.gov/)
The U.S. Department of Homeland Security, in partnership with the Advertising Council, has launched "Listo Negocios," an extension of the "Listo" campaign, to help Spanish-speaking owners of small- to medium-sized businesses prepare their employees, operations, and assets for emergencies. Listo Negocios is the Spanish version of the "Ready Business" campaign launched in September 2004.

Contracts and Grants

Below are descriptions of recently awarded contracts and grants related to hazards and disasters. An inventory of awards from 1995 to the present is available at *http://www.colorado.edu/hazards/resources/grants/*.

Addressing the Data Management Challenges of Disaster Information Management Within the Context of a Pilot National Data Center (NDC) for Sri Lanka. Funding Institution: National Science Foundation, one year. Principal Investigator: *Louiqa Raschid, University of Maryland, 3129 A.V. Williams Building, College Park, MD 20742; (301) 405-6747; e-mail: louiqa@umiacs.umd.edu; http://www.umiacs.umd.edu/labs/CLIP/Handle/SGERtsunami.html.*

It was evident in the wake of the December 2004 earthquake and tsunami that there is a need for both well–developed government information management systems in the countries that border the Indian Ocean and comprehensive disaster management software that can handle a variety of global disaster information management needs. This project explores intellectual challenges of disaster data management using Sahana, an open-source disaster information management system deployed in Sri Lanka following the event. Challenges include the design of the data management component in a manner that recognizes the scope of information that should be accessible during and after a disaster and planning for data acquisition, data cleaning, integration, and quality in the context of a National Data Center for Sri Lanka.

Affect, Risk, and the Tsunami Disaster. Funding Institution: National Science Foundation, one year. Principal Investigators: *Daniel Vastfjall (Paul Slovic, Ellen Peters), Decision Science Research Institute, 1201 Oak Street, Eugene, OR 97401; (541) 485-2400; daniel.vastfjall@psy.gu.se.*

How do big events like natural disasters impact everyday behavior? By examining the shift in the national mood of Sweden, a country that experienced its largest national tragedy in the last 100 years when more than 1,200 Swedes were killed or went missing following December's Indian Ocean tsunami, this project studies how individual and societal judgment and decision behavior is influenced by feelings and emotion in the aftermath of a major natural disaster. The aim of this project is to test research hypotheses about how affect experienced by a whole nation can influence risk perceptions, evaluative judgments, judgments about the future, and the decision strategies people use to mitigate their negative feelings.

A Wireless Sensor Network for Monitoring Volcanic Eruptions. Funding Institution: National Science Foundation, one year. Principal Investigator: *Matthew D. Welsh, Harvard University; Harvard Engineering & Applied Science, Maxwell-Dworkin, 33 Oxford Street, Cambridge, MA 02138; (617) 495-3311; e-mail: mdw@eecs.harvard.edu; http://www.eecs.harvard.edu/~werner/projects/volcano/.*

As part of an effort to develop new wireless technologies for monitoring eruptions of active and hazardous volcanoes, this investigator will develop and deploy a wireless sensor array at Volcán Tungurahua, an active volcano in central Ecuador. The project will demonstrate the potential of wireless sensor networks to provide a richer scientific understanding of volcanic processes.

Stalking Cascadia Episodic Tremor and Slip with Enhanced GPS and Seismic Arrays. Funding Institution: National Science Foundation, one year. Principal Investigator: *Kenneth C. Creager, University of Washington, Earth and Space Sciences, Box 351310, Seattle, WA 98195-1310; (206) 685-2803; e-mail: kcc@ess.washington.edu.*

Megathrust earthquakes, with similarities to the December 2004 earthquake in Sumatra, are thought to occur along the Cascadia subduction zone with average repeat intervals of roughly 500 years. These earthquakes accommodate the relative motion between the Juan de Fuca and North American plates along a fault that is mostly off shore but may extend onshore in places such as the Olympic Peninsula. It has been recently discovered that much, if not all, of the slip along the portion of the plate boundary just east of the megathrust earthquake zone is accommodated by episodic tremor and slip (ETS) events that occur every 14 months in the regions from the Olympic Peninsula north into Vancouver Island. This project proposes deployment of arrays of seismometers and global positioning system instrumentation in order to record and better characterize the next ETS event, which is expected to occur in August, September, or October 2005.

Recent Publications

Below are brief descriptions of some recent publications on hazards and disasters received by the Natural Hazards Center. Many of these publications are available through local and online booksellers, but information on how to obtain copies directly is also provided.

All Hazards

Planning for the Unexpected: Land-Use Development and Risk. *Laurie Johnson, Laura Dwelley Samant, and Suzanne Frew. Planning Advisory Service Report Number 531. ISBN 1-932364-08-0. 2005. 104 pp. $48.00. Available from the Planners Book Service, American Planning Association, 122 South Michigan Avenue, Suite 1600, Chicago, IL 60603; (312) 786-6344; e-mail: bookservice@planning.org; http://www.planning.org/bookservice/.*

Written to help communities better address existing as well as emerging risks, this report discusses the principles and practices of risk management and how they can be applied in land use planning and development practices and protocols. Chapters examine assessing risk in land use planning, a risk management framework, case studies, and establishing a risk management based approach to planning.

Thirty Years of Natural Disasters 1974-2003: The Numbers. *D. Guha-Sapir, D. Hargitt, and P. Hoyois. ISBN 2-930344-71-7. 2004. 188 pp. 10.00 €. Published by Presses Universitaires de Louvain. Available at http://www.i6doc.com/. For more information, contact the Centre for Research on Epidemiology of Disasters, Department of Public Health, Université Catholique de Louvain, 30.94 Clos Chapelle-aux-Champs, B-1200 Brussels, Belgium; + 32 2 764 .33.26/33.27; e-mail: cred@epid.ucl.ac.be.*

Over the last 30 years, 6,367 natural disasters killed more than two million people. A cumulative total of 5.1 billion individuals were affected, of which 182 million were left homeless. These same disasters caused $1.4 trillion in damage. Data on natural disasters and their impact on populations and economies play an essential role in understanding the factors that increase human vulnerability and the importance of disaster preparedness, mitigation, and prevention. Policy analysts, aid and development specialists, researchers, and journalists are invited to read this book to familiarize themselves with the occurrence and impact of natural disasters. Engineers, environmental and insurance specialists, and other technical professionals may also find this publication of interest.

International Perspectives on Natural Disasters: Occurrence, Mitigation, and Consequences. *Joseph P. Stoltman, John Lidstone, and Lisa M. DeChano, editors. Advances in Natural and Technological Hazards Research 21. ISBN 1-4020-2850-4. 2004. 480 pp. $169.00. Published by Kluwer Academic Publishers. Available from Springer New York, 233 Spring Street, New York, NY 10013; (212) 460-1500; e-mail: service-ny@springer-sbm.com; http://www.springeronline.com/.*

This book was written for professionals and citizens who are engaged in natural disaster preparedness, prevention, and response. It aims to inform those who are charged with educating the public about the occurrence, risks, and consequences of natural disasters, and what people, governments, and social institutions can do to mitigate the effects of such events. The editors intended it to encourage readers to recognize the dangers that natural hazards present in a location or region; to recognize patterns of events, both locally and globally; and to begin thinking about the importance of mitigation activities. The chapters were prepared by scientists who have researched and written about natural hazards and disasters for much of their careers. The target audience consists of policy makers, disseminators of information about natural disasters, education professionals, academic libraries, research libraries, governmental agencies, emergency managers/responders, planners, and university students studying natural disasters.

The Social Contours of Risk. *Jeanne X. Kasperson and Roger E. Kasperson.* ***Volume 1: Publics, Risk Communication & the Social Amplification of Risk***. *ISBN 1-84407-073-5. 2005. 376 pp. £24.95.* ***Volume 2: Risk Analysis, Corporations and the Globalization of Risk***. *ISBN 1-84407-175-8. 344 pp. £24.95. Published by Earthscan. Available from Macmillan Distribution, Direct Customer Services, Brunel Road, Houndmills, Basingstoke, Hampshire RG21 6XS, UK; +44 (0) 1256 302699; e-mail: orders@earthscan.co.uk; http://www.earthscan.co.uk/.*

Volume 1 of this two-book examination of the social dimensions of risk collects the authors' fundamental work on how risks are communicated among different publics and stakeholders, including local communities, corporations, and the larger society. It analyzes the problems of lack of transparency and trust and explores how even minor effects can be amplified and distorted through media and social responses, preventing effective management. Additionally, it investigates the ethical issues raised by the unequal distribution of risk depending on factors such as wealth, location, and genetic inheritance.

Volume 2 focuses on the analysis and management of risk in society, in international business and multinationals, and globally. It reviews the structures and processes for managing risks in the private sector and the factors that produce or impede effective decisions. The authors also discuss the transfer of corporate risk management systems from industrial to developing countries, how globalization is spreading and creating new kinds of risk, and the new priorities and capacities needed to deal with these enhanced vulnerabilities around the globe.

Geography for a Changing World: A Science Strategy for the Geographic Research of the U.S. Geological Survey, 2005-2015. *Gerard McMahon, Susan P. Benjamin, Keith Clarke, John E. Findley, Robert N. Fisher, William L. Graf, Linda C. Gundersen, John W. Jones, Thomas R. Loveland, Keven S. Roth, E. Lynn Usery, and Nathan J. Wood. Circular 1281. ISBN 0-607-97179-7. 2005. 74 pp. Available free online from the U.S. Geological Survey (USGS), Information Services, Box 25286, Denver Federal Center, Denver, CO 80225; (888) 275-8747; http://geography.usgs.gov/documents/USGSGeographyScience Plan.pdf.*

The common thread running through the vision, mission, and science goals presented in this plan is that USGS geographers will provide international leadership to understand coupled human-environmental systems in the face of land change and will deliver

pertinent information to decision makers on the vulnerability and resilience of these systems. Successful plan implementation will require a sustained investment in the geography-related core competencies of the USGS: integration of natural and social science (transmitting science results to decision makers and the public); regional geography (applying the concepts and tools of geography to understand processes and interactions characteristic of regions); remote sensing (comprehensive monitoring of the Earth at multiple resolutions); and GIScience (geographic information systems, data management techniques, visualization, remote sensing, and spatial statistics and modeling).

***Risk Analysis IV**. C.A. Brebbia, editor. ISBN 1-85312-736-1. 2004. 832 pp. $465.00. Published by WIT Press (http://www.witpress.com). Available in North America from Computational Mechanics, 25 Bridge Street, Billerica, MA 01821; (978) 667-5841; e-mail: info USA@witpress.com; http://www.compmech.com/.*

This book contains over 70 papers from the Fourth International Conference on Computer Simulation in Risk Analysis and Hazard Mitigation. Topics covered include seismic risk, landslides and slope movements, floods and droughts, human-caused risk, emergency response, data collection and analysis, estimation of risk, risk assessment and management, risk mitigation, and hazard prevention.

***The Risk Landscape of the Future**. 2004. 33 pp. Free. Available from Swiss Reinsurance Company, Mythenquai 50/60, PO Box, 8022 Zurich, Switzerland; +41 43 285 2121; e-mail: publications@swissre.com; http://www.swissre.com/.*

The real difficulty of risk assessment lies in the accelerated change of complex systems. The faster the risk landscape changes, the more risks remain entirely unidentified for the time being or become incalculable. In order to manage future risks successfully, these changes must be recognized earlier and influenced systematically in their infancy. This publication shows that it is possible both to understand and consciously configure the risk landscape, but steers clear of promising any ready-made solutions.

***Mass Fatality Incidents: A Guide for Human Forensic Identification**. 2005. 83 pp. Available free online from the U.S. Department of Justice, Office of Justice Programs, 810 Seventh Street NW, Washington, DC 20531; http://www.ojp.usdoj.gov/nij/pubs-sum/199758.htm.*

In a mass fatality incident, correct victim identification is essential to satisfy humanitarian considerations, meet civil and criminal investigative needs, and identify victim perpetrators. This special report provides medical examiners/coroners with guidelines for preparing the portion of the disaster plan concerned with victim identification and summarizes the victim identification process for other first responders. It discusses the integration of the medical examiner/coroner into the initial response process and the roles of various forensic disciplines (including forensic anthropology, radiology, and odontology; fingerprinting, and DNA analysis) in victim identification.

***Working Together When the Worst Happens: Nonprofit Emergency Preparedness in the Capital Region**. 2005. 32 pp. Available free online from the Nonprofit Roundtable of Greater Washington, 1201 15th Street NW, Suite 420, Washington, DC 20005; (202) 955-6187; e-mail: info@nonprofitroundtable.org; http://www.nonprofitroundtable.org/images/issues_and_initiatives/files/Working%20Together.pdf.*

When disaster strikes, nonprofit organizations are critical first responders. The National Capital Region relies on nonprofits to rush to the aid of victims and their families in the aftermath of disaster. It also relies on nonprofits to provide ongoing support and services as the community recovers from a catastrophic event. For the region to respond effectively to a large-scale emergency, its nonprofit sector must be fully prepared and integrated into local and regional preparedness, response, and recovery plans. This report describes the efforts of 20 organizations (18 nonprofits and 2 local government agencies) to coordinate disaster response and recovery services in the National Capital Region.

Earthquakes

***Seismic Hazard and Risk Analysis**. Robin K. McGuire. ISBN 0-943198-01-1. 2004. 240 pp. $45.00. Available from the Earthquake Engineering Research Institute (EERI), 499 14th Street, Suite 320, Oakland, CA 94612; (510) 451-0905; e-mail: eeri@eeri.org; http://www.eeri.org/cds_publications/catalog/.*

This EERI monograph provides a general introduction to methods of seismic hazard and risk analysis. Following an introductory chapter that presents key terms and an overview of probabilistic seismic hazard and risk computations, the author examines seismicity and properties of earthquake sources, estimating earthquake ground motion, seismic hazard analysis, and estimating seismic risk.

***Earthquake Rebuilding in Gujarat, India**. C.V.R. Murty, Marjorie Greene, Sudhir K. Jain, N. Purendra Prasad, and Vipul V. Mehta. ISBN 1-932884-05-X. 2005. 128 pp. $15.00. Available from the Earthquake Engineering Research Institute (EERI), 499 14th Street, Suite 320, Oakland, CA 94612; (510) 451-0905; e-mail: eeri@eeri.org; http://www.eeri.org/cds_publications/catalog/.*

Written by a small recovery reconnaissance team, this report documents observations on the recovery program underway in Gujarat, India, following the 2001 Bhuj earthquake. It is intended to be the first in a series of EERI reports focusing on field observations of the postearthquake recovery process (in contrast to the more typical immediate postearthquake reconnaissance). The core of Gujarat's recovery program consists of the rebuilding or repair of over a million housing units accompanied by a training program in earthquake-resistant design and construction for engineers, masons, and homeowners.

***The Great Earthquake and Firestorms of 1906: How San Francisco Nearly Destroyed Itself**. Philip L. Fradkin. ISBN 0-520-23060-4. 2005. 435 pp. $27.50. Published by the University of California Press. Available from California-Princeton Fulfillment Services, 1445 Lower Ferry Road, Ewing, NJ 08618; (609) 883-1759, (800) 777-4726; e-mail: orders@cpfsinc.com; http://www.ucpress.edu/.*

This account of the great 1906 earthquake, the devastating firestorms that followed, and the city's subsequent reconstruction demonstrates that human ineptitude and power politics, not the forces of nature, were the driving forces behind the near destruction of San Francisco. Using previously unpublished eyewitness accounts and photographs, the author introduces the people and places that experienced these events. In so doing, he tells about how an elite oligarchy failed to serve the needs of ordinary people, the heroic efforts of obscure citizens, the long-lasting psychological effects, and how all these events ushered in a period of unparalleled civic upheaval.

Tsunamis

***The Bridge**. Vol. 35, No. 2, Summer 2005. 52 pp. Available free online from the National Academy of Engineering of the National Academies, 500 Fifth Street NW, Washington, DC 20001; (202) 334-3200; http://www.nae.edu/NAE/bridgecom.nsf/weblinks/MKEZ-6DJKL9?OpenDocument.*

This issue of ***The Bridge*** focuses on various aspects of the recent tsunami disaster. The featured articles are "Lessons in Engineering from the Tsunami in Thailand," "Tsunami Simulations and Numerical Models," "Tsunami Warning Systems," and "The Megatsunami of December 26, 2004."

***After the Tsunami: Rapid Environmental Assessment**. United Nations Environment Programme (UNEP) Asian Tsunami Task Force. ISBN 92-807-2565-3. 2005. 140 pp. $20.00. Available free online from UNEP, PO Box 30552, Nairobi, Kenya; ++254 (0) 20 62 1234; e-mail: cpiinfo@unep.org; http://www.unep.org/.*

This report is the product of close cooperation between UNEP and national environmental authorities and experts. It provides a preliminary ground-level look at the tsunami's impact on various sectors of the region's environment. Problems in need of immediate attention are highlighted in a manner that underscores the strong link between environment and sustainable livelihood and the need for

improved early warning and disaster preparedness systems. Looking forward, the report examines how the affected regions are rebuilding and how future tragedy can be avoided through adequate planning.

The Raging Sea: The Powerful Account of the Worst Tsunami in U.S. History. *Dennis M. Powers. ISBN 0-8065-2682-3. 2005. 288 pp. $15.95. Available from Kensington Publishing Corp., 850 Third Avenue, New York, NY 10022; (877) 422-3665; http://www.kensingtonbooks.com/.*

On Good Friday in 1964, the town of Crescent City, California, was caught unawares by a tsunami generated by an earthquake thousands of miles away. This book tells the tale of this natural disaster, which killed eleven people, ravaged thirty city blocks, and damaged or destroyed 289 homes and businesses, by weaving historical research together with survivor accounts.

Wildfire

Protecting Life and Property from Wildfire. *James C. Smalley, editor. ISBN 0-87765-694-0. 2005. 400 pp. $89.95. Available from the National Fire Protection Association (NFPA), 11 Tracy Drive, Avon, MA 02322; (617) 770-3000, (800) 344-3555; e-mail: custserv@nfpa.org; http://www.nfpacatalog.org/.*

From coast to coast, an estimated 30,000 communities are at risk from wildland fire. This book provides community leaders and the fire service with the tools required to understand this complex problem and work together to mitigate risks. It outlines U.S. agencies and programs with wildfire responsibilities, features firewise construction and landscaping checklists, and provides sample state firewise implementation plans, case studies, and mitigation initiatives.

American Perspectives on the Wildland/Urban Interface. *National Wildfire Coordinating Group Wildland/Urban Interface Working Team. 2004. 124 pp. Available for the cost of shipping and handling from the Firewise Electronic Catalog at https://secure.donet.com/firewise/. Quantities are limited to one per address.*

With the intent of starting a dialogue among all those who work, live, or play in areas prone to wildfire, this compilation of more than 20 essays looks at fire in the wildland/urban interface from several angles: from the tribal perspective to that of residents, planners, and builders. It explores the problems, concerns, solutions, and recommendations from the various disciplines involved in the processes of planning, building, landscaping, protecting, or living in the interface as well as various perspectives on growth and development, the future of the interface, and possible solutions to wildland fire concerns. The essays in the book observe, among other things, the ecological role of wildland fire, the development of the wildland/urban interface, the expanding role of the volunteer firefighter, and the relationship between people and the wildlands.

Glossary of Wildland Fire Terminology. *National Wildfire Coordinating Group (NWCG) Incident Operations Standards Working Team. 2005. 185 pp. Available free online from the NWCG at http://www.nwcg.gov/pms/pubs/pubs.htm. A browsable online version is also available.*

This glossary provides the wildland fire and fire use communities with a single source document that covers wildland fire, prescribed fire, fire use, and incident management terminology commonly used by the NWCG and its working teams. The objective of the glossary is to help improve communication and provide consistency in terminology usage throughout organizations with a mission of wildland fire or fire use management. It will also facilitate consistent use of glossary terms in publications, course development, and incident management activities.

Severe Weather and Floods

Extreme Weather: A Guide and Record Book. *Christopher C. Burt. ISBN 0-393-32658-6. 2004. 304 pp. $24.95. Available from W.W. Norton Order Department, Department I, Keystone Industrial Park, Scranton, PA 18512; (800) 233-4830; http://www.wwnorton.com/.*

Extensively illustrated with photographs, maps, and tables, this guide provides a compilation of weather statistics from more than 300 weather stations across the United States. It also includes historical examples of some of the more bizarre weather events observed: heat bursts, electrified dust storms, snow rollers, pink snowstorms, luminous tornadoes, falls of fish and toads, ball lightning, super bolts, and more.

The following reports were completed for the Federal Emergency Management Agency (FEMA) as part of the evaluation of the National Flood Insurance Program. They are available free online, along with other documents related to the evaluation, at *http://www.fema.gov/nfip/nfipeval.shtm*.

> ***A Chronology of Major Events Affecting the National Flood Insurance Program***. *2004. 83 pp.*
>
> ***The National Flood Insurance Program: An Annotated Bibliography***. *2004. 330 pp.*
>
> ***The National Flood Insurance Program's Mandatory Purchase Requirement: Policies, Processes, and Stakeholders***. *Richard J. Tobin and Corinne Calfee. 2005. 135 pp.*
>
> ***The Developmental and Environmental Impacts of the National Flood Insurance Program: A Review of the Literature***. *Walter Rosenbaum. 2005. 27 pp.*

Climate Change and Drought

Cities and Climate Change: Urban Sustainability and Global Environmental Governance. *Harriet Bulkeley and Michele Betsill. ISBN 0-415-35916-3. 2005. 256 pp. $39.95. Available from Taylor & Francis Group, 7625 Empire Drive, Florence, KY 41042; (800) 634-7064; e-mail: cserve@routledge-ny.com; http://www.routledge.com/.*

This book provides an analysis of the role of cities in addressing climate change and the prospects for urban sustainability. Part one considers the politics of climate change and efforts by international organizations and transnational networks to promote local action on global environmental issues and the implications of these developments for understanding global environmental governance and urban sustainability. Part two presents case studies that examine the development and implementation of local climate change policy. Part three compares the experiences of the case study cities in addressing climate change and assesses the implications of these findings for urban sustainability and global environmental governance.

The Pew Center on Global Climate Change published the following reports on the U.S. buildings and electricity sectors—which together account for the largest portion of the U.S. economy's physical wealth and enable almost every activity of daily life and also account for approximately half of the nations' carbon dioxide emissions. The reports identify a number of technologies and policy options for greenhouse gas reductions in both sectors. They are both available from the *Pew Center on Global Climate Change, 2101 Wilson Boulevard, Suite 550, Arlington, VA 22201; (703) 516-4146; http://www.pewclimate.org/global-warming-in-depth/solutions/reports/.*

> ***Toward a Climate-Friendly Built Environment***. *Marilyn A. Brown, Frank Southworth, and Therese K. Stovall. 2005. 78 pp. Free.*
>
> ***U.S. Electric Power Sector and Climate Change Mitigation***. *Granger Morgan, Jay Apt, and Lester Lave. 2005. 84 pp. Free.*

Climate Change Impacts for the Conterminous USA: An Integrated Assessment. *Norman J. Rosenberg and James A. Edmonds, editors. ISBN 1-4020-3255-2. 2005. 162 pp. $69.95. Available from Springer New York, 233 Spring Street, New York, NY 10013; (212) 460-1500; e-mail: service-ny@springer-sbm.com; http://www.springeronline.com/.*

In this volume, an improved integrated assessment methodology is used to analyze climate change impacts on agriculture, water resources, unmanaged ecosystems, irrigation, and land use in the United States and the economic implications of these impacts. This book contains a series of papers documenting the methods, models, analysis, and results of this integrated assessment for a wide-ranging set of scenarios describing future climate change. It is written for climatologists, agricultural researchers, social scientists, and policy makers.

Monitoring and Predicting Agricultural Drought: A Global Study. *Vijendra K. Boken, Arthur P. Cracknell, and Ronald L. Heathcote, editors. ISBN 0-19-516234-X. 2005. 496 pp. $124.50. Available from Oxford University Press, 2001 Evans Road, Cary, NC 27513; (919) 677-0977, (800) 451-7556; e-mail: custserv.us@oup.com; http://www.oup.com/.*

Agricultural droughts affect whole societies, leading to higher food costs, threatened economies, and even famine. The editors of this book assembled a team of experts from every continent to describe biometeorological models and monitoring methods for agricultural droughts, noting the relationships between precipitation, soil moisture, and crop yields, using data gathered from conventional and remote sensing techniques. The book includes probabilistic models and techniques used in America, Europe, the former USSR, Africa, Asia, and Australia and it concludes with coverage of climate change and resultant shifts in agricultural productivity, drought early warning systems, and famine mitigation.

Health

Disasters and Mental Health. *Juan José López-Ibor, George Christodoulou, Mario Maj, Norman Sartorius, and Ahmed Okasha, editors. ISBN 0-470-02123-3. 2004. 288 pp. $135.00. Available from John Wiley & Sons, Inc., Customer Care Center, Consumer Accounts, 10475 Crosspoint Boulevard, Indianapolis, IN 46256; (877) 762-2974; http://www.wiley.com/.*

Recognizing the increasing impact that disasters, war, and terrorism are having on the mental health of populations worldwide, the editors of this book provide an overview of clinical and epidemiological aspects, psychobiological and psychosocial consequences, and service organization aspects of disaster psychiatry. The book includes a series of reports on experiences such as the Kobe earthquake, the Nairobi U.S. Embassy bombing, and the September 11, 2001, terrorist attacks. Targeted readers include psychiatrists and psychologists, mental health care professionals dealing with disaster victims, researchers, and policy makers.

Mental Health Response to Mass Violence and Terrorism: A Training Manual. *Publication No. SMA 3959. 2004. 192 pp. Free. Available from the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA), 1 Choke Cherry Road, Rockville, MD 20857; (800) 789-2647, (866) 889-2647 (TDD); http://www.mentalhealth.samhsa.gov/publications/allpubs/SMA-3959/default.asp.*

As part of a collaboration between SAMHSA's Center for Mental Health Services and the U.S. Department of Justice Office for Victims of Crime, this training manual was developed to help mental health providers better serve victims of terrorism and mass violence. Included are field and training resources, such as handouts, overheads, and rapid field-training modules. The primary audience for this publication consists of mental health professionals, crime victim assistance providers, and faith-based counselors who respond to acts of mass violence and terrorism.

Terrorism and Radiation Incidents

Terrorism, Media, and Public Policy: The Oklahoma City Bombing. *James David Ballard. ISBN 1-57273-610-0. 2005. 160 pp. $39.50. Available from Hampton Press, 23 Broadway, Cresskill, NJ 07626; (201) 894-1686, (800) 894-8955; e-mail: HamptonPr1@aol.com; http://www.hamptonpress.com/.*

This text reviews the terrorism-related policy developments surrounding the Oklahoma City Bombing. It uses three methodologies to assess and chronicle the historical details of these policies; provides a framework to understand how they were changed by the events of April 19, 1995, and how the media covered this tragedy; and ultimately details the final results of the policy debates.

UK Recovery Handbook for Radiation Incidents: 2005. *S. Mobbs, A. Nisbet, J. Brown, J. Mercer, K. Mortimer, G. Roberts, and N. Hesketh. ISBN 0-85951-559-1. 2005. 572 pp. £50.00. Available free online from the Information Office, Health Protection Agency Centre for Radiation, Chemical, and Environmental Hazards (Radiation Protection Division), Chilton, Didcot, Oxon, OX11 0RQ, UK; +44 (0) 1235 822742; e-mail: information@hpa-rp.org.uk; http://www.hpa.org.uk/radiation/publications/hpa_rpd_reports/2005/hpa_rpd_002.htm.*

Designed for use in the United Kingdom, this document is a handbook to guide decision makers through the available recovery options following an incident dispersing radioactive material in the environment. It contains a compilation of comprehensive information to help users identify the important issues and evaluate timely and effective actions and countermeasures. The handbook is divided into five topic areas: recovery and radiation protection, agricultural food production, domestic food production and the gathering of free foods, inhabited areas, and drinking water.

Business Continuity

The Business Roundtable has published two guides to help chief executive officers and other corporate managers improve the private sector's preparedness for infrastructure disruptions, natural disasters, and terrorist attacks. Both publications are available free online from the *Business Roundtable, 1717 Rhode Island Avenue NW, Suite 800, Washington, DC 20036; (202) 872-1260; e-mail: info@businessroundtable.org; http://www.businessroundtable.org/.*

Committed to Protecting America: CEO Guide to Security Challenges. *2005. 175 pp.*

Committed to Protecting America: A Private-Sector Crisis Preparedness Guide. *2005. 56 pp.*

GAO Reports

The Government Accountability Office (GAO) reports provide background information and insight into key issues and concerns of the U.S. Congress. The office frequently publishes studies regarding hazards and disaster policy. Some recent GAO reports and testimonies that might interest ***Observer*** readers are listed below. Summaries and full text are available on the Web at *http://www.gao.gov/*. Printed copies are also available. The first copy is free. Additional copies are $2.00 each. To order, contact the *GAO, 441 G Street NW, Room LM, Washington, DC 20548; (202) 512-6000; TDD: (202) 512-2537; http://www.gao.gov/cgi-bin/ordtab.pl*.

Flood Map Modernization: Federal Emergency Management Agency's Implementation of a National Strategy. *GAO-05-894T. 2005. 17 pp.*

Strategic Budgeting: Risk Management Principles Can Help DHS Allocate Resources to Highest Priorities. *GAO-05-824T. 2005. 17 pp.*

Critical Infrastructure Protection: Department of Homeland Security Faces Challenges in Fulfilling Cybersecurity Responsibilities. *GAO-05-434. 2005. 73 pp.*

Homeland Security: Actions Needed to Better Protect National Icons and Federal Office Buildings from Terrorism. *GAO-05-790. 2005. 52 pp.*

Federal Emergency Management Agency: Crisis Counseling Grants Awarded to the State of New York After the September 11 Terrorist Attacks. *2005. GAO-05-514. 49 pp.*

Some Goodbyes . . .

Janet Kroeckel, the Natural Hazards Center's publications administrator, has answered one call we hoped she wouldn't receive this soon—the call to retire. After 16 years of dedicated service, Janet has decided to leave Colorado and head home to her family and the beautiful hills of Missouri.

Over the years, Janet became a whiz at managing the Center's database, processing publication orders, responding to information requests from around the world, and, in general, representing the Center to the public. She also played a lead role in coordinating the Center's annual workshop. Janet has been the person that the staff turned to when they needed anything, no matter how big or small. Her willingness to go the extra mile has earned her the reputation as the Center's "superglue" (her unofficial title).

Janet has not only been a wonderful colleague, she has also been a friend of the highest order. She has always provided a listening ear, a caring gesture, and a kind word, just when they were needed most. She has even been known to slip grad students a few bucks and send them off to the local coffee shop when they became particularly frazzled. Janet has been more than just the Center's superglue, she has also been its heart.

Sadly, Janet is not the only person that we are saying goodbye to. Mara Salazar, our trusty, dependable work study student and another member of our front office staff, decided that it was time to graduate and take her economics degree and move on. Mara has been with the Center for four years and four workshops and has proven to be a valuable member of the team and one that could be counted on time and time again.

The dedication that Mara showed the Center is rare for a student employee whose passion is not hazards and disasters. In addition to being a hard worker, she brightened the office with her youthfulness, cheerfulness, and good attitude. We have no doubt that wherever the future takes her, she will excel.

Janet and Mara, thank you for everything. While embarking on very different journeys, we know that exciting things lay ahead for the both of you—and we want to hear all about them. You will be deeply missed.

. . . And a Hello!

In early July, just in time for her first workshop, Julie Baxter joined the Natural Hazards Center staff as our communications specialist. Julie holds a master's degree in community and regional planning from the University of Oregon and a bachelor's degree in natural resources from the University of Michigan. Julie's interests include natural hazards mitigation, land use planning, and public participation strategies. Her master's thesis addressed public support for land use regulations in the wildland/urban interface. In addition to her academic interest in hazards, her experience preparing park stewardship plans for Colorado State Parks and developing a county wildfire protection plan as a project manager for the Oregon Natural Hazards Workgroup make her a welcome addition to the Natural Hazards Center's staff.

Julie will be responsible for compiling and editing the ***Disaster Research*** e-newsletter, implementing outreach activities, managing the Center's Web site, and coordinating special projects and publications. With the trial-by-fire introduction to the Center and its community at the workshop, Julie is well up-to-speed with our mission and off and running. We look forward to working with her and getting to know her better.

Watch the November ***Observer*** for more introductions: the Center's new crop of graduate research assistants.

Homeland Security Standards Database

The American National Standards Institute (ANSI) has announced that the Homeland Security Standards Database (HSSD) is now operational at *http://www.hssd.us/*. ANSI undertook this project on behalf of the U.S. Department of Homeland Security (DHS). The first set of standards is loaded under the categories of threats, emergency preparedness and response, borders and transportation, information analysis and infrastructure protection, and DHS adopted standards. Many of these categories have additional subcategories for further specificity.

The goal of the HSSD is to provide a single comprehensive source for standards that relate to homeland security. To meet this goal, ANSI is working with DHS, standards developing organizations, and other stakeholders to identify and classify relevant standards. The initial effort deals with the area of first responders. This is being done in cooperation with the Responder Knowledge Base (*http://www1.rkb.mipt.org/*) and uses the Standardized Equipment List as the basis for the classification structure.

The Natural Hazards Center

The mission of the Natural Hazards Center at the University of Colorado at Boulder is to advance and communicate knowledge on hazard mitigation and disaster preparedness, response, and recovery. Using an all-hazards and interdisciplinary framework, the Center fosters information sharing and integration of activities among researchers, practitioners, and policy makers from around the world; supports and conducts research; and provides educational opportunities for the next generation of hazards scholars and professionals. The Natural Hazards Center is funded through a National Science Foundation grant and supplemented by contributions from a consortium of federal agencies and nonprofit organizations dedicated to reducing vulnerability to disasters. Please send information of potential interest to the Natural Hazards Center or the readers of this newsletter to the address below. The deadline for the next ***Observer*** is *September 21, 2005*.

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Natural Hazards Center

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Copies of the ***Observer*** and the Natural Hazard Center's electronic newsletter, ***Disaster Research***, are also available on the Center's Web site:

http://www.colorado.edu/hazards/

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