

# NN/LM Earthquake Summit Report



**Friday, April 6, 2012**

University of California/  
San Francisco  
Library and Knowledge  
Management Center

Report by:  
Susan Yowell  
Dan Wilson

The NN/LM Earthquake Summit was designed to *develop* a greater understanding of earthquake risks, *promote* partnerships with emergency planners, *explore* potential roles for libraries and librarians before and after a disaster, and to *share* best practices.

## Speakers

**Dan Wilson**, Coordinator, NN/LM Emergency Preparedness & Response Initiative, University of Virginia, Charlottesville, VA

**Keith Knudsen**, Deputy Director, Earthquake Science Center, U.S. Geological Survey, Menlo Park, CA

**Monica Gowan**, PhD Candidate, University of Canterbury, Christchurch, New Zealand

**Siobhan Champ-Blackwell**, Aquilent, Inc., Disaster Information Management Research Center (DIMRC), National Library of Medicine, Bethesda, MD

**Randy Brawley**, Preparedness Planning Analyst, FEMA Region IX, Oakland, CA

**Roberto Lombardi**, Facilities Director, San Francisco Public Library System, San Francisco, CA



**Dan Wilson, Coordinator, NN/LM  
Emergency Preparedness &  
Response Initiative**  
([danwilson@virginia.edu](mailto:danwilson@virginia.edu)):  
*Accomplishments and Progress of  
the NN/LM Initiative*

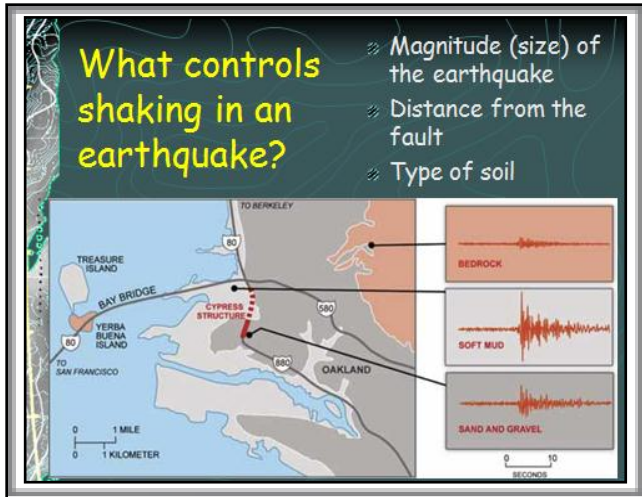
- Working with the NN/LM network of over 6,000 libraries to improve readiness and response capabilities based on NLM's directive from their 2006-2016 Long Range Plan
- Developing library and librarian partnerships with the Medical Reserve Corps and the American Red Cross; exploring partnerships with faith-based organizations and tribal groups
- Free tools available: NN/LM EP&R Toolkit <http://nmlm.gov/ep/>, one-page pocket response plan, 10-step approach to service continuity planning, and 15 elements of a library at a high state of readiness
- NN/LM has sponsored summit-type meetings around the United States patterned after the South Carolina model <http://uscm.med.sc.edu/disaster.html>

**Keith Knudsen, Deputy Director,  
Earthquake Science Center, U.S.  
Geological Survey**  
([kknudsen@usgs.gov](mailto:kknudsen@usgs.gov)): *Earthquake  
Risks for the Bay Area and the West  
Coast*



- Cause of earthquakes: the strain created by plate motion loads the faults, resulting in earthquakes. Strike-slip faults are those where the two sides slide past each other horizontally. Subduction zones, like those in Northern CA, OR, WA and Japan, occur where one plate is shoved beneath another
- Rupture area and depth determine the magnitude of the quake; geologic investigations and geo data are used to measure
- There is a subduction zone earthquake potential for Oregon and Washington as well
- Ground shaking from earthquakes causes most of the damage to structures, and falling structures are what kill people
- Don't run out of the building during an earthquake; **drop, cover, and hold on!**

- Geologists provide geophysical data to agencies to inform building design and codes in order to reduce the potential for quake-related damage to structures
- Intensity of ground shaking is really what causes damage. Earthquake magnitude is a less useful parameter. PGA or Peak Ground Acceleration is one measure of intensity



- Risk is not the same as hazard
- Other parts of the country are exposed to earthquake hazards besides the Pacific Rim areas, including the New Madrid fault area and the states of South Carolina, and Virginia (e.g. magnitude 5.8 quake centered in Mineral, VA, August 2011)
- Earthquake hazard in Alaska is really high but the overall risk to people and buildings is less because it is so sparsely populated
- Keep in mind that the same forces that produce earthquakes are the ones which make our country and others so beautiful, as they have created mountain ranges, lakes, bays, etc.
- The incidence of earthquakes in the central U.S. is increasing over time, which can be

attributed to “induced seismicity,” or human activity, e.g. the disposal of liquids in fracking, a process used in extracting natural gas and oil from the earth.

- There is a set of handbooks, *Putting Down Roots in Earthquake Country* <http://www.earthquakecountry.info/roots/index.php>, all of which are tailored to several quake-prone areas of the US
- On May 19-20, there will be an open house at the Menlo Park USGS office, to which everyone is invited



**Monica Gowan, PhD Candidate, University of Canterbury ([monica.gowan@gmail.com](mailto:monica.gowan@gmail.com)):**  
***Psychosocial Perspectives on Sudden Disaster Risk and Uncertainty: Recent Research and Field Notes on Resilience from “The Shaky Isles” of New Zealand***

- Sudden onset disasters can make big impressions; e.g. tornado in Minnesota led to creation of the Mayo Clinic
- Many types of sudden onset disasters—floods, volcanoes, terrorism
- The Pacific “Ring of Fire” exists because of geological forces
- New Zealand exists in a multi-hazard geologic setting
- An emerging trend: integration of preventive health paradigms and health-related quality-of-life

research designs into disaster resilience studies and the science of health care delivery

- this involves examining the roles of both the affective and cognitive domains to motivate behavior change
- Realization that “health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1948), and incorporates the ability to “change or cope with the environment” (World Health Organization, 1986)
- Highlighted libraries in New Zealand damaged by the earthquakes, and the resulting “virtual libraries and virtual reference tools for communication”
- Practical aspects included promoting awareness, improving response capabilities, coping with uncertainty, and applying creativity
- Disasters bring profound change and prolonged challenges!
- Recovery is a long process.
- Headline from *The Press* of New Zealand: *500 Days/9500 Quakes*—illustrated the ongoing fear and uncertainty, the long-term anxiety; there was some displacement, which was driven by work, fear, and stress, and significant dislocation due to workplace, housing, and infrastructure damage
- Examples of how the people of New Zealand coped: Kiwi sensibility/practicality, ingenuity (creative use of facilities, distribution of aid), spirit of undauntedness, “mateship”, friendship among the people, humor, a sense of “not losing the plot,” re-connecting with the big picture
- A key response and continuing endeavor throughout the disaster planning community is promoting partnerships, moving from role-based to resilience-based response for communities, responders, survivors; public-private partnerships for disaster preparedness; outreach
- Understand that people react in many different ways to a sudden onset disaster over a variety of timelines, and that, on a personal level, remember to “be very kind to yourself!”

**Merging Physical and Health Sciences through Behavioral Health**

values  
motivation  
attitudes  
stereotypes  
feelings  
affective domain

synthesis  
recollection  
comprehension  
evaluation  
analysis  
cognitive domain

**Research Goal:**  
Contribute to evidence base on utility of *preventive* health practices for building disaster resilience and community well-being



**Siobhan Champ-Blackwell, Aquilent, Inc., Disaster Information Management Research Center (DIMRC), National Library of Medicine ([siobhan.champ-blackwell@nih.gov](mailto:siobhan.champ-blackwell@nih.gov)): *Overview of DIMRC, Disaster Health Literature and Tools***

- Mission of DIMRC: to develop and provide access to health information resources and technology for disaster preparedness, response and recovery
- Web site hosts a wealth of free resources: <http://disasterinfo.nlm.nih.gov>
- Features both peer-reviewed scholarly literature and freely available online “grey” literature
- Emergency Access Initiative (EAI) from NLM

provides free access in emergencies to full-text biomedical journals and reference books for areas affected by a disaster

- The disaster topic pages provide access to resources organized by disaster types, specific events and tools. Make sure to review the topic page on apps and mobile web pages for mobile devices.

**WISER: Wireless Information System for Emergency Responders**

- Easy to use, intuitive tool to manage Hazmat/CBRN events
- Information tailored to the specific needs and roles of first responders, Hazmat, EMS, & first receivers
- Includes chemical, biological, and radiological agents
- Helps to identify unknown chemicals via signs/symptoms and properties
- Contains information for triaging patients during mass casualty events

[wiser.nlm.nih.gov](http://wiser.nlm.nih.gov)

United States National Library of Medicine National Institutes of Health

- WISER (Wireless Information System for Emergency Responders)—tailored to specific needs and roles of first responders—Hazmat, EMS and first receivers; features include substance identification support, containment and suppression advice, and medical treatment information
- REMM (Radiation Emergency Medical Management)—guidance about clinical diagnosis and treatment; can be downloaded in advance and used if the internet is not available. Contains radiation principles, procedures for patient management, decontamination and

assessment of internal contamination as well as countermeasures.

- CHEMM (Chemical Hazards Emergency Medical Management)—to plan for, respond to, recover from and mitigate the effects of incidents involving chemicals; tailored to first responders, first receivers; can be downloaded to computer, includes identification tools and medical management guidelines. Contains a Mental Modeling/Expert Modeling function to assist specific user groups

**Disaster Information Management Research Center (DIMRC)**  
<http://disasterinfo.nlm.nih.gov>

- Compilation of resources and tools:
  - Topic pages
  - Tools
  - Disaster literature
  - For/about librarians
  - Databases
  - Health organizations
  - Keeping informed

- Librarians can function as “disaster forensic specialists,” verifying information in a disaster, which is what medical librarians are experts in
- DIMRC also engages in outreach through collaboration projects
- Stay connected and involved through Twitter [https://twitter.com/#NLM\\_DIMRC](https://twitter.com/#NLM_DIMRC) and also through the DISASTR-OUTREACH-LIB listserv: [http://disasterinfo.nlm.nih.gov/dimrc/dimrc\\_listserv.html](http://disasterinfo.nlm.nih.gov/dimrc/dimrc_listserv.html)
- They provide training in disaster information resources and also host a

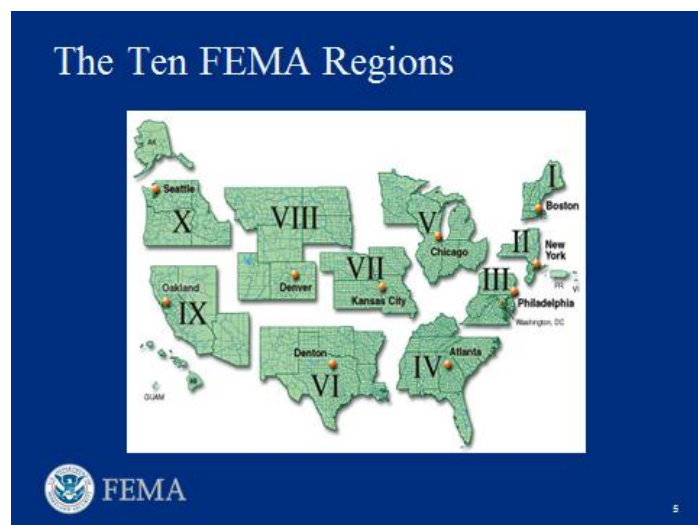
monthly conference call (information posted on the listserv)

- Disaster Information Management Specialization Program available through the Medical Library Association’s continuing education program, funded by NLM: <http://www.mlanet.org/education/dis/index.html>
- Noted that the Stafford Act recognized libraries as “essential community services,” eligible for federal assistance “for the provision of temporary facilities”



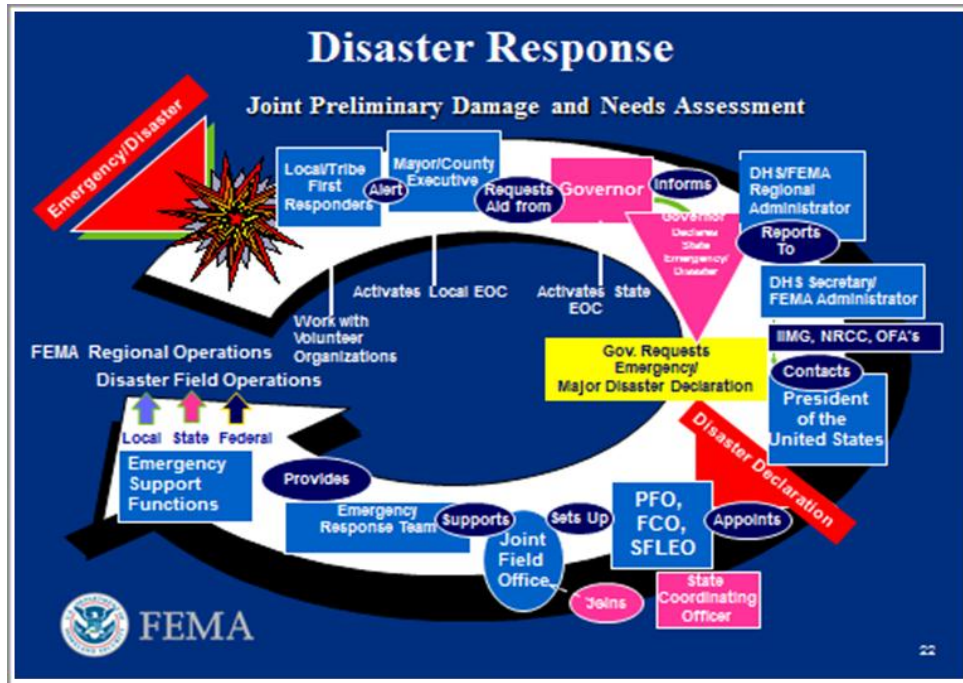
**Randy Brawley, Preparedness Analyst and Planning Officer, Federal Emergency Management Agency, Region IX, Oakland, CA**  
**([Randy.Brawley@fema.dhs.gov](mailto:Randy.Brawley@fema.dhs.gov)):**  
***What Do You Expect from FEMA?***

- Overview of FEMA’s mission: to support our citizens and first responders to ensure that as a nation we work together to build, sustain and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards
- How many first responders does FEMA have? NONE! They have a program called “Ready Responder,” which is designed to help first responders prepare for their jobs, but FEMA is not a “first response” agency.
- Randy gave an overview of FEMA regions and the territory included in Region IX, which includes California, Arizona, Nevada, all Native American tribes in these states, Hawaii, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands, and the Federated States of Micronesia



- FEMA uses the “Preparedness Cycle” to build, sustain and improve preparedness capabilities: Plan/Organize-Equip/Train/Exercise/Evaluate-Improve
- In preparing to respond to catastrophic events, FEMA strives to stabilize an event within 72 hours; their goal is to create a pathway for communities to use in response—citizens are their “force multipliers”
- Voluntary and non-profit agencies as well as universities all have a role to play and should be preparing to work alongside FEMA and first responders

- The National Incident Management System (NIMS) is the framework for managing resources, credentialing, and emergency management assistance (see also the NIMS Resource Center)
- The National Training Program includes 5 options: the Emergency Management Institute, the Center for Domestic Preparedness, 64 training partners offering 641 courses, the Masters & Executive Leadership program, and national continuity programs
- The National Exercise Program organizes national-level exercises, including support from regional, state, local and tribal groups
- Evaluation and improvement is carried out through the Comprehensive Assessment system and the Remedial Action Management program, including the Corrective Action program
- The National Response Framework guides how the nation conducts all-hazards incident response, and is scalable—it is always in effect, and can be partially or fully implemented



- Disaster response is organized from the local level through the county, state (governor’s office) and then to FEMA; the above slide shows the way the process works among different agencies
- Federal Emergency Teams: Disaster Medical Assistance Teams (DMAT), Disaster Mortuary Operational Response Teams (DMORT), DOL/OSHA’s Specialized Response Teams, Urban Search & Rescue Task Forces and Incident Support Teams, Federal Incident Management Teams, Domestic Emergency Support Team (DEST), and Domestic Animal and Wildlife Emergency Response Teams
- FEMA’s recovery programs include individual assistance, public assistance and their hazard mitigation grant program
- Individual assistance includes: housing assistance, referrals to the Small Business Administration for low-interest loans, other needs assistance (medical, dental, funeral, transportation, etc.), crisis counseling, disaster unemployment assistance, legal aid, and volunteer agency coordination
- Public assistance includes: assistance to state and local governments and certain private non-profit organizations for repair of infrastructure, debris removal, protective measures, etc. provided by the President’s Disaster Relief Fund; funded by 75% federal funds and 25% non-federal funds

**Angela Nak, Individual and Community Preparedness Officer, FEMA Region IX**  
 (angela.nak@associates.fema.gov) *Individual Preparedness*

- Spoke about the necessity for individuals to be prepared at home in order to be effective in response to emergencies
- Opportunities to learn more and be better prepared: sign up at Ready.gov for a “community” for emergency preparedness, Citizencorps.gov: <http://www.citizencorps.gov/>
- Advises making a plan first, then putting together a kit based on the contingencies identified
- Reminder to prepare for everyday emergencies as well as the catastrophic ones (snacks in the car, meds, etc.)

- FEMA works with the Red Cross through Angela's position to promote individual and community preparedness

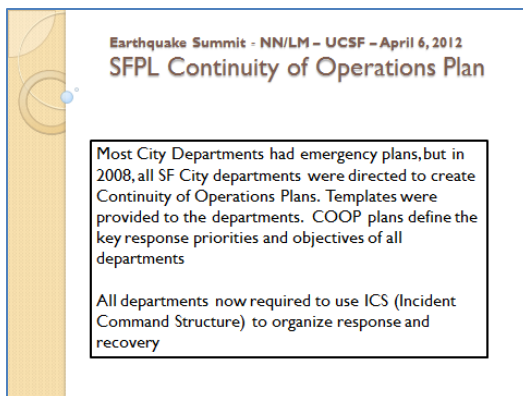
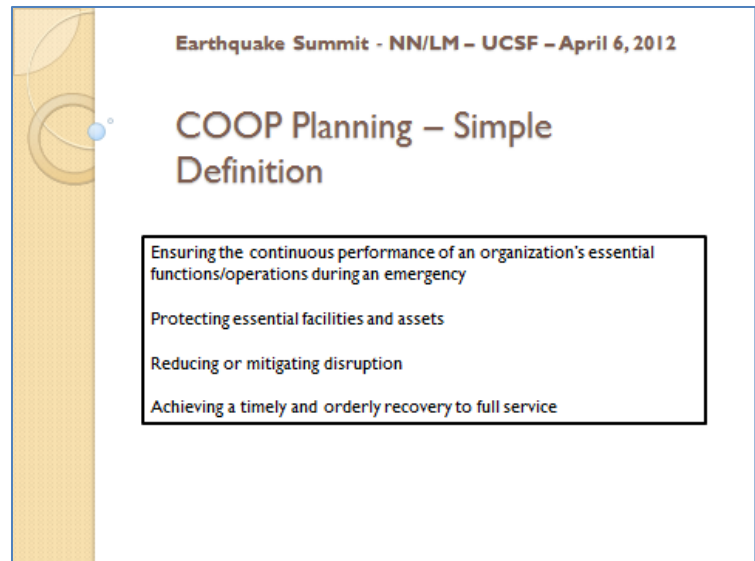


**Roberto Lombardi, Facilities Director, San Francisco Public Library System ([rlombardi@sfpl.org](mailto:rlombardi@sfpl.org)): *COOP Planning at the San Francisco Public Library System***

- All the SFPL library branches have community rooms, and all have been built to codes for earthquakes; it is now required that the budget include a percentage each year for this purpose, and they feel very responsible to their public for this
- The SFPL hosts over 7 million visitors per year, with over 11 million items circulated
- COOP features orders of succession and instructions for delegation of authority, and

defines key response priority for their work units

- It specifies the procedures for inspection and clearance of structures, and lists the order in which areas or buildings are to be re-opened
- Minimum staffing requirements for areas and buildings are specified, as well as procedures for employee communications to staff and to the public; they do not rely on cell phones, but use a remote land line phone
- MAAs (Mutual Aid Agreements) are in place
- They have plans also for assisting people with disabilities
- They ensure clarity on disaster service worker roles in the context of the larger organization, for example all SFPL librarians are also San Francisco Disaster Service workers



- Their COOP also specifies emergency procurement procedures
- All staff who may respond to an emergency and be part of the response team must be familiar with and be able to use the ICS (Incident Command System) for response teams
- The Pareto Principle (the “80/20” rule, or 80% of the effects come from 20% of the causes) is definitely in play with COOP planning; they do try to identify high-value strategies, such as creating a quick reference guide to response



# Takeaways

1. NN/LM is active in facilitating partnerships among libraries and community emergency responders. The toolkit for finding more information is at <http://nnlm.gov/ep>.
2. The most important actions to remember in responding to an earthquake are: DROP, COVER and HOLD ON!
3. The reason for not running outside of a building during an earthquake is that most injuries and fatalities associated with earthquakes are caused by parts of buildings falling off the outside.
4. The incidence of earthquakes is increasing due to human activity, or “induced seismicity.”
5. “Sudden onset” disasters have an enormous impact on the physical and mental/emotional health of survivors; a quick recovery should not be expected.
6. Disasters bring profound change and prolonged challenges.
7. The Disaster Information Management Research Center provides many free and downloadable tools to assist emergency responders and health care professionals. See their website at <http://disaster.nlm.nih.gov>.
8. The Federal Emergency Management Agency (FEMA) provides structure and training for emergency/disaster preparedness response on the national level and through regional, state and county agencies, as well as assistance to individuals. Resources are available from their site at <http://www.fema.gov>.
9. Public libraries prepare for disasters by developing Continuity of Operations Plans (COOPs). Their plans cover preparedness and response for staff, facilities, collections and patrons. Public libraries function as community centers, especially following a disaster, and must be prepared to maintain as many of their services and locations as possible.



## Acknowledgements

NN/LM wishes to thank the following for their contributions to the success of the Earthquake Summit:

- all of the speakers, for donating their time, expertise and insights: Keith Knudsen, Monica Gowan, Siobhan Champ-Blackwell, Randy Brawley, Angela Nak, and Roberto Lombardi
- Karen Butter, University Librarian and Assistant Vice Chancellor, for allowing NN/LM to reserve classroom space and use AV equipment in the UCSF Library
- NN/LM’s Southeastern Atlantic Region, for their financial support

**This project has been funded in whole or in part with Federal funds from the National Library of Medicine, National Institutes of Health, Department of Health and Human Services, under Contract No. HHS-N-276-2011-00004-C with the University of Maryland Baltimore.**