

Session 9. What Should SCEC Build Together?

Community Priorities for California's
Earthquake System Science
Enterprise

This closing session will synthesize priorities emerging from SCEC2026 and perspectives from across the SCEC community. The session will provide an opportunity for broad community input on priorities, questions, and future directions for SCEC.



Wednesday, September | 10:00–11:55



Session 9. What Should SCEC Build Together?

Moderator: Ahmed Elbanna (USC)

10:00-10:25 Key Priorities Emerging from SCEC2026:

3-Minute Reports from Sessions 1-8

10:25 -10:45 Perspectives from the SCEC Community:

Early Career Researchers and Professionals

SCEC Institutions and Board of Directors

International Community

SCEC Science Steering and Proposal

Review Committees

10:45-11:20 Open Community Discussion: Priorities and Opportunities for SCEC's Next Phase

11:20-11:55 Ahmed Elbanna, SCEC Director

How community input from The SCEC Wish Wall and meeting discussions will shape SCEC's programs and future directions

11:55-12:00 Closing Remarks, SCEC2026 Adjourns

<https://slido.com/scecmeet>





Sunday | Session 1 | 15:30–17:00



Session 1. State of SCEC

Moderator: Greg Beroza (Stanford)

What themes emerged from your session?

- An inspiring vision with an upbeat, but realistic, State of SCEC from Ahmed
- Impressive Community Engagement and Workforce Development report from Mark
- Reports on outcomes from 7 Community Science Workshops - there's a lot going on!
- An inspiring Distinguished Lecture on Aseismology from Roland

What could SCEC and its partners do together to make a real difference?

- Continue to Convene and Nurture the Community - lots of enthusiasm and ideas!
- Create New Synergies for Earthquake Science and Engineering
- Develop a Broader Spectrum of Sponsorship and Build a Bridge to the Future



Monday | Session 2 | 08:00–09:30



Session 2. Get Ready to ShakeOut!

Moderator: Ashley Griffith (OSU)

What themes emerged from your session?

- Shakeout 1.0 succeeded in leading to implementing policy changes in Los Angeles and some surrounding communities. Critical vulnerabilities remain in certain areas of infrastructure (e.g., water, gas pipelines) and neighboring communities
- Shakeout 2.0 is underway and will include updates in data, techniques, and modifications in societal priorities that have occurred during the past 20 years
- Communication techniques we use within our scientific communities are not effective with the general public

What could SCEC and its partners do together to make a real difference?

- Identify effective communication strategies/channels for information dissemination
- Advocate for policy/building code updates in additional communities around LA
- Incorporate Hollywood aftershock scenario, evaluate successes and challenges since Shakeout 1.0



Monday | Session 3 | 10:00–11:30



Session 3. Frontiers in Statewide California Earthquake System Science I – Observing the Earthquake Cycle

Moderator: Gareth Funning (UCR)

What themes emerged from your session?

- High resolution topography, geodesy, imagery and seismicity allow us to map fault traces, ruptures, damage zones and barriers, and build understanding of the relationships that control them, event size and periodicity
- NISAR will allow us to study earthquake cycle deformation at high resolution, everywhere, all the time!

What could SCEC and its partners do together to make a real difference?

- Marshal support to continue the collection of critical long-term time series data (alignment arrays!)
- Train a cadre of SCEC researchers with the field geodesy and mapping skills to contribute observations of faulting
- Continue to develop the methodologies and workflows to build and refine community models and datasets



Monday | Session 4 | 14:00–15:30



Session 4. Frontiers in Statewide California Earthquake System Science II – Modeling the Earthquake Cycle

Moderator: Morgan Page (USGS)

What themes emerged from your session?

- There is a gap between verification underway for earthquake-cycle simulations vs. quasi-dynamic simulators
- Simulators provide answers to questions needed to build (currently largely empirical) seismic hazard models (but more validation against data needed)
- Is paleoseismic data the neglected cherry on top of the PSHA pyramid? 🍒

What could SCEC and its partners do together to make a real difference?

- Future SEAS benchmarks with multi-fault interactions could include simulators
- Construction of fault-system digital twins including validation with paleoseismic data
- Future “natural” enhanced geothermal at Brawley could provide natural laboratory to test predictive power of models



Tuesday | Session 5 | 08:00–09:30



Session 5. Frontiers in Statewide California Earthquake System Science III – Physics-Based Seismic Hazard Analysis & Ground Motion Forecasting

Moderator: Morgan Moschetti (USGS)

What themes emerged from your session?

- SCEC has developed suites of codes to support seismic hazard analyses and ground-motion modeling
- SCEC products and tools are being used for by multiple user communities (hazard, ground-motion modeling, engineering structural response)

What could SCEC and its partners do together to make a real difference?

- Advance the scientific underpinnings of SCEC SHA and ground-motion forecasting–new directions and features from across the SCEC community
- Continue to identify opportunities to integrate SCEC products into user applications (NSHM, engineering/risk analyses, site-specific design)
- Develop/support user community within SCEC



Session 6. Who Uses Earthquake Science—and What Do They Need Next?

Moderators: Jillian Maloney (SDSU) & Tran Huynh (USC)

What themes emerged from your session?

- Earthquake science enters practitioner decisions through much larger decision systems.
- Uncertainty matters—and users need science that characterizes uncertainty realistically.
- There are identifiable science opportunities where better information could affect practice.
- Moving good science into practice requires more than improving the science (communication & collaboration).

What could SCEC and its partners do together to make a real difference?

- Better understand how earthquake science and uncertainty feed catastrophe-loss models and insurance decisions.
- Improve observations and characterization of poorly mapped faults, including uncertainty in fault location and geometry, across California.
- Advance CyberShake capabilities and validation, and develop practical tools and guidance to move simulations into engineering practice.



Session 7. Translating Earthquake Science into Action

Moderator: Christie Rowe (Nevada Seismo Lab, UNR)

What themes emerged from your session?

- Hazards - Resilience - Vulnerability are different lenses on earthquake risk that need to work together
- To understand vulnerabilities and needs - ASK PEOPLE
- Advocacy can take many forms but it needs to be consistent and ubiquitous

What could SCEC and its partners do together to make a real difference?

- Establish communication channels (early and frequent engagement) to reach people when opportunities arise
- Researchers (Mavens) rely on connectors and salespeople - find those for statewide context
- Find opportunities to align seismic mitigation strategies with other more quotidian purposes



Session 8. Open Problems in Earthquake System Science

Moderators: Alice Gabriel (UCSD) & Greg Beroza (Stanford)

- **NORCAT & SIERRA TAGs**

Thanks to Camilla, Mostafa, and Devin! Some questions we covered:



- **ML/AI methods** may outperform classical observational methods but has it yet taught us something genuinely new about how earthquakes work? **What would an AI/ML-driven fundamental discovery in earthquake science** look like, and what approaches might enable it?
- Are small and large earthquakes the same? Is the final size of an earthquake set at nucleation? What **new models could settle fundamental questions on earthquake physics** within the next few years?
- How to improve and better integrate the **geologic** record (on- and off-fault) including uncertainties, all the way to time-dependent hazard models?
- Since this meeting launches the **TAG team-science model**, which **hard, quantifiable problems** are most likely to solved by **SCEC team science**, and which will still need one "stubborn" person with a "strange" idea?



Wednesday, September | 10:00–11:55



Session 9. What Should SCEC Build Together?

Moderator: Ahmed Elbanna (USC)

10:00-10:25 **Key Priorities Emerging from SCEC2026:**
3-Minute Reports from Sessions 1-8

10:25 -10:45 **Perspectives from the SCEC Community:**
Early Career Researchers and Professionals
SCEC Institutions and Board of Directors
International Community
SCEC Science Steering and Proposal
Review Committees

10:45-11:20 **Open Community Discussion:** Priorities and
Opportunities for SCEC's Next Phase

11:20-11:55 **Ahmed Elbanna, SCEC Director**

How community input from The SCEC Wish
Wall and meeting discussions will shape
SCEC's programs and future directions

11:55-12:00 **Closing Remarks**, SCEC2026 Adjourns

<https://slido.com/scecmeet>





ECR Feedback Survey

Community Involvement Committee

Jillian Maloney, Betsy Madden, Caroline Seyler

What priorities do you think SCEC should pursue?

- Training opportunities for ECR (workshops, internships, technical and research training, including code training)
- Community Models - open source, sufficiently detailed, defined pipeline from observation to model, updating or retiring older models
- Outreach and communication

What questions do you have about SCEC's current and future priorities?

- TAGs - will all research now be under a TAG umbrella? How will they evolve?
- Will there be opportunities for TAGs on communication/outreach?
- How does SCEC view the future of earthquake science - where are there opportunities and challenges?



Input from SCEC Board of Directors



Board of Directors: Oversees Center governance, approves key plans and appointments, and helps guide SCEC's priorities and response to emerging needs and opportunities.

Tim Dawson (CGS, Board Chair) & Rachel Abercrombie (Boston University, Board Vice-Chair)

What could SCEC and its partners do together to make a real difference?

- Continue focusing on earthquake system science and developing useful products that capture that system science.
- Continue SCEC's web presence for distributing tools and its role as an organizational hub for California earthquake resources.
- Sustain the Annual Meeting and expanded workshops as key ways the community collaborates, organizes, and musters its resources, people, and skills.
- Find effective ways to advocate for the Center and the resources the community needs.
- Think through in advance how the community will respond scientifically and in a coordinated fashion to the next earthquake.



Feedback from the International Community

Community Involvement Committee

Jillian Maloney, Betsy Madden, Caroline Seyler

- Earthquake science is global; SCEC needs international perspectives to address major research questions and extend its reach.
- Expand collaboration with the China Earthquake Administration, including mutual learning from earthquake models, testing, and operational forecasting.
- Engage international users of SCEC science—particularly the insurance sector—to better understand how SCEC data and tools are applied.
- Explore an organizational partnership with the Global Earthquake Model Foundation, drawing on its global training, tools, and public-private network.
- Work with institutional international student offices to identify ways to support international students.

SCEC SSC and PRC Perspectives



2025–2026 TAG / Science Collaboration Timeline



Science Steering Committee (SSC)

Identifies research priorities, sets the Center's science goals, and monitors progress



USGS Liaisons to the SSC

USGS internal coordinators for relevant SCEC areas of work (plus Mike Blanpied, who oversees internal research support)





SCEC SSC and PRC Perspectives



2025–2026 TAG / Science Collaboration Timeline



2027 TAG RFP is coming!

Proposal Review Committee (PRC) – May 2026 only

Evaluates proposals submitted to SCEC, and recommends the annual portfolio of projects for funding to the Board to approve

(A total of 24–30 reviewers that span 12 disciplinary and interdisciplinary focus areas of SCEC research.)

 PRC Chair Meeting Chair	Seismology PRC Member Ad Hoc Reviewer	Geology PRC Member PRC Member
SDOT Ad Hoc Reviewer PRC Member	Geodesy PRC Member PRC Member	Research Computing PRC Member PRC Member
PBS PRC Member PRC Member	EFP PRC Member PRC Member	CEM PRC Member PRC Member
GM PRC Member Ad Hoc Reviewer	ASI PRC Member PRC Member	CCB PRC Member PRC Member
		FARM PRC Member

USGS Liaisons to the PRC

Chairs of USGS external grant review panels for relevant areas of work (plus Jill Franks, who oversees external research support)

 USGS Liaison NoCA Coordinator	 USGS Liaison SoCA Coordinator	 USGS Liaison EQ Source Processes
 USGS Liaison EQ Rupture Forecasting	 USGS Liaison Ground Motion	
 USGS Liaison Hazard, Impacts, & Risk	 USGS Liaison EHP Leadership	



SCEC SSC and PRC Perspectives



- Potential gaps:
 - Rheology community model
 - Physical consistency between CXMs
 - Geographical footprint of ShakeOut
 - Quantified uncertainties
 - Sustainability planning
 - Philanthropic, state, tribal (Aqua Caliente?), ... funding



SCEC SSC and PRC Perspectives



- Potential opportunities:
 - Leverage connections between TAGs
 - Leverage leadership-class computing to provide engineers with models + uncertainties (e.g., for NSHM 2035)
 - Track and communicate SCEC strengths, including, SCEC's many success stories in workforce development
 - "Pitch deck", what SCEC could do with new funding, but also how can our expertise help other communities
 - September 15: NSF GEO office hour
 - New NASA program "Earth science to action"

2027 TAG RFP is coming!



Wednesday, September | 10:00–11:55



Session 9. What Should SCEC Build Together?

Moderator: Ahmed Elbanna (USC)

10:00-10:25 **Key Priorities Emerging from SCEC2026:**

3-Minute Reports from Sessions 1-8

10:25 -10:45 **Perspectives from the SCEC Community:**

Early Career Researchers and Professionals

SCEC Institutions and Board of Directors

International Community

SCEC Science Steering and Proposal

Review Committees

10:45-11:20 **Open Community Discussion: Priorities and Opportunities for SCEC's Next Phase**

11:20-11:55 **Ahmed Elbanna, SCEC Director**

How community input from The SCEC Wish Wall and meeting discussions will shape SCEC's programs and future directions

11:55-12:00 **Closing Remarks, SCEC2026 Adjourns**

<https://slido.com/scecmeet>





Open Community Discussion

- **Workforce and education:** Support international students, strengthen mentoring amid growing AI use, and bring current SCEC science into undergraduate teaching.
- **ShakeOut 2.0:** Consider regional and economic impacts beyond Los Angeles—including the Inland Empire, neighboring states, Mexico, and supply chains—and clearly convey that the scenario is neither a prediction nor the only possible event, drawing on social scientists, communication experts, and community stories.
- **Earthquake simulators:** Consider a coordinated working group to explore physically based loading from depth, alternatives to backslip, and shared benchmarks for comparing simulator behavior.
- **Community models and unrecognized faults:** Use simulators to integrate and test community models, while exploring evolving fault geometries or other ways to account for unknown and blind faults.
- **User and government engagement:** Strengthen reciprocal relationships with local governments, existing regional networks, insurers, and other users to understand their needs and how SCEC science and model uncertainties inform decisions.
- **SCEC's role and partnerships:** Clarify SCEC's core strengths while working with communication, social science, engineering, risk, and other experts where their capabilities complement SCEC's.

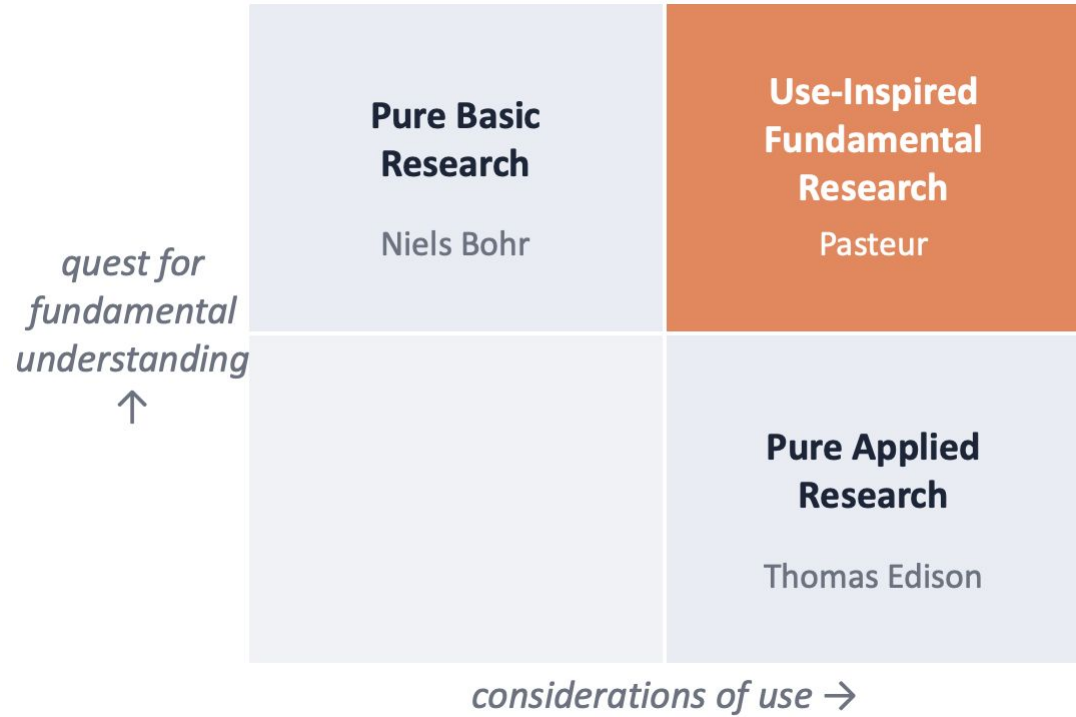


Statewide California Earthquake Center

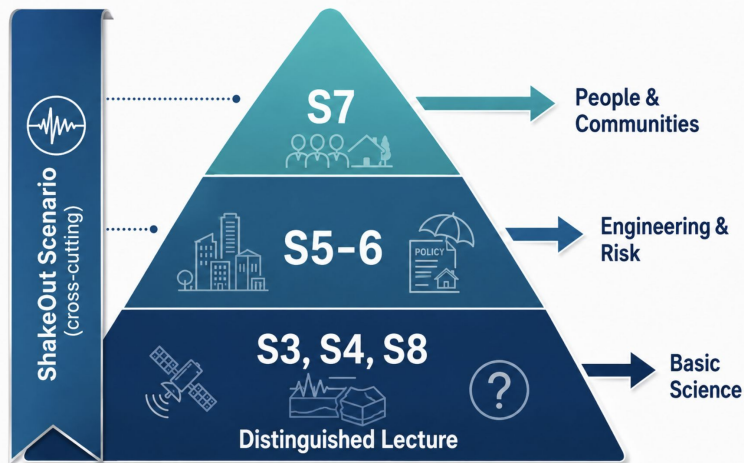
A collaborative research and education hub that brings together
experts across geoscience and related fields

What SCEC Should Build Together?

Ahmed Elbanna, PhD
Palm Springs, CA, 09/02/2026

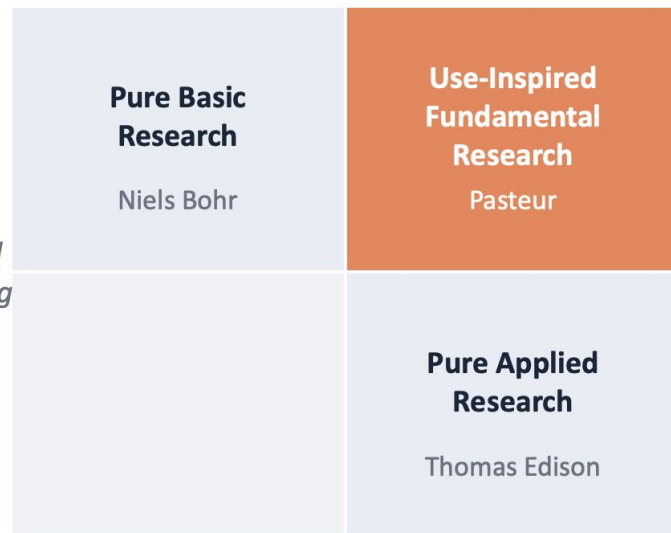


From Science To Society



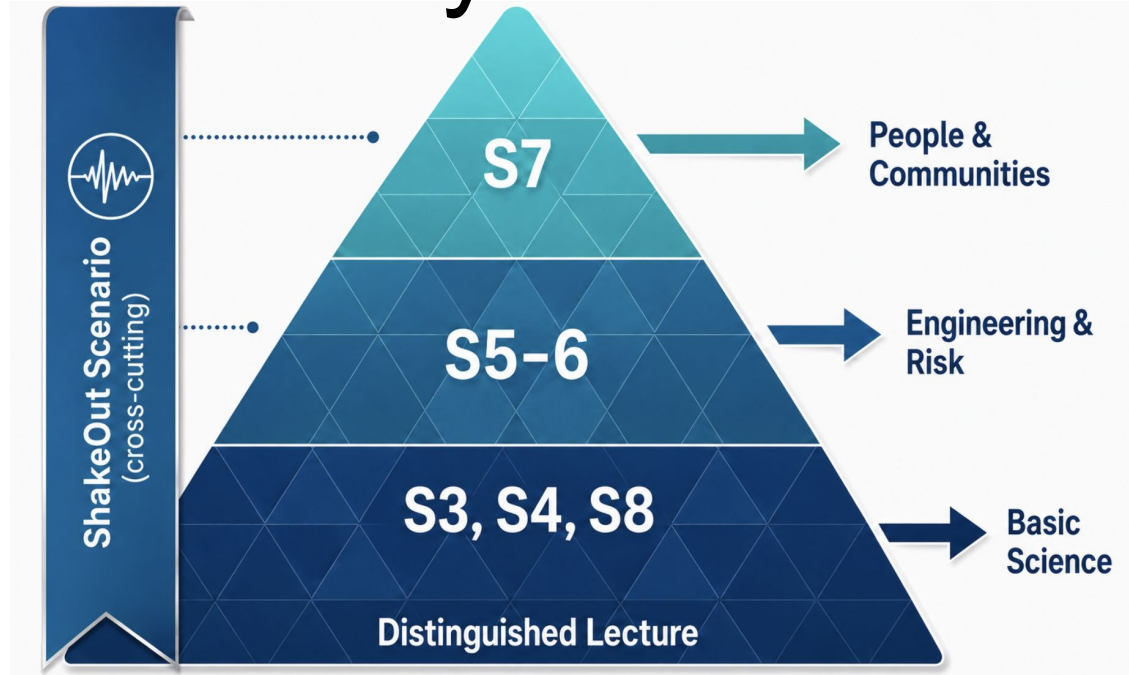
*quest for
fundamental
understanding*

↑

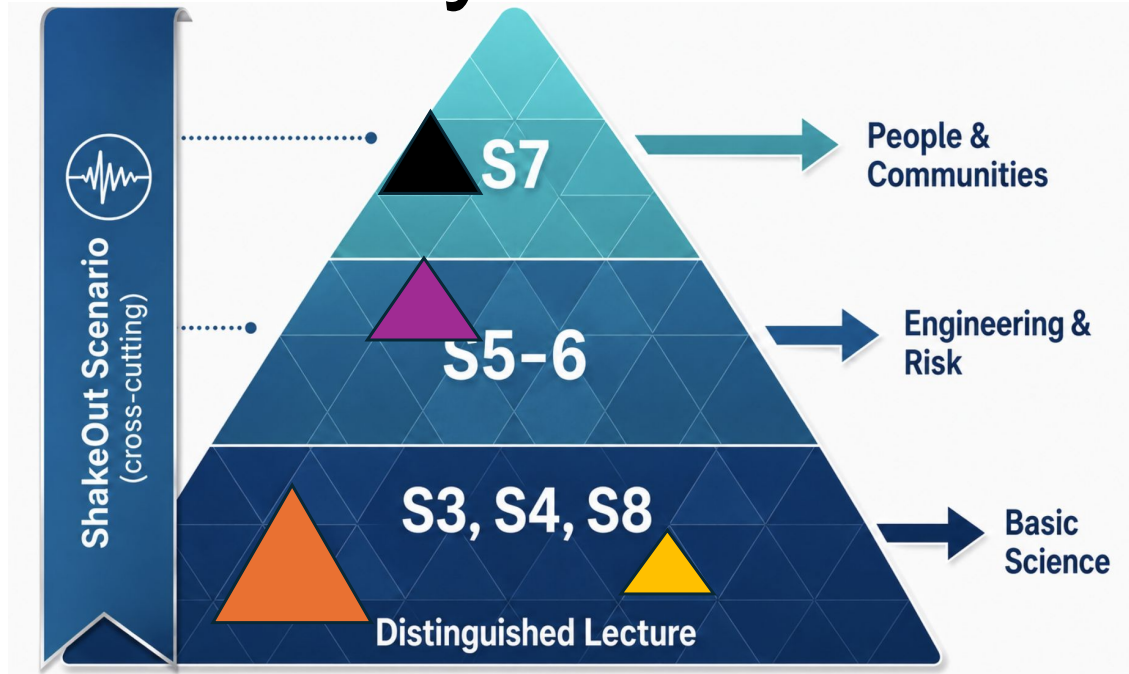


considerations of use →

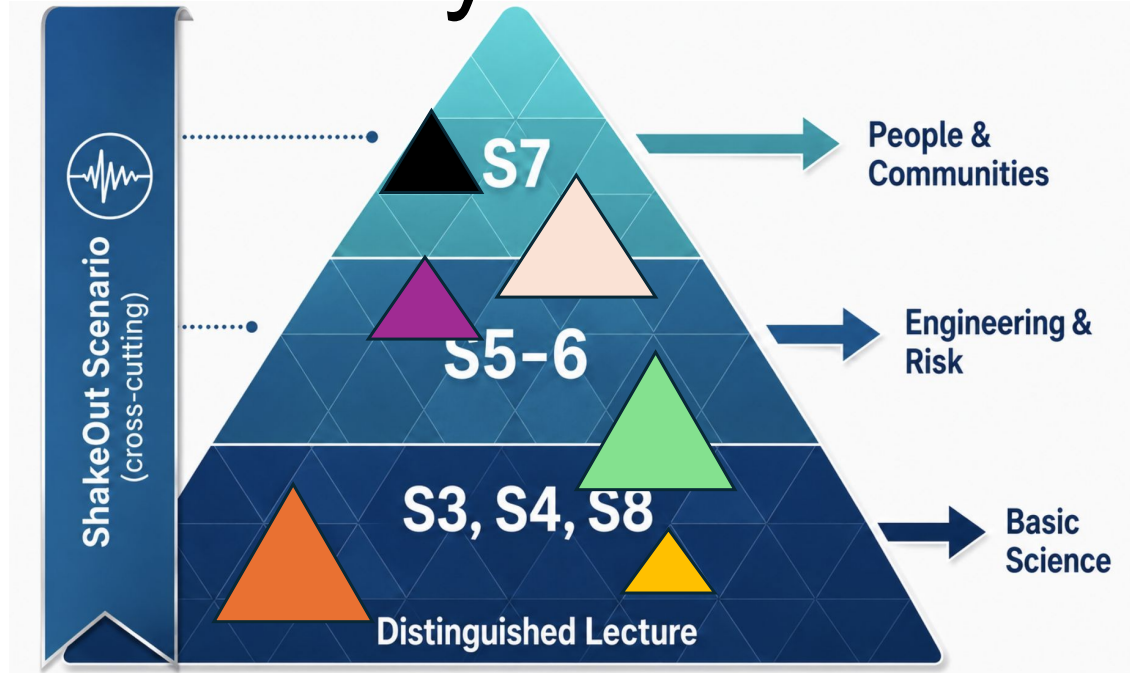
From Science To Society



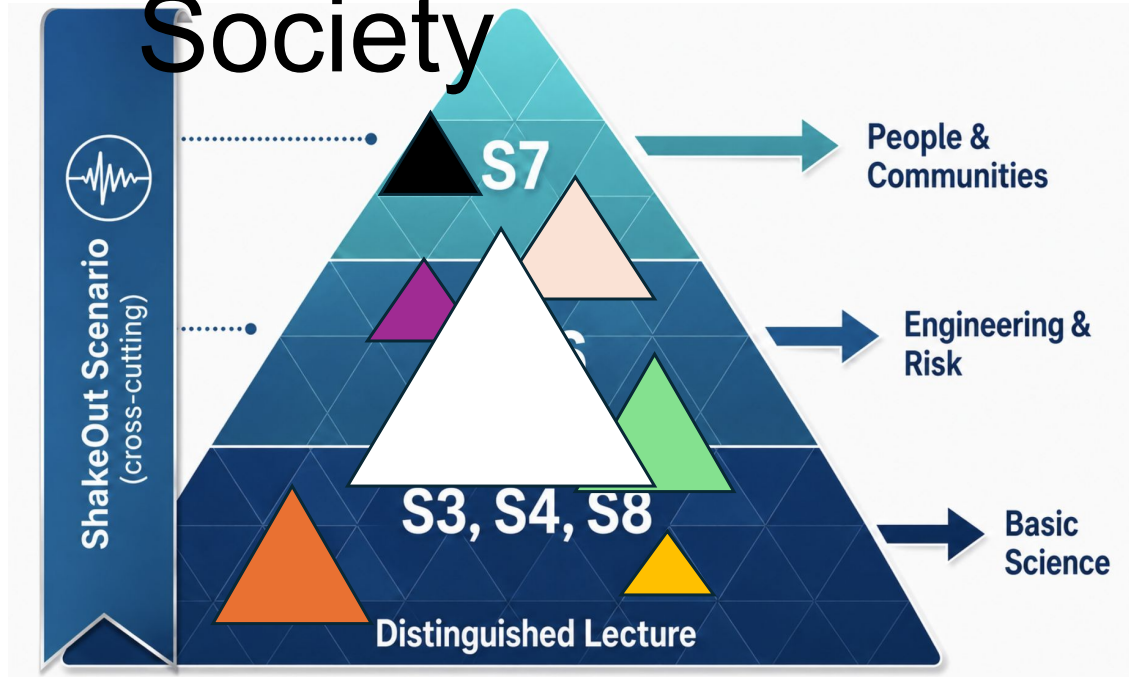
From Science To Society



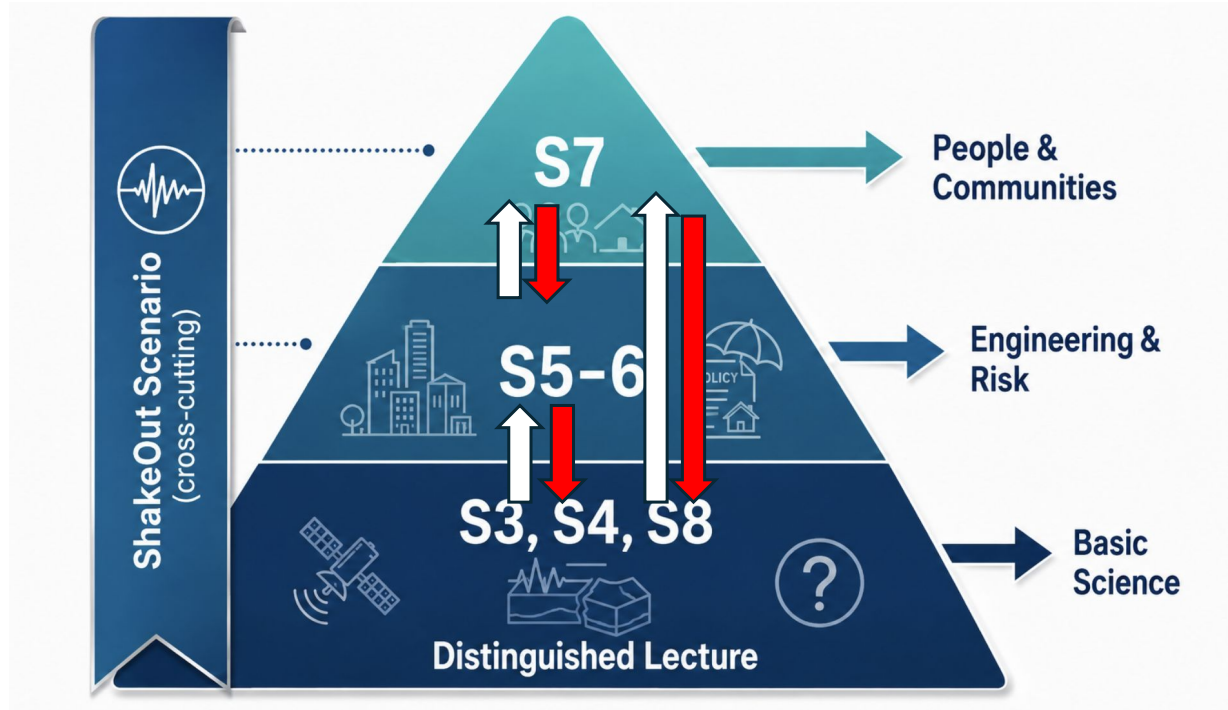
From Science To Society



From Science To Society



From Science To



**Earthquakes: A Tale of Scales,
Rheology,
(State of the Art and
Open Questions)**

Memory

Hysteresis

Criticality

Ahmed Elbanna, PhD
Professor of Earth Sciences and
Engineering, USC

Open Questions to be addressed:

- How are faults loaded?
- How do earthquakes start?
- What is the absolute level of stress?
- What details of rheology matter?
- How is energy partitioned?
- How is deformation partitioned on and off the fault?
- Can we infer the current state of the system?
- Are there identifiable precursors?
- ...

Open Questions to be addressed:

- How are faults loaded?
- How do earthquakes start?

- What is

What observations exist?

- What do

- How is energy partitioned?

- How is

Confronting models with different sets of observations simultaneously

- Can we infer the current state of the system?

- Are the

What test/experiment/field campaign needed to discriminate competing hypothesis?

- ...

How can we reduce uncertainty (or at least quantify it)?

?

Open Questions to be addressed:

- How are faults loaded?
- How do earthquakes start?
- What is the absolute level of stress?
- What details of rheology matter?
- How is energy partitioned?
- How is deformation partitioned on and off the fault?
- Can we infer the current state of the system?
- Are there identifiable precursors?
- ...

Holy Grail: Earthquake and Ground Motion
Forecasting

Lobby the state
for funding !!!

+1

Scenarios get the
community engaged,
and are likely
benefits for selecting
funding from
stakeholders/orgs.
More of these?

Eggs, sausage,
bacon

Yes! Low-carb
options please.

Some talks on
geodynamics of
California.

More direct
involvement
with
the media

Lots build a
bridge to all
seismic hazards,
liquefaction and
EQ landslides,
structures to
build.

Helping scientists
communicate to a wider
audience & non-scientists
— how TAG?

Scenarios. (Seismic time ticking bombs!)

A CEM integrator (data fusion, physical compatibility, interoperability)

Resolve how SEAS and simulators are connected

More support and opportunities for early career/workforce training

More bridges to the user community

More field trips!

AI skepticism vs enthusiasm. (How SCEC can lead in gaining scientific insights from AI + develop verification/validation frameworks)



September 15, 2026 - Q&As and information sessions

NSF GEO Virtual Office Hour: Updates from the NSF Directorate for Geosciences

 [View image credit & caption](#)

[Home](#) / [Events](#) / NSF GEO Virtual Office Hour: Updates from the NSF Directorate for Geosciences

About the event

This virtual office hour will focus on updates from the U.S. National Science Foundation Directorate for Geosciences, followed by a question and answer session.

[Register here](#) .

For assistance with [accessibility and reasonable accommodations](#) or to request support, contact rarequest@nsf.gov or call 703-292-8020. Please contact NSF at least 14 days before your meeting or event date for sessions lasting one day or less and 30 days in advance for sessions lasting two or more consecutive days to allow sufficient time to coordinate arrangements.

Date and time

Tuesday, September 15, 2026
1:00 p.m. – 2:00 p.m.

 [Save the date](#)

Location

This event will take place online.

[Register for Zoom webinar](#) 





California Senate Bill 895

CA State Legislature page for SB895

\$ 7.5 B

- SummarySponsors**Texts**VotesResearchCommentsTrack
- IntroducedAmendedAmendedAmendedAmended**Amended**

Bill Title: California Science and Health Research Bond Act.

Sponsorship: Broadly Bipartisan Bill

Status: (Enrolled) 2026-08-31 - Assembly amendments concurred in. (Ayes 28. Noes 9.) Ordered to engrossing and enrolling. [SB895 Detail]

Download: California-2025-SB895-Amended.html

11899.1. (a) The California Foundation for Science and Health Research is established within the Government Operations Agency.

(b) (1) The foundation's role is to facilitate scientific research by awarding grants and making loans-to, and entering contracts with, public or private research companies, universities, academic medical centers, institutes, and organizations for scientific research and development and to construct facilities for research and development, development and for sectors identified as "Bet" and "Accelerators in the California Jobs First State Economic Blueprint, as published and updated by the Governor's Office of Business and Economic Development, including, but not limited to, any of the following fields of research:

(1)

(A) Biomedical, including finding cures for high mortality diseases, including, but not limited to, cancer, Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, heart disease, strokes, child and adult leukemia, infectious diseases, HIV/AIDS, and genetic and chronic diseases that affect children and infants.

(2)

(B) Public health, including, but not limited to, environmental health detecting and responding to new and emerging health threats.

(3)

(C) Disease prevention, including, but not limited to, cancer, Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, heart disease, strokes, child and adult leukemia, infectious diseases, and HIV/AIDS.

(4)

(D) Promoting healthy and safe behaviors, communities, and environment.

(5)

(E) Wildfire prevention.

(6) (F) Behavioral health, including, but not limited to, addiction and substance use disorders.

(7) (G) Climate, including climate change and its impact on human health.

(8) (H) Weather.

(9) Ocean:

(I) Ocean, including sea level rise.

(10)

(J) Coastal and marine ecosystems and resources.

(11)

(K) Agriculture and water.

(12)

(L) Emerging technologies.

(13)

(M) Safety, efficacy, and security of drugs, biological products, medical devices, our nation's food supply, and cosmetics.

(N) Seismic and related geohazards.



THE NEW YORK TIMES BESTSELLER
FROM THE WORLD'S #1 LEADERSHIP THINKER

How Successful People Become
Even More Successful!

What Got You Here Won't Get You There

Discover
the 20
Workplace Habits
You Need to
Break

MARSHALL GOLDSMITH
WITH MARK REITER

"...Marshall's proven improvement process ROCKS!"
—Alan Mulally, CEO, Ford Motor Company



THE NEW YORK TIMES BESTSELLER
FROM THE WORLD'S #1 LEADERSHIP THINKER

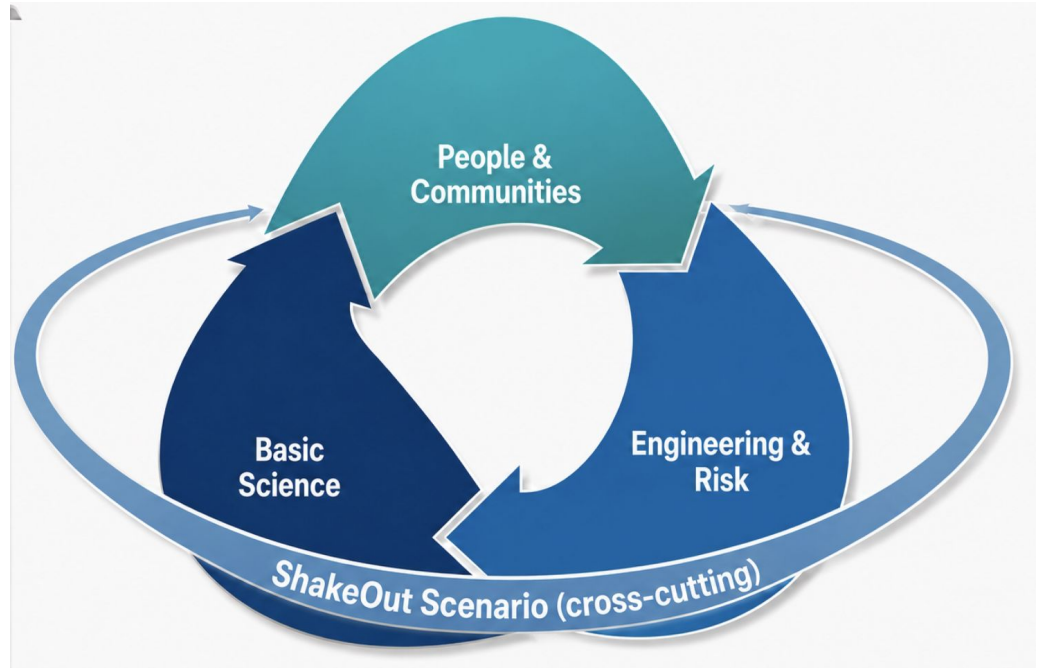
How Successful People Become
Even More Successful!

What Got You Here Won't Get You There

Discover
the 20
Workplace Habits
You Need to
Break

MARSHALL GOLDSMITH
WITH MARK REITER

"...Marshall's proven improvement process ROCKS!"
—Alan Mulally, CEO, Ford Motor Company





See You at
SCEC 2027