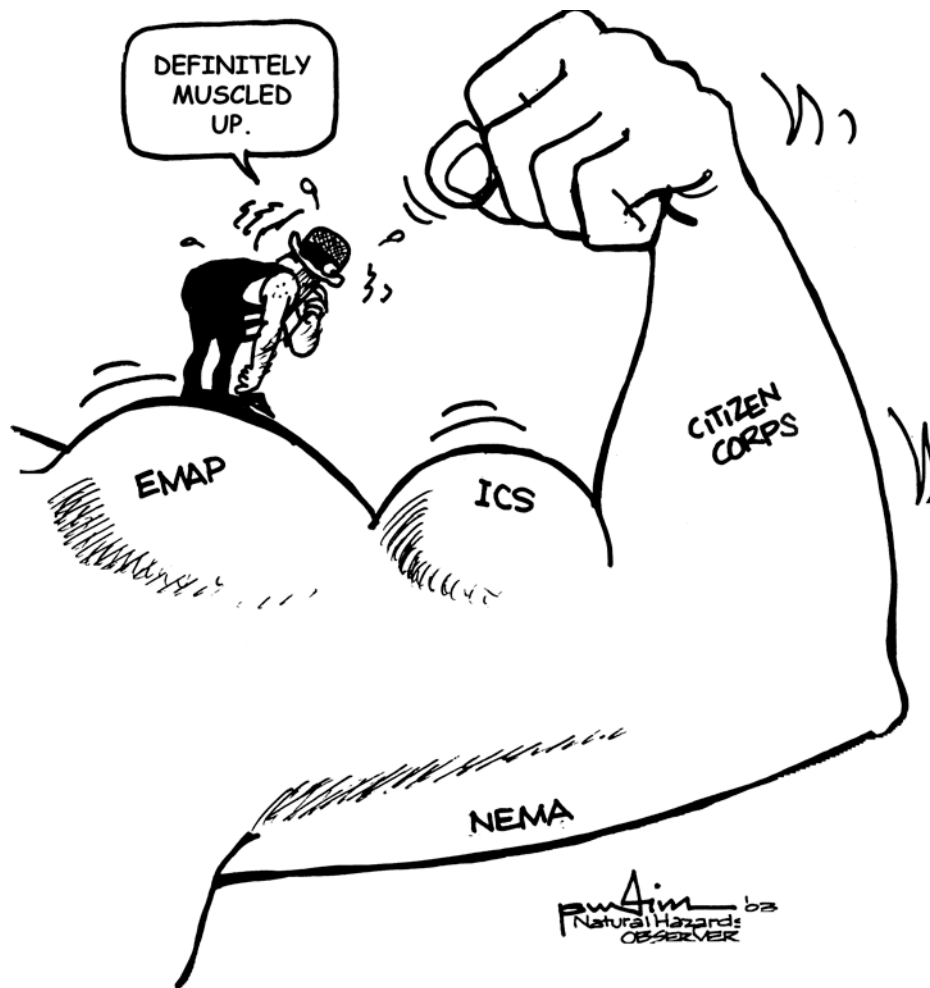


NATURAL HAZARDS Observer

Volume XXVII Number 3

January 2003



Strengthening Our Emergency Response Systems

—an invited comment

The events of September 11, 2001, launched this country on a rigorous and resolute examination of its ability to protect its citizens and better prepare its emergency responders for any kind of emergency or disaster, including acts of terrorism. As we learn from the lessons of that fateful day and work to become better prepared, we must continue to enhance the response systems and processes that have worked effectively in hundreds of emergency situations and disaster operations over the years. Our approach is all-hazards and our priorities are establishing a nationwide mutual aid capability, a common command and control

system, baseline capability assessments and national standards, support of state and local emergency management and responders, citizen preparedness, and coordination of federal preparedness programs.

Mutual Aid

One of the most important things we can do to help respond more effectively to any emergency is to build a National Mutual Aid System based on agreements among local jurisdictions and states. We must also establish con-

current national standards for equipment, personnel, training, assessments, and exercises. We are working to facilitate mutual aid arrangements within and among states so local, state, federal, and volunteer response networks can operate more smoothly. This requires leveraging assets to the greatest extent possible, along with resource typing, standardized credentialing of individuals and teams, and equipment and communications interoperability.

Currently, we are developing a national system that will categorize resources commonly exchanged during disasters through mutual aid—an important step on the way to the standardization process. This information will be stored in a database to identify resource type, location, utilization requirements, availability, and cost. This will allow emergency managers to locate, obtain, and track resources as well as return them to their point of origin.

Funds are available for this type of planning at the state and local level, and we are specifically encouraging planners to focus on mutual aid. We urge jurisdictions that have effective agreements already in place to share the details of those arrangements by sending an e-mail to our new “Smart Practices” project (*Smart Practices@fema.gov*) so we can share them with others in the emergency management community (see page 11 of this *Observer*).

Command and Control

Critical to building a more efficient and successful national response structure is the acceptance and use of a common command and control system that everyone understands, trains for, and practices.

The Incident Command System (ICS), including the operational concept of unified command, provides a foundation for effectively and collaboratively responding to all kinds of emergencies. It is an effective tool for coordinating emergency responses that involve multiple agencies, jurisdictions, and responders. It is the standard emergency response system for many states and has been adopted and endorsed by numerous federal agencies and organizations.

After the attack on the Pentagon, officials in Arlington County, Virginia, reported that operations conducted under ICS contributed significantly to an integrated and efficient response. Well before the attack, under the leadership of Chief Edward Plaughter, the Arlington County Fire Department (ACFD) had adopted the ICS as its response structure for large-scale incidents. Primary responders understood the ICS and were able to implement it effectively.

The county’s after-action report noted, “the ACFD, an experienced ICS practitioner, established its command presence literally within minutes of the attack . . . Other supporting jurisdictions and agencies, with few exceptions, operated seamlessly within the ICS framework [because] there is a common understanding of basic working relationships among local jurisdictions.”

Baseline Capability Assessments

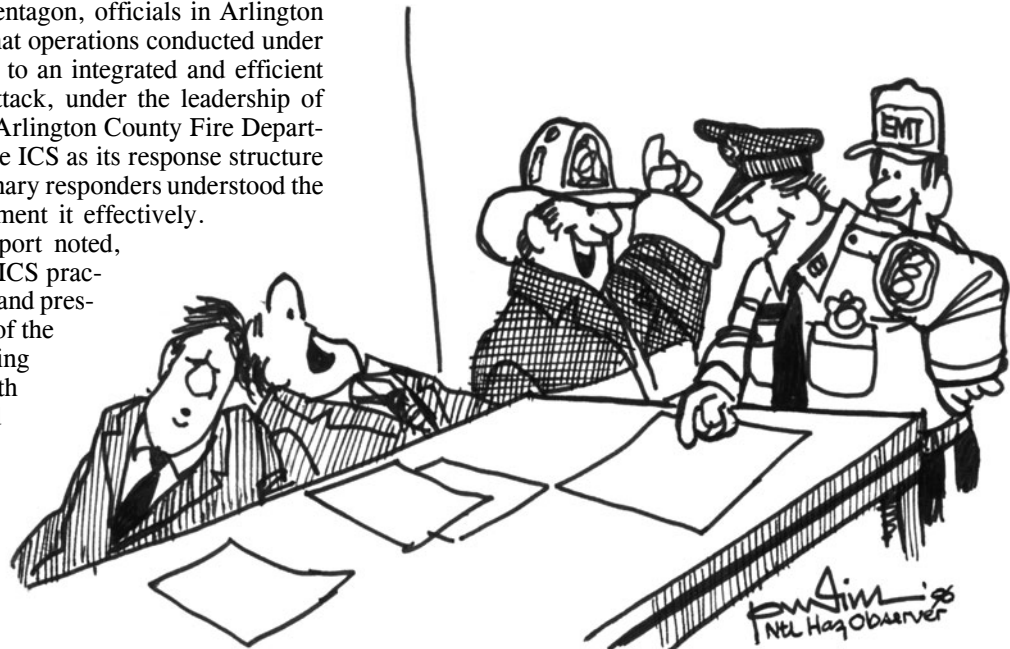
Working with other federal, state, and local stakeholders, FEMA is committed to a leadership role in the establishment of national emergency management standards and a capability assessment process. Currently, we are working with the National Emergency Management Association and the Emergency Management Accreditation Program (EMAP) Commission to use the EMAP standard and process to conduct, during FY 2003 and FY 2004, assessments of all state and territorial emergency management programs. Our goal is to establish a reliable national baseline of our current capability to respond to and recover from emergencies and disasters. This effort will enable us to target assistance to important areas and, over time, measure and report resulting improvements in the capabilities of states and territories.

Efforts also are under way to revise the State Capability Assessment for Readiness (State CAR) so that it directly corresponds with and supports the EMAP Standard. The re-engineered State CAR is envisioned as a self-assessment augmentation tool to help states achieve a minimum baseline capability.

Supporting State and Local Responders

One of the most important lessons learned from the response to September 11 is the value of a strong and effective local response. Supporting state and local responders and helping them build their preparedness and response capabilities is one of our principal missions.

Using FY 2002 supplemental funds, we are moving forward with a \$100 million grants package for state and local governments to update their all-hazards emergency operations plans to include terrorist incident annexes, particularly incidents of terrorism involving weapons of mass destruction (see page 9 of this *Observer*).



Updated emergency operations plans should address the use of a standard incident command system, state-wide mutual aid, state and local continuity of operations and government, critical infrastructure protection, and volunteer management. The funds will flow through the states, with at least 75% going to local emergency planners. There is no match requirement for these funds. Additionally, FEMA is providing \$56 million in 2002 funds for grants to upgrade state and local emergency operations centers. FY 2002 funds for state and local training and exercises and equipment for law enforcement personnel will be available through the Department of Justice's Office of Domestic Preparedness.

Citizen Corps and FEMA's Community Emergency Response Teams

An important component of the preparedness effort is the good will and enthusiasm of the country's citizens. The Citizen Corps program builds on existing crime prevention, natural disaster preparedness, and public health response networks. Citizen Corps is coordinated nationally by FEMA, which also provides training standards, general information, and materials (see the *Observer*, Vol. XXVI, No. 4, p. 6). We will identify additional volunteer programs and initiatives that support the goals of the Corps. FY 2002 supplemental funds have been made available for Citizen Corps activities and to expand training for FEMA's Community Emergency Response Teams (CERT) across the country.

Coordinating Federal Preparedness Programs

The need for a single agency to take the lead in coordinating federal emergency preparedness programs for state and local responders is well established. While the new Department of Homeland Security will address the problems of fragmentation and duplication, our work will continue as we transition into the new department. In the meantime, FEMA is leading regular meetings of an interagency coordinating group of federal departments and agencies with emergency preparedness and first responder responsibilities.

Additionally, we are creating a web-accessible, searchable database of federal terrorism response training courses for state and local responders and emergency management officials. Users will be able to search the FEMA web site for training programs by functional area, event phase, competency level, instruction medium, class size, and more.

We know the difficulties state and local governments confront with the range of planning requirements imposed upon them by the federal agencies that provide grants to first responders. To ease this process, FEMA, the Office of Domestic Preparedness in the Department of Justice, and the Office of Emergency Public Health Preparedness in the Department of Health and Human Services, are working together to develop an integrated, unified approach to strategic planning for emergencies and disasters.

FEMA's mission to lead the federal government's emergency response to disasters and emergencies will be greatly strengthened by the Department of Homeland Security. The department will have complete responsibility and accountability for providing the federal government's emergency response and for coordinating its support with other federal

entities such as the Department of Defense and the Federal Bureau of Investigation.

Meanwhile, we will continue to look to our federal, state, and local partners nationwide to help us build systems to respond effectively to all hazards. While the devastation of September 11 served to remind us of the fragility of human life, the fierce determination demonstrated by our nation in its response serves as a constant reminder of the strength of the human spirit.

Bruce Baughman
Director, Office of National Preparedness
Federal Emergency Management Agency

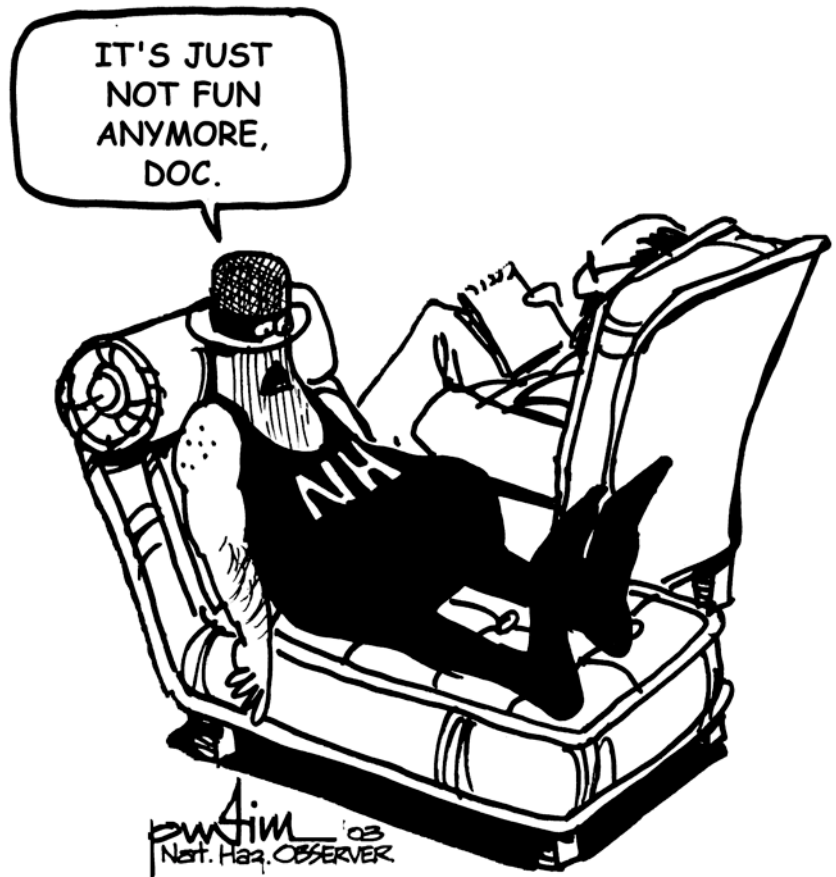
Editor's Note: On November 25, President Bush signed the Homeland Security Act of 2002, which will restructure the executive branch of government to better deal with terrorism, natural disasters, and other catastrophic events. Those parts of FEMA's Office of National Preparedness (ONP) that focus on terrorism will be moved to the new Homeland Security Department's Directorate of Border and Transportation Security, while the remainder of ONP and FEMA will be moved to the Directorate of Emergency Preparedness and Response. For more information on the new department, as well as FEMA's role in it, see page 5 of this *Observer*.



Three New QR Reports from the Hazards Center

The Psychology of Disasters

Researcher David N. Sattler has done quite a bit of research into the psychological response of disaster victims both in the U.S. and abroad. Some of his recent work is profiled in two recent Quick Response (QR) reports: *QR 160: El Salvador Earthquakes: Resource Loss, Traumatic Event Exposure, and Psychological Functioning* (2002, 22 pp.) and *QR 158: The September 11th Attacks on America: Relationships Among Psychological Distress, Post-traumatic Growth, and Social Support in New York* (2002, 27 pp.). Both reports use survey questionnaire data to examine student reactions to prolonged and recent disasters, such as terrorism, war, tornadoes, and earthquakes. In the case of El Salvador, the situation was especially unique in that serious life threats due to multiple earthquakes were present for over two months. Reports in the San Salvador media suggested these reoccurring earthquakes were creating extreme concern and distress. In New York City the situation was equally unique, and students responded to questions about the possibilities of future attacks, post-traumatic stress variables, and personal coping characteristics.

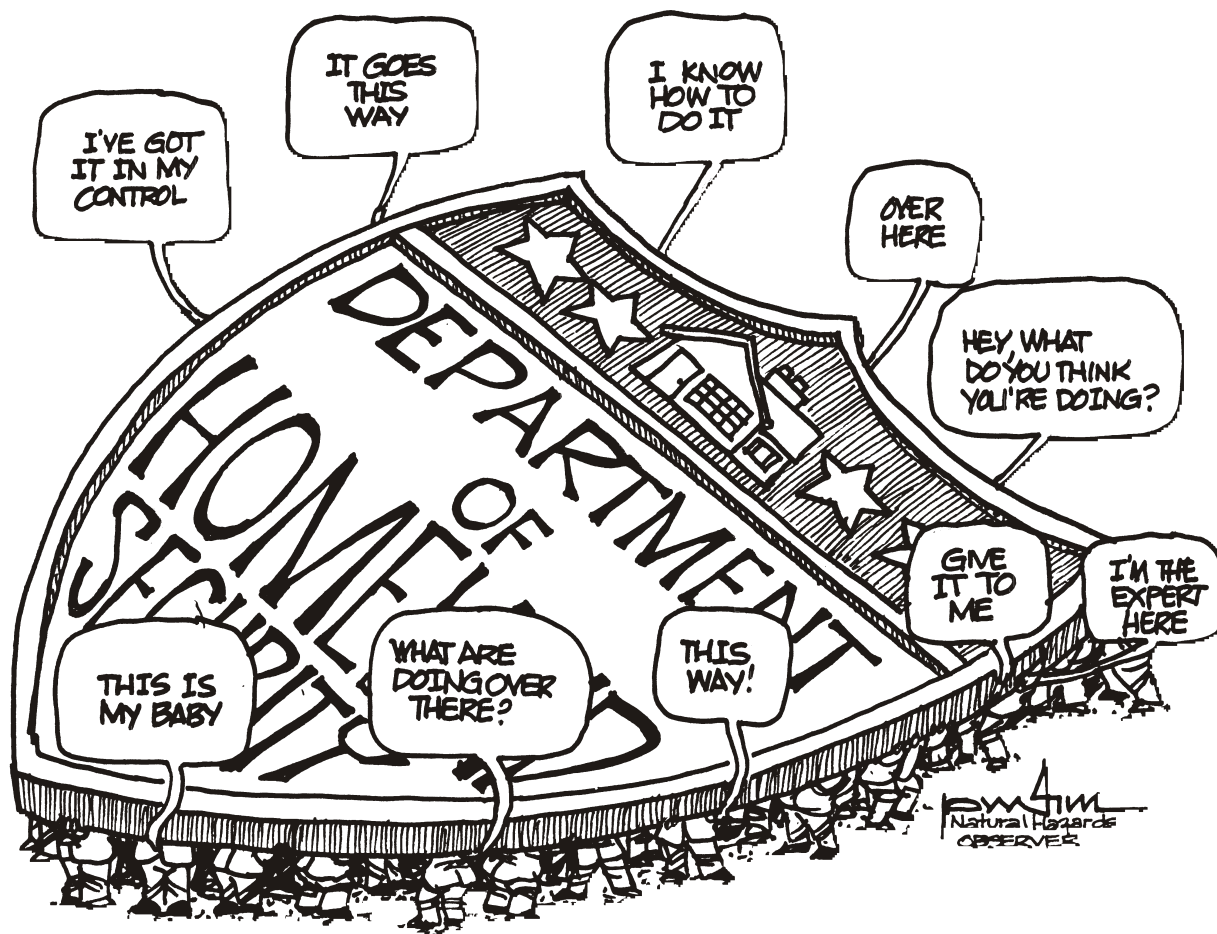


Arkadelphia Tornado

In *QR 159: Defining Sustainable Development: Arkadelphia, Arkansas* (2002, 10 pp.), Cheryl Childers and Brenda Phillips explore the recovery, and subsequent redevelopment, of the town of Arkadelphia, which experienced a series of F-3 to F-4 tornadoes that cut a swath through the state of Arkansas. An F-4 tornado passed through a series of farm areas and into Arkadelphia's residential neighborhoods and downtown business district, devastating approximately 60 blocks of the community and causing tremendous property damage for such a small town. As the community initiated recovery, leaders defined the rebuilding effort as the creation of a "sustainable" community. This report examines how Arkadelphia came to understand and act upon a sustainable recovery.

These three reports (and many others), may be downloaded from the *Natural Hazards Center web site*: <http://www.colorado.edu/hazards/qr/qr.html>. QR reports are the result of the Natural Hazards Center's Quick Response Program, which allows researchers to examine the effects of disasters immediately after they happen. Besides being available free on the web, the reports can be purchased for \$5.00, plus \$4.50 shipping, from the *Publications Administrator, Natural Hazards Center, University of Colorado, 482 UCB, Boulder, CO 80309-0482; (303) 492-6819; fax: (303) 492-2151; e-mail: janet.kroeckel@colorado.edu*.





Congress Creates Department of Homeland Security

Take a few whole federal agencies, add parts of federal departments, throw in a dab of new institutions, stir, and you have the Department of Homeland Security, created by Congress on November 19 (Public Law 107-296) to better prepare the United States to respond to terrorist incidents, disasters, and other catastrophic events. Congress also added new responsibilities and programs to other departments in the executive branch. The Homeland Security Act of 2002 was signed into law by President Bush on November 25, 2002.

The primary missions of the new department are to prevent terrorist attacks within the United States, reduce U.S. vulnerability to terrorism, minimize damage and assist in the recovery from terrorist attacks that do occur, carry out functions of entities transferred to the department (including acting as a focal point regarding natural and human-caused crises and emergency planning), ensure that the overall economic security of the U.S. is not diminished by homeland security activities, and sever connections between

illegal drug trafficking and terrorism. The primary responsibility for investigating and prosecuting acts of terrorism, however, will still remain under the jurisdictions of pertinent federal, state, and local law enforcement agencies.

Secretary of Homeland Security

The secretary of the new department will be responsible for:

- coordinating with state and local governments and the private sector to ensure adequate planning, equipment, training, and exercise activities;
- coordinating and, as appropriate, consolidating the federal government's communications systems relating to homeland security with state and local government agencies, the private sector, and others; and

- coordinating the distribution of warnings and information to state and local government authorities and the public.

The secretary will have a special assistant to coordinate homeland security activities with the private sector. Other newly created offices include the Deputy Secretary of Homeland Security, the Office of State and Local Government Coordination, and a Joint Interagency Homeland Security Task Force made up of representatives from military and civilian agencies of the federal government.

Department Directorates

The new department is organized into four directorates: Information Analysis and Infrastructure Protection, Science and Technology, Border and Transportation Security, and Emergency Preparedness and Response.

Directorate for Information Analysis and Infrastructure Protection

This directorate will access, receive, and analyze law enforcement and intelligence information from federal, state, and local government agencies and the private sector. It will assess the vulnerabilities of key resources and critical infrastructure of the U.S. and identify priorities for protective and support measures.

This directorate will also administer the Homeland Security Advisory System to provide advisories, alerts, and warnings to relevant companies, targeted sectors, other governmental entities, or the general public regarding potential threats to infrastructure.

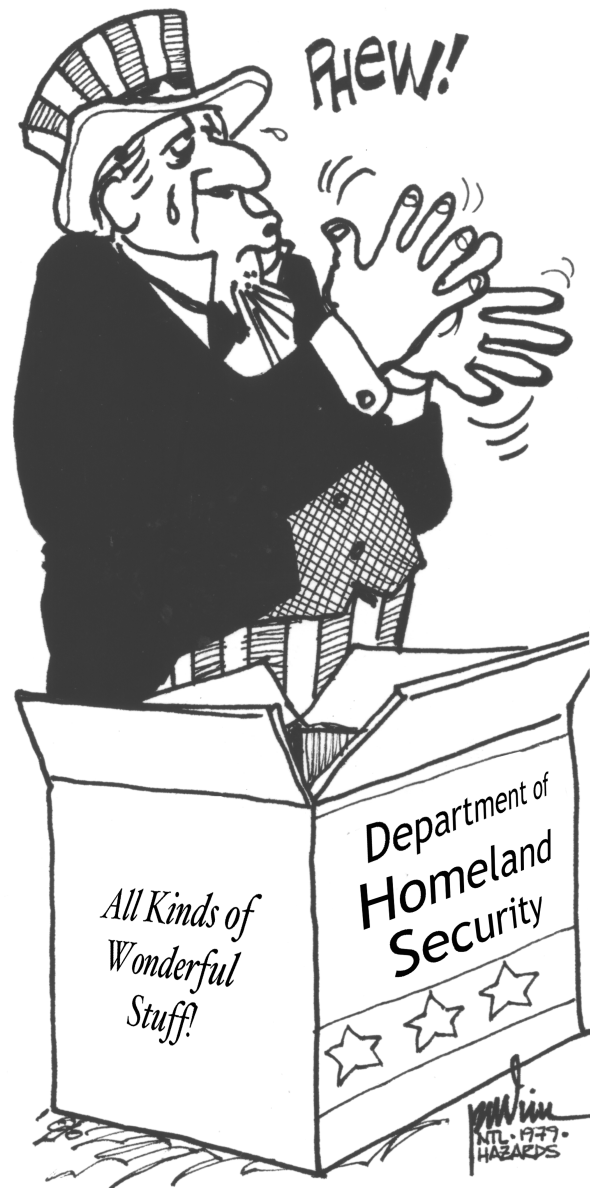
It will also establish a national technology guard, to be known as "NET Guard," composed of local teams of volunteer experts in relevant areas of science and technology, to assist local communities to respond to and recover from attacks on information systems and communications networks.

Directorate of Science and Technology

Created to advise the secretary regarding research and development efforts, this office will develop a national policy and strategic plan for the civilian effort to develop countermeasures to terrorist threats, including the development of comprehensive, research-based goals, and implementation of research, development, demonstration, testing, and evaluation activities.

Several programs from the Department of Energy that deal with chemical and biological security, nuclear threats, and microbial pathogens research have been transferred to this directorate.

The directorate will have the authority to establish or contract with federally funded research centers to provide independent, unclassified analysis of homeland security issues. It will include the Homeland Security Advanced Research Projects Agency (HSARPA), which will award grants, cooperative agreements, or contracts to public and



private entities. In addition, Congress stipulated that the program ensure that colleges, universities, private research institutes, and companies from "as many areas of the U.S. as practicable participate in the research."

Within one year of enactment, this directorate is to establish one or more university-based centers for homeland security. Also, the under secretary may draw upon the expertise of any laboratory of the federal government and must establish a Homeland Security and Technology Advisory Committee. The directorate will also establish a technology clearinghouse to encourage and support innovative solutions.

A Homeland Security Institute will be created by the secretary as a separate entity to perform systems and risk analysis and modeling, undertake economic and policy analysis of various approaches to enhancing security, identify improvements in common standards and protocols, design methods for evaluating effectiveness of homeland

security programs, design and support exercises and simulations, and create strategic technologies. The institute shall terminate three years after the effective date of the act.

Directorate of Border and Transportation Security

This directorate will work to prevent the entry of terrorists and instruments of terror into the U.S. Activities include securing borders, territorial waters, ports, terminals, waterways, and all transportation systems. The directorate will also enforce immigration policies and oversee inspections of imported agricultural products. The legislation moves many functions of the Immigration and Naturalization Service (INS) into this directorate and abolishes the agency. The U.S. Customs Service is also transferred to this directorate, along with the Transportation Security Administration of the Department of Transportation, the Office for Domestic Preparedness of the Department of Justice, and the Federal Law Enforcement Training Center from the Department of the Treasury.

Under this directorate, the Office for Domestic Preparedness will have primary responsibility within the executive branch for the preparedness of the U.S. for acts of terrorism. The office will coordinate preparedness efforts at all levels of government as well as the private and nonprofit sectors, including training, exercises, and equipment support. It will oversee grant programs, other than those provided by the Department of Health and Human Services, for all emergency response providers. In addition, it will cooperate closely with the Federal Emergency Management Agency (FEMA), which will be moved to the Directorate of Emergency Preparedness and Response and shall have the primary responsibility within the executive branch to prepare for and mitigate the effects of nonterrorist-related disasters in the country. However, elements of the Office of National Preparedness of FEMA that relate to terrorism will be transferred to the Office for Domestic Preparedness.

Directorate of Emergency Preparedness and Response

This office will work to ensure the effectiveness of emergency response providers to respond to terrorist attacks, major disasters as defined under the Stafford Act, and other emergencies. It will also establish standards, conduct exercises, and provide funds for training and planning for nuclear response.

The directorate will provide the federal government's response to major disasters, terrorist attacks, and nuclear incidents. Duties entail managing response to these events and coordinating other federal response resources. The agency will also aid the recovery from catastrophic events by building a comprehensive national incident management system with federal, state, and local governments and the private and nonprofit sectors; consolidate existing federal emergency response plans into a single national response plan; and establish comprehensive programs for interoperative communications technology and assist emergency response providers in acquiring such technology.

FEMA will become part of this directorate, as will the

Integrated Hazard Information System of the National Oceanic and Atmospheric Administration (which will be renamed "FIRESAT"); offices of the Department of Justice; and the Office of Emergency Preparedness, the National Disaster Medical System, and other organizations from the Department of Health and Human Services.

FEMA will retain all functions and authorities prescribed under the Stafford Act. It will lead the nation in a comprehensive, risk-based emergency management program of mitigation, preparedness, response, and recovery. FEMA will remain the lead agency for the Federal Response Plan, however the FEMA director must revise the plan to reflect the changes in this legislation.

Congress mandated this directorate to use, to the maximum extent practicable, private sector networks and infrastructure for emergency response to chemical, biological, radiological, nuclear, explosive, or other major disasters.

Office of the President

The legislation establishes within the Executive Office of the President the Homeland Security Council to advise the chief executive. Members will include the president, the vice president, the secretary of Homeland Security, the attorney general, the secretary of Defense, and others designated by the president.

Department of Justice (DOJ)

Congress created within the DOJ the Directorate of Science and Technology to serve as the local focal point for law enforcement technology and provide equipment, training, and technical assistance to federal, state, and local law enforcement agencies. The Bureau of Alcohol, Tobacco, and Firearms will be transferred from the Department of Revenue to DOJ.

Implementation

Under the Homeland Security Act, the president must submit a reorganization plan to Congress within 60 days of the enactment of this legislation. The executive branch will be allowed a 12-month transition period from the effective date of the act. However, agencies cannot be transferred until 90 days after the reorganization plan is submitted. Congress also expressed the need to reorganize committee structures in both houses to coordinate with the reorganization of the executive branch.

The 475 page text of the Homeland Security Act of 2002 can be found at *any federal repository library* or on the *Library of Congress web site*: <http://thomas.loc.gov>.

The *Department of Homeland Security Reorganization Plan* (2002, 18 pp., free), along with the latest news and information regarding creation of the new department, can be found on the White House web site at <http://www.whitehouse.gov/homeland>.



WASHINGTON UPDATE

Congress Passes Inland Flood Warning Bill

The American public needs to be better prepared and better warned about flooding in inland areas. Congress has ordered a federal agency to develop an index to assist in this effort. On October 29, 2002, President Bush signed into law the Inland Flood Forecasting and Warning System Act of 2002 (Public Law 107-253) to provide for research, training, and outreach activities relating to improving inland flood forecasting and awareness.

Under the legislation, the National Oceanic and Atmospheric Administration, through the United States Weather Research Program, will:

- improve the capability to accurately forecast inland flooding, including flooding caused by coastal and ocean storms, through research and modeling;
- develop, test, and deploy a new flood warning index to give the public and emergency management officials more detailed, understandable, and accurate information about the risks and dangers posed by expected floods;
- train emergency management officials, National Weather Service personnel, meteorologists, and others in improved flood forecasting methods, risk management techniques, and use of the inland flood warning index; and
- conduct outreach and education activities for local meteorologists and the public regarding the dangers of inland flooding as well as the use of the warning index and assess the long-term trends in frequency and severity of inland flooding along with how shifts in climate, development, and erosion patterns might make certain regions vulnerable to more continual or escalating flood damage in the future.

Congress appropriated \$1.25 million per year for carrying out this act for each of the fiscal years 2003 through 2005. One-hundred-thousand dollars per year shall be available for competitive grants to institutions of higher education to develop models to improve forecasts of coastal and estuary-inland flooding that are influenced by tropical cyclones. In addition, \$1.15 million will be available for fiscal years 2006 and 2007. During each of these two years, \$250,000 will be available for grants to institutions.

NOAA must transmit an annual report to Congress regarding its activities under this act and the success and acceptance of the inland flood warning index by the public



and emergency management professionals. Also, no later than January 1, 2006, NOAA must submit to Congress a report on the likely long-term trends in inland flooding, the results of which shall be used in outreach activities, especially to alert the public to flood hazards.

The complete text of Inland Flood Forecasting and Warning System Act of 2002 can be found in *any federal repository library* or on the *Library of Congress web site*: <http://thomas.loc.gov>.

Terrorism Insurance Funded by Congress

Insurance losses from catastrophic events, such as natural disasters and terrorist attacks, can create widespread regional and national economic impacts. In the waning days of the 107th Congress, legislators noted that the ability of businesses and individuals to obtain property and casualty insurance at a reasonable price is critical to economic growth, urban development, housing construction and maintenance, and other economic interests and will help spread the risk of both routine and catastrophic losses. Congress noted that the insurance industry should build capacity and aggregate risk in order to provide affordable coverage for terrorism risk. Nevertheless, legislators approved the Terrorism Risk Insurance Act of 2002 (Public Law 107-297) on November 19 to pay, from the federal treasury, the lion's share of property and casualty losses due to a terrorist attack.

The bill establishes the Terrorism Insured Loss Shared Compensation Program in the Department of the Treasury, which is to be administered by the secretary of the Treasury, who has final decision-making authority regarding compensation. It prescribes guidelines for mandatory insurance company program participation as well as mandatory availability of insurance to the general public that does not

differ from coverage limitations for losses arising from events other than terrorism.

The program will cover up to \$90 billion in the first year to subsidize insurers in future terrorist attacks. The legislation creates a three-year program during which the federal government will cover 90% of all terrorism-related losses, although it will not provide assistance for events with losses less than \$5 million. Insurance companies will pay a deductible in 2003 equal to 7% of the premiums they received the previous year. This deductible will rise to 10% in 2004 and 15% in 2005. The federal government will then cover all property and casualty loss claims above the deductible. Federal payments would be capped at \$90 billion the first year, \$87.5 billion the second year, and \$85 billion in the final year of the program.

The 20-page text of the Terrorism Risk Insurance Act of 2002 can be found in *any federal repository library* or on the *Library of Congress web site*: <http://thomas.loc.gov>.

FEMA Offers Grants for State and Local Homeland Security Activities

In October, the Federal Emergency Management Agency (FEMA) Office of National Preparedness (ONP) issued a notice of availability of supplemental funds for all-hazards emergency operational planning, Citizen Corps activities, and development or improvement of emergency operation centers (EOCs). The agency stated that \$100 million was available for planning, \$25 million for Citizen Corps functions, and \$56 million for EOCs. The funding was made available through the 2002 Supplemental Appropriations Act for Further Recovery From and Response to Terrorist Attacks on the United States (Public Law 107-206).

For operations planning, states may apply for the grants, and local governments will be subgrantees of the state. The supplemental funding will provide comprehensive planning assistance to conduct emergency operations updating for all hazards, with a special emphasis on incidents of terrorism, including use of weapons of mass destruction. Funds will be allocated to states on the basis of population and will not require a cost-share contribution. Each state that receives grant money will be required to pass along at least 75% of the funds to local governments. The funds should also be used to incorporate inter- and intra-state mutual aid agreements, facilitate communication and interoperability protocols, establish a common incident command system, address critical infrastructure protection, conduct assessments to determine emergency planning priorities, address continuity of operations and government, and provide for effective use of volunteers in preparedness and response activities (see the Invited Comment on page 1 of this *Observer*).

Of the \$25 million appropriated, \$4 million will be used for grants related to Citizen Corps Councils, \$17 million will be used for grants for Community Emergency Response Team (CERT) training, and \$4 million will be used for FEMA activities essential for developing the Citizen Corps initiative. Grantees will be expected to develop and imple-



ment a jurisdiction-wide strategic plan, including forming local Citizen Corps Councils, Community Emergency Response Team training, public education and outreach, and volunteer opportunities that promote community and family safety.

The funding for EOCs will be awarded in two phases. In the first phase, each state will be allocated \$50,000 for an initial assessment of the hazards, vulnerabilities, and resultant risk to its existing EOC. If a state has already completed an assessment of its EOC, it may use the funds for assessments of local EOCs. Phase 2 grants will address immediate EOC deficiencies nationwide and will require a 50% non-federal cost share from recipients. Funding will be allocated under Phase 2 based on several national priorities, including modifications to EOCs to support secure communications, new and retrofit construction, architectural and engineering services, and physical modifications to enhance security.

The complete text of the notice of funding availability can be found in the October 17, 2002, *Federal Register* (Vol. 67, No. 201, pp. 64121-64124). The text of Public Law 107-206 can be found in *any federal repository library* or on the *Library of Congress website*: <http://thomas.loc.gov>. To obtain more information about the supplemental funds, contact *Gil Jamieson, FEMA, 500 C Street, S.W., Washington, DC 20472; (202) 646-4090; e-mail: gil.jamieson@fema.gov*.

SBA Issues Final Rule on Pre-Disaster Mitigation Loans

The Small Business Administration (SBA) recently announced the implementation of the Pre-Disaster Mitigation Loan Program, which is a five-year pilot program authorized by statute in 1999. SBA will make low interest, fixed-rate loans to small businesses for the purpose of implementing mitigation measures to protect property from disaster-related damage. The program was developed in support of FEMA's Pre-Disaster Mitigation Loan Program (see the *Observer*, Vol. XXVI, No. 5, p. 7) and covers businesses located in eligible communities (as determined by FEMA). In the October 7, 2002, *Federal Register* (Vol. 67, No. 194, pp. 62335-62339), SBA describes the new program as well as the amounts that can be borrowed to provide *post*-disaster mitigation for a damaged primary residence.

The pilot program was authorized at \$15 million for each of five fiscal years from 2000 through 2004. However, SBA has not disbursed any money due to the amount of time it took to establish a pre-mitigation program in FEMA (known formerly as Project Impact), a hold placed on funding by Congress, and FEMA's re-evaluation and revamping of its pre-disaster mitigation program. This is the first time since SBA began administering the disaster loan program in 1953 that it has been empowered to administer a pre-disaster mitigation loan program.

SBA loans will be funded on a first come, first served basis. The mitigation measures must protect property or contents from damage that may be caused by future disasters and must conform to the priorities or goals of the state or local government's mitigation plan.

To be eligible to apply for a loan, the business must be located in a participating pre-disaster mitigation community. Interested individuals can find out if their community participates by contacting their FEMA regional office or visiting the FEMA web site: <http://www.fema.gov>. Eligible businesses in participating communities may also receive loans to protect against flood hazards if they are located in a Special Flood Hazard Area designated under the National Flood Insurance Program.



Under the final rule, SBA defines a mitigation measure as "something done for the purpose of protecting real and personal property against disaster related damage." Borrowers can obtain up to \$50,000 a year at a fixed interest rate of 4%. Examples include building retaining walls, sea walls, grading and contouring, and structure retrofitting. Borrowers can also borrow the lesser of either the cost of the mitigation measure or up to 20% of the amount of an approved home disaster loan to repair or replace their damaged primary residence and personal property. Additionally, borrowers can draw on the same amounts for business disaster mitigation from an approved physical disaster business loan.

The SBA final rule in the *Federal Register* can be found in *any federal repository library* or on-line at <http://www.access.gpo.gov>. For further information about this program, contact *Herbert L. Mitchell, Office of Disaster Assistance, Small Business Administration; 409 3rd Street S.W., Washington, D.C. 20416; (202) 205-6734*.

HHS Creates Volunteer Medical Response Teams

Forty-two communities will soon be better prepared to respond to public health emergencies after receiving \$2 million from the U.S. Department of Health and Human Services (HHS) to help create Medical Reserve Corps (MRC) units. MRCs, a component of the Citizen Corps initiative, will be made up of volunteers who are trained to respond to health crises; their responsibilities will include emergency response, logistical planning, records keeping, public health and awareness assistance, and public communications.



Each MRC unit will be set up and operated by the local community in concert with established emergency response and public health systems. Teams will provide additional community resources to address health problems that may arise due to catastrophic events along with other public health activities throughout the year. The MRC initiative will provide the local organizational framework, including training and procedures, as well as partnership building among local organizations such as faith-based groups, government agencies, hospitals, the American Red Cross, and others.

The MRC is led by the Office of the Surgeon General for HHS. For more information, including the MRC guidance document, *Medical Reserve Corps—A Guide for Local Leaders*; information on training resources; and the monthly MRC newsletter, call the *Office of the Surgeon General*: (301) 443-4000; or visit the *MRC web site*: <http://www.medicalreservecorps.gov>.



Dam Safety Act Passed

Toward the end of the 107th Congress, lawmakers amended the National Dam Safety Program Act to direct the Interagency Committee on Dam Safety to encourage the establishment of effective federal programs to enhance dam safety. The Dam Safety and Security Act of 2002 (Public Law 107-310) requires the FEMA director to prepare a strategic plan to establish goals, priorities, and target dates to improve dam safety as well as provide cooperation with and assistance to interested state governmental entities.

In addition, the act requires the FEMA director to establish the National Dam Safety Review Board to monitor state implementation of dam safety programs, monitor the safety of dams in the U.S., and advise the FEMA director on national dam safety policy. Lawmakers also require technical and archival support and maintenance of information systems to guide the formulation of effective public policy and to improve dam safety engineering, security, and management. FEMA must provide, at the request of any state that has or intends to develop a dam safety program, training for dam safety staff and inspectors.

The text of the Dam Safety and Security Act of 2002 can be found in *any federal repository library* or on the *Library of Congress web site*: <http://thomas.loc.gov>.

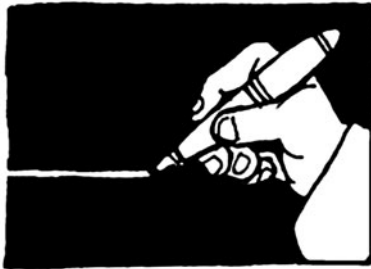
FEMA Highlights Smart Practices of State and Local Responders

FEMA recently launched an initiative to gather and share the “smart practices” of state and local emergency responders. FEMA intends this initiative to benefit responders by improving state and local preparation and response plans for all types of emergencies and disasters (see page 1 of this *Observer*).

State and local smart practices may involve effective mutual aid practices, response operations, training, assessment tools, planning models, exercises, standards and competencies, incident management, and many more practices. The first issue of FEMA’s *Spotlight on Smart Practices* weekly bulletin featured the City of Pittsburgh’s effort to evaluate the risks and vulnerabilities of high-rise buildings in the city.



Selected smart practices will be e-mailed to interested individuals as well as posted on the FEMA website at <http://www.fema.gov/onp>. To submit a smart practice idea to share with the responder community or to subscribe to the weekly bulletin, send an e-mail to SmartPractices@fema.gov.



ON THE LINE

Emerging Research and Practice in Disaster Mental Health

It has often gone unrecognized that the emotional devastation from a disaster can be at least as great as the physical devastation. Traditional disaster attention has often focused on facilitating a physical recovery without appreciating that full recovery in one realm cannot occur without recovery in the other. This is true not only of victims, but of responders as well.

Most early psychological interventions were directed toward those most severely affected, for example, the post-traumatic responses of soldiers from the battlefield and the reactions of children to severe trauma. There was another group potentially needing attention, however: the victims and responders experiencing “normal reactions to a very abnormal event” that were, nevertheless, highly distressful to them and perhaps temporarily incapacitating. Typically, more than 70% of people affected by a disaster will recover “on their own,” but could or should something be done to help them?

The Practitioner Perspective

About 15 years ago, the American Red Cross saw the distress in many of the thousands of people it deployed each year and sought to develop a program that would be responsive to the needs of its workers. Very quickly, it became clear that the same kinds of support could be made available not just to responders, but to others who were directly impacted by disasters.

The overriding assumption at that time was that these responses were normal and that most people can and will recover without classic psychological or psychiatric ses-

sions. However, particularly for those who seek help, some actions are helpful, such as:

- Psychological first aid to provide a “friendly ear,” keep people together, and reduce physiological distress;
- Early, brief, on-site support by skilled, trained people, who often simply walk around and make themselves available;
- Practical provision of information in contrast to in-depth emotional discussions (although some may seek that opportunity);
- Responsiveness to everyday needs that can range from concerns about safety and security, to food and shelter, to linkages with family and community;
- Referral and facilitation of support networks; and
- Consultation with community groups and others.

Terrorism—A Special Case

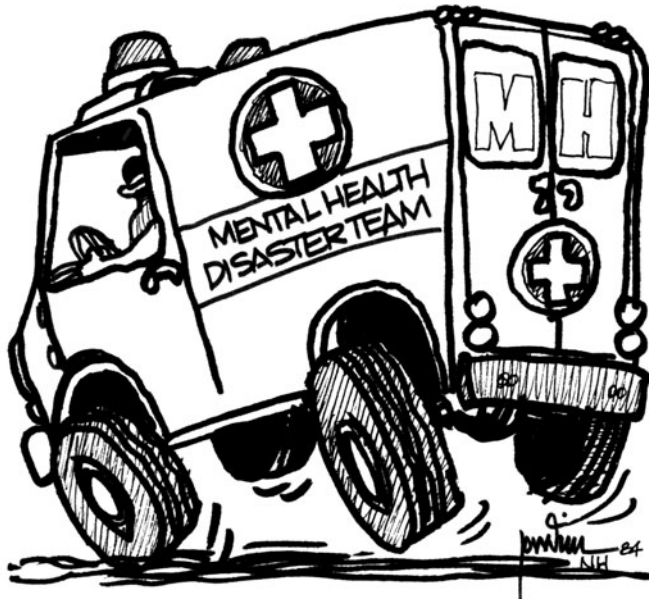
While some elements of more typical disaster responses were applicable to the events of September 11, additional dimensions confronted practitioners. Many of the impacts parallel experiences with other terrorist events such as the Oklahoma City bombing, but responses to September 11 seem to be different due to the events that triggered them. For example, a higher percentage of those impacted have demonstrated symptoms of post-traumatic stress disorders.

Also, this disaster clearly impacted adults and children well beyond its immediate geographic vicinity, and some of these stress reactions continue to persist. Compounding the mental health challenge, the effects of these attacks have been prolonged by protracted nationwide attention, making “anniversary date” reactions and pervasive worry all the more problematic.

Earlier experiences have demonstrated that there frequently can be delayed reactions to traumatic events, particularly for those intimately involved such as emergency responders. Now, more than a year after the attacks, clinicians, teachers, and other help providers report that, for some, this type of pervasive worry persists.

The Research Perspective

In October 2001, a conference of experts from around the country was convened by the departments of Defense, Justice, Health and Human Services, and Veterans Affairs, and the American Red Cross. The conference yielded a comprehensive report released in September 2002, *Mental Health and Mass Violence* (See the *Observer* Vol. XXVII, No. 2, p 24). Several other forums (for example, one co-sponsored by the Pacific Graduate School for Psychology and the American Red Cross in October 2002) have also attempted to evaluate what we know and what we need to know about this problem.



In general, there is agreement (although not universal) that some assistance can be helpful, especially if it is provided on a voluntary basis by well-trained people who respect the normality of most people’s reactions and who can diagnose when reactions are out of the ordinary. However, there remain some very important questions subject to research. These include:

- Who are those most likely to experience significant effects, and how do we best screen and triage?
- What kinds of interventions and assistance work best at what stages following a traumatic event?
- Are there important things practitioners should not do, and are there times when it is best not to intervene?
- On what basis should we screen and select those who will be involved in providing assistance?
- What kinds and levels of training do these practitioners need?

While some excellent research on these and other questions has been done, much remains to be answered.

An Ounce of Prevention

There has been a quite appropriate focus on providing mental health assistance after a disaster. Equally important for both practitioners and researchers is the question: What can be done to help people prepare for the unexpected and ameliorate potential after-effects? Major initiatives are underway to provide families with preparedness information and to build disaster preparedness into school curricula. A great deal of debate is occurring about what kind of information and preparation is valuable; whether there is such a thing as too much preparedness; and how communities and neighborhoods should prepare.

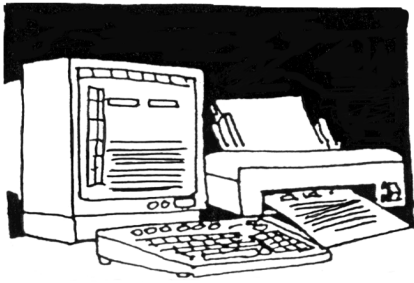
When first initiated, mental health-related efforts often met with skepticism in the emergency response community. Sometimes there was a desire to “tough it out” as well as a desire to “keep it in the family.” This close-knit pulling together proves to be a true asset that can facilitate recovery. At the same time, it is very clear that the emotional impact of traumatic events—for both those directly impacted and those seeking to help—can be profound, even if it is temporary. Planning to have disaster mental health experts involved in recovery efforts will, in fact, make a difference.

John Clizbe
American Red Cross (retired)
Arlington, Virginia

Mental Health and Mass Violence: Evidence-Based Early Intervention for Victims/Survivors of Mass Violence. A Workshop to Reach Consensus on Best Practices (2002. 123 pp.) is available from the *National Institute of Mental Health (NIMH), Office of Communications and Public Liaison, 6001 Executive Boulevard, Room 8184, Bethesda, MD 20892; (301) 443-4513.*

To locate your local Red Cross chapter, visit <http://www.redcross.org>.





INTERNET PAGES

Below are new or updated Internet resources that Natural Hazards Center staff have found informative and useful. For a more complete list of some of the better sites dealing with hazards and disasters, see <http://www.colorado.edu/hazards/sites/sites.html>.

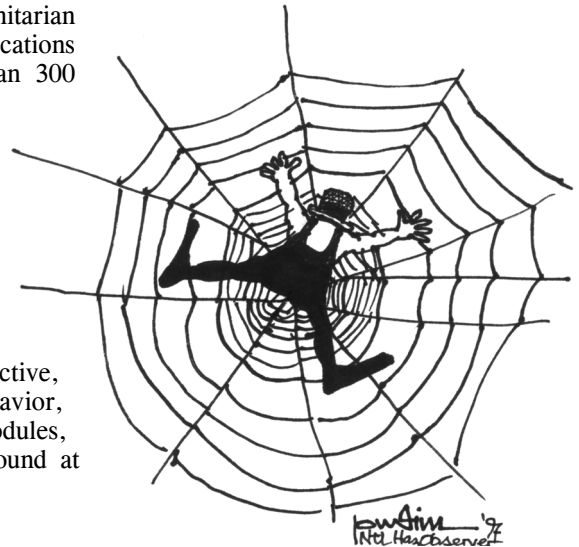
All Hazards

<http://www.reliefweb.int/w/lib.nsf/LibHome?OpenForm&Count=25>

ReliefWeb, a United Nations organization serving the needs of the humanitarian and relief community, has launched a new, searchable library of humanitarian documents, aiming to provide a central point of access to publications addressing a wide range of humanitarian issues. The more than 300 documents from 105 sources presently available include analyses, annual reports, conference reports, program and project evaluations, manuals, and program guidelines.

<http://meted.ucar.edu/emgmt/index.htm>

The COMET Program, which was created by the University Corporation for Atmospheric Research to support and enhance scientific knowledge about the weather, has made available web-based training materials on weather and weather-related hazards for emergency managers. This page provides links to interactive, self-paced multimedia learning modules on such topics as wildfire behavior, hazardous weather, hurricanes, and flooding. Other COMET modules, which are primarily designed for weather forecasters, can be found at <http://meted.ucar.edu/modules.htm>.



<http://www.unep.net>

<http://europe.unep.net>

Among the first group of environmental information portals available as part of the globally distributed United Nations Environment Program's UNEP.Net information network, the European portal is up and running. It is possible to make a variety of searches using portals such as climate change, freshwater resources, mountains, etc. Regional updates will be added as they are complete.

<http://www.partnershipforpublicwarning.org/ppw/newsletter/>

The Partnership for Public Warning (PPW) announces the first edition of its new on-line newsletter. The newsletter provides current information about PPW activities and other items of interest to the public warning community. All feedback and comments are welcome. Sections in the first issue include "on the scene," "tales from the front line," and news about PPW.

<http://www.disabilitypreparedness.com/>

The National Center on Emergency Preparedness for People with Disabilities (NCEP) web site is focused on ensuring that all individuals are included in the development of plans for protection from both natural and human-made emergencies. In almost all cases, emergency planning has not taken into consideration the communication, transportation, and medical needs of persons with disabilities and other special populations. The National Center on Emergency Planning for People with Disabilities, in cooperation with the Environmental Protection Agency, the Federal Emergency Management Agency, the American Red Cross, the National Organization on Disability, the Administration on Developmental Disabilities, and the Disability and Business Technical Assistance Centers, is working to assist those responsible for emergency planning and management for people with disabilities. The site includes training resources and related links.

<http://www.disabilityresources.org/DISASTER.html>

The Disability Resources Monthly guide to resources on the Internet includes a section on disaster preparedness for people with disabilities that has a list of resources for disaster preparedness, emergency plans and procedures, fire safety, and other topics that impact the physically and mentally challenged during disasters.

<http://www.pma-map.com/gac/>

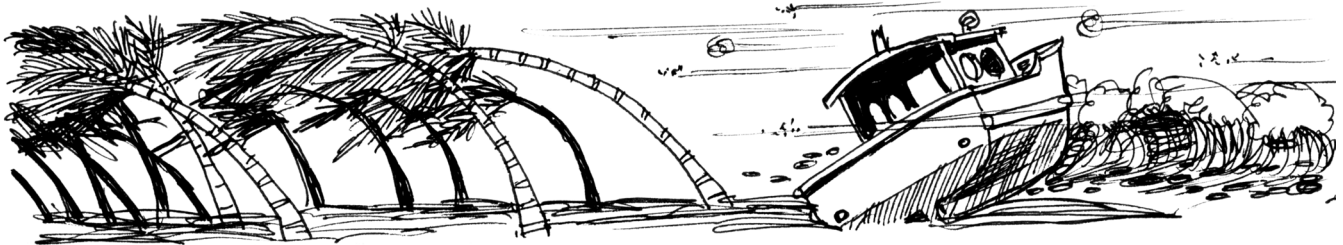
This web site presents basic information on a proposed new project, "Geoscience for Andean Communities" (GAC), which is currently in the second phase of development. GAC focuses on geological hazards in participating Andean Countries. Project specifics, along with a monthly newsletter in English and Spanish, are available on this site.

<http://www.fema.gov/fima/antiterrorism>

This new Federal Emergency Management Agency (FEMA) web site integrates terrorism into hazard mitigation programs. Titled, "Hazard Mitigation: It's Not Just for Natural Disasters Any More," the site is a companion to FEMA's how-to guide "Integrating Human-Caused Hazards into Mitigation Planning," and is an information library for hazards professionals working to incorporate human-caused hazards into hazard mitigation efforts. The site includes reference publications, frequently asked questions, and a variety of relevant links. (See page 27 in this *Observer* for information about CD-ROM versions of the hazard mitigation guides.)

<https://disasterhelp.gov/portal/jhtml/index.jhtml>

The Federal Emergency Management Agency launched a pilot version of an information portal designed to provide one-stop information for emergency preparedness and response information. The portal will support more than four million members of the first responder community, including firefighters, police officers, and emergency medical technicians. It will pull together several systems, simplify services, and eliminate duplication.



<http://www.epa.gov/echo>

The U.S. Environmental Protection Agency (EPA) is releasing an innovative pilot information tool that provides the public direct access to the current environmental compliance records of more than 800,000 regulated facilities nationwide. The Enforcement and Compliance History Online (ECHO) was developed in partnership with the Environmental Council of the States (ECOS), a national association representing state and territorial environmental commissioners.

<http://urban.nyu.edu/catastrophe/index.htm>

A variety of reports and publications that may be of interest to *Observer* readers are listed at this web site—the Urban Catastrophic Research Page of the Taub Urban Research Center at New York University. The center explores issues affecting cities and metropolitan regions, issues reports, and conducts forums with participants from government, business, nonprofit organizations, and the academic community.

Terrorism

<http://biotech.lsu.edu/index.htm>

This medical and public health law site, maintained by law professor Edward P. Richards III at Louisiana State University, recently included a section on terrorism and bioterrorism resources. This section contains a variety of links to articles and web sites dealing with state laws, government publications, and public health and safety.

<http://www.counterterrorismtraining.gov/>

This web site grew out of recommendations made by the Counter-Terrorism Training Coordination Working Group, convened by the U.S. Department of Justice's (DOJ) Office of Justice Programs to examine the counter-terrorism tools available to law enforcement and first responder communities. This site serves as a single point of access to counter-terrorism training opportunities and related materials available across the federal government and from private and nonprofit organizations. These resources will help law enforcement decision makers develop strategic plans for professional training and local emergency response.

Volcanos

<http://rathbun.si.edu/gvp/>

The Smithsonian's National Museum of Natural History has launched a newly renovated web site about its Global Volcanism Program. The site has information about more than 1,500 holocene volcanoes and more than 8,500 eruptions, and features both weekly and monthly reports concerning current activity. Much of the data, photos, and first-hand accounts have never before been available to the public.

Earthquakes

<http://geoinfo.usc.edu/gvdc>

http://geoinfo.usc.edu/gvdc/User_Survey/index.asp

Participants from the Consortium of Organizations for Strong-Motion Observation Systems (COSMOS)/Pacific Earthquake Engineering Research Center (PEER) Lifeline project have created a new web site at the first URL to disseminate information and receive feedback about the project, the goal of which is to develop a virtual data center linking a variety of seismic data sets. The second URL contains an on-line survey to assess how practitioners and researchers currently generate, store, and disseminate geotechnical information. The survey, which takes about 30 minutes to complete, will provide a baseline of current practices for future developments. Researchers request that interested individuals go to the web site to answer survey questions.

Floods and Drought

<http://www.floodassoc.com>

The National Flood Determination Society (NFDA), representing a number of flood determination companies, has unveiled its new web site. NFDA serves as a collective industry voice on legislative and regulatory issues related to floods, and the site contains information on their certification program.

<http://www.drought.unl.edu>

The National Drought Mitigation Center web site has a new look and organization. The web site's information has been streamlined and reorganized into sections dealing with the following: an overview of drought, monitoring, planning, risk and impact assessment, and mitigation. Site development will continue with planned additions about water conservation and state drought plans.



Wildland Fire Mitigation Considered Cost-Effective

The cost of suppressing wildfires in the U.S. exceeded \$1 billion in 2000 and will do so again in 2002. Annually, appropriations for the National Fire Plan, the philosophical and policy foundation for federal and interagency fire management activities, have surpassed \$2 billion, and additional money is spent on many other fire programs. These costs have increased dramatically in recent years, due in part to a buildup of hazardous fuels that feed the fires, increased home construction in fire-prone areas, and severe drought.

Some see the current method of paying for wildfire suppression as a blank check with no incentive to reduce losses of life and property. As appropriated funds are tapped out, agencies simply borrow from other funds and then expect the monies to be replenished. However, programs that focus on mitigation, such as hazardous fuels reduction, community vulnerability assessment, increased firefighter preparedness, and restoration of burned areas, often remain well within their budgetary limits.

A panel from the National Academy of Public Administration (NAPA) has found that only through cooperation, sharing responsibilities for fire suppression, and working with incentive programs, will wildland fires come to be managed more cost-effectively. The panel examined federal wildfire assistance to state and local governments, and offered steps to better prepare federal, state, local, and tribal officials to work together. Studies of six large fires from 2001 formed the basis for the panel's findings and recommendations. Each fire situation illustrated a different story about firefighting strategies, tactics, and costs.



NAPA concluded that successful fire suppression is more than a one-year, single-incident proposition and that significantly containing rising costs will require a long-term vision and policies that address the root causes of fire hazards. Agencies working at all levels of government must strike at the main, underlying causes of wildland fires in order to more effectively control the escalating costs of firefighting and reduce the costs of property damage. Strategies recommended by the academy for suppression include a comprehensive fuels reduction strategy; increased community responsibility; incident management efficiency and accountability; and the cost-effective application of science, technology, and information management. Ultimately, intergovernmental, fully integrated programs that center on fuel management and hazard reduction in communities and that rely on coordinated land management focusing on mitigation and ecological improvement will both decrease suppression costs and spread them among larger numbers of stakeholders.

The academy report is comprised of two free, on-line volumes. The shorter report, *Wildfire Suppression: Strategies for Containing Costs* (2002, 77 pp., free), provides the panel's recommendations, and the longer volume, *Background and Research Report* (2002, 462 pp., free), provides the case studies and other research on which the panel based its recommendations.

Both volumes are available from the *National Academy of Public Administration*, 1100 New York Avenue, N. W., Suite 1090 East, Washington, DC 20005; (202) 347-3190; <http://www.napawash.org>.





CONTRACTS AND GRANTS

Below are descriptions of recently awarded contracts and grants for the study of hazards and disasters. An inventory of contracts and grants awarded from 1995 to the present (primarily those funded by the National Science Foundation) is available from the Natural Hazards Center's web site: <http://www.colorado.edu/hazards/grants.html>.

Earthquake Safety Program in India. Funding: U.S. Agency for International Development, \$1.5 million, 36 months.

Earthquake Safety Program in Central Asia. Funding: Office of U.S. Foreign Disaster Assistance, \$900,000, 36 months.

For information, contact *Janifer Stackhouse* or *Stephanie Engelsen*; *Geohazards International, 200 Town and Country Village, Palo Alto, CA 94309*; (650) 614-9050; fax: (650) 614-9051; e-mail: info@geohaz.org; <http://www.geohaz.org>.

These funds will support earthquake safety initiatives in 20 major cities in India and three capital cities in Central Asia. Geohazards International will assess risk, raise awareness, improve school safety, launch self-sustaining mitigation activities, and strengthen the capacity of governments and nongovernmental organizations (NGOs) to prepare for and respond to future earthquakes. Both projects will collaborate with in-country experts, local populations, and established NGOs to promote self-sustaining as well as culturally and politically sensitive hazard reduction.

Optimal Structural System Design for Catastrophic Unforeseen Events. Funding: National Science Foundation, \$100,000, 12 months. Principal Investigators: *Benjamin W. Schafer* and *Roger G. Ghanem*, *Johns Hopkins University, 3400 North Charles Street, Baltimore, MD 21218*; e-mail: shafer@jhu.edu.

Whether one views the behavior of the World Trade Center structure following the attacks of September 11 as a design success (because so many people were able to get to safety) or a design failure (after all, the buildings collapsed), one issue that has been lost in the resulting discussion is that the building's response to the damage was not necessarily a direct result of building code requirements nor design methodologies. This project is based on the supposition that current design, using only component-wise reliability, ignoring redundancy, and lacking a formal decision-making

framework, is inadequate. The research seeks to combine new findings in structural sensitivity, redundancy, probabilistic earthquake engineering, optimization under uncertainty, and catastrophic risk insurance. It should lead to better decision-making in the design of buildings and insure a higher level of building structural safety, within realistic economic constraints, by providing a framework for decision making regarding structural safety.

GEON: A Research Project to Create Cyberinfrastructure for the Geosciences. Funding: National Science Foundation, \$1,000,000, 60 months. Principal Investigator: *Dogan Seber*, *Cornell University, Ithaca, NY 14853*; e-mail: ds51@cornell.edu.

The GEOscience Network (GEON) project seeks to create a cyberinfrastructure for the solid earth geosciences. The need to manage growing amounts of diverse earth science data will be addressed through collaboration between information technology and earth science researchers. The goal of GEON is to create a national information infrastructure that enables researchers to share databases and tools for research, including data related to tectonics, mountain building, broader understanding and prediction of geologic hazards, four-dimensional reconstruction modeling of earth through time, and natural resources management.

Disruption of Independent Infrastructures. Funding: National Science Foundation, \$93,303, 12 months. Principal Investigators: *William A. Wallace* and *John E. Mitchell*, *Rensselaer Polytechnic Institute, Troy, NY 12180*; e-mail: wallaw@rpi.edu.

Critical infrastructure systems, such as transportation, utilities, communications, and energy, provide services that are essential to both the economy and well-being of nations. The investigators in this project will work to ensure an efficient, effective, and equitable distribution of resources in responding to events that disrupt infrastructure systems and to aid in designing systems that are robust under disruptions

caused by natural or human-caused events. They will develop definitions of critical infrastructure dependencies, model interdependencies among systems, assess vulnerabilities, and determine emergency response. If successful, the project will improve the ability to both mitigate and respond to events that cause large-scale, potentially catastrophic damage to critical infrastructure systems.

Cataclysms and Catastrophes—The Role of Science. Funding: National Science Foundation, \$152,126, 24 months. Principal Investigators: *Katherine K. Ellins, Sean S. Gulick, Gail L. Christeson, and Roberto Gutierrez, University of Texas–Austin, Austin, TX 78713; e-mail: kellins@ig.utexas.edu.*

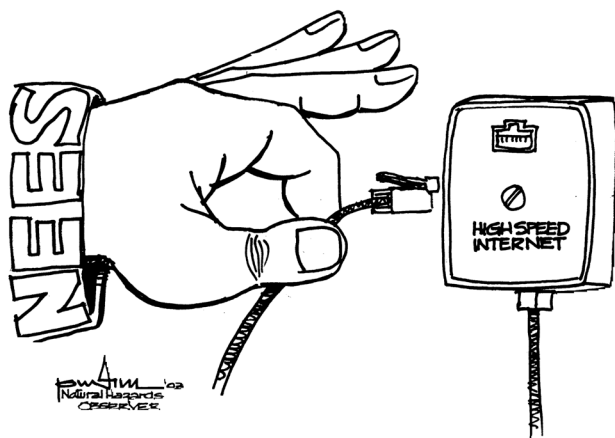
Researchers in this project are developing and testing curricula based on the role of science in understanding catastrophes. The goal is to help high school teachers incorporate geoscience into the teaching of physics, mathematics, chemistry, and biology. This collaborative effort involves the University of Texas Institute for Geophysics (UTIG), the Bureau of Economic Geology (BEG), and 4empowerment (an Austin-based private education company). Events such as Hurricane Mitch in Honduras, the Chicxulub asteroid impact, and the klahoma City bombing

serve as the basis for hands-on learning activities using data collected by UTIG and BEG scientists. In addition, activities will teach about technologies such as remote sensing, drilling, seismic reflection and refraction, geophysical information, and the Internet.

An Integrated Framework for Health Monitoring of Highway Bridges and Civil Infrastructure. Funding: National Science Foundation, \$2,650,000, 60 months. Principal Investigators: *Ahmed-W.M. Elgamal, Joel P. Conte, Mohan M. Trivedi, and Tony Fountain, University of California–San Diego, La Jolla, CA 92094; e-mail: elgamal@ucsd.edu.*

The ability to monitor the safety and “health” of highway bridges and constructed facilities is crucial for mitigating potential disasters and recovering quickly. Detecting and assessing the level of damage to civil infrastructures caused by natural or anthropogenic events as well as environmental deterioration is crucial. In cooperation with the California Department of Transportation, computer scientists and structural engineers will develop software to integrate real-time sensor data, archived data, visualization software, probabilistic risk analysis, and decision-making procedures to create a next-generation health monitoring strategy.

Earthquake Testing Equipment Will Be Connected to National Network



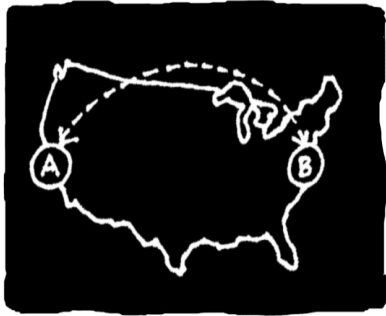
Five new NSF awards will support advanced research and provide experimental equipment to evaluate the impact of earthquakes. Researchers from across the United States are studying the effects of earthquakes in relation to building design, advanced materials, and other measures that can minimize earthquake damage and loss of life.

The awards are part of NSF’s George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES). The high-speed Internet network, when completed in 2004, will remotely link researchers with tools for testing and improving the seismic design and performance of structures, utilities, and other infrastructure. NSF will invest a total of about \$82 million under NEES for new and upgraded equipment and the computer network that will connect the equipment facilities.

Integration of the equipment is being managed by the University of Illinois at Urbana-Champaign. The equipment and network system will be managed by a consortium to be selected at a later time.

The five new awards, totaling \$15.5 million over two years, will fund construction, expansion, and modernization of equipment at five U.S. institutions—Brigham Young University, Cornell University, Lehigh University, the University of California–San Diego, and the University of Illinois–Urbana-Champaign. These awards complement equipment grants announced in early 2001 (see the *Observer*, Vol. XXV, No. 4, p. 16) and provide new testing capabilities for large-scale structural response and soil-foundation-structure interaction.

For details about the NEES awards, see <http://www.eng.nsf.gov/nees> and <http://www.nsf.gov/od/lpa/news/press/01/pr0110.htm>.



CONFERENCES AND TRAINING

Below are the most recent conference announcements received by the Natural Hazards Center. A comprehensive list of hazard/disaster meetings is posted on our web site: <http://www.colorado.edu/hazards/conf.html>.

Seventh Annual Fire Suppression and Detection Research Application Symposium. Sponsor: Fire Protection Research Foundation of the National Fire Protection Association (NFPA). Orlando, Florida: January 22-24, 2003. This “bridging the gap” symposium brings together professionals in fire detection and suppression to share practical solutions for day-to-day fire problems. The conference provides a unique opportunity to learn about common issues and includes a special session on new initiatives at major North American fire suppression and detection laboratories as well as an international session on uses of new fire information. Several case studies and test results will also be presented. To obtain complete program information or to register, contact Eric Peterson, Fire Protection Research Foundation, 1 Batterymarch Park, Quincy, MA 02269-9101; (617) 984-7281; e-mail: epeterson@nfpa.org; <http://www.nfpa.org/foundation>.

Disaster Management 2003: Solutions to Enhance Your Preparation, Response, and Recovery Efforts. Sponsors: National Institute for Government Innovation and Institute for International Research (IIR). Las Vegas, Nevada: January 27-29, 2003. With a main focus on improving preparedness, response, recovery, and mitigation for all natural and human-made disasters in order to save lives and reduce property damage, this conference has a special emphasis on emerging technologies in disaster management, legal and practical blueprints for emergency operations, and a variety of table-top emergency management exercises. To register, contact IIR, 708 Third Avenue, 4th Floor, New York, NY, 10017; (888) 670-8200; e-mail: registration@nigi.org; <http://www.nigi.org>.

Transportation Safety and Security Workshop. Sponsors: George Washington University (GWU) Institute for Crisis,

Disaster and Risk Management and The International Emergency Management Society (TIEMS). Washington, DC: January 28-29, 2003. The objective of the workshop is to provide an opportunity for an international exchange in a workshop setting on topical concerns and issues regarding transportation safety and security. For additional information, including the agenda and registration specifics, please contact Greg Shaw, GWU, 1776 G Street N.W., Washington, DC, 20052; e-mail: glshaw@gwu.edu; or Claire Rubin; e-mail: cbrubin@gwu.edu; <http://www.tiems.org>.

International Course for Managers on Health, Disasters, and Development. Sponsor: Pan American Health Organization. St. Ann, Jamaica: February 10-21, 2003. Emergencies caused by natural and human-made phenomena are becoming increasingly frequent. It is not enough simply to learn how to better coordinate humanitarian relief operations or to recognize when disasters are the result of weaknesses in development models. Current leaders and health managers must incorporate an approach to risk management and vulnerability reduction to make efficient decisions. This management course is designed to build capacity among participants to establish and manage disaster reduction (from prevention to response) and places special emphasis on the health and social sectors. Complete information and an on-line registration form are available from: course-leaders@paho.org; http://www.disaster-info.net/LIDERES/ideresindex_jamaica.htm.

American Association for the Advancement of Science (AAAS) Annual Meeting. Denver, Colorado: February 13-18, 2003. This scientific meeting brings together science, engineering, and technology professionals from around the world. Select conference themes of interest to **Observer** readers include challenging and changing nature (hazards

and disasters), public health and public risk, and many others. Full details and registration information may be acquired from the *AAAS Meetings Department, 1200 New York Avenue, N.W., Washington, D.C. 20005; (202) 842-1065*; or found at <http://www.aaas.org/meetings/index.html>.

2003 Government Risk Management Seminar. Sponsor: Public Risk Management Association (PRIMA). Las Vegas, Nevada: February 17-21, 2003. This seminar will provide a variety of educational tracks relating to risk management, ranging from “foundations” directed at those new to risk management, to sessions on emerging issues, and course offerings that lead to completion of a certificate program. For more detailed information, contact *PRIMA, 1815 North Fort Myer Drive, Suite 1020, Arlington, VA 22209; (703) 528-7701; e-mail: pwolfe@primacentral.org; http://www.primacentral.org/meetings/grms2003/grms2003.php*.

Southern California Earthquake Center (SCEC) Landslide Analysis and Mitigation Workshop. Los Angeles, California: February 20-21, 2003. This workshop is presented by members of a SCEC committee convened to develop specific slope stability analysis implementation procedures to aid local southern California city and county agencies in their compliance with review requirements of the state’s Seismic Hazard Mapping Act. It will summarize and explain recommended procedures as well as provide time for interaction among practicing engineers and geologists. For more details, contact the *Southern California Earthquake Center, University of Southern California, 3651 Trousdale Parkway, Suite 169, Los Angeles, CA 90089-0742; (213) 740-5843; http://www.scec.org/resources/landslide.html*.

3rd International Symposium on Aviation Emergencies: Increasing Survivability. Sponsor: Emergency Disaster Management, Inc., Federal Aviation Administration (FAA), and Transportation Security Administration (TSA). Miami Beach, Florida: March 24-27, 2003. Sessions focus on public health, evacuation strategies, integrated incident command, and airport/community planning and emergency response. For registration information, contact *Emergency and Disaster Management, Inc., Airport Center, c/o 3rd International Symposium on Aviation Emergencies, 5959 West Century Boulevard, Suite 501, Los Angeles, CA 90045; (310) 649-0700; http://www.emergency-management.net/3rd_symposium/sym_home.html*.

Protecting the Public in a Hazardous Materials Emergency. Sponsor: National Institute for Chemical Studies (NICS) and Marshall University Graduate College. Charleston, West Virginia: March 25, 2003. In a hazardous materials emergency, responders need to quickly make evacuation decisions. Designed for emergency responders and other emergency management officials who want to improve their leadership skills, this workshop prepares responders to make decisions that will best protect the public during chemical emergencies. More information may be acquired by contacting *NICS, 2300 MacCorkle Avenue, S.E., Charleston, WV 25304; (304) 346-6264; http://www.nicsinfo.org/*.

2003 Central United States Earthquake Consortium (CUSEC) Annual Meeting. Nashville, Tennessee: March 25-26, 2003. The theme of this year’s meeting is “communicating the earthquake risk: two decades of collaboration.” Registration and meeting information will soon be available from *Kerri Hall, CUSEC, 2630 East Holmes Road, Memphis, TN 38118; (800) 824-5817; e-mail: khall@cusec.org; http://www.cusec.org/*.

Spring World 2003: 14th Annual Corporate Contingency Planning Seminar and Exhibition. Sponsor: Disaster Recovery Journal (DRJ). Orlando, Florida: March 30-April 2, 2003. This conference features the latest in business continuity planning, including sessions on best practices, command post operations, crisis management planning, and the fundamentals of disaster recovery. To register, contact *DRJ Registrar, P.O. Box 510110, St. Louis, MO 63151; (314) 894-0267; e-mail: mercedes@drj.com; http://www.drj.com*.

International Workshop on Integrated Water Resource Management. Sponsor: U.S. Bureau of Reclamation. Denver, Colorado: April 7-11, 2003. This workshop will review and analyze developments in integrated water resource management (IWRM). Speakers will provide an overview of theory, technique, policies, and practical management issues. Discussion will focus on competing demands on a limited resource and ways to promote efficient, multiple-use management. For details, contact *Leanna Principe, International Affairs, D-1520, U.S. Bureau of Reclamation, P.O. Box 25007, Denver, CO 80255; (303) 445-2127; e-mail: lprincipe@do.usbr.gov*.

25th Annual National Hurricane Conference. Sponsors: American Meteorological Society, American Public Works Association, Coastal States Organization, the National Weather Service, the Tropical Prediction Center, and many others. New Orleans, Louisiana: April 14-18, 2003. The primary goal of this conference is to improve hurricane preparedness, response, recovery, and mitigation in order to save lives and property in the United States and the tropical islands of the Caribbean and the Pacific. The conference is also a forum for federal, state, and local officials to exchange ideas and recommendations. Conference emphasis is on lessons learned from hurricane strikes; state-of-the-art programs; new ideas; and the ABCs of hurricane preparedness, response, recovery, and mitigation. For complete information, contact *the National Hurricane Conference, 2952 Wellington Circle, Tallahassee, FL 32309; (850) 906-9224; e-mail: mail@hurricanemeeting.com; http://hurricanemeeting.com*.

Midwest Sociological Society 2003 Annual Meeting. Sponsor: Midwest Sociological Society (MSS). Chicago, Illinois: April 16-19, 2003. This year’s theme is social and cultural dynamics, from social relationships through the world system. A special call for disaster-related papers has been issued, and there will be a session on disaster sociology. General information about the conference is available from the *Department of Sociology, Drake University, 2507*

University, Des Moines, IA 50311-4505; (515) 271-4108; <http://www.themss.org/>.

13th World Congress on Disaster and Emergency Medicine. Sponsor: World Association for Disaster and Emergency Medicine. Melbourne, Australia: May 6-10, 2003. This conference will address the theme of "redefining the scope of disaster and emergency medicine." Breakout sessions include: global collaboration on research and education; standards for a variety of disaster-related disciplines; and global learning, sharing, and advancing. For more information, contact the Meeting Planners, 91-97 Islington Street, Collingwood, VIC, Australia 3066; tel: 61 3 9417 0888; <http://www.wcdem2003.com>.

5th National Conference on Earthquake Engineering. Sponsor: Turkish Government Agencies. Istanbul, Turkey: May 26-30, 2003. The structural damage that has occurred due to recent earthquakes in Turkey and abroad has resulted in important advances in earthquake engineering. The objective of this conference is to build a forum for discussion about the recent advances in earthquake engineering and on methods to minimize earthquake hazards. Conference themes include seismic hazard assessment, structural analysis and design, earthquake evaluation of historical buildings, and city planning. For more information about this conference, contact the Turkish Chamber of Civil Engineers, Halaskargazi Cad. 35/1, 80230 Harbiye-Istanbul, Turkey; tel: 90 212 219 9962-63; e-mail: Sudmk@ins.itu.edu.tr; http://www.ins.itu.edu.tr/Sudmk/0_en.htm.

Third Regional Course on Earthquake Vulnerability Reduction for Cities (EVRC-3). Sponsor: Asian Disaster Preparedness Center (ADPC). Dhaka, Bangladesh: June 9-18, 2003. Increasing population and urban development in areas susceptible to earthquakes has increased earthquake vulnerability. However, earthquakes do not necessarily present an uncontrollable and unpredictable hazard to life and property. Greater understanding of the causes and effects of earthquakes will reduce damage and loss of life. This course focuses on mitigation strategies to reduce earthquake vulnerability. For more information contact ADPC, Asian Institute of Technology, P.O. Box 4, Klong Luang, Pathumthani 12120, Thailand; tel: (66 2) 524 5354; e-mail: teda@dpc@ait.ac.th; <http://www.adpc.ait.ac.th/training/te-evrc3.html>.

World Congress on Risk 2003. Sponsor: Society for Risk Analysis (SRA). Brussels, Belgium: June 22-25, 2003. The theme of the first world congress on risk is "risk and governance." This reflects the world-wide trend toward making better use of risk-oriented concepts, tools, and processes in public decision making and risk analysis. Goals are to stimulate dialog on risk issues worldwide; share insight on methods and decision processes; demonstrate recent advancements in assessment, management, and communication; and build an international community of individuals working on these issues. More information and an on-line registration form are available by contacting SRA, 1313 Dolley Madison Boulevard, Suite 402, McLean, VA

22101; (703) 790-1745; e-mail: sra@burkinc.com; <http://www.sra.org/events.htm#world>.

13th World Conference on Disaster Management. Sponsor: Canadian Centre for Emergency Preparedness (CCEP). Toronto, Canada: June 22-25, 2003. This conference emphasizes "emerging trends in disaster management: new threats, new approaches," and is aimed at bringing professionals from a variety of emergency response, risk, information technology, and health fields together. Conference details are available from Adrian Gordon, CCEP, 1005 Skyview Drive, Suite 202, Burlington, ON L7P 5B1, Canada; (905) 319 4034; e-mail: agordon@ccep.ca; <http://www.wcdm.org/>.

Catastrophic Risks and Insurability Conference. Sponsor: Aon Australia. Queensland, Australia: August 17-19, 2003. This conference will address the issues of the limits of risk insurability, including what should be insured, the extent to which community expectations contribute to the state of the risk industry, and current limits to risk modeling. Conference details will soon be available from Aon Australia, Level 29, Aon Tower, 201 Kent Street, Sydney NSW 2000, Australia; tel: 61 (2) 9253 7000; <http://www.aon.com.au/>.

Fourth International Conference on Earthquake Resistant Engineering Structures (ERES). Sponsor: Wessex Institute of Technology (WIT) and University of Ancona, Italy. Ancona, Italy: September 22-24, 2003. ERES 2003 is the fourth international conference in a series on earthquake-resistant engineering structures. The objective of the meeting is to provide a forum for discussion of both basic and applied research in the various fields of engineering relevant to earthquake resistant analysis and the design of structural systems. Registration information will be available in the near future at <http://www.wessex.ac.uk/conferences/2003/eres03/index.html>.

3rd International Wildland Fire and Exhibition Conference. Sponsors: Erickson Air-Crane, North American Forest Commission Fire Management Working Group, and many others. Sydney, Australia: October 3-6, 2003. Conference objectives are to bring together the leading fire management professionals and practitioners from around the globe; present a range of contemporary and future fire management issues relevant to nations and organizations with fire management capacities; and enhance global and regional networks of fire management professionals, industry leaders, and policy makers. Complete conference information may be obtained from the Conference and Exhibition Managers, GPO Box 128, Sydney, NSW, Australia 2001; tel: 61 2 9248 0800; e-mail: wildlandfire03@tourhosts.com.au; <http://www.ausfire.com/>.

Safer Sustainable Communities: 2003 Australian Disasters Conference. Sponsor: Emergency Management Australia (EMA). Canberra, Australia: September 10-12, 2003. Abstracts are due by February 14, 2003, and must be submitted under the broad theme of "community safety is everyone's business." Specific themes include working with

communities, understanding risk and uncertainty, implementing consequence management, protecting critical infrastructure, and enhancing information and communication. For complete information, contact *EMA, P.O. Box 1020, Dickson, Australian Capital Territory 2602, Australia; tel: 61 (0) 2 6232 4240; e-mail: enquiry@einsteinandedison.com.au; http://www.ema.gov.au/ema/emaInternet.nsf/AllDocs/RWPF618ACD890CB33EDCA256C8C00130A62?OpenDocument.*

GDIN2003. Sponsor: Global Disaster Information Network (GDIN). Washington, DC: November 4-7, 2003. GDIN is an organization dedicated to improving the flow of information before and during natural disasters. Conference themes include: emergency telecommunications, disaster manager needs, the UN International Strategy for Disaster Reduction, information management (including homeland security), urban search and rescue, and many others. Information about abstract submission (due by February 28, 2003),

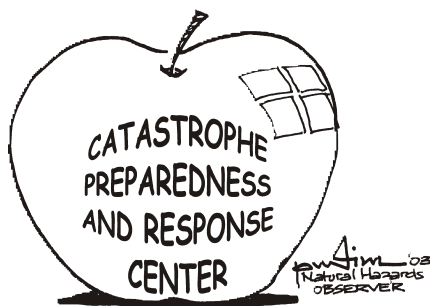
chairing session presentations, and more is available from *GDIN, 26128 Talamore Drive, South Riding, VA 20152; (202) 647-5070; e-mail: gdin2003@hotmail.com; http://www.gdin.org/.*

The 32nd Session of the International Geological Congress. Sponsors: International Union of Geological Sciences (IUGS), and member countries of the Mediterranean Consortium. Florence, Italy: August 20-28, 2004. The conference has been designed as a forum for a broad debate of the most significant advances in the geological sciences, as well as to promote discussion of the congress theme: "from the Mediterranean area toward a global geological renaissance—geology, natural hazards and cultural heritage." For more details, contact *Chiara Manetti, Borgo Albizi, 28, 50121 Firenze, Italy; tel: 39 055 2382146; e-mail: casaitalia@geo.unifi.it; http://www.32igc.org/default1.htm.*

Catastrophe Preparedness and Response Center Finds Home in New York City

New York University has announced that it has been selected as the site of a new, federally funded center to improve responses to major terrorist attacks and natural catastrophes. The Catastrophe Preparedness and Response Center will make use of university scholars to help analyze best practices in preparedness and response, as well as develop case studies and training materials for emergency services personnel worldwide. Other center goals include developing techniques and policies that will enable health systems to respond to large-scale emergencies and bioterrorism; assessing early warning systems; and conducting a review of the psychological and legal implications of terrorist attacks.

The center was conceived in New York during the months following September 11, 2001, to work with city, state, and federal governments to look beyond the terrorist attacks and prepare for future emergencies, catastrophes, and disasters. The center will take an integrated approach to counter-terrorism studies that includes applications in health, biomedicine, mental health, public service, urban planning, information technology, public policy, communications, and law. This cross-discipline approach matches the philosophy of New York University and will help provide comprehensive, multi-disciplinary analyses for many of these issues. More information about the Catastrophe and Preparedness Response Center may be obtained by calling *John Beckman; (212) 998-6848; or visiting http://www.nyu.edu/publicaffairs/newsreleases/b_NYU_T12.shtml.*





RECENT PUBLICATIONS

Below are summaries of some of the recent, most useful publications on hazards and disasters received by the Natural Hazards Center. Due to space limitations, we have provided descriptions of only a few key publications or those with a title that may not indicate content. All items contain information on how to obtain a copy. A complete bibliography of publications received from 1995 to the present can be found on our web site: <http://www.colorado.edu/hazards/bib/bib.html>.

All Hazards

Disaster Safety Review. Vol. 1, No. 1 (Fall 2002). Free. Copies are available from the Institute for Business and Home Safety (IBHS), 4775 East Fowler Avenue, Tampa, FL 33617; (866) 657-4247; fax: (813) 286-9960; e-mail: creese@ibhs.org. A downloadable version can be found on the IBHS web site: http://www.ibhs.org/research_library/view.asp?id=322.

The inaugural issue of the IBHS quarterly technical journal *Disaster Safety Review* contains news, research, and articles pertaining to natural disaster safety. It was created by the organization to be a forum for communicating research and perspectives into new ways to build stronger, safer homes and businesses. Topics include "billion dollar thunderstorms," whether a market for mitigation exists, and wind-resistant retrofit testing.

Atlas of Natural Hazards in the Hawaiian Coastal Zone. 2002. 186 pp. \$38.00. Copies can be ordered by calling the U.S. Geological Survey, Earth Science Information Center, Box 25286, Building 810, Denver Federal Center, Denver, CO 80225; (303) 202-4200 or (888) 275-8747; fax: (303) 202-4188; e-mail: infoservices@usgs.gov. The entire atlas can also be found on-line at <http://geopubs.wr.usgs.gov/l-map/i2761>.

This report was created to help citizens and regulatory authorities better understand coastal hazards in Hawaii, as well as their impacts on property and the natural environment. It is intended to help planners and managers more effectively guide coastal land use and planning. It provides information on seven potentially hazardous threats: coastal erosion, sea-level rise, major storms, volcanic and seismic activity, tsunami inundation, coastal stream flooding, and extreme seasonal high-wave events. The atlas ranks each hazard as low, moderately low, moderately high, or high for given segments of the Hawaiian coast. Maps also indicate a general history of hazards for each island.

Citizen Corps: A Guide for Local Leaders. 2002. 34 pp. Free. The document can be downloaded from the Citizen Corps web site: <http://www.citizencorps.gov/council.pdf>.

Citizen Corps was recently created by President Bush to be a broad network of volunteers to prepare local communities to effectively prevent and respond to terrorism, crime, or any kind of disaster. Citizen Corps Councils will guide local citizen participation by coordinating Citizen Corps programs, developing community action plans, assessing possible threats and identifying local resources. This guidebook describes the program and its components, outlines citizen corps councils and their responsibilities, offers tips for establishing a council, describes available resources, examines communications issues, and delineates state and federal government roles. The appendix lists pertinent web sites, potential resources, opportunities for volunteering, and facts regarding the Citizen Corps program.

Crisis Information Management Software (CIMS) Feature Comparison Report. National Institute of Justice (NIJ) Special Report No. NCJ 197065. 2002. 57 pp. Free. Copies can be downloaded from the NIJ web site: <http://www.ncjrs.org/pdffiles1/nij/197065.pdf> or <http://www.ncjrs.org/txfiles1/nij/197065.txt>.

The CIMS Test Bed Project was implemented by the U.S. Department of Justice, National Institute of Justice/Office of Science and Technology in support of its Critical Incident Technology Program. Through this work, NIJ advances research and development of public safety technologies that will assist state and local public safety entities in their prevention of and response to critical incidents. CIMS, the software found in emergency management operations centers, supports the management of crisis information and the corresponding response by public safety agencies. The Test Bed Project was established to assist responders in comparing commercially available software. The outcome of the project is presented in this report and includes the project background, general

findings and implications for the selection of an appropriate product, a description of how the feature comparisons were conducted, CIMS candidate product information, and a feature comparison matrix.

Confronting Catastrophe: A GIS Handbook. R.W. Greene. 2002. 160 pp. \$14.95. To order the book, contact ESRI Press by calling (800) 447-9778 or by visiting their web site: <http://www.esri.com/shop>.

Geographic information system (GIS) technology is a practical tool that every community can use to plan for, respond to, and recover from major disasters, whether they are natural events such as hurricanes or human-caused incidents such as terrorist attacks. By giving responders and disaster managers a way to visually analyze each stage of a disaster and synthesize complex information sets, GIS permits swifter decision-making and clearer communication. **Confronting Catastrophe** guides readers through five stages of hazards management—identification and planning, mitigation, preparedness, response, and recovery—and demonstrates how GIS can be incorporated into each.

Responding to the Unexpected: Report of the Workshop Held in New York City February 2-March 1, 2002. Yigal Arens and Paul Rosenbloom, editors. 2002. 69 pp. Free. The on-line report is available at <http://www.isi.edu/crue/>. For ordering information, contact University of Southern California Information Sciences Institute (USC/ISI), 4676 Admiralty Way, Suite 1001, Marina Del Ray, CA 90292; (303) 822-1511; fax:(310) 823-6714.

Responding to unexpected events, whether natural or human-caused, is the great challenge facing the United States, as evidenced during the terrorist attacks of September 11. With National Science Foundation support, USC/ISI convened a workshop that focused on new developments in information technology (IT), engineering, and social science and the creation of highly effective virtual organizations that can respond immediately to a disaster. The workshop brought a small group of leading researchers from across academic disciplines together with representatives of agencies and organizations that are intimately involved in crisis response. The goals of the workshop were to begin understanding and developing the new technical, social, and policy requirements for responding to unexpected events, and to do so in a manner that will transform our society into one that is more resilient and secure.

“Providing Relief to Families After a Mass Fatality: Roles of the Medical Examiner’s Office and the Family Assistance Center.” Ray L. Blakeney. *OVC Bulletin*, November 2002. (Document No. NCJ 188912.) Free. Copies can be ordered from the U.S. Department of Justice, Office for Victims of Crime, 810 Seventh Street, N.W., Eighth Floor, Washington, DC 20531; (202) 307-5983; fax: (202) 514-6383. The document can also be downloaded from http://www.ojp.usdoj.gov/ovc/publications/bulletins/prfmf_11_2001/.

This issue of *OVC Bulletin* deals with an issue common in many disasters—providing relief to families following an event that causes mass fatalities. Topics include understanding the primary issues and concerns of victims’ families; implementing a state/federal partnership to provide victim assistance services in a medical examiner’s office; instituting effective methods for assisting victims; establishing a family assistance center; operating Disaster Mortuary Operational Response Teams; formulating a crisis response plan; enhancing victim support tasks; and planning for such events among emergency preparedness, medical, mental health, and victim assistance professionals.

Southern Building, September/October 2002. For subscription information, contact the Southern Building Code Congress

International (SBCCI), 900 Montclair Road, Birmingham, AL 35213-1206; (205) 591-1206; fax: (205) 591-0775; <http://www.sbcc.org>. The publication can also be viewed for free on-line at http://www.sbcc.org/magazine/Archive/articles/02Sep_Oct.pdf.

This issue of **Southern Building** contains two articles that may be of interest to *Observer* readers. “After 10 Years, Andrew Gains Strength,” by Andrew LePore, discusses the scientific re-examination of Hurricane Andrew’s wind speeds and subsequent reclassification of the storm as a category 5 (increased from its original category 4). “Surviving Nature’s Wrath and Human Shortsightedness,” by James. E. Waller, examines the reluctance of the home-building industry to adopt tornado shelters and safe rooms to reduce the loss of life from severe wind catastrophes. He describes the risks to regions in the U.S. due to hurricanes and tornadoes, types of shelters that protect individuals from risk, future trends in the storm shelter industry, and the National Storm Shelter Association.

Homeland Security

A Governor’s Guide to Emergency Management—Volume Two: Homeland Security. 2002. 137 pp. Free. The guide can be downloaded from www.nga.org/cda/files/GOVSGUIDEHS2.pdf. Information about this report can be obtained from the National Governors’ Association (NGA), Publications, P.O. Box 421, Annapolis Junction, MD 20701; (301) 498-3738; fax: (301) 206-9789; e-mail: opa@nga.org; <http://www.nga.org>.

The past year has demonstrated that homeland security is a complex challenge that demands significant investment and collaboration among local, state, and federal governments as well as integration with the private sector. The National Governors’ Association’s (NGA) Center for Best Practices recently released this volume as a reference document for state and territorial governors to assist them in facing the challenges of homeland security. In



addition to outlining state-focused homeland security information, policies, and procedures, the guide addresses state structure and how to set up a homeland security team, including the development of state plans, emergency powers of the governor, role of the National Guard, how to establish continuity of operations and alert systems, and how to communicate with the public during a crisis. It also discusses potential terrorist threats—biological, agricultural,

chemical, nuclear, radiological, and cyber. Chapters provide governors with detailed background information and checklists for each of these potential threats, identify federal resources and model response plans, and discuss how to prepare responses to these threats.

"Measuring the Effects of the September 11 Attack on New York City." Jason Bram, James Orr, and Carol Rapaport. *Economic Policy Review*, Vol. 8, No. 2 (November 2002). The article can be viewed on the Federal Reserve Bank of New York web site: http://www.newyorkfed.org/rmaghome/econ_pol/2002/1102rapa.html.

This article measures the short-term economic effects of the events of September 2001 on New York City's labor force and capital stock through June 2002, the end of the recovery process at the World Trade Center site. Using a lifetime-earnings loss concept, the authors estimate that the nearly 3,000 workers killed in the attack lost \$7.8 billion in prospective income. Moreover, the employment impact in key affected sectors—such as finance, air transportation, hotels, and restaurants—translated into an estimated earnings shortfall of \$3.6 billion to \$6.4 billion, while the cost of repairing and replacing the damaged physical capital stock and infrastructure totaled an estimated \$21.6 billion. Accordingly, the authors determine that the total attack-related cost to New York City during this period was between \$33 and \$36 billion. The article also examines the attack's effects on the city's most economically vulnerable residents and analyzes survey findings on the incidence of post-traumatic stress disorder and alcohol and drug use after September 11.

Beyond the Beltway: Focusing on Hometown Security. Executive Session on Domestic Preparedness (ESDP), John F. Kennedy School of Government, Harvard University. 2002. 55 pp. Free. The report can be downloaded from <http://ksgnotes1.harvard.edu/BCSIA/Library.nsf/pubs/ESDPMemorial>.

Beyond the Beltway examines local planning and preparation for terrorist attacks, based on the premise that domestic preparedness requires action and emergency planning focused in hometowns, not solely Washington, D.C. It focuses on the most urgent local and state needs and offers a blueprint for addressing them. It contains recommendations for areas often overlooked by local responders, such as off-duty commitments of responders, involvement of mental health providers, working with public health officials, relying on neighborhood police officers, engaging hometown businesses, working with a regional focus, using the National Guard, educating members of the media, and ensuring an all-hazards preparedness approach.

Bioterrorism: A Guide for Community Leaders and First Responders. 2002. 34 pp. Free. Copies can be downloaded from the Washington National Guard web site: <http://55.93.1.202/-Documents/bio%20terrorism%20handbook.pdf>.

The School of Public Health at New York Medical College prepared this report for the National Memorial Institute for the Prevention of Terrorism, located in Oklahoma City, Oklahoma. The report discusses local plans and resources, data collection, coalition building, strategic planning, disaster-resistant communities, communication, frequently asked questions, and public health activities and lists numerous web sites for further information.

Emergency Response in the Wake of World Trade Center Attacks: The Remote Sensing Perspective, 2002. Charles K. Huyck and Beverley J. Adams. Report No. 02-SP05. 2002. \$25.00. 58 pp. To order a printed copy, contact the Multidisciplinary Center for Earthquake Engineering Research, Publications Department, State University of New York at Buffalo, Red Jacket Quadrangle, Box 610025, Buffalo, NY 14261-0025; (716) 645-3391; fax: (716) 645-3399; e-mail: mceer@acsu.buffalo.edu. The

report can also be downloaded from the MCEER web site: <http://mceer.buffalo.edu/publications/sp-pubs/WTCReports/02-SP05-screen.pdf>.

Climate Change

Risk, Reliability, Uncertainty, and Robustness of Water Resources Systems. Janos J. Bogardi and Zbigniew W. Kundzewicz, editors. 2002. 236 pp. \$110.00. Copies can be obtained from Cambridge University Press; 110 Midland Avenue, Port Chester, NY 10573-4930; (800) 872-7423; fax: (914) 937-4712; <http://us.cambridge.org>.

In this volume, 35 scientists review research on water resources systems, including aspects of extreme hydrological events such as floods and droughts, water quantity and quality, dams, reservoirs and hydraulic structures, sustainability, and climate change impacts. In addition to discussing essential challenges and research directions, authors examine the application of theoretical methods to practical problems in water resources.

Global Warming: Causes, Effects, and the Future. Mark Maslin. 2002. 72 pp. \$16.95. To obtain a copy, contact Voyageur Press, World Life Library Series, 123 North 2nd Street, Stillwater, MN 55082; (800) 888-9653; fax: (651) 430-2211; e-mail: books@voyageurpress.com; <http://www.voyageurpress.com/5875.htm>.

Global warming is caused by the increase in greenhouse gases, such as carbon dioxide, put into the atmosphere. Burning fossil fuel has already elevated the amount of atmospheric carbon dioxide to its highest level in 20 million years. The most recent report by the Intergovernmental Panel on Climate Change (IPCC) leaves us with little doubt that the scientific uncertainties of global warming are essentially resolved. This book explains what global warming is, presents the evidence that it is really happening, and examines the devastating effects global warming will have on human society, including drastic changes in health, agriculture, water resources, coastal regions, storms, forests, and wildlife.

Hurricanes

Killer 'Cane: The Deadly Hurricane of 1928. Robert Mykle. 2002. 320 pp. \$26.95. To order a copy, contact Cooper Square Press; (800) 462-6420 or (717) 794-3800; e-mail: custserv@nbnbooks.com; <http://www.coopersquarebooks.com>.

On the night of September 16, 1928, a hurricane swung up from Puerto Rico and collided unexpectedly with the Florida Everglades region. The powerful winds from the storm burst a dike and sent a 20-foot wall of water through three towns, killing over 2,000 people, a third of the area's population. The author describes how residents believed prior to the storm that they had tamed nature, how racial attitudes compounded the disaster, and how the difficult cleanup in the storm's aftermath caused severe psychological distress. *Killer 'Cane* describes one of the greatest natural disasters in the U.S. and places it in context with the financial collapse of the Florida real estate markets and the onset of the Great Depression.

Hurricane! Coping with Disaster. Robert Simpson, editor. 2003. 360 pp. Non-member, \$39.00; American Geophysical Union Member (AGU), \$27.30. To obtain a copy, contact AGU, 2000 Florida Avenue, N.W., Washington, DC 20009-1277; (202) 462-6900; fax: (202) 328-0566 <http://www.agu.org/cgi-bin/agubookstore>.

Hurricane research implies something more than science: it is also the key to saving lives and mitigating economic damage. From the Galveston catastrophe of 1900, where more than 8,000 people died, to the economic devastation wrought by Hurricane Andrew in 1992, scientists have striven to understand and track hurricanes while charting their societal effects. *Hurricane! Coping with Disaster* tells the dramatic history of that effort by leading meteorologists those

who brought hurricane science into the 21st century and who sustain it today. The book includes sections on understanding and tracking hurricanes, their societal and economic challenges, and the potential impact of science and technology in both the present and future.



“Hurricane Georges: A Cross-National Study Examining Preparedness, Resource Loss, and Psychological Distress in the U.S. Virgin Islands, Puerto Rico, Dominican Republic, and the United States,” David N. Sattler, Andrew J. Preston, Charles F. Kaiser, Vivian E. Olivera, Juan Valdez, and Shannon Schlueter. *Journal of Traumatic Stress*, Vol. 15, No. 5 (October 2002). Subscription/information available from Kluwer Academic/Plenum Publishers; contact Sharon Panulla, 233 Spring Street, New York, NY 10013-1578; (212) 620-8000; fax: (212) 463-0742; <http://www.kluweronline.com/issn/0894-9867/contents>.

This cross-national study examines preparation for and psychological functioning following Hurricane Georges in the U.S. Virgin Islands, Puerto Rico, Dominican Republic, and the United States. Four to five weeks after the storm made landfall, 697 college students completed a questionnaire assessing a variety of characteristics to determine symptoms associated with acute stress disorder. Location, resource loss, and social support accounted for a significant portion of study variance.

Avalanches and Winter Storms

Secrets of the Snow: Visual Clues to Avalanche and Ski Conditions. Edward R. LaChapelle. 2002. 128 pp. \$12.95. University of Washington Press. Copies may be ordered from a local or on-line bookseller.

White Death: The Blizzard of '77. 1999. 360 pp. \$22.00. To obtain a copy, contact Seventy Seven (77) Publishing, 147 Tennessee Avenue, Port Colborne, ON, Canada L3K 2R8; (905) 835-8051; fax: (905) 835-2928; e-mail: erossi@whitedeath.com; <http://www.whitedeath.com>.

On Friday, January 28, 1977, a monster snowstorm struck Canada and the United States. Southern portions of the province of Ontario and parts of western and northern New York state were besieged by the blizzard. Thousands of people were stranded. Most highways were impassable, train lines were blocked, and airports were closed. This volume contains the experiences of many Canadian and American survivors.

GAO Reports Available

Here are the latest items of interest to *Observer* readers from the U.S. General Accounting Office (GAO). All reports are free and can be requested from the GAO, P.O. Box 37050, Washington, DC 20013; (202) 512-6000; fax: (202) 512-6061; TDD (202) 512-2537; e-mail: info@www.gao.gov. The complete text of each report is also available on-line at <http://www.gao.gov>.

- **Highlights of a GAO Forum: Mergers and Transformation: Lessons Learned for a Department of Homeland Security and Other Federal Agencies.** GAO-03-293SP. 2002. 14 pp.
- **Hazard Mitigation: Proposed Changes to FEMA's Multihazard Mitigation Programs Present Challenges.** GAO-02-1035. 2002. 42 pp.
- **Catastrophe Insurance Risks: The Role of Risk-Linked Securities.** GAO-03-195T. 2002. 8 pp.
- **September 11: Small Business Assistance Provided in Lower Manhattan in Response to Terrorist Attacks.** GAO-03-88. 2002. 34 pp.
- **Catastrophe Insurance Risks: The Role of Risk-Linked Securities and Factors Affecting Their Use.** GAO-02-941. 2002. 60 pp.

Electronic Fare

Getting Started: Building Support for Mitigation Planning. State and Local Mitigation Planning How-To Guide. Document No. FEMA 386-1 CD. 2002. CD-ROM. Free.

Integrating Human-Caused Hazards Into Mitigation Planning. State and Local Mitigation Planning How-To Guide. Document No. FEMA 386-7 CD. 2002. CD-ROM. Free.

Both items can be requested from the Federal Emergency Management Agency, Publications Distribution Center, P.O. Box 2012, Jessup, MD 20794-2012; (800) 480-2520.

Getting Started is the first in the series of FEMA's State and Local Mitigation Planning How-To Guides (see the *Observer*, Vol. XXVI, No. 3, p. 4). It contains tips for assessing community support for natural hazard mitigation, building a planning team, and engaging the public. Future CDs (not yet available) will address such topics as using risk assessment results to draft a hazard mitigation plan, implementing and evaluating a plan, and using benefit/cost analysis throughout the mitigation process. Appendices include a glossary, a list of web sites and publications, a worksheet for creating a planning committee, and a sample questionnaire.

The second CD addresses the need to incorporate new threats into emergency management planning, particularly terrorism and technological disasters. In this volume, mitigation refers to specific measures that can be taken to reduce loss of life and property from human-caused hazards by modifying the built environment to reduce the potential consequences of these events. It presents guidance for local officials to organize resources and obtain public support, assess risks, develop a mitigation plan, and implement the plan and monitor progress. Appendices include a list of significant research publications on the topic, a list of web sites, and worksheets for completing each task.

THE HAZARDS CENTER

The NATURAL HAZARDS RESEARCH AND APPLICATIONS INFORMATION CENTER was founded to strengthen communication among researchers and the individuals and organizations concerned with mitigating natural disasters. The center is funded by the National Science Foundation, the Federal Emergency Management Agency, the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Department of Transportation, the U.S. Bureau of Reclamation, the U.S. Forest Service, the National Aeronautics and Space Administration, the Centers for Disease Control and Prevention, the Institute for Business and Home Safety, and the Public Entity Risk Institute. Please send information of potential interest to the center or the readers of this newsletter to the address below. The deadline for the next *Observer* is *January 17, 2003*.

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