

SCEC Community Engagement and Workforce Development

Mark Benthien

SCEC 2026 Annual Meeting

Palm Springs



35 Years of Building Connections for Earthquake Resilience

Community engagement and workforce development have always been core to accomplishing SCEC's mission— with three enduring threads:

- Developing people
- Connecting people and networks
- Inspiring people and organizations to take action



Geoscience/Technical Community Engagement

SCEC Annual Meeting and Science Workshops

Virtual Collaborations (Technical Activity Groups, etc.)

Multidisciplinary workshops with technical stakeholders (engineers/policymakers)

SCEC.org: Overview of all SCEC activities, research highlights, workshop registrations, community profiles

SCEC mailing list: Now anyone can join, at [scec.org/community](https://www.scec.org/community)

Social Media: Follow SCEC (X/FB/IG)





Education & Workforce Development

SCEC fosters the future of earthquake science by nurturing a vibrant community of researchers at every stage of their careers. This future is *here* all those who have been interns, supported by SCEC research funding, or participants in SCEC activities.

We continue to provide **transformative research experiences**, equipping students and early-career scientists with the skills and support they need to thrive. **Strong mentorship relationships**, cultivated through dedicated training, empower researchers to build confidence, belonging, and a lasting commitment to their field.

This holistic approach fosters a pipeline of talented individuals who are shaping the present and future of earthquake science.

Special recognition: Dr. Gaby Noriega built upon years of internship programs (since 1994) developed by her predecessors by expanding professional development opportunities for students and early career researchers.



Three Pillars:

Education

Professional Development

Community Engagement



Shaping Future Geoscientists | Undergraduate Internships

SCEC internships provide undergraduates with authentic, fully funded research experiences that incorporate professional skills development with key competencies such as systems thinking and problem-solving.

- More than 750 interns since 1994
 - Remotely-mentored (SOURCES) or based at researcher's institution (SURE)
 - UseIT (2002-2019) engaged students in team-based computing approaches for earthquake science
- Full financial support enables students to focus on research and learning
- Weekly professional development sessions
- Poster presentations at SCEC Annual Meeting



[scec.org/education](https://www.scec.org/education)



2026 SCEC Internships Cohort



Larua Grenot Jones
UCLA



Claire Ip
Dartmouth



Tomoka Ohmori
Princeton



Ashley Seeman
SDSU



ShakeOut Scenario 2.0: Mapping Losses, Health Hazards, and Human Experience
Mentors: Lucy Jones, Keith Porter, Erik Frost
Posters: 166, 168, 104 (Group B)



Lamar Anderson
Pasadena City College



Ishmael Legaspi
USC



Sandi Shwe Win
Cal Poly Pomona



Benjamin Rosen
CSU Long Beach



ShakeOut Scenario 2.0: Dynamic Rupture Modeling and Long-Period Ground Motions
Mentors: Ahmed Elbanna, Chunhui Zhao, Scott Callaghan
Poster: 221 (Group A)



Corey Rightmyer
Cuesta College



Alfredo Barillas
Norco College



ShakeOut Website: Updated Regional U.S. Webpages, New Country-Level Registration
Mentors: Mark Benthien and Edward Salcido
Poster: 188 (Group B)

10 interns from 10 institutions across the nation

Please visit their posters!



Community and Cohort Building | Fostering Collaborative Geoscience

Support **Community and Cohort building** by cultivating informal networking opportunities that serve important functions including career direction and guidance and staying connected to the professional community.

- SCEC Breakfast Club (tomorrow morning)

Transitions Program offers resources for students and postdocs to build their professional profile, expand their professional network, and/or broaden their research interests.

- Research and Travel Awards (funds for ECRs and students to attend SCECAM)
- SCEC Lightning Talks



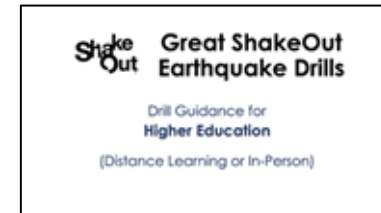
Over 700 mentors and mentees have participated in 20+ Transitions events, 60+ faculty/ECRs and graduate students were trained in mentorship skills, and 40+ students and ECRs received Research Travel Awards.



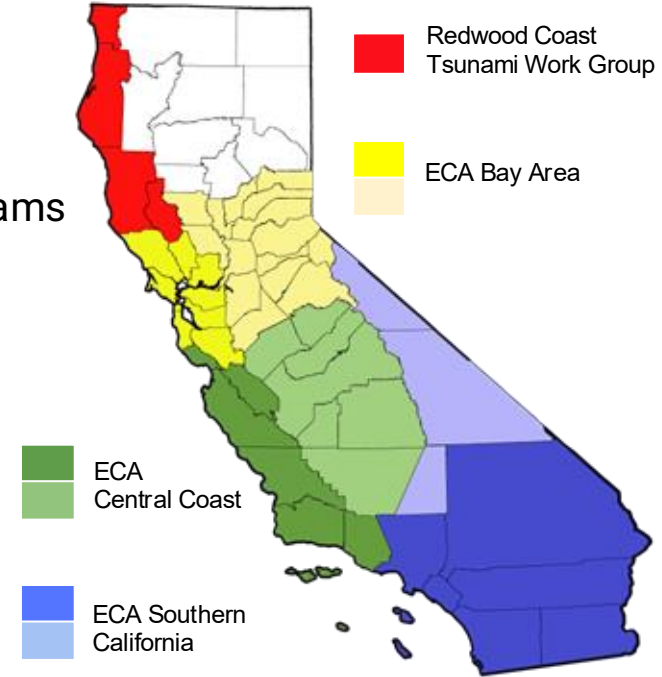
Public Education and Preparedness: Major Programs

- Earthquake Country Alliance (EarthquakeCountry.org)
- HayWired Scenario Outreach (EarthquakeCountry.org/haywired)
- Great ShakeOut Earthquake Drills (ShakeOut.org)
- Regional Tsunami Exercises/Campaigns (Tsunamizone.org)
- Quake Heroes Film and Expos (QuakeHeroes.org)

*Additional support for these activities is provided by **FEMA**, **Cal OES**, **USGS**, and other partners/sponsors*



- 4000+ *Public-Private-Grassroots* leaders
- Subject matter expert *Committees* develop resources and programs
- *Regional Alliances* organize meetings and outreach activities (presentations, booths at events, etc.)
- California's Office of Emergency Services provides FEMA NEHRP funding for ECA earthquake mitigation activities
- USC's Statewide California Earthquake Center (SCEC.org) administers ECA (created by SCEC in 2003)



Join the ECA: EarthquakeCountry.org/join



Earthquake Country Alliance



ECA has been an experiment in coordinating people and organizations and inspiring collective action, that has become an established statewide infrastructure:

- Nearly 25 years of partnerships
- State, regional, local, professional, nonprofit, and community connections
- Growing state-agency participation and leadership
- Shared resources and coordinated public messaging for safety, mitigation, and resilience

In advance of ECA's 25th Anniversary in 2028, we will expand on these strengths:

- Partner with local networks across 10 regions of California
 - CVDPN - Inland SoCal
 - BICEPP, ENLA, EERI Socal - Socal Coast
 - SF CARD - Bay Area
 - RCTWG - North Coast
- Further integrate ECA and SCEC, building on SCEC's expanded statewide activities, reach, and broadened resilience goals
- Greater engagement with state agencies, in addition to Cal OES & CGS
- Expand *Cal OES Secure Your Space Projects* to provide earthquake fasteners to 60+ nonprofits each year (with coordination by Lindsay Huerta)
- Provide new opportunities for leadership and recognition of local leaders, communities, and organizations



Seven Steps To Earthquake Safety

1. Secure Your Space



2. Plan To Be Safe



3. Organize Supplies



4. Minimize Financial Hardship



5. Drop, Cover, and Hold On



6. Improve Safety



7. Reconnect and Restore

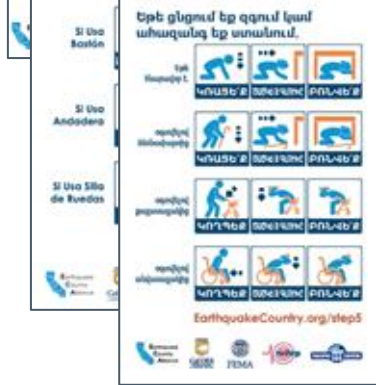


BEFORE

DURING

AFTER

Updated Materials in 18 Languages



EarthquakeCountry.org/languages

Earthquake Self-Protection Guidance

- ***Drop, Cover, and Hold On*** or ***Lock, Cover, and Hold On***

- Prevents being thrown to the ground
- Reduces injury from falling or flying items, inside or falling from exteriors
- Increases chance of surviving a building collapse

- Guidance for many situations–

EarthquakeCountry.org/step5

Terremotos.org/paso5

EarthquakeCountry.org/accessibility



If You Feel Shaking or Get an Alert:



EarthquakeCountry.org/step5



Great ShakeOut Earthquake Drills



- Annual opportunities for schools, organizations, and families to practice earthquake safety and other aspects of their emergency plans
- Created as part of original ShakeOut Scenario outreach in So. Calif. (2008); statewide 2009; with FEMA NEHRP funding SCEC supported expansion to other regions (all US states/territories involved since 2015)
- **2025:** 19.3 million U.S. participants (10.4 million in California)
- **2026** International ShakeOut Day:
October 15 (but you can drill on any day)
- **ShakeOut.org/highereducation**
Resources for engaging your institutions

Learn more and register: **ShakeOut.org**





Great ShakeOut Earthquake Drills have also been an experiment in coordination:

- A SCEC-led, recognizable international brand
- Sustained, vital support from FEMA, Cal OES, NSF, USGS, and others
- An umbrella for locally coordinated state, regional, national, and international ShakeOut regions
- Locally relevant participation within a coherent shared identity
- A model that makes preparedness visible, accessible, and actionable



SCEC's National/Global Coordination Role



As the background organization (with support from FEMA) for ShakeOut nationally, the Statewide California Earthquake Center:

- Maintains and updates all ShakeOut websites
- Creates and distributes regionally customized “ShakeOut Update” email newsletters to encourage participation and additional actions
- Sends individual emails to people who haven’t renewed their registration
- Calls larger organizations nationwide to help them to renew their registration
- Creates social media content posts for everyone to share (see [ShakeOut.org/messaging](https://www.ShakeOut.org/messaging) and follow x.com/ShakeOut and facebook.com/GreatShakeOut)
- Works with CUSEC to support participation in the Central U.S. and SouthEast regions





Great ShakeOut Earthquake Drills 2.0



In advance of ShakeOut's 20th Anniversary in 2028, we are implementing major updates:

- A new, more robust, secure, and maintainable platform is under development, led by Edward Salcido
- New Nation-level registration pages
 - Allows countries to register their drills, and provide data for participation categories
 - New partnership with United Nations Disaster Risk Reduction (UNDRR) for encouraging countries to organize earthquake drill campaigns
- More universally accessible resources
- Modernized branding and messaging
- A simplified & more centralized website experience across ShakeOut regions
- More visibility for what regional leaders and drill participants are doing - showcase their earthquake programs, drill resources, and effective practices
- These new features are also being incorporated within [TsunamiZone.org](https://www.tsunami-zone.org) and the regional exercises it supports.



35 Years of Building Connections for Earthquake Resilience

- Decades of contributions by leaders, partners, and participants in SCEC-led programs have provided opportunities to develop people, connect organizations, and inspire action.
- Our next opportunity is to bring those strengths together for a more resilient California— with tools and programs for impact far beyond it.
- We're All in This Together!