Communication, Education, and Outreach

Creating an Earthquake and Tsunami Resilient California
Experiential Learning and Career Advancement
2013 SURE Program

Jessica Zimmerman
Texas A&M
Mentor: Z. Peng (Georgia Tech)

Michelle Vanegas
Cal State Los Angeles
Mentors: K. Springer (SBCM) & R. de Groot (USC)

Paul Morgan
UC Santa Cruz
Mentor: Z. Peng (Georgia Tech)

Gavin Rinaldo
Georgia Tech
Mentor: Z. Peng (Georgia Tech)
Matthew Warbritton  
St Louis University  
Mentor: S. McGill, CSUSB

Edgar Chu  
University of Southern California  
Mentors: R. Welti & J. Taber (IRIS)

Walter Nelson  
Sewanee – The University of the South  
Mentors: S. McGill (CSUSB)

Daniel Halford  
Stanford University  
Mentors: S. Akciz (UCLA) & L. Grant-Ludwig (UCI)
2013 USEIT Interns

2013 Grand Challenge: Develop SCEC-VDO and GIS tools for exploring the new Uniform California Earthquake Rupture Forecast Forecast, Version 3.3, and use the UCERF3.3 to produce visualizations of the earthquake hazard in Southern California for public education during the 20th Anniversary of the 1994 Northridge earthquake.
California State University, Los Angeles  
California State University, Fullerton  
California State University, Northridge  
Chaffey College - 2YC (CA)  
Clemson University (SC)  
East Los Angeles College -2YC  
Georgia Institute of Technology  
Harvey Mudd College (CA)  
Lyndon State College (VT)  
Pasadena City College -2YC (CA)
2013 USEIT Documentary

http://www.youtube.com/watch?v=XSE3w2Xdrt4
Earthquake & Tsunami Education and Public Information Center (EPIcenter) Network

- **EPIcenters** include a variety of public venues such as museums, science centers, libraries, aquaria, park visitor centers, and universities

- Share a commitment to demonstrating and encouraging earthquake and tsunami preparedness

- Help coordinate activities in their region (including the ShakeOut), lead presentations or organize events in their communities, or in other ways demonstrate leadership in earthquake and tsunami education and risk reduction.

www.earthquakecountry.org/EPIcenter
Visit with Redwood Coast Tsunami Work Group

Recruited two new EPIcenters and Quake Catcher Network Sensor Installations at: HSU Natural History Museum, Arcata and HSU Founders Hall (Geological Sciences).

Visited Humboldt County Fair to see award-winning earthquake and tsunami room.
Project Updates

A Virtual Field Excursion to Pallett Creek – A new educational product of the San Bernardino County Museum’s Hall of Geological Wonders Discover Your Backyard Field Guide Series.

What is a Fault?

Earthquakes occur on faults. A fault is a break or zone of crushed rock separating blocks of the earth's crust. When an earthquake occurs, the sides move in opposite directions along the break. Faults can be vertical, horizontal, or diagonal at an angle. Faults can extend deep into the earth and may not extend up to the earth’s surface.

We know faults exist because we see natural features that could not have formed any other way. Rocks formed on opposite sides of a fault can be miles apart at the surface. But if you drill down to the same spot now are miles apart, there can also be those features like fault scarps or surface ruptures which shows movement has recently occurred along a fault plane.

Directions to Pallett Creek

Pallett Creek is in Victorville, California. From Interstate 38 turn south onto 138 E at S. M. Make a right turn at the stop sign onto Pallett Creek Road. Proceed 2.3 miles and park at the turnoff on the left side of the road near main river. A short path heads towards Pallett Creek. Your left as you cross several trees. Rat and you will come upon the Pallet Creek sign and the bridge.

Parking GPS: N 34° 27' 23.8" W 117° 53' 14.1"

Driveway GPS: N 66° 37' 20.8" W 117° 53' 14.6"

Please Continue Your Journey

You can learn more about the San Andreas Fault at the San Bernardino County Museum, located in Redlands, California. Just off Interstate 10 at the California Street offram.

San Bernardino County Museum

2008 Orange Tree Lane, Redlands, CA 92374 (909) 873-3461

Visit the museum’s website for online virtual tours and links to related information.

Native California Project – Engagement with Native American cultural centers & QCN Sensor Installations
Quake Catcher Network (QCN)

• Largest, low-cost strong motion seismic network utilizes sensors in and attached to Internet-connected computers.

• Collaborative initiative of Stanford Univ. & USGS

• Provides educational software that uses the sensors to teach about earthquakes and their hazards

• QCN and the EPIcenter Network are initiating a campaign to bring sensors and educational programming to free-choice learning environments. Partners include SCEC, NEES, IRIS, USGS, CA Geological Survey, UNAVCO, and EarthScope

http://qcn.stanford.edu
QCN-EPICenter Network

QCN and Education and Public Information Centers (EPICenters)

The Quake-Catcher Network’s (QCN) collaboration with the Earthquake Country Alliance (ECA) Earthquake and Public Information Centers (EPICenters) is a network within a network that supports the missions of the QCN, the ECA-EPICenter network, as well as its collaborating partners (e.g., USGS, SCEC, NEES, IRIS, NSF, EarthScope, and UNAVCO). This joint network will assist participating free-choice learning institutions in engaging broad and diverse audiences in QCN activities, by providing program materials and products for implementation and use. Overall, through access to these cutting-edge technologies, participating institutions will increase public awareness of earthquake science, participation in earthquake data collection, and earthquake preparedness of their communities throughout the United States.

EPICenter Network Website

The EPICenter community shares a commitment to demonstrate and encourage earthquake and tsunami preparedness. They coordinate the Earthquake Country Alliance (ECA) activities in their county or region (e.g., ShakeOut), lead presentations or organize events in their communities, or in other ways demonstrate leadership in earthquake education and risk reduction. EPICenters are found in a variety of free-choice learning venues, such as museums, science centers, libraries, and universities.

QCN-EPICenter Kit

The QCN-EPICenter Kit aims to ensure that we are helping institutions meet their education and research goals, appeal and encourage partners (e.g., NEES, IRIS, CGS, and USGS) to help promote QCN by incorporating their ideas, serve as a medium to promote the QCN and EPICenter networks, and foster education in earthquake science, while also promoting research in the field. In addition, you can find how YOUR participation is crucial to the success of the QCN-EPICenter network. Details on how to install and how to perform demonstrations with the sensor are included.

qcn.stanford.edu/learning-center/qcn-epicenter-network
Join Our Team!

Members of QCN-EPIcenter Network

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Sunnylands Center &amp; Gardens - Rancho Mirage</td>
</tr>
<tr>
<td>2) The Living Desert</td>
</tr>
<tr>
<td>3) Natural History Museum of LA County</td>
</tr>
<tr>
<td>4) Rancho Mirage Public Library - Emergency Information Center</td>
</tr>
<tr>
<td>5) Discovery Science Center - Santa Ana</td>
</tr>
<tr>
<td>6) Palm Springs Aerial Tramway Mountain Station</td>
</tr>
<tr>
<td>7) Founders Hall - Humboldt State University EPIcenter</td>
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<tr>
<td>8) Friends of the Desert Mountains</td>
</tr>
<tr>
<td>9) Palm Springs Aerial Tramway-Valley Station</td>
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<td>10) Hatfield Marine Science Center Visitor Center - Newport, OR</td>
</tr>
<tr>
<td>11) Southern California Earthquake Center - Education Office [Founder]</td>
</tr>
<tr>
<td>12) HSU Natural History Museum, Arcata</td>
</tr>
<tr>
<td>13) Temescal HS - Lake Elsinore (SBCM Hub)</td>
</tr>
<tr>
<td>14) Carlo DeVito Jr</td>
</tr>
<tr>
<td>15) California State University Los Angeles - EPIcenter</td>
</tr>
<tr>
<td>17) Marquez Charter School - SBCM Hub</td>
</tr>
</tbody>
</table>

Join over 25 schools, from across CA and even as far away as NZ!
In April 2013, the BBC came to Marquez Charter School (Pacific Palisades) to see QCN in action!
M 4.7 Anza Earthquake 3/11/13

Recorded at Rancho Mirage Public Library
NASA Insight

Interior Exploration using Seismic Investigations, Geodesy and Heat Transport
InSight 2013 Activities

2013 Vital Signs of the Planet

Educator Fellows:

• Were immersed into the science of Caltech, JPL, QCN, SCEC
• Conducted 5 days of survey-mode GPS research
• Developed 4 Research Lessons and kits using Lesson Study
• Will test teach the Research Lessons twice
• Will facilitate the installation of a QCN seismometer at their school site
• Participated in Teacher Workshop at SBCM on 8 September
• Will participate in the 2013 Great California ShakeOut Drill
ECA is a public-private partnership of people, organizations, and regional alliances, founded in 2003 in Southern California and expanded statewide in 2009.

Each regional alliance conducts its own activities and collaborates with the others.

Statewide committees determine long-range plans, sector-based needs, and develop resources.

Join today:  www.earthquakecountry.org/alliance
The Great California ShakeOut
Register today at www.ShakeOut.org

California Tsunami Awareness week
Encourage participation

Development of consistent, statewide messaging and resources via sector-based committees
www.earthquakecountry.org

ECA EPIcenters
60+ museums, parks, libraries, etc. that have ShakeOut events and other programs

Speakers Bureau
Presentations & booths at fairs,

Coordination among ECA Associates
Preparedness Resources

- www.earthquakecountry.org
- **Putting Down Roots in Earthquake Country**
  - Includes “Seven Steps to Earthquake Safety”
  - Online to read, download, or order free printed copies
  - So. Cal. English & Spanish
  - Bay Area (also multi-language special versions)
- **North Coast: Living on Shaky Ground** (similar content)
- **7 Steps to an Earthquake Resilient Business**
- www.Terremotos.org
Staying Safe Where the Earth Shakes

- Project of CEA & CalEMA with input from ECA subject matter experts
- Based around updated “Seven Steps to Earthquake Safety”
- Simple, low-literacy, multi-language booklet in the family of “Putting Down Roots in Earthquake Country” and “Living on Shaky Ground” materials
- Different versions for ShakeOut Regions and for Designated Media Areas (DMAs)
Before the next big earthquake we recommend these four steps that will make you, your family, or your workplace better prepared to survive and recover quickly:

**Step 1:** 
*Secure your space* by identifying hazards and securing moveable items.

**Step 2:** 
*Plan to be safe* by creating a disaster plan and deciding how you will communicate in an emergency.

**Step 3:** 
*Organize disaster supplies* in convenient locations.

**Step 4:** 
*Minimize financial hardship* by organizing important documents, strengthening your property, and considering insurance.

During the next big earthquake, and immediately after, is when your level of preparedness will make a difference in how you and others survive and can respond to emergencies:

**Step 5:** 
*Drop, Cover, and Hold On* when the earth shakes.

**Step 6:** 
*Improve safety* after earthquakes by evacuating if necessary, helping the injured, and preventing further injuries or damage.

After the immediate threat of the earthquake has passed, your level of preparedness will determine your quality of life in the weeks and months that follow:

**Step 7:** 
*Reconnect and Restore*  
Restore daily life by reconnecting with others, repairing damage, and rebuilding community.
WELCOME TO EARTHQUAKE COUNTRY!

The Earthquake Country Alliance (ECA) is a public-private partnership of people, organizations, and regional alliances that work together to improve preparedness, mitigation and resiliency.

ECA provides information and resources to help everyone who lives, works, or travels in earthquake country get prepared to survive and recover quickly.

Our website is transitioning to this new design, so some content may not currently be available.
Earthquake Preparedness Guide for People with Disabilities and Other Access or Functional Needs

Organized according to Seven Steps to Earthquake Safety

Think about What May Happen During and after an Earthquake or other Disaster:
Consider your daily activities; think about how a disaster will impact your life. Take into consideration what you do independently and where you may need assistance. Keep in mind that your regular sources of assistance may not be available after a disaster. Plan now for how you will meet your needs.

- What if power, gas, and phone lines are not working?
- What if roads and sidewalks are impassable or your means of transportation is unavailable?
- How will you maintain supplies of water, food, medications, and other critical needs?
  - Right now: Make a list of equipment and medication you may need if you had to leave your home. Store extras, labeled with your name and contact information, in your disaster supplies kit. (See Step 3, below)

This guide follows the Seven Steps to Earthquake Safety, featured in the Putting Down Roots in Earthquake Country series of publications at www.earthquakecountry.org/roots. The content has been specially adapted for people with disabilities and other access and functional needs.

STEP 1 – Secure Your Space, by identifying hazards and securing moveable items:
When you enter a room, look for safe places to “Drop, Cover, and Hold On” (see Step 5).

- Safe spaces are places where heavy or falling objects and breaking glass won’t injure you, such as under tables or desks, along inside walls, etc.
- The more limitations you have, the more important it is to create safe spaces for yourself – especially if you cannot Drop, Cover, and Hold On under a desk, table, etc.
- Create safe spaces by bolting heavy furniture to wall studs, moving heavy items to low shelves, securing hanging art to walls with closed hooks, or taking other measures found at http://www.daretoreprepare.org/secure_your_stuff.html
- Secure essential equipment such as oxygen tanks or other life support devices, so they won’t fall and be damaged or cause injury.
- When you are in public places, be aware of your surroundings and identify your safe spaces.
Mitigation Messaging/Activities

• Buildings at Risk Summit
  – 2011 & 2012: So Cal
  – 2013: So Cal and Bay Area

• Secure Your Space
  – Expanded content at new earthquakecountry.org site
  – Additional ShakeOut guidance
  – Featured in every major CA ShakeOut media event (Big Shaker earthquake simulator)

• Beat the Quake
  – Play at dropcoverholdon.org
Tsunami Messaging

• Suggestions for how to organize a tsunami drill with ShakeOut, developed with California Geological Survey

ShakeOut plus Tsunami Evacuation-WalkOut Drill

Add a tsunami evacuation drill to your ShakeOut Drill

First, find out if you live, work or play in a tsunami hazard area:

- Use the links listed below to find out where tsunami hazard zones occur.
  
  CGS website: http://www.tsunami.ca.gov
  CalEMA MyHazards: http://myhazards.calema.ca.gov/

- Information from either of these websites can help you identify the tsunami hazard area in your community and help you prepare. If you are located just outside of a tsunami hazard area, you might consider working with your community to see what kind of assistance you might be able to provide for potential evacuees.

Add a Tsunami Evacuation Drill to your planned ShakeOut Drill

- For ShakeOut, it is important to register in advance for the event, and on the day of ShakeOut participate in the Drop-Cover-Hold On drill. Prior to ShakeOut, use the links above to determine if you are in a tsunami hazard area. If you are, you can add an organized tsunami evacuation drill that will follow the Drop-Cover-Hold On.

- To prepare for the drill, identify if there is an evacuation plan in place for your site. Contact your building manager, school district, and/or city or county offices of emergency services to find out the recommended procedures. Additionally, the maps at www.tsunami.ca.gov and http://myhazards.calema.ca.gov can lead you to links to local, regional, state, and national information sources.

- If there is no tsunami evacuation plan in place for your building, learn what the recommended tsunami evacuation routes are in your city, county and region. Some cities and counties have this information available online.

- Identify an area outside the tsunami hazard zone where you can safely relocate (school, church, parking lot).

- Walk your evacuation route prior to the drill. Make sure there are no potential hazards that may prevent you from using this evacuation route safely.
Northridge 20th Anniversary

- Virtual Exhibit
  - “Northridge Near You” set of SCEC-VDO animations of faults, ShakeMaps, and loss estimates for 25 potential earthquakes (View here at the meeting; use in your classes or as scenarios for your institution’s ShakeOut drill)
  - Interviews of people who experienced the earthquake, linked to the Northridge ShakeMap
  - Timeline of science, engineering, and policy developments

- Media Workshop in October

- Policy Conference
  - January 16-17
  - Joint effort with PEER, CEA, CalOES, EERI, FLASH, FEMA, SCEC, SEAOSC, USGS, RenassianceRe, and many others
Northridge 20th Anniversary

Northridge: 20 Years Later – A Educational Web Portal Created for the 20th Anniversary of the Northridge Earthquake and Beyond

SPRINGER, Kathleen, Division of Geological Sciences, San Bernardino County Museum, 2024 Orange Tree Lane, Redlands, CA 92374, kspringer@sbcsm.sbcounty.gov; BURKETT, Erin, USGS, Pasadena eburkett@usgs.gov; GRAVES, Robert W., USGS, Pasadena ngraves@usgs.gov; HUDNUT, Kenneth, USGS, Pasadena, CA, khudnut@usgs.gov; JONES, Lucille, USGS, Pasadena, CA, ljones@usgs.gov; SCEC 2013 Interns Southern California Earthquake Center, University of Southern California, 3651 Trousdale Parkway, Ste. 169, Los Angeles, CA 90089, de GROOT, Robert, Southern California Earthquake Center, University of Southern California, 3651 Trousdale Parkway, Ste. 169, Los Angeles, CA 90089 dmde groot@usc.edu; BENTHINN, Mark, Southern California Earthquake Center, benthinn@usc.edu, University of Southern California, 3651 Trousdale Parkway, Ste. 169, Los Angeles, CA 90089 ROMANO, Mark, Blue Tavern Productions, moromano89@gmail.com; SCOTT, Eric, Division of Geological Sciences, San Bernardino County Museum, 2024 Orange Tree Lane, Redlands, CA 92374 escott@sbcsm.sbcounty.gov.

On January 17, 1994, a M6.7 earthquake jolted Northridge, California, resulting in the worst natural disaster to ever befall California as well as the costliest earthquake in U.S. history. For the 10 million people who experienced this quake, it remains powerfully in our collective consciousness. But as we commemorate this event, how best do we communicate to the generation who missed this temblor the ongoing risks offered by a southern California nile with faults and stored earthquake potential?

Fast forward to January 17, 2014 and beyond: an educational opportunity in the making. We have created a teachable moment for the public – to learn and reflect, to share and to act. Northridge: 20 Years Later is a two-decade educational timeline, a retrospective, and a vehicle for future learning. The web portal and virtual exhibit team with content, graphics and video recounting the events of January 1994, revealing advances in earthquake science and mitigation since that quake, and relaying the real experiences and lessons learned over the past two decades. The website weaves the science of the Northridge earthquake with risk communication and preparedness messaging, empowering the public so that they can make themselves safer. Video interview accounts of those who experienced the earthquake are tied to the Northridge ShakeMap and the Community Internet Interactive Map. Utilizing social media, this site seeks to organically turn into a conversation, allowing the public to share their own experiences. Science and earthquake hazards are communicated to the media and the public via engaging visualizations courtesy of SCEC and their IHEP Ion program. With the premise of “What if a Northridge-sized earthquake happened near you?” the intern created SECC – VEER (3.0 moves), incorporating GIS tools for exploring the new U.S. CFR V1.3 data, producing visualizations of earthquake hazard in locations throughout southern California. The USGS-produced ShakeMaps of the same area create powerful complementary graphic imagery. This content segues into the development and implementation of earthquake early warning and the ShakeAlert system. Finally, the website content will be woven into the San Bernardino County Museum’s Hall of Geological Wonders, whose educational focus makes topical connections to our region; this new science-based educational product will provide tangible links between the exhibits and the natural world.
Value-Based Messaging Commercial

- Created as part of California Earthquake Authority Media Campaign
- Features a fire fighter, police officer, teacher, and businesswoman all encouraging participation in the ShakeOut
- Great example of use of the messaging research results
ShakeOut History

• Began in Southern California in 2008
  – Based on comprehensive “ShakeOut Scenario” created by USGS and many partners for a 7.8 magnitude earthquake
  – Became the scenario for a state-led emergency management exercise
  – ShakeOut drill created by Earthquake Country Alliance partners to involve families, schools, and organizations
  – 5.4 million Southern California participants

• More participants and additional states/countries each year
  – 2009: 6.9 million statewide in California
  – 2010: 8 million in California, Nevada, and Guam
  – 2011: 12.1 million, 15 states/territories & British Columbia
  – 2012: 19.4 million, 26 states/territories, 5 countries with official drills
  – 2013: 20+ million, 43 states/territories, expansion across Japan
Nationwide and International

Oct 17 (41)
April 17 (1)
International 10/17 (2)
(Others Various Dates)

Multi-state regions:
- Central US ShakeOut
- Southeast US ShakeOut
- Northeast US ShakeOut
- Rocky Mountain ShakeOut
www.shakeout.org/southeast
Buildings at Risk Summit

<table>
<thead>
<tr>
<th>Category</th>
<th>Participants</th>
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<tbody>
<tr>
<td><strong>Total:</strong></td>
<td>7,751,531</td>
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<tr>
<td>Individuals/Families</td>
<td>5,332</td>
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<tr>
<td>Childcare and Pre-Schools</td>
<td>13,297</td>
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<tr>
<td>K-12 Schools and Districts</td>
<td>5,329,571</td>
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<td>Colleges and Universities</td>
<td>1,177,929</td>
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<td>Local Government</td>
<td>267,025</td>
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<td>State Government</td>
<td>92,983</td>
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<tr>
<td>Federal Government (Including Military)</td>
<td>125,943</td>
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<tr>
<td>Tribes/Rancherias</td>
<td>1,503</td>
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<td>Businesses</td>
<td>406,386</td>
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<tr>
<td>Healthcare</td>
<td>111,055</td>
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<tr>
<td>Senior Facilities/Communities</td>
<td>7,945</td>
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<td>Disability/AFN Organizations</td>
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<td>Non-Profit Organizations</td>
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<td>Neighborhood Groups</td>
<td>15,034</td>
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<td>Preparedness Organizations</td>
<td>2,151</td>
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<td>Faith-based Organizations</td>
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<td>Museums, Libraries, Parks, etc.</td>
<td>5,235</td>
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<td>Volunteer/Service Clubs</td>
<td>375</td>
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<td>Youth Organizations</td>
<td>366</td>
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<tr>
<td>Animal Shelter/Service Providers</td>
<td>140</td>
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<tr>
<td>Agriculture/Livestock</td>
<td>10</td>
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<tr>
<td>Volunteer Radio Groups</td>
<td>617</td>
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<tr>
<td>Science/Engineering Organizations</td>
<td>741</td>
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<tr>
<td>Media Organizations</td>
<td>11,456</td>
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<tr>
<td>Other</td>
<td>277</td>
</tr>
</tbody>
</table>

**LOCAL GOVERNMENT AGENCIES IN CALIFORNIA**

375,578 participants are registered for Great ShakeOut Earthquake Drills worldwide in 2013, by 982 local government agencies.

249,627 of these participants are registered for the 2013 California ShakeOut, by 172 local government agencies.

The local government agencies on the list below agreed to be listed when they registered. (Not listed)

Names are linked if a website was provided during registration.

**LIST**

**Alameda**
- City of Oakland, Keep Oakland Clean and Beautiful Division, Oakland
- City of Oakland: Public Works Agency, Oakland
- County of Alameda
  - Probation Department, Oakland
  - Hayward Area Recreation and Park District, Hayward

**Colusa**
- Colusa County Sheriff’s Office, Office of Emergency Services, Colusa

**Contra Costa**
- City of Lafayette, Lafayette
- Contra Costa County Vocational Services, Concord
- County of Contra Costa
  - Office of the Sheriff, Emergency Services Division, Martinez
  - Moraga-Orinda Fire District, Moraga

**Del Norte**
- Big Rock Community Services District, Crescent City
- County of Del Norte
  - Department of Health and Human Services, Mental Health Branch, Crescent City
  - Del Norte Local Transportation Commission, Crescent City

**Humboldt**
- County of Humboldt
  - County Administrative Office Team, County Administrative Office, Eureka
  - Department of Health and Human Services Social Services Branch, OR Collections Unit, Eureka
  - Humboldt County Public Works, Roads Division, Eureka
  - Humboldt County Public Works Department, Public Works, Eureka
  - Humboldt County Risk Management, Risk Management, Eureka

**Imperial**
- County of Imperial
  - Imperial County Public Health Department, Imperial County EMS Agency, El Centro
  - Imperial County Medical Reserve Corps, El Centro
  - Imperial County Office of Emergency Services, El Centro
ShakeOut is Social!

ShakeOut milestones, preparedness tips, and other info, with community interaction

Facebook.com/greatshakeout

Twitter.com/shakeout
CA ShakeOut Evaluation Efforts

- **2008 (funded)**
  - *Comprehensive Program Evaluation*: Davoudi Consulting, Inc., 120 participant stories
  - *Education Sector*: RiskRed/Western Washington University, online survey, $N=378$ K-12 schools, $N=30$ school districts
  - *Media Focus*: The Normal Lear Center, USC Annenberg, online survey of households, $N=3,068$

- **2009 – 2012 (in kind)**
  - SCEC Research & Evaluation Committee, online survey, $N=10,617$ all participation categories
# 2012 CA Household Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>%</th>
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<tbody>
<tr>
<td>EQ insurance</td>
<td>5/29</td>
</tr>
<tr>
<td>Assess building EQ risks</td>
<td>7/18</td>
</tr>
<tr>
<td>Strengthen home for EQ</td>
<td>8/28</td>
</tr>
<tr>
<td>First aid training</td>
<td>12/57</td>
</tr>
<tr>
<td>Secure furniture to wall</td>
<td>13/37</td>
</tr>
<tr>
<td>Fire extinguishers</td>
<td>13/55</td>
</tr>
<tr>
<td>Copy documents</td>
<td>14/48</td>
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<tr>
<td>First aid kit</td>
<td>16/77</td>
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<tr>
<td>Portable radio/batteries</td>
<td>18/61</td>
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<tr>
<td>Evacuation bag</td>
<td>18/42</td>
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<tr>
<td>Learn shut off main gas valve</td>
<td>20/60</td>
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<tr>
<td>3 days of water</td>
<td>22/65</td>
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<tr>
<td>3 days of food</td>
<td>22/68</td>
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<tr>
<td>Home EQ drills</td>
<td>22/19</td>
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<tr>
<td>Out-of-area contact</td>
<td>24/55</td>
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<td>Shoes/flashlights by bed</td>
<td>25/55</td>
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<tr>
<td>HH disaster plan</td>
<td>27/48</td>
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<tr>
<td>ID safe spots in every room</td>
<td>30/40</td>
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<tr>
<td>Learn what to do DURING EQ</td>
<td>39/53</td>
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### 2012 CA Organization Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings meet current safety standards</td>
<td>71</td>
</tr>
<tr>
<td>Hazardous materials limited/ eliminated/secured</td>
<td>63</td>
</tr>
<tr>
<td>Have alternate site/continuity plans</td>
<td>59</td>
</tr>
<tr>
<td>Secure tall/heavy funishing/equipment</td>
<td>61</td>
</tr>
<tr>
<td>Encourage staff to prepare for disasters at home</td>
<td>53</td>
</tr>
<tr>
<td>Train staff in EQ preparedness</td>
<td>51</td>
</tr>
</tbody>
</table>

- **Done because of ShakeOut**
- **Done (not because of ShakeOut)**
2012 CA School Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous materials limited/eliminated/secured</td>
<td>9/71</td>
</tr>
<tr>
<td>Have alternate site/continuity plans</td>
<td>10/35</td>
</tr>
<tr>
<td>Buildings meet current safety standards</td>
<td>10/80</td>
</tr>
<tr>
<td>Secure tall/heavy furnishing/equipment</td>
<td>14/70</td>
</tr>
<tr>
<td>Encourage staff to prepare for disasters at home</td>
<td>32/38</td>
</tr>
<tr>
<td>Train staff in EQ preparedness</td>
<td>37/55</td>
</tr>
</tbody>
</table>

- **Done** because of ShakeOut
- **Done (not because of ShakeOut)**
<table>
<thead>
<tr>
<th>Outcome</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous materials limited/ eliminated/secured</td>
<td>67</td>
</tr>
<tr>
<td>Buildings meet current safety standards</td>
<td>64</td>
</tr>
<tr>
<td>Secure tall/heavy funishing/equipment</td>
<td>54</td>
</tr>
<tr>
<td>Have alternate site/continuity plans</td>
<td>33</td>
</tr>
<tr>
<td>Train staff in EQ preparedness</td>
<td>33</td>
</tr>
<tr>
<td>Encourage staff to prepare for disasters at home</td>
<td>41</td>
</tr>
</tbody>
</table>

- Encourage staff to prepare for disasters at home. 41% have done this because of ShakeOut.
- Train staff in EQ preparedness. 33% have done this (not because of ShakeOut).
- Have alternate site/continuity plans. 33% have done this (not because of ShakeOut).
- Secure tall/heavy funishing/equipment. 54% have done this (not because of ShakeOut).
- Buildings meet current safety standards. 64% have done this (not because of ShakeOut).
- Hazardous materials limited/eliminated/secured. 67% have done this (not because of ShakeOut).
Publication Plan

• Case Study (in press)
  – Book chapter on risk communication featuring the ShakeOut as a case study

• Process Evaluation (Fall 2013)
  – Descriptive paper on ShakeOut implementation and participation history

• Outcome Evaluation Papers (Spring 2014)
  – Households and Organizations
  – Schools, School Districts, Universities
  – We are collecting confidential rather than anonymous data now (since 2012) and it is now possible to track people’s responses to the ShakeOut over time.
How You Can Participate

• Register to participate at Shakeout.Org

• Encourage your institution to participate (or increase participation), and perhaps organize a central event

• Invite your child’s school, local businesses, etc. to register

• Needed: Additional scenarios for all ShakeOut regions, including simulations

• Distribute flyers, post signage, or promote via social media

• Add a link to ShakeOut.org on your website(s)