September 1995

THIS MONTH’S MEETING

Joint meeting with the South Coast Geological Society (SCGS)
September 11, 1995

Recent neotectonic studies of the Garlock fault, and lessons learned from the Landers earthquake for studies of prehistoric ruptures

presented by
Sally McGill

Reservations must be made by Friday, September 8
call Dames & Moore at 714-433-2000
(Please call to cancel if you can’t attend, or SCGS will be billed)

Cost: $20.00

Revere House
901 First Street
Tustin, CA

6:00 Social Hour
7:00 Dinner
8:00 Program

Map to Meeting
SEPTEMBER PROGRAM

Recent neotectonic studies of the Garlock fault, and lessons learned from the Landers earthquake for studies of prehistoric ruptures

by

Sally McGill

Associate Professor
California State University
San Bernardino

I will present the results of my slip-rate study of the Garlock fault near Mojave, as well as preliminary estimates of the recurrence interval from a recent trench in El Paso Mountains. I will also discuss the variability of displacement along strike in the Landers earthquake, and the implications of that variability for studies of prehistoric ruptures along strike-slip faults.

Information on the Mojave site for the roadlog:

At this site an incised channel has been left-laterally offset by the Garlock fault. The fault parallels the dirt road and is located about 75 meters to the southeast of the road. The modern channel is not off set, but the old wall of the channel is offset about 60 meters. The northeastern wall of the channel shows the offset most clearly. In the vicinity of the offset channel, the geomorphic expression of the fault is partially obscured by an abandoned dirt road. The alluvial fan into which the channel incised was abandoned no more than 18,000 years ago, and probably less than 16,000 years ago. The oldest channel-fill deposits that have been dated are about 7,000 years old. This suggests a minimum slip rate 3.4 to 9.2 mm/radiocarbon year. This is a minimum rate because erosion may have lessened the apparent offset of the channel, and because this rate applies only to the main strand of the fault. Additional left-lateral slip may have occurred on a fault located at the Southern Sierra Nevada range front, a few hundred meters farther north. For further information see McGill (1994a, 1994b).


McGill, Sally F., 1994b, Preliminary slip rate and recurrence interval for the western Garlock fault near Lone Tree Canyon, California, Geological Society of America, Abstracts with Programs, v. 26, p. 72.

Biographical information: I received my bachelor’s degree in geological sciences from Harvard & Radcliffe College in 1985. Both my master’s (1989) and Ph.D. (1992) are from Caltech, where I worked with Kerry Sieh. I have been an assistant professor at California State University, San Bernardino since the fall of 1991, and was recently promoted to associate professor. My research has focussed on the neotectonics of various faults in southern California, including the Garlock fault, the faults that ruptured in the Landers earthquake, and the San Andreas fault.

CHAIRPERSON’S COLUMN

by Joseph Cota

Thank you all for giving me this great assignment. I need your help. There’s lots of work to do. AEG’s annual meeting in Sacramento is coming up early in October. We’re fortunate that it’s close enough for many of us to attend, at least for a few days. Then, in November. Kim Bishop and Randy Jibson (USGS) will be leading a field trip in the northern San Fernando Valley and Santa Clarita regions. Something about an earthquake, or something like that. Tom Henyey and Jill Andrews of the Southern California Earthquake Center are busy preparing for a January, 1995 AEG Short Course on updated seismic hazard analysis topics.
Hugh Robertson and Bob Hollingsworth remain as Section Legislative Affairs and Professional Registration Committee Chairmen. Call them and bug them regularly.

Robert Larson did a fine job as this past years’ Chairman. He kept us abreast of the latest political happenings and made sure we had good places to meet, eat, socialize, and learn. He faithfully participated in AEG’s annual meeting in Williamsburg and attended the Board meetings. Rob’s always busy doing things like editing technical publications, arranging field trips, and organizing geologic symposiums. He’s currently working on an impressive presentation package for the West Coast Basin, Dominguez Gap and Alamitos Seawater-Intrusion Barrier System for AEG’s Outstanding Environmental and Engineering Geologic Project Award (why don’t we just call it the WCBDBASIS for AEG’s OEEGPA for short?). The award will be presented at the opening ceremony at the annual meeting on October 4, 1995. No doubt Rob will remain active in AEG activities.

As the incoming Section Chairman, I am quickly finding out how much work it’s going to be. With the help of my faithful employer, GeoSoils, Inc. and its staff, I will continue the simple tradition that Southern California Section AEG has always stood for. We will have great monthly meetings with informative speakers, good, fun field trips, and continuing education through short courses. I hope to see you all in Sacramento.

IN MEMORIAM

Cesare Emiliani, one of the seminal figures in isotope geochemistry and paleoclimatology, died from a sudden heart attack on July 20 in Palm Beach Gardens, Florida. He was closely associated with Roger Revelle and many others at SIO during the development of the JOIDES Deep-Sea Drilling Program, which grew out of his original LOCO (LONG CORES) project that drilled the first long core (68 feet) into Pliocene sediments off Jamaica in 1963. He was an early member of the University of Chicago “Geochemistry Mafia” in Harold Urey’s laboratory, where he took on himself the application of Urey’s studies of Cretaceous paleotemperatures to the study of foraminifera in Pleistocene and Recent sediments. He arrived in Chicago in 1950, a classically-trained micropaleontologist (University of Bologna), and moved to the University of Miami seven years later bearing the full-weight of Pleistocene paleoclimatology on his shoulders, having created a major revolution in the understanding of Late Cenozoic glacial cycles.

Among his many contributions to the use of oxygen isotopes in the fields of paleoecology and paleoclimatology, he made three major discoveries. First, he showed that the oxygen isotope cycles in long sediment cores corresponded to the carbonate extrema measured by G. Arrhenius, and proved that these cycles represented glacial and interglacial periods. This discovery was the death knell of the then-classical picture of four major glacial cycles during the Pleistocene epoch, and led ultimately to the knowledge that there have been some 36 glaciations during the last three million years of the Cenozoic era, extending far back before the Plio-Pleistocene boundary. Secondly, he demonstrated that these glaciation periodicities corresponded to the calculated temperature variations in the Milankovitch cycle that had been deduced from the orbital and precessional effects of the earth. Thirdly, he showed that the temperature of the deep ocean had decreased monotonically from the Late Cretaceous to the present. The discovery of the many cycles of Plio-Pleistocene glaciation and their correlation with the Milankovitch cycle revolutionized the understanding of Cenozoic climatic and glaciation cycles, and stands as one of the most remarkable examples of the overturning of geological concepts based on continental studies by new ideas developed from oceanographic research.

Cesare Emiliani was a true Renaissance scientist, at home in classical literature, fluent in many languages, and a dedicated opponent of dogma and mental rigidity wherever he found it. He received many honors during his career including most recently the Alexander Agassiz Medal of the National Academy of Sciences. In his later years he worked valiantly to introduce calendar reform to eliminate the BC-AD chronology hiatus caused by the lack of a Zero Year. That this was a non-trivial pursuit is shown by his final publication (Nature 375, 530, 1995) in which he showed that no less an authority that Pope John
Paul II had himself erred in defining the second and third millennia in his Apostolic Letter proclaiming the Great Jubilee at the end of the second millennium, "Sic transit gloria mundi", as Cesare would say.

Harmon Craig
July 27, 1995
passim@helium.ucsd.edu
retrieved from: sci.geo.geology newsgroup

POLITICAL SCENE

During the next 5 months, Congress is going to be looking for $1,000,000,000,000 in savings to balance the budget over the next 7 years. An important factor in these deliberations will be constituent input. Members of Congress are very interested in the views of their constituents and respond to them whenever possible. A large portion of a Member's staff is dedicated to constituent communications, which includes responding to correspondence, telephone calls, and personal visits.

Yet, all too often Members of Congress report that they receive little communication from the science community. Congressional turnover in the last two elections has brought many new members to the House of Representatives (45% +). Both old and new members of the House and Senate meet frequently with veterans, farmers, business leaders, and other individuals in their district or state, and receive letters from these interests daily. Many of these constituents make sure that their Members of Congress know their views on policy and spending. That is usually not true for scientists. Most members, especially those new to Congress, do not have a clear understanding of who the scientists are in their district or state, and the value of their research.

Informing a Member of Congress of your views is neither difficult nor time consuming. Below are some time-proven guidelines on ensuring that your representative and senators know what you think about the Fiscal Year 1996 budget that is now taking shape and where the one trillion dollars in savings should come from over the next 7 years.

WRITING TO A MEMBER OF CONGRESS:

Constituent mail is, by far, the most popular way to inform members. Congressional offices receive, and send, thousands of letters every year. Many of these letters are not as effective as they could be -- often a letter is difficult to read, covers too many topics, displays a lack of understanding, or fails to include a return address. Here is what you can do to make sure that your letter stands out:

Timing is important. A letter that reaches your representative or senator after a vote is held is useless. A letter sent months before an issue is considered is likely to be forgotten. AGU Science Legislative Alert (ASLA) monitors legislation of interest to the geophysical science community and provides notice of important dates for action whenever possible. Limit your letter to one page and one subject. Letters that are too long and cover too many topics may be delayed by being routed to several staff aides for response.

Type your letter whenever possible, and make sure it contains a legible name and address. Organize your letter into three paragraphs: In the first paragraph, state your reason for writing and your "credentials," e.g., "I am a hydrologist teaching and doing research at Ohio State University."

In the second paragraph, state your position with specific supporting evidence about what impact the subject will have on your research or institution or that of others. Include a relevant personal experience. Refer to a bill by its specific number. Avoid emotionalism -- stick to the facts. Offer an alternative approach where appropriate.

In your third, and concluding, paragraph, request (not demand) a specific action, such as a vote for or against a bill. Offer your assistance.

Avoid e-mail. Although much easier and quicker, congressional offices with this capability report that their already stretched staffs are being inundated by electronic mail. Not all offices have e-mail. Faxes are also to be avoided if possible, as members find that their machines are frequently overloaded.

You do not need an individual office address to write to a member. The preferred address for all senators and representatives is as follows:

The Honorable
United States Senate
Washington, D.C. 20510

Dear Senator:

The Honorable
U.S. House of Representatives
Washington, D.C. 20515

Dear Representative:

Correspondence addressed to your Member of Congress will have greater impact than mail sent to other members. If an important issue is coming before a committee, where legislation is actually drafted, and if your own members are not on that committee, consider the following course: write to the committee chairmen, and other key committee members if desired, but also write to your own representative or senator. Ask that they convey your sentiments to the chairman and other committee members. This can be a very effective way for your voice to be heard.

PERSONAL VISITS:

Swarming around the House and Senate office buildings every weekday are citizens who have come to Capitol Hill to present their views to Members of Congress and their staffs. Although they come to Washington for a variety of reasons, they all have one thing in common: they have discovered that the best way to communicate with a Member of Congress is by meeting him or her in person.

It is a common request to ask for an appointment with a member and/or staff. On many days there is a constant stream of visitors to a congressional office. Visiting with a member provides a personal touch, an opportunity for questions, and immediate feedback. Here is how to plan a visit:

A general rule of thumb is that it is easier to get an appointment with a representative than with a senator. Arranging a meeting with your own members will be much easier than with a representative or senator who does not represent you. If a member is not available, ask for an appointment with the relevant legislative assistant.

Plan far ahead. Members of Congress and their staffs are working under crushing
work loads this year. Call the Capitol's switchboard at 202-224-3121 and request a specific office. Ask to speak to the appointments scheduler, briefly introduce yourself (noting if you are a constituent), and describe the purpose of your visit.

Call at least 3-4 weeks in advance.

Follow the correspondence guidelines above in planning your presentation, citing relevant legislation (including bill number.) Be ready to provide a brief nontechnical explanation of your topic as appropriate, avoiding all abbreviations and jargon. Allow time for dialogue and questions. Request (not demand) a specific action. Know the member's position on the issue; contact us for assistance if needed. Most appointments last around 15 minutes; less if they are a courtesy call.

If you are coming as a member of a group, decide on a spokesperson. Agree on your presentation and strategy before you arrive. Anticipate schedule changes! An appointment planned months in advance with a member can be changed or canceled because of unanticipated committee or floor action. Committee members can no longer vote by proxy, which means they must be present when bills are being marked-up. A string of back-to-back votes on the floor can keep a member away from his or her office. In this case, a staff assistant will handle the appointment. These dedicated assistants are often the most knowledgeable about legislation and can be very influential.

If appropriate, bring a "hands-on" visual aid. A few well selected hand-outs may be useful, but resist the temptation to bring along stacks of materials. In all probability they will never be read. A one-page summary of your position with an attached business card to present at the end of your appointment will be welcomed.

End your appointment on time. Follow-up your visit with a thank you letter in which you reiterate your main points, and offer your assistance as needed.

If a legislative assistant is present during your appointment, ask for their business card. This individual can serve as your primary source of contact for subsequent telephone calls and informal correspondence.

Arrange, if possible, your appointment with the member while they are at their home office. Your meeting will occur in a far more relaxed environment away from committee and floor deliberations and other distractions.

Offer to arrange a visit to your facility or institution where the member can get a much clearer impression of what federal tax payers are helping to support!

Although meeting with a Member of Congress may at first glance seem to be an anxiety-producing event -- relax! Most members participate in hundreds of these appointments every year, and they are typically very good at making people feel welcomed and comfortable. After all, if you are their constituent, they are interested in gaining your future support.

Source: American Institute of Physics, AGustaffasla95.005
AGU SCIENCE LEGISLATION ALERT (ASLA)
A KOSMOS Service for AGU Members
(E-mail address: asla@kosmos.agu.org)

AEG Legislative Report — August, 1995
Report of Legislative activity July 1 - July 31, 1995

STATUS ON BOARD OF REGISTRA-
TION FOR GEOLOGISTS AND GEO-
PHYSICISTS

The funding for the Board of Registration for Geologists and Geophysicists was retained in the final version of the budget.

Last year a bill was passed to sunset several boards. The Board of Registration for Geologists and Geophysicists, among them. Over the next three years each board will be evaluated as to their value and effectiveness. The Board will be up for evaluation and will be sunset by the end of the next year if the Board does not justify its existence.

The board is preparing a report which will be submitted to the Legislative Sunset Review Committee by October 1, 1995. The Committee will review all of the reports and will hold hearings the end of November and the first week of December. The Committee will then make recommendations to either extend the sunset for four years or eliminate the Board. The will also recommend to the Department of Consumer Affairs whether to continue the licensing of Geologists and Geophysicists. The Depart-
ment of Consumer Affairs can either take the recommendation, make changes to the licensing process or keep it as is and administer it through the Department.

If the Board of Registration for Geologists and Geophysicists is eliminated the effective date would be July 1, 1997.

OTHER LEGISLATIVE UPDATES

The Legislature is on recess until the week of August 21. The 1995 session will end on September 15 at midnight.

AB 349 (ESCU TIA)
Position: Support/Amended

Existing law requires the State Fire Marshall to establish and maintain a centralized database on specified intrastate hazardous liquids pipelines. This bill would require the data base to include information on fault movement and seismic subsidence reported along the pipeline route.

Status: In the Appropriations Committee, no date set.

AB 1566 (RAIN EY)
Position: None at this date

Existing law, the Professional Land Surves Act, specifies the physical characteristics of the map that is the record of survey. This bill would revise those characteristics and would make conforming changes.

Status: In the Senate In-Active file. It may still be heard in the Senate before the end of the Session.

SB 562 (THOMPSON)
Position: Neutral

This bill would authorize the State Water Resource Board to pay a claim for the costs of corrective action to a person who owns property on which is located a release from a petroleum underground storage tank which has been the subject of a completed corrective action abd for which additional corrective is required because of newly discovered contamination from that tank.

Status: Scheduled to be heard in the Assembly Committee on Environmental Safety on August 21, 1995.

The position of Membership Chair is now vacant as Deems Padgett is bugging out and headed for the beautiful San Francisco Bay Area (your editor's former home). Call Joe Cote at 818-785-2158 for information.

AEG Southern California Section • Newsletter

September 1995
**NEWS**

**AWARD of MARTIN L. STOUT SCHOLARSHIP**

The Southern California Section is pleased to announce the award of the Martin L. Stout Scholarship to Vassilia Angelaki. Ms. Angelaki, a graduate student at Kent State University in Ohio, is the first recipient of the award. This scholarship, which amounts to $500.00, will be given annually to a student member of the AEG.

**DIBBLEE FOUNDATION TO PUBLISH FOUR NEW MAPS**

The Dibblee Geological Foundation is nearing completion of four new 7 1/2-minute geologic quadrangles, and plans to go to press late this fall. The maps are the NEWHALL, MINT CANYON, AGUA DOLCE, and ACTON quadrangles. These four new maps will add to a growing mosaic of 59 geologic maps (for a total of 74 quadrangles) continuous from downtown Los Angeles to the San Luis Obispo County line, at least two quadrangles deep. The four new maps are especially sought after, because Tom Dibblee mapped most of this region in the late 1930's, before extensive development began. In recent years he has conducted considerable additional field work to update and complete his earlier mapping and has reviewed the mapping by other geologists. Each of the new maps will also contain two or more geologic cross sections.

In the past, many members of the Southern California Section of AEG and their companies have helped with financial support in the Foundation's efforts to publish these maps. Using innovative techniques developed by editor Helmut Ehrenspeck, the Dibblee Foundation has been able to create these full-color maps at a fraction of the cost of government-produced geologic maps. However, as you can imagine, field work, editing, final drafting, preparation, and printing of the maps still costs a lot: nearly $10,000 per map. The Foundation directors and the executive committee, including Tom Dibblee, all volunteer their time and effort to help produce these important geologic maps as fast as possible.

To continue publishing the maps that geologists need, the Foundation definitely needs your financial support now. As you know, previous oil company support has just about dried up, and government funding is not available. So it's up to individual geologists and geotechnical and environmental companies to help take up the slack. Publishing these four new maps will cost some $40,000. Please send us your tax-deductible personal or corporate contributions to the Dibblee Foundation, P.O. Box 60560, Santa Barbara, CA 93160. Individual contributions of $500 or more, and company contributions of $1000 or more will be acknowledged on one or more of the new maps (or on a future map, if received after press time).

Please call Dick Brown (310) 598-0595 or Helmut Ehrenspeck (805) 968-0481 for further information.

Submitted by Dick Brown, e-mail: geofine@aol.com, Fax 310-598-5658, phone 310-598-0595.

**COMPUTER CORNER**

Gareth Mills (gmill@pacificnet.net) kindly informed me of my error in transcription in the July newsletter. The correct URL is:

http://www.pacificnet.net/~gmill/main.html

Try it, it works.

**FIELD TRIPS**

The field trip scheduled for this fall has been postponed until November 11. The itinerary of the trip will include visits of several landslides in the Castaic Junction area that were activated by the 1994 Northridge earthquake. A poster session and talk regarding liquefaction in the Simi Valley area, and possibly a visit to a lateral spreading site in the northern San Fernando Valley. Watch the next newsletter for details.

The SCGS 1995 Field Trip to the Garlock Fault and El Paso Mountains is on for September 23 and 24. Registration mailers are out. If you haven't received one but would like to please contact Alan Pace at 714-724-1776 or e-mail at apace@aol.com. Registration deadline is September 11. We will be meeting and camping at Red Rock Canyon Park. High Clearance Vehicles are Required and Car-Pooling is Highly desired.

**GEOQUOTE OF THE MONTH**

The situations of practice are not problems to be solved but problematic situations characterized by uncertainty, disorder, and indeterminacy. Russell Achoff, one of the founders of the field of operations research, has recently announced ... that "managers are not confronted with problems that are independent of each other, but with dynamic situations that consist of complex systems of changing problems that interact with each other. I call such situations messes... Managers do not solve problems: they manage messes."
**The Performance Company**

The PRESSURE GROUT COMPANY
More than 35 Years of Innovative Grouting

- Densifying/Strengthening Foundation Soils
- Preventing Soil Liquefaction
- Reinforcing Soils on Slopes
- Thwarting Soil Settlements
- Leveling of Structures
- Water Shut-off
- Epoxy Grouting *

310-432-4100

---

**Environmental Geotechnology Laboratory**

11823 Slauson Ave., Unit 18
Santa Fe Springs, CA 90670
Tel: (800)945-5648, (310)945-0689
Fax: (310)945-0364

**GEOTECHNICAL TESTING SERVICES**

- Index Properties
- Compaction
- Soil Chemistry
- Soil Strength (triaxial compression & shear)
- Consolidation
- Hydraulic Conductivity & Air Permeability
- Total & Effective Porosity, etc.

*Guaranteed Quality Services with Competitive Rates!!!*

---

**POWER LIFT FOUNDATION REPAIR**

CA License #693886

- STEEL PIERS Interior & Exterior
- Compaction Grouting & Mudjacking

ALL TYPES OF FOUNDATIONS & FLOORS RAISED
RESIDENTIAL & COMMERCIAL

Licensed Engineer Reports Available

over 28 years of progressive foundation repair experience

818-342-5438 800-562-5438

LOS ANGELES NATION WIDE

Minimal Lawn Disturbance

---

*AEG Southern California Section ● Newsletter*
ALPHA
STRUCTURAL, INC.
GENERAL ENGINEERING CONTRACTORS

WE SPECIALIZE IN:

- Foundation Underpinning
- Seismic Retrofitting
- Caissons / Grade Beams
- Hillside Repair
- Retaining Walls
- Structural Repairs

EXPERIENCE • EXPERIENCE • EXPERIENCE

213-258-5482