

# Post-Earthquake Rapid Response

- SCEC collaborates with state and federal agencies with regulatory responsibility to respond to earthquakes.
- SCEC mission: Guide a more effective response
  - ***Intellectual leadership*** spanning the breadth of earthquake system science.
  - ***Coordination*** of the response of the earthquake science community.
  - ***Communication*** of knowledge to the world at large.

# Coordination Role of SCEC

- **Motivation:** Post-earthquake phenomena and data quality decay quickly. Time and resources are limited.
  - Surface rupture
  - Aftershocks
  - Post-seismic deformation (afterslip, visco-elastic)
  - Fault-zone damage
  - Ground motion anomalies
- **Response:** SCEC infrastructure *and culture* exists to organize rapid (<1 day) community initial response.
- **Leadership:** SCEC sets example for rapid scientific response
  - **Open, immediate data sharing** after a disaster is critical to make the best use of resources.
  - **Ensure that suitable observations are being gathered** to address science goals (e.g. Operational Earthquake Forecasting)
  - **Coordinate experiments** (e.g. fault-zone drilling, lidar) that require community support.

# EQ Response Science Questions

- How does an earthquake sequence unfold, leading to nucleation of large aftershocks?
- How do the path of radiated seismic energy and site conditions affect strong ground motion?
- How variable is fault slip, and what is the nature of surface slip deficit?
- How are large stress changes dissipated around faults?
- What are the depth and time-dependent properties of fault damage and healing?
- What is the rheology of the fault zone, its lower crustal root, and the upper mantle?

# Earthquake Response Portals

- **response.scec.org**
  - Event-based forum for coordinating activities among SCEC scientists (text, images, files)
  - Use your SCEC login to contribute
  - Curated summaries of daily response
- **californiaeqclearinghouse.org**
  - Event-based forum and mapping tools for collecting field observations in engineering and geology
  - Coordination of response efforts (any organization)
  - Knowledge transfer to emergency services
  - Disaster Service Worker certification