Communication, Education, and Outreach

SCEC
AN NSF+USGS CENTER

Mark Benthien
Associate Director

SCEC CEO Planning Committee

Tim Sellnow

Chair & Advisory Council Rep.
Focus Area: Public Education and Preparedness
University of Central Florida

Jacobo Bielak

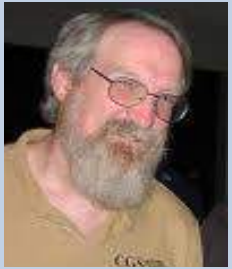
Focus Area: Implementation Interface
Carnegie Mellon University

Danielle Sumy

Focus Area: K-14 Earthquake Education Initiative
IRIS

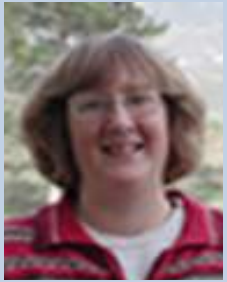
Kate Long

Vice Chair & Advisory Council Rep.
Focus Area: Public Education and Preparedness
Calif. Office of Emergency Services



Chris Wills

SCEC Board Rep.
Focus Area: Implementation Interface
California Geological Survey



Sally McGill

Focus Area: Experiential Learning and Career Advancement
CSU San Bernardino

SCEC CEO Staff & Consultants

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Associate Director for CEO

Sharon Sandow
Asst. Director Strategic Partnerships

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Webmaster / Digital Products Manager

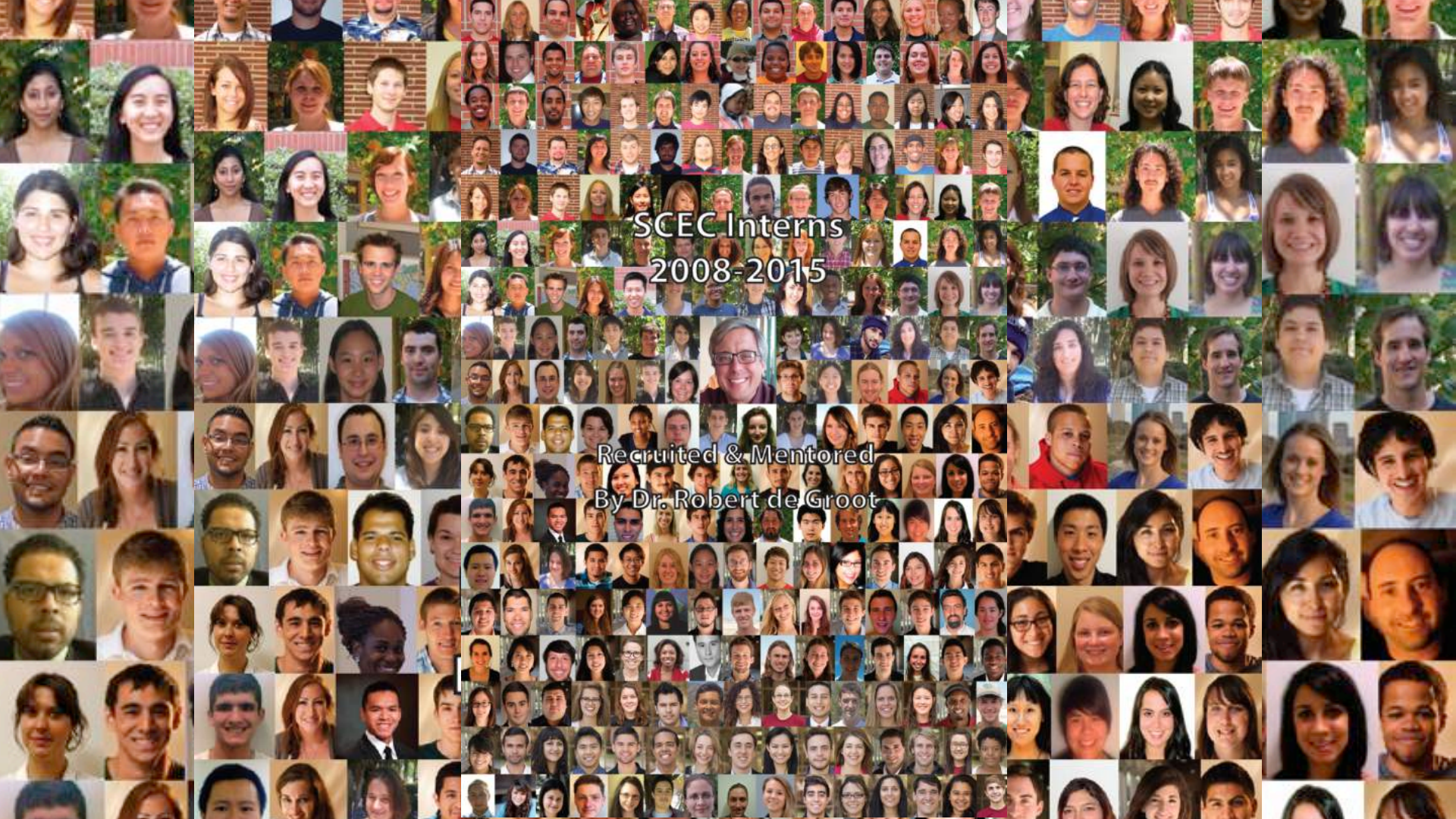
Jason Ballmann
Communications Specialist

Ines Pearce
ECA Sector-Based Committees Liaison

Michele Wood
SCEC/ECA Evaluation

April Kelcy
ECA Speakers Bureau Chair

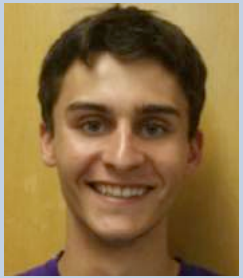
Jozi Pearson
UseIT Supervisor


SCEC Interns
2008-2015
Recruited & Mentored
By Dr. Robert de Groot

2016 SURE Interns

Matthew Peterson
Geological Sciences
University of Idaho
Mentor: Sally McGill, CSU San Bernardino

Naomi Jahan
Geosciences
Smith College
Mentor: Sally McGill, CSU San Bernardino



Liam Shaughnessy
Physics/Geology
Macalaster College
Mentor: Danielle Sumy, IRIS

Summer Undergraduate Research Experience

273 internships since 1994

New SCEC/SURE Supplements

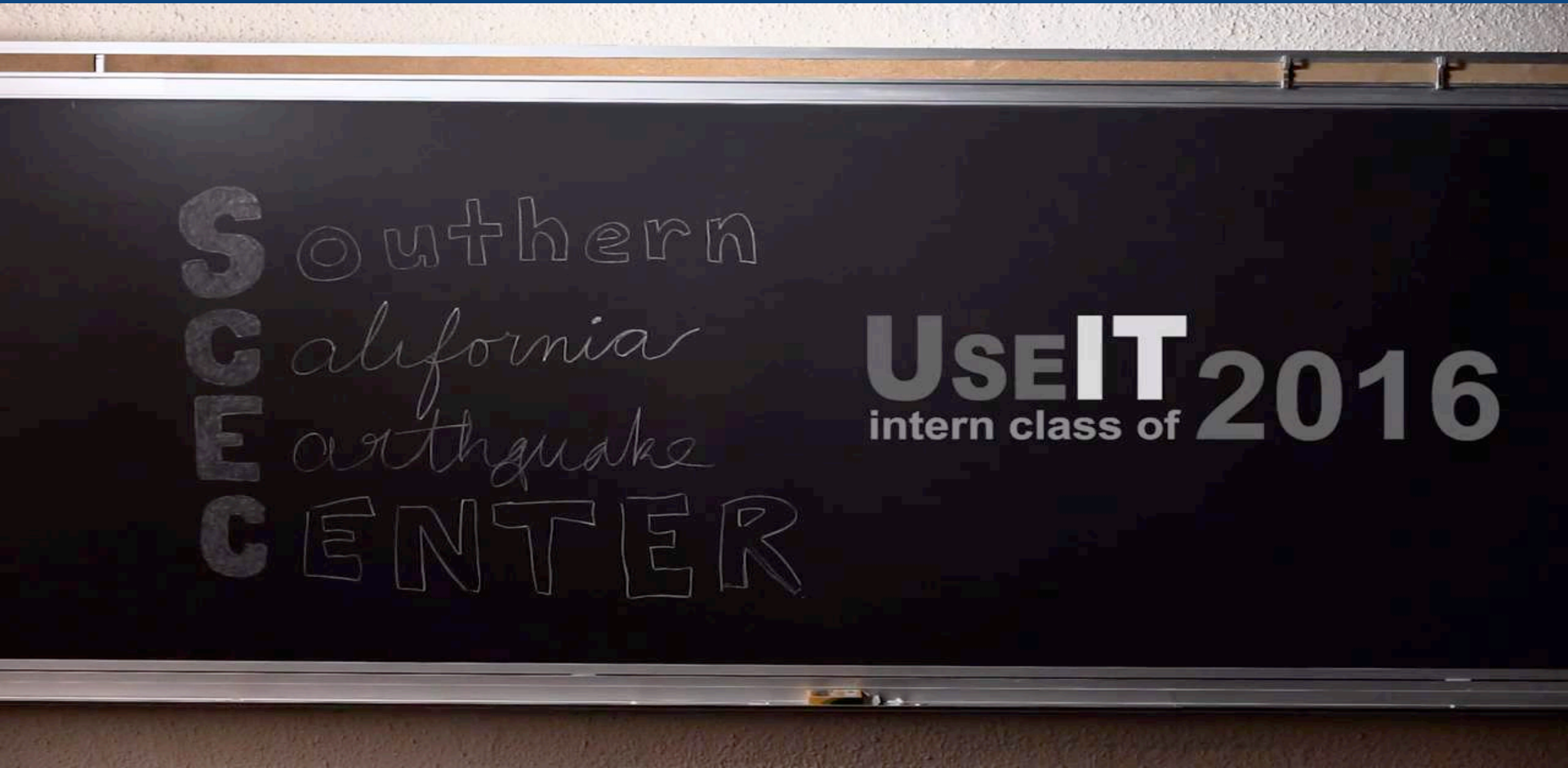
- Include a project description for a summer intern as part of your SCEC proposal
- Full stipends and travel support to SCEC Annual Meeting awarded directly to student as supplement to SCEC awards
- Number of SURE internships will depend on available funding (likely 4-6)
- CEO will manage recruitment and placement

2016 UseIT Interns

Undergraduate Studies in Earthquake Information Technology

294 internships
since 2002

2016 UseIT Documentary



Quake Catcher Network (QCN)

- Public collects seismic data via low-cost seismometers connected to personal computers

- Educational opportunity for K-12 schools
- Installed in museums, libraries, and park visitor centers
- Participants can access their recordings of local earthquakes or data from over 5000 QCN stations around the world
- **QuakeCatcher.org**

QCN

IRIS

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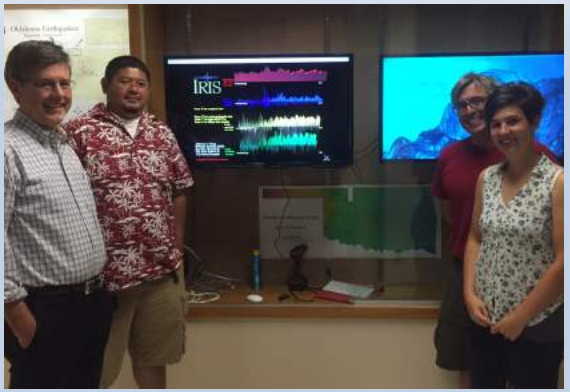
USGS
science for a changing world

Recent QCN Activities

- **Feb:** 5 stations Installations in Calgary, with hubat Mt. Royal University
- **April & Sept:** 30+ installations in Coachella Valley school districts; Hub at Sunnylands
- **Spring-Summer:** New QCN Servers hosted by SCEC; new QCN website development led by Danielle Sumy (IRIS) and intern Natalie Edgecombe.
- **July:** 9 Installations in Oklahoma; 4 museums as hubs
- **Sept 3:** 8 new OK stations triggered in M5.8 earthquake
- **Fall 2016:** QCN Interns in Central US (Co-hosted by SCEC and CUSEC)

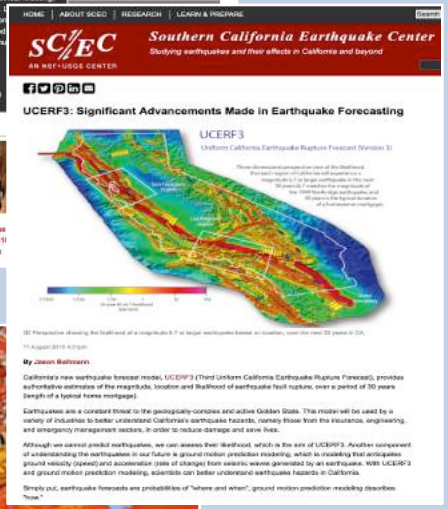


Installation at OK Geological Survey

Sensors Triggered by Pawnee EQ

SCEC Science Outreach

- SCEC Media Relations
- SCEC Social Media
  - Twitter.com/sce
  - Facebook.com/scec
  - Linkedin.com (search for SCEC)
  - Youtube/com/scecmovies
  - Instagram.com/SCECinsta (new)
- New SCEC.org website
- Annual Meeting Interviews
- Post Earthquake Information



GeoHazards Messaging Collaboratory (GMC)

- IRIS, UNAVCO, and SCEC communications collaboration
- BaseCamp online conversation portal and biweekly web calls
- Consistency in delivering messages, especially after significant earthquakes, and shared knowledge of objectives

IRIS

UNAVCO

SCEC

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Earthquake Country Alliance

- Public-Private-Grassroots leaders coordinate efforts to reduce losses in future earthquakes
- Regional alliances organize local activities and messaging
- Sector-based committees develop resources and programs
- California's Office of Emergency Services requests FEMA support for ECA
- Join today: **EarthquakeCountry.org/alliance**
- Follow ECA: **twitter.com/eca** **facebook.com/earthquakecountryalliance**

Earthquake Country **Alliance**

We're all in this together.

Seven Steps to Earthquake Safety

BEFORE

1. Secure Your Space

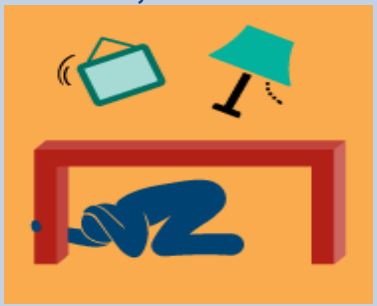
2. Plan To Be Safe

3. Organize Disaster Supplies

4. Minimize Financial Hardship

DURING

5. Drop, Cover, and Hold On



6. Improve Safety

AFTER

7. Reconnect and Restore

EarthquakeCountry.org/sevensteps

Earthquake Safety Video Series

- **Youtube.com/greatshakeout**

- Separate short videos for how to protect yourself if…
  - indoors, a table/desk is nearby
  - indoors, no table/desk
  - in a theater/stadium
  - near the shore

- Soon:
  - you use a wheelchair, walker, or cane (DAFN)
  - in a car
  - In bed
  - In a store

Protect Yourself During Earthquakes

1

In a high rise or office: Move away from windows, then *Drop* onto your hands and knees. *Cover* your head with your arms and *Hold On* to your neck. If near a table or desk, crawl under it and *Hold On* to your shelter, keeping one arm covering your head. If no shelter, crawl next to an interior wall and continue to *Cover* your head and neck.

2

Indoors, as table or desk: *Drop* onto your hands and knees. *Cover* your head with your arms, and *Hold On* to your neck with both hands. For more protection, crawl next to an interior wall or low-lying furniture. If seated and unable to drop to the floor, bend forward. *Cover* your head with your arms, and *Hold On* to your neck with both hands.

3

In bed: Do not get out of bed. Lie face down to protect vital organs, and *Cover* your head and neck with a pillow, keeping your arms as close to your head as possible, while you *Hold On* to your head and neck with both hands until shaking stops.

4

In a store: Move away from dangerous items then *Drop*, *Cover*, and *Hold On* as in #2. A shopping cart or merchandise racks may provide extra protection. If you are a wheelchair user (any location): *Lock* your wheels, bend over and (if possible) *Cover* your head with your arms and *Hold On* to your neck (or hold an object above your head and neck).

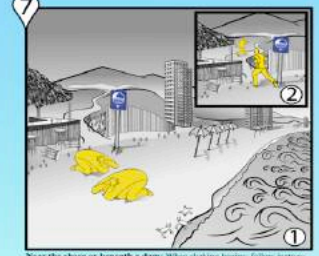
5

In a classroom: *Drop*, *Cover*, and *Hold On* as in #1 and #2. Laboratories or other settings may require special considerations to ensure safety. Students should also be taught what to do at home or other locations.

6

Outdoors: Quickly move away from power lines, buildings, vehicles, and other hazards, then *Drop*, *Cover* and *Hold On* as in #2. This protects you from any objects that may be thrown sidewise, even if nothing is directly above you.

7

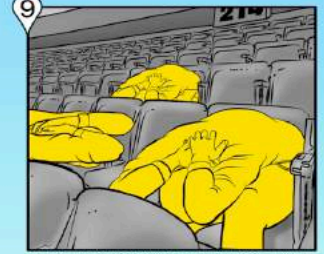


Near the shore or beneath a dam: When shaking begins: follow instructions as in other scenes of this poster. Near the shore: If shaking lasts 20 seconds or more, as soon as you can stand walk quickly to high ground or inland as a tsunami may arrive soon. Beneath a dam: get to high ground or follow official instructions.

8

Driving: Pull over to the side of the road, stop, and set the parking brake. Avoid overpasses, bridges, power lines, signs and other hazards. Remain in your car until shaking stops, then proceed carefully by avoiding fallen debris, cracked or shifted pavement, and emergency vehicles.

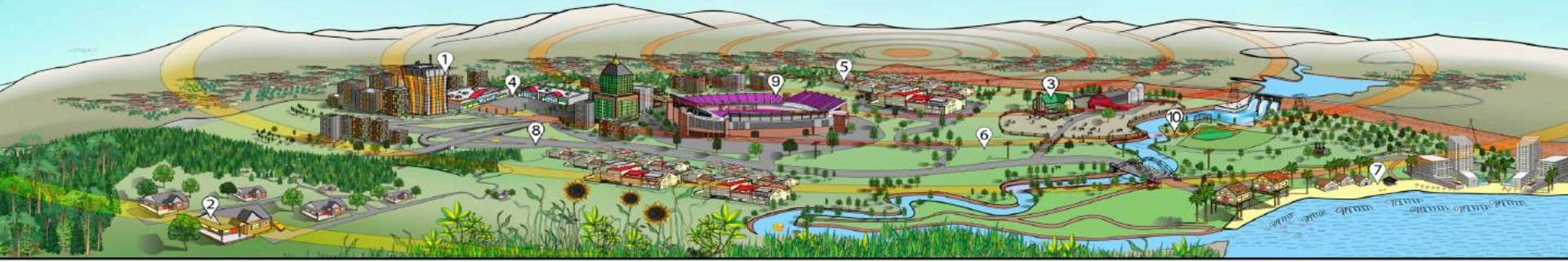
9



In a stadium or theater: *Drop* to the ground in front of your seat or lean over as much as possible, then *Cover* your head with your arms (as best as possible), and *Hold On* to your neck with both hands until shaking stops. Then walk out slowly, watching for anything that could fall in aftershocks.

?

Do you know what to do, wherever you are, when the earth begins to shake?



Earthquake Country Alliance

Why are these protective actions recommended?
www.EarthquakeCountry.org/step5

ShakeOut

Practice with millions worldwide:
www.ShakeOut.org

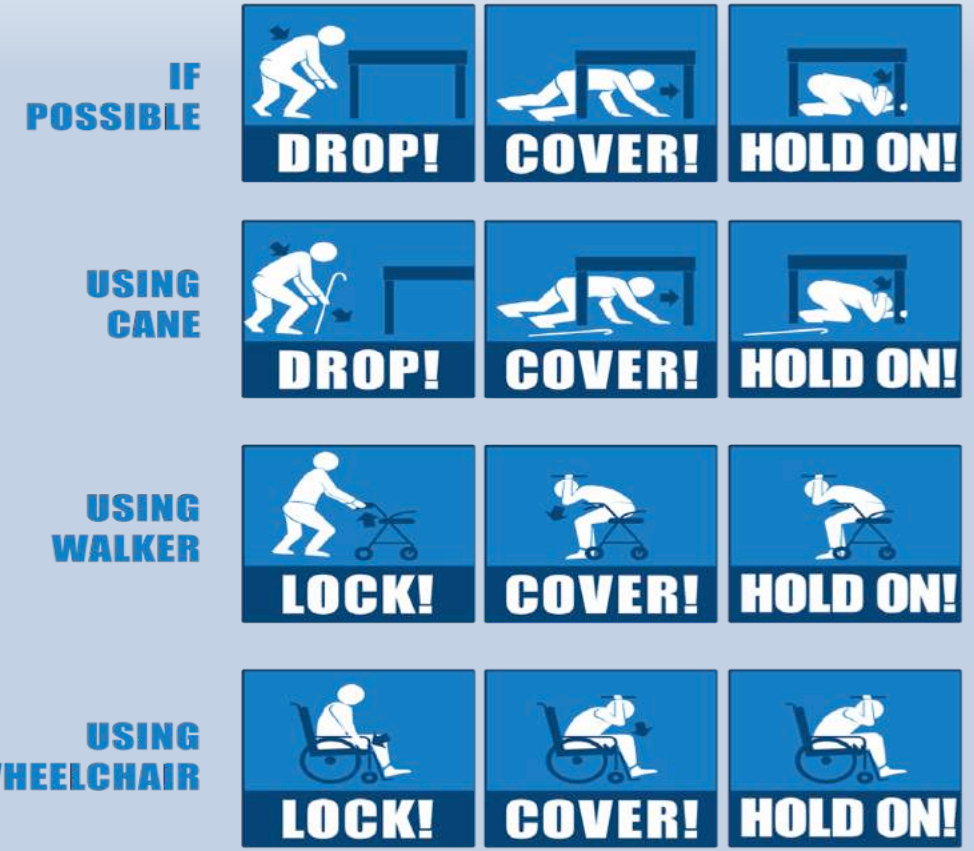
FEMA

Learn how to reduce injury and damage:
www.FEMA.gov/earthquake

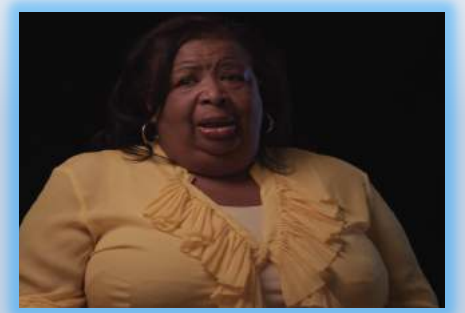
nehrp

Adapt to Your Situation

- If you can't get back up, don't get down
- Know what you need so you can instruct others on how to assist you
- Practice is key
- EarthquakeCountry.org/disability



Quake Heroes Documentary



Quake Heroes Documentary

- 50-minute film and educational toolkit (EEW, QCN, & GPS lessons)
- Interviews of people who experienced the 1994 Northridge earthquake, and how they helped others
- Features live-action reenactments, archival footage, and graphics
- Encourages everyone to become trained (CERT, CPR, etc.)
- Funding from FEMA and other sponsors
- Will be shown in schools and communities in advance of ShakeOut

Great ShakeOut Earthquake Drills

In 2015 more than **43 million** people worldwide (**21 million U.S.**) in schools, organizations, and homes practiced…

Many did much more!

2016 International ShakeOut Day: October 20

AMERICA'S PrepareAthon!™

ShakeOut.org

ShakeOut™

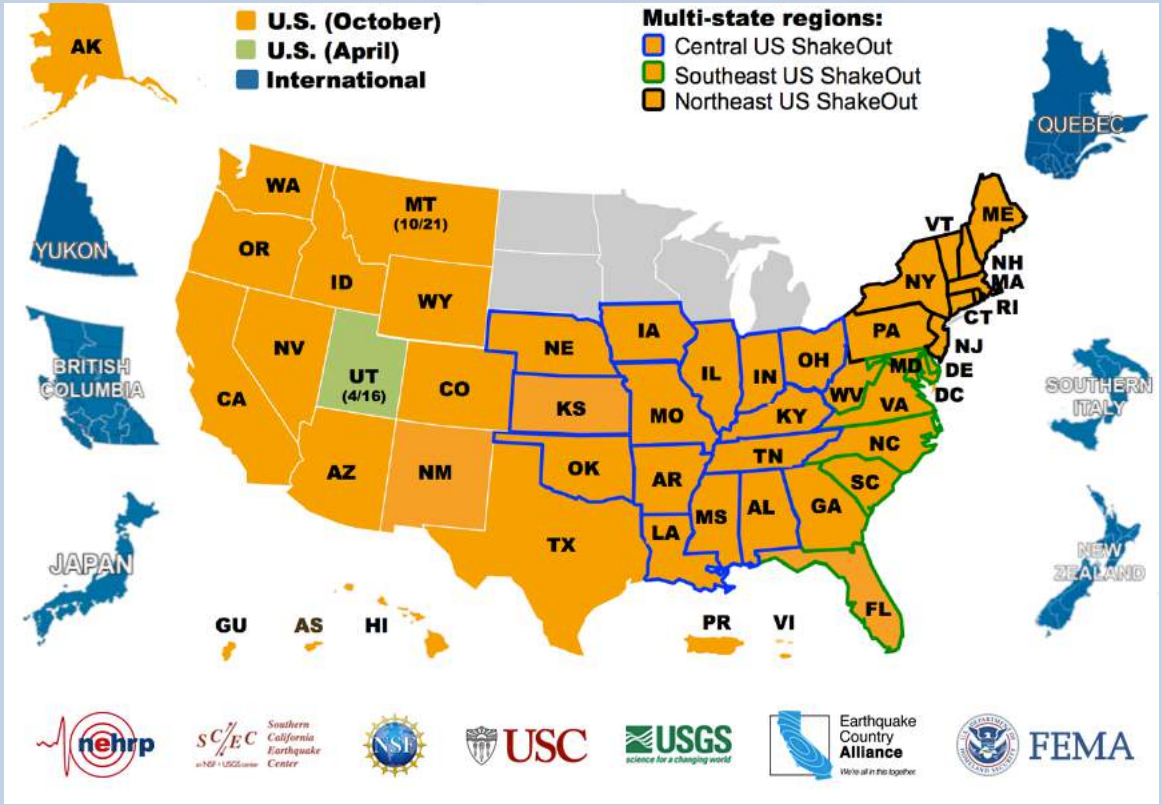
Mission

Everyone, Everywhere

should know how
to protect themselves
during earthquakes

Everyone… Everywhere, & Growing!

States, Territories, Provinces & Countries Participating in 2015 Great ShakeOut Earthquake Drills



2015 Official ShakeOut Regions

28 Regions worldwide
22 U.S. regions spanning 51 states & territories
65 additional countries with independent registrations (individuals, schools, etc.)

Participation History (worldwide)

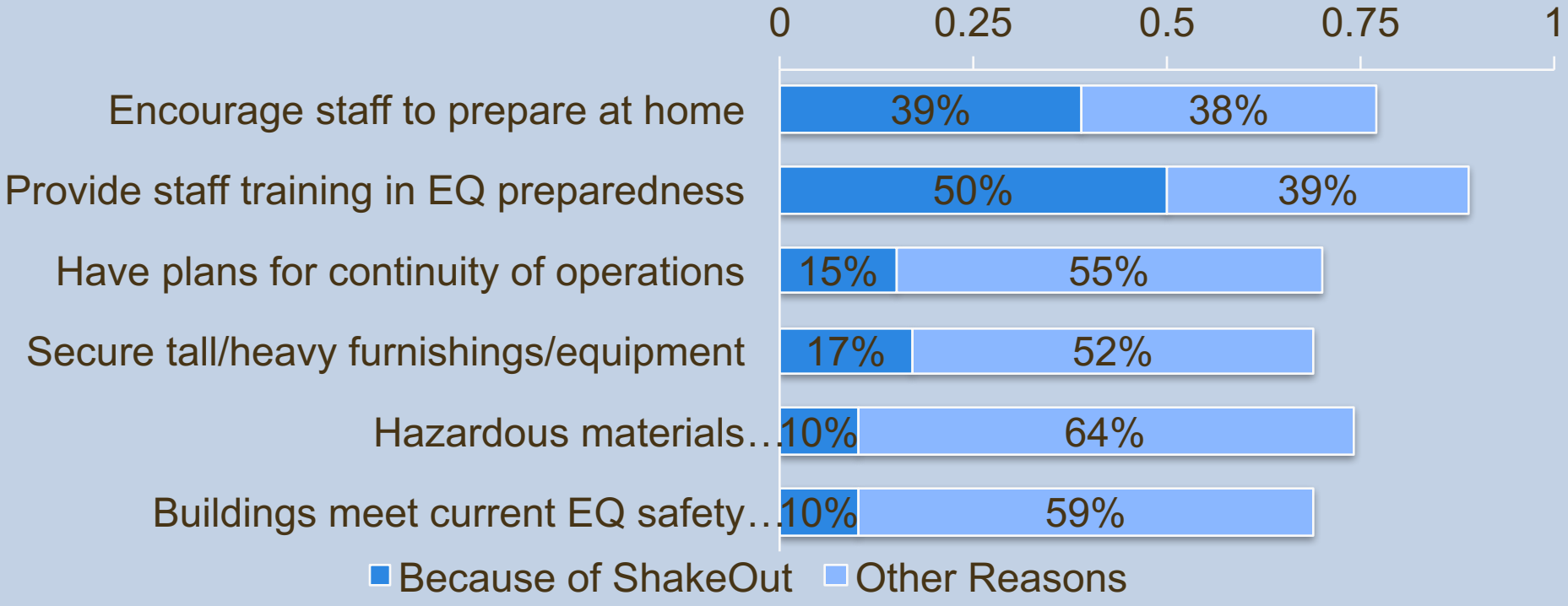
2015: 43.5 million (+ TX, IA, LA, NE, global growth)
2014: 26.5 million (+ NM, KS, FL, Quebec, Yukon, more)
2013: 25.0 million (+ Southeast, Northeast, MT, WY, CO)
2012: 19.5 million (+ Japan, New Zealand, UT, WA, AZ)
2011: 12.5 million (+ Central US, BC, OR)
2010: 8.0 million (+ Nevada and Guam)
2009: 6.9 million (+ Northern California)
2008 5.4 million (Southern California)

Key Facts

- Participants practice “Drop, Cover, and Hold On” and other aspects of their emergency plans.
- Register at www.ShakeOut.org
- Largest component “America’s PrepareAthon,” sponsored by FEMA

ShakeOut Evaluation Results

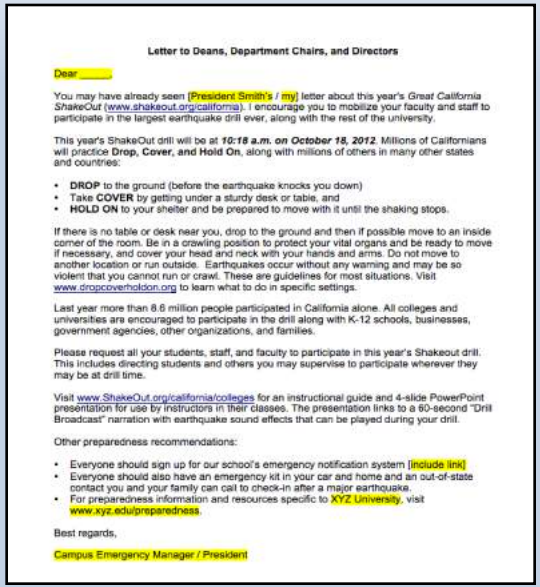
Which things has your institution done to prepare for earthquakes? Did you do them because of the ShakeOut?



Register and Spread the Word

- Register your ShakeOut Drill at Shakeout.Org
- Join the discussion:
  - Facebook.com/greatshakeout
  - Twitter.com/shakeout (#shakeout)
- Download and distribute ShakeOut resources: drill manuals, flyers, posters, videos, and much more.
- (

Higher Education ShakeOut Resources



Letter to Deans, Department Chairs, and Directors

Dear _____,

You may have already seen [President Smith's / my] letter about this year's *Great California ShakeOut* (www.shakeout.org/california). I encourage you to mobilize your faculty and staff to participate in the largest earthquake drill ever, along with the rest of the university.

This year's ShakeOut drill will be at ***10:18 a.m. on October 18, 2012***. Millions of Californians will practice **Drop, Cover, and Hold On**, along with millions of others in many other states and countries:

- **DROP** to the ground (before the earthquake knocks you down)
- Take **COVER** by getting under a sturdy desk or table, and
- **HOLD ON** to your shelter and be prepared to move with it until the shaking stops.

If there is no table or desk near you, drop to the ground and then if possible move to an inside corner of the room. Be in a crawling position to protect your vital organs and be ready to move if necessary, and cover your head and neck with your hands and arms. Do not move to another location or run outside. Earthquakes occur without any warning and may be so violent that you cannot run or crawl. These are guidelines for most situations. Visit www.dropcoverholdon.org to learn what to do in specific settings.

Last year more than 8.6 million people participated in California alone. All colleges and universities are encouraged to participate in the drill along with K-12 schools, businesses, government agencies, other organizations, and families.

Please request all your students, staff, and faculty to participate in this year's Shakeout drill. This includes directing students and others you may supervise to participate wherever they may be at drill time.

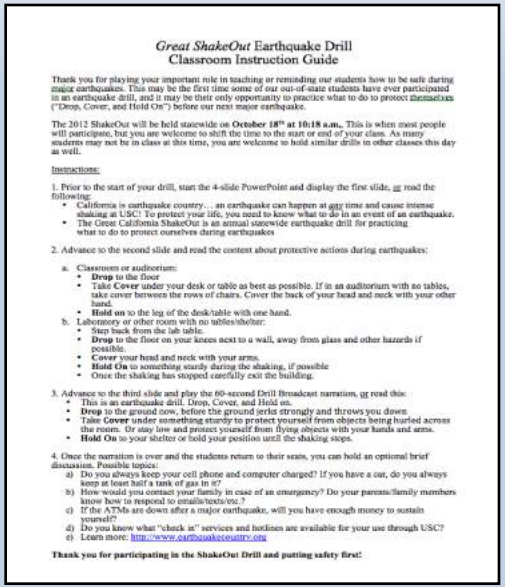
Visit www.ShakeOut.org/california/colleges for an instructional guide and 4-slide PowerPoint presentation for use by instructors in their classes. The presentation links to a 60-second "Drill Broadcast" narration with earthquake sound effects that can be played during your drill.

Other preparedness recommendations:

- Everyone should sign up for our school's emergency notification system [include link]
- Everyone should also have an emergency kit in your car and home and an out-of-state contact you and your family can call to check-in after a major earthquake.
- For preparedness information and resources specific to XYZ University, visit www.xyz.edu/preparedness.

Best regards,

Campus Emergency Manager / President



***Great ShakeOut* Earthquake Drill**
Classroom Instruction Guide

Thank you for playing your important role in teaching or reminding our students how to be safe during major earthquakes. This may be the first time some of our out-of-state students have ever participated in an earthquake drill, and it may be their only opportunity to practice what to do to protect themselves ("Drop, Cover, and Hold On") before our next major earthquake.

The 2012 ShakeOut will be held statewide on **October 18th at 10:18 a.m.**. This is when most people will participate, but you are welcome to shift the time to the start or end of your class. As many students may not be in class at this time, you are welcome to hold similar drills in other classes this day as well.

Instructions:

1. Prior to the start of your drill, start the 4-slide PowerPoint and display the first slide, or read the following:
   - California is earthquake country… an earthquake can happen at any time and cause intense shaking at USC! To protect your life, you need to know what to do in an event of an earthquake.
   - The Great California ShakeOut is an annual statewide earthquake drill for practicing what to do to protect ourselves during earthquakes
2. Advance to the second slide and read the content about protective actions during earthquakes:
   a. Classroom or auditorium:
      - **Drop** to the floor
      - Take **Cover** under your desk or table as best as possible. If in an auditorium with no tables, take cover between the rows of chairs. Cover the back of your head and neck with your other hand.
      - **Hold on** to the leg of the desk/table with one hand.
   b. Laboratory or other room with no tables/shelter:
      - Step back from the lab table.
      - **Drop** to the floor on your knees next to a wall, away from glass and other hazards if possible.
      - **Cover** your head and neck with your arms.
      - **Hold On** to something sturdy during the shaking, if possible
      - Once the shaking has stopped carefully exit the building.
3. Advance to the third slide and play the 60-second Drill Broadcast narration, or read this:
   - This is an earthquake drill. Drop, Cover, and Hold on.
   - **Drop** to the ground now, before the ground jerks strongly and throws you down.
   - Take **Cover** under something sturdy to protect yourself from objects being hurled across the room. Or stay low and protect yourself from flying objects with your hands and arms.
   - **Hold On** to your shelter or hold your position until the shaking stops.
4. Once the narration is over and the students return to their seats, you can hold an optional brief discussion. Possible topics:
   a) Do you always keep your cell phone and computer charged? If you have a car, do you always keep at least half a tank of gas in it?
   b) How would you contact your family in case of an emergency? Do your parents/family members know how to respond to emails/texts/etc.?
   c) If the ATMs are down after a major earthquake, will you have enough money to sustain yourself?
   d) Do you know what "check in" services and hotlines are available for your use through USC?
   e) Learn more: http://www.earthquakecountry.org

Thank you for participating in the ShakeOut Drill and putting safety first!

Messaging templates, instructor's guide, and PowerPoint slides (with link to Drill Broadcast): ShakeOut.org/colleges

QuakeSmart Community Resilience Program

JOIN US!

QUAKESMART
Preparedness Workshop

At this Workshop, you will:

Identify Your Risk
Learn about business continuity, disaster response, and the cost benefit of preparing for earthquakes and other business interruptions;

Develop a Plan
Identify preparedness and mitigation actions needed to ensure safety and business continuity. Complete assessments and begin planning for retrofit projects; and

Take Action
Learn how to perform preparedness and mitigation activities using the QuakeSmart Community Resilience Program.

Get QuakeSmart®!

WHAT
QuakeSmart Preparedness Workshop

WHEN
Thursday, October 20, 2016
9:00 am – 3:00 pm

WHERE
American Institute of Architects
1735 New York Avenue Northwest
Washington, DC 20006

HOW
The Workshop is free, but registration is required. Click here.
For a preview of the Agenda. Click here.

The American Institute of Architects · DRB Toolkit Disaster Resistant Business · Earthquake Country Alliance · FEMA · FLASH · ShakeOut · SIMPSON StrongTie · USGS science for a changing world

Knowledge Implementation

Desired Outcomes

- Increased attendance and info-sharing at engineering meetings, webinars, etc
- Engage engineers to be part of the solution, get them involved in working groups/projects
- Adoption of our science for better building codes, insurance rate setting, response, etc.
  - UGMS/CyberShake
  - Simulations (High-F, Broadband, CyberShake)
  - UCERF (Uniform California Earthquake Rupture Forecast)
  - OEF (Operational Earthquake Forecasting)
- Get public officials to use science for decision-making
- Trust and validation of SCEC as the authority
- Help SCEC community to better articulate their science, both internally and externally

Who to Target

- Engineers
- Building officials and their staff
- Public officials and their staff
- Media and public
- Social scientists

Approaches

- Participate in ACSE / SEAOC / SEAOSC / CGS / EERI meetings
- Training webinars and in-person meetings for earthquake engineers, media, etc.
- Invite engineers and building officials to our annual meeting

SCEC5 CEO

- Builds on SCEC4 CEO focus areas and activities and adds new aspects
- Theme: *Partner Globally, Prepare Locally*
- Evidence-based program design
  - Engage Social Science researchers, geoscience education researchers, publish evaluation results, etc.
- Outcome-based program evaluation (Logic model and metrics)
  - Improved application of earthquake science in policy and practice
  - Reduced loss of life, property, recovery time
  - Increased science literacy
  - Increased diversity, retention, and career success in the science workforce